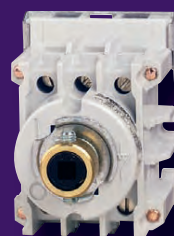




## Disconnect Switch Catalog



## **Company presentation**

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## LBS from 16 to 125 A

### Product presentation



LBSM



LBSR



LBST



LBSR

Ferraz Shawmut LBS load break disconnect switches have been designed for today's industrial control systems. The LBS switches allow you to safely turn power to your motor on and off or to isolate a particular circuit within the panel. These switches are extremely compact and offer a variety of mounting options like DIN rail mounting, base mounting, or door mounting.

A wide assortment of handles, shafts and accessories are available to provide you with the ultimate flexibility in the design of your industrial control panels. Wiring terminations are integral to the switch body and recessed to insure a "finger safe" environment according to IEC standards to an IP20 grade of protection.

#### Highlights

- Finger safe
- Compact footprint
- DIN rail or base mount standard
- Door mounting optional
- Choice of external handles / shafts
- Direct mount handle option
- Toggle handle option
- Padlockable handles

#### Applications

- On / Off switching and disconnect applications in circuits up to 600 volts, 125 amperes on the load side of branch circuit protection fusing.
- LBS M range: Motor Controller
- LBS R & T range: Motor Controller suitable as Motor Disconnect
- Motor Isolator
- General Purpose

#### Ratings

- 600 VAC
- 16, 20, 25, 30, 40, 60, 80, 100, and 125 amperes

#### Approvals

- Meets the requirements of UL508 and CSA
- UL Listed Guide NLRV File E196672
- CSA C22.2 No 14 CEC rule 28 602 (3) (b)
- IEC 947-3 as load break disconnect





## External front operated base mounted range from 16 to 30 A



Select a switch

| Ampere rating          | 16     | 20     | 25     | 30     |
|------------------------|--------|--------|--------|--------|
| Catalog number: 3 pole | LBSM16 | LBSM20 | LBSM25 | LBSM30 |

Note: DIN rail or back plate installation.

### M type selector handle



Select a handle

| NEMA type        | IEC  | Color        | Catalog number |      |      |      |
|------------------|------|--------------|----------------|------|------|------|
| 1, 3R, 12, 4, 4X | IP65 | Black        | HMSB           | HMSB | HMSB | HMSB |
| 1, 3R, 12, 4, 4X | IP65 | Red / Yellow | HMSR           | HMSR | HMSR | HMSR |

Note: handle is not defeatable and is padlockable in the "OFF" position.



Select a shaft

| Shaft length (inches / mm) | Catalog number |          |          |          |
|----------------------------|----------------|----------|----------|----------|
| 2.75 / 70                  | SM70-5L        | SM70-5L  | SM70-5L  | SM70-5L  |
| 4.72 / 120                 | SM120-5L       | SM120-5L | SM120-5L | SM120-5L |
| 7.9 / 200                  | SM200-5L       | SM200-5L | SM200-5L | SM200-5L |
| 12.0 / 305                 | SM300-5L       | SM300-5L | SM300-5L | SM300-5L |

Note: all "5L" shafts have door interlock pinned at factory (no assembly required).

### S type pistol handle



Select a handle

| NEMA type        | IEC  | Color        | Catalog number |       |       |       |
|------------------|------|--------------|----------------|-------|-------|-------|
| 1, 3R, 12        | IP54 | Black        | HSPB           | HSPB  | HSPB  | HSPB  |
| 1, 3R, 12        | IP54 | Red / Yellow | HSPR           | HSPR  | HSPR  | HSPR  |
| 1, 3R, 12, 4, 4X | IP65 | Black        | HSPB4          | HSPB4 | HSPB4 | HSPB4 |
| 1, 3R, 12, 4, 4X | IP65 | Red / Yellow | HSPR4          | HSPR4 | HSPR4 | HSPR4 |

Note: handle is defeatable and is padlockable in the "OFF" position.



Select a shaft

| Shaft length (inches / mm) | Catalog number |          |          |          |
|----------------------------|----------------|----------|----------|----------|
| 7.9 / 200                  | SS200-5L       | SS200-5L | SS200-5L | SS200-5L |
| 12.6 / 320                 | SS320-5L       | SS320-5L | SS320-5L | SS320-5L |
| 15.7 / 400                 | SS400-5L       | SS400-5L | SS400-5L | SS400-5L |

Note: all "5L" shafts have door interlock pinned at factory (no assembly required).

### Options for external front operation



|                                                              | Catalog number |         |         |         |
|--------------------------------------------------------------|----------------|---------|---------|---------|
| Modular 4th power pole (rating same as switch)               | PPM16          | PPM20   | PPM25   | PPM30   |
| Neutral pole (feed through, not switched, rated 30A, 480VAC) | NMM            | NMM     | NMM     | NMM     |
| Ground pole (feed through, not switched, rated 30A, 480VAC)  | GMM            | GMM     | GMM     | GMM     |
| 1 NO+NC, side mount, pre-break auxiliary contact             | ACMM           | ACMM    | ACMM    | ACMM    |
| A300, rated 15A @ 120 VAC                                    |                |         |         |         |
| Terminal shroud (for 3 pole switch)                          | TSLBSM         | TSLBSM  | TSLBSM  | TSLBSM  |
| Terminal shroud for modular 4th pole or NMM or GMM           | TSLBSM4        | TSLBSM4 | TSLBSM4 | TSLBSM4 |
| Direct mounted handle (requires removing collar from switch) | HAD60M         | HAD60M  | HAD60M  | HAD60M  |

## Direct front operated base mounted range from 16 to 30 A



Select a switch

| Ampere rating          | 16       | 20       | 25       | 30       |
|------------------------|----------|----------|----------|----------|
| Catalog number: 3 pole | LBSM16DH | LBSM20DH | LBSM25DH | LBSM30DH |

Note: direct handle included, handle is padlockable in the "OFF" position. DIN rail or blackplate installation.  
Please consult us for availability of switches with direct mounted handles.

### Options for direct operation



|                                                                              | Catalog number |         |         |         |
|------------------------------------------------------------------------------|----------------|---------|---------|---------|
| Modular 4th power pole (rating same as switch)                               | PPM16          | PPM20   | PPM25   | PPM30   |
| Neutral pole (feed through, not switched, rated 30A, 480VAC)                 | NMM            | NMM     | NMM     | NMM     |
| Ground pole (feed through, not switched, rated 30A, 480VAC)                  | GMM            | GMM     | GMM     | GMM     |
| (1) NO+NC, side mount, pre-break auxiliary contact A300, rated 15A @ 120 VAC | ACMM           | ACMM    | ACMM    | ACMM    |
| Terminal shroud (for 3 pole switch)                                          | TSLBSM         | TSLBSM  | TSLBSM  | TSLBSM  |
| Terminal shroud for modular 4th pole or NMM or GMM                           | TSLBSM4        | TSLBSM4 | TSLBSM4 | TSLBSM4 |

## Door mounted range from 16 to 30 A



Select a switch

| Ampere rating          | 16      | 20      | 25      | 30      |
|------------------------|---------|---------|---------|---------|
| Catalog number: 3 pole | LBSDM16 | LBSDM20 | LBSDM25 | LBSDM30 |

Note: door mounting adaptor included.

### M type selector handle



Select a handle

| NEMA type        | IEC  | Color        | Catalog number |      |      |      |
|------------------|------|--------------|----------------|------|------|------|
| 1, 3R, 12, 4, 4X | IP65 | Black        | HMSB           | HMSB | HMSB | HMSB |
| 1, 3R, 12, 4, 4X | IP65 | Red / Yellow | HMSR           | HMSR | HMSR | HMSR |

Note: handle is not defeatable and is padlockable in the "OFF" position.

### Options for door mounted



|                                                                             | Catalog number |        |        |        |
|-----------------------------------------------------------------------------|----------------|--------|--------|--------|
| Modular 4th power pole (rating same as switch)                              | PPDM16         | PPDM20 | PPDM25 | PPDM30 |
| Neutral pole (feed through, not switched, rated 30A, 480VAC)                | NDMM           | NDMM   | NDMM   | NDMM   |
| Ground pole (feed through, not switched, rated 30A, 480VAC)                 | GDMM           | GDMM   | GDMM   | GDMM   |
| 1 NO+NC, side mount, pre-break auxiliary contact, A300, rated 15A @ 120 VAC | ACDMM          | ACDMM  | ACDMM  | ACDMM  |

# LBS R & T

## External front operated base mounted range from 30 to 125 A



Select a switch

| Ampere rating          | 30      | 40      | 60     | 80     | 100     | 125     |
|------------------------|---------|---------|--------|--------|---------|---------|
| Catalog number: 3 pole | LBSR30  | LBSR40  | LBSR60 | LBSR80 | LBSR100 | LBSR125 |
| Catalog number: 4 pole | LBSR304 | LBSR404 | -      | -      | -       | -       |

Note: DIN rail or back plate installation.

### M type selector handle



Select a handle

| NEMA type        | IEC  | Color        | Catalog number |      |      |      |      |      |
|------------------|------|--------------|----------------|------|------|------|------|------|
| 1, 3R, 12, 4, 4X | IP65 | Black        | HMSB           | HMSB | HMSB | HMSB | HMSB | HMSB |
| 1, 3R, 12, 4, 4X | IP65 | Red / Yellow | HMSR           | HMSR | HMSR | HMSR | HMSR | HMSR |

Note: handle is not defeatable and is padlockable in the "OFF" position.



Select a shaft

| Shaft length (inches / mm) | Catalog number |          |          |          |          |          |
|----------------------------|----------------|----------|----------|----------|----------|----------|
| 2.75 / 70                  | SM70-5L        | SM70-5L  | SM70-5L  | SM70-5L  | SM70-5L  | SM70-5L  |
| 4.72 / 120                 | SM120-5L       | SM120-5L | SM120-5L | SM120-5L | SM120-5L | SM120-5L |
| 7.9 / 200                  | SM200-5L       | SM200-5L | SM200-5L | SM200-5L | SM200-5L | SM200-5L |
| 12.0 / 305                 | SM300-5L       | SM300-5L | SM300-5L | SM300-5L | SM300-5L | SM300-5L |

Note: all "5L" shafts have door interlock pinned at factory (no assembly required).

### S type pistol handle



Select a handle

| NEMA type        | IEC  | Color        | Catalog number |       |       |       |       |       |
|------------------|------|--------------|----------------|-------|-------|-------|-------|-------|
| 1, 3R, 12        | IP54 | Black        | HSPB           | HSPB  | HSPB  | HSPB  | HSPB  | HSPB  |
| 1, 3R, 12        | IP54 | Red / Yellow | HSPR           | HSPR  | HSPR  | HSPR  | HSPR  | HSPR  |
| 1, 3R, 12, 4, 4X | IP65 | Black        | HSPB4          | HSPB4 | HSPB4 | HSPB4 | HSPB4 | HSPB4 |
| 1, 3R, 12, 4, 4X | IP65 | Red / Yellow | HSPR4          | HSPR4 | HSPR4 | HSPR4 | HSPR4 | HSPR4 |

Note: handle is defeatable and is padlockable in the "OFF" position.



Select a shaft

| Shaft length (inches / mm) | Catalog number |          |          |          |          |          |
|----------------------------|----------------|----------|----------|----------|----------|----------|
| 7.9 / 200                  | SS200-5L       | SS200-5L | SS200-5L | SS200-5L | SS200-5L | SS200-5L |
| 12.6 / 320                 | SS320-5L       | SS320-5L | SS320-5L | SS320-5L | SS320-5L | SS320-5L |
| 15.7 / 400                 | SS400-5L       | SS400-5L | SS400-5L | SS400-5L | SS400-5L | SS400-5L |

Note: all "5L" shafts have door interlock pinned at factory (no assembly required).

### Options for external front operation



|                                                     | Catalog number |          |         |         |         |         |
|-----------------------------------------------------|----------------|----------|---------|---------|---------|---------|
| Auxiliary contact holder (includes 1NO)             |                |          |         |         |         |         |
| 3 pole (accommodates up to 6 auxiliary contacts)    | ACHLBS1        | ACHLBS1  | ACHLBS2 | ACHLBS2 | ACHLBS2 | ACHLBS2 |
| 4 pole (accommodates up to 6 auxiliary contacts)    | ACHLBS14       | ACHLBS14 | -       | -       | -       | -       |
| Auxiliary contact                                   |                |          |         |         |         |         |
| 1 NC Auxiliary contact rated 10A, 600VAC, A600-Q600 | AC11           | AC11     | AC11    | AC11    | AC11    | AC11    |
| 1 NO Auxiliary contact rated 10A, 600VAC, A600-Q600 | AC12           | AC12     | AC12    | AC12    | AC12    | AC12    |
| Direct mounted handle <sup>(1)</sup>                | HAD40R         | HAD40R   | HAD80R  | HAD80R  | HAD80R  | HAD80R  |

(1) Requires removing collar from switch.

## Direct front operated base mounted range from 30 to 125 A



Select a switch

| Ampere rating          | 30        | 40        | 60       | 80       | 100       | 125       |
|------------------------|-----------|-----------|----------|----------|-----------|-----------|
| Catalog number: 3 pole | LBSR30DH  | LBSR40DH  | LBSR60DH | LBSR80DH | LBSR100DH | LBSR125DH |
| Catalog number: 4 pole | LBSR304DH | LBSR404DH | -        | -        | -         | -         |

Note: direct handle included, handle is padlockable in the "OFF" position. DIN rail or blackplate installation.  
Please consult us for availability of switches with direct mounted handles.

## LBS R & T

### Door mounted range from 30 to 125 A



Select a switch

| Ampere rating          | 30      | 40      | 60     | 80     | 100     | 125     |
|------------------------|---------|---------|--------|--------|---------|---------|
| Catalog number: 3 pole | LBSR30  | LBSR40  | LBSR60 | LBSR80 | LBSR100 | LBSR125 |
| Catalog number: 4 pole | LBSR304 | LBSR404 | -      | -      | -       | -       |



Select a kit

|                   | Catalog number |         |         |         |         |         |
|-------------------|----------------|---------|---------|---------|---------|---------|
| Door mounting kit | DMKLBSR        | DMKLBSR | DMKLBSR | DMKLBSR | DMKLBSR | DMKLBSR |

Note: shaft included.

### M type selector handle



Select a handle

| NEMA type        | IEC  | Color        | Catalog number |      |      |      |      |      |
|------------------|------|--------------|----------------|------|------|------|------|------|
| 1, 3R, 12, 4, 4X | IP65 | Black        | HMSB           | HMSB | HMSB | HMSB | HMSB | HMSB |
| 1, 3R, 12, 4, 4X | IP65 | Red / Yellow | HMSR           | HMSR | HMSR | HMSR | HMSR | HMSR |

Note: handle is not defeatable and is padlockable in the "OFF" position.

### Toggle operated range from 30 to 125 A



Select a switch

| Ampere rating          | 30      | 40      | 60     | 80     | 100     | 125     |
|------------------------|---------|---------|--------|--------|---------|---------|
| Catalog number: 3 pole | LBST30  | LBST40  | LBST60 | LBST80 | LBST100 | LBST125 |
| Catalog number: 4 pole | LBST304 | LBST404 | -      | -      | -       | -       |

### Options for toggle operation



|                                     | Catalog number |         |       |       |       |       |
|-------------------------------------|----------------|---------|-------|-------|-------|-------|
| Padlockable escutcheon plate 3 pole | CP40T          | CP40T   | CP80T | CP80T | CP80T | CP80T |
| Padlockable escutcheon plate 4 pole | CP40T4P        | CP40T4P | -     | -     | -     | -     |

Note: padlockable in both "ON" and "OFF" positions.

## Technical characteristics for LBS M range

### UL and cUL - Motor controller only

| Rating<br>Approval                         | LBS M                |                     |                     |                     |
|--------------------------------------------|----------------------|---------------------|---------------------|---------------------|
|                                            | 16 A<br>UL508 / cUL  | 20 A<br>UL508 / cUL | 25 A<br>UL508 / cUL | 30 A<br>UL508 / cUL |
| Short-circuit rating kA at 600 V AC (SCCR) | 5                    | 5                   | 5                   | 5                   |
| Branch circuit fuse type                   | RK5                  | RK5                 | RK5                 | RK5                 |
| Max fuse rating (A)                        | 30                   | 30                  | 30                  | 30                  |
| Maximum UL Horsepower ratings (3-ph)       | 208V AC              | 3                   | 5                   | 7.5                 |
|                                            | 220-240V AC          | 5                   | 7.5                 | 7.5                 |
|                                            | 440-480V AC          | 10                  | 15                  | 15                  |
|                                            | 600V AC              | 10                  | 20                  | 20                  |
| Maximum UL Horsepower ratings (1-ph)       | 120 V AC             | 1.5                 | 2                   | 2                   |
|                                            | 240 V AC             | 3                   | 3                   | 5                   |
| DC ratings                                 | 125 V DC             | 20                  | 25                  | 30                  |
| 2 pole in series                           |                      |                     |                     |                     |
| Terminal lugs                              | wire type            | Cu                  | Cu                  | Cu                  |
|                                            | wire size (solid)    | #10-#14             | #10-#14             | #10-#14             |
|                                            | wire size (stranded) | #6-#14              | #6-#14              | #6-#14              |
| Weight (lb)                                | 0.32                 | 0.32                | 0.32                | 0.32                |

### IEC 947-3

| Thermal current I <sub>th</sub> (40 °C)              | LBS M   |           |           |           |
|------------------------------------------------------|---------|-----------|-----------|-----------|
|                                                      | 16 A    | 20 A      | 25 A      | 32 A      |
| Rated insulation voltage U <sub>i</sub> (V)          | 800     | 800       | 800       | 800       |
| Rated impulse withstand U <sub>imp</sub> (kV)        | 8       | 8         | 8         | 8         |
| Operational current (A)                              |         |           |           |           |
| 400 V AC                                             | AC 22 A | 16        | 20        | 25        |
|                                                      | AC 23 A | 16        | 20        | 25        |
| 500 V AC                                             | AC 22 A | 16        | 20        | 25        |
|                                                      | AC 23 A | 16        | 20        | 25        |
| 690 V AC                                             | AC 22 A | 16        | 20        | 25        |
|                                                      | AC 23 A | 16        | 20        | 25        |
| Motor power (KW)                                     |         |           |           |           |
| 400 V AC                                             | AC 23   | 7         | 9         | 11        |
| 500 V AC                                             | AC 23   | 9         | 11        | 15        |
| 690 V AC                                             | AC 23   | 11        | 15        | 15        |
| Overload capacity                                    |         |           |           |           |
| Short-circuit current with gG fuses (kA Rms)         | 50      | 50        | 50        | 50        |
| Maximum rating for associated gG fuses (A)           | 16      | 20        | 25        | 32        |
| Cut-off current (kA peak)                            | 5.9     | 5.9       | 5.9       | 5.9       |
| Short-time withstand current I <sub>cw</sub> 1s (kA) | 1.2     | 1.2       | 1.2       | 1.2       |
| Mechanical endurance (# of operations)               | 100 000 | 100 000   | 100 000   | 100 000   |
| Connection                                           |         |           |           |           |
| Cu (mm <sup>2</sup> )                                | 3p / 4p | 1.5 to 16 | 1.5 to 16 | 1.5 to 16 |

Note: 4-pole made by using modular 4th pole (see options, pages 5, 6, ie PPM16 or PPDm16).

## Technical characteristics for LBS R & T range

### UL and CSA - Motor controller suitable as motor disconnect

| Rating Approvals                           | LBS R & T                             |                                       |                        |                        |                   |                               |
|--------------------------------------------|---------------------------------------|---------------------------------------|------------------------|------------------------|-------------------|-------------------------------|
|                                            | 30 A <sup>(1)</sup><br>UL508 / CSA MD | 40 A <sup>(1)</sup><br>UL508 / CSA MD | 60 A<br>UL508 / CSA MD | 80 A<br>UL508 / CSA MD | 100 A<br>UL508 MD | 125 A<br>UL508 <sup>(2)</sup> |
| Short-circuit rating kA at 600 V AC (SCCR) | 10                                    | 10                                    | 10                     | 10                     | 10                | 10                            |
| Branch circuit fuse type                   | RK5                                   | RK5                                   | J or RK5               | J or RK5               | J or RK5          | J or RK5                      |
| Max fuse rating (A)                        | 80                                    | 80                                    | 150                    | 150                    | 150               | 150                           |
| Maximum UL Horsepower ratings (3-ph)       | 208V AC                               | 7.5                                   | 7.5                    | 10                     | 15                | 20                            |
|                                            | 220-240V AC                           | 7.5                                   | 7.5                    | 15                     | 20                | 25                            |
|                                            | 440-480V AC                           | 15                                    | 20                     | 30                     | 40                | 50                            |
|                                            | 600V AC                               | 20                                    | 25                     | 40                     | 50                | 60                            |
| Maximum UL Horsepower ratings (1-ph)       | 120 V AC                              | 1.5                                   | 2                      | 2                      | 3                 | 5                             |
|                                            | 240 V AC                              | 3                                     | 3                      | 7.5                    | 10                | 15                            |
| DC ratings 2 pole in series                | 125 V DC                              | 30                                    | 40                     | 60                     | 80                | 80                            |
| Terminal lugs                              | wire type                             | Cu                                    | Cu                     | Cu                     | Cu                | Cu                            |
|                                            | wire size (solid)                     | #10-#14                               | #10-#14                | #10-#14                | #10-#14           | #10-#14                       |
|                                            | wire size (stranded)                  | #4-#14                                | #4-#14                 | #1-#14                 | #1-#14            | #1-#14                        |
| Weight (lb)                                | 0.44                                  | 0.44                                  | 0.66                   | 0.66                   | 0.66              | 0.66                          |

(1) Consult factory for "approvals of" 4 pole ratings: LBSR304, LBSR404, LBST304, LBST404, LBSR304DH and LBSR404DH.

(2) UL508 Motor Controller only.

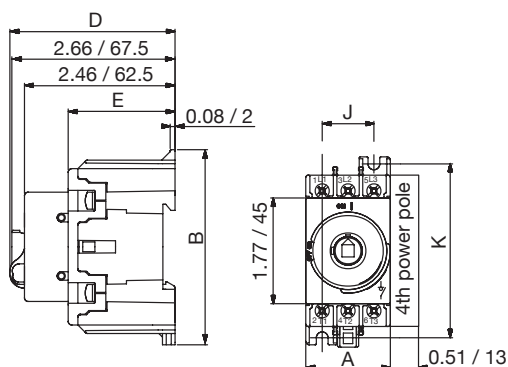
### IEC 947-3

| Thermal current I <sub>th</sub> (40 °C)              | LBS R & T |           |           |           |           |       |
|------------------------------------------------------|-----------|-----------|-----------|-----------|-----------|-------|
|                                                      | 32 A      | 40 A      | 63 A      | 80 A      | 100 A     | 125 A |
| Rated insulation voltage U <sub>i</sub> (V)          | 690       | 690       | 690       | 690       | 690       | 690   |
| Rated impulse withstand U <sub>imp</sub> (kV)        | 8         | 8         | 8         | 8         | 8         | 8     |
| Operational current (A)                              |           |           |           |           |           |       |
| 400 V AC                                             | AC 22 A   | 32        | 40        | 63        | 80        | 100   |
|                                                      | AC 23 A   | 25        | 25        | 63        | 63        | 63    |
| 500 V AC                                             | AC 22 A   | 32        | 40        | 63        | 80        | 100   |
|                                                      | AC 23 A   | 25        | 25        | 45        | 45        | 45    |
| 690 V AC                                             | AC 22 A   | 32        | 40        | 63        | 80        | 80    |
|                                                      | AC 23 A   | 25        | 25        | 40        | 40        | 40    |
| Motor power (KW)                                     |           |           |           |           |           |       |
| 400 V AC                                             | AC 23     | 11        | 11        | 30        | 30        | 30    |
| 500 V AC                                             | AC 23     | 15        | 15        | 30        | 30        | 30    |
| 690 V AC                                             | AC 23     | 22        | 22        | 33        | 33        | 33    |
| Overload capacity                                    |           |           |           |           |           |       |
| Short-circuit current with gG fuses (kA Rms)         | 50        | 50        | 50        | 50        | 50        | -     |
| Maximum rating for associated gG fuses (A)           | 32        | 40        | 63        | 80        | 100       | -     |
| Cut-off current (kA peak)                            | 4.5       | 5         | 5         | -         | -         | -     |
| Short-time withstand current I <sub>cw</sub> 1s (kA) | 0.9       | 1         | 1.5       | 1.5       | 1.5       | -     |
| Mechanical endurance (# of operations)               | 20 000    | 20 000    | 20 000    | 20 000    | 20 000    | -     |
| Connection                                           |           |           |           |           |           |       |
| Cu (mm <sup>2</sup> )                                | 3p        | 1.5 to 16 | 1.5 to 16 | 1.5 to 35 | 1.5 to 35 | -     |
|                                                      | 4p        | 1.5 to 25 | 1.5 to 25 | -         | -         | -     |



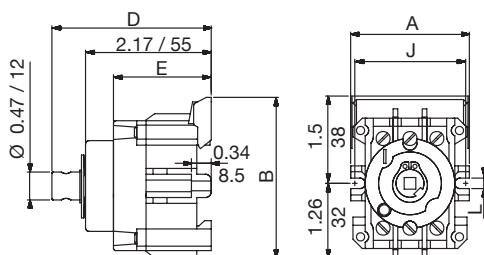
## Dimensions (in / mm)

### LBS M - Base mounting

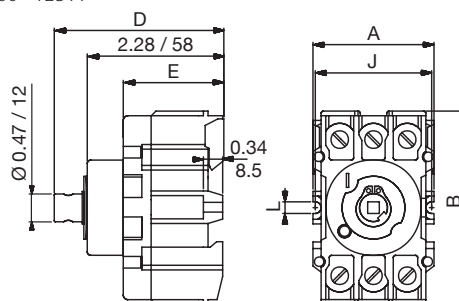


### LBS R - Base mounting

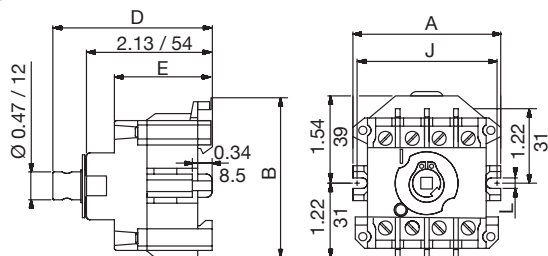
30 - 40 A  
3 pole



60 - 80 - 100 - 125 A  
3 pole



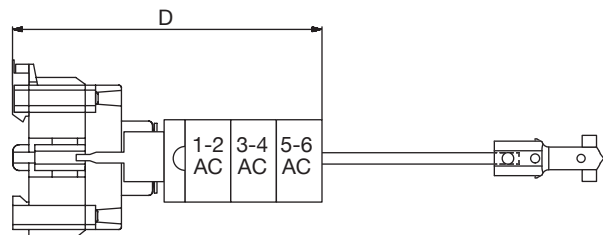
30 - 40 A  
4 pole



| Rating      | Number<br>of pole | A    |      | B    |    | D    |    | E    |      | J    |    | K    |    | L    |     |
|-------------|-------------------|------|------|------|----|------|----|------|------|------|----|------|----|------|-----|
|             |                   | In   | mm   | In   | mm | In   | mm | In   | mm   | In   | mm | In   | mm | In   | mm  |
| LBS M 16 A  | 3P                | 1.42 | 36   | 3.15 | 80 | 2.76 | 70 | 1.76 | 44.5 | 0.87 | 22 | 2.92 | 74 | -    | -   |
| LBS M 20 A  | 3P                | 1.42 | 36   | 3.15 | 80 | 2.76 | 70 | 1.76 | 44.5 | 0.87 | 22 | 2.92 | 74 | -    | -   |
| LBS M 25 A  | 3P                | 1.42 | 36   | 3.15 | 80 | 2.76 | 70 | 1.76 | 44.5 | 0.87 | 22 | 2.92 | 74 | -    | -   |
| LBS M 30 A  | 3P                | 1.42 | 36   | 3.15 | 80 | 2.76 | 70 | 1.76 | 44.5 | 0.87 | 22 | 2.92 | 74 | -    | -   |
| LBS R 30 A  | 3P                | 2.01 | 51   | 2.76 | 70 | 2.71 | 69 | 1.66 | 42   | 1.79 | 45 | -    | -  | 0.17 | 4.2 |
| LBS R 40 A  | 4P                | 2.42 | 61.5 | 2.76 | 70 | 2.71 | 69 | 1.66 | 42   | 2.28 | 58 | -    | -  | 0.17 | 4.2 |
| LBS R 60 A  | 3P                | 2.09 | 53   | 3.35 | 85 | 2.87 | 73 | 1.69 | 43   | 1.97 | 50 | -    | -  | 0.17 | 4.2 |
| LBS R 80 A  | 3P                | 2.09 | 53   | 3.35 | 85 | 2.87 | 73 | 1.69 | 43   | 1.97 | 50 | -    | -  | 0.17 | 4.2 |
| LBS R 100 A | 3P                | 2.09 | 53   | 3.35 | 85 | 2.87 | 73 | 1.69 | 43   | 1.97 | 50 | -    | -  | 0.17 | 4.2 |
| LBS R 125 A | 3P                | 2.09 | 53   | 3.35 | 85 | 2.87 | 73 | 1.69 | 43   | 1.97 | 50 | -    | -  | 0.17 | 4.2 |

## Dimensions (in / mm)

### LBS R - With auxiliary contacts

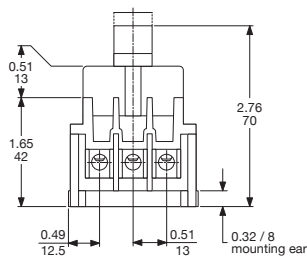
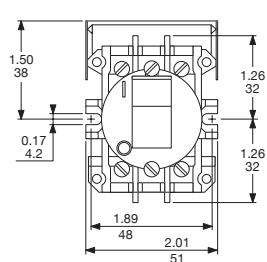


| LBS                            | D (in / mm) |            |            |
|--------------------------------|-------------|------------|------------|
|                                | 1-2 AC      | 3-4 AC     | 5-6 AC     |
| 30-40 A<br>3 pole              | 3.63 / 92   | 4.53 / 115 | 5.44 / 138 |
| 30-40 A<br>4 pole              | 3.63 / 92   | 4.53 / 115 | 5.44 / 138 |
| 60-80 A<br>100-125 A<br>3 pole | 3.78 / 96   | 4.69 / 119 | 5.60 / 142 |

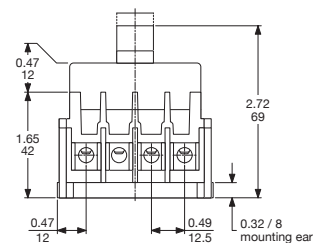
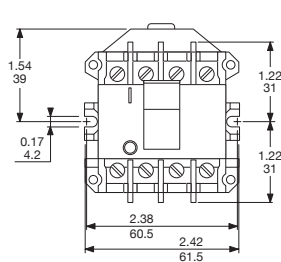
Note: Auxiliary contacts can be used with external operation only.

### LBS T - Base mounting

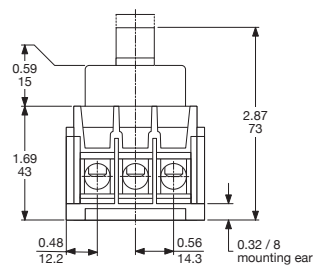
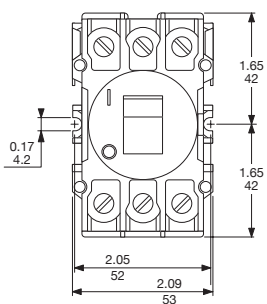
30 - 40 A  
3 pole



30 - 40 A  
4 pole

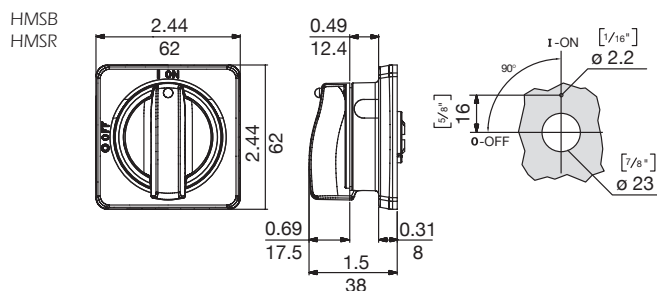


60 - 80 - 100 - 125 A  
3 pole

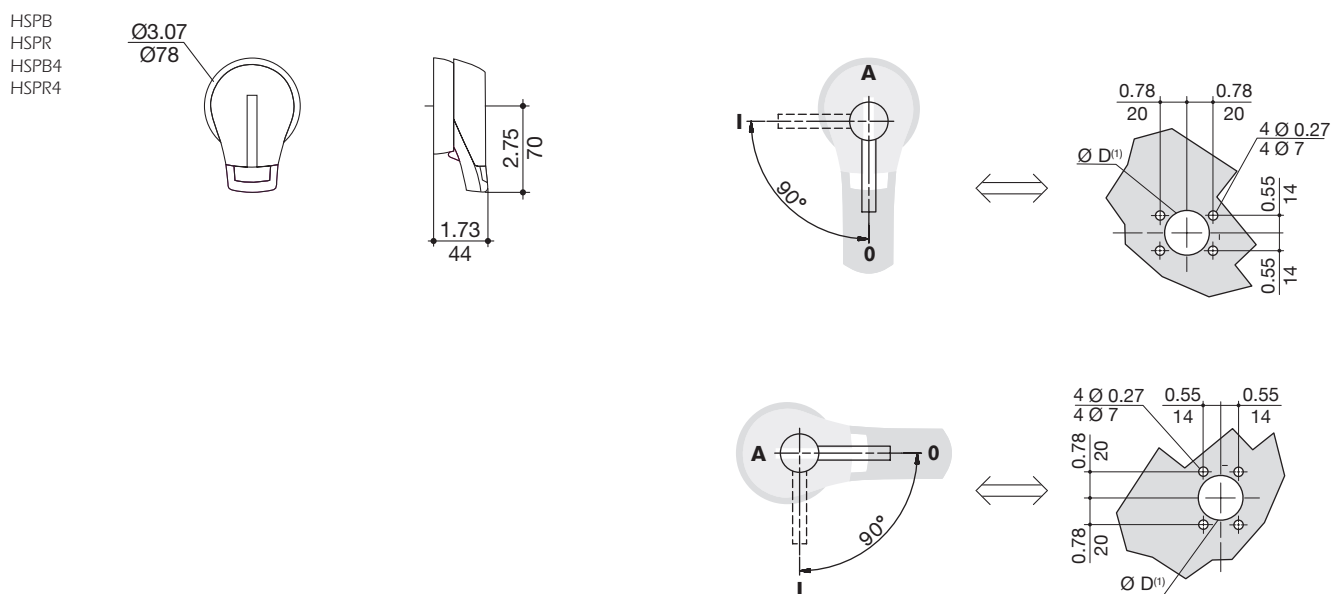


## Dimensions (in / mm) for handles for external front operation

### M type selector handle for LBS M and LBS R



### S type pistol handle for LBS M and LBS R



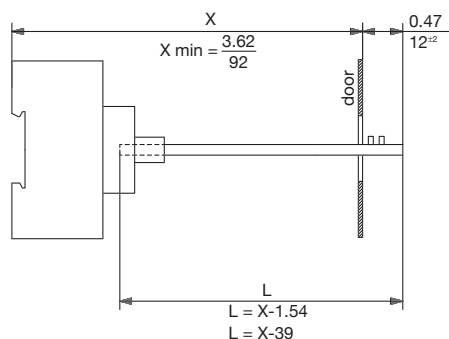
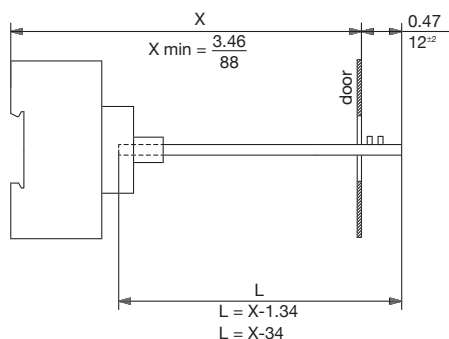
(1) Conventional fixing (from rear): D = 1.22 to 1.45 in / 31 to 37 mm.  
Fast fixing (external, door closed): D = 1.45 in / 37 mm, fast fixing is achieved with special clips that avoid drilling for fixation of the handle on the door. Clips are included.

## Dimensions (in / mm) from backplate to door distance with shaft extension

### M type pistol handle - Shaft trimming length (= dimensions L)

LBS M (16 up to 30 A)  
LBS R (30 up to 40 A)

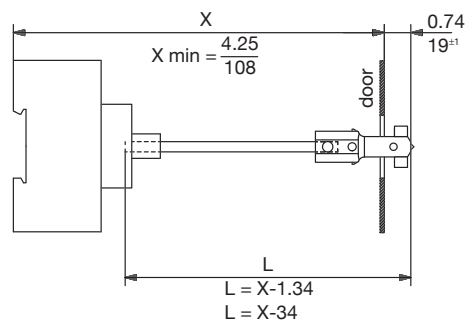
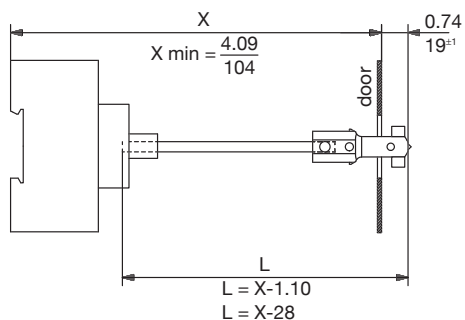
LBS R (60 up to 125 A)



### S type pistol handle - Shaft trimming length (= dimensions L)

LBS M (16 up to 30 A)  
LBS R (30 up to 40 A)

LBS R (60 up to 125 A)



# SIRCO from 30 to 1200 A

## Product presentation



SCV30



SCV200U



SC400

Ferraz Shawmut SIRCO disconnect switches are extremely durable, manually operated, non-fused disconnect switches. These heavy-duty switches are designed with the most up-to-date disconnect switch technology available. Designed to suit the UL98 or UL489 standard, the SIRCO gives you a product that “makes and breaks” power circuits on load.

The SIRCO switches are tested and approved for use in the most demanding applications, such as “Service Entrance”. Up to 400A, the switches come with visible blade contacts. A wide array of handles are available to meet OSHA padlocking requirements, NEMA configurations, defeater options and NFPA 79 requirements.

### Highlights

- Service entrance rated
- Compact footprints
- Front operated switches
- Side operated switches
- Visible blade contacts up to 400 A
- Line side shrouding supplied with switch
- Defeatable pistol handles automatically re-latch when panel door is closed - no tool necessary to reset latch
- External or direct operation handles
- Flange operation (for use with side operated switches)
- Modular switch concept, special execution, on request (5 pole, mix ratings...)
- Padlockable handles

### Applications

- Service entrance or main panel disconnects up to 600 VAC, 1200 A
- “Make and break” power circuit applications on load
- NFPA 79 solutions

### Ratings

- 600 VAC, 250 VDC
- 30, 60, 100, 200, 400, 600, 800, 1000, and 1200 amperes
- Up to 200 kA Short Circuit Rating with Fuses

### Approvals

- All SIRCO switches meet the requirements of UL and CSA
- UL Listed Guide WHTY, File E191605 for UL 98 (ratings from 60 A to 1200 A)
- UL Listed Guide WJAZ, File E258428 for UL489 (rating 30 A)
- CSA 22.2 # 4, class 4652-04, File703166 (ratings from 60 A to 1200 A)
- CSA 22.2 # 5, class 4652-06, File703166 (ratings 30 A)
- IEC 947-3 CE mark (other IEC ratings up to 5,000A available on request, please consult us)



## Front and side operated range from 30 to 400 A



Select a switch

| Ampere rating          | 30      | 60      | 100      | 200      | 400      |
|------------------------|---------|---------|----------|----------|----------|
| Catalog number: 3 pole | SCV30   | SCV60U  | SCV100U  | SCV200U  | SCV400U  |
| Catalog number: 4 pole | SCV30SN | SCV604U | SCV1004U | SCV2004U | SCV4004U |

Note: SCV30 and SCV30SN are UL489 and CSA 22.2 # 5.

## M type selector handle for external front operation



Select a handle

| Nema type        | IEC  | Color        | Catalog number |   |   |   |   |
|------------------|------|--------------|----------------|---|---|---|---|
| 1, 3R, 12, 4, 4X | IP65 | Black        | HMSB           | - | - | - | - |
| 1, 3R, 12, 4, 4X | IP65 | Red / Yellow | HMSR           | - | - | - | - |

Note: handle is not defeatable and is padlockable in the "OFF" position



Select a shaft

| Shaft length (inches / mm) | Catalog number |   |   |   |   |
|----------------------------|----------------|---|---|---|---|
| 7.9 / 200                  | SM200-5        | - | - | - | - |
| 12.6 / 320                 | SM320-5        | - | - | - | - |
| 15.7 / 400                 | SM400-5        | - | - | - | - |

## S type pistol handle for external front and side operation



Select a handle

| Nema type        | IEC  | Color        | Catalog number |        |        |        |        |
|------------------|------|--------------|----------------|--------|--------|--------|--------|
| 1, 3R, 12        | IP54 | Black        | HSPB           | HSPBL  | HSPBL  | HSPBL  | HSPBL  |
| 1, 3R, 12        | IP54 | Red / Yellow | HSPR           | HSPRL  | HSPRL  | HSPRL  | HSPRL  |
| 1, 3R, 12, 4, 4X | IP65 | Black        | HSPB4          | HSPB4L | HSPB4L | HSPB4L | HSPB4L |
| 1, 3R, 12, 4, 4X | IP65 | Red / Yellow | HSPR4          | HSPR4L | HSPR4L | HSPR4L | HSPR4L |

Note: handle is defeatable and is padlockable in the "OFF" position.



Select a shaft

| Shaft length (inches / mm) | Catalog number |          |          |          |          |
|----------------------------|----------------|----------|----------|----------|----------|
| 7.9 / 200                  | SS200-5        | SS200-10 | SS200-10 | SS200-10 | SS200-10 |
| 12.6 / 320                 | SS320-5        | SS320-10 | SS320-10 | SS320-10 | SS320-10 |
| 15.7 / 400                 | SS400-5        | SS400-10 | SS400-10 | SS400-10 | SS400-10 |
| 19.7 / 500                 | -              | SS500-10 | SS500-10 | SS500-10 | SS500-10 |

## Pistol handle for direct front operation



Select a handle

| Color | Catalog number |                                                                                                           |  |  |  |
|-------|----------------|-----------------------------------------------------------------------------------------------------------|--|--|--|
| Black | HADB1          | This function can be achieved using side operated 60 - 400 A non fusible disconnect switches. (see pg 19) |  |  |  |

Note: for getting auxiliary contact option on SCV30 and SCV30SN when direct handle is installed, please use auxiliary contact block holder ACHCD. HADB1 handle is padlockable in the "OFF" position.

## Options for front & side operation



|                                                               | Catalog number |          |          |          |                         |
|---------------------------------------------------------------|----------------|----------|----------|----------|-------------------------|
| Terminal Lugs Kit                                             |                |          |          |          |                         |
| 6 lugs per kit - for 3 pole switches                          | integral       | integral | integral | TL200    | TL400                   |
| 8 lugs per kit - for 4 pole switches                          | integral       | integral | integral | TL2004   | TL4004                  |
| Terminal Shrouds kit <sup>(1)</sup>                           |                |          |          |          |                         |
| 3-pole (for line or load side)                                | integral       | integral | integral | TS200SC  | TS400SC <sup>(2)</sup>  |
| 4-pole (for line or load side)                                | integral       | integral | integral | TS2004SC | TS4004SC <sup>(2)</sup> |
| Auxiliary contact                                             |                |          |          |          |                         |
| Auxiliary contact block holder                                | ACHD           | -        | -        | -        | -                       |
| 1 N / O, 10A, 600VAC snap-on contact block, A600-Q600         | AC3            | AC3      | AC3      | AC3      | AC3                     |
| 1 N / C, 10A, 600VAC snap-on contact block, A600-Q600         | AC4            | AC4      | AC4      | AC4      | AC4                     |
| 1 NO + NC side mount contact block, A600-N600 <sup>(3)</sup>  | -              | AC5      | AC5      | AC5      | AC5                     |
| 2 NO + NC side mount contact blocks, A600-N600 <sup>(3)</sup> | -              | AC6      | AC6      | AC6      | AC6                     |

(1) Line side Shrouding supplied as standard with switch.

(2) As replacement part (two Terminal Screens supplied as standard with switch).

(3) Two auxiliary contact blocks maximum can be side mounted.

## Front operated range from 400 to 1200 A



Select a switch

| Ampere rating          | 400    | 600    | 800    | 1000    | 1200    |
|------------------------|--------|--------|--------|---------|---------|
| Catalog number: 3 pole | SC400  | SC600  | SC800  | SC1000  | SC1200  |
| Catalog number: 4 pole | SC4004 | SC6004 | SC8004 | SC10004 | SC12004 |

## S type pistol handle for front external operation



Select a handle

| Nema type        | IEC  | Color        | Catalog number |         |         |         |         |
|------------------|------|--------------|----------------|---------|---------|---------|---------|
| 1, 3R, 12        | IP54 | Black        | HSPBEL         | HSPBEL  | HSPBEL  | HSPBEL  | HSPBEL  |
| 1, 3R, 12        | IP54 | Red / Yellow | HSPREL         | HSPREL  | HSPREL  | HSPREL  | HSPREL  |
| 1, 3R, 12, 4, 4X | IP65 | Black        | HSPB4EL        | HSPB4EL | HSPB4EL | HSPB4EL | HSPB4EL |
| 1, 3R, 12, 4, 4X | IP65 | Red / Yellow | HSPR4EL        | HSPR4EL | HSPR4EL | HSPR4EL | HSPR4EL |

Note: handle is defeatable and is padlockable in the "OFF" position



Select a handle

| Nema type        | IEC  | Color        | Catalog number |       |       |       |       |
|------------------|------|--------------|----------------|-------|-------|-------|-------|
| 1, 3R, 12, 4, 4X | IP65 | Black        | HSTB4          | HSTB4 | HSTB4 | HSTB4 | HSTB4 |
| 1, 3R, 12, 4, 4X | IP65 | Red / Yellow | HSTR4          | HSTR4 | HSTR4 | HSTR4 | HSTR4 |

Note: handle is defeatable and is padlockable in the "OFF" position.



Select a shaft

| Shaft length (inches / mm) | Catalog number |          |          |          |          |
|----------------------------|----------------|----------|----------|----------|----------|
| 7.9 / 200                  | SS200-15       | SS200-15 | SS200-15 | SS200-15 | SS200-15 |
| 12.6 / 320                 | SS320-15       | SS320-15 | SS320-15 | SS320-15 | SS320-15 |
| 15.7 / 400                 | SS400-15       | SS400-15 | SS400-15 | SS400-15 | SS400-15 |

## Pistol handle for direct front operation



Select a handle

| Color | Catalog number |       |       |       |       |
|-------|----------------|-------|-------|-------|-------|
| Black | HADB5          | HADB5 | HADB5 | HADB5 | HADB5 |

Note: handle is padlockable in the "OFF" position.

## Options for front & side operation



Select a handle

| Color                                                     | Catalog number |          |                        |           |           |
|-----------------------------------------------------------|----------------|----------|------------------------|-----------|-----------|
| Terminal Lugs Kit                                         |                |          |                        |           |           |
| (6 lugs per kit - for 3 pole switches)                    | TL400          | TL600    | TL800 <sup>(4)</sup>   | TL1200    | TL1200    |
| (8 lugs per kit - for 4 pole switches)                    | TL4004         | TL6004   | TL18004 <sup>(4)</sup> | TL12004   | TL12004   |
| Terminal Screen <sup>(1)</sup>                            |                |          |                        |           |           |
| 3-pole (for line or load side)                            | TS600SC        | TS600SC  | TS1200SC               | TS1200SC  | TS1200SC  |
| 4-pole (for line or load side)                            | TS6004SC       | TS6004SC | TS12004SC              | TS12004SC | TS12004SC |
| Auxiliary Contacts                                        |                |          |                        |           |           |
| Auxiliary Contacts Holder <sup>(2)</sup>                  | ACHSC          | ACHSC    | ACHSC                  | ACHSC     | ACHSC     |
| 1 N / O, 10A, 600VAC snap-on contact block, A600-O600     | AC3            | AC3      | AC3                    | AC3       | AC3       |
| 1 N / C, 10A, 600VAC snap-on contact block, A600-C600     | AC4            | AC4      | AC4                    | AC4       | AC4       |
| Padlocking facility for external operation <sup>(3)</sup> | SWL01          | SWL01    | SWL01                  | SWL01     | SWL01     |

(1) Line side Terminal Screen supplied as standard with switch.

(2) ACHSC accommodates up to 4 auxiliary contacts.

(3) Allows to padlock the switch when door of the enclosure is open.

(4) TL1200 or TL12004 also fit if 4 holes is required.

## Other handles



Metallic handle UL pending available on request, please consult us

# SIRCO & NFPA 79

## Front operated range from 30 to 400 A



Select a switch

| Ampere rating          | 30      | 60      | 100      | 200      | 400      |
|------------------------|---------|---------|----------|----------|----------|
| Catalog number: 3 pole | SCV30   | SCV60U  | SCV100U  | SCV200U  | SCV400U  |
| Catalog number: 4 pole | SCV30SN | SCV604U | SCV1004U | SCV2004U | SCV4004U |

Note: SCV30 and SCV30SN are UL489 and CSA 22.2 # 5.

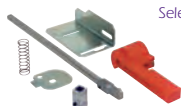
## NFPA 79 front operation kit



Select a handle

| Nema type        | IEC  | Color        | Catalog number |        |        |        |        |
|------------------|------|--------------|----------------|--------|--------|--------|--------|
| 1, 3R, 12        | IP54 | Black        | HSPB           | HSPBL  | HSPBL  | HSPBL  | HSPBL  |
| 1, 3R, 12        | IP54 | Red / Yellow | HSPR           | HSPRL  | HSPRL  | HSPRL  | HSPRL  |
| 1, 3R, 12, 4, 4X | IP65 | Black        | HSPB4          | HSPB4L | HSPB4L | HSPB4L | HSPB4L |
| 1, 3R, 12, 4, 4X | IP65 | Red / Yellow | HSPR4          | HSPR4L | HSPR4L | HSPR4L | HSPR4L |

Note: handle is defeatable and is padlockable in the "OFF" position.



Select a kit

| Catalog number |         |         |         |         |         |
|----------------|---------|---------|---------|---------|---------|
| HADB6          | NFPA791 | NFPA791 | NFPA791 | NFPA791 | NFPA791 |

Note: Allows to operate and padlock the switch when door of the enclosure is open.

For full information on NFPA 79 requirements and on our solution, please consult page 109.

## Options for NFPA 79 front operation



|                                                                    | Catalog number |          |          |          |                         |
|--------------------------------------------------------------------|----------------|----------|----------|----------|-------------------------|
| Terminal Lugs Kit                                                  |                |          |          |          |                         |
| (6 lugs per kit - for 3 pole switches)                             | integral       | integral | integral | TL200    | TL400                   |
| (8 lugs per kit - for 4 pole switches)                             | integral       | integral | integral | TL2004   | TL4004                  |
| 3-pole Terminal Shrouds kit <sup>(1)</sup> (for line or load side) | integral       | integral | integral | TS200SC  | TS400SC <sup>(2)</sup>  |
| 4-pole Terminal Shrouds kit <sup>(1)</sup> (for line or load side) | integral       | integral | integral | TS2004SC | TS4004SC <sup>(2)</sup> |
| Auxiliary contacts                                                 |                |          |          |          |                         |
| 1 N / O, 10A, 600VAC snap-on contact block, A600-Q600              | AC3            | AC3      | AC3      | AC3      | AC3                     |
| 1 N / C, 10A, 600VAC snap-on contact block, A600-Q600              | AC4            | AC4      | AC4      | AC4      | AC4                     |
| 1 NO + NC side mount contact block, A600-N600 <sup>(3)</sup>       | -              | AC5      | AC5      | AC5      | AC5                     |
| 2 NO + NC side mount contact blocks, A600-N600 <sup>(3)</sup>      | -              | AC6      | AC6      | AC6      | AC6                     |



# SIRCO & NFPA 79

## Side operated range from 60 to 400 A



Select a switch

| Ampere rating          | 60       | 100       | 200       | 400       |
|------------------------|----------|-----------|-----------|-----------|
| Catalog number: 3 pole | SCV60SO  | SCV100SO  | SCV200SO  | SCV400SO  |
| Catalog number: 4 pole | SCV604SO | SCV1004SO | SCV2004SO | SCV4004SO |

## Cable flange operated handle (square D type - class 9422)



Select a handle

| NEMA type       | IEC  | Catalog number         |                        |                        |                        |
|-----------------|------|------------------------|------------------------|------------------------|------------------------|
| 1, 3, 3R, 4, 12 | IP54 | HAF-OP1 <sup>(1)</sup> | HAF-OP1 <sup>(1)</sup> | HAF-OP1 <sup>(1)</sup> | HAF-OP1 <sup>(1)</sup> |
| 4, 4X           | IP65 | HAF-OP2 <sup>(2)</sup> | HAF-OP2 <sup>(2)</sup> | HAF-OP2 <sup>(2)</sup> | HAF-OP2 <sup>(2)</sup> |

Note: handle is defeatable and is padlockable in the "OFF" position.



Mechanism

|  |  | Catalog number |          |          |          |
|--|--|----------------|----------|----------|----------|
|  |  | HAF-MECH       | HAF-MECH | HAF-MECH | HAF-MECH |



Select a cable

| Cable length (inches / mm) | Catalog number |         |         |         |
|----------------------------|----------------|---------|---------|---------|
| 36 / 914.4                 | HAFC36         | HAFC36  | HAFC36  | HAFC36  |
| 60 / 1 524                 | HAFC60         | HAFC60  | HAFC60  | HAFC60  |
| 120 / 3 048                | HAFC120        | HAFC120 | HAFC120 | HAFC120 |

Note: cable flange operation is for enclosures from 5.75 / 146 to 36 / 990, depending on the cable length.

## Rod flange operated handle (square D type - class 9422)



Select a handle

| NEMA type       | IEC  | Catalog number         |                        |                        |                        |
|-----------------|------|------------------------|------------------------|------------------------|------------------------|
| 1, 3, 3R, 4, 12 | IP54 | HAF-OP1 <sup>(1)</sup> | HAF-OP1 <sup>(1)</sup> | HAF-OP1 <sup>(1)</sup> | HAF-OP1 <sup>(1)</sup> |
| 4, 4X           | IP65 | HAF-OP2 <sup>(2)</sup> | HAF-OP2 <sup>(2)</sup> | HAF-OP2 <sup>(2)</sup> | HAF-OP2 <sup>(2)</sup> |

Note: handle is defeatable and is padlockable in the "OFF" position.



Select a rod

| Rod length (inches / mm) | Catalog number |      |      |      |
|--------------------------|----------------|------|------|------|
| 23.6 / 500               | HAFR           | HAFR | HAFR | HAFR |

Note: rod kit is for enclosure depth from 8 / 203 to 24.12 / 613.  
For smaller depth, please consult us.

## Pistol handle for direct side operation (not NFPA 79)



Select a handle

| Color | Catalog number |       |       |       |
|-------|----------------|-------|-------|-------|
| Black | HADB4          | HADB4 | HADB4 | HADB4 |

Note : handle is padlockable in the "OFF" position.

## Options for flange & direct operation



|                                                                    | Catalog number |          |          |                         |
|--------------------------------------------------------------------|----------------|----------|----------|-------------------------|
| Terminal Lugs Kit                                                  |                |          |          |                         |
| (6 lugs per kit - for 3 pole switches)                             | integral       | integral | TL200    | TL400                   |
| (8 lugs per kit - for 4 pole switches)                             | integral       | integral | TL2004   | TL4004                  |
| 3-pole Terminal Shrouds Kit <sup>(3)</sup> (for line or load side) | integral       | integral | TS200SC  | TS400SC <sup>(4)</sup>  |
| 4-pole Terminal Shrouds Kit <sup>(3)</sup> (for line or load side) | integral       | integral | TS2004SC | TS4004SC <sup>(4)</sup> |
| Auxiliary Contacts                                                 |                |          |          |                         |
| 1 NO + NC side mount contact block, A600-N600 <sup>(5)</sup>       | AC5            | AC5      | AC5      | AC5                     |
| 2 NO + NC side mount contact blocks, A600-N600 <sup>(5)</sup>      | AC6            | AC6      | AC6      | AC6                     |

(1) All external metal parts are sheet steel.

(2) All external metal parts are either stainless steel or a chrome-plated non-ferrous die casting.

(3) Line side Shrouding supplied as standard with switch.

(4) As replacement part (two Terminal Screens supplied as standard with switch).

## Technical characteristics for front & side operation

### UL, cUL and CSA

| Catalog number                                   |         | SCV30<br>SCV30SN      | SCV60U / SCV604U<br>SCV60SO / SCV604SO | SCV100U / SCV1004U<br>SCV100SO / SCV1004SO | SCV200U / SCV2004U<br>SCV200SO / SCV2004SO | SCV400U / SCV4004U<br>SCV400SO / SCV4004SO |
|--------------------------------------------------|---------|-----------------------|----------------------------------------|--------------------------------------------|--------------------------------------------|--------------------------------------------|
| Rating                                           | A       | 30                    | 60                                     | 100                                        | 200                                        | 400                                        |
| Operating voltage                                | V       | 600                   | 600                                    | 600                                        | 600                                        | 600                                        |
| Max horsepower rating /                          |         |                       |                                        |                                            |                                            |                                            |
| Max motor FLA current                            |         |                       |                                        |                                            |                                            |                                            |
| Three phase                                      |         |                       |                                        |                                            |                                            |                                            |
| 208 V                                            |         | 5 / 17.5              | 15 / 48.5                              | 25 / 78.5                                  | 50 / 150                                   | 100 / 286                                  |
| 240 V                                            |         | 7.5 / 22              | 15 / 42                                | 30 / 80                                    | 60 / 154                                   | 125 / 312                                  |
| 480 V                                            |         | 15 / 21               | 30 / 40                                | 60 / 77                                    | 125 / 156                                  | 250 / 302                                  |
| 600 V                                            |         | 20 / 22               | 50 / 52                                | 75 / 77                                    | 150 / 144                                  | 350 / 336                                  |
| DC 125 V                                         |         | 3 / 25 <sup>(1)</sup> | 3 / 25 <sup>(1)</sup>                  | 7.5 / 58 <sup>(1)</sup>                    | 15 / 112 <sup>(1)</sup>                    | 20 / 148 <sup>(1)</sup>                    |
| DC 250 V                                         |         | 5 / 20 <sup>(1)</sup> | 10 / 38 <sup>(2)</sup>                 | 20 / 72 <sup>(2)</sup>                     | 40 / 140 <sup>(2)</sup>                    | 50 / 173 <sup>(2)</sup>                    |
| Short circuit rating with fuses (SCCR)           | kA      | 65                    | 200                                    | 200                                        | 200                                        | 200                                        |
| Branch circuit fuse type                         |         | J or CC               | J                                      | J                                          | J                                          | J                                          |
| Max fuse rating (A)                              |         | 30                    | 60                                     | 100                                        | 200                                        | 400                                        |
| Dimension 3 pole (front operated switches)       |         |                       |                                        |                                            |                                            |                                            |
| H                                                | in      | 4.56                  | 5.87                                   | 5.87                                       | 8.13                                       | 14.31                                      |
| W                                                | in      | 3.78                  | 6.69                                   | 6.69                                       | 9.52                                       | 11.93                                      |
| D                                                | in      | 2.59                  | 3.89                                   | 3.89                                       | 3.42                                       | 4.92                                       |
| Shaft size square (front operated switches)      |         |                       |                                        |                                            |                                            |                                            |
|                                                  | in      | 0.2 x 0.2             | 0.4 x 0.4                              | 0.4 x 0.4                                  | 0.4 x 0.4                                  | 0.4 x 0.4                                  |
|                                                  | mm      | 5 x 5                 | 10 x 10                                | 10 x 10                                    | 10 x 10                                    | 10 x 10                                    |
| 3-pole switch operating torque (front operation) | lb. in. | 21                    | 88                                     | 88                                         | 106                                        | 130                                        |
| Terminal lugs kit (# lugs per kit)               |         | Integral              | Integral                               | Integral                                   | Optional (6)                               | Optional (6)                               |
| Wire range AWG (# wire holes per lug)            |         | #10-#14 (1)           | #3-#10 (1)                             | #3-#10 (1)                                 | 3 / 0-#6 (1)                               | 600 kcmil-#2 (1)                           |
| Wire tightening torque                           | lb. in. | 27                    | 58                                     | 58                                         | 200                                        | 500                                        |

(1) 2 pole in series.

(2) 3 pole in series.

### IEC 947-3

| Catalog number                     |                 | SCV30<br>SCV30SN | SCV60U / SCV604U<br>SCV60SO / SCV604SO | SCV100U / SCV1004U<br>SCV100SO / SCV1004SO | SCV200U / SCV2004U<br>SCV200SO / SCV2004SO | SCV400U / SCV4004U<br>SCV400SO / SCV4004SO |
|------------------------------------|-----------------|------------------|----------------------------------------|--------------------------------------------|--------------------------------------------|--------------------------------------------|
| Rating                             | A               | 32               | 63                                     | 100                                        | 200                                        | 400                                        |
| Rated Insulation voltage Ui (V)    | V               | 800              | 750                                    | 750                                        | 750                                        | 800                                        |
| Rated impulse voltage (Uimp)       | kV              | 8                | 8                                      | 8                                          | 8                                          | 8                                          |
| Operation current Ie (A)           |                 |                  |                                        |                                            |                                            |                                            |
| 400 V AC                           | AC 22A          | 32               | 63                                     | 100                                        | 200                                        | 400                                        |
|                                    | AC 23A          | 32               | 63                                     | 100                                        | 200                                        | 400                                        |
| 690 V AC                           | AC 22A          | 32               | 63                                     | 100                                        | 200                                        | 400                                        |
|                                    | AC 23A          | 32               | 63                                     | 100                                        | 200                                        | 315                                        |
| Motor Power (kW)                   |                 |                  |                                        |                                            |                                            |                                            |
| 400 V AC                           | AC 23A          | 15               | 30                                     | 51                                         | 100                                        | 220                                        |
| 500 V AC                           | AC 23A          | 18.5             | 40                                     | 63                                         | 140                                        | 220                                        |
| 690 V AC                           | AC 23A          | 25               | 55                                     | 90                                         | 185                                        | 295                                        |
| Max. peak let through current (gG) | kA peak         | 5.5              | 17.6                                   | 17.6                                       | 32                                         | 40                                         |
| Connection                         |                 |                  |                                        |                                            |                                            |                                            |
| Minimum Cu cable section           | mm <sup>2</sup> | 6                | 10                                     | 25                                         | 50                                         | 185                                        |
| Minimum CU busbar section          | mm <sup>2</sup> | -                | -                                      | -                                          | -                                          | -                                          |

## Technical characteristics for front & side operation

### UL, cUL and CSA

| Catalog number                                   |         | SC400 / SC4004          | SC600 / SC6004          | SC800 / SC8004   | SC1000 / SC10004 | SC1200 / SC12004 |
|--------------------------------------------------|---------|-------------------------|-------------------------|------------------|------------------|------------------|
| Rating                                           | A       | 400                     | 600                     | 800              | 1000             | 1200             |
| Operating voltage                                | V       | 600                     | 600                     | 600              | 600              | 600              |
| Max horsepower rating /                          |         |                         |                         |                  |                  |                  |
| Max motor FLA current                            |         |                         |                         |                  |                  |                  |
| Three phase                                      |         |                         |                         |                  |                  |                  |
| 208 V                                            |         | 125 / 360               | 150 / 415               | 200 / 554        | 200 / 554        | 200 / 554        |
| 240 V                                            |         | 125 / 312               | 200 / 480               | 200 / 602        | 200 / 602        | 200 / 602        |
| 480 V                                            |         | 250 / 302               | 400 / 447               | 500 / 590        | 500 / 590        | 500 / 590        |
| 600 V                                            |         | 350 / 336               | 350 / 336               | 500 / 472        | 500 / 472        | 500 / 472        |
| DC 125 V                                         |         | 20 / 148 <sup>(1)</sup> | 20 / 148 <sup>(1)</sup> | -                | -                | -                |
| DC 250 V                                         |         | 50 / 173 <sup>(2)</sup> | 50 / 173 <sup>(2)</sup> | -                | -                | -                |
| Short circuit rating with fuses (SCCR)           | kA      | 200                     | 200                     | 100              | 100              | 100              |
| Branch circuit fuse type                         |         | J                       | J                       | J                | J                | J                |
| Max fuse rating (A)                              |         | 400                     | 600                     | 800              | 1000             | 1200             |
| Dimension 3 pole (front operated switches)       |         |                         |                         |                  |                  |                  |
| H                                                | in.     | 12.60                   | 12.60                   | 13               | 13               | 13               |
| W                                                | in.     | 11.02                   | 11.02                   | 14.64            | 14.64            | 14.64            |
| D                                                | in.     | 5.51                    | 5.51                    | 5.51             | 5.51             | 5.51             |
| Shaft size square (front operated switches)      | in.     | 0.59 x 0.59             | 0.59 x 0.59             | 0.59 x 0.59      | 0.59 x 0.59      | 0.59 x 0.59      |
|                                                  | mm      | 15 x 15                 | 15 x 15                 | 15 x 15          | 15 x 15          | 15 x 15          |
| 3-pole switch operating torque (front operation) | lb. in. | 320                     | 320                     | 320              | 320              | 320              |
| Terminal lugs kit (#lugs per kit)                |         | optional (6)            | optional (6)            | optional (6)     | optional (12)    | optional (12)    |
| Wire range AWG (# wire holes per lug)            |         | 600 kcmil-#2 (1)        | 600 kcmil-#2 (2)        | 600 kcmil-#2 (3) | 600 kcmil-#2 (4) | 600 kcmil-#2 (4) |
| Wire tightening torque                           | lb. in. | 500                     | 500                     | 500              | 500              | 500              |

(1) 2 pole in series.  
(2) 3 pole in series

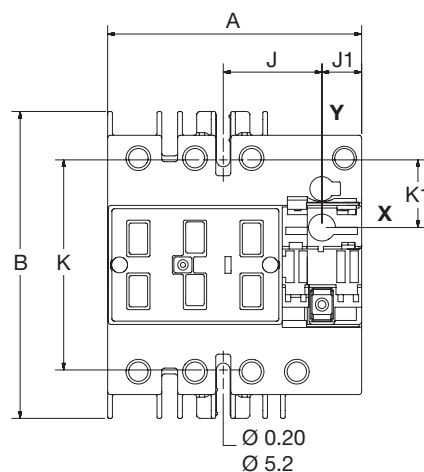
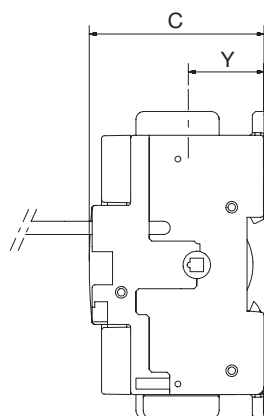
### IEC 947-3

| Catalog number                     |                 | SC400 / SC4004 | SC600 / SC6004 | SC800 / SC8004 | SC1000 / SC10004 | SC1200 / SC12004 |
|------------------------------------|-----------------|----------------|----------------|----------------|------------------|------------------|
| Rating                             | A               | 400            | 600            | 800            | 1000             | 1200             |
| Rated Insulation voltage Ui        | V               | 1000           | 1000           | 1000           | 1000             | 1000             |
| Rated impulse voltage (Uimp)       | kV              | 12             | 12             | 12             | 12               | 12               |
| Operation current Ie (A)           |                 |                |                |                |                  |                  |
| 400 V AC                           | AC 22A          | 400            | 630            | 800            | 1000             | 1200             |
|                                    | AC 23A          | 400            | 630            | 800            | 1000             | 1000             |
| 690 V AC                           | AC 22A          | 400            | 500            | 630            | 630              | 630              |
|                                    | AC 23A          | 200            | 200            | 400            | 400              | 400              |
| Motor Power (kW)                   |                 |                |                |                |                  |                  |
| 400 V AC                           | AC 23A          | 220            | 355            | 450            | 560              | 560              |
| 500 V AC                           | AC 23A          | 280            | 450            | 560            | 560              | 560              |
| 690 V AC                           | AC 23A          | 185            | 185            | 400            | 400              | 400              |
| Max. peak let through current (gG) | kA peak         | 48             | 48             | 75             | 75               | 75               |
| Connection                         |                 |                |                |                |                  |                  |
| Minimum Cu cable section           | mm <sup>2</sup> | 185            | 2 x 150        | 2 x 185        | 2 x 240          | -                |
| Minimum CU busbar section          | mm <sup>2</sup> | -              | 2 x 30 x 5     | 2 x 40 x 5     | 2 x 50 x 5       | 2 x 60 x 5       |

## Dimensions (in / mm) for front and side operation

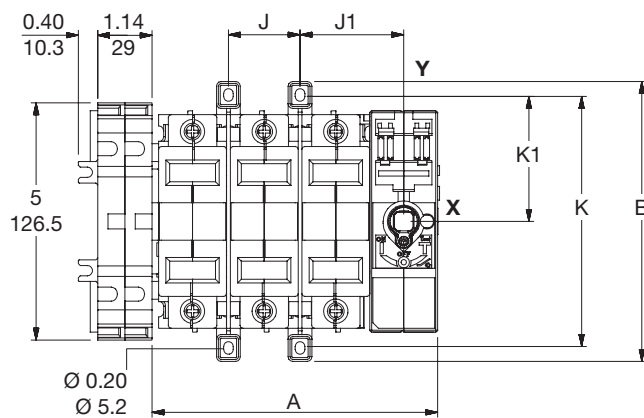
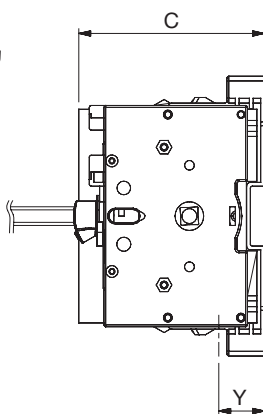
### SIRCO V 30 A

SCV30  
SCV30SN



### SIRCO V 60-100A

SCV60U  
SCV604U  
SCV100U  
SCV1004U

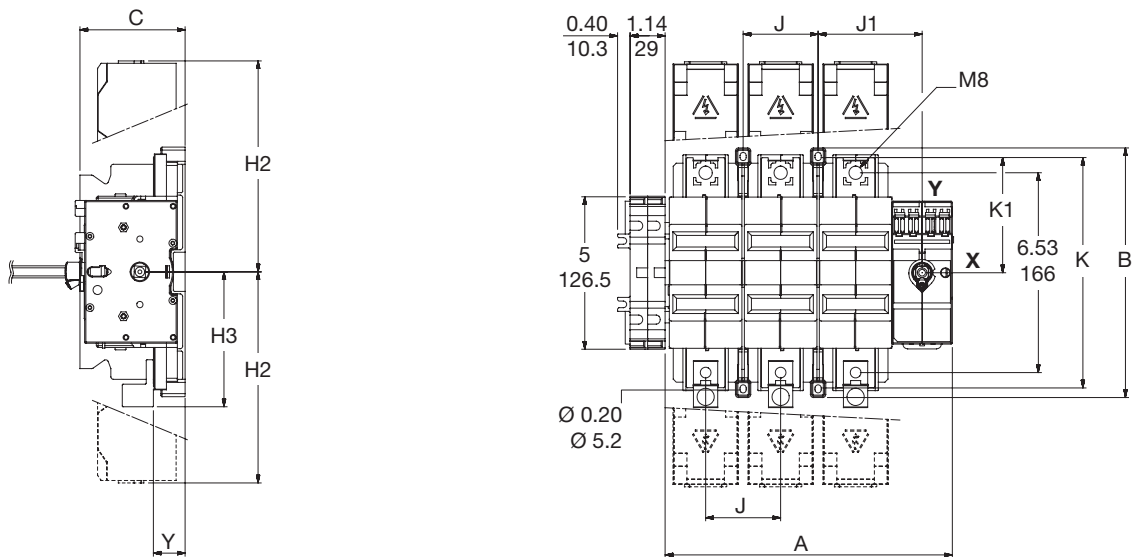


| Rating  | Number of pole | A    |     | B    |     | C    |    | J    |      | J1   |    | K    |       | K1   |      | Y    |      |
|---------|----------------|------|-----|------|-----|------|----|------|------|------|----|------|-------|------|------|------|------|
|         |                | In   | mm  | In   | mm  | In   | mm | In   | mm   | In   | mm | In   | mm    | In   | mm   | In   | mm   |
| V 30 A  | 3 P / 4 P      | 3.78 | 96  | 4.56 | 116 | 2.59 | 66 | 1.47 | 37.5 | 0.59 | 15 | 3.13 | 79.5  | 1    | 25.5 | 1.12 | 28.5 |
| V 60 A  | 3 P            | 5.98 | 152 | 5.87 | 149 | 3.89 | 99 | 1.5  | 38   | 2.12 | 54 | 5.25 | 133.5 | 2.63 | 66.5 | 0.95 | 24.5 |
|         | 4 P            | 7.48 | 190 | 5.87 | 149 | 3.89 | 99 | 1.5  | 38   | 2.12 | 54 | 5.25 | 133.5 | 2.63 | 66.5 | 0.95 | 24.5 |
| V 100 A | 3 P            | 5.98 | 152 | 5.87 | 149 | 3.89 | 99 | 1.5  | 38   | 2.12 | 54 | 5.25 | 133.5 | 2.63 | 66.5 | 0.95 | 24.5 |
|         | 4 P            | 7.48 | 190 | 5.87 | 149 | 3.89 | 99 | 1.5  | 38   | 2.12 | 54 | 5.25 | 133.5 | 2.63 | 66.5 | 0.95 | 24.5 |

## Dimensions (in / mm) for front and side operation

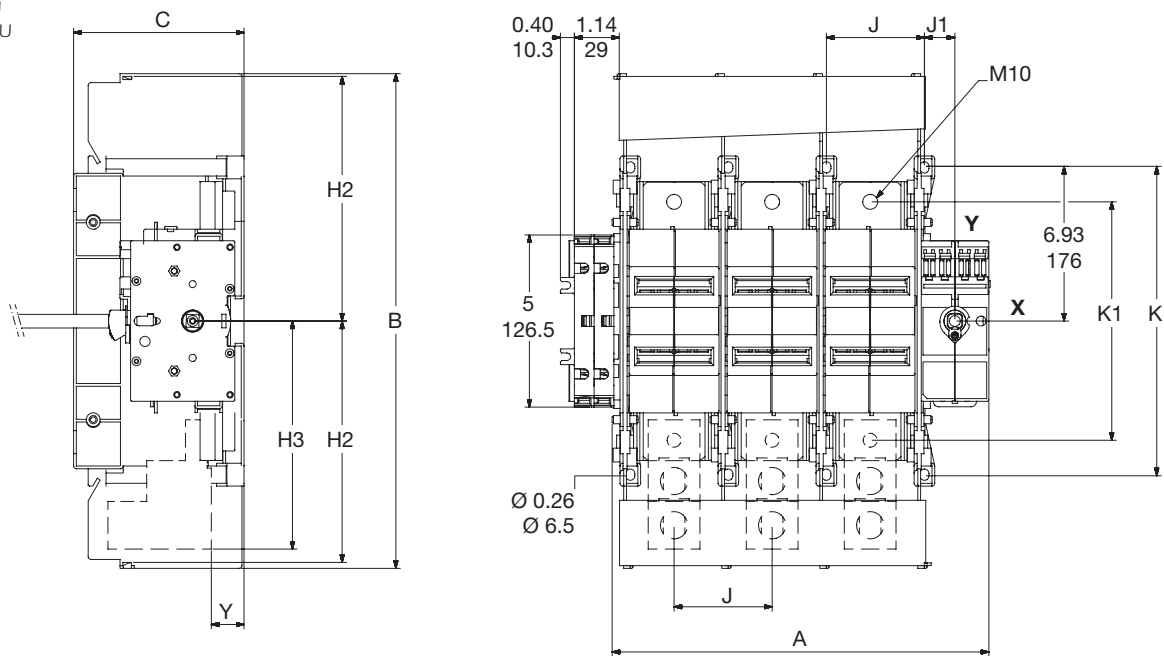
### SIRCO V 200 A

SCV200U  
SCV2004U



### SIRCO V 400 A

SCV400U  
SCV4004U

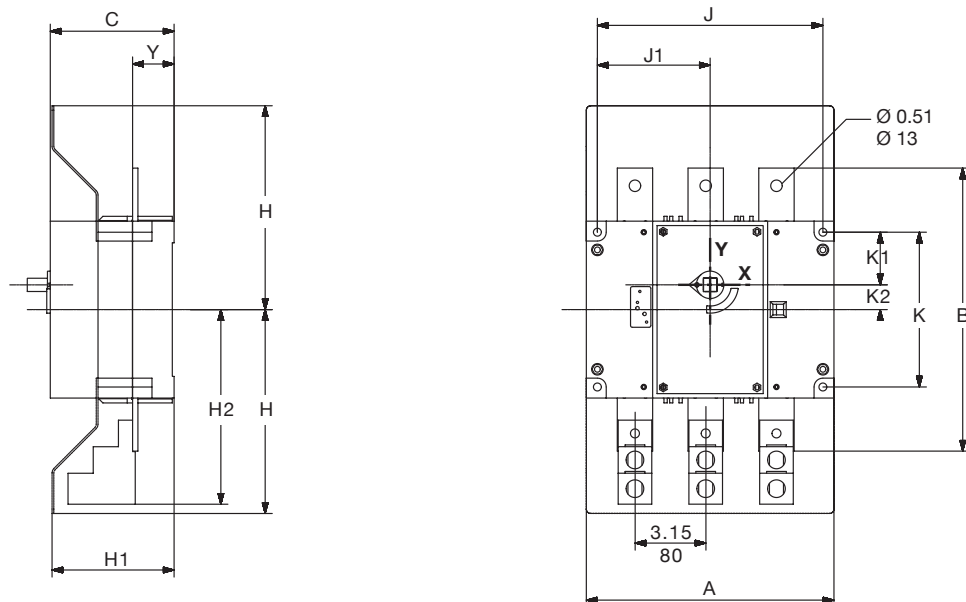


| Rating  | Number of pole | A     |     | B     |       | C    |     | H  |    | H1 |    | H2   |       | H3   |       | J    |    | J1   |      | K    |       | K1   |     | Y    |      |
|---------|----------------|-------|-----|-------|-------|------|-----|----|----|----|----|------|-------|------|-------|------|----|------|------|------|-------|------|-----|------|------|
|         |                | In    | mm  | In    | mm    | In   | mm  | In | mm | In | mm | In   | mm    | In   | mm    | In   | mm | In   | mm   | In   | mm    | In   | mm  | In   | mm   |
| V 200 A | 3 P            | 9.37  | 238 | 8.13  | 206.5 | 3.42 | 87  | -  | -  | -  | -  | 6.87 | 174.5 | 4.39 | 111.5 | 2.44 | 62 | 3.38 | 86   | 7.5  | 190.5 | 3.74 | 95  | 0.95 | 24.5 |
|         | 4 P            | 11.81 | 300 | 8.13  | 206.5 | 3.42 | 87  | -  | -  | -  | -  | 6.87 | 174.5 | 4.39 | 111.5 | 2.44 | 62 | 3.38 | 86   | 7.5  | 190.5 | 3.74 | 95  | 0.95 | 24.5 |
| V 400 A | 3 P            | 10.8  | 276 | 14.31 | 363.5 | 4.92 | 125 | -  | -  | -  | -  | 7.04 | 179   | 6.59 | 167.5 | 2.84 | 72 | 0.88 | 22.5 | 8.83 | 224   | 4.41 | 112 | 1.06 | 27   |
|         | 4 P            | 13.7  | 348 | 14.31 | 363.5 | 4.92 | 125 | -  | -  | -  | -  | 7.04 | 179   | 6.59 | 167.5 | 2.84 | 72 | 0.88 | 22.5 | 8.83 | 224   | 4.41 | 112 | 1.06 | 27   |

## Dimensions (in / mm) for front operation

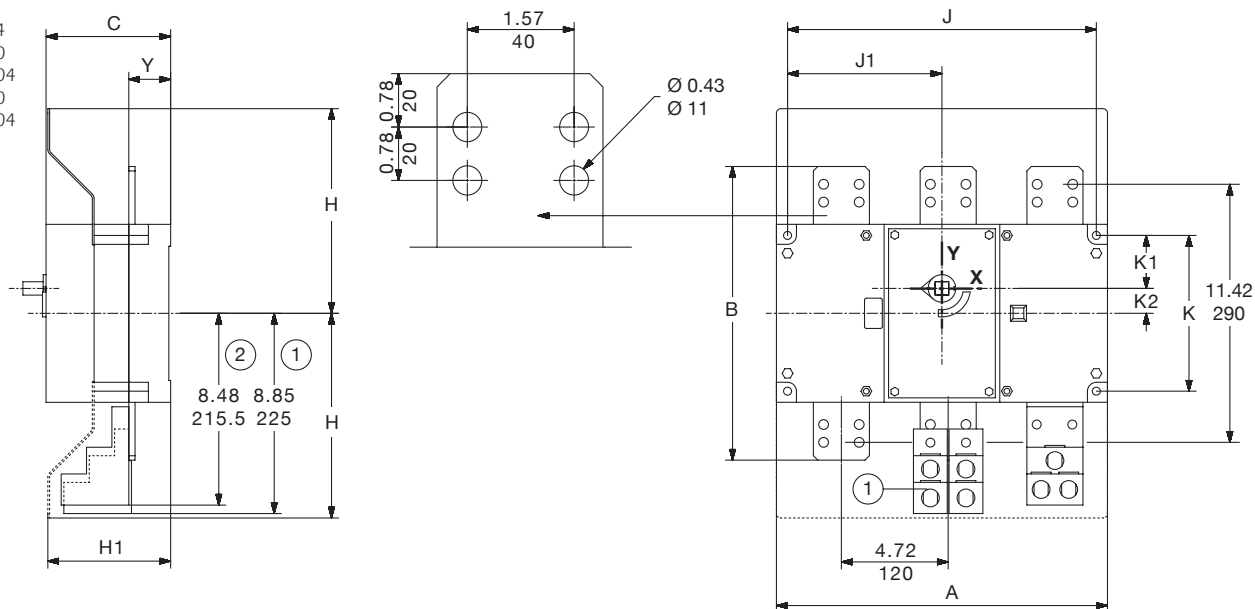
### SIRCO 400-600 A

SC400  
SC4004  
SC600  
SC6004



### SIRCO 800-1000-1200 A

SC800  
SC8004  
SC1000  
SC10004  
SC1200  
SC12004

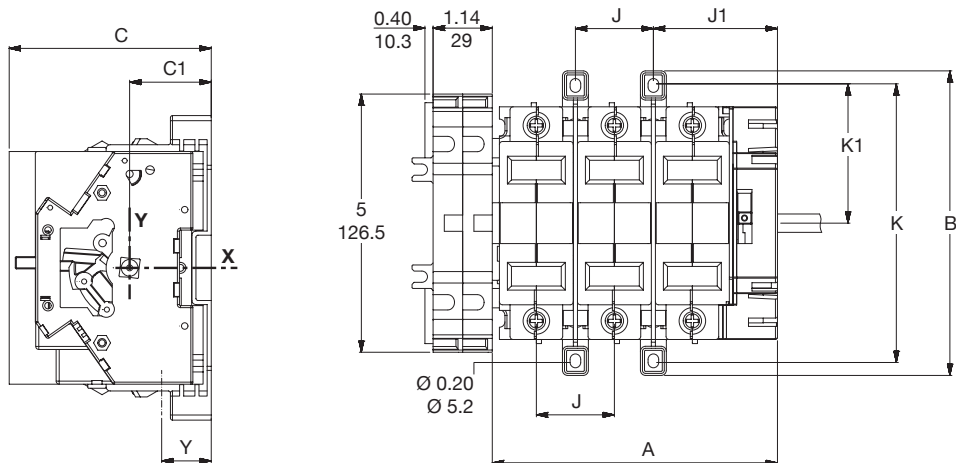


| Rating         | Number of pole | A     |     | B     |     | C    |     | H    |     | H1   |     | H2   |     | J     |     | J1   |       | K    |     | K1   |      | K2   |    | Y    |    |
|----------------|----------------|-------|-----|-------|-----|------|-----|------|-----|------|-----|------|-----|-------|-----|------|-------|------|-----|------|------|------|----|------|----|
|                |                | In    | mm  | In    | mm  | In   | mm  | In   | mm  | In   | mm  | In   | mm  | In    | mm  | In   | mm    | In   | mm  | In   | mm   | In   | mm | In   | mm |
| 400 A          | 3 P            | 11.02 | 280 | 12.60 | 320 | 5.51 | 140 | 9.05 | 230 | 5.43 | 138 | 8.66 | 220 | 10.04 | 255 | 5    | 127.5 | 6.88 | 175 | 2.34 | 59.5 | 1.10 | 28 | 1.85 | 47 |
| 600 A          | 4 P            | 14.17 | 360 | 12.60 | 320 | 5.51 | 140 | 9.05 | 230 | 5.43 | 138 | 8.66 | 220 | 13.19 | 335 | 6.59 | 167.5 | 6.88 | 175 | 2.34 | 59.5 | 1.10 | 28 | 1.85 | 47 |
| 800 A - 1000 A | 3 P            | 14.64 | 372 | 13    | 330 | 5.51 | 140 | 9.05 | 230 | 5.43 | 138 | -    | -   | 13.66 | 347 | 6.83 | 173.5 | 6.88 | 175 | 2.34 | 59.5 | 1.10 | 28 | 1.85 | 47 |
| 1200 A         | 4 P            | 19.37 | 492 | 13    | 330 | 5.51 | 140 | 9.05 | 230 | 5.43 | 138 | -    | -   | 18.38 | 467 | 9.19 | 233.5 | 6.88 | 175 | 2.34 | 59.5 | 1.10 | 28 | 1.85 | 47 |

## Dimensions (in / mm) for side operation

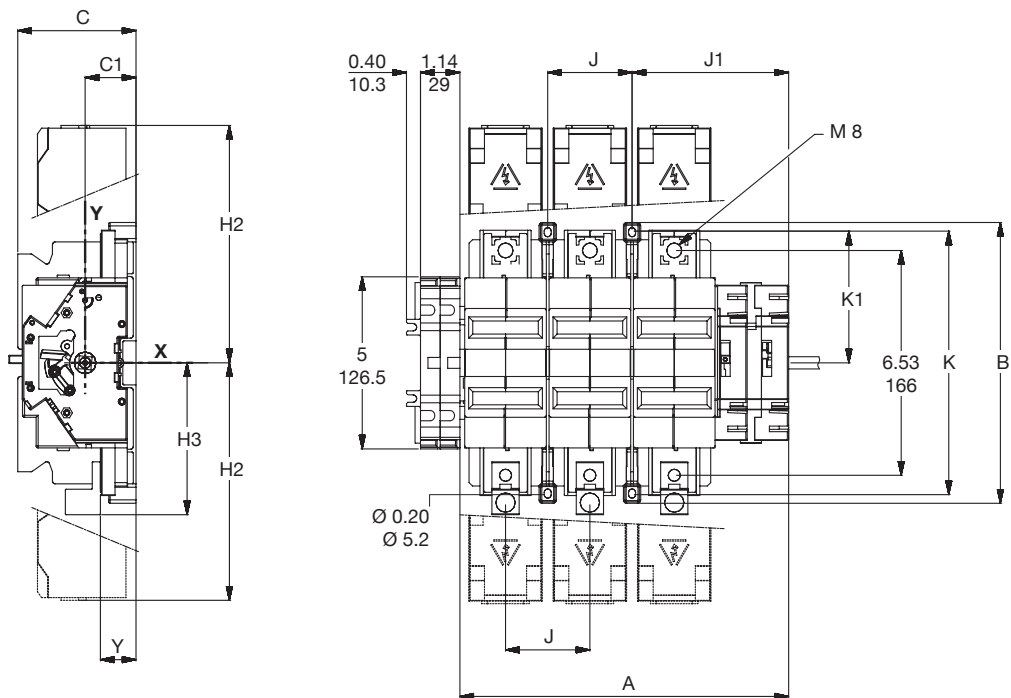
### SIRCO V 60-100 A

SCV60SO  
SCV604SO  
SCV100SO  
SCV1004SO



### SIRCO V 200 A

SCV200SO  
SCV2004SO

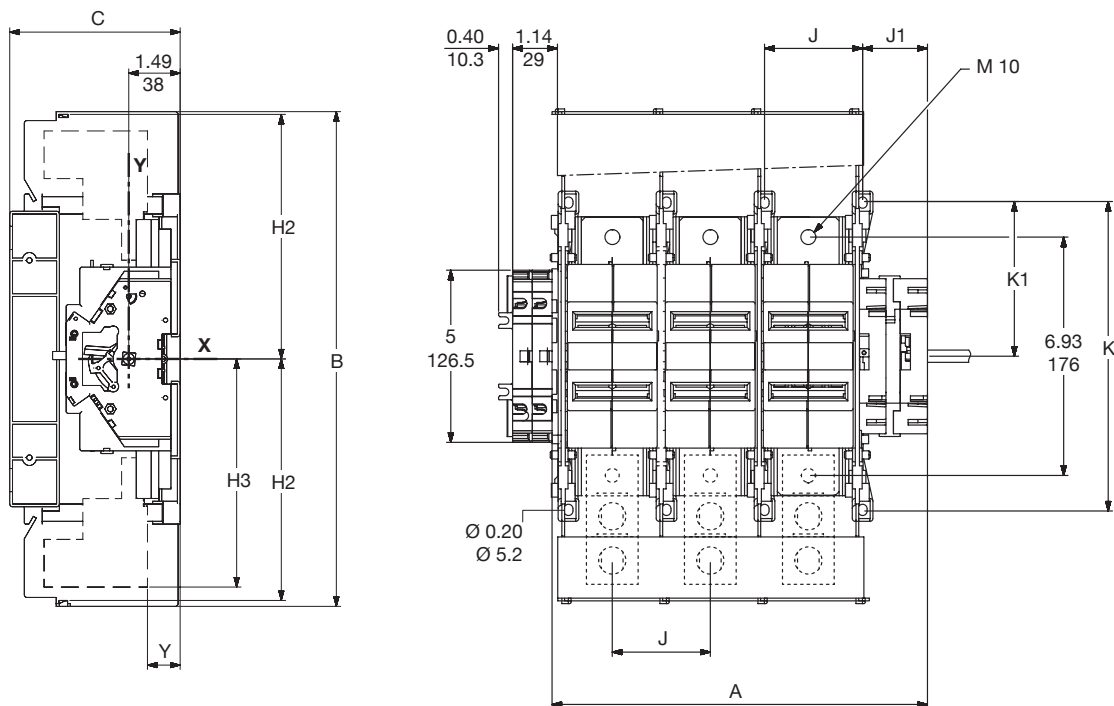


| Rating  | Number of pole | A    |       | B    |       | C    |    | C1   |      | H2   |       | H3   |       | J    |    | J1   |       | K    |       | K1   |      | Y    |      |
|---------|----------------|------|-------|------|-------|------|----|------|------|------|-------|------|-------|------|----|------|-------|------|-------|------|------|------|------|
|         |                | In   | mm    | In   | mm    | In   | mm | In   | mm   | In   | mm    | In   | mm    | In   | mm | In   | mm    | In   | mm    | In   | mm   | In   | mm   |
| V 60 A  | 3 P            | 5.45 | 138.5 | 5.86 | 149   | 3.89 | 99 | 1.57 | 40   | -    | -     | -    | -     | 1.49 | 38 | 2.32 | 59    | 5.25 | 133.5 | 2.62 | 66.5 | 0.96 | 24.5 |
|         | 4 P            | 6.95 | 176.5 | 5.86 | 149   | 3.89 | 99 | 1.57 | 40   | -    | -     | -    | -     | 1.49 | 38 | 2.32 | 59    | 5.25 | 133.5 | 2.62 | 66.5 | 0.96 | 24.5 |
| V 100 A | 3 P            | 7.09 | 180   | 5.86 | 149   | 3.89 | 99 | 1.47 | 37.5 | -    | -     | -    | -     | 1.49 | 38 | 2.32 | 59    | 5.25 | 133.5 | 2.62 | 66.5 | 0.96 | 24.5 |
|         | 4 P            | 9.13 | 232   | 5.86 | 149   | 3.89 | 99 | 1.47 | 37.5 | -    | -     | -    | -     | 1.49 | 38 | 2.32 | 59    | 5.25 | 133.5 | 2.62 | 66.5 | 0.96 | 24.5 |
| V 200 A | 3 P            | 9.47 | 240.5 | 8.13 | 206.5 | 3.42 | 87 | 1.47 | 37.5 | 6.87 | 174.5 | 4.39 | 111.5 | 2.44 | 62 | 4.47 | 113.5 | 7.5  | 190.5 | 3.74 | 95   | 0.96 | 24.5 |
|         | 4 P            | 11.9 | 302.5 | 8.13 | 206.5 | 3.42 | 87 | 1.47 | 37.5 | 6.87 | 174.5 | 4.39 | 111.5 | 2.44 | 62 | 4.47 | 113.5 | 7.5  | 190.5 | 3.74 | 95   | 0.96 | 24.5 |

## Dimensions (in / mm) for side operation

### SIRCO V 400 A

SCV400SO  
SCV4004SO

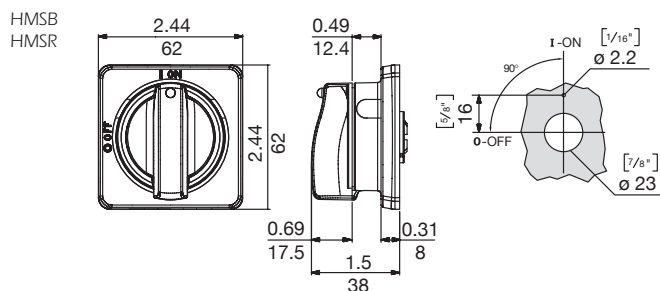


| Rating  | Number<br>of pole | A     |     | B     |       | C    |     | H2   |     | H3   |       | J    |    | J1   |    | K    |     | K1   |     | Y    |    |
|---------|-------------------|-------|-----|-------|-------|------|-----|------|-----|------|-------|------|----|------|----|------|-----|------|-----|------|----|
|         |                   | In    | mm  | In    | mm    | In   | mm  | In   | mm  | In   | mm    | In   | mm | In   | mm | In   | mm  | In   | mm  | In   | mm |
| V 400 A | 3 P               | 10.9  | 277 | 14.31 | 363.5 | 4.92 | 125 | 7.04 | 179 | 6.59 | 167.5 | 2.84 | 72 | 1.89 | 48 | 8.82 | 224 | 4.41 | 112 | 1.06 | 27 |
|         | 4 P               | 13.74 | 349 | 14.31 | 363.5 | 4.92 | 125 | 7.04 | 179 | 6.59 | 167.5 | 2.84 | 72 | 1.89 | 48 | 8.82 | 224 | 4.41 | 112 | 1.06 | 27 |

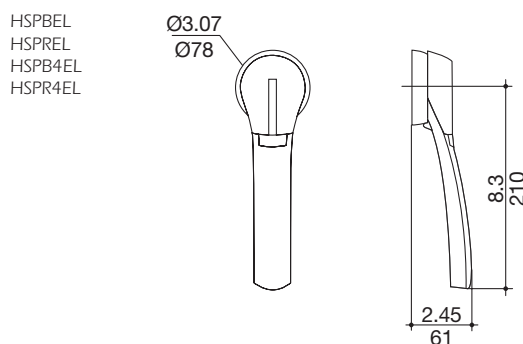
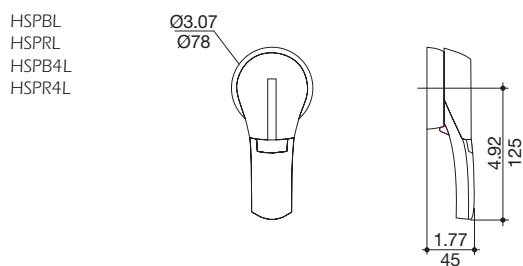
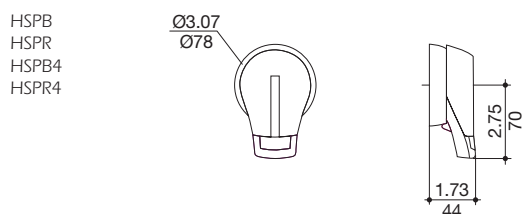


## Dimensions (in / mm) for external front operation handles

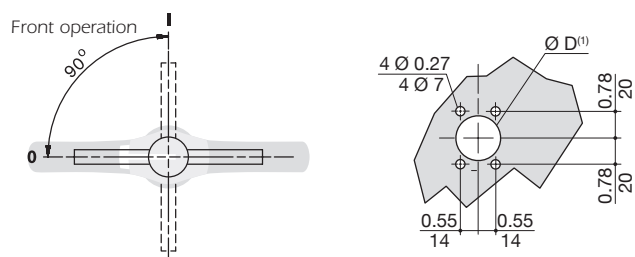
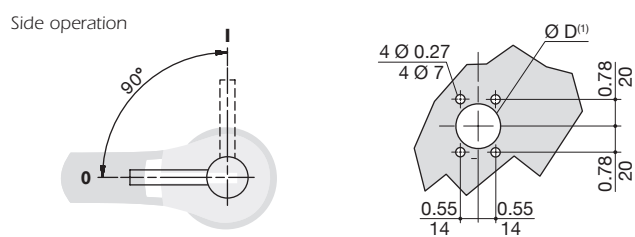
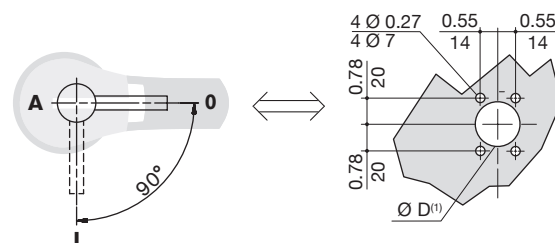
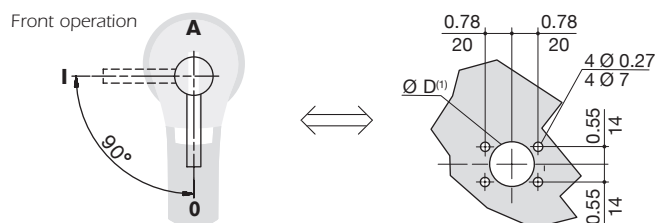
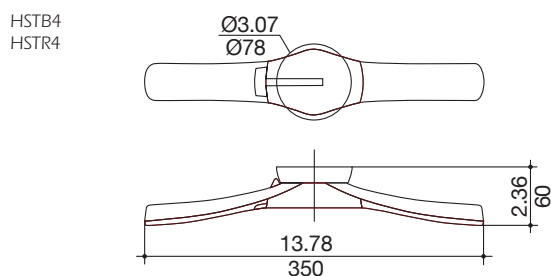
### M type selector handle



### S type pistol handle



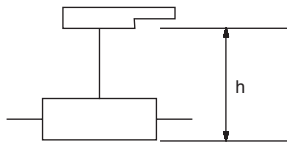
### S type pistol double handle



(1) Conventional fixing (from rear): D = 1.22 to 1.45 in / 31 to 37 mm.  
 Fast fixing (external, door closed): D = 1.45 in / 37 mm, fast fixing is achieved with special clips that avoid drilling for fixation of the handle on the door. Clips are included.

## Dimensions (in / mm) from backplate to door distance with shaft extension

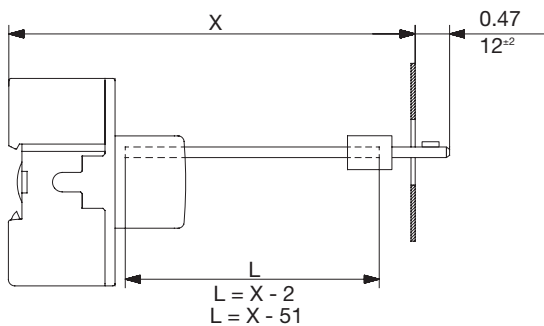
### Minimum distance (in / mm)



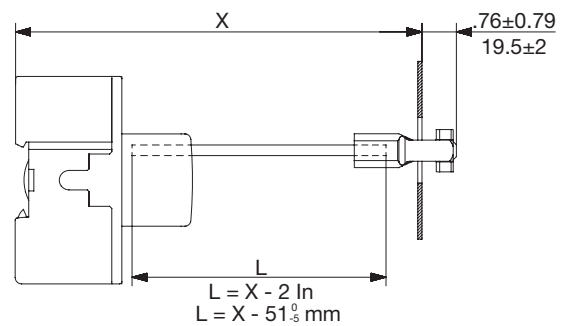
| h minimum dimension | Handle type M |     | Handle type S |     |
|---------------------|---------------|-----|---------------|-----|
|                     | In            | mm  | In            | mm  |
| SIRCO V 30 A        | 4.14          | 105 | 5.31          | 135 |
| SIRCO V 60-100 A    | -             | -   | 5.31          | 135 |
| SIRCO V 200 A       | -             | -   | 4.84          | 123 |
| SIRCO V 400 A       | -             | -   | 6.34          | 161 |
| SIRCO 400-600 A     | -             | -   | 8.70          | 221 |
| SIRCO 800-1000-1200 | -             | -   | 8.70          | 221 |

### Shaft trimming length (= dimension L)

M type selector handle  
SCV30  
SCV30SN



S type pistol handle  
SCV30  
SCV30SN



### S type pistol handle

SCV60U  
SCV6004U  
SCV100U

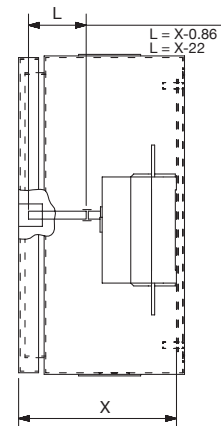
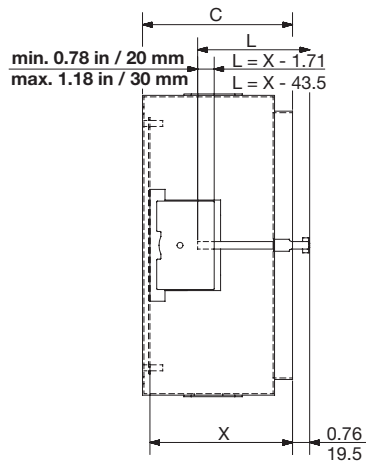
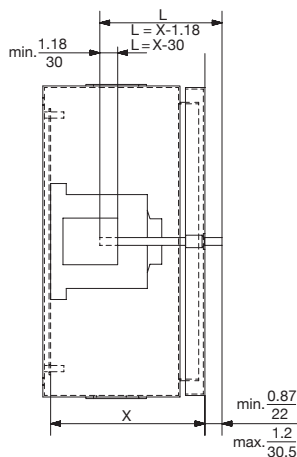
SCV1004U  
SCV200U  
SCV2004U

SCV400U  
SCV4004U

SC400  
SC4004  
SC600  
SC6004

SC800  
SC8004  
SC1000  
SC10004

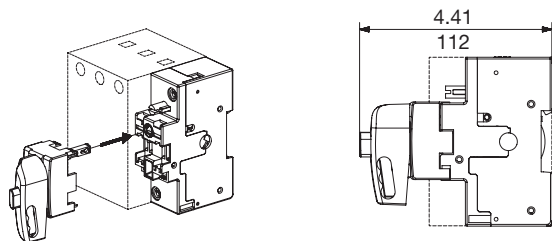
SC1200  
SC12004



## Dimensions (in / mm) for direct front operation handles

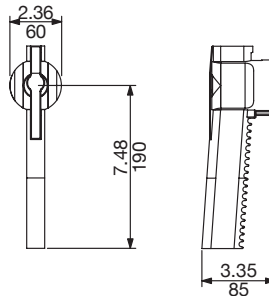
### Direct pistol handle

HADB1



### Direct pistol handle

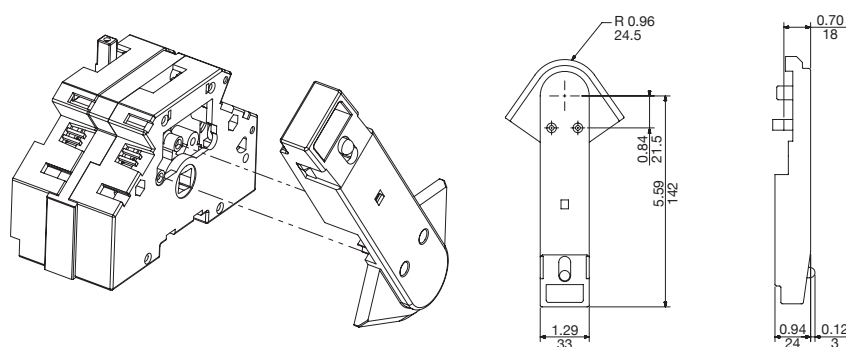
HADB5U



## Dimensions (in / mm) for direct side operation handles

### Direct pistol handle

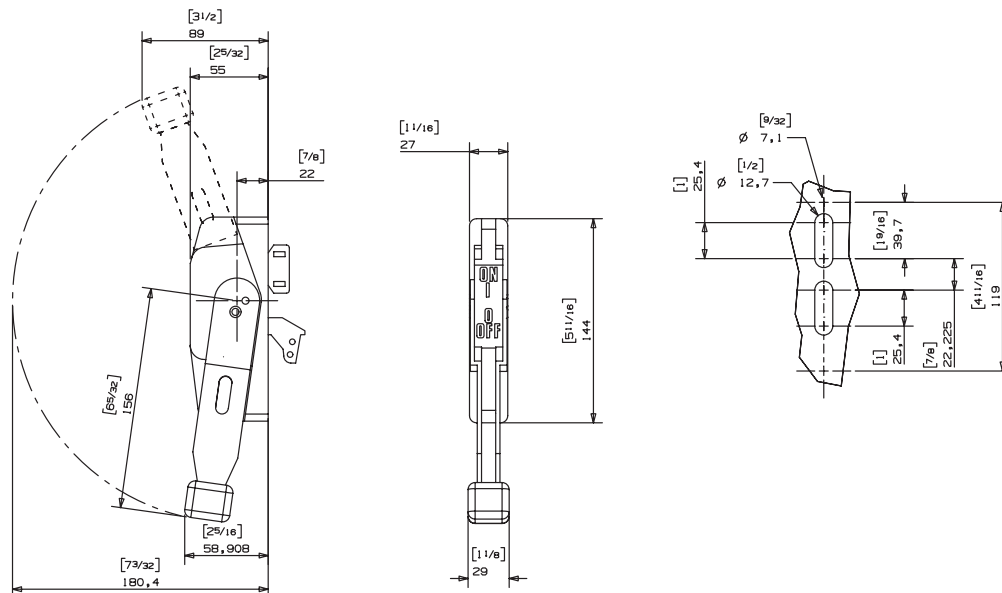
HADB4



## Dimensions (in / mm) for flange operation handles

### Square D type flange handle - class 9422 (A1 & A2)

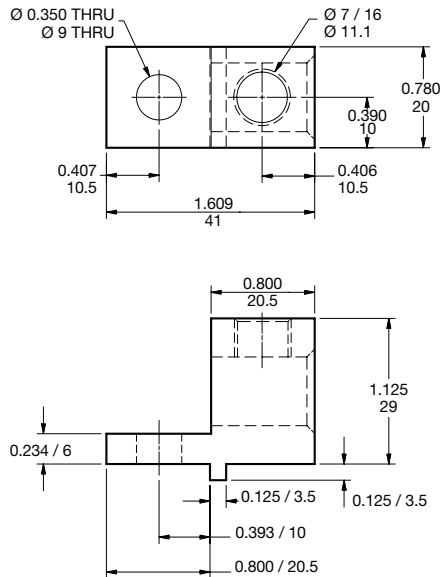
HAF - OP1  
HAF - OP2



## Dimensions (in / mm) for terminal lugs

### TL200

For use with SIRCO V 200 A

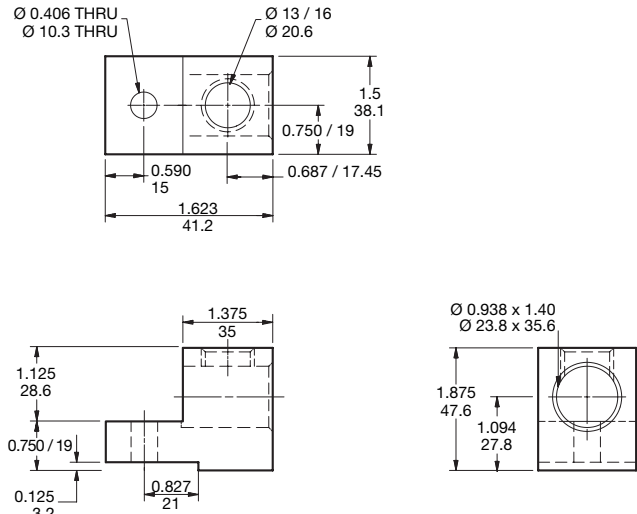


1 wire 3 / 0 - #6

Note: for SCV200, please use HM bolts 8 x 20 mm class 6.8.

### TL400

For use with SIRCO V 400, SIRCO 400



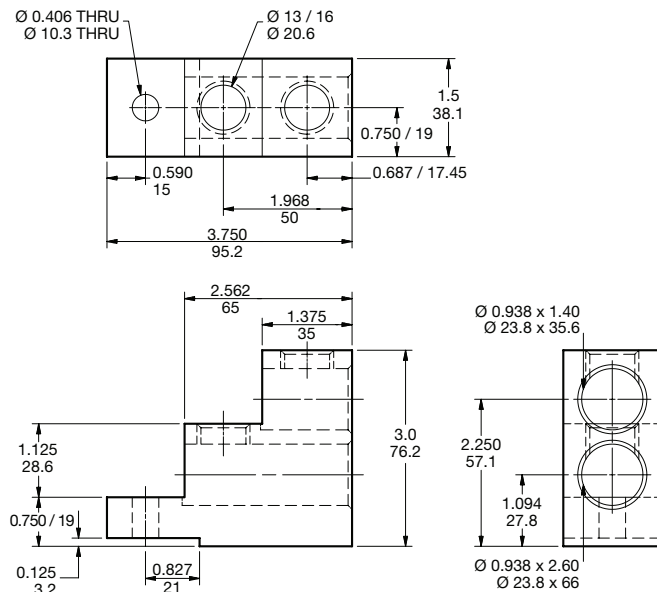
1 wire 600 MCM-2

Note: for SCV400, please use HM bolts 10 x 30 mm class 6.8.

### TL600 and TL1200

TL600: For use with SIRCO 600 A (1 lug per terminal)

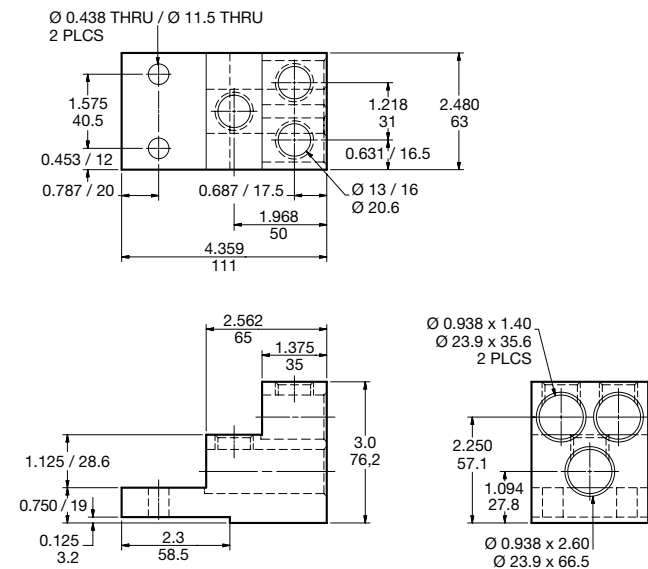
TL1200: For use with SIRCO 800, 1000 & 1200 A (2 lugs per terminal)



2 wires 600 MCM-2

### TL 800

For use with SIRCO 800 A



3 wires 600 MCM-2

# FUSERBLOC from 30 to 800 A

## Product presentation



FBJ30CDT



FBJ30SO



FBJ200U



FBJ600U

Ferraz Shawmut FUSERBLOC disconnect switches are extremely durable, manually operated, fusible disconnect switches. The switches employ double break contacts per pole that ensure complete isolation of the fuse when the switch is in the OFF position. With safety in mind, all FUSERBLOC switches are supplied with fuse covers and line side shrouding as a standard feature. These switches provide the ultimate in short circuit protection when used with Ferraz Shawmut's Class CC, J or L fuses. These heavy-duty switches are designed with the most up-to-date disconnect fuse and switch

technology available. Designed to meet the UL98 or UL489 standard, the FUSERBLOC gives you the product that "makes and breaks" power circuits under load. FUSERBLOC switches are tested and approved for use in the most demanding applications, such as "Service Entrance". The optional TEST function (up to 400 A) enables testing of the control circuit auxiliaries without switching the main contacts. This function provides a simple alternative to a separately wired push button. A wide array of handles are available to meet OSHA padlocking requirements, NEMA configurations, defeater options and NFPA 79 requirements.

### Highlights

- Double break contacts per pole up to 800 A
- Touch safe fuse covers/line shrouding standard
- Service Entrance Rated
- Compact Footprints
- Front and side operated switches with snap-on auxiliary contact feature
- Dedicated side operated switch for flange and direct side operation
- External or direct operation handles
- Defeatable pistol handles automatically re-latch when panel door is closed - no tool necessary to reset latch
- Test positions available up to 400 A
- Padlocking feature as standard on modular switchgear boxes
- Modular switch concept, special executions on request (5 pole, mix ratings...)
- Padlockable handle

### Applications

- Service entrance or main panel disconnects up to 600VAC, 800A
- "Make and Break" power circuit applications on load
- Fusible isolation switches
- NFPA 79 solutions

### Ratings

- 600 VAC, 250VDC
- 30, 60, 100, 200, 400, 600 and 800 amperes
- up to 200 kA Short Circuit current Rating (SCCR) with Class CC, J, or L Fuses

### Approvals

- All FUSERBLOC switches meet the requirements of UL and CSA
- UL Listed Guide WHTY, File E191605 for UL 98 (ratings from 30 A to 800 A)
- UL Listed Guide WJAZ, File E258428 for UL489 (rating 30 A CD)
- CSA 22.2 # 4, class 4652-04, File703166 (ratings from 30 A to 800 A)
- CSA 22.2 # 5, class 4652-06, File 703166 (ratings 30 A CD)
- IEC 947-3 CE mark



### Recommended fuse usage

FBCC . . . . . use with ATDR\*, ATMR, ATOR  
 FBJ . . . . . use with AJT, A4J, HSJ  
 FBL . . . . . use with A4BQ, A4BY, A4BT

\* Recommended for DC applications

# FUSERBLOC

## Front and side operated range from 30 to 60 A



Select a switch

| Ampere rating          | 30           | 30          | 30       | 30      | 60      |
|------------------------|--------------|-------------|----------|---------|---------|
| Catalog number: 3 pole | FBCC30CDT    | FBJ30CDT    | FBCC30U  | FBJ30U  | FBJ60U  |
| Catalog number: 4 pole | FBCC30SNC DT | FBJ30SNC DT | FBCC304U | FBJ304U | FBJ604U |
| Fuse class             | CC           | J           | CC       | J       | J       |

Note : FBCC30CDT, FBCC30SNC DT, FBJ30CDT and FBJ30SNC DT are UL489 and CSA 22.2 #5.

## M type selector handle for external front operation



Select a handle

| NEMA type        | IEC  | Test function | Color        | Catalog number |      |   |   |   |
|------------------|------|---------------|--------------|----------------|------|---|---|---|
| 1, 3R, 12, 4, 4X | IP65 | No            | Black        | HMSB           | HMSB | - | - | - |
| 1, 3R, 12, 4, 4X | IP65 | No            | Red / Yellow | HMSR           | HMSR | - | - | - |

Note : handle is not defeatable, and is padlockable in the "OFF" position.



Select a shaft

| Shaft length (inches / mm) | Catalog number |         |   |   |   |
|----------------------------|----------------|---------|---|---|---|
| 7.9 / 200                  | SM200-5        | SM200-5 | - | - | - |
| 12.6 / 320                 | SM320-5        | SM320-5 | - | - | - |
| 15.7 / 400                 | SM400-5        | SM400-5 | - | - | - |

## S type pistol handle for external front and side operation



Select a handle

| NEMA type        | IEC  | Test function | Color        | Catalog number |        |         |         |         |
|------------------|------|---------------|--------------|----------------|--------|---------|---------|---------|
| 1, 3R, 12        | IP54 | No            | Black        | HSPB           | HSPB   | HSPBL   | HSPBL   | HSPBL   |
| 1, 3R, 12        | IP54 | No            | Red / Yellow | HSPR           | HSPR   | HSPRL   | HSPRL   | HSPRL   |
| 1, 3R, 12, 4, 4X | IP65 | No            | Black        | HSPB4          | HSPB4  | HSPB4L  | HSPB4L  | HSPB4L  |
| 1, 3R, 12, 4, 4X | IP65 | No            | Red / Yellow | HSPR4          | HSPR4  | HSPR4L  | HSPR4L  | HSPR4L  |
| 1, 3R, 12, 4, 4X | IP65 | Yes           | Black        | HSPB4T         | HSPB4T | HSPB4LT | HSPB4LT | HSPB4LT |
| 1, 3R, 12, 4, 4X | IP65 | Yes           | Red / Yellow | HSPR4T         | HSPR4T | HSPR4LT | HSPR4LT | HSPR4LT |

Note: handle is defeatable, and is padlockable in the "OFF" position.



Select a shaft

| Shaft length (inches / mm) | Catalog number |         |          |          |          |
|----------------------------|----------------|---------|----------|----------|----------|
| 7.9 / 200                  | SS200-5        | SS200-5 | SS200-10 | SS200-10 | SS200-10 |
| 12.6 / 320                 | SS320-5        | SS320-5 | SS320-10 | SS320-10 | SS320-10 |
| 15.7 / 400                 | SS400-5        | SS400-5 | SS400-10 | SS400-10 | SS400-10 |
| 19.7 / 500                 | -              | -       | SS500-10 | SS500-10 | SS500-10 |

## Pistol handle for direct front operation



Select a handle

| Color | Test function | Catalog number |       |                                                                                           |
|-------|---------------|----------------|-------|-------------------------------------------------------------------------------------------|
| Black | Yes           | HADB1          | HADB2 | This function can be achieved using side operated 30 - 400 A fusible disconnect switches. |

Note: For getting auxiliary contact option on FBCC30CDT, FBCC30SNC DT, FBJ30CDT and FBJ30SNC DT when direct handle is installed, please use auxiliary contact blocks holder ACHCD.

HADB1 and HADB2 handles are padlockable in the "OFF" position. (See pages 36 - 37)

## Options for external front & side operation



|                                                                      |                             | Catalog number |          |          |          |          |
|----------------------------------------------------------------------|-----------------------------|----------------|----------|----------|----------|----------|
| Terminal Lugs Kit                                                    | (for 3 and 4 pole switches) | integral       | integral | integral | integral | integral |
| Terminal Shrouds                                                     | (for 3 and 4 pole switches) | integral       | integral | integral | integral | integral |
| Shorting Links Kit                                                   | (3 links per Kit)           | -              | -        | -        | -        | SL60     |
| Auxiliary contact                                                    |                             |                |          |          |          |          |
| Auxiliary contact block holder                                       |                             | ACHCD          | ACHCD    | -        | -        | -        |
| 1 N / O, 10A, 600VAC snap-on contact block, A600-Q600 <sup>(1)</sup> |                             | AC3            | AC3      | AC3      | AC3      | AC3      |
| 1 N / C, 10A, 600VAC snap-on contact block, A600-Q600 <sup>(1)</sup> |                             | AC4            | AC4      | AC4      | AC4      | AC4      |
| 1 NO + NC side mount contact block, A600-N600 <sup>(2)</sup>         |                             | -              | -        | AC5      | AC5      | AC5      |
| 2 NO + NC side mount contact blocks, A600-N600 <sup>(2)</sup>        |                             | -              | -        | AC6      | AC6      | AC6      |

(1) Compact Design Fusible Disconnect Switch accommodates up to 4 auxiliary contacts for FBCC30CDT and FBCC30SNC DT and up to 2 auxiliary contacts for FBJ30CDT and FBJ30SNC DT on the switch.

(2) Two auxiliary contact blocks maximum can be side mounted.

Note : For class T fuse adaptors, please consult us.

# FUSERBLOC

## Front and side operated range from 100 to 800 A



Select a switch

| Ampere rating          | 100      | 200      | 400      | 600      | 800      |
|------------------------|----------|----------|----------|----------|----------|
| Catalog number: 3 pole | FBJ100U  | FBJ200U  | FBJ400U  | FBJ600U  | FBL800U  |
| Catalog number: 4 pole | FBJ1004U | FBJ2004U | FBJ4004U | FBJ6004U | FBL8004U |
| Fuse class             | J        | J        | J        | J        | L        |

## S type pistol handle for external front and side operation



Select a handle

| NEMA type        | IEC  | Test function | Color        | Catalog number |         |         |         |         |
|------------------|------|---------------|--------------|----------------|---------|---------|---------|---------|
| 1, 3R, 12        | IP54 | No            | Black        | HSPBL          | HSPBL   | HSPBL   | HSPBEL  | HSPBEL  |
| 1, 3R, 12        | IP54 | No            | Red / Yellow | HSPRL          | HSPRL   | HSPRL   | HSPREL  | HSPREL  |
| 1, 3R, 12, 4, 4X | IP65 | No            | Black        | HSPB4L         | HSPB4L  | HSPB4L  | HSPB4EL | HSPB4EL |
| 1, 3R, 12, 4, 4X | IP65 | No            | Red / Yellow | HSPR4L         | HSPR4L  | HSPR4L  | HSPR4EL | HSPR4EL |
| 1, 3R, 12, 4, 4X | IP65 | Yes           | Black        | HSPB4LT        | HSPB4LT | HSPB4LT | -       | -       |
| 1, 3R, 12, 4, 4X | IP65 | Yes           | Red / Yellow | HSPR4LT        | HSPR4LT | HSPR4LT | -       | -       |

Note: handle is defeatable, and is padlockable in the "OFF" position.



Select a handle

| NEMA type        | IEC  | Test function | Color        | Catalog number |   |   |       |       |
|------------------|------|---------------|--------------|----------------|---|---|-------|-------|
| 1, 3R, 12, 4, 4X | IP65 | No            | Black        | -              | - | - | HSTB4 | HSTB4 |
| 1, 3R, 12, 4, 4X | IP65 | No            | Red / Yellow | -              | - | - | HSTR4 | HSTR4 |

Note: handle is defeatable and is padlockable in the "off" position. Handle can not be used for side operation.



Select a shaft

| Shaft length (inches / mm) | Catalog number |          |          |          |          |
|----------------------------|----------------|----------|----------|----------|----------|
| 7.9 / 200                  | SS200-10       | SS200-10 | SS200-10 | SS200-12 | SS200-12 |
| 12.6 / 320                 | SS320-10       | SS320-10 | SS320-10 | SS320-12 | SS320-12 |
| 15.7 / 400                 | SS400-10       | SS400-10 | SS400-10 | SS400-12 | SS400-12 |
| 19.7 / 500                 | SS500-10       | SS500-10 | SS500-10 | SS500-12 | SS500-12 |

## Pistol handle for direct front operation



Select a handle

| Color | Test function | Catalog number                                                                                                |        |  |
|-------|---------------|---------------------------------------------------------------------------------------------------------------|--------|--|
| Black | No            | This function can be achieved using side operated 30 - 400 A fusible disconnect switches. (See pages 36 - 37) |        |  |
|       |               | HADB5U                                                                                                        | HADB5U |  |

Note: HADB5U is not padlockable, concerned switches have padlocking feature as standard on the gear box.

## Options for external front & side operation



|                                                             | Catalog number |          |                         |         |         |
|-------------------------------------------------------------|----------------|----------|-------------------------|---------|---------|
| Terminal lugs kit                                           |                |          |                         |         |         |
| 6 lugs per kit - for 3 pole switches                        | TL100          | TL200    | TL400                   | TL600   | TL600   |
| 8 lugs per kit - for 4 pole switches                        | TL1004         | TL2004   | TL4004                  | TL4004  | TL4004  |
| Terminal shrouds kit <sup>(1)</sup>                         |                |          |                         |         |         |
| 3-pole (for line or load side)                              | TS100FB        | TS200FB  | TS400FB <sup>(2)</sup>  | TS800U  | TS800U  |
| 4-pole (for line or load side)                              | TS1004FB       | TS2004FB | TS4004FB <sup>(2)</sup> | TS8004U | TS8004U |
| Shorting links kit (3 links per kit)                        | SL100          | SL200    | SL400                   | SL800   | SL800   |
| Auxiliary contacts                                          |                |          |                         |         |         |
| 1 N/O, 10A, 600 VAC snap-on-contact block, A600-Q600        | AC3            | AC3      | AC3                     | AC3     | AC3     |
| 1 N/C, 10A, 600 VAC snap-on-contact block, A600-Q600        | AC4            | AC4      | AC4                     | AC4     | AC4     |
| 1 NO+NC side mount contact block, A600-N600 <sup>(3)</sup>  | AC5            | AC5      | AC5                     | -       | -       |
| 2 NO+NC side mount contact blocks, A600-N600 <sup>(3)</sup> | AC6            | AC6      | AC6                     | -       | -       |

(1) Line side Shrouding supplied as standard with switch.

(2) As a replacement part for line or load side (two terminal screens supplied as standard with switch).

(3) Two auxiliary contact blocks maximum can be side mounted.

Note: for class T fuse adaptors, please consult us.

## Other handles



Metallic handle available on request, please consult us. UL pending.

# FUSERBLOC & NFPA 79

## Front operated range from 30 to 60 A



Select a switch

| Ampere rating          | 30           | 30          | 30       | 30      | 60      |
|------------------------|--------------|-------------|----------|---------|---------|
| Catalog number: 3 pole | FBCC30CDT    | FBJ30CDT    | FBCC30U  | FBJ30U  | FBJ60U  |
| Catalog number: 4 pole | FBCC30SNC DT | FBJ30SNC DT | FBCC304U | FBJ304U | FBJ604U |
| Fuse class             | CC           | J           | CC       | J       | J       |

Note : FBCC30CDT, FBCC30SNC DT, FBJ30CDT and FBJ30SNC DT are UL489 and CSA 22.2 #5.

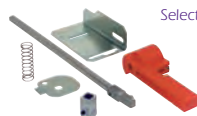
## NFPA 79 front operation kit



Select a handle

| NEMA type        | IEC  | Test function | Color        | Catalog number |        |         |         |         |
|------------------|------|---------------|--------------|----------------|--------|---------|---------|---------|
| 1, 3R, 12        | IP54 | No            | Black        | HSPB           | HSPB   | HSPBL   | HSPBL   | HSPBL   |
| 1, 3R, 12        | IP54 | No            | Red / Yellow | HSPR           | HSPR   | HSPRL   | HSPRL   | HSPRL   |
| 1, 3R, 12, 4, 4X | IP65 | No            | Black        | HSPB4          | HSPB4  | HSPB4L  | HSPB4L  | HSPB4L  |
| 1, 3R, 12, 4, 4X | IP65 | No            | Red / Yellow | HSPR4          | HSPR4  | HSPR4L  | HSPR4L  | HSPR4L  |
| 1, 3R, 12, 4, 4X | IP65 | Yes           | Black        | HSPB4T         | HSPB4T | HSPB4LT | HSPB4LT | HSPB4LT |
| 1, 3R, 12, 4, 4X | IP65 | Yes           | Red / Yellow | HSPR4T         | HSPR4T | HSPR4LT | HSPR4LT | HSPR4LT |

Note: handle is defeatable, and is padlockable in the "OFF" position.



Select a kit

| Catalog number |       |       |         |         |
|----------------|-------|-------|---------|---------|
|                | HADB6 | HADB6 | NFPA791 | NFPA791 |

Note: allows to operate & padlock the switch when door of enclosure is open.

For full information on NFPA79 requirements and on our solution, please consult page 109.

## Options for NFPA 79 front operation



|                                                                      |                             | Catalog number |          |          |          |          |
|----------------------------------------------------------------------|-----------------------------|----------------|----------|----------|----------|----------|
| Terminal Lugs Kit                                                    | (for 3 and 4 pole switches) | integral       | integral | integral | integral | integral |
| Terminal Shrouds                                                     | (for 3 and 4 pole switches) | integral       | integral | integral | integral | integral |
| Shorting Links Kit                                                   | (3 links per Kit)           | -              | -        | -        | -        | SL60     |
| Auxiliary contacts                                                   |                             |                |          |          |          |          |
| Auxiliary contact block holder                                       |                             | ACHCD          | ACHCD    | -        | -        | -        |
| 1 N / O, 10A, 600VAC snap-on contact block, A600-Q600 <sup>(1)</sup> |                             | AC3            | AC3      | AC3      | AC3      | AC3      |
| 1 N / C, 10A, 600VAC snap-on contact block, A600-Q600 <sup>(1)</sup> |                             | AC4            | AC4      | AC4      | AC4      | AC4      |
| 1 NO + NC side mount contact block, A600-N600 <sup>(2)</sup>         |                             | -              | -        | AC5      | AC5      | AC5      |
| 2 NO + NC side mount contact blocks, A600-N600 <sup>(2)</sup>        |                             | -              | -        | AC6      | AC6      | AC6      |

(1) Compact Design Fusible Disconnect Switch accommodates up to 4 auxiliary contacts for FBCC30CDT and FBCC30SNC DT and up to 2 auxiliary contacts for FBJ30CDT and FBJ30SNC DT on the switch UL489.

(2) Two auxiliary contact blocks maximum can be side mounted.

Note: for class T fuse adaptors, please consult us.



# FUSERBLOC & NFPA 79

## Front operated range from 100 to 800 A



Select a switch

| Ampere rating          | 100      | 200      | 400      | 600      | 800      |
|------------------------|----------|----------|----------|----------|----------|
| Catalog number: 3 pole | FBJ100U  | FBJ200U  | FBJ400U  | FBJ600U  | FBL800U  |
| Catalog number: 4 pole | FBJ1004U | FBJ2004U | FBJ4004U | FBJ6004U | FBL8004U |
| Fuse class             | J        | J        | J        | J        | L        |

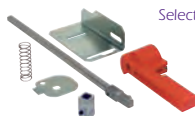
## NFPA 79 front operation kit



Select a handle

| NEMA type        | IEC  | Test function | Color        | Catalog number |         |         |         |         |
|------------------|------|---------------|--------------|----------------|---------|---------|---------|---------|
| 1, 3R, 12        | IP54 | No            | Black        | HSPBL          | HSPBL   | HSPBL   | HSPBEL  | HSPBEL  |
| 1, 3R, 12        | IP54 | No            | Red / Yellow | HSPRL          | HSPRL   | HSPRL   | HSPREL  | HSPREL  |
| 1, 3R, 12, 4, 4X | IP65 | No            | Black        | HSPB4L         | HSPB4L  | HSPB4L  | HSPB4EL | HSPB4EL |
| 1, 3R, 12, 4, 4X | IP65 | No            | Red / Yellow | HSPR4L         | HSPR4L  | HSPR4L  | HSPR4EL | HSPR4EL |
| 1, 3R, 12, 4, 4X | IP65 | Yes           | Black        | HSPB4LT        | HSPB4LT | HSPB4LT | -       | -       |
| 1, 3R, 12, 4, 4X | IP65 | Yes           | Red / Yellow | HSPR4LT        | HSPR4LT | HSPR4LT | -       | -       |

Note: handle is defeatable, and is padlockable in the "OFF" position.



Select a kit

|  | Catalog number |         |         |         |         |
|--|----------------|---------|---------|---------|---------|
|  | NFPA791        | NFPA791 | NFPA791 | NFPA792 | NFPA792 |

Note: Allows to operate & padlock the switch when door of enclosure is open.

For full information on NFPA79 requirements and on our solution, please consult page 109.

## Options for NFPA 79 front operation



|                                                               | Catalog number |          |                         |         |         |
|---------------------------------------------------------------|----------------|----------|-------------------------|---------|---------|
| Terminal lugs kit                                             |                |          |                         |         |         |
| 6 lugs per kit - for 3 pole switches)                         | TL100          | TL200    | TL400                   | TL600   | TL800   |
| (8 lugs per kit - for 4 pole switches)                        | TL1004         | TL2004   | TL4004                  | TL6004  | TL8004  |
| Terminal shrouds kit <sup>(1)</sup>                           |                |          |                         |         |         |
| 3-pole (for line or load side)                                | TS100FB        | TS200FB  | TS400FB <sup>(2)</sup>  | TS800U  | TS800U  |
| 4-pole (for line or load side)                                | TS1004FB       | TS2004FB | TS4004FB <sup>(2)</sup> | TS8004U | TS8004U |
| Shorting links kit (3 links per kit)                          | SL100          | SL200    | SL400                   | SL800   | SL800   |
| Auxiliary contacts                                            |                |          |                         |         |         |
| 1 N/O, 10A, 600 VAC snap-on-contact block, A600-Q600          | AC3            | AC3      | AC3                     | AC3     | AC3     |
| 1 N/C, 10A, 600 VAC snap-on-contact block, A600-Q600          | AC4            | AC4      | AC4                     | AC4     | AC4     |
| 1 NO+NC side mount contact block, A600-N600AC5 <sup>(3)</sup> | AC5            | AC5      | -                       | -       | -       |
| 2 NO+NC side mount contact blocks, A600-N600 <sup>(3)</sup>   | AC6            | AC6      | AC6                     | -       | -       |

(1) Line side Shrouding supplied as standard with switch.

(2) As a replacement part for line or load side (two terminal screens supplied as standard with switch).

(3) Two auxiliary contact blocks maximum can be side mounted.

Note: for class T fuse adaptors, please consult us.

# FUSERBLOC & NFPA 79

## Side operated range from 30 to 60 A



Select a switch

| Ampere rating          | 30        | 30       | 60       |
|------------------------|-----------|----------|----------|
| Catalog number: 3 pole | FBCC30SO  | FBJ30SO  | FBJ60SO  |
| Catalog number: 4 pole | FBCC304SO | FBJ304SO | FBJ604SO |
| Fuse class             | CC        | J        | J        |

## Cable flange operated handle (square D type - class 9422)



Select a handle

| NEMA type       | IEC  |  | Catalog number         |                        |                        |
|-----------------|------|--|------------------------|------------------------|------------------------|
| 1, 3, 3R, 4, 12 | IP54 |  | HAF-OP1 <sup>(1)</sup> | HAF-OP1 <sup>(1)</sup> | HAF-OP1 <sup>(1)</sup> |
| 4, 4X           | IP65 |  | HAF-OP2 <sup>(2)</sup> | HAF-OP2 <sup>(2)</sup> | HAF-OP2 <sup>(2)</sup> |

Note: handle is defeatable, and padlockable in the "OFF" position.



Mechanism

|  | Catalog number |          |          |
|--|----------------|----------|----------|
|  | HAF-MECH       | HAF-MECH | HAF-MECH |



Select a cable

| Cable length (inches / mm) | Catalog number |         |         |
|----------------------------|----------------|---------|---------|
| 36 / 914.4                 | HAFC36         | HAFC36  | HAFC36  |
| 60 / 1 524                 | HAFC60         | HAFC60  | HAFC60  |
| 120 / 3 048                | HAFC120        | HAFC120 | HAFC120 |

Note: cable flange operation is for enclosure depth from 5.75 / 146 to 36 / 990, depending on the cable length.

## Rod flange operated handle (square D type - class 9422)



Select a handle

| NEMA type       | IEC  |  | Catalog number         |                        |                        |
|-----------------|------|--|------------------------|------------------------|------------------------|
| 1, 3, 3R, 4, 12 | IP54 |  | HAF-OP1 <sup>(1)</sup> | HAF-OP1 <sup>(1)</sup> | HAF-OP1 <sup>(1)</sup> |
| 4, 4X           | IP65 |  | HAF-OP2 <sup>(2)</sup> | HAF-OP2 <sup>(2)</sup> | HAF-OP2 <sup>(2)</sup> |

Note: handle is defeatable, and padlockable in the "OFF" position.



Select a rod

| Rod length (inches / mm) | Catalog number |      |      |
|--------------------------|----------------|------|------|
| 23.6 / 500               | HAFR           | HAFR | HAFR |

Note: rod kit is for enclosure depth from 8 / 203 to 24.12 / 613.  
For smaller depth, please consult us.

## Pistol handle for direct side operation (not NFPA 79)



Select a handle

| Color | Catalog number |       |       |
|-------|----------------|-------|-------|
| Black | HADB3          | HADB4 | HADB4 |

Note: handle is padlockable in the "OFF" position.

## Options for flange & direct operation



|                                                               |                                            | Catalog number |          |          |
|---------------------------------------------------------------|--------------------------------------------|----------------|----------|----------|
| Terminal Lugs Kit                                             | For 3 and 4 pole fuse switches             | integral       | integral | integral |
| Terminal Shrouds                                              | For 3 and 4 pole fuse switches             | integral       | integral | integral |
| Shorting links kit                                            | 3 links per kit - for 3 pole fuse switches | -              | -        | SL60     |
| Auxiliary Contacts                                            |                                            |                |          |          |
| 1 NO + NC side mount contact block, A600-N600 <sup>(3)</sup>  |                                            | AC5            | AC5      | AC5      |
| 2 NO + NC side mount contact blocks, A600-N600 <sup>(3)</sup> |                                            | AC6            | AC6      | AC       |

(1) All external metal parts are sheet steel.

(2) All external metal parts are either stainless steel or a chrome-plated non-ferrous die casting.

(3) Two auxiliary contact blocks maximum can be side mounted.

Note: for class T fuse adaptors, please consult us.

# FUSERBLOC & NFPA 79

## Side operated range from 100 to 400 A



Select a switch

| Ampere rating          | 100       | 200       | 400       |
|------------------------|-----------|-----------|-----------|
| Catalog number: 3 pole | FBJ100SO  | FBJ200SO  | FBJ400SO  |
| Catalog number: 4 pole | FBJ1004SO | FBJ2004SO | FBJ4004SO |
| Fuse class             | J         | J         | J         |

## Cable flange operated handle (square D type - class 9422)



Select a handle

| NEMA type       | IEC  |  | Catalog number         |                        |                        |
|-----------------|------|--|------------------------|------------------------|------------------------|
| 1, 3, 3R, 4, 12 | IP54 |  | HAF-OP1 <sup>(1)</sup> | HAF-OP1 <sup>(1)</sup> | HAF-OP1 <sup>(1)</sup> |
| 4, 4X           | IP65 |  | HAF-OP2 <sup>(2)</sup> | HAF-OP2 <sup>(2)</sup> | HAF-OP2 <sup>(2)</sup> |

Note: handle is defeatable, and padlockable in the "OFF" position.



Mechanism

|  | Catalog number |          |          |
|--|----------------|----------|----------|
|  | HAF-MECH       | HAF-MECH | HAF-MECH |



Select a cable

| Cable length (inches / mm) | Catalog number |         |         |
|----------------------------|----------------|---------|---------|
| 36 / 914.4                 | HAFC36         | HAFC36  | HAFC36  |
| 60 / 1 524                 | HAFC60         | HAFC60  | HAFC60  |
| 120 / 3 048                | HAFC120        | HAFC120 | HAFC120 |

Note: cable flange operation is for enclosure depth from 5.75 / 146 to 36 / 990, depending on the cable length.

## Rod flange operated handle (square D type - class 9422)



Select a handle

| NEMA type       | IEC  |  | Catalog number         |                        |                        |
|-----------------|------|--|------------------------|------------------------|------------------------|
| 1, 3, 3R, 4, 12 | IP54 |  | HAF-OP1 <sup>(1)</sup> | HAF-OP1 <sup>(1)</sup> | HAF-OP1 <sup>(1)</sup> |
| 4, 4X           | IP65 |  | HAF-OP2 <sup>(2)</sup> | HAF-OP2 <sup>(2)</sup> | HAF-OP2 <sup>(2)</sup> |

Note: handle is defeatable, and padlockable in the "OFF" position.



Select a rod

| Rod length (inches / mm) | Catalog number |      |      |
|--------------------------|----------------|------|------|
| 23.6 / 500               | HAFR           | HAFR | HAFR |

Note: rod kit is for enclosure depth from 8 / 203 to 24.12 / 613.  
For smaller depth, please consult us.

## Pistol handle for direct side operation (not NFPA 79)



Select a handle

| Color | Catalog number |       |       |
|-------|----------------|-------|-------|
| Black | HADB4          | HADB4 | HADB4 |

Note: handle is padlockable in the "OFF" position.

## Options for flange & direct operation handle from 100 to 400 A



|                                                                    | Catalog number |          |                         |
|--------------------------------------------------------------------|----------------|----------|-------------------------|
| Terminal lugs kit                                                  |                |          |                         |
| 6 lugs per kit - for 3 pole fuse switches                          | TL100          | TL200    | TL400                   |
| 8 lugs per kit - for 4 pole fuse switches                          | TL1004         | TL2004   | TL4004                  |
| Terminal shrouds kit <sup>(4)</sup>                                |                |          |                         |
| 3-pole (for line or load side)                                     | TS100FB        | TS200FB  | TS400FB <sup>(5)</sup>  |
| 4-pole terminal shrouds kit <sup>(4)</sup> (for line or load side) | TS1004FB       | TS2004FB | TS4004FB <sup>(5)</sup> |
| Shorting links kit (3 links per kit - for 3 pole fuse switches)    | SL100          | SL200    | SL400                   |
| Auxiliary contacts <sup>(3)</sup>                                  |                |          |                         |
| 1 NO+NC side mount contact block, A600 - N600                      | AC5            | AC5      | AC5                     |
| 2 NO+NC side mount contact blocks, A600 - N600                     | AC6            | AC6      | AC6                     |

(1) All external metal parts are sheet steel. - (2) All external metal parts are either stainless steel or a chrome-plated non-ferrous die casting.

(3) Two auxiliary contact blocks maximum can be side mounted. - (4) Line side Shrouding supplied as standard with switch.

(5) As a replacement part (two terminal screens supplied as standard with switch).

Note: for class T fuse adaptors, please consult us.

## Technical characteristics for front & side operation

### UL, cUL and CSA

| Catalog number                                   |          | FBCC30CDT<br>FBCC30SNC DT | FBJ30CDT<br>FBJ30SNC DT | FBCC30U / FBCC304U<br>FBCC30SO / FBCC304SO | FBJ30U / FBJ304U<br>FBJ30SO / FBJ304SO |
|--------------------------------------------------|----------|---------------------------|-------------------------|--------------------------------------------|----------------------------------------|
| <b>Rating</b>                                    | <b>A</b> | <b>30</b>                 | <b>30</b>               | <b>30</b>                                  | <b>30</b>                              |
| Fuse type                                        |          | CC                        | J                       | CC                                         | J                                      |
| Operating voltage                                | V        | 600                       | 600                     | 600                                        | 600                                    |
| Max horsepower rating/                           |          |                           |                         |                                            |                                        |
| Max motor FLA current                            |          |                           |                         |                                            |                                        |
| Three phase                                      |          |                           |                         |                                            |                                        |
| 208 V                                            |          | 5/17.5                    | 5/17.5                  | 5/17.5                                     | 5/17.5                                 |
| 240 V                                            |          | 7.5/22                    | 7.5/22                  | 7.5/22                                     | 7.5/22                                 |
| 480 V                                            |          | 15/21                     | 15/21                   | 15/21                                      | 15/21                                  |
| 600 V                                            |          | 20/22                     | 20/22                   | 20/22                                      | 20/22                                  |
| DC 125 V } 2 pole in series                      |          | 3/25                      | 3/25                    | 3/25                                       | 3/25                                   |
| DC 250 V } except (1)                            |          | 5/20                      | 5/20                    | 5/20                                       | 5/20                                   |
| Short circuit rating with fuses (SCCR)           | kA       | 65                        | 65                      | 100                                        | 100 <sup>(1)</sup>                     |
| Branch circuit fuse type                         |          | CC                        | J                       | CC                                         | J                                      |
| Max fuse rating (A)                              |          | 30                        | 30                      | 30                                         | 30                                     |
| Dimension 3 pole (front operated switches)       |          |                           |                         |                                            |                                        |
| H                                                | in       | 4.56                      | 4.56                    | 5.87                                       | 5.87                                   |
| W                                                | in       | 3.78                      | 4.13                    | 5.63                                       | 6.72                                   |
| D                                                | in       | 3.28                      | 3.89                    | 3.89                                       | 5.62                                   |
| Shaft size square (front operated switches)      |          |                           |                         |                                            |                                        |
|                                                  | in       | 0.2 x 0.2                 | 0.2 x 0.2               | 0.4 x 0.4                                  | 0.4 x 0.4                              |
|                                                  | mm       | 5 x 5                     | 5 x 5                   | 10 x 10                                    | 10 x 10                                |
| 3-pole switch operating torque (front operation) | lb. in.  | 21                        | 21                      | 53                                         | 88                                     |
| Terminal lugs kit (# of lugs per kit)            |          | Integral                  | Integral                | Integral                                   | Integral                               |
| Wire range AWG (# of wire holes per lug)         |          | #10-#14 (1)               | #10-#14 (1)             | #10-#14 (1)                                | #3-#10 (1)                             |
| Wire tightening torque                           | lb. in.  | 27                        | 27                      | 48                                         | 58                                     |

(1) 200 kA available on request.

### IEC 947-3

| Catalog number                     |                 | FBCC30CDT<br>FBCC30SNC DT | FBJ30CDT<br>FBJ30SNC DT | FBCC30U / FBCC304U<br>FBCC30SO / FBCC304SO | FBJ30U / FBJ304U<br>FBJ30SO / FBJ304SO |
|------------------------------------|-----------------|---------------------------|-------------------------|--------------------------------------------|----------------------------------------|
| <b>Rating</b>                      | <b>A</b>        | <b>32 CD</b>              | <b>32 CD</b>            | <b>32</b>                                  | <b>32</b>                              |
| Rated Insulation voltage Ui (V)    | V               | 800                       | 800                     | 750                                        | 750                                    |
| Rated impulse voltage (Uimp)       |                 | 8 kV                      | 8 kV                    | 8 kV                                       | 8 kV                                   |
| Operating current Ie (A)           |                 |                           |                         |                                            |                                        |
| 400 V AC                           | AC 22A          | 32                        | 32                      | 32                                         | 32                                     |
|                                    | AC 23A          | 32                        | 32                      | 32                                         | 32                                     |
| 690 V AC                           | AC 22A          | 32                        | 32                      | 32                                         | 32                                     |
|                                    | AC 23A          | 32                        | 32                      | 32                                         | 32                                     |
| Motor Power (kW)                   |                 |                           |                         |                                            |                                        |
| 400 V AC                           | AC 23A          | 15                        | 15                      | 15                                         | 15                                     |
| 500 V AC                           | AC 23A          | 18.5                      | 18.5                    | 18.5                                       | 18.5                                   |
| 690 V AC                           | AC 23A          | 25                        | 25                      | 25                                         | 25                                     |
| Max. peak let through current (gG) | kA peak         | 5.5                       | 5.5                     | 7.6                                        | 17.6                                   |
| Connection                         |                 |                           |                         |                                            |                                        |
| Minimum Cu cable section           | mm <sup>2</sup> | 6                         | 6                       | 6                                          | 6                                      |
| Minimum CU busbar section          | mm <sup>2</sup> | -                         | -                       | -                                          | -                                      |

## Technical characteristics for front & side operation

### UL, cUL and CSA

| Catalog number                                   | FBJ60U / FBJ604U<br>FBJ60SO / FBJ604SO | FBJ100U / FBJ1004U<br>FBJ100SO / FBJ1004SO | FBJ200U / FBJ2004U<br>FBJ200SO / FBJ2004SO | FBJ400U / FBJ4004U<br>FBJ400SO / FBJ4004SO | FBJ600U / FBJ6004U | FBL800U / FBL8004U |                  |
|--------------------------------------------------|----------------------------------------|--------------------------------------------|--------------------------------------------|--------------------------------------------|--------------------|--------------------|------------------|
| Rating                                           | A                                      | 60                                         | 100                                        | 200                                        | 400                | 600                | 800              |
| Fuse type                                        |                                        | J                                          | J                                          | J                                          | J                  | J                  | L                |
| Operating voltage                                | V                                      | 600                                        | 600                                        | 600                                        | 600                | 600                | 600              |
| Max horsepower rating /                          |                                        |                                            |                                            |                                            |                    |                    |                  |
| Max motor FLA current                            |                                        |                                            |                                            |                                            |                    |                    |                  |
| Three phase                                      |                                        |                                            |                                            |                                            |                    |                    |                  |
| 208 V                                            |                                        | 15 / 48.5                                  | 25 / 78.5                                  | 50 / 150                                   | 100 / 286          | -                  | -                |
| 240 V                                            |                                        | 15 / 42                                    | 30 / 80                                    | 60 / 154                                   | 125 / 312          | 200 / 480          | 200 / 480        |
| 480 V                                            |                                        | 30 / 40                                    | 60 / 77                                    | 125 / 156                                  | 250 / 302          | 400 / 477          | 500 / 590        |
| 600 V                                            |                                        | 50 / 52                                    | 75 / 77                                    | 150 / 144                                  | 350 / 336          | 500 / 472          | 500 / 472        |
| DC 125 V 2 pole in series                        |                                        | 3 / 25                                     | 7.5 / 58                                   | 15 / 112                                   | 20 / 148           | -                  | -                |
| DC 250 V except <sup>(1)</sup>                   |                                        | 10 / 38                                    | 20 / 38                                    | 40 / 140(1)                                | 50/173(1)          | -                  | -                |
| Short circuit rating with fuses (SCCR)           | kA                                     | 200                                        | 200                                        | 200                                        | 200                | 200                | 200              |
| Branch circuit fuse type                         |                                        | J                                          | J                                          | J                                          | J                  | J                  | L                |
| Max fuse rating (A)                              |                                        | 60                                         | 100                                        | 200                                        | 400                | 600                | 800              |
| Dimension 3 pole (front operated switches)       |                                        |                                            |                                            |                                            |                    |                    |                  |
| H                                                | in.                                    | 5.87                                       | 7.19                                       | 8.13                                       | 14.31              | 11.86              | 11.86            |
| W                                                | in.                                    | 6.72                                       | 8.26                                       | 9.44                                       | 11.93              | 14.31              | 14.31            |
| D                                                | in.                                    | 5.62                                       | 5.63                                       | 6                                          | 5.56               | 11.42              | 11.42            |
| Shaft size square (front operated switches)      | in.                                    | 0.4 x 0.4                                  | 0.4 x 0.4                                  | 0.4 x 0.4                                  | 0.4 x 0.4          | 4.7 x 4.7          | 4.7 x 4.7        |
|                                                  | mm                                     | 10 x 10                                    | 10 x 10                                    | 10 x 10                                    | 10 x 10            | 12 x 12            | 12 x 12          |
| 3-pole switch operating torque (front operation) | lb-in.                                 | 88                                         | 88                                         | 106                                        | 132                | 350                | 350              |
| Terminal lugs kit (# lugs per kit)               |                                        | Integral                                   | Optional (6)                               | Optional (6)                               | Optional (6)       | Optional (6)       | Optional (6)     |
| Wire range AWG (# of wire holes per lug)         |                                        | #3-#10 (1)                                 | 2 / 0-#14 (1)                              | 3 / 0-#6 (1)                               | 600 kcmil-#2 (1)   | 600 kcmil-#2 (2)   | 600 kcmil-#2 (2) |
| Wire tightening torque                           | lb-in.                                 | 58                                         | 120                                        | 200                                        | 500                | 500                | 500              |

(1) 3 pole in series.

### IEC 947-3

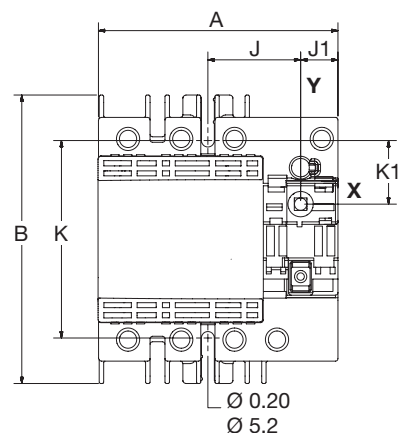
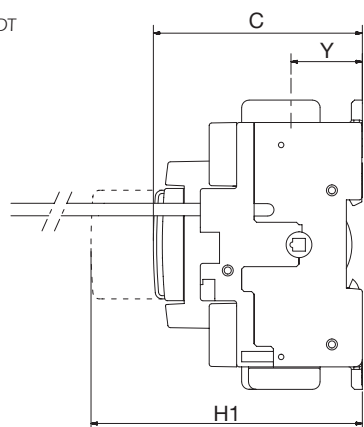
| Catalog number                     |         | FBJ60U / FBJ604U<br>FBJ60SO / FBJ604SO | FBJ100U / FBJ1004U<br>FBJ100SO / FBJ1004SO | FBJ200U / FBJ2004U<br>FBJ200SO / FBJ2004SO | FBJ400U / FBJ4004U<br>FBJ400SO / FBJ4004SO | FBJ600U / FBJ6004U | FBL800U / FBL8004U |
|------------------------------------|---------|----------------------------------------|--------------------------------------------|--------------------------------------------|--------------------------------------------|--------------------|--------------------|
| Rating                             | A       | 60                                     | 100                                        | 200                                        | 400                                        | 600                | 800                |
| Rated Insulation voltage Ui        | V       | 750                                    | 750                                        | 750                                        | 800                                        | 1000               | 1000               |
| Rated impulse voltage (Uimp)       |         | 8 kV                                   | 8 kV                                       | 8 kV                                       | 8 kV                                       | 12 kV              | 12 kV              |
| Operating current Ie (A)           |         |                                        |                                            |                                            |                                            |                    |                    |
| 400 V AC                           | AC 22A  | 63                                     | 100                                        | 200                                        | 400                                        | 630                | 800                |
|                                    | AC 23A  | 63                                     | 100                                        | 200                                        | 400                                        | 630                | 800                |
| 690 V AC                           | AC 22A  | 63                                     | 100                                        | 200                                        | 400                                        | 630                | 800                |
|                                    | AC 23A  | 63                                     | 100                                        | 200                                        | 250                                        | 630                | 630                |
| Motor Power (kW)                   |         |                                        |                                            |                                            |                                            |                    |                    |
| 400 V AC                           | AC 23A  | 30                                     | 51                                         | 100                                        | 220                                        | 355                | 450                |
| 500 V AC                           | AC 23A  | 40                                     | 63                                         | 140                                        | 220                                        | 450                | 560                |
| 690 V AC                           | AC 23A  | 55                                     | 90                                         | 185                                        | 220                                        | 600                | 600                |
| Max. peak let through current (gG) | kA peak | 17.6                                   | 22                                         | 32                                         | 36                                         | 80                 | 90                 |
| Connection                         |         |                                        |                                            |                                            |                                            |                    |                    |
| Minimum Cu cable section           | mm²     | 10                                     | 25                                         | 50                                         | 185                                        | 2 x 150            | -                  |
| Minimum Cu busbar section          | mm²     | -                                      | -                                          | -                                          | -                                          | -                  | 2 x 40 x 5         |

# FUSERBLOC

## Dimensions (in / mm) for front and side operation

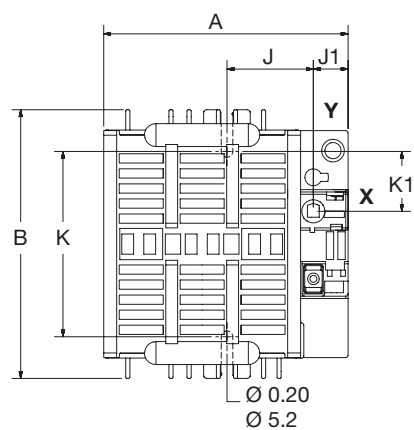
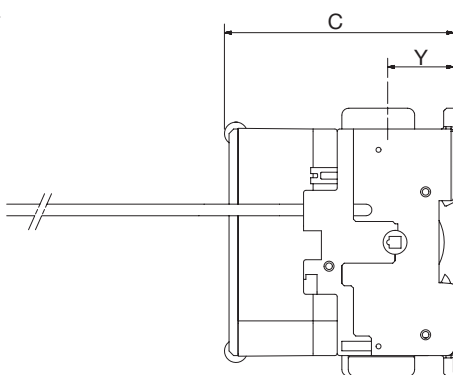
### FUSERBLOC CD 30 A CC

FBCC30CDT  
FBCC30SNCDT



### FUSERBLOC CD 30 A J

FBJ30CDT  
FBJ30SNCDT



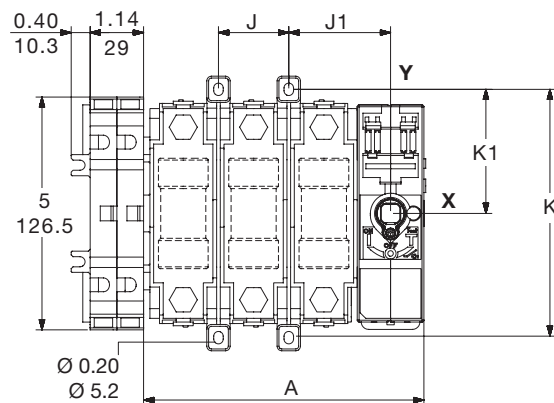
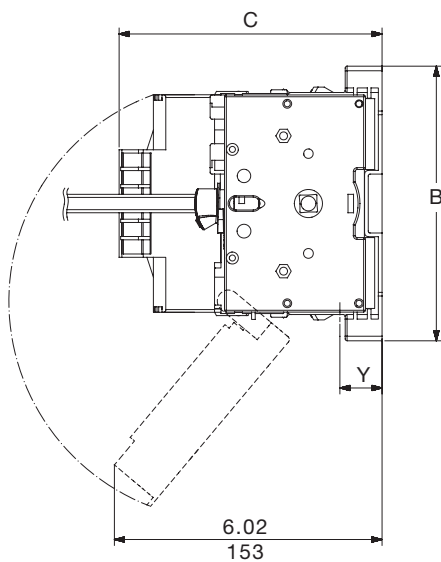
| Rating             | Number of pole | A    |     | B    |     | C    |      | H  |    | H2   |     | H3 |    | J  |    | J1   |      | K    |    | K1   |      | K3 |      | Y    |      |
|--------------------|----------------|------|-----|------|-----|------|------|----|----|------|-----|----|----|----|----|------|------|------|----|------|------|----|------|------|------|
|                    |                | In   | mm  | In   | mm  | In   | mm   | In | mm | In   | mm  | In | mm | In | mm | In   | mm   | In   | mm | In   | mm   | In | mm   | In   | mm   |
| 30 A CC<br>CD type | 3 P            | 3.78 | 96  | 4.56 | 116 | 3.28 | 83.5 | -  | -  | 5.19 | 132 | -  | -  | -  | -  | 1.47 | 37.5 | 0.59 | 15 | 3.13 | 79.5 | 1  | 25.5 | 1.12 | 28.5 |
| 30 A J<br>CD type  | 3 P            | 4.13 | 105 | 4.56 | 116 | 3.89 | 99   | -  | -  | -    | -   | -  | -  | -  | -  | 1.47 | 37.5 | 0.59 | 15 | 3.30 | 84   | 1  | 25.5 | 1.12 | 28.5 |

# FUSERBLOC

## Dimensions (in / mm) for front and side operation

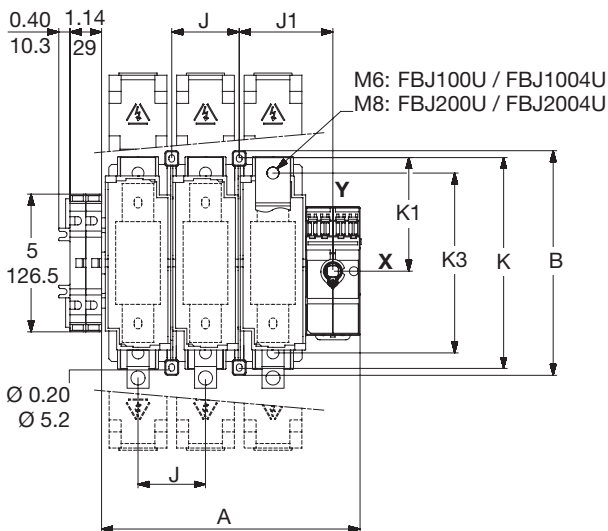
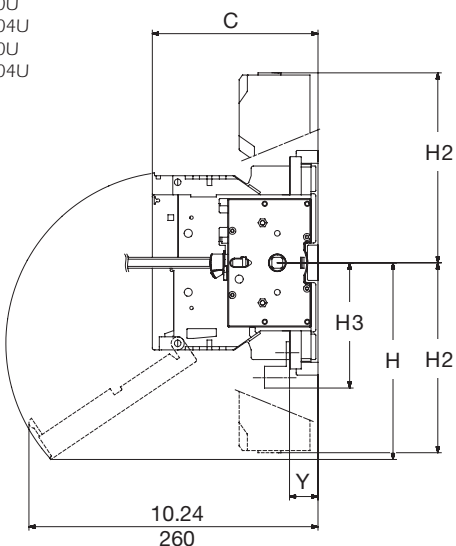
### FUSERBLOC 30 A CC - 30 A J - 60 A J

FBCC30U  
FBCC304U  
FBJ30U  
FBJ304U  
FBJ60U  
FBJ604U



### FUSERBLOC 100 A J - 200 A J

FBJ100U  
FBJ1004U  
FBJ200U  
FBJ2004U



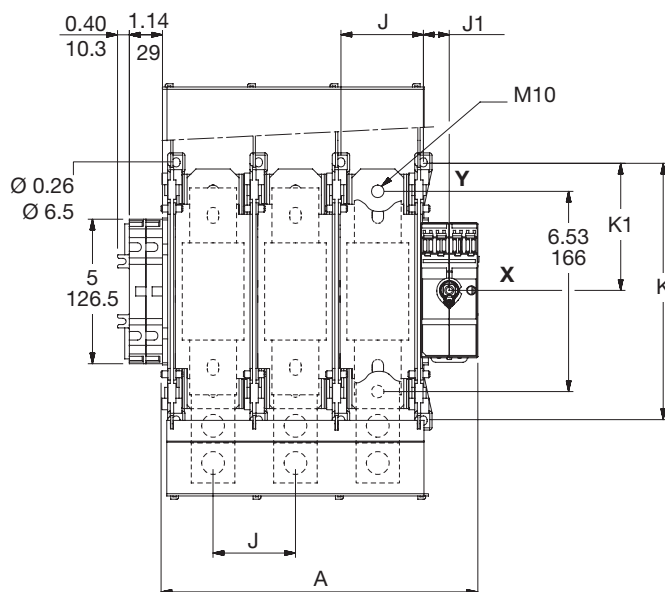
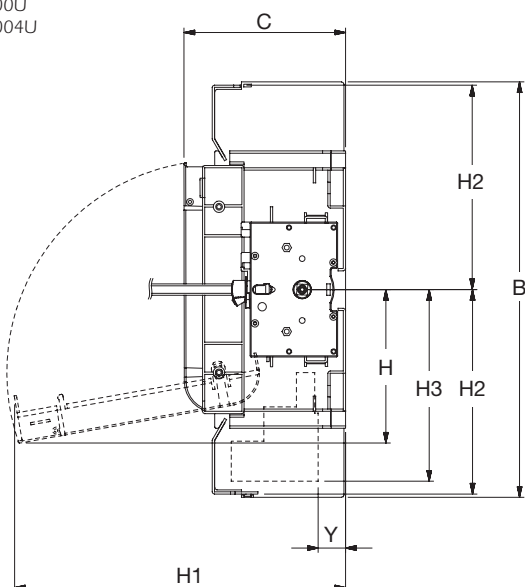
| Rating  | Number of pole | A     |     | B    |       | C    |       | H    |       | H2   |       | H3   |     | J    |    | J1   |    | K    |     | K1   |      | K3   |     | Y    |      |
|---------|----------------|-------|-----|------|-------|------|-------|------|-------|------|-------|------|-----|------|----|------|----|------|-----|------|------|------|-----|------|------|
|         |                | In    | mm  | In   | mm    | In   | mm    | In   | mm    | In   | mm    | In   | mm  | In   | mm | In   | mm | In   | mm  | In   | mm   | In   | mm  | In   | mm   |
| 30 A CC | 3 P            | 4.92  | 125 | 5.87 | 149   | 3.89 | 99    | -    | -     | -    | -     | -    | -   | 1.14 | 29 | 1.77 | 45 | 5.31 | 135 | 2.63 | 66.5 | -    | -   | 1.21 | 31   |
|         | 4 P            | 6.06  | 154 | 5.87 | 149   | 3.89 | 99    | -    | -     | -    | -     | -    | -   | 1.14 | 29 | 1.77 | 45 | 5.31 | 135 | 2.63 | 66.5 | -    | -   | 1.21 | 31   |
| 30 A J  | 3 P            | 5.51  | 140 | 5.87 | 149   | 4.58 | 116.5 | -    | -     | -    | -     | -    | -   | 1.33 | 34 | 1.97 | 50 | 5.31 | 135 | 2.63 | 66.5 | -    | -   | 0.94 | 24   |
|         | 4 P            | 6.85  | 174 | 5.87 | 149   | 4.58 | 116.5 | -    | -     | -    | -     | -    | -   | 1.33 | 34 | 1.97 | 50 | 5.31 | 135 | 2.63 | 66.5 | -    | -   | 0.94 | 24   |
| 60 A J  | 3 P            | 5.98  | 152 | 5.87 | 149   | 5.62 | 143   | -    | -     | -    | -     | -    | -   | 1.5  | 38 | 2.12 | 54 | 5.31 | 135 | 2.63 | 66.5 | -    | -   | 0.95 | 24.5 |
|         | 4 P            | 7.48  | 190 | 5.87 | 149   | 5.62 | 143   | -    | -     | -    | -     | -    | -   | 1.5  | 38 | 2.12 | 54 | 5.31 | 135 | 2.63 | 66.5 | -    | -   | 0.95 | 24.5 |
| 100 A J | 3 P            | 7.63  | 194 | 7.19 | 182.5 | 5.63 | 143   | 4.06 | 103   | 5.27 | 134   | 3.66 | 93  | 2.05 | 52 | 2.95 | 75 | 6.61 | 168 | 3.28 | 83.5 | 5.55 | 141 | 1.02 | 26   |
|         | 4 P            | 9.68  | 246 | 7.19 | 182.5 | 5.63 | 143   | 4.06 | 103   | 5.27 | 134   | 3.66 | 93  | 2.05 | 52 | 2.95 | 75 | 6.61 | 168 | 3.28 | 83.5 | 5.55 | 141 | 1.02 | 26   |
| 200 A J | 3 P            | 9.37  | 238 | 8.13 | 206.5 | 6    | 152   | 7.27 | 184.5 | 6.87 | 174.5 | 4.79 | 122 | 2.44 | 62 | 3.38 | 86 | 7.56 | 192 | 3.75 | 95.5 | 6.53 | 166 | 1.02 | 26   |
|         | 4 P            | 11.81 | 300 | 8.13 | 206.5 | 6    | 152   | 7.27 | 184.5 | 6.87 | 174.5 | 4.79 | 122 | 2.44 | 62 | 3.38 | 86 | 7.56 | 192 | 3.75 | 95.5 | 6.53 | 166 | 1.02 | 26   |

# FUSERBLOC

## Dimensions (in / mm) for front and side operation

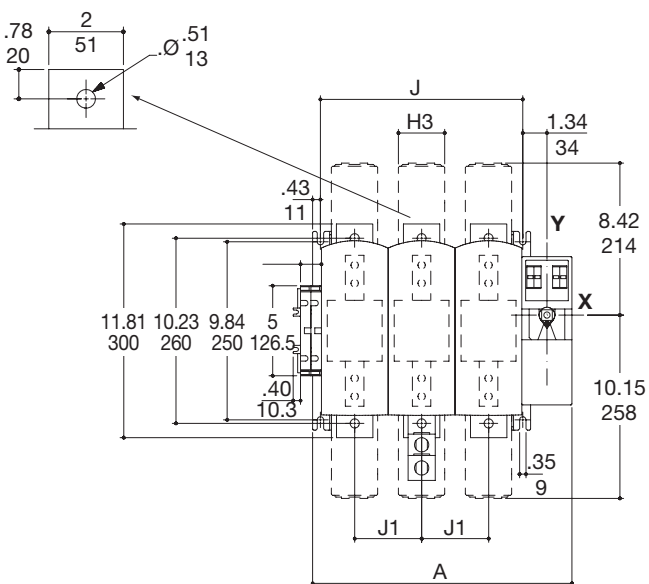
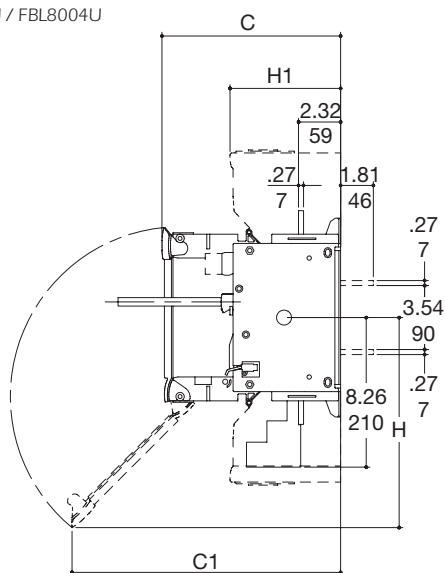
### FUSERBLOC 400 A J

FBJ400U  
FBJ4004U



### FUSERBLOC 600 A J - 800 A L

FBJ600U / FBJ6004U  
FBL800U / FBL8004U



| Rating | Number of pole | A     |     | B     |       | C    |       | C1    |     | H     |       | H1    |     | H2   |     | H3   |       | J     |     | J1   |      | K    |     | K1   |     | Y    |    |
|--------|----------------|-------|-----|-------|-------|------|-------|-------|-----|-------|-------|-------|-----|------|-----|------|-------|-------|-----|------|------|------|-----|------|-----|------|----|
|        |                | In    | mm  | In    | mm    | In   | mm    | In    | mm  | In    | mm    | In    | mm  | In   | mm  | In   | mm    | In    | mm  | In   | mm   | In   | mm  | In   | mm  | In   | mm |
| 400AJ  | 3 P            | 10.8  | 276 | 14.31 | 363.5 | 5.56 | 141.5 | -     | -   | 5.28  | 134.5 | 11.41 | 290 | 7.04 | 179 | 6.59 | 167.5 | 2.84  | 72  | 0.88 | 22.5 | 8.83 | 224 | 4.41 | 112 | 1.06 | 27 |
|        | 4 P            | 13.7  | 348 | 14.31 | 363.5 | 5.56 | 141.5 | -     | -   | 5.28  | 134.5 | 11.41 | 290 | 7.04 | 179 | 6.59 | 167.5 | 2.84  | 72  | 0.88 | 22.5 | 8.83 | 224 | 4.41 | 112 | 1.06 | 27 |
| 600AJ  | 3 P            | 14.33 | 364 | -     | -     | 9.84 | 250   | 14.72 | 374 | 11.69 | 297   | 6.10  | 155 | -    | -   | 2.56 | 65    | 11.18 | 284 | 3.70 | 94   | -    | -   | -    | -   | -    | -  |
| 800AL  | 4 P            | 18.03 | 458 | -     | -     | 9.84 | 250   | 14.72 | 374 | 11.69 | 297   | 6.10  | 155 | -    | -   | 2.56 | 65    | 14.88 | 378 | 3.70 | 94   | -    | -   | -    | -   | -    | -  |

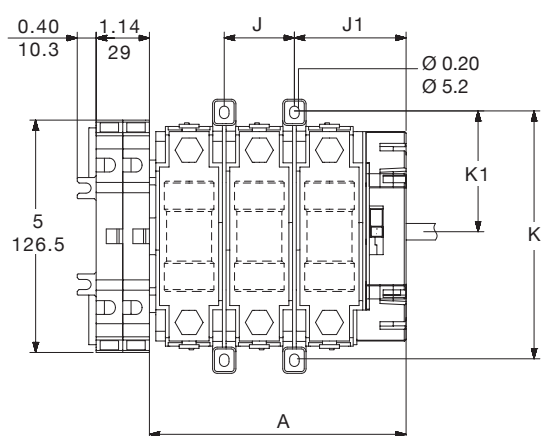
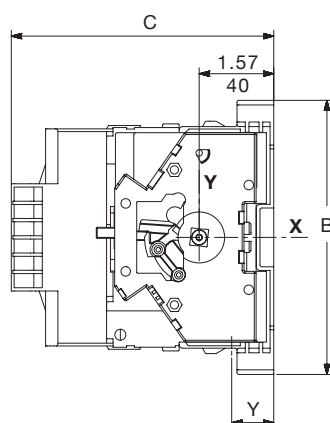


# FUSERBLOC

## Dimensions (in / mm) for side operation

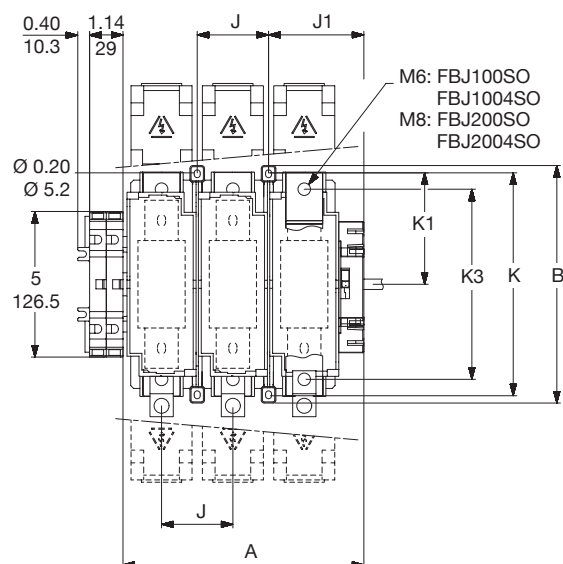
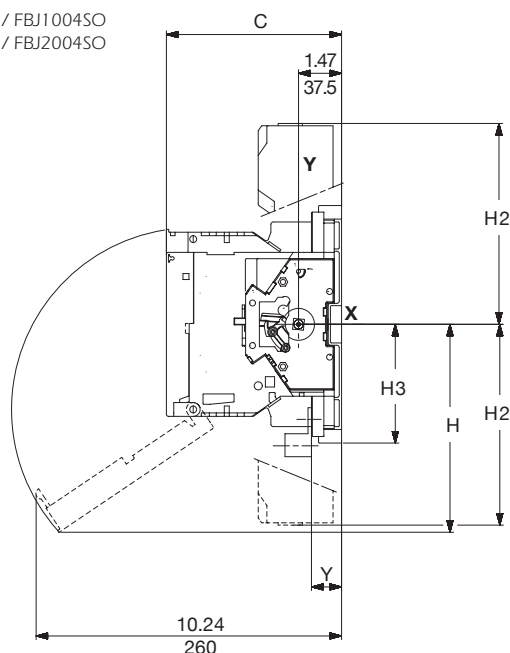
### FUSERBLOC 30 A CC - 30 A J - 60 A J

FBCC30SO / FBCC304SO  
FBJ30SO / FBJ304SO  
FBJ60SO / FBJ604SO



### FUSERBLOC 100 A J - 200 A J

FBJ100SO / FBJ1004SO  
FBJ200SO / FBJ2004SO

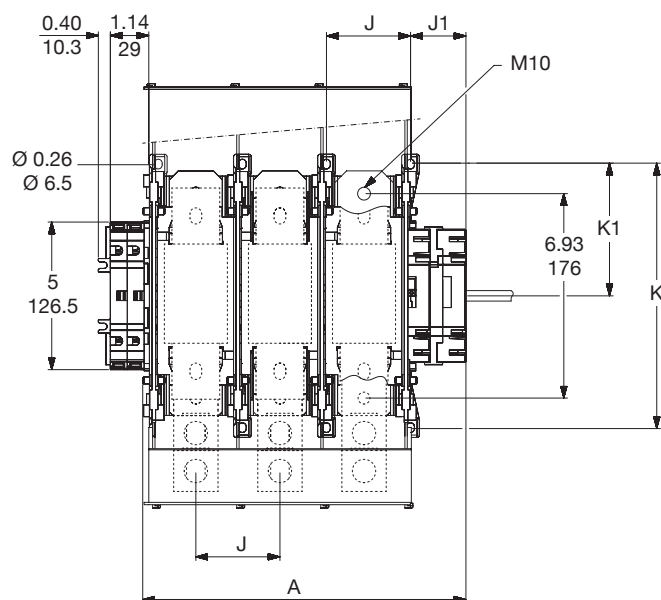
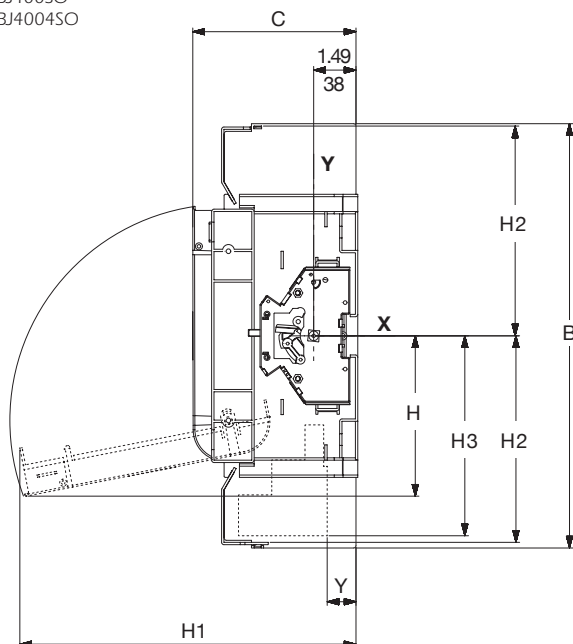


| Rating  | Number of pole | A    |       | B    |       | C    |     | H    |       | H2   |       | H3   |     | J    |    | J1   |       | K    |     | K1   |      | K3   |     | Y    |      |
|---------|----------------|------|-------|------|-------|------|-----|------|-------|------|-------|------|-----|------|----|------|-------|------|-----|------|------|------|-----|------|------|
|         |                | In   | mm    | In   | mm    | In   | mm  | In   | mm    | In   | mm    | In   | mm  | In   | mm | In   | mm    | In   | mm  | In   | mm   | In   | mm  | In   | mm   |
| 30 A CC | 3 P            | 4.37 | 111   | 5.87 | 149   | 3.89 | 99  | -    | -     | -    | -     | -    | -   | 1.14 | 29 | 1.97 | 50    | 5.31 | 135 | 2.63 | 66.5 | -    | -   | 1.21 | 31   |
|         | 4 P            | 5.51 | 140   | 5.87 | 149   | 3.89 | 99  | -    | -     | -    | -     | -    | -   | 1.14 | 29 | 1.97 | 50    | 5.31 | 135 | 2.63 | 66.5 | -    | -   | 1.21 | 31   |
| 30 A J  | 3 P            | 5.45 | 138.5 | 5.87 | 149   | 5.62 | 143 | -    | -     | -    | -     | -    | -   | 1.5  | 38 | 2.32 | 59    | 5.31 | 135 | 2.63 | 66.5 | -    | -   | 0.95 | 24.5 |
|         | 4 P            | 6.95 | 176.5 | 5.87 | 149   | 5.62 | 143 | -    | -     | -    | -     | -    | -   | 1.5  | 38 | 2.32 | 59    | 5.31 | 135 | 2.63 | 66.5 | -    | -   | 0.95 | 24.5 |
| 60 A J  | 3 P            | 5.45 | 138.5 | 5.87 | 149   | 5.62 | 143 | -    | -     | -    | -     | -    | -   | 1.5  | 38 | 2.32 | 59    | 5.31 | 135 | 2.63 | 66.5 | -    | -   | 0.95 | 24.5 |
|         | 4 P            | 6.95 | 176.5 | 5.87 | 149   | 5.62 | 143 | -    | -     | -    | -     | -    | -   | 1.5  | 38 | 2.32 | 59    | 5.31 | 135 | 2.63 | 66.5 | -    | -   | 0.95 | 24.5 |
| 100 A J | 3 P            | 7.09 | 180   | 7.19 | 182.5 | 5.63 | 143 | 4.06 | 103   | 5.27 | 134   | 3.66 | 93  | 2.05 | 52 | 2.86 | 73    | 6.61 | 168 | 3.28 | 83.5 | 5.55 | 141 | 1    | 26   |
|         | 4 P            | 9.13 | 232   | 7.19 | 182.5 | 5.63 | 143 | 4.06 | 103   | 5.27 | 134   | 3.66 | 93  | 2.05 | 52 | 2.86 | 73    | 6.61 | 168 | 3.28 | 83.5 | 5.55 | 141 | 1    | 26   |
| 200 A J | 3 P            | 9.47 | 240.5 | 8.13 | 206.5 | 6    | 152 | 7.27 | 184.5 | 6.87 | 174.5 | 4.79 | 122 | 2.44 | 62 | 4.47 | 113.5 | 7.56 | 192 | 3.75 | 95.5 | 6.53 | 166 | 1.03 | 26   |
|         | 4 P            | 11.9 | 302.5 | 8.13 | 206.5 | 6    | 152 | 7.27 | 184.5 | 6.87 | 174.5 | 4.79 | 122 | 2.44 | 62 | 4.47 | 113.5 | 7.56 | 192 | 3.75 | 95.5 | 6.53 | 166 | 1.03 | 26   |

## Dimensions (in / mm) for side operation

### FUSERBLOC 400 A J

FBJ400SO  
FBJ4004SO

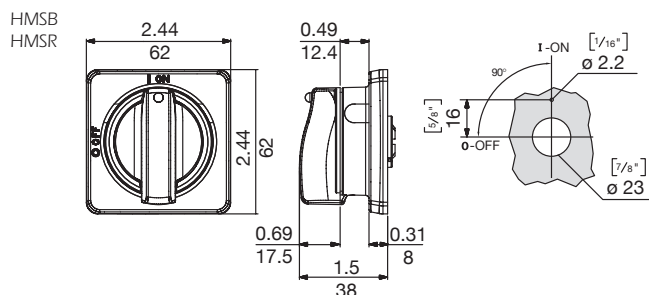


| Rating | Number of pole | A     |     | B     |       | C    |       | H    |       | H1    |     | H2   |     | H3   |       | J    |    | J1   |    | K    |     | K1   |     | Y    |    |
|--------|----------------|-------|-----|-------|-------|------|-------|------|-------|-------|-----|------|-----|------|-------|------|----|------|----|------|-----|------|-----|------|----|
|        |                | In    | mm  | In    | mm    | In   | mm    | In   | mm    | In    | mm  | In   | mm  | In   | mm    | In   | mm | In   | mm | In   | mm  | In   | mm  | In   | mm |
| 400AJ  | 3 P            | 10.9  | 277 | 14.31 | 363.5 | 5.57 | 141.5 | 5.29 | 134.5 | 11.42 | 290 | 7.04 | 179 | 6.59 | 167.5 | 2.84 | 72 | 1.89 | 48 | 8.82 | 224 | 4.41 | 112 | 1.06 | 27 |
|        | 4 P            | 13.74 | 349 | 14.31 | 363.5 | 5.57 | 141.5 | 5.29 | 134.5 | 11.42 | 290 | 7.04 | 179 | 6.59 | 167.5 | 2.84 | 72 | 1.89 | 48 | 8.82 | 224 | 4.41 | 112 | 1.06 | 27 |

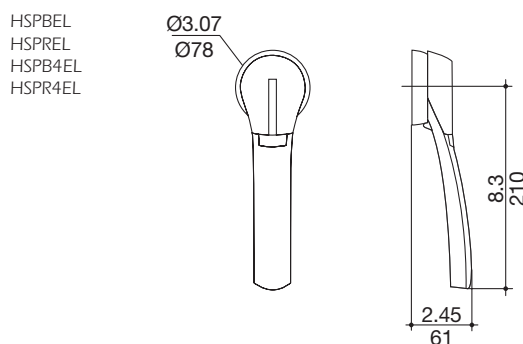
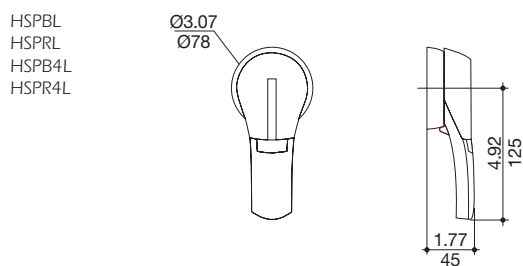
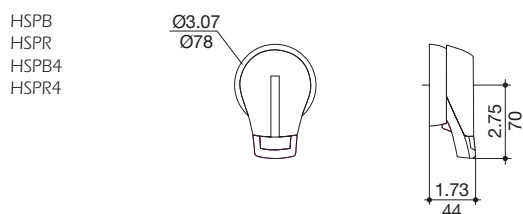
# FUSERBLOC

## Dimensions (in / mm) for external front operation handles

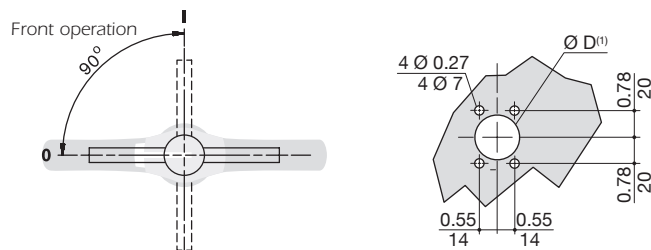
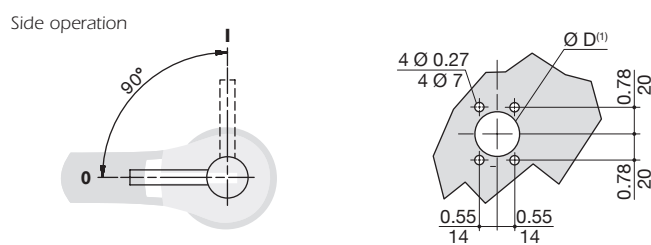
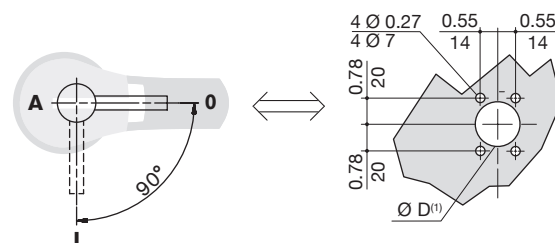
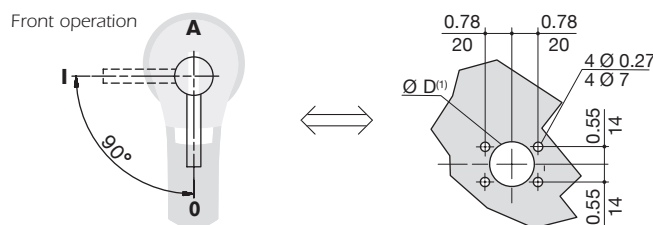
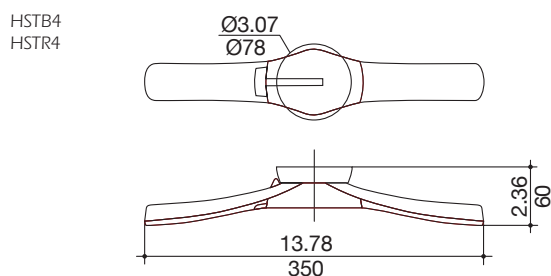
### M type selector handle



### S type pistol handle



### S type pistol double handle



(1) Conventional fixing (from rear): D = 1.22 to 1.45 in / 31 to 37 mm.  
 Fast fixing (external, door closed): D = 1.45 in / 37 mm, fast fixing is achieved with special clips that avoid drilling for fixation of the handle on the door. Clips are included.

# FUSERBLOC

## Dimensions (in / mm) from backplate to door distance with shaft extension

### Minimum distance (in / mm)

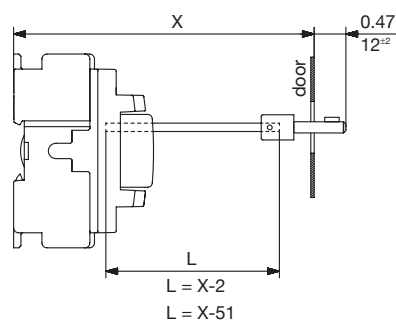


| h minimum dimension         | Handle type M |     | Handle type S |     |
|-----------------------------|---------------|-----|---------------|-----|
|                             | In            | mm  | In            | mm  |
| FUSERBLOC CD 30 A CC        | 4.73          | 120 | 5.31          | 135 |
| FUSERBLOC CD 30 A J         | 5.32          | 135 | 5.98          | 152 |
| FUSERBLOC 30 A CC           | -             | -   | 5.98          | 152 |
| FUSERBLOC 30 A J - 60 A J   | -             | -   | 7.04          | 179 |
| FUSERBLOC 100 A J           | -             | -   | 7.04          | 179 |
| FUSERBLOC 200 A J           | -             | -   | 7.40          | 188 |
| FUSERBLOC 400 A J           | -             | -   | 6.96          | 177 |
| FUSERBLOC 600 A J - 800 A L | -             | -   | 10.11         | 255 |

### Shaft trimming length (= dimension L)

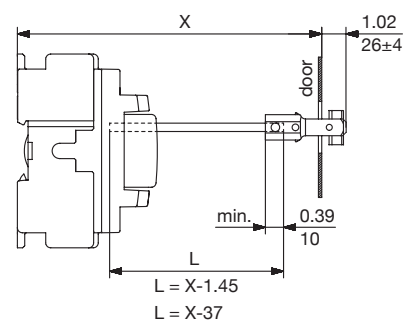
M type selector handle

FBCC30CDT  
FBCC30SNCDT  
FBJ30CDT  
FBJ30SNCDT



S type pistol handle

FBCC30CDT  
FBCC30SNCDT  
FBJ30CDT  
FBJ30SNCDT



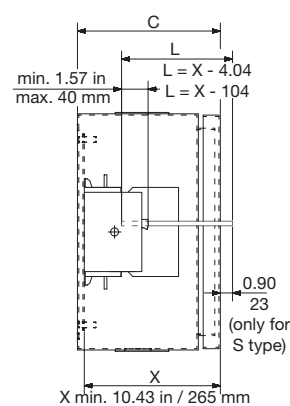
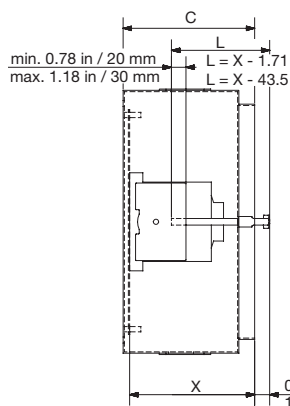
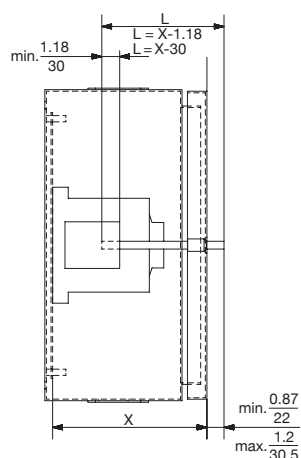
### S type pistol handle

FBCC30U  
FBCC304U  
FBJ30U  
FBJ304U  
FBJ60U

FBJ604U  
FBJ100U  
FBJ1004U  
FBJ200U  
FBJ2004U

FBJ400U  
FBJ4004U

FBJ600U  
FBJ6004U  
FBL800U  
FBL8004U

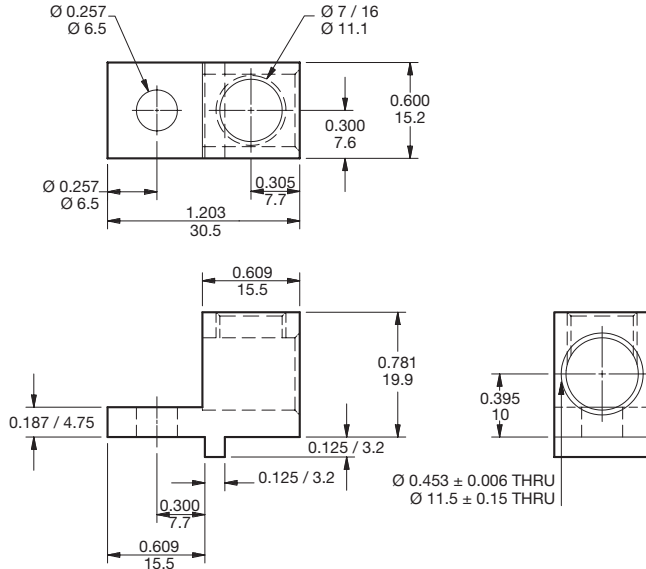




## Dimensions (in / mm) for terminal lugs

### TL100

For use with FBJ 100

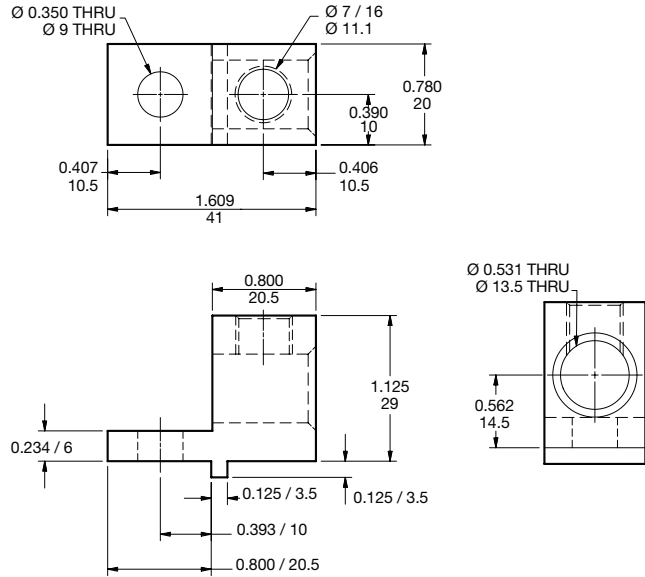


1 wire 2/0 - #14

Note: for FBJ100, please use HM bolts 6 x 20 mm class 6.8.

### TL200

For use with FBJ 200

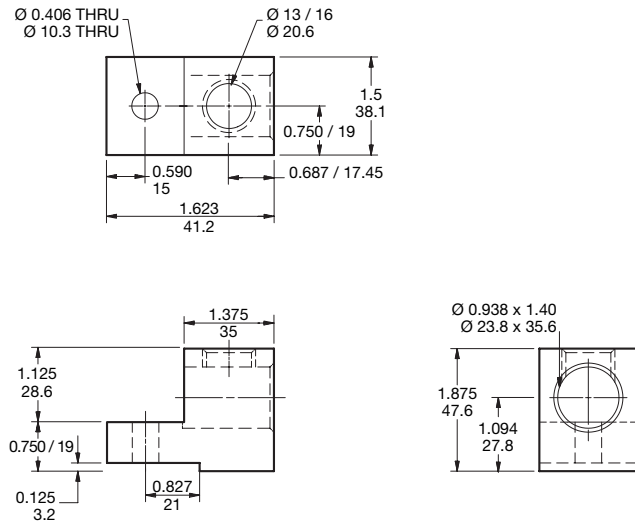


1 wire 3/0 - #6

Note: for FBJ200, please use HM bolts 8 x 20 mm class 6.8.

### TL400

For use with FBJ 400

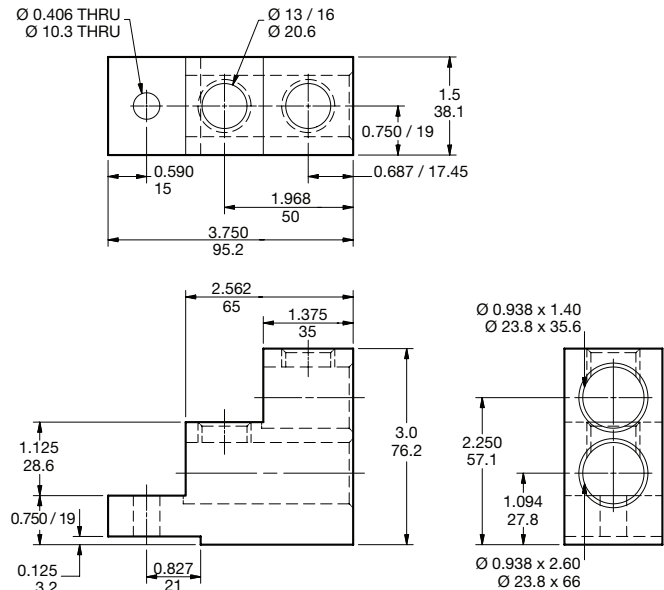


1 wire 600 MCM-2

Note: for FBJ400, please use HM bolts 10 x 30 mm class 6.8.

### TL600

For use with FBJ 600U and FBJ 800U



2 wire 600 MCM-2

# METERING SWITCH

## Product presentation



Metering switch has been designed to disconnect the control circuit of switchboards. As those products are near the main busbars, 100 kA as a short circuit closing capacity is typical.

Ferraz Shawmut's metering switch is a UL98 two or three pole fusible disconnect switch with double break per pole and with touch safe covers and terminals.

With its compact foot print, this switch is ideal for disconnecting safely any control circuits up to 100 kA of SCCR.

Combined with Ferraz Shawmut Class CC fuses, your installation and operators are now under protection.

### Highlights

- Double break contacts
- Touch safe fuse covers/line shrouding standard
- Service entrance rated
- Make on short circuit current ability
- Direct side padlockable handle
- Compact footprint

### Applications

- Protection of any control circuit protection, on service entrance, on main panel, or on sub panels up to 600 VAC, 30 A

### Ratings

- 600 VAC, 30 A
- 2 or 3 pole
- Up to 100kA short circuit current rating (SCCR) with class CC fuses

### Approvals

- Meets UL98 requirements
- UL Listed Guide WHTY, File E191605
- CSA C22.2 # 4 Class 4652 04, File 703166
- IEC 947-3 CE mark



## Range

| Catalog number | Description                                                                      |
|----------------|----------------------------------------------------------------------------------|
| FBCC302PDH     | 2 pole, metering switch, 30A class CC defeatable and padlockable handle included |
| FBCC30DH       | 3 pole, metering switch, 30A class CC defeatable and padlockable handle included |
| AC5            | 1 NO + NC side mount contact block, A600-N600 <sup>(1)</sup>                     |
| AC6            | 2 NO + NC side mount contact block, A600-N600 <sup>(1)</sup>                     |

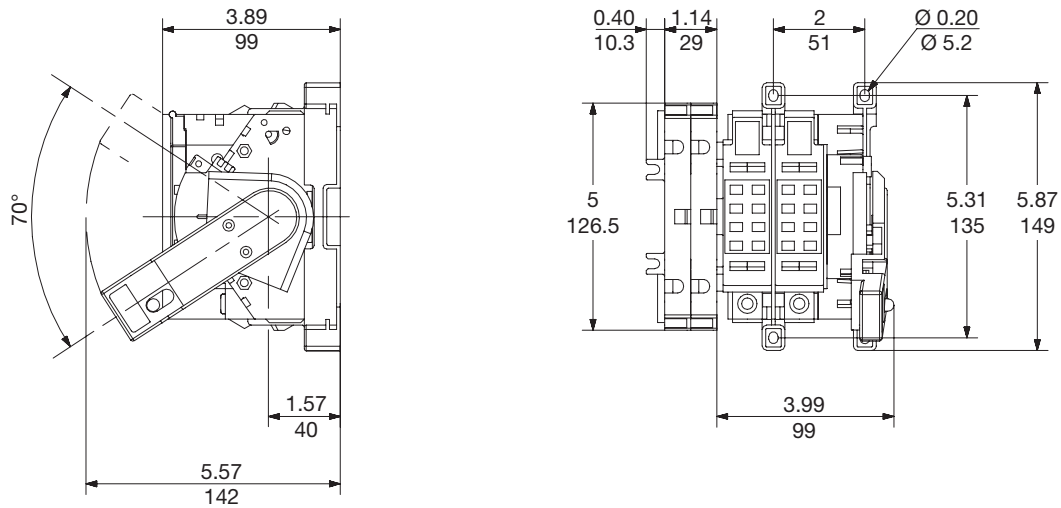
(1) Two auxiliary contact blocks maximum can be side mounted.

# METERING SWITCH

## Dimensions (in / mm) for direct side operation

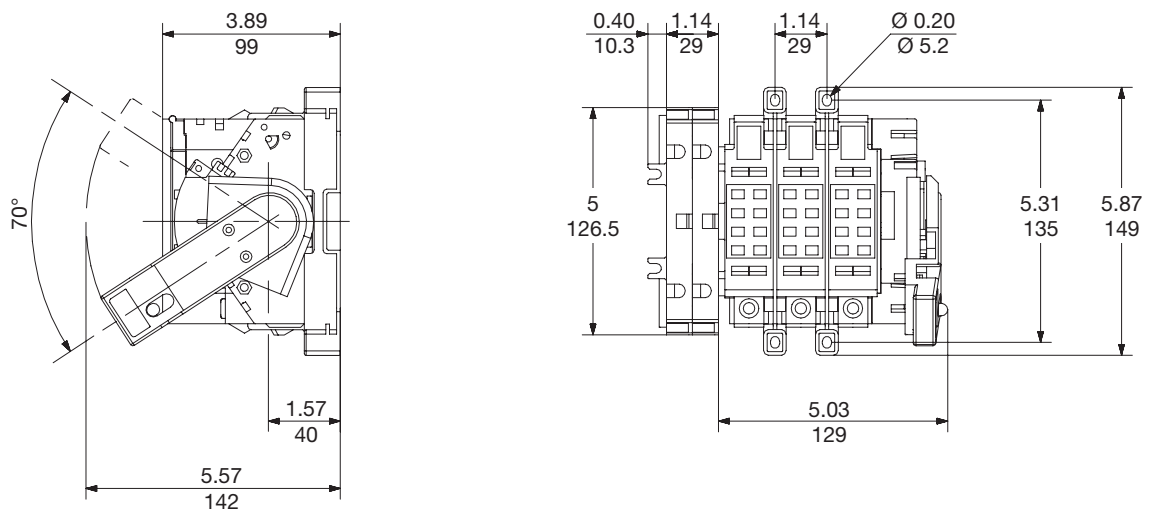
### 2 pole 30 A CC

FBCC302PDH



### 3 pole 30 A CC

FBCC30DH





# SURGE SWITCH

## Product presentation



The Ferraz Shawmut Surge Switch is an extremely compact, high performance, manually operated, non-fused switch. It is specifically designed to withstand the high surge current of 200 kA with an 8 x 20  $\mu$ s waveform seen in today's transient voltage Surge Protection Device (SPD) applications. Ferraz Shawmut's Surge Switch utilizes a unique contact design that actually clamp contacts tighter during a surge.

### Highlights

- Only Surge Rated Switch available today
- Compact footprint
- Extremely reliable
- Defeatable pistol handles automatically re-latch when panel door is closed-no tool necessary to reset latch
- Direct mount handle option

### Applications

- TVSS panels up to 600 V AC, 200 kA 8 x 20  $\mu$ s waveform

### Ratings

- 600 V AC
- 200 kA 8 x 20  $\mu$ s wave form

### Approvals

- UL 508 certified
- CSA Certification Pending
- UL Listed Guide NRNT, File E224922



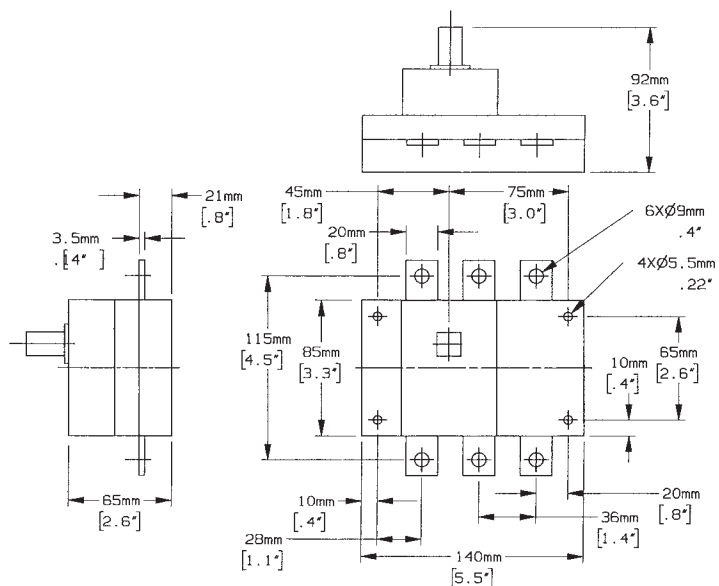
## Range

| Catalog number | Description                                                                                                                      |
|----------------|----------------------------------------------------------------------------------------------------------------------------------|
| SS200          | 3-pole, surge switch, 200 kA 8 x 20 $\mu$ s                                                                                      |
| SS200-4        | 4-pole, surge switch, 200 kA 8 x 20 $\mu$ s                                                                                      |
| HADSS200       | Black direct front B type pistol handle                                                                                          |
| HSPB           | Black external front S type pistol handle and padlockable in the "OFF" position<br>NEMA 1, 3R, 12 (IEC IP 54), defeatable        |
| HSPR           | Red external front S type pistol handle and padlockable in the "OFF" position<br>NEMA 1, 3R, 12 (IEC IP 54), defeatable          |
| HSPB4          | Black external front S type pistol handle and padlockable in the "OFF" position<br>NEMA 1, 3R, 12, 4, 4X (IEC IP 65), defeatable |
| HSPR4          | Red external front S type pistol handle and padlockable in the "OFF" position<br>NEMA 1, 3R, 12, 4, 4X (IEC IP 65), defeatable   |
| SS200-10       | Shaft, 7.9 in (200 mm)                                                                                                           |
| SS320-10       | Shaft, 12.6 in (320 mm)                                                                                                          |
| SS400-10       | Shaft, 15.7 in (400 mm)                                                                                                          |
| TS200SS        | Terminal Shroud, 3 - Pole                                                                                                        |
| TS2004SS       | Terminal Shroud, 4 - Pole                                                                                                        |

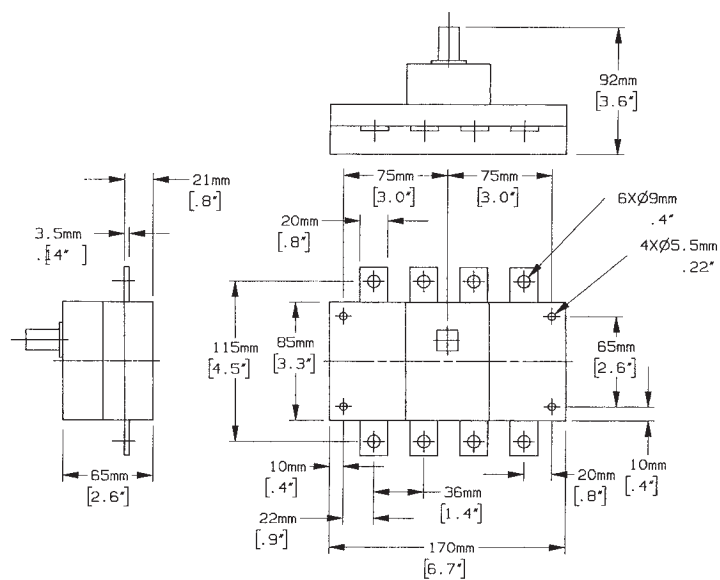
# SURGE SWITCH

## Dimensions (in / mm)

### SS200



### SS200-4

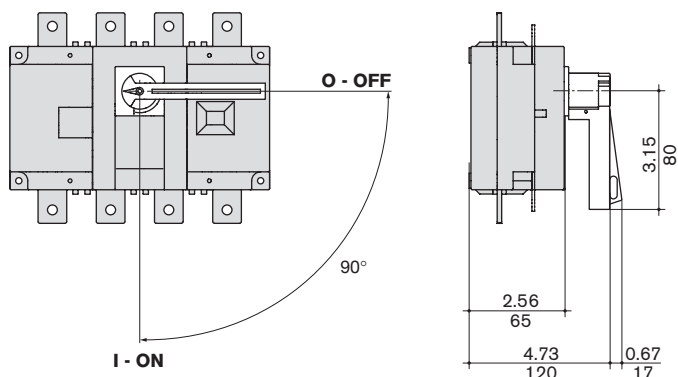


# SURGE SWITCH

## Dimensions (in / mm)

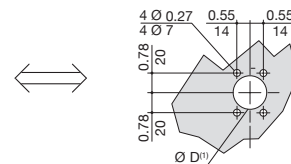
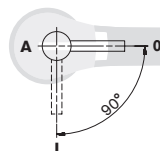
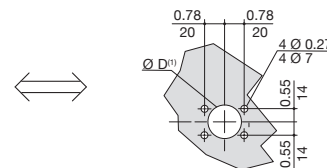
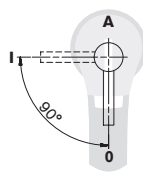
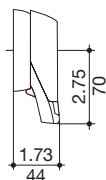
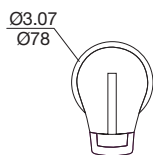
### B type pistol handle for direct front operation

HADSS200



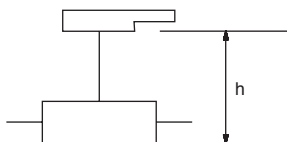
### S type pistol handle for external front operation

HSPB  
HSPR  
HSPB4  
HSPR4



### Backplate to door distance with shaft extension - S type pistol handle

SS200/SS200-4



| Shaft length |     | h minimum dimension |     | h maximum dimension |     |
|--------------|-----|---------------------|-----|---------------------|-----|
| In           | mm  | In                  | mm  | In                  | mm  |
| 7.9          | 200 | 4.88                | 124 | 9.29                | 236 |
| 12.6         | 320 | 4.88                | 124 | 14.01               | 356 |
| 15.7         | 400 | 4.88                | 124 | 17.16               | 436 |



## EDS from 16 to 1200 A

### Product presentation



EGFBJ1003BPO



EDLBS803RSO



EBFBCC303RSO

Ferraz Shawmut Enclosed Disconnect Switches are designed to meet customer's requirements for compact and durable individual disconnecting means. Both fusible and non-fusible versions are available in a variety of enclosure types resulting in one of the largest available ranges in the industry. The enclosed disconnect switch range offers safety, ease of installation, space savings and operational convenience to end-users.

Ferraz Shawmut features NEMA style, Type 4X non-metallic and stainless steel enclosures that are extremely durable and provide the ultimate protection for harsh environments and conditions. These rugged enclosure types are often used in areas where "wash down" applications are required.

Ferraz Shawmut's enclosed switches include the high quality Socomec disconnect switch line. Socomec switches are world renowned for their superior operational performance, durability and reliability. The enclosed fused switch line offers

line and load side breaking to ensure safe fuse replacements by completely isolating the fuse from applied voltage. The use of enclosed fused disconnects can assist in the effort to mitigate arc flash hazards and have SCCR's up to 200 kA.

Enclosed non-fused disconnect switches are often employed as motor disconnect switches to comply with NEC Article 430 for "line of sight" applications. This is where it is required to provide a disconnect switch within 15' of the sight of a motor in order to provide a safe means of disconnection and lockout capability to ensure the safety of personnel required to perform service work on motors.

Enclosed disconnects, most often fusible, are also used as a disconnection means provided for panels with no main incoming disconnection provision. These enclosed fused switches can be a method employed to help mitigate the risk of arc flash hazards. This requires the use of a UL98 Service Entrance Rated disconnect switch.

#### Highlights

- Suitable for use as Motor Disconnect
- Meets OSHA lockout / tagout requirements
- NEMA, Type rated enclosures
- Knockouts provided on non-metallic enclosures (16 - 80 A non-fused)
- Easy screw mounting
- Selector or pistol handles in red/yellow or black that are UV approved for outdoor applications
- Clear ON/OFF indication
- Load break switching
- Separate disconnect means within sight of all motor loads to comply with NEC® Article 430.
- Circuit isolation
- Service entrance ratings available

#### Applications

- Load break switching
- Separate disconnect means within sight of all motor loads to comply with NEC® Article 430
- Circuit isolation
- Service entrance ratings available
- Typical markets served: food processing, conveyor systems, harsh industrial environments, industrial facilities, baggage handling, chemical plants

#### Ratings

- Fusible: 600 VAC: 30 to 800 A
- Non-Fusible: 600 VAC: 16 to 1200 A

#### Approvals

- UL 508A
- UL508
- UL98, UL489
- CSA
- IEC versions available



## UL 508, 3 pole, 600 V, non fused from 16 to 40 A

### Selector handle



| Ampere rating                        | 16          | 20          | 25          | 30          | 40          |
|--------------------------------------|-------------|-------------|-------------|-------------|-------------|
| NEMA enclosure type: 1               | EALBS163RS0 | EALBS203RS0 | EALBS253RS0 | EALBS303RS0 | EALBS403RS0 |
| NEMA enclosure type: 3R              | EFLBS163RS0 | EFLBS203RS0 | EFLBS253RS0 | EFLBS303RS0 | EFLBS403RS0 |
| NEMA enclosure type: 12              | ECLBS163RS0 | ECLBS203RS0 | ECLBS253RS0 | ECLBS303RS0 | ECLBS403RS0 |
| NEMA enclosure type: 4               | EHLBS163RS0 | EHLBS203RS0 | EHLBS253RS0 | EHLBS303RS0 | EHLBS403RS0 |
| NEMA enclosure type: 4X Stainless    | EBLBS163RS0 | EBLBS203RS0 | EBLBS253RS0 | EBLBS303RS0 | EBLBS403RS0 |
| NEMA enclosure type: 4X Non-Metallic | EDLBS163RS0 | EDLBS203RS0 | EDLBS253RS0 | EDLBS303RS0 | EDLBS403RS0 |

### Pistol handle



| Ampere rating                        | 16          | 20          | 25          | 30          | 40          |
|--------------------------------------|-------------|-------------|-------------|-------------|-------------|
| NEMA enclosure type: 1               | EALBS163RP0 | EALBS203RP0 | EALBS253RP0 | EALBS303RP0 | EALBS403RP0 |
| NEMA enclosure type: 3R              | EFLBS163RP0 | EFLBS203RP0 | EFLBS253RP0 | EFLBS303RP0 | EFLBS403RP0 |
| NEMA enclosure type: 12              | ECLBS163RP0 | ECLBS203RP0 | ECLBS253RP0 | ECLBS303RP0 | ECLBS403RP0 |
| NEMA enclosure type: 4               | EHLBS163RP0 | EHLBS203RP0 | EHLBS253RP0 | EHLBS303RP0 | EHLBS403RP0 |
| NEMA enclosure type: 4X Stainless    | EBLBS163RP0 | EBLBS203RP0 | EBLBS253RP0 | EBLBS303RP0 | EBLBS403RP0 |
| NEMA enclosure type: 4X Non-Metallic | EDLBS163RP0 | EDLBS203RP0 | EDLBS253RP0 | EDLBS303RP0 | EDLBS403RP0 |

## UL 98, 3 pole, 600 V, non fused from 30 to 400 A

### Pistol handle



| Ampere rating                        | 30         | 60         | 100         | 200         | 400         |
|--------------------------------------|------------|------------|-------------|-------------|-------------|
| NEMA enclosure type: 1               | EASC303RP0 | EASC603RP0 | EASC1003RP0 | EASC2003RP0 | EASC4003RP0 |
| NEMA enclosure type: 3R              | EFSC303RP0 | EFSC603RP0 | EFSC1003RP0 | EFSC2003RP0 | EFSC4003RP0 |
| NEMA enclosure type: 12              | ECSC303RP0 | ECSC603RP0 | ECSC1003RP0 | ECSC2003RP0 | ECSC4003RP0 |
| NEMA enclosure type: 4               | EHSC303RP0 | EHSC603RP0 | EHSC1003RP0 | EHSC2003RP0 | EHSC4003RP0 |
| NEMA enclosure type: 4X Stainless    | EBSC303RP0 | EBSC603RP0 | EBSC1003RP0 | EBSC2003RP0 | EBSC4003RP0 |
| NEMA enclosure type: 4X Non-Metallic | EGSC303RP0 | EGSC603RP0 | EGSC1003RP0 | EGSC2003RP0 | EGSC4003RP0 |

## UL 98, 3 pole, 600 V, fused from 30 to 60 A

### Pistol handle



| Ampere rating                        | 30 compact   | 30 compact   | 30          | 30          | 60          |
|--------------------------------------|--------------|--------------|-------------|-------------|-------------|
| Fuse type                            | CC           | J            | CC          | J           | J           |
| NEMA enclosure type: 1               | EAFBCC303RP0 | EAFBJC303RP0 | EAFBC303RP0 | EAFBJ303RP0 | EAFBJ603RP0 |
| NEMA enclosure type: 3R              | EFBCC303RP0  | EFBJC303RP0  | EFBC303RP0  | EFBJ303RP0  | EFBJ603RP0  |
| NEMA enclosure type: 12              | ECFBC303RP0  | ECFBJC303RP0 | ECFBC303RP0 | ECFBJ303RP0 | ECFBJ603RP0 |
| NEMA enclosure type: 4               | EHFBC303RP0  | EHFBJC303RP0 | EHFBC303RP0 | EHFBJ303RP0 | EHFBJ603RP0 |
| NEMA enclosure type: 4X Stainless    | EBFBC303RP0  | EBFBJC303RP0 | EBFBC303RP0 | EBFBJ303RP0 | EBFBJ603RP0 |
| NEMA enclosure type: 4X Non-Metallic | EGFBC303RP0  | EGFBJC303RP0 | EGFBC303RP0 | EGFBJ303RP0 | EGFBJ603RP0 |

#### Notes:

- Each of the above enclosed switches are provided with a red/yellow handle. Simply replace the "RS" or "RP" with a "BS" or "BP" to receive a black selector or black pistol handle at no additional cost. For UL508 enclosed switches only.
- "0" suffix is standard in part number and means enclosed switch shipped with no auxiliary contacts. Replacing the "0" with a "1", "2" or "3" provides the following type of auxiliary contact. "1" is one NO auxiliary contact, "2" is one NC auxiliary contact, and "3" is 1NO+1NC auxiliary contact. Please consult factory if other auxiliary contact configuration are desired.
- The non-metallic enclosures are comprised of "ED" polycarbonate boxes and "EG" polyester fiberglass boxes.
- These are standard enclosures, for any other versions (4 pole, multipolar, accessories...) please consult us.
- 30 A switch ratings are UL 489 and CSA 22.2 #5.

## UL 508, 3 pole, 600 V, non fused from 60 to 125 A

### Selector handle



| Ampere rating                        | 60          | 80          | 100          | 125          |
|--------------------------------------|-------------|-------------|--------------|--------------|
| NEMA enclosure type: 1               | EALBS603RS0 | EALBS803RS0 | EALBS1003RS0 | EALBS1253RS0 |
| NEMA enclosure type: 3R              | EFLBS603RS0 | EFLBS803RS0 | EFLBS1003RS0 | EFLBS1253RS0 |
| NEMA enclosure type: 12              | ECLBS603RS0 | ECLBS803RS0 | ECLBS1003RS0 | ECLBS1253RS0 |
| NEMA enclosure type: 4               | EHLBS603RS0 | EHLBS803RS0 | EHLBS1003RS0 | EHLBS1253RS0 |
| NEMA enclosure type: 4X Stainless    | EBLBS603RS0 | EBLBS803RS0 | EBLBS1003RS0 | EBLBS1253RS0 |
| NEMA enclosure type: 4X Non-Metallic | EDLBS603RS0 | EGLBS803RS0 | EGLBS1003RS0 | EGLBS1253RS0 |

### Pistol handle



| Ampere rating                        | 60          | 80          | 100          | 125          |
|--------------------------------------|-------------|-------------|--------------|--------------|
| NEMA enclosure type: 1               | EALBS603RP0 | EALBS803RP0 | EALBS1003RP0 | EALBS1253RP0 |
| NEMA enclosure type: 3R              | EFLBS603RP0 | EFLBS803RP0 | EFLBS1003RP0 | EFLBS1253RP0 |
| NEMA enclosure type: 12              | ECLBS603RP0 | ECLBS803RP0 | ECLBS1003RP0 | ECLBS1253RP0 |
| NEMA enclosure type: 4               | EHLBS603RP0 | EHLBS803RP0 | EHLBS1003RP0 | EHLBS1253RP0 |
| NEMA enclosure type: 4X Stainless    | EBLBS603RP0 | EBLBS803RP0 | EBLBS1003RP0 | EBLBS1253RP0 |
| NEMA enclosure type: 4X Non-Metallic | EDLBS603RP0 | EGLBS803RP0 | EGLBS1003RP0 | EGLBS1253RP0 |

## UL 98, 3 pole, 600 V, non fused from 600 to 1200 A

### Pistol handle



| Ampere rating                        | 600         | 800         | 1000         | 1200         |
|--------------------------------------|-------------|-------------|--------------|--------------|
| NEMA enclosure type: 1               | EASC6003RP0 | EASC8003RP0 | EASC10003RP0 | EASC12003RP0 |
| NEMA enclosure type: 3R              | EFSC6003RP0 | EFSC8003RP0 | EFSC10003RP0 | EFSC12003RP0 |
| NEMA enclosure type: 12              | ECSC6003RP0 | ECSC8003RP0 | ECSC10003RP0 | ECSC12003RP0 |
| NEMA enclosure type: 4               | EHSC6003RP0 | EHSC8003RP0 | EHSC10003RP0 | EHSC12003RP0 |
| NEMA enclosure type: 4X Stainless    | EBSC6003RP0 | EBSC8003RP0 | EBSC10003RP0 | EBSC12003RP0 |
| NEMA enclosure type: 4X Non-Metallic | EGSC6003RP0 | EGSC8003RP0 | EGSC10003RP0 | EGSC12003RP0 |

## UL 98, 3 pole, 600 V, fused from 100 to 800 A

### Pistol handle



| Ampere rating                        | 100          | 200          | 400          | 600          | 800          |
|--------------------------------------|--------------|--------------|--------------|--------------|--------------|
| Fuse type                            | J            | J            | J            | J            | L            |
| NEMA enclosure type: 1               | EAFBJ1003RP0 | EAFBJ2003RP0 | EAFBJ4003RP0 | EAFBJ6003RP0 | EAFBL8003RP0 |
| NEMA enclosure type: 3R              | EFFBJ1003RP0 | EFFBJ2003RP0 | EFFBJ4003RP0 | EFFBJ6003RP0 | EFFBL8003RP0 |
| NEMA enclosure type: 12              | ECFBJ1003RP0 | ECFBJ2003RP0 | ECFBJ4003RP0 | ECFBJ6003RP0 | ECFBL8003RP0 |
| NEMA enclosure type: 4               | EHFBJ1003RP0 | EHFBJ2003RP0 | EHFBJ4003RP0 | EHFBJ6003RP0 | EHFBL8003RP0 |
| NEMA enclosure type: 4X Stainless    | EBFBJ1003RP0 | EBFBJ2003RP0 | EBFBJ4003RP0 | EBFBJ6003RP0 | EBFBL8003RP0 |
| NEMA enclosure type: 4X Non-Metallic | EGFBJ1003RP0 | EGFBJ2003RP0 | EGFBJ4003RP0 | EGFBJ6003RP0 | EGFBL8003RP0 |

#### Notes:

- Each of the above enclosed switches are provided with a red/yellow handle. Simply replace the "RS" or "RP" with a "BS" or "BP" to receive a black selector or black pistol handle at no additional cost. For UL508 enclosed switches only.
- "0" suffix is standard in part number and means enclosed switch shipped with no auxiliary contacts. Replacing the "0" with a "1", "2" or "3" provides the following type of auxiliary contact. "1" is one NO auxiliary contact, "2" is one NC auxiliary contact, and "3" is 1NO+1NC auxiliary contact. Please consult factory if other auxiliary contact configuration are desired.
- The non-metallic enclosures are comprised of "ED" polycarbonate boxes and "EG" polyester fiberglass boxes.
- These are standard enclosures, for any other versions (4 pole, multipolar, accessories...) please consult us.
- 30 A switch ratings are UL 489 and CSA 22.2 #5.

## Dimensions (in / mm)

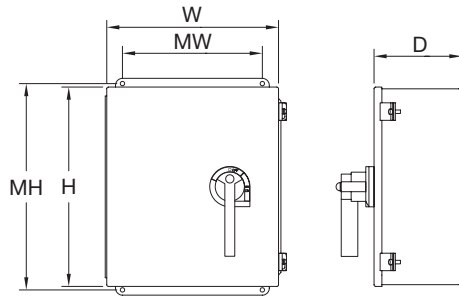


Figure 1  
Exterior mounting

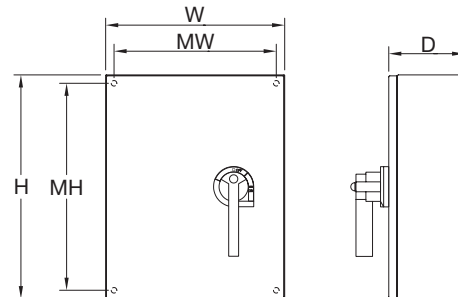


Figure 2  
Interior mounting

## Non-Fused Disconnect Switches

| Switch rating*                                  | Enclosure type   | H height |        | W width |        | D depth |        | MH mounting height |        | MH mounting width |        | Shipping weight | Figure No |
|-------------------------------------------------|------------------|----------|--------|---------|--------|---------|--------|--------------------|--------|-------------------|--------|-----------------|-----------|
|                                                 |                  | in       | mm     | in      | mm     | in      | mm     | in                 | mm     | in                | mm     |                 |           |
| 16 - 25 A<br>(LBSM)<br>UL508<br>Selector handle | 1                | 6.00     | 152,40 | 6.00    | 152,40 | 4.00    | 101,60 | 6.75               | 171,45 | 4.00              | 101,60 | 5.1             | 2         |
|                                                 | 3R               | 6.00     | 152,40 | 6.00    | 152,40 | 4.00    | 102,00 | 7.00               | 177,80 | 3.00              | 79,00  | 5.4             | 1         |
|                                                 | 12               | 6.00     | 152,40 | 6.00    | 152,40 | 4.00    | 101,60 | 6.75               | 171,45 | 4.00              | 101,60 | 5.1             | 1         |
|                                                 | 4                | 6.00     | 152,40 | 6.00    | 152,40 | 4.00    | 101,60 | 6.75               | 171,45 | 4.00              | 101,60 | 5.1             | 1         |
|                                                 | 4X Stainless     | 6.00     | 152,40 | 6.00    | 152,40 | 4.00    | 101,60 | 6.75               | 171,45 | 4.00              | 101,60 | 5.1             | 1         |
|                                                 | 4X Non- Metallic | 7.00     | 177,80 | 5.03    | 127,76 | 4.02    | 102,50 | 6.18               | 156,97 | 4.21              | 107,00 | 1.6             | 1         |
|                                                 | IP65             | 5.20     | 132,08 | 3.43    | 87,12  | 2.99    | 76,00  | 4.69               | 119,13 | 2.91              | 74,00  | 0.8             | 2         |
| 16 - 25 A<br>(LBSM)<br>UL508<br>Pistol handle   | 1                | 5.91     | 150,11 | 5.91    | 150,11 | 4.72    | 119,89 | 5.20               | 132,08 | 3.35              | 85,09  | 5.6             | 2         |
|                                                 | 3R               | 8.00     | 203,20 | 8.00    | 203,20 | 6.00    | 152,40 | 9.00               | 228,60 | 3.00              | 76,20  | 9.6             | 1         |
|                                                 | 12               | 5.91     | 150,11 | 5.91    | 150,11 | 4.72    | 119,89 | 5.20               | 132,08 | 3.35              | 85,09  | 5.6             | 2         |
|                                                 | 4                | 5.91     | 150,11 | 5.91    | 150,11 | 4.72    | 119,89 | 5.20               | 132,08 | 3.35              | 85,09  | 5.7             | 2         |
|                                                 | 4X Stainless     | 5.91     | 150,11 | 5.91    | 150,11 | 4.72    | 119,89 | 5.20               | 132,08 | 3.35              | 85,09  | 5.8             | 2         |
|                                                 | 4X Non- Metallic | 7.00     | 177,80 | 5.03    | 127,76 | 5.02    | 127,51 | 6.18               | 156,97 | 4.21              | 106,93 | 2.5             | 2         |
|                                                 | IP65             | 5.20     | 132,08 | 3.43    | 87,12  | 2.99    | 76,00  | 4.69               | 119,13 | 2.91              | 74,00  | 0.8             | 2         |
| 30 A<br>(LBSR)<br>UL508<br>Selector handle      | 1                | 6.00     | 152,40 | 6.00    | 152,40 | 4.00    | 101,60 | 6.75               | 171,45 | 4.00              | 101,60 | 5.2             | 2         |
|                                                 | 3R               | 6.00     | 152,40 | 6.00    | 152,40 | 4.00    | 101,60 | 7.00               | 177,80 | 3.00              | 76,20  | 5.5             | 1         |
|                                                 | 12               | 6.00     | 152,40 | 6.00    | 152,40 | 4.00    | 101,60 | 6.75               | 171,45 | 4.00              | 101,60 | 5.2             | 1         |
|                                                 | 4                | 6.00     | 152,40 | 6.00    | 152,40 | 4.00    | 101,60 | 6.75               | 171,45 | 4.00              | 101,60 | 5.4             | 1         |
|                                                 | 4X Stainless     | 6.00     | 152,40 | 6.00    | 152,40 | 4.00    | 101,60 | 6.75               | 171,45 | 4.00              | 101,60 | 5.2             | 1         |
|                                                 | 4X Non- Metallic | 7.00     | 177,80 | 5.03    | 127,76 | 4.02    | 102,11 | 6.18               | 156,97 | 4.21              | 106,93 | 1.8             | 2         |
|                                                 | IP65             | 5.20     | 132,08 | 3.43    | 87,12  | 2.99    | 76,00  | 4.69               | 119,13 | 2.91              | 74,00  | 0.8             | 2         |
| 30 A<br>(LBSR)<br>UL508<br>Pistol handle        | 1                | 5.91     | 150,11 | 5.91    | 150,11 | 4.72    | 119,89 | 5.20               | 132,08 | 3.35              | 85,09  | 5.7             | 2         |
|                                                 | 3R               | 8.00     | 203,20 | 8.00    | 203,20 | 6.00    | 152,40 | 9.00               | 228,60 | 3.00              | 76,20  | 9.7             | 1         |
|                                                 | 12               | 5.91     | 150,11 | 5.91    | 150,11 | 4.72    | 119,89 | 5.20               | 132,08 | 3.35              | 85,09  | 5.7             | 2         |
|                                                 | 4                | 5.91     | 150,11 | 5.91    | 150,11 | 4.72    | 119,89 | 5.20               | 132,08 | 3.35              | 85,09  | 5.8             | 2         |
|                                                 | 4X Stainless     | 5.91     | 150,11 | 5.91    | 150,11 | 4.72    | 119,89 | 5.20               | 132,08 | 3.35              | 85,09  | 5.9             | 2         |
|                                                 | 4X Non- Metallic | 7.00     | 177,80 | 5.03    | 127,76 | 5.02    | 127,51 | 6.18               | 156,97 | 4.21              | 106,93 | 2.6             | 2         |
|                                                 | IP65             | 5.20     | 132,08 | 3.43    | 87,12  | 2.99    | 76,00  | 4.69               | 119,13 | 2.91              | 74,00  | 0.8             | 2         |
| 40 A<br>(LBSR)<br>UL508<br>Selector handle      | 1                | 6.00     | 152,40 | 6.00    | 152,40 | 4.00    | 101,60 | 6.75               | 171,45 | 4.00              | 101,60 | 5.2             | 2         |
|                                                 | 3R               | 6.00     | 152,40 | 6.00    | 152,40 | 4.00    | 101,60 | 7.00               | 177,80 | 3.00              | 76,20  | 5.5             | 1         |
|                                                 | 12               | 6.00     | 152,40 | 6.00    | 152,40 | 4.00    | 101,60 | 6.75               | 171,45 | 4.00              | 101,60 | 5.2             | 1         |
|                                                 | 4                | 6.00     | 152,40 | 6.00    | 152,40 | 4.00    | 101,60 | 6.75               | 171,45 | 4.00              | 101,60 | 5.4             | 1         |
|                                                 | 4X Stainless     | 6.00     | 152,40 | 6.00    | 152,40 | 4.00    | 101,60 | 6.75               | 171,45 | 4.00              | 101,60 | 5.2             | 1         |
|                                                 | 4X Non- Metallic | 7.00     | 177,80 | 5.03    | 127,76 | 4.02    | 102,11 | 6.18               | 156,97 | 4.21              | 106,93 | 1.8             | 2         |
|                                                 | IP65             | 5.20     | 132,08 | 3.43    | 87,12  | 2.99    | 76,00  | 4.69               | 119,13 | 2.91              | 74,00  | 0.8             | 2         |
| 40 A<br>(LBSR)<br>UL508<br>Pistol handle        | 1                | 5.91     | 150,11 | 5.91    | 150,11 | 4.72    | 119,89 | 5.20               | 132,08 | 3.35              | 85,09  | 5.8             | 2         |
|                                                 | 3R               | 8.00     | 203,20 | 8.00    | 203,20 | 6.00    | 152,40 | 9.00               | 228,60 | 3.00              | 76,20  | 9.7             | 1         |
|                                                 | 12               | 5.91     | 150,11 | 5.91    | 150,11 | 4.72    | 119,89 | 5.20               | 132,08 | 3.35              | 85,09  | 5.8             | 2         |
|                                                 | 4                | 5.91     | 150,11 | 5.91    | 150,11 | 4.72    | 119,89 | 5.20               | 132,08 | 3.35              | 85,09  | 5.8             | 2         |
|                                                 | 4X Stainless     | 5.91     | 150,11 | 5.91    | 150,11 | 4.72    | 119,89 | 5.20               | 132,08 | 3.35              | 85,09  | 5.8             | 2         |
|                                                 | 4X Non- Metallic | 7.00     | 177,80 | 5.03    | 127,76 | 5.02    | 127,51 | 6.18               | 156,97 | 4.21              | 106,93 | 2.6             | 2         |
|                                                 | IP65             | 5.20     | 132,08 | 3.43    | 87,12  | 2.99    | 76,00  | 4.69               | 119,13 | 2.91              | 74,00  | 0.8             | 2         |
| 60 A<br>(LBSR)<br>UL508<br>Selector handle      | 1                | 8.00     | 203,20 | 8.00    | 203,20 | 6.00    | 152,40 | 5.00               | 127,00 | 7.00              | 177,80 | 8.5             | 2         |
|                                                 | 3R               | 8.00     | 203,20 | 6.00    | 152,40 | 4.00    | 101,60 | 9.00               | 228,60 | 3.00              | 76,20  | 6.8             | 1         |
|                                                 | 12               | 8.00     | 203,20 | 6.00    | 152,40 | 6.00    | 152,40 | 8.75               | 222,25 | 4.00              | 101,60 | 8.2             | 1         |
|                                                 | 4                | 7.87     | 199,90 | 5.91    | 150,11 | 4.72    | 119,89 | 5.20               | 132,08 | 3.35              | 85,09  | 6.7             | 2         |
|                                                 | 4X Stainless     | 8.00     | 203,20 | 6.00    | 152,40 | 4.00    | 101,60 | 8.75               | 222,25 | 4.00              | 101,60 | 7.0             | 1         |
|                                                 | 4X Non- Metallic | 7.00     | 177,80 | 5.03    | 127,76 | 4.02    | 102,11 | 6.18               | 156,97 | 4.21              | 106,93 | 2.0             | 2         |
|                                                 | IP65             | 5.20     | 132,08 | 3.43    | 87,12  | 2.99    | 76,00  | 4.69               | 119,13 | 2.91              | 74,00  | 0.8             | 2         |



## Dimensions (in / mm)

### Non-Fused Disconnect Switches (continuous)

| Switch rating*                           | Enclosure type   | H height |        | W width |        | D depth |        | MH mounting height |        | MH mounting width |        | Shipping weight lbs | Figure No |
|------------------------------------------|------------------|----------|--------|---------|--------|---------|--------|--------------------|--------|-------------------|--------|---------------------|-----------|
|                                          |                  | in       | mm     | in      | mm     | in      | mm     | in                 | mm     | in                | mm     |                     |           |
| 60 A<br>(LBSR)<br>UL508<br>Pistol handle | 1                | 8.00     | 203,20 | 8.00    | 203,20 | 6.00    | 152,40 | 5.00               | 127,00 | 7.00              | 177,80 | 9.1                 | 2         |
|                                          | 3R               | 8.00     | 203,20 | 8.00    | 203,20 | 6.00    | 152,40 | 9.00               | 228,60 | 3.00              | 76,20  | 9.9                 | 1         |
|                                          | 12               | 8.00     | 203,20 | 6.00    | 152,40 | 6.00    | 152,40 | 8.75               | 222,25 | 4.00              | 101,60 | 8.8                 | 1         |
|                                          | 4                | 7.87     | 199,90 | 5.91    | 150,11 | 4.72    | 119,89 | 5.20               | 132,08 | 3.35              | 85,09  | 7.3                 | 2         |
|                                          | 4X Stainless     | 7.87     | 199,90 | 5.91    | 150,11 | 4.72    | 119,89 | 5.20               | 132,08 | 3.35              | 85,09  | 7.3                 | 2         |
|                                          | 4X Non- Metallic | 7.00     | 177,80 | 5.03    | 127,76 | 5.02    | 127,51 | 6.18               | 156,97 | 4.21              | 106,93 | 2.9                 | 2         |
| 80 A<br>(LBSR)<br>UL 508                 | 1                | 10.00    | 254,00 | 8.00    | 203,20 | 6.00    | 152,40 | 7.00               | 177,80 | 7.00              | 177,80 | 10.6                | 2         |
|                                          | 3R               | 10.00    | 254,00 | 8.00    | 203,20 | 6.00    | 152,40 | 11.00              | 279,40 | 3.00              | 76,20  | 11.1                | 1         |
|                                          | 12               | 10.00    | 254,00 | 8.00    | 203,20 | 6.00    | 152,40 | 10.75              | 273,05 | 6.00              | 152,40 | 12.3                | 1         |
|                                          | 4                | 10.00    | 254,00 | 8.00    | 203,20 | 6.00    | 152,40 | 10.75              | 273,05 | 6.00              | 152,40 | 11.8                | 1         |
|                                          | 4X Stainless     | 9.84     | 249,94 | 7.87    | 199,90 | 5.91    | 150,11 | 9.13               | 231,90 | 5.31              | 134,87 | 9.8                 | 2         |
|                                          | 4X Non- Metallic | 9.30     | 236,22 | 7.31    | 185,67 | 4.96    | 125,98 | 8.74               | 222,00 | 4.01              | 101,85 | 6.0                 | 1         |
| 100 A<br>(LBSR)<br>UL508                 | 1                | 10.00    | 254,00 | 8.00    | 203,20 | 6.00    | 152,40 | 7.00               | 177,80 | 7.00              | 177,80 | 10.6                | 2         |
|                                          | 3R               | 10.00    | 254,00 | 8.00    | 203,20 | 6.00    | 152,40 | 11.00              | 279,40 | 3.00              | 76,20  | 11.1                | 1         |
|                                          | 12               | 10.00    | 254,00 | 8.00    | 203,20 | 6.00    | 152,40 | 10.75              | 273,05 | 6.00              | 152,40 | 12.3                | 1         |
|                                          | 4                | 10.00    | 254,00 | 8.00    | 203,20 | 6.00    | 152,40 | 10.75              | 273,05 | 6.00              | 152,40 | 11.8                | 1         |
|                                          | 4X Stainless     | 9.84     | 249,94 | 7.87    | 199,90 | 5.91    | 150,11 | 9.13               | 231,90 | 5.31              | 134,87 | 9.8                 | 2         |
|                                          | 4X Non- Metallic | 11.31    | 287,27 | 9.31    | 236,47 | 5.43    | 137,92 | 10.75              | 273,05 | 6.02              | 152,91 | 7.6                 | 1         |
| 125 A<br>(LBSR)<br>UL508                 | 1                | 10.00    | 254,00 | 8.00    | 203,20 | 6.00    | 152,40 | 7.00               | 177,80 | 7.00              | 177,80 | 10.6                | 2         |
|                                          | 3R               | 10.00    | 254,00 | 8.00    | 203,20 | 6.00    | 152,40 | 11.00              | 279,40 | 3.00              | 76,20  | 11.1                | 1         |
|                                          | 12               | 10.00    | 254,00 | 8.00    | 203,20 | 6.00    | 152,40 | 10.75              | 273,05 | 6.00              | 152,40 | 12.4                | 1         |
|                                          | 4                | 10.00    | 254,00 | 8.00    | 203,20 | 6.00    | 152,40 | 10.75              | 273,05 | 6.00              | 152,40 | 11.9                | 1         |
|                                          | 4X Stainless     | 9.84     | 249,94 | 7.87    | 199,90 | 5.91    | 150,11 | 9.13               | 231,90 | 5.31              | 134,87 | 9.8                 | 2         |
|                                          | 4X Non- Metallic | 11.31    | 287,27 | 9.31    | 236,47 | 5.43    | 137,92 | 10.75              | 273,05 | 6.02              | 152,91 | 7.6                 | 1         |
| 30 A<br>(SCV)<br>UL98                    | 1                | 8.00     | 203,20 | 8.00    | 203,20 | 6.00    | 152,40 | 5.00               | 127,00 | 5.00              | 127,00 | 9.3                 | 2         |
|                                          | 3R               | 8.00     | 203,20 | 8.00    | 203,20 | 6.00    | 152,40 | 9.00               | 228,60 | 3.00              | 76,20  | 10.2                | 1         |
|                                          | 12               | 7.87     | 199,90 | 5.91    | 150,11 | 4.72    | 119,89 | 5.20               | 132,08 | 3.35              | 85,09  | 7.6                 | 1         |
|                                          | 4                | 7.87     | 199,90 | 5.91    | 150,11 | 4.72    | 119,89 | 5.20               | 132,08 | 3.35              | 85,09  | 7.6                 | 1         |
|                                          | 4X Stainless     | 9.84     | 249,94 | 7.87    | 199,90 | 5.91    | 150,11 | 9.13               | 231,90 | 5.31              | 134,87 | 10.1                | 2         |
|                                          | 4X Non- Metallic | 9.30     | 236,22 | 7.31    | 185,67 | 4.96    | 125,98 | 8.74               | 222,00 | 4.01              | 101,85 | 6.2                 | 1         |
| 60 A<br>(SCV)<br>UL98                    | 1                | 12.00    | 304,80 | 12.00   | 304,80 | 6.00    | 152,40 | 9.00               | 228,60 | 11.00             | 279,40 | 16.0                | 2         |
|                                          | 3R               | 12.00    | 304,80 | 10.00   | 254,00 | 6.00    | 152,40 | 13.00              | 330,20 | 3.00              | 76,20  | 17.6                | 1         |
|                                          | 12               | 12.00    | 304,80 | 12.00   | 304,80 | 6.00    | 152,40 | 12.75              | 323,85 | 10.00             | 254,00 | 21.6                | 1         |
|                                          | 4                | 12.00    | 304,80 | 12.00   | 304,80 | 6.00    | 152,40 | 12.75              | 323,85 | 10.00             | 254,00 | 21.9                | 1         |
|                                          | 4X Stainless     | 11.81    | 299,97 | 9.84    | 249,94 | 5.91    | 150,11 | 11.10              | 281,94 | 7.28              | 184,91 | 17.4                | 2         |
|                                          | 4X Non- Metallic | 13.30    | 337,82 | 11.29   | 286,77 | 7.10    | 180,34 | 12.75              | 323,85 | 8.01              | 203,45 | 12.9                | 1         |
| 100 A<br>(SCV)<br>UL98                   | 1                | 12.00    | 304,80 | 12.00   | 304,80 | 6.00    | 152,40 | 9.00               | 228,60 | 11.00             | 279,40 | 16.0                | 2         |
|                                          | 3R               | 12.00    | 304,80 | 10.00   | 254,00 | 6.00    | 152,40 | 13.00              | 330,20 | 3.00              | 76,20  | 17.6                | 1         |
|                                          | 12               | 12.00    | 304,80 | 12.00   | 304,80 | 6.00    | 152,40 | 12.75              | 323,85 | 10.00             | 254,00 | 21.6                | 1         |
|                                          | 4                | 12.00    | 304,80 | 12.00   | 304,80 | 6.00    | 152,40 | 12.75              | 323,85 | 10.00             | 254,00 | 21.9                | 1         |
|                                          | 4X Stainless     | 12.00    | 304,80 | 10.00   | 254,00 | 6.00    | 152,40 | 12.75              | 323,85 | 8.00              | 203,20 | 18.6                | 1         |
|                                          | 4X Non- Metallic | 13.30    | 337,82 | 11.29   | 286,77 | 7.10    | 180,34 | 12.75              | 323,85 | 8.01              | 203,45 | 12.9                | 1         |
| 200 A<br>(SCV)<br>UL98                   | 1                | 30.00    | 762,00 | 20.00   | 508,00 | 8.62    | 218,95 | 27.50              | 698,50 | 15.00             | 381,00 | 68.6                | 2         |
|                                          | 3R               | 30.00    | 762,00 | 24.00   | 610,00 | 8.00    | 203,20 | 31.00              | 787,40 | 13.00             | 330,20 | 88.6                | 1         |
|                                          | 12               | 30.00    | 762,00 | 20.00   | 508,00 | 8.00    | 203,20 | 28.50              | 723,90 | 18.50             | 469,90 | 70.1                | 2         |
|                                          | 4                | 30.00    | 762,00 | 20.00   | 508,00 | 8.00    | 203,20 | 28.50              | 723,90 | 18.50             | 469,90 | 70.1                | 2         |
|                                          | 4X Stainless     | 30.00    | 762,00 | 20.00   | 508,00 | 10.00   | 254,00 | 28.50              | 723,90 | 18.50             | 469,90 | 71.0                | 1         |
|                                          | 4X Non- Metallic | 32.87    | 834,90 | 25.00   | 635,00 | 11.81   | 299,97 | 34.72              | 881,89 | 22.91             | 581,91 | 59.3                | 1         |

\* Consult factory for 400A and above ratings since enclosure sizes can vary depending upon wiring method employed.

## Dimensions (in / mm)

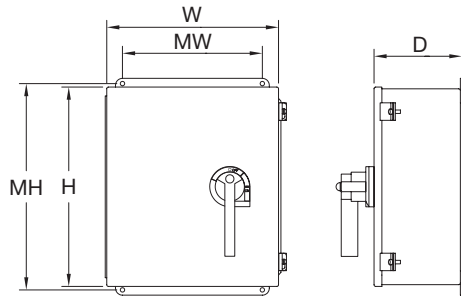


Figure 1  
Exterior mounting

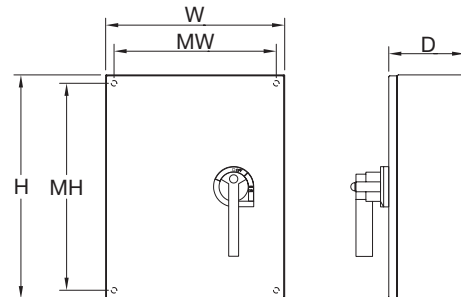


Figure 2  
Interior mounting

## Fused Disconnect Switches

| Switch rating*                 | Enclosure type   | H height |        | W width |        | D depth |        | MH mounting height |        | MH mounting width |        | Shipping weight | Figure No |
|--------------------------------|------------------|----------|--------|---------|--------|---------|--------|--------------------|--------|-------------------|--------|-----------------|-----------|
|                                |                  | in       | mm     | in      | mm     | in      | mm     | in                 | mm     | in                | mm     |                 |           |
| 30 A<br>(FBCC Compact)<br>UL98 | 1                | 8.00     | 203,20 | 8.00    | 203,20 | 6.00    | 152,40 | 5.00               | 127,00 | 7.00              | 177,80 | 9.4             | 2         |
|                                | 3R               | 8.00     | 203,20 | 8.00    | 203,20 | 6.00    | 152,40 | 9.00               | 228,60 | 3.00              | 76,20  | 10.3            | 1         |
|                                | 12               | 9.84     | 249,94 | 7.87    | 199,90 | 5.91    | 150,11 | 9.13               | 231,90 | 5.31              | 134,87 | 10.8            | 1         |
|                                | 4                | 9.84     | 249,94 | 7.87    | 199,90 | 5.91    | 150,11 | 9.13               | 231,90 | 5.31              | 134,87 | 10.8            | 1         |
|                                | 4X Stainless     | 9.84     | 249,94 | 7.87    | 199,90 | 5.91    | 150,11 | 9.13               | 231,90 | 5.31              | 134,87 | 11.3            | 2         |
|                                | 4X Non- Metallic | 11.31    | 287,27 | 9.31    | 236,47 | 5.43    | 137,92 | 10.75              | 273,05 | 6.02              | 152,91 | 7.8             | 1         |
| 30 A<br>(FBCC)<br>UL98         | 1                | 10.00    | 254,00 | 10.00   | 254,00 | 6.00    | 152,40 | 7.00               | 177,80 | 9.00              | 228,60 | 13.9            | 2         |
|                                | 3R               | 8.00     | 203,20 | 8.00    | 203,20 | 6.00    | 152,40 | 9.00               | 228,60 | 3.00              | 76,20  | 12.1            | 1         |
|                                | 12               | 10.00    | 254,00 | 8.00    | 203,20 | 6.00    | 152,40 | 10.75              | 273,05 | 6.00              | 152,40 | 14.4            | 1         |
|                                | 4                | 10.00    | 254,00 | 8.00    | 203,20 | 6.00    | 152,40 | 10.75              | 273,05 | 6.00              | 152,40 | 13.9            | 1         |
|                                | 4X Stainless     | 11.81    | 299,97 | 9.84    | 249,94 | 5.91    | 150,11 | 11.10              | 281,94 | 7.28              | 184,91 | 16.5            | 1         |
|                                | 4X Non- Metallic | 11.31    | 287,27 | 9.31    | 236,47 | 6.93    | 176,02 | 10.75              | 273,05 | 6.02              | 152,91 | 9.7             | 1         |
| 30 A<br>(FBJ Compact)<br>UL98  | 1                | 10.00    | 254,00 | 10.00   | 254,00 | 6.00    | 152,40 | 7.00               | 177,80 | 9.00              | 228,60 | 12.4            | 2         |
|                                | 3R               | 8.00     | 203,20 | 8.00    | 203,20 | 6.00    | 152,40 | 9.00               | 228,60 | 3.00              | 76,20  | 10.6            | 1         |
|                                | 12               | 9.84     | 249,94 | 7.87    | 199,90 | 5.91    | 150,11 | 9.13               | 232,00 | 5.31              | 134,87 | 11.0            | 2         |
|                                | 4                | 10.00    | 254,00 | 8.00    | 203,20 | 6.00    | 152,40 | 10.75              | 273,05 | 6.00              | 152,40 | 13.3            | 1         |
|                                | 4X Stainless     | 9.84     | 249,94 | 7.87    | 199,90 | 5.91    | 150,11 | 9.13               | 232,00 | 5.31              | 134,87 | 11.7            | 2         |
|                                | 4X Non- Metallic | 11.31    | 287,27 | 9.31    | 236,47 | 5.43    | 137,92 | 10.75              | 273,05 | 6.02              | 152,91 | 8.2             | 1         |
| 30 A<br>(FBJ)<br>UL98          | 1                | 12.00    | 304,80 | 12.00   | 304,80 | 8.00    | 203,20 | 9.00               | 228,60 | 11.00             | 279,40 | 18.3            | 2         |
|                                | 3R               | 12.00    | 304,80 | 12.00   | 304,80 | 10.00   | 254,00 | 13.00              | 330,20 | 5.00              | 127,00 | 23.2            | 1         |
|                                | 12               | 12.00    | 304,80 | 10.00   | 254,00 | 8.00    | 203,20 | 12.75              | 323,85 | 8.00              | 203,20 | 21.9            | 1         |
|                                | 4                | 13.78    | 350,01 | 11.81   | 299,97 | 7.87    | 199,90 | 13.07              | 331,98 | 9.25              | 234,95 | 22.4            | 2         |
|                                | 4X Stainless     | 13.78    | 350,01 | 11.81   | 299,97 | 7.87    | 199,90 | 13.07              | 331,98 | 9.25              | 234,95 | 24.3            | 2         |
|                                | 4X Non- Metallic | 15.32    | 389,13 | 13.30   | 337,82 | 8.19    | 208,03 | 14.75              | 374,65 | 10.00             | 254,00 | 17.1            | 1         |
| 60 A<br>(FBJ)<br>UL98          | 1                | 12.00    | 304,80 | 12.00   | 304,80 | 8.00    | 203,20 | 9.00               | 228,60 | 11.00             | 279,40 | 18.2            | 2         |
|                                | 3R               | 12.00    | 304,80 | 12.00   | 304,80 | 10.00   | 254,00 | 13.00              | 330,20 | 5.00              | 127,00 | 23.1            | 1         |
|                                | 12               | 12.00    | 304,80 | 10.00   | 254,00 | 8.00    | 203,20 | 12.75              | 323,85 | 8.00              | 203,20 | 14.6            | 1         |
|                                | 4                | 13.78    | 350,01 | 11.81   | 299,97 | 7.87    | 199,90 | 13.07              | 331,98 | 9.25              | 234,95 | 24.2            | 2         |
|                                | 4X Stainless     | 13.78    | 350,01 | 11.81   | 299,97 | 7.87    | 199,90 | 13.07              | 331,98 | 9.25              | 234,95 | 24.2            | 2         |
|                                | 4X Non- Metallic | 15.32    | 389,13 | 13.30   | 337,82 | 8.19    | 208,03 | 14.75              | 374,65 | 10.00             | 254,00 | 17.5            | 1         |
| 100 A<br>(FBJ)<br>UL98         | 1                | 20.00    | 508,00 | 16.00   | 406,40 | 8.62    | 218,95 | 17.88              | 454,15 | 11.00             | 279,40 | 35.2            | 2         |
|                                | 3R               | 20.00    | 508,00 | 20.00   | 508,00 | 8.00    | 203,20 | 21.00              | 533,40 | 13.00             | 330,20 | 50.3            | 1         |
|                                | 12               | 20.00    | 508,00 | 16.00   | 406,40 | 8.00    | 203,20 | 18.50              | 469,90 | 14.50             | 368,30 | 35.2            | 1         |
|                                | 4                | 20.00    | 508,00 | 16.00   | 406,40 | 8.00    | 203,20 | 18.50              | 469,90 | 14.50             | 368,30 | 39.0            | 2         |
|                                | 4X Stainless     | 20.00    | 508,00 | 16.00   | 406,40 | 8.00    | 203,20 | 18.50              | 469,90 | 14.50             | 368,30 | 38.1            | 2         |
|                                | 4X Non- Metallic | 19.31    | 490,47 | 17.31   | 439,67 | 9.58    | 243,33 | 18.74              | 476,00 | 12.00             | 304,80 | 25.6            | 1         |
| 200 A<br>(FBJ)<br>UL98         | 1                | 30.00    | 762,00 | 20.00   | 508,00 | 8.62    | 218,95 | 27.50              | 698,50 | 15.00             | 381,00 | 68.8            | 2         |
|                                | 3R               | 30.00    | 762,00 | 24.00   | 609,60 | 8.00    | 203,20 | 31.00              | 787,40 | 13.00             | 330,20 | 88.8            | 1         |
|                                | 12               | 30.00    | 762,00 | 20.00   | 508,00 | 8.00    | 203,20 | 28.50              | 723,90 | 18.50             | 469,90 | 70.3            | 2         |
|                                | 4                | 30.00    | 762,00 | 20.00   | 508,00 | 8.00    | 203,20 | 28.50              | 723,90 | 18.50             | 469,90 | 70.3            | 2         |
|                                | 4X Stainless     | 30.00    | 762,00 | 20.00   | 508,00 | 10.00   | 254,00 | 28.50              | 723,90 | 18.50             | 469,90 | 71.2            | 1         |
|                                | 4X Non- Metallic | 32.87    | 834,90 | 25.00   | 635,00 | 11.81   | 299,97 | 34.72              | 881,89 | 22.91             | 581,91 | 59.5            | 1         |

Note: consult factory for 400A and above ratings since enclosure sizes can vary depending upon wiring method employed.

## Product presentation



6 pole



8 pole

COMO I are 6 and 8 pole manually operated load-break switches.

On and Off switching action to provide safety isolation for any low voltage electrical circuit.

### Highlights

- Finger safe
- Compact footprint
- Fully visible breaking
- Large number of mounting possibilities (DIN rail, back plate or door mounting)
- Choice of external and direct handle
- Modular switch concept, special executions on request (3ACs, 5 pole...)

### Applications

- Multi circuit switching with one handle
- HVAC panels

### Ratings

- 25, 40, 63 and 100 Amps

### Approvals

- UL 508 Manual Motor Controller
- UL Listed Guide NLRV, File E173959
- IEC 60947-3
- NF EN 60947-3
- VDE 0660 Teil 107 (1992)



## COMO I range: switches from 25 to 100 A



Select a switch

| Ampere rating | 25       | 40       | 63       | 100      |
|---------------|----------|----------|----------|----------|
| 6 pole        | 42606002 | 42606004 | 42606006 | 42606010 |
| with 2 NO ACs | 42606202 | 42606204 | -        | -        |
| 8 pole        | 42608002 | 42608004 | 42608006 | 42608010 |
| with 2 NO ACs | 42608202 | 42608204 | -        | -        |

Note: for special executions, please consult us.

### External and direct operation

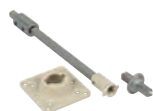


Select a handle

| IP   | Color        | Catalog number |          |          |          |
|------|--------------|----------------|----------|----------|----------|
| IP54 | Black        | 42591042       | 42591042 | 42591082 | 42591082 |
| IP54 | Red / Yellow | 42591043       | 42591053 | 42591083 | 42591083 |

Note: handle is padlockable in the "OFF" position and is not defeatable.

### For external operation only



Select a shaft

| Shaft length (inches / mm) | Catalog number |          |          |          |
|----------------------------|----------------|----------|----------|----------|
| 7.9 / 200                  | 42595042       | 42595042 | 42595082 | 42595082 |

Note: includes an escutcheon allowing the function of door interlocking in ON position.

### Options for multipolar switches



|                            | Catalog number |          |          |          |
|----------------------------|----------------|----------|----------|----------|
| Back plate mounting device | 42599040       | 42599040 | 42599040 | 42599040 |
| Din rail mounting device   | 42599001       | 42599001 | 42599001 | 42599001 |

## Technical characteristics

### UL and cUL

| Rating                                      |        | 25          | 40                             | 63          | 100         |
|---------------------------------------------|--------|-------------|--------------------------------|-------------|-------------|
| UL approval                                 |        |             | UL 508 Manual Motor Controller |             |             |
| Short circuit rating                        | kA     | 5           | 5                              | 5           | 5           |
| Branch circuit fuse type                    |        | J           | J                              | K5          | K5          |
| Max fuse rating                             | A      | 70          | 125                            | 80          | 125         |
| Maximum UL Horsepower ratings (3-PH)        | HP     |             |                                |             |             |
| 200 / 208 V AC                              |        | 1.5         | 5                              | 15          | 20          |
| 220 / 240 V AC                              |        | 2           | 7.5                            | 15          | 25          |
| 380 / 415 V AC                              |        | 3           | 10                             | 25          | 30          |
| 440 / 480 V AC                              |        | 5           | 15                             | 30          | 40          |
| 550 / 600 V AC                              |        | 7.5         | 20                             | 32          | 50          |
| Maximum UL Horsepower ratings (1-PH)        | HP     |             |                                |             |             |
| 110 / 120 V AC                              |        | 2           | 2                              | 5           | 10          |
| 220 / 240 V AC                              |        | 5           | 5                              | 10          | 15          |
| Terminal lugs                               |        |             |                                |             |             |
| Max wire size                               | AWG    | 10          | 6                              | 1           | 1           |
| Wire type                                   |        | Cu          | Cu                             | Cu          | Cu          |
| Minimum wire tightening torque              | lb.in. | 14.2        | 16.0                           | 21.3        | 21.3        |
| Weight (lb / kg)                            |        |             |                                |             |             |
| 3-pole changeover switch with direct handle |        | 0.55 / 0.25 | 0.66 / 0.30                    | 1.21 / 0.55 | 1.39 / 0.63 |
| 4-pole changeover switch with direct handle |        | 0.68 / 0.31 | 0.88 / 0.40                    | 1.54 / 0.70 | 1.76 / 0.80 |

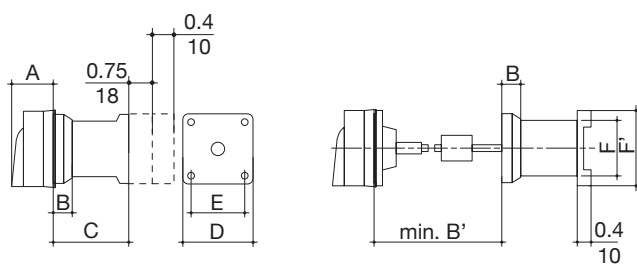
### IEC 947-3

| Rating (Thermal current Ith at 40 °C)                                                       | A               | 25      | 40      | 63      | 100     |
|---------------------------------------------------------------------------------------------|-----------------|---------|---------|---------|---------|
| Rated insulation voltage Ui (V)                                                             |                 | 660     | 660     | 660     | 660     |
| Rated impulse withstand voltage Uimp (kV)                                                   |                 | 4       | 4       | 4       | 4       |
| Rated operating current Ie (A)                                                              |                 |         |         |         |         |
| 400 V AC                                                                                    | AC 21A          | 25      | 40      | 63      | 100     |
|                                                                                             | AC 22A          | 25      | 40      | 63      | 100     |
|                                                                                             | AC 23A          | 20      | 32      | 63      | 63      |
| 500 V AC                                                                                    | AC 21A          | 25      | 40      | 63      | 100     |
|                                                                                             | AC 22A          | 25      | 40      | 63      | 100     |
|                                                                                             | AC 23A          | 20      | 25      | 50      | 63      |
| Motor Power (kW)                                                                            |                 |         |         |         |         |
| 400 V AC without pre break auxiliary contact:                                               | AC 23           | 10      | 15      | 20      | 32      |
| 500 V AC without pre break auxiliary contact:                                               | AC 23           | 12      | 18.5    | 22      | 36      |
| Overload capacity                                                                           |                 |         |         |         |         |
| Fuse-protected short circuit withstand (kA rms prospective) with gG DIN fuse <sup>(1)</sup> |                 | 6       | 6       | 15      | 15      |
| Rating of DIN gG fuse (A)                                                                   |                 | 25      | 40      | 63      | 100     |
| Cut-off current (kA peak) <sup>(1)</sup>                                                    |                 | 2       | 2.6     | 5.8     | 5.8     |
| Mechanical durability (number of operations)                                                |                 | 100 000 | 100 000 | 100 000 | 100 000 |
| Connection (copper)                                                                         |                 |         |         |         |         |
| Minimum section at Ith (cable)                                                              | mm <sup>2</sup> | 2.5     | 6       | 10      | 16      |
| Maximum section (cable)                                                                     | mm <sup>2</sup> | 6       | 16      | 50      | 50      |
| Minimum tightening torque                                                                   | Nm              | 1.6     | 1.8     | 2.4     | 2.4     |

(1) For a rated operating voltage Ue = 400 V AC.

# COMO I

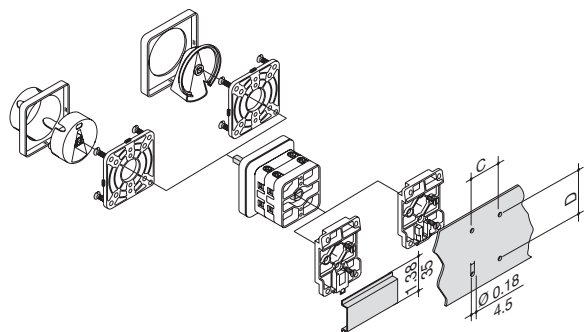
## Dimensions (in / mm) for COMO I 25 to 100 A



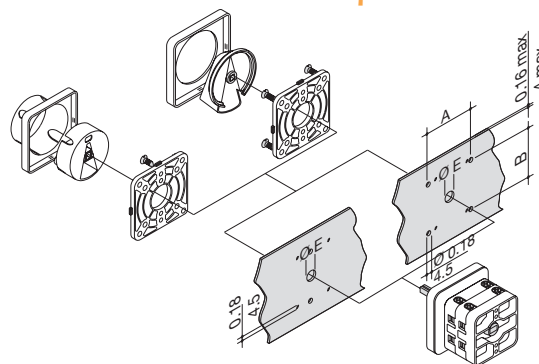
| Rating | Number of pole | A    |    | B   |      | B'   |    | C    |      | D   |    | E    |    | F  |    | F'  |    |
|--------|----------------|------|----|-----|------|------|----|------|------|-----|----|------|----|----|----|-----|----|
|        |                | In   | mm | In  | mm   | In   | mm | In   | mm   | In  | mm | In   | mm | In | mm | In  | mm |
| 25     | 6              | 1.45 | 36 | 0.5 | 12.5 | 3    | 75 | 2    | 50.5 | 1.9 | 48 | 1.45 | 36 | 2  | 50 | 2.5 | 64 |
|        | 8              | 1.45 | 36 | 0.5 | 12.5 | 3    | 75 | 2.4  | 60.5 | 1.9 | 48 | 1.45 | 36 | 2  | 50 | 2.5 | 64 |
| 40     | 6              | 1.45 | 36 | 0.6 | 14.3 | 3    | 75 | 2.4  | 60.3 | 2.4 | 60 | 1.9  | 48 | 2  | 50 | 2.5 | 64 |
|        | 8              | 1.45 | 36 | 0.6 | 14.3 | 3    | 75 | 2.85 | 72.3 | 2.4 | 60 | 1.9  | 48 | 2  | 50 | 2.5 | 64 |
| 63     | 6              | 1.5  | 38 | 0.6 | 15   | 3.15 | 80 | 3.25 | 82   | 2.6 | 66 | 1.9  | 48 | -  | -  | -   | -  |
|        | 8              | 1.5  | 38 | 0.6 | 15   | 3.15 | 80 | 3.95 | 99.5 | 2.6 | 66 | 1.9  | 48 | -  | -  | -   | -  |
| 100    | 6              | 1.5  | 38 | 0.6 | 15   | 3.15 | 80 | 3.25 | 82   | 2.6 | 66 | 1.9  | 48 | -  | -  | -   | -  |
|        | 8              | 1.5  | 38 | 0.6 | 15   | 3.15 | 80 | 3.95 | 99.5 | 2.6 | 66 | 1.9  | 48 | -  | -  | -   | -  |

## Dimensions (in / mm) for door drilling

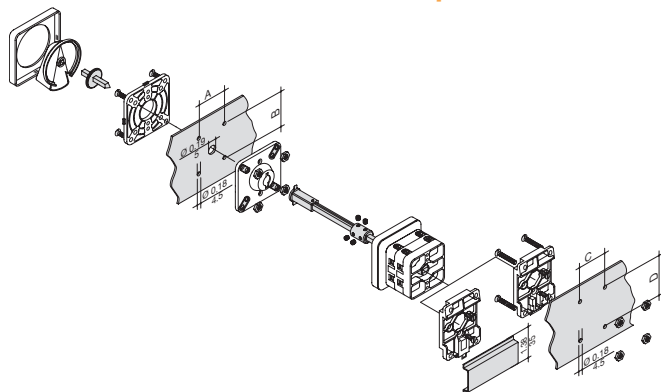
### Back mounted with direct operation



### Door mounted with direct operation



### Back mounted with external operation



| Rating      | A         | B         | E         | M         | C         | D         |
|-------------|-----------|-----------|-----------|-----------|-----------|-----------|
| 25 A        | 1.42 / 36 | 1.42 / 36 | 0.39 / 10 | 1.50 / 38 | 1.42 / 36 | 2.20 / 56 |
| 40 A        | 1.89 / 48 | 1.89 / 48 | 0.39 / 10 | 1.77 / 45 | 1.42 / 36 | 2.20 / 56 |
| 63 to 100 A | 1.89 / 48 | 1.89 / 48 | 0.55 / 14 | 0.59 / 15 | 3.07 / 78 | 3.07 / 78 |

# COMO C from 25 to 125 A

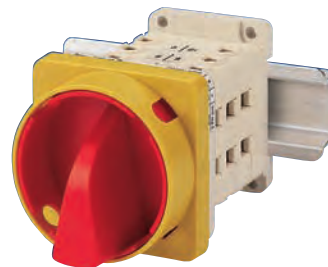
## Product presentation



Padlockable handle



Direct handle



DIN rail mounted

COMO C are manually operated multipolar change-over switches.

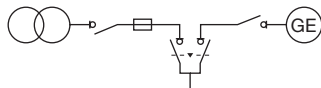
They changeover between two low voltage power circuits under load and provide safety disconnection.

### Highlights

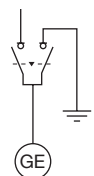
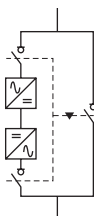
- Finger Safe
- Compact footprint
- Internal bridging link provided as standard
- Fully visualized breaking
- Large number of mounting possibilities (DIN rail, backplate or door mounting)
- Large number of configurations (I-II, I-O-II, I-O-II by-pass, I+II-II)
- Choice of external and direct handles
- Modular switch concept, special executions on request (3ACs, overlapping bypass...)

### Applications

- Manual changeover from main supply to back-up source



- Switching between loads (motor or back-up)
- Reversing motor via phase inversion
- By-pass (upstream and downstream isolation in one operation)
- Application: UPS, variable frequency drive
- Earthing switch



### Ratings

- 25, 40, 63, 80, 100 and 125 amperes

### Approvals

- UL508 Manual Motor Controller
- UL Listed Guide NRLV, File E173959
- IEC 60947-3
- NF EN 60947-3
- VDE 0660 Teil 107 (1992)



# COMO C

## COMO C range from 25 to 125 A



Select a switch

| Ampere rating                                           | 25       | 40       | 63       |
|---------------------------------------------------------|----------|----------|----------|
| COMO C for I-I operation                                |          |          |          |
| Catalog number: 3 pole                                  | 42203002 | 42203004 | 42203006 |
| Catalog number: 4 pole                                  | 42204002 | 42204004 | 42204006 |
| COMO C for I-O-II operation                             |          |          |          |
| Catalog number: 3 pole                                  | 42303002 | 42303004 | 42303006 |
| Catalog number: 4 pole                                  | 42304002 | 42304004 | 42304006 |
| COMO C for I+II-II operation (overlapping)              |          |          |          |
| Catalog number: 3 pole                                  | 42403002 | 42403004 | 42403006 |
| Catalog number: 4 pole                                  | 42404002 | 42404004 | 42404006 |
| COMO C for I-O-II operation with one auxiliary contact  |          |          |          |
| Catalog number: 3 pole                                  | 42303102 | 42303104 | 42303106 |
| Catalog number: 4 pole                                  | 42304102 | 42304104 | 42304106 |
| COMO C for I-O-II operation with two auxiliary contacts |          |          |          |
| Catalog number: 3 pole                                  | 42303202 | 42303204 | 42303206 |
| Catalog number: 4 pole                                  | 42304202 | 42304204 | 42304206 |
| COMO C for I-O-II by-pass operation                     |          |          |          |
| Catalog number: 3 + 6 pole                              | 42503002 | 42503004 | 42503006 |
| Catalog number: 4 + 8 pole                              | 42504002 | 42504004 | 42504006 |

## External and direct operation

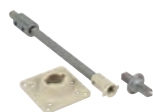


Select a handle

| To suit switch   | IP   | Padlock position | Color        | Catalog number |          |          |
|------------------|------|------------------|--------------|----------------|----------|----------|
| I-II             | IP54 | I-II             | Black / Grey | 42591042       | 42591042 | 42591082 |
| I-II             | IP54 | I-II             | Red / Yellow | 42591043       | 42591043 | 42591083 |
| I-O-II / By-pass | IP54 | 0                | Black / Grey | 42591042       | 42591042 | 42591082 |
| I-O-II / By-pass | IP54 | 0                | Red / Yellow | 42591043       | 42591043 | 42591083 |
| I+II-II          | IP54 | I+II-II          | Black / Grey | 42591042       | 42591042 | 42591082 |
| I+II-II          | IP54 | I+II-II          | Red / Yellow | 42591043       | 42591043 | 42591083 |
| I-II             | IP54 | -                | White        | 42592022       | 42592042 | 42592082 |
| I-O-II / By-pass | IP54 | -                | White        | 42593022       | 42593042 | 42593082 |
| I+II-II          | IP54 | -                | White        | 42594022       | 42594042 | 42594082 |

Note: handles are not defeatable.

## For external operation only



Select a shaft

| Shaft length (inches / mm) | Catalog number |          |          |
|----------------------------|----------------|----------|----------|
| 7.9 / 200                  | 42595042       | 42595042 | 42595082 |

Note: includes an escutcheon allowing the function of door interlocking in ON position.

## Options for I-II / I-O-II / By-pass / I+II-II changeover switches



|                            | Catalog number |          |          |
|----------------------------|----------------|----------|----------|
| Back plate mounting device | 42599040       | 42599040 | 42599080 |
| DIN rail mounting device   | 42599001       | 42599001 | 42599001 |



# COMO C

## COMO C range from 25 to 125 Amperes



Select a switch

| Ampere rating                                           | 80       | 100      | 125      |
|---------------------------------------------------------|----------|----------|----------|
| COMO C for I-II operation                               |          |          |          |
| Catalog number: 3 pole                                  | 42203008 | 42203010 | 42203012 |
| Catalog number: 4 pole                                  | 42204008 | 42204010 | 42204012 |
| COMO C for I-O-II operation                             |          |          |          |
| Catalog number: 3 pole                                  | 42303008 | 42303010 | 42303012 |
| Catalog number: 4 pole                                  | 42304008 | 42304010 | 42304012 |
| COMO C for I+II-II operation (overlapping)              |          |          |          |
| Catalog number: 3 pole                                  | 42403008 | 42403010 | 42403012 |
| Catalog number: 4 pole                                  | 42404008 | 42404010 | 42404012 |
| COMO C for I-O-II operation with one auxiliary contact  |          |          |          |
| Catalog number: 3 pole                                  | 42303108 | -        | -        |
| Catalog number: 4 pole                                  | 42304108 | -        | -        |
| COMO C for I-O-II operation with two auxiliary contacts |          |          |          |
| Catalog number: 3 pole                                  | 42303208 | -        | -        |
| Catalog number: 4 pole                                  | 42304208 | -        | -        |
| COMO C for I-O-II by-pass operation                     |          |          |          |
| Catalog number: 3 + 6 pole                              | 42503008 | 42503010 | 42503012 |
| Catalog number: 4 + 8 pole                              | 42504008 | 42504010 | 42504012 |

## External and direct operation

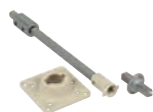


Select a handle

| To suit switch   | IP   | Padlock position | Color        | Catalog number |          |          |
|------------------|------|------------------|--------------|----------------|----------|----------|
| I-II             | IP54 | I-II             | Black / Grey | 42591082       | 42591082 | 42591082 |
| I-II             | IP54 | I-II             | Red / Yellow | 42591083       | 42591083 | 42591083 |
| I-O-II / By-pass | IP54 | 0                | Black / Grey | 42591082       | 42591082 | 42591082 |
| I-O-II / By-pass | IP54 | 0                | Red / Yellow | 42591083       | 42591083 | 42591083 |
| I+II-II          | IP54 | I+II-II          | Black / Grey | 42591082       | 42591082 | 42591082 |
| I+II-II          | IP54 | I+II-II          | Red / Yellow | 42591083       | 42591083 | 42591083 |
| I-II             | IP54 | -                | White        | 42592082       | 42592082 | 42592082 |
| I-O-II / By-pass | IP54 | -                | White        | 42593082       | 42593082 | 42593082 |
| I+II-II          | IP54 | -                | White        | 42594082       | 42594082 | 42594082 |

Note: handles are not defeatable.

## For external operation only



Select a shaft

| Shaft length (inches / mm) | Catalog number |          |          |
|----------------------------|----------------|----------|----------|
| 7.9 / 200                  | 42595082       | 42595082 | 42595082 |

Note: includes an escutcheon allowing the function of door interlocking in ON position.

## Options for I-II / I-O-II / By-pass / I+II-II changeover switches



|                            | Catalog number |          |          |
|----------------------------|----------------|----------|----------|
| Back plate mounting device | 42599080       | 42599080 | 42599080 |
| DIN rail mounting device   | 42599001       | 42599001 | 42599001 |

## Technical characteristics

### UL and cUL

| Rating                                      | 25          | 40          | 63                             | 80        | 100       | 125       |
|---------------------------------------------|-------------|-------------|--------------------------------|-----------|-----------|-----------|
| UL approval                                 |             |             | UL 508 Manual Motor Controller |           |           |           |
| Short circuit rating kA                     | 5           | 5           | 5                              | 5         | 5         | 5         |
| Branch circuit fuse type                    | J           | J           | K5                             | K5        | K5        | K5        |
| Max fuse rating A                           | 70          | 125         | 80                             | 100       | 125       | 150       |
| Maximum UL Horsepower ratings (3-PH) HP     |             |             |                                |           |           |           |
| 200 / 208 V AC                              | 1.5         | 5           | 15                             | 15        | 20        | 20        |
| 220 / 240 V AC                              | 2           | 7.5         | 15                             | 20        | 25        | 25        |
| 380 / 415 V AC                              | 3           | 10          | 25                             | 25        | 30        | 30        |
| 440 / 480 V AC                              | 5           | 15          | 30                             | 30        | 40        | 40        |
| 550 / 600 V AC                              | 7.5         | 20          | 32                             | 40        | 50        | 50        |
| Maximum UL Horsepower ratings (1-PH) HP     |             |             |                                |           |           |           |
| 110 / 120 V AC                              | 2           | 2           | 5                              | 7.5       | 10        | 10        |
| 220 / 240 V AC                              | 5           | 5           | 10                             | 15        | 15        | 15        |
| Terminal lugs                               |             |             |                                |           |           |           |
| Max wire size AWG                           | 10          | 6           | 1                              | 1         | 1         | 1         |
| Wire type                                   | Cu          | Cu          | Cu                             | Cu        | Cu        | Cu        |
| Minimum wire tightening torque lb.in.       | 14.2        | 16.0        | 21.3                           | 21.3      | 21.3      | 21.3      |
| Weight (lb / kg)                            |             |             |                                |           |           |           |
| 3-pole changeover switch with direct handle | 0.55 / 0.25 | 0.66 / 0.30 | 1.21 / 0.55                    | 1.39/0.63 | 1.39/0.63 | 1.39/0.63 |
| 4-pole changeover switch with direct handle | 0.68 / 0.31 | 0.88 / 0.40 | 1.54/0.70                      | 1.76/0.80 | 1.76/0.80 | 1.76/0.80 |

### IEC 947-3

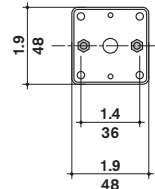
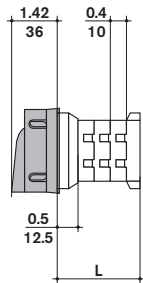
| Rating (Thermal current Ith at 40 °C) A                                                     | 25      | 40      | 63      | 80      | 100     | 125     |
|---------------------------------------------------------------------------------------------|---------|---------|---------|---------|---------|---------|
| Rated insulation voltage Ui (V)                                                             | 660     | 660     | 660     | 660     | 660     | 660     |
| Rated impulse withstand voltage Uimp (kV)                                                   | 4       | 4       | 4       | 4       | 4       | 4       |
| Rated operating current Ie (A)                                                              |         |         |         |         |         |         |
| 400 V AC                                                                                    |         |         |         |         |         |         |
| AC 21A                                                                                      | 25      | 40      | 63      | 80      | 100     | 125     |
| AC 22A                                                                                      | 25      | 40      | 63      | 80      | 100     | 100     |
| AC 23A                                                                                      | 20      | 32      | 63      | 63      | 63      | 85      |
| 500 V AC                                                                                    |         |         |         |         |         |         |
| AC 21A                                                                                      | 25      | 40      | 63      | 80      | 100     | 125     |
| AC 22A                                                                                      | 25      | 40      | 63      | 63      | 100     | 100     |
| AC 23A                                                                                      | 20      | 25      | 50      | 50      | 63      | 85      |
| Motor Power (kW)                                                                            |         |         |         |         |         |         |
| 400 V AC without pre break auxiliary contact: AC 23                                         | 10      | 15      | 20      | 26      | 32      | 32      |
| 500 V AC without pre break auxiliary contact: AC 23                                         | 12      | 18.5    | 22      | 30      | 36      | 36      |
| Overload capacity                                                                           |         |         |         |         |         |         |
| Fuse-protected short circuit withstand (kA rms prospective) with gG DIN fuse <sup>(1)</sup> | 6       | 6       | 15      | 15      | 15      | 15      |
| Rating of DIN gG fuse (A)                                                                   | 25      | 40      | 63      | 80      | 100     | 125     |
| Cut-off current (kA peak) <sup>(1)</sup>                                                    | 2       | 2.6     | 5.8     | 5.8     | 5.8     | 5.8     |
| Mechanical durability (number of operations)                                                | 100 000 | 100 000 | 100 000 | 100 000 | 100 000 | 100 000 |
| Connection (copper)                                                                         |         |         |         |         |         |         |
| Minimum section at Ith (cable) mm <sup>2</sup>                                              | 2.5     | 6       | 10      | 16      | 16      | 16      |
| Maximum section (cable) mm <sup>2</sup>                                                     | 6       | 16      | 50      | 50      | 50      | 50      |
| Minimum tightening torque Nm                                                                | 1.6     | 1.8     | 2.4     | 2.4     | 2.4     | 2.4     |

(1) For a rated operating voltage Ue = 400 V AC.

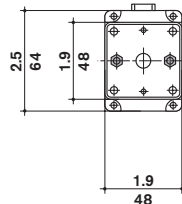
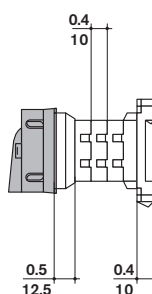
# COMO C

## Dimensions (in / mm) for COMO C 25 A

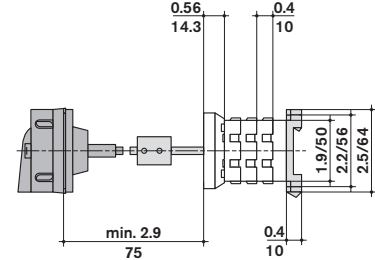
Door mounted with direct operation



Back mounted with direct operation



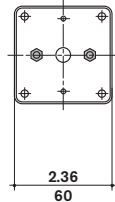
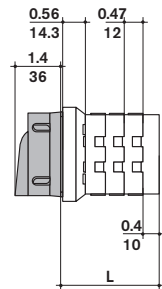
Back mounted with external operation



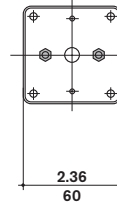
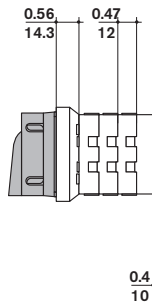
| 25 A   | I-O-II      |             | I-II        |             | I-I+II-II   |             | I-O-II By pass |             |
|--------|-------------|-------------|-------------|-------------|-------------|-------------|----------------|-------------|
| COMO C | 3 P         | 4 P         | 3 P         | 4 P         | 3 P         | 4 P         | 3 + 6 P        | 4 + 8 P     |
| L      | 1.99 / 50.5 | 2.38 / 60.5 | 1.99 / 50.5 | 2.38 / 60.5 | 1.99 / 50.5 | 2.38 / 60.5 | 2.77 / 70.5    | 3.17 / 80.5 |

## Dimensions (in / mm) for COMO C 40 A

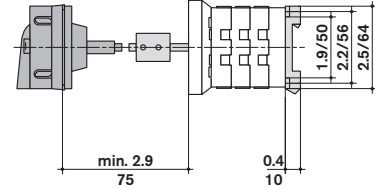
Door mounted with direct operation



Back mounted with direct operation



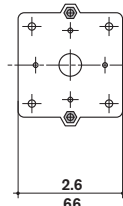
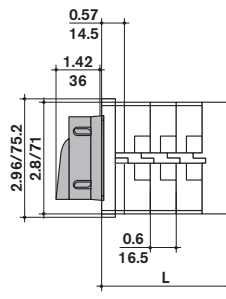
Back mounted with external operation



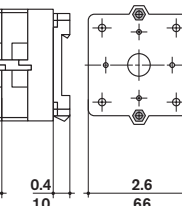
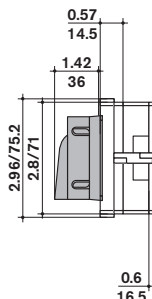
| 40 A   | I-O-II      |             | I-II        |             | I-I+II-II   |             | I-O-II By pass |             |
|--------|-------------|-------------|-------------|-------------|-------------|-------------|----------------|-------------|
| COMO C | 3 P         | 4 P         | 3 P         | 4 P         | 3 P         | 4 P         | 3 + 6 P        | 4 + 8 P     |
| L      | 2.37 / 60.3 | 2.85 / 72.3 | 2.37 / 60.3 | 2.85 / 72.3 | 2.37 / 60.3 | 2.85 / 72.3 | 3.32 / 84.3    | 3.79 / 96.3 |

## Dimensions (in / mm) for COMO C 63 - 80 - 100 - 125 A

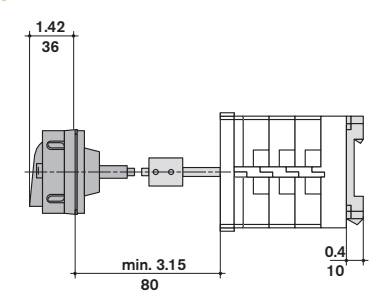
Door mounted with direct operation



Back mounted with direct operation



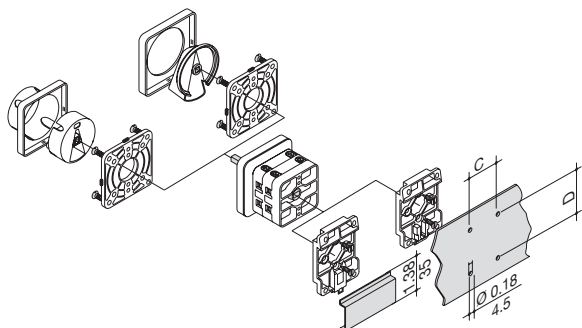
Back mounted with external operation



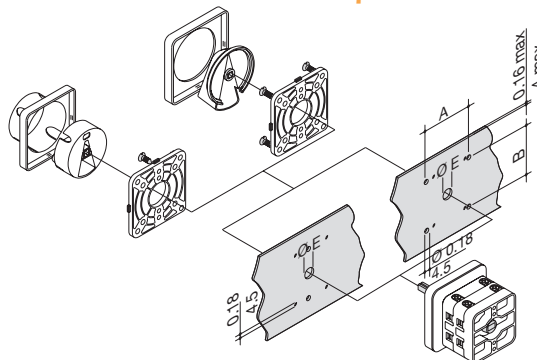
| 63 - 80 - 100 - 125 A | I-O-II    |           | I-II      |           | I-I+II-II |           | I-O-II By pass |              |
|-----------------------|-----------|-----------|-----------|-----------|-----------|-----------|----------------|--------------|
| COMO C                | 3 P       | 4 P       | 3 P       | 4 P       | 3 P       | 4 P       | 3 + 6 P        | 4 + 8 P      |
| L                     | 3.15 / 80 | 3.82 / 97 | 3.15 / 80 | 3.82 / 97 | 3.15 / 80 | 3.82 / 97 | 4.48 / 113.8   | 5.14 / 130.5 |

## Dimensions (in / mm) for door drilling

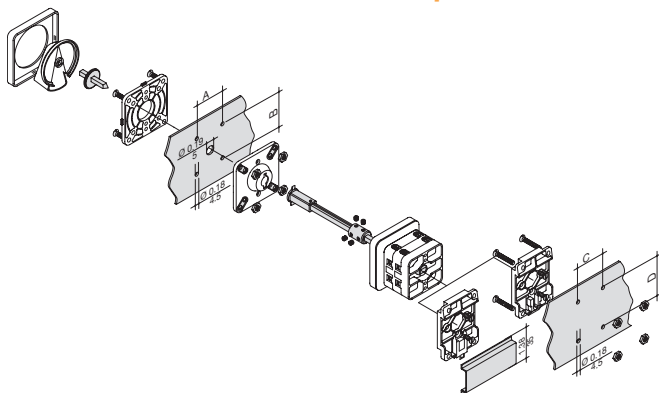
### Back mounted with direct operation



### Door mounted with direct operation



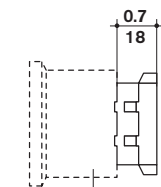
### Back mounted with external operation



| Rating      | A         | B         | E         | M         | C         | D         |
|-------------|-----------|-----------|-----------|-----------|-----------|-----------|
| 25 A        | 1.42 / 36 | 1.42 / 36 | 0.39 / 10 | 1.50 / 38 | 1.42 / 36 | 2.20 / 56 |
| 40 A        | 1.89 / 48 | 1.89 / 48 | 0.39 / 10 | 1.77 / 45 | 1.42 / 36 | 2.20 / 56 |
| 63 to 125 A | 1.89 / 48 | 1.89 / 48 | 0.55 / 14 | 0.59 / 15 | 3.07 / 78 | 3.07 / 78 |

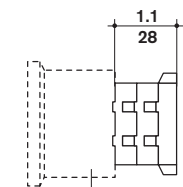
## Dimensions (in / mm) for auxiliary contacts

### One aux. contact

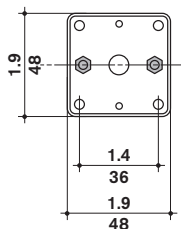


COMO C

### Two aux. contacts



COMO C



# SIRCOVER from 125 to 3150 A

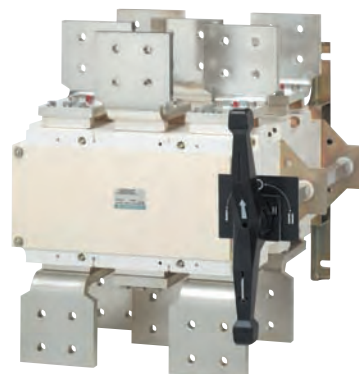
## Product presentation



200 A



1600 A



3150 A

SIRCOVER are manually operated multipolar changeover switches.

They changeover between two low voltage power circuits under load and provide safety disconnection.

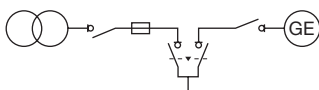
### Highlights

- Fully visualized breaking
- 3 stable positions (I-O-II or overlapping I-I+II-II)
- Motorized versions available on request

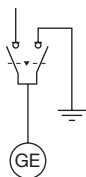


### Applications

- Manual changeover from main supply to back-up source



- Switching between loads (motor or back-up)
- Reversing motor via phase inversion
- Earthing switch



### Ratings

- 125, 160, 200, 250, 400, 630, 800, 1250, 1600, 1800, 2000, 2500 and 3150 amperes

### Approvals

- IEC 60947-3
- NF EN 60947-3
- VDE 0660 Teil 107 (1992)
- NBN EN 60947-3
- BS EN 60947-3

## SIRCOVER range from 125 to 200 A



Select a switch

| Ampere rating                                | 125      | 160      | 200      |
|----------------------------------------------|----------|----------|----------|
| SIRCOVER for I-O-II operation                |          |          |          |
| Catalog number: 3 pole                       | 41003013 | 41003016 | 41003019 |
| Catalog number: 4 pole                       | 41004013 | 41004016 | 41004019 |
| SIRCOVER for I+II-II operation (overlapping) |          |          |          |
| Catalog number: 3 pole                       | 41903013 | 41903016 | 41903019 |
| Catalog number: 4 pole                       | 41904013 | 41904016 | 41904019 |

### S type pistol handle for external front operation



Select a handle

| To suit switch | IP   | Padlock position | Color | Catalog number |          |          |
|----------------|------|------------------|-------|----------------|----------|----------|
| I-O-II         | IP55 | 0                | Black | 14212113       | 14212113 | 14212113 |
| I-O-II         | IP65 | 0                | Black | 14232113       | 14232113 | 14232113 |
| I-O-II         | IP65 | I-O-II           | Black | 14232813       | 14232813 | 14232813 |
| I+II-II        | IP65 | I+II             | Black | 14232114       | 14232114 | 14232114 |
| I+II-II        | IP65 | I+II-II          | Black | 14232814       | 14232814 | 14232814 |

Note: handle is defeatable.



Select a shaft

| Shaft length (inches / mm) | Catalog number |          |          |
|----------------------------|----------------|----------|----------|
| 7.9 / 200                  | 14001020       | 14001020 | 14001020 |
| 12.6 / 320                 | 14001032       | 14001032 | 14001032 |

### B type pistol handle for direct front operation



Select a handle

| To suit switch | IP | Padlock position | Color | Catalog number |          |          |
|----------------|----|------------------|-------|----------------|----------|----------|
| I-O-II         | -  | I-O-II           | Black | 41995012       | 41995012 | 41995012 |
| I+II-II        | -  | I+II-II          | Black | 41995012       | 41995012 | 41995012 |

### Options for I-O-II and I+II-II changeover switches



|                                                   | Catalog number |          |          |
|---------------------------------------------------|----------------|----------|----------|
| 3-pole Terminal Shrouds Kit (IP20) <sup>(1)</sup> |                |          |          |
| Line + load shroud side / front terminals         | 26943014       | 26943014 | 26943014 |
| Line + load shroud side / rear terminals          | 26943014       | 26943014 | 26943014 |
| 4-pole Terminal Shrouds Kit (IP20) <sup>(1)</sup> |                |          |          |
| Line + load shroud side / front terminals         | 26944014       | 26944014 | 26944014 |
| Line + load shroud side / rear terminals          | 26944014       | 26944014 | 26944014 |
| Bridging bars For 1 pole <sup>(2)</sup>           | 41090019       | 41090019 | 41090019 |
| Auxiliary contacts                                |                |          |          |
| 1st NO.NC per position, 16 A                      | 41090021       | 41090021 | 41090021 |
| 2nd NO.NC <sup>(3)</sup> per position, 16 A       | 41090021       | 41090021 | 41090021 |

Note: Door interlocking feature in ON position for external front operation.

For any specific interlocking device (Ronis, Castell, Kirck), please consult us.

(1) Set for three or four terminals.

Cannot fit rear terminal shroud when bridging bars are fitted.

(2) One bridging bar required per pole.

(3) Mounted on the first auxiliary contact (part 41090021).

# SIRCOVER

## SIRCOVER range from 250 to 630 A



Select a switch

| Ampere rating                                | 250      | 400      | 630      |
|----------------------------------------------|----------|----------|----------|
| SIRCOVER for I-O-II operation                |          |          |          |
| Catalog number: 3 pole                       | 41003025 | 41003039 | 41003063 |
| Catalog number: 4 pole                       | 41004025 | 41004039 | 41004063 |
| SIRCOVER for I+II-II operation (overlapping) |          |          |          |
| Catalog number: 3 pole                       | 41903025 | 41903039 | 41903063 |
| Catalog number: 4 pole                       | 41904025 | 41904039 | 41904063 |

### S type pistol handle for external front operation



Select a handle

| To suit switch | IP   | Padlock position | Color | Catalog number |          |          |
|----------------|------|------------------|-------|----------------|----------|----------|
| I-O-II         | IP54 | 0                | Black | 14212113       | 14212113 | 14212113 |
| I-O-II         | IP65 | 0                | Black | 14232113       | 14232113 | 14232113 |
| I-O-II         | IP65 | I-O-II           | Black | 14232813       | 14232813 | 14232813 |
| I+II-II        | IP54 | I+II             | Black | 14232114       | 14232114 | 14232114 |
| I+II-II        | IP65 | I+II-II          | Black | 14232814       | 14232814 | 14232814 |

Note: handle is defeatable.



Select a shaft

| Shaft length (inches / mm) | Catalog number |          |          |
|----------------------------|----------------|----------|----------|
| 7.9 / 200                  | 14001020       | 14001020 | 14001020 |
| 12.6 / 320                 | 14001032       | 14001032 | 14001032 |

### B type handle for direct front operation



Select a handle

| To suit switch | IP | Padlock position | Color | Catalog number |          |          |
|----------------|----|------------------|-------|----------------|----------|----------|
| I-O-II         | -  | I-O-II           | Black | 41995012       | 41995012 | 41995012 |
| I+II-II        | -  | I+II-II          | Black | 41995012       | 41995012 | 41995012 |

### Options for I-O-II and I+II-II changeover switches



|                                                   | Catalog number |          |          |
|---------------------------------------------------|----------------|----------|----------|
| 3-pole Terminal Shrouds Kit (IP20) <sup>(1)</sup> |                |          |          |
| Line + load shroud side / front terminals         | 26943020       | 26943020 | 26943051 |
| Line + load shroud side / rear terminals          | 26943020       | 26943020 | 26943051 |
| 4-pole Terminal Shrouds Kit (IP20) <sup>(1)</sup> |                |          |          |
| Line + load shroud side / front terminals         | 26944020       | 26944020 | 26944051 |
| Line + load shroud side / rear terminals          | 26944020       | 26944020 | 26944051 |
| Bridging bars For 1 pole <sup>(2)</sup>           | 41090025       | 41090039 | 41090063 |
| Auxiliary contacts                                |                |          |          |
| 1st NO.NC per position, 16 A                      | 41090021       | 41090021 | 41090021 |
| 2nd NO.NC <sup>(3)</sup> per position, 16 A       | 41090021       | 41090021 | 41090021 |

Note: Door interlocking feature in ON position for external front operation.

For any specific interlocking device (Ronis, Castell, Kirck), please consult us.

(1) Set for three or four terminals.

Cannot fit rear terminal shroud when bridging bars are fitted.

(2) One bridging bar required per pole.

(3) Mounted on the first auxiliary contact (part 41090021).

## SIRCOVER range from 800 to 1800 A



Select a switch

| Ampere rating                                | 800      | 1250     | 1600     | 1800     |
|----------------------------------------------|----------|----------|----------|----------|
| SIRCOVER for I-O-II operation                |          |          |          |          |
| Catalog number: 3 pole                       | 41003080 | 41003120 | 41003160 | 41003180 |
| Catalog number: 4 pole                       | 41004080 | 41004120 | 41004160 | 41004180 |
| SIRCOVER for I+II-II operation (overlapping) |          |          |          |          |
| Catalog number: 3 pole                       | 41903080 | 41903120 | 41903160 | 41903180 |
| Catalog number: 4 pole                       | 41904080 | 41904120 | 41904160 | 41904180 |

### S type pistol handle for external front operation



Select a handle

| To suit switch | IP   | Padlock position | Color | Catalog number |          |          |          |
|----------------|------|------------------|-------|----------------|----------|----------|----------|
| I-O-II         | IP65 | I-O-II           | Black | 14333813       | 14333813 | 14333813 | 14333813 |
| I+II-II        | IP65 | I+II-II          | Black | 14333814       | 14333814 | 14333814 | 14333814 |

Note: handle is defeatable.



Select a shaft

| Shaft length (inches / mm) | Catalog number |          |          |          |
|----------------------------|----------------|----------|----------|----------|
| 7.9 / 200                  | 14011520       | 14011520 | 14011520 | 14011520 |
| 17.7 / 450                 | 14011532       | 14011532 | 14011532 | 14011532 |

### C type pistol handle for direct front operation



Select a handle

| To suit switch | IP | Padlock position | Color | Catalog number |          |          |          |
|----------------|----|------------------|-------|----------------|----------|----------|----------|
| I-O-II         | -  | I-O-II           | Black | 27997052       | 27997052 | 27997052 | 27997052 |
| I+II-II        | -  | I+II-II          | Black | 27997052       | 27997052 | 27997052 | 27997052 |

### Options for I-O-II and I+II-II changeover switches



|                                             | Catalog number |          |          |          |
|---------------------------------------------|----------------|----------|----------|----------|
| 3-pole Terminal Screen                      | 15093080       | 15093080 | 15093160 | 15093160 |
| Line or load side / front terminals         |                |          |          |          |
| 4-pole Terminal Screen                      | 15094080       | 15094080 | 15094160 | 15094160 |
| Line or load side / front terminals         |                |          |          |          |
| Bridging bars For 1 pole <sup>(1)</sup>     | 41090080       | 41090120 | 41090160 | 41090160 |
| Auxiliary contacts                          |                |          |          |          |
| 1st NO.NC per position, 16 A                | 41090021       | 41090021 | 41090021 | 41090021 |
| 2nd NO.NC <sup>(2)</sup> per position, 16 A | 41090021       | 41090021 | 41090021 | 41090021 |

Note: Door interlocking feature in ON position for external front operation.

For any specific interlocking device (Ronis, Castell, Kirck), please consult us.

(1) One bridging bar required per pole.

(2) Mounted on the first auxiliary contact (part 41090021 or 44090021).



## SIRCOVER range from 2000 to 3150 A



Select a switch

| Ampere rating                 | 2000     | 2500     | 3150     |
|-------------------------------|----------|----------|----------|
| SIRCOVER for I-O-II operation |          |          |          |
| Catalog number: 3 pole        | 42003200 | 42003250 | 42003310 |
| Catalog number: 4 pole        | 42004200 | 42004250 | 42004310 |

### V type double handle for external front operation



Select a handle

| To suit switch | IP   | Padlock position | Color | Catalog number |          |          |
|----------------|------|------------------|-------|----------------|----------|----------|
| I-O-II         | IP65 | I-O-II           | Black | 27997146       | 27997146 | 27997146 |

Note: handle is not defeatable.



Select a shaft

| Shaft length (inches / mm) | Catalog number |          |          |
|----------------------------|----------------|----------|----------|
| 12.6 / 320                 | 27993018       | 27993018 | 27993018 |

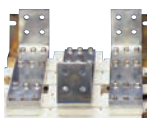
### C type double handle for direct front operation



Select a handle

| To suit switch | IP | Padlock position | Color | Catalog number |          |          |
|----------------|----|------------------|-------|----------------|----------|----------|
| I-O-II         | -  | I-O-II           | Black | 27997012       | 27997012 | 27997012 |

### Options for I-O-II changeover switches



|                                                          | Catalog number |             |             |
|----------------------------------------------------------|----------------|-------------|-------------|
| 3-pole Terminal Screen                                   | as standard    | as standard | as standard |
| Line + load side / front terminals                       |                |             |             |
| 4-pole Terminal Screen                                   | as standard    | as standard | as standard |
| Line + load side / front terminals                       |                |             |             |
| Bridging bars For 1 pole <sup>(1)</sup> (factory fitted) | 44090250       | 44090250    | 44090310    |
| Auxiliary contacts                                       |                |             |             |
| 1st NO.NC per position, 16 A                             | 44090021       | 44090021    | 44090021    |
| 2nd NO.NC <sup>(2)</sup> per position, 16 A              | 44090022       | 44090022    | 44090022    |

Note: Door interlocking feature in ON position for external front operation.

For any specific interlocking device (Ronis, Castell, Kirck), please consult us.

(1) One bridging bar required per pole.

(2) Mounted on the first auxiliary contact (part 44090021).

## Technical characteristics

### IEC 947-3

| Rating (Thermal current I <sub>th</sub> at 40 °C)                                           | 125 A           | 160 A                  | 200 A                                  | 250 A                                  | 400 A                                  | 630 A                                  |
|---------------------------------------------------------------------------------------------|-----------------|------------------------|----------------------------------------|----------------------------------------|----------------------------------------|----------------------------------------|
| Rated insulation voltage U <sub>i</sub> (V)                                                 | 800             | 800                    | 800                                    | 800                                    | 800                                    | 1000                                   |
| Rated impulse withstand voltage U <sub>imp</sub> (kV)                                       | 8               | 8                      | 8                                      | 8                                      | 8                                      | 12                                     |
| Dielectric strength (V) 50 Hz 1 min                                                         | 5 000           | 5 000                  | 5 000                                  | 5 000                                  | 5 000                                  | 8 000                                  |
| Rated operational current I <sub>e</sub> (A) <sup>(1)</sup>                                 | A / B           | A / B                  | A / B                                  | A / B                                  | A / B                                  | A / B                                  |
| 400 V AC                                                                                    | AC 21A / AC 21B | 125 / 125              | 160 / 160                              | 200 / 200                              | 250 / 250                              | 400 / 400                              |
|                                                                                             | AC 22A / AC 22B | 125 / 125              | 160 / 160                              | 200 / 200                              | 250 / 250                              | 400 / 400                              |
|                                                                                             | AC 23A / AC 23B | 125 / 125              | 160 / 160                              | 160 / 160                              | 250 / 250                              | 250 / 250                              |
| 690 V AC <sup>(2)</sup>                                                                     | AC 20A / AC 20B | 125 / 125              | 160 / 160                              | 200 / 200                              | 250 / 250                              | 400 / 400                              |
|                                                                                             | AC 21A / AC 21B | 125 / 125              | 160 / 160                              | 160 / 160                              | 200 / 250                              | 200 / 250                              |
|                                                                                             | AC 22A / AC 22B | 125 / 125              | 125 / 125                              | 125 / 125                              | 125 / 160                              | 125 / 160                              |
|                                                                                             | AC 23A / AC 23B | 63 / 80                | 63 / 80                                | 63 / 80                                | 100 / 125                              | 100 / 125                              |
| 220 V DC                                                                                    | DC 20A / DC 20B | 125 / 125              | 160 / 160                              | 200 / 200                              | 250 / 250                              | 400 / 400                              |
|                                                                                             | DC 21A / DC 21B | 125 / 125              | 160 / 160                              | 160 / 160                              | 250 / 250                              | 250 / 250                              |
|                                                                                             | DC 22A / DC 22B | 125 / 125              | 160 / 160                              | 160 / 160                              | 250 / 250                              | 250 / 250                              |
|                                                                                             | DC 23A / DC 23B | 125 / 125              | 125 / 125                              | 125 / 125                              | 200 / 200                              | 200 / 200                              |
| 440 V DC                                                                                    | DC 20A / DC 20B | 125 / 125              | 160 / 160                              | 200 / 200                              | 250 / 250                              | 400 / 400                              |
|                                                                                             | DC 21A / DC 21B | 125 / 125              | 125 / 125                              | 125 / 125                              | 200 / 200                              | 200 / 200                              |
|                                                                                             | DC 22A / DC 22B | 125 / 125              | 125 / 125                              | 125 / 125                              | 200 / 200                              | 200 / 200                              |
|                                                                                             | DC 23A / DC 23B | 125 <sup>(3)</sup> /80 | 125 <sup>(3)</sup> /125 <sup>(3)</sup> | 125 <sup>(3)</sup> /125 <sup>(3)</sup> | 200 <sup>(3)</sup> /200 <sup>(3)</sup> | 200 <sup>(3)</sup> /200 <sup>(3)</sup> |
| Motor Power (kW) <sup>(1)</sup>                                                             | A / B           | A / B                  | A / B                                  | A / B                                  | A / B                                  | A / B                                  |
| 400 V AC without pre break auxiliary contact: AC 23                                         | 63 / 63         | 80 / 80                | 80 / 80                                | 132 / 132                              | 132 / 132                              | 280 / 280                              |
| 690 V AC without pre break auxiliary contact: AC 23                                         | 55 / 75         | 55 / 75                | 55 / 75                                | 90 / 110                               | 90 / 110                               | 150 / 185                              |
| Overload capacity                                                                           |                 |                        |                                        |                                        |                                        |                                        |
| Fuse-protected short circuit withstand (kA rms prospective) with gG DIN fuse <sup>(4)</sup> | 100             | 100                    | 50                                     | 50                                     | 18                                     | 70                                     |
| Rating of DIN gG fuse (A)                                                                   | 125             | 160                    | 200                                    | 250                                    | 400                                    | 630                                    |
| Cut-off current (kA peak)                                                                   | 18              | 18                     | 18                                     | 23                                     | 23                                     | 45                                     |
| Rated short-time withstand current I <sub>cw</sub> (kA rms 1s)                              | 7               | 7                      | 7                                      | 9                                      | 9                                      | 13                                     |
| Making & Breaking capacity characteristics (A rms)                                          |                 |                        |                                        |                                        |                                        |                                        |
| Breaking capacity: 400V AC 23A                                                              | 1000            | 1280                   | 1280                                   | 2000                                   | 2000                                   | 4 000                                  |
| Making capacity: 400V AC 23A                                                                | 1250            | 1600                   | 1600                                   | 2500                                   | 2500                                   | 5 000                                  |
| Rated short-circuit making capacity I <sub>cm</sub> (kA peak prospective)                   | 11.9            | 11.9                   | 11.9                                   | 15.3                                   | 15.3                                   | 26                                     |
| Mechanical durability (number of operations)                                                | 10 000          | 10 000                 | 10 000                                 | 10 000                                 | 10 000                                 | 5 000                                  |
| Operating torque (Nm)                                                                       | 6.5             | 6.5                    | 7                                      | 10                                     | 10                                     | 14.5                                   |
| Connection (copper)                                                                         |                 |                        |                                        |                                        |                                        |                                        |
| Minimum section at I <sub>th</sub> (mm <sup>2</sup> ) (Cu cables)                           | 35              | 50                     | 50                                     | 95                                     | 185                                    | 2 x 150                                |
| Maximum section (mm <sup>2</sup> ) (cables)                                                 | 50              | 95                     | 95                                     | 150                                    | 240                                    | 2 x 300                                |
| Minimum section at I <sub>th</sub> (mm <sup>2</sup> ) (Cu busbar)                           |                 |                        |                                        |                                        |                                        | 2 x 30 x 5                             |
| Maximum width (mm) (busbar)                                                                 | 25              | 25                     | 25                                     | 32                                     | 32                                     | 50                                     |
| Minimum tightening torque (Nm)                                                              | 9               | 9                      | 9                                      | 20                                     | 20                                     | 20                                     |
| Weight (kg)                                                                                 |                 |                        |                                        |                                        |                                        |                                        |
| 3-pole switch                                                                               | 1.5             | 1.6                    | 1.8                                    | 2.0                                    | 3.0                                    | 3.5                                    |
| 4-pole switch                                                                               | 1.6             | 1.7                    | 1.9                                    | 2.1                                    | 3.5                                    | 4.0                                    |

## Technical characteristics

### IEC 947-3

| Rating (Thermal current I <sub>th</sub> at 40 °C)                                           | 800 A                                  | 1250 A                                   | 1600 A                                   | 2000 A                                   | 2500 A                                   | 3150 A                                   |
|---------------------------------------------------------------------------------------------|----------------------------------------|------------------------------------------|------------------------------------------|------------------------------------------|------------------------------------------|------------------------------------------|
| Rated insulation voltage U <sub>i</sub> (V)                                                 | 1000                                   | 1000                                     | 1000                                     | 1000                                     | 1000                                     | 1000                                     |
| Rated impulse withstand voltage U <sub>imp</sub> (kV)                                       | 12                                     | 12                                       | 12                                       | 12                                       | 12                                       | 12                                       |
| Dielectric strength (V) 50 Hz 1 min                                                         | -                                      | -                                        | 10000                                    | 10000                                    | 10000                                    | 10000                                    |
| Rated operational current I <sub>e</sub> (A) <sup>(1)</sup>                                 | A / B                                  | A / B                                    | A / B                                    | A / B                                    | A / B                                    | A / B                                    |
| 400 V AC                                                                                    |                                        |                                          |                                          |                                          |                                          |                                          |
| AC 21A / AC 21B                                                                             | 800 / 800                              | 1250 / 1250                              | 1600 / 1600                              | 2000/2000                                | 2500 /2500                               | 3150/3150                                |
| AC 22A / AC 22B                                                                             | 800 / 800                              | 1250 / 1250                              | 1250 / 1250                              | 2000/2000                                | 2000 /2500                               | 2500/2500                                |
| AC 23A / AC 23B                                                                             | 800 / 800                              | 1250 /1250                               | 1000/1000                                | 1250/1250                                | 1250/1250                                | 1250/1250                                |
| 690 V AC <sup>(2)</sup>                                                                     |                                        |                                          |                                          |                                          |                                          |                                          |
| AC 20A / AC 20B                                                                             | 800 / 800                              | 1250 / 1250                              | 1600 / 1600                              | 2000/2000                                | 2500 /2500                               | 3150/3150                                |
| AC 21A / AC 21B                                                                             | 800 / 800                              | -                                        | 1600 / 1600                              | 2000/ 2000                               | 2000 / 2500                              | 2000 / 2500                              |
| AC 22A / AC 22B                                                                             | 800 / 800                              | -                                        | 800 / 800                                | 1000 / 1000                              | 1000 / 1000                              | 1000 / 1000                              |
| AC 23A / AC 23B                                                                             | -                                      | -                                        | 500 / 500                                | 800 / 800                                | 800 / 800                                | 800 / 800                                |
| 220 V DC                                                                                    |                                        |                                          |                                          |                                          |                                          |                                          |
| DC 20A / DC 20B                                                                             | 800 / 800                              | 1250 / 1250                              | 1600 / 1600                              | 2000/2000                                | 2500 /2500                               | 3150/3150                                |
| DC 21A / DC 21B                                                                             | 800 / 800                              | 1250 / 1250                              | 1600 / 1600                              | 2000/2000                                | 2000 /2500                               | 2000/2500                                |
| DC 22A / DC 22B                                                                             | 800 / 800                              | 1250 / 1250                              | 1250 / 1250                              | 1250 /1600                               | 1250/1600                                | 1250/1600                                |
| DC 23A / DC 23B                                                                             | 800 / 800                              | 1250/1250                                | 1250 <sup>(3)</sup> /1250 <sup>(3)</sup> | 1250 <sup>(3)</sup> /1250 <sup>(3)</sup> | 1250 <sup>(3)</sup> /1250 <sup>(3)</sup> | 1250 <sup>(3)</sup> /1250 <sup>(3)</sup> |
| 440 V DC                                                                                    |                                        |                                          |                                          |                                          |                                          |                                          |
| DC 20A / DC 20B                                                                             | 800 / 800                              | 1250 / 1250                              | 1600 / 1600                              | 2000/2000                                | 2500 /2500                               | 3150/3150                                |
| DC 21A / DC 21B                                                                             | 800 <sup>(3)</sup> /800 <sup>(3)</sup> | 1250 <sup>(3)</sup> /1250 <sup>(3)</sup> | 1250/1250                                | 1250/1250                                | 1250/1250                                | 1250/1250                                |
| DC 22A / DC 22B                                                                             | 800 <sup>(3)</sup> /800 <sup>(3)</sup> | 1250 <sup>(3)</sup> /1250 <sup>(3)</sup> | 1250 <sup>(3)</sup> /1250 <sup>(3)</sup> | 1250 <sup>(3)</sup> /1250 <sup>(3)</sup> | 1250 <sup>(3)</sup> /1250 <sup>(3)</sup> | 1250 <sup>(3)</sup> /1250 <sup>(3)</sup> |
| DC 23A / DC 23B                                                                             | 800 <sup>(3)</sup> /800 <sup>(3)</sup> | 1250 <sup>(3)</sup> /1250 <sup>(3)</sup> | 1000 <sup>(3)</sup> /1000 <sup>(3)</sup> | 1000 <sup>(3)</sup> /1000 <sup>(3)</sup> | 1000 <sup>(3)</sup> /1000 <sup>(3)</sup> | 1000 <sup>(3)</sup> /1000 <sup>(3)</sup> |
| Motor Power (kW) <sup>(1)</sup>                                                             | A / B                                  | A / B                                    | A / B                                    | A / B                                    | A / B                                    | A / B                                    |
| 400 V AC without pre break auxiliary contact: AC 23                                         | -                                      | 560 / 560                                | 560 / 560                                | 710 / 710                                | 710 / 710                                | 710 / 710                                |
| 690 V AC without pre break auxiliary contact: AC 23                                         | -                                      | 400 / 475                                | 475 / 475                                | 750 / 750                                | 750 / 750                                | 750 / 750                                |
| Overload capacity                                                                           |                                        |                                          |                                          |                                          |                                          |                                          |
| Fuse-protected short circuit withstand (kA rms prospective) with gG DIN fuse <sup>(4)</sup> | 50                                     | 100                                      | 100                                      | 100                                      | 100                                      | 100                                      |
| Rating of DIN gG fuse (A)                                                                   | 800                                    | 1250                                     | 2 x 800                                  | 2 x 1000                                 | 2 x 1250                                 | -                                        |
| Cut-off current (kA peak)                                                                   | -                                      | -                                        | 86                                       | 120                                      | 120                                      | 120                                      |
| Rated short-time withstand current I <sub>cw</sub> (kA rms 1s)                              | -                                      | -                                        | 50                                       | 50                                       | 50                                       | 55                                       |
| Making & Breaking capacity characteristics (A rms)                                          |                                        |                                          |                                          |                                          |                                          |                                          |
| Breaking capacity: 400V AC 23A                                                              | -                                      | -                                        | 8 000                                    | 10000                                    | 10000                                    | 10000                                    |
| Making capacity: 400V AC 23A                                                                | -                                      | 10000                                    | 12500                                    | 12500                                    | 12500                                    |                                          |
| Rated short-circuit making capacity I <sub>cm</sub> (kA peak prospective)                   | -                                      | -                                        | 66                                       | 80                                       | 80                                       | 80                                       |
| Mechanical durability (number of operations)                                                | 3 000                                  | 3 000                                    | 3 000                                    | 3 000                                    | 2500                                     | 2500                                     |
| Operating torque (Nm)                                                                       | -                                      | -                                        | 37                                       | 60                                       | 60                                       | 60                                       |
| Connection (copper)                                                                         |                                        |                                          |                                          |                                          |                                          |                                          |
| Minimum section at I <sub>th</sub> (mm <sup>2</sup> ) (Cu cables)                           | 2 x 185                                | -                                        | -                                        | -                                        | -                                        | -                                        |
| Maximum section (mm <sup>2</sup> ) (cables)                                                 | 2 x 300                                | 4 x 185                                  | 6 x 240                                  | -                                        | -                                        | -                                        |
| Minimum section at I <sub>th</sub> (mm <sup>2</sup> ) (Cu busbar)                           | 2 x 40 x 5                             | 2 x 60 x 5                               | 2 x 80 x 5                               | 3 x 100 x 5                              | 4 x 100 x 5                              | 4 x 100 x 5                              |
| Maximum width (mm) (busbar)                                                                 | 63                                     | 100                                      | 100                                      | 125                                      | 125                                      | 125                                      |
| Minimum tightening torque (Nm)                                                              | -                                      | 20                                       | 40                                       | 40                                       | 40                                       | 40                                       |
| Weight (kg)                                                                                 |                                        |                                          |                                          |                                          |                                          |                                          |
| 3-pole switch                                                                               | -                                      | 22.5                                     | 34                                       | 70                                       | 72                                       | 98                                       |
| 4-pole switch                                                                               | -                                      | 27.5                                     | 42                                       | 85                                       | 88                                       | 110                                      |

(1) "A" indication=frequent operations.

"B" indication=infrequent operations.

(2) With terminal shrouds or separation shield between terminals.

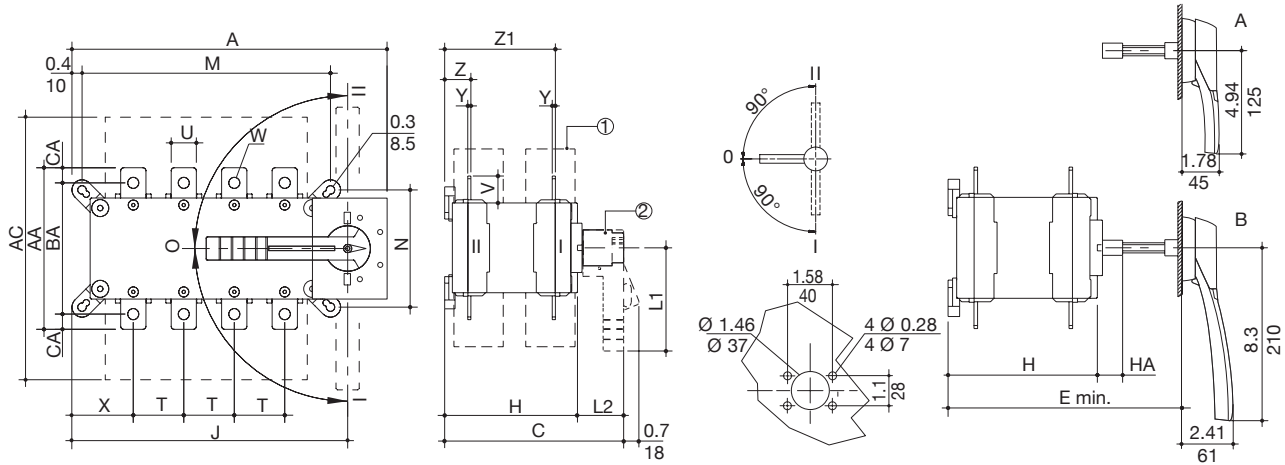
(3) 4 pole changeover switch with 2 pole in series per polarity.

(4) For a rated operating voltage U<sub>e</sub> = 400 V AC.

## Dimensions (in / mm) for SIRCOVER 125-1800 A

### Direct front operation

### External front operation



1. Terminal shrouds.

2. Direct handle

125 to 630 A: L1 = Ø 5.51 / 140 ; L2 = 2.8 / 70.

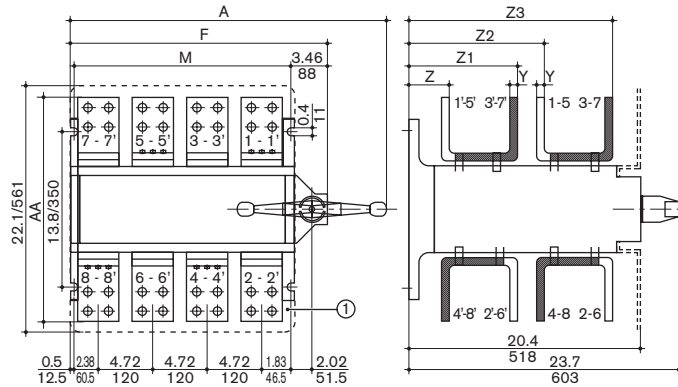
800 to 1800 A: L1 = Ø 8.27 / 210 ; L2 = 4.2 / 106.

|            | Overall dimensions (mm) |      |      |              |      |      |     | Switch mounting (mm) |      |      |      |     | Connection terminals (mm) |     |     |         |      |      |     |     |      |      |     |     |  |
|------------|-------------------------|------|------|--------------|------|------|-----|----------------------|------|------|------|-----|---------------------------|-----|-----|---------|------|------|-----|-----|------|------|-----|-----|--|
| Rating (A) | A3p                     | A 4p | C    | E            | AC   | H    | HA  | J 3p                 | J 4p | M 3p | M 4p | N   | T                         | U   | V   | W       | X 3p | X 4p | Y   | Z   | Z1   | AA   | BA  | CA  |  |
| 125        | 8.7                     | 9.9  | 8.6  | 8.2 to 17.2  | 9.3  | 5.8  | 1   | 7.2                  | 8.3  | 6.1  | 7.3  | 4.0 | 1.4                       | 0.8 | 1.0 | 0.3     | 2.2  | 2.0  | 0.1 | 1.1 | 4.9  | 5.3  | 4.5 | 0.4 |  |
| 160        | 8.7                     | 9.9  | 8.6  | 8.2 to 17.2  | 9.3  | 5.8  | 1   | 7.2                  | 8.3  | 6.1  | 7.3  | 4.0 | 1.4                       | 0.8 | 1.0 | 0.3     | 2.2  | 2.0  | 0.1 | 1.1 | 4.9  | 5.3  | 4.5 | 0.4 |  |
| 200        | 8.7                     | 9.9  | 8.6  | 8.2 to 17.2  | 9.3  | 5.8  | 1   | 7.2                  | 8.3  | 6.1  | 7.3  | 4.0 | 1.4                       | 0.8 | 1.0 | 0.3     | 2.2  | 2.0  | 0.1 | 1.1 | 4.9  | 5.3  | 4.5 | 0.4 |  |
| 250        | 10.3                    | 12.3 | 8.6  | 8.2 to 17.2  | 11.0 | 5.8  | 1   | 8.8                  | 10.7 | 7.7  | 9.7  | 4.6 | 2.0                       | 1.0 | 1.2 | 0.4     | 2.4  | 2.4  | 0.1 | 1.2 | 4.9  | 6.3  | 5.1 | 0.4 |  |
| 400        | 10.3                    | 12.3 | 8.6  | 8.2 to 17.2  | 11.0 | 5.8  | 1   | 8.8                  | 10.7 | 7.7  | 9.7  | 4.6 | 2.0                       | 1.4 | 1.4 | 0.4     | 2.4  | 2.4  | 0.1 | 1.2 | 4.9  | 6.7  | 5.5 | 0.6 |  |
| 630        | 12.6                    | 14.9 | 11.6 | 11.2 to 20.2 | 15.7 | 8.9  | 1   | 10.7                 | 13.1 | 9.7  | 12.0 | 6.9 | 2.6                       | 1.8 | 2.0 | 0.5     | 2.8  | 2.6  | 0.2 | 1.7 | 7.1  | 10.2 | 8.7 | 0.8 |  |
| 800        | 15.2                    | 18.3 | 14.8 | 16.7 to 22.7 | 18.1 | 11.7 | 1.1 | 12.1                 | 15.2 | 13.2 | 13.2 | 9.8 | 3.1                       | 2.0 | 2.4 | 0.6     | 1.9  | 1.9  | 0.3 | 2.6 | 10.0 | 12.6 | -   | 1.0 |  |
| 1250       | 15.2                    | 18.3 | 14.8 | 16.7 to 22.7 | 18.1 | 11.7 | 1.1 | 12.1                 | 15.2 | 13.2 | 13.2 | 9.8 | 3.1                       | 2.4 | 2.6 | 0.6x0.4 | 1.9  | 1.9  | 0.3 | 2.6 | 10.0 | 13.0 | -   | 1.2 |  |
| 1600       | 18.8                    | 23.5 | 14.8 | 16.7 to 22.7 | 18.2 | 11.7 | 1.1 | 15.3                 | 20.4 | 13.7 | 18.4 | 9.8 | 4.7                       | 3.5 | 1.7 | 0.5x0.2 | 2.1  | 2.1  | 0.3 | 2.6 | 10.0 | 11.3 | -   | 0.6 |  |
| 1800       | 18.8                    | 23.5 | 14.8 | 16.7 to 22.7 | 18.2 | 11.7 | 1.1 | 15.3                 | 20.4 | 13.7 | 18.4 | 9.8 | 4.7                       | 3.5 | 1.7 | 0.5x0.2 | 2.1  | 2.1  | 0.3 | 2.6 | 10.0 | 11.3 | -   | 0.6 |  |

|            | Overall dimensions (mm) |      |     |            |     |     |    | Switch mounting (mm) |       |      |      |     | Connection terminals (mm) |    |      |        |      |      |     |      |       |     |     |      |  |
|------------|-------------------------|------|-----|------------|-----|-----|----|----------------------|-------|------|------|-----|---------------------------|----|------|--------|------|------|-----|------|-------|-----|-----|------|--|
| Rating (A) | A3p                     | A 4p | C   | E          | AC  | H   | HA | J 3p                 | J 4p  | M 3p | M 4p | N   | T                         | U  | V    | W      | X 3p | X 4p | Y   | Z    | Z1    | AA  | BA  | CA   |  |
| 125        | 221                     | 251  | 218 | 208 to 436 | 235 | 148 | 25 | 182                  | 212   | 156  | 186  | 101 | 36                        | 20 | 25   | 8.5    | 56   | 50   | 3.5 | 28   | 124   | 135 | 115 | 10   |  |
| 160        | 221                     | 251  | 218 | 208 to 436 | 235 | 148 | 25 | 182                  | 212   | 156  | 186  | 101 | 36                        | 20 | 25   | 8.5    | 56   | 50   | 3.5 | 28   | 124   | 135 | 115 | 10   |  |
| 200        | 221                     | 251  | 218 | 208 to 436 | 235 | 148 | 25 | 182                  | 212   | 156  | 186  | 101 | 36                        | 20 | 25   | 8.5    | 56   | 50   | 3.5 | 28   | 124   | 135 | 115 | 10   |  |
| 250        | 262                     | 312  | 218 | 208 to 436 | 280 | 148 | 25 | 223                  | 273   | 196  | 246  | 116 | 50                        | 25 | 30   | 11     | 61   | 61   | 3.5 | 30   | 124   | 160 | 130 | 10   |  |
| 400        | 262                     | 312  | 218 | 208 to 436 | 280 | 148 | 25 | 223                  | 273   | 196  | 246  | 116 | 50                        | 35 | 35   | 11     | 61   | 61   | 3.5 | 30   | 124   | 170 | 140 | 15   |  |
| 630        | 319                     | 379  | 295 | 285 to 513 | 400 | 225 | 25 | 272                  | 332   | 246  | 306  | 176 | 65                        | 45 | 50   | 13     | 70.5 | 65.5 | 5   | 43   | 180   | 260 | 220 | 20   |  |
| 800        | 386                     | 466  | 375 | 425 to 577 | 459 | 298 | 29 | 306.5                | 386.5 | 336  | 336  | 250 | 80                        | 50 | 60.5 | 15     | 48   | 48   | 7   | 66.5 | 253.5 | 321 | -   | 26.5 |  |
| 1250       | 386                     | 466  | 375 | 425 to 577 | 459 | 298 | 29 | 306.5                | 386.5 | 336  | 336  | 250 | 80                        | 60 | 65   | 16x11  | 48   | 48   | 7   | 66.5 | 253.5 | 330 | -   | 29.5 |  |
| 1600       | 478                     | 598  | 375 | 425 to 577 | 461 | 298 | 29 | 388.5                | 518.5 | 347  | 467  | 250 | 120                       | 90 | 43.5 | 12.5x5 | 54   | 54   | 8   | 66.5 | 255.5 | 288 | -   | 15   |  |
| 1800       | 478                     | 598  | 375 | 425 to 577 | 461 | 298 | 29 | 388.5                | 518.5 | 347  | 467  | 250 | 120                       | 90 | 43.5 | 12.5x5 | 54   | 54   | 8   | 66.5 | 255.5 | 288 | -   | 15   |  |

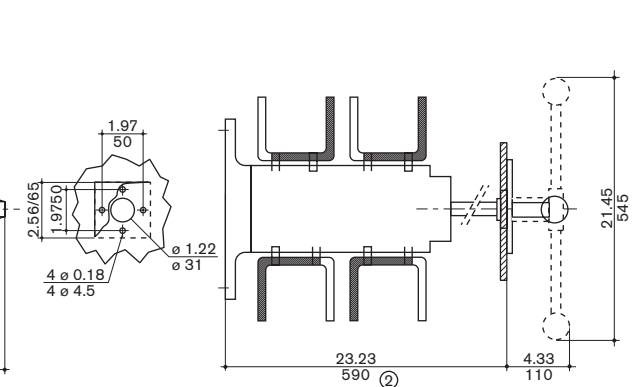
## Dimensions (in / mm) for SIRCOVER 2000-3150 A

### Direct front operation



1. Terminal screen

### External front operation



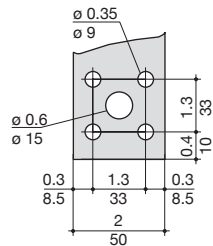
2. Minimum dimension with shaft extension: 25 / 638

| Rating [A] | Overall dimensions (in) |     |      |     |      |       |      |       | Switch mounting (in) |     |      |     | Connection terminals (in) |    |     |      |     |       |      |       |      |       |      |     |
|------------|-------------------------|-----|------|-----|------|-------|------|-------|----------------------|-----|------|-----|---------------------------|----|-----|------|-----|-------|------|-------|------|-------|------|-----|
|            | A3p                     |     | A 4p |     | F 3p |       | F 4p |       | M 3p                 |     | M 4p |     | Y                         |    | Z   |      | Z1  |       | Z2   |       | Z3   |       | AA   |     |
|            | in                      | mm  | in   | mm  | in   | mm    | in   | mm    | in                   | mm  | in   | mm  | in                        | mm | in  | mm   | in  | mm    | in   | mm    | in   | mm    | in   | mm  |
| 2000       | 22.7                    | 576 | 27.4 | 696 | 17.6 | 447.5 | 22.3 | 567.5 | 13.7                 | 347 | 18.4 | 467 | 0.4                       | 10 | 3.1 | 78.5 | 8.9 | 225.5 | 12.2 | 309.5 | 18.0 | 456.5 | 17.9 | 455 |
| 2500       | 22.7                    | 576 | 27.4 | 696 | 17.6 | 447.5 | 22.3 | 567.5 | 13.7                 | 347 | 18.4 | 467 | 0.4                       | 10 | 3.1 | 78.5 | 8.9 | 225.5 | 12.2 | 309.5 | 18.0 | 456.5 | 17.9 | 455 |
| 3150       | 22.7                    | 576 | 27.4 | 696 | 17.6 | 447.5 | 22.3 | 567.5 | 13.7                 | 347 | 18.4 | 467 | 0.6                       | 15 | 3.1 | 78.5 | 9.1 | 230.5 | 12.2 | 309.5 | 18.2 | 461.5 | 19.9 | 505 |

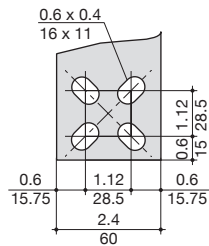
Notes: Mounting orientation: rotation of some devices may be limited. Please consult us.

## Dimensions (in / mm) for connection terminals

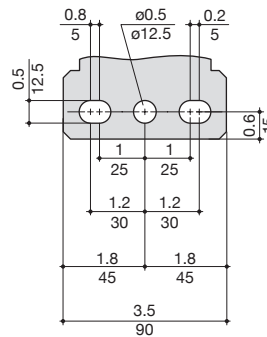
### SIRCOVER 800 A



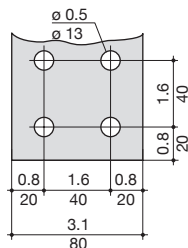
### SIRCOVER 1250 A



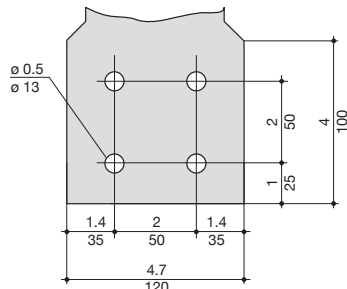
### SIRCOVER 1600-1800 A



### SIRCOVER 2000-2500



### SIRCOVER 3150 A





# SIRCOVER BY-PASS from 125 to 1600 A

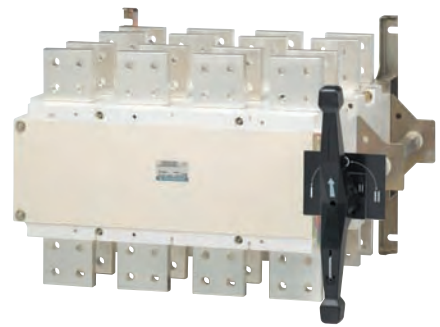
## Product presentation



125 A



400 A



800 A

SIRCOVER BY-PASS are manually operated multipolar changeover switches.

They are a combination of three interlocked switches for use with 3+6 pole or 4+8 pole.

They insulate by providing simultaneous safety isolation upstream and downstream and by passing loads or low voltage circuits mainly during maintenance operations.

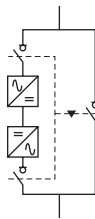
### Highlights

- Fully visualized breaking
- 3 stable positions (I0-II) or on request overlapping contacts (I-I+II-II)
- Motorized versions available on request



### Applications

- Circuit by-pass
- UPS, variable frequency drive



### Ratings

- 125, 160, 200, 250, 400, 630, 800, 1250 and 1600 amperes

### Approvals

- IEC 60947-3
- NF EN 60947-3
- VDE 0660 Teil 107 (1992)
- NBN EN 60947-3
- BS EN 60947-3

# SIRCOVER BY-PASS

## SIRCOVER BY-PASS range from 125 to 200 A



Select a switch

| Ampere rating                 | 125      | 160      |
|-------------------------------|----------|----------|
| SIRCOVER for I-O-II operation |          |          |
| Catalog number: 3+6 pole      | 41007013 | 41007016 |
| Catalog number: 4+8 pole      | 41009013 | 41009016 |

### S type pistol handle for external front operation



Select a handle

| To suit switch | IP   | Padlock position | Color | Catalog number |          |
|----------------|------|------------------|-------|----------------|----------|
| I-O-II By-pass | IP55 | 0                | Black | 14212113       | 14212113 |
| I-O-II By-pass | IP65 | 0                | Black | 14232113       | 14232113 |
| I-O-II By-pass | IP65 | I-O-II           | Black | 14232813       | 14232813 |

Note: handle is defeatable.



Select a shaft

| Shaft length (inches / mm) | Catalog number |          |
|----------------------------|----------------|----------|
| 7.9 / 200                  | 14001020       | 14001020 |
| 12.6 / 320                 | 14001032       | 14001032 |

### B type pistol handle for direct front operation



Select a handle

| To suit switch | IP | Padlock position | Color | Catalog number |          |
|----------------|----|------------------|-------|----------------|----------|
| I-O-II By-pass | -  | I-O-II           | Black | 41995012       | 41995012 |

### Options for I-O-II by-pass changeover switches



|                                                   | Catalog number |          |
|---------------------------------------------------|----------------|----------|
| 3-pole Terminal Shrouds Kit (IP20) <sup>(3)</sup> | 26943014       | 26943014 |
| Line + load shroud side / front terminals         |                |          |
| 4-pole Terminal Shrouds Kit (IP20) <sup>(3)</sup> | 26944014       | 26944014 |
| Line + load shroud side / front terminals         |                |          |
| Bridging bars For 1 pole <sup>(1)</sup>           | 41090019       | 41090019 |
| Auxiliary contacts                                |                |          |
| 1st NO.NC per position, 16 A                      | 41090021       | 41090021 |
| 2nd NO.NC <sup>(2)</sup> per position, 16 A       | 41090021       | 41090021 |

Note: Door interlocking feature in ON position for external front operation.

Overlapping by-pass changeover switches available, please consult us.

For any specific interlocking device (Ronis, Castell, Kirck), please consult us.

(1) One bridging bar required per pole.

(2) Mounted on the first auxiliary contact (part 41090021).

(3) Set for three or four terminals.



# SIRCOVER BY-PASS

## SIRCOVER BY-PASS range from 125 to 200 A



Select a switch

| Ampere rating                 | 200      | 250      |
|-------------------------------|----------|----------|
| SIRCOVER for I-0-II operation |          |          |
| Catalog number: 3+6 pole      | 41007019 | 41007025 |
| Catalog number: 4+8 pole      | 41009019 | 41009025 |

### S type pistol handle for external front operation



Select a handle

| To suit switch | IP   | Padlock position | Color | Catalog number |          |
|----------------|------|------------------|-------|----------------|----------|
| I-0-II By-pass | IP55 | 0                | Black | 14212113       | -        |
| I-0-II By-pass | IP65 | 0                | Black | 14232113       | -        |
| I-0-II By-pass | IP65 | I-0-II           | Black | 14232813       | 14333813 |

Note: handle is defeatable.



Select a shaft

| Shaft length (inches / mm) | Catalog number |          |
|----------------------------|----------------|----------|
| 7.9 / 200                  | 14001020       | 14011520 |
| 12.6 / 320                 | 14001032       | -        |
| 17.7 / 400                 | -              | 14011540 |

### B type pistol handle for direct front operation



Select a handle

| To suit switch | IP | Padlock position | Color | Catalog number |          |
|----------------|----|------------------|-------|----------------|----------|
| I-0-II By-pass | -  | I-0-II           | Black | 41995012       | 27997052 |

### Options for I-0-II by-pass changeover switches



|                                                   | Catalog number |          |
|---------------------------------------------------|----------------|----------|
| 3-pole Terminal Shrouds Kit (IP20) <sup>(3)</sup> | 26943014       | 26943021 |
| Line + load shroud side / front terminals         |                |          |
| 4-pole Terminal Shrouds Kit (IP20) <sup>(3)</sup> | 26944014       | 26944021 |
| Line + load shroud side / front terminals         |                |          |
| Bridging bars For 1 pole <sup>(1)</sup>           | 41090019       | 41090025 |
| Auxiliary contacts                                |                |          |
| 1st NO.NC per position, 16 A                      | 41090021       | 41090021 |
| 2nd NO.NC <sup>(2)</sup> per position, 16 A       | 41090021       | 41090021 |

Note: Door interlocking feature in ON position for external front operation.

Overlapping by-pass changeover switches available, please consult us.

For any specific interlocking device (Ronis, Castell, Kirck), please consult us.

(1) One bridging bar required per pole.

(2) Mounted on the first auxiliary contact (part 41090021).

(3) Set for three or four terminals.

# SIRCOVER BY-PASS

## SIRCOVER BY-PASS range from 250 to 630 A



Select a switch

| Ampere rating                 | 400      | 630      |
|-------------------------------|----------|----------|
| SIRCOVER for I-O-II operation |          |          |
| Catalog number: 3+6 pole      | 41007039 | 41007063 |
| Catalog number: 4+8 pole      | 41009039 | 41009063 |

### S type handle for external front operation



Select a handle

| To suit switch | IP   | Padlock position | Color | Catalog number |          |
|----------------|------|------------------|-------|----------------|----------|
| I-O-II By-pass | IP65 | I-O-II           | Black | 14333113       | 14333813 |

Note: handle is defeatable.



Select a shaft

| Shaft length (inches / mm) | Catalog number |          |
|----------------------------|----------------|----------|
| 7.9 / 200                  | 14011520       | 14011520 |
| 17.7 / 400                 | 14011540       | 14011540 |

### C type handle for direct front operation



Select a handle

| To suit switch | IP | Padlock position | Color | Catalog number |          |
|----------------|----|------------------|-------|----------------|----------|
| I-O-II By-pass | -  | I-O-II           | Black | 27997052       | 27997052 |

### Options for I-O-II by-pass changeover switches



|                                                   | Catalog number |          |
|---------------------------------------------------|----------------|----------|
| 3-pole Terminal Shrouds Kit (IP20) <sup>(3)</sup> | 26943021       | 26943021 |
| Line + load shroud side / front terminals         |                |          |
| 4-pole Terminal Shrouds Kit (IP20) <sup>(3)</sup> | 26944021       | 26944021 |
| Line + load shroud side / front terminals         |                |          |
| Bridging bars For 1 pole <sup>(1)</sup>           | 41090039       | 41090063 |
| Auxiliary contacts                                |                |          |
| 1st NO.NC per position, 16 A                      | 41090021       | 41090021 |
| 2nd NO.NC <sup>(2)</sup> per position, 16 A       | 41090021       | 41090021 |

Note: Door interlocking feature in ON position for external front operation.  
Overlapping by-pass changeover switches available, please consult us.  
For any specific interlocking device (Ronis, Castell, Kirck), please consult us.

(1) One bridging bar required per pole.  
(2) Mounted on the first auxiliary contact (part 41090021).  
(3) Set for three or four terminals.

# SIRCOVER BY-PASS

## SIRCOVER BY-PASS range from 800 to 1600 A



Select a switch

| Ampere rating                 | 800      | 1250     | 1600     |
|-------------------------------|----------|----------|----------|
| SIRCOVER for I-O-II operation |          |          |          |
| Catalog number: 3+6 pole      | 41007080 | 41007120 | 41007160 |
| Catalog number: 4+8 pole      | 41009080 | 41009120 | 41009160 |

### C type double handle for external front operation



Select a handle

| To suit switch | IP   | Padlock position | Color | Catalog number |          |          |
|----------------|------|------------------|-------|----------------|----------|----------|
| I-O-II By-pass | IP65 | I-O-II           | Black | 41997146       | 41997146 | 41997146 |

Note: handle is not defeatable.



Select a shaft

| Shaft length (inches / mm) | Catalog number |          |          |
|----------------------------|----------------|----------|----------|
| 7.9 / 200                  | 27993015       | 27993015 | 27993015 |
| 17.7 / 400                 | 27993019       | 27993019 | 27993019 |

### C type double handle for direct front operation



Select a handle

| To suit switch | IP | Padlock position | Color | Catalog number |          |          |
|----------------|----|------------------|-------|----------------|----------|----------|
| I-O-II By-pass | -  | I-O-II           | Black | 27997012       | 27997012 | 27997012 |

### Options for I-O-II by-pass changeover switches



|                                             | Catalog number |          |          |
|---------------------------------------------|----------------|----------|----------|
| 3-pole Terminal Screen                      | 15093080       | 15093080 | 15093160 |
| Line + load shroud side / front terminals   |                |          |          |
| 4-pole Terminal Screen                      | 15094080       | 15094080 | 15094160 |
| Line + load shroud side / front terminals   |                |          |          |
| Bridging bars For 1 pole <sup>(1)</sup>     | 41090080       | 41090120 | 41090160 |
| Auxiliary contacts                          |                |          |          |
| 1st NO.NC per position, 16 A                | 41090021       | 41090021 | 41090021 |
| 2nd NO.NC <sup>(2)</sup> per position, 16 A | 41090021       | 41090021 | 41090022 |

Note: Door interlocking feature in ON position for external front operation.  
Overlapping by-pass changeover switches available, please consult us.  
For any specific interlocking device (Ronis, Castell, Kirck), please consult us.

(1) One bridging bar required per pole.

(2) Mounted on the first auxiliary contact (part 41090021).

## Technical characteristics

### IEC 947-3

| Rating (Thermal current Ith at 40 °C)                                                       |                 | 125 A                  | 160 A                                  | 200 A                                  | 250 A                                  | 400 A                                  |
|---------------------------------------------------------------------------------------------|-----------------|------------------------|----------------------------------------|----------------------------------------|----------------------------------------|----------------------------------------|
| Rated insulation voltage Ui (V)                                                             |                 | 800                    | 800                                    | 800                                    | 800                                    | 800                                    |
| Rated impulse withstand voltage Uimp (kV)                                                   |                 | 8                      | 8                                      | 8                                      | 8                                      | 8                                      |
| Dielectric strength (V) 50 Hz 1 min                                                         |                 | 5 000                  | 5 000                                  | 5 000                                  | 5 000                                  | 5 000                                  |
| Rated operational current Ie (A) <sup>(1)</sup>                                             |                 | A / B                  | A / B                                  | A / B                                  | A / B                                  | A / B                                  |
| 400 V AC                                                                                    | AC 21A / AC 21B | 125 / 125              | 160 / 160                              | 200 / 200                              | 250 / 250                              | 400 / 400                              |
|                                                                                             | AC 22A / AC 22B | 125 / 125              | 160 / 160                              | 200 / 200                              | 250 / 250                              | 400 / 400                              |
|                                                                                             | AC 23A / AC 23B | 125 / 125              | 160 / 160                              | 160 / 160                              | 250 / 250                              | 250 / 250                              |
| 690 V AC <sup>(2)</sup>                                                                     | AC 20A / AC 20B | 125 / 125              | 160 / 160                              | 200 / 200                              | 250 / 250                              | 400 / 400                              |
|                                                                                             | AC 21A / AC 21B | 125 / 125              | 160 / 160                              | 160 / 160                              | 200 / 250                              | 200 / 250                              |
|                                                                                             | AC 22A / AC 22B | 125 / 125              | 125 / 125                              | 125 / 125                              | 125 / 160                              | 125 / 160                              |
|                                                                                             | AC 23A / AC 23B | 63 / 80                | 63 / 80                                | 63 / 80                                | 100 / 125                              | 100 / 125                              |
| 220 V DC                                                                                    | DC 20A / DC 20B | 125 / 125              | 160 / 160                              | 200 / 200                              | 250 / 250                              | 400 / 400                              |
|                                                                                             | DC 21A / DC 21B | 125 / 125              | 160 / 160                              | 160 / 160                              | 250 / 250                              | 250 / 250                              |
|                                                                                             | DC 22A / DC 22B | 125 / 125              | 160 / 160                              | 160 / 160                              | 250 / 250                              | 250 / 250                              |
|                                                                                             | DC 23A / DC 23B | 125 / 125              | 125 / 125                              | 125 / 125                              | 200 / 200                              | 200 / 200                              |
| 440 V DC                                                                                    | DC 20A / DC 20B | 125 / 125              | 160 / 160                              | 200 / 200                              | 250 / 250                              | 400 / 400                              |
|                                                                                             | DC 21A / DC 21B | 125 / 125              | 125 / 125                              | 125 / 125                              | 200 / 200                              | 200 / 200                              |
|                                                                                             | DC 22A / DC 22B | 125 / 125              | 125 / 125                              | 125 / 125                              | 200 / 200                              | 200 / 200                              |
|                                                                                             | DC 23A / DC 23B | 125 <sup>(3)</sup> /80 | 125 <sup>(3)</sup> /125 <sup>(3)</sup> | 125 <sup>(3)</sup> /125 <sup>(3)</sup> | 200 <sup>(3)</sup> /200 <sup>(3)</sup> | 200 <sup>(3)</sup> /200 <sup>(3)</sup> |
| Motor Power (kW) <sup>(1)</sup>                                                             |                 | A / B                  | A / B                                  | A / B                                  | A / B                                  | A / B                                  |
| 400 V AC without pre break auxiliary contact: AC 23                                         |                 | 63 / 63                | 80 / 80                                | 80 / 80                                | 132 / 132                              | 132 / 132                              |
| 690 V AC without pre break auxiliary contact: AC 23                                         |                 | 55 / 75                | 55 / 75                                | 55 / 75                                | 90 / 110                               | 90 / 110                               |
| Overload capacity                                                                           |                 |                        |                                        |                                        |                                        |                                        |
| Fuse-protected short circuit withstand (kA rms prospective) with gG DIN fuse <sup>(4)</sup> |                 | 100                    | 100                                    | 50                                     | 50                                     | 18                                     |
| Rating of DIN gG fuse (A)                                                                   |                 | 125                    | 160                                    | 200                                    | 250                                    | 400                                    |
| Cut-off current (kA peak)                                                                   |                 | 18                     | 18                                     | 18                                     | 23                                     | 23                                     |
| Rated short-time withstand current Icw (kA rms 1s)                                          |                 | 7                      | 7                                      | 7                                      | 9                                      | 9                                      |
| Making & Breaking capacity characteristics (A rms)                                          |                 |                        |                                        |                                        |                                        |                                        |
| Breaking capacity: 400V AC 23A                                                              |                 | 1000                   | 1280                                   | 1280                                   | 2000                                   | 2000                                   |
| Making capacity: 400V AC 23A                                                                |                 | 1250                   | 1600                                   | 1600                                   | 2500                                   | 2500                                   |
| Rated short-circuit making capacity Icm (kA peak prospective)                               |                 | 11.9                   | 11.9                                   | 11.9                                   | 15.3                                   | 15.3                                   |
| Mechanical durability (number of operations)                                                |                 | 10 000                 | 10 000                                 | 10 000                                 | 10 000                                 | 10 000                                 |
| Operating torque (Nm)                                                                       |                 | 13                     | 13                                     | 14                                     | 20                                     | 20                                     |
| Connection (copper)                                                                         |                 |                        |                                        |                                        |                                        |                                        |
| Minimum section at Ith (mm²) (Cu cables)                                                    |                 | 35                     | 50                                     | 50                                     | 95                                     | 185                                    |
| Maximum section (mm²) (cables)                                                              |                 | 50                     | 95                                     | 95                                     | 150                                    | 240                                    |
| Minimum section at Ith (mm²) (Cu busbar)                                                    |                 |                        |                                        |                                        |                                        |                                        |
| Maximum width (mm) (busbar)                                                                 |                 | 25                     | 25                                     | 25                                     | 32                                     | 32                                     |
| Minimum tightening torque (Nm)                                                              |                 | 9                      | 9                                      | 9                                      | 20                                     | 20                                     |
| Weight (kg)                                                                                 |                 |                        |                                        |                                        |                                        |                                        |
| 3-pole switch                                                                               |                 | 1.5                    | 1.6                                    | 1.8                                    | 2.0                                    | 3.0                                    |
| 4-pole switch                                                                               |                 | 1.6                    | 1.7                                    | 1.9                                    | 2.1                                    | 3.5                                    |

(1) "A" indication=frequent operations.

"B" indication=infrequent operations.

(2) With terminal shrouds or separation shield between terminals.

(3) 4 pole changeover switch with 2 pole in series per polarity.

(4) For a rated operating voltage Ue = 400 V AC.

## Technical characteristics

### IEC 947-3

| Rating (Thermal current I <sub>th</sub> at 40 °C)                                              | 630 A                                   | 800 A                                   | 1250 A                                    | 1600 A                                    |
|------------------------------------------------------------------------------------------------|-----------------------------------------|-----------------------------------------|-------------------------------------------|-------------------------------------------|
| Rated insulation voltage U <sub>i</sub> (V)                                                    | 1000                                    | 1000                                    | 1000                                      | 1000                                      |
| Rated impulse withstand voltage U <sub>imp</sub> (kV)                                          | 12                                      | 12                                      | 12                                        | 12                                        |
| Dielectric strength (V) 50 Hz 1 min                                                            | 8 000                                   | -                                       | -                                         | 10000                                     |
| Rated operational current I <sub>e</sub> (A) <sup>(1)</sup>                                    | A / B                                   | A / B                                   | A / B                                     | A / B                                     |
| 400 V AC                                                                                       |                                         |                                         |                                           |                                           |
| AC 21A / AC 21B                                                                                | 630 / 630                               | 800 / 800                               | 1250 / 1250                               | 1600 / 1600                               |
| AC 22A / AC 22B                                                                                | 630 / 630                               | 800 / 800                               | 1250 / 1250                               | 1250 / 1250                               |
| AC 23A / AC 23B                                                                                | 500 / 500                               | 800 / 800                               | 1250 / 1250                               | 1000 / 1000                               |
| 690 V AC <sup>(2)</sup>                                                                        |                                         |                                         |                                           |                                           |
| AC 20A / AC 20B                                                                                | 630 / 630                               | 800 / 800                               | 1250 / 1250                               | 1600 / 1600                               |
| AC 21A / AC 21B                                                                                | 500 / 500                               | 800 / 800                               | -                                         | 1600 / 1600                               |
| AC 22A / AC 22B                                                                                | 315 / 315                               | 800 / 800                               | -                                         | 800 / 800                                 |
| AC 23A / AC 23B                                                                                | 160 / 200                               | -                                       | -                                         | 500 / 500                                 |
| 220 V DC                                                                                       |                                         |                                         |                                           |                                           |
| DC 20A / DC 20B                                                                                | 630 / 630                               | 800 / 800                               | 1250 / 1250                               | 1600 / 1600                               |
| DC 21A / DC 21B                                                                                | 630 / 630                               | 800 / 800                               | 1250 / 1250                               | 1600 / 1600                               |
| DC 22A / DC 22B                                                                                | 500 / 500                               | 800 / 800                               | 1250 / 1250                               | 1250 / 1250                               |
| DC 23A / DC 23B                                                                                | 500 / 500                               | 800 / 800                               | 1250 <sup>(3)</sup> / 1250 <sup>(3)</sup> | 1250 <sup>(3)</sup> / 1250 <sup>(3)</sup> |
| 440 V DC                                                                                       |                                         |                                         |                                           |                                           |
| DC 20A / DC 20B                                                                                | 630 / 630                               | 800 / 800                               | 1250 / 1250                               | 1600 / 1600                               |
| DC 21A / DC 21B                                                                                | 500 / 500                               | 800 <sup>(3)</sup> / 800 <sup>(3)</sup> | 1250 <sup>(3)</sup> / 1250 <sup>(3)</sup> | 1250 / 1250                               |
| DC 22A / DC 22B                                                                                | 500 / 500                               | 800 <sup>(3)</sup> / 800 <sup>(3)</sup> | 1250 <sup>(3)</sup> / 1250 <sup>(3)</sup> | 1250 <sup>(3)</sup> / 1250 <sup>(3)</sup> |
| DC 23A / DC 23B                                                                                | 500 <sup>(3)</sup> / 500 <sup>(3)</sup> | 800 <sup>(3)</sup> / 800 <sup>(3)</sup> | 1250 <sup>(3)</sup> / 1250 <sup>(3)</sup> | 1000 <sup>(3)</sup> / 1000 <sup>(3)</sup> |
| Motor Power (kW) <sup>(1)</sup>                                                                | A / B                                   | A / B                                   | A / B                                     | A / B                                     |
| 400 V AC without pre break auxiliary contact: AC 23                                            | 280 / 280                               | -                                       | 560 / 560                                 | 560 / 560                                 |
| 690 V AC without pre break auxiliary contact: AC 23                                            | 150 / 185                               | -                                       | 400 / 475                                 | 475 / 475                                 |
| Overload capacity                                                                              |                                         |                                         |                                           |                                           |
| Fuse-protected short circuit withstand<br>(kA rms prospective) with gG DIN fuse <sup>(4)</sup> | 70                                      | 50                                      | 100                                       | 100                                       |
| Rating of DIN gG fuse (A)                                                                      | 630                                     | 800                                     | 1250                                      | 2 x 800                                   |
| Cut-off current (kA peak)                                                                      | 45                                      | -                                       | -                                         | 86                                        |
| Rated short-time withstand current I <sub>cw</sub> (kA rms 1s)                                 | 13                                      | -                                       | -                                         | 50                                        |
| Making & Breaking capacity characteristics (A rms)                                             |                                         |                                         |                                           |                                           |
| Breaking capacity: 400V AC 23A                                                                 | 4 000                                   | -                                       | -                                         | 8 000                                     |
| Making capacity: 400V AC 23A                                                                   | 5 000                                   | -                                       | -                                         | 10000                                     |
| Rated short-circuit making capacity I <sub>cm</sub><br>(kA peak prospective)                   | 26                                      | -                                       | -                                         | 66                                        |
| Mechanical durability (number of operations)                                                   | 5 000                                   | 3 000                                   | 3 000                                     | 3 000                                     |
| Operating torque (Nm)                                                                          | 29                                      | -                                       | -                                         | 74                                        |
| Connection (copper)                                                                            |                                         |                                         |                                           |                                           |
| Minimum section at I <sub>th</sub> (mm <sup>2</sup> ) (Cu cables)                              | 2 x 150                                 | 2 x 185                                 | -                                         | -                                         |
| Maximum section (mm <sup>2</sup> ) (cables)                                                    | 2 x 300                                 | 2 x 300                                 | 4 x 185                                   | 6 x 240                                   |
| Minimum section at I <sub>th</sub> (mm <sup>2</sup> ) (Cu busbar)                              | 2 x 30 x 5                              | 2 x 40 x 5                              | 2 x 60 x 5                                | 2 x 80 x 5                                |
| Maximum width (mm) (busbar)                                                                    | 50                                      | 63                                      | 100                                       | 100                                       |
| Minimum tightening torque (Nm)                                                                 | 20                                      | -                                       | 20                                        | 40                                        |
| Weight (kg)                                                                                    |                                         |                                         |                                           |                                           |
| 3-pole switch                                                                                  | 3.5                                     | -                                       | -                                         | 34                                        |
| 4-pole switch                                                                                  | 4.0                                     | -                                       | -                                         | 42                                        |

(1) "A" indication=frequent operations.

"B" indication=infrequent operations.

(2) With terminal shrouds or separation shield between terminals.

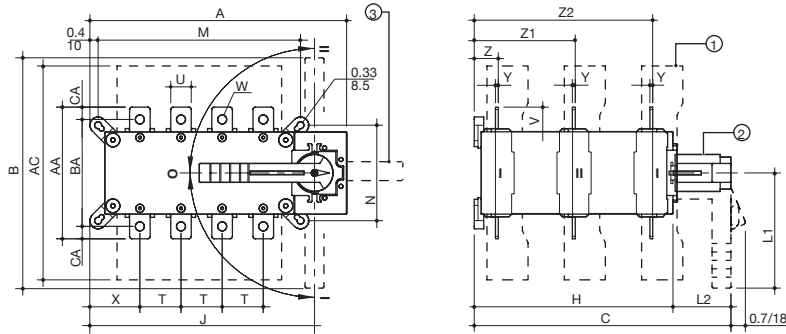
(3) 4 pole changeover switch with 2 pole in series per polarity.

(4) For a rated operating voltage U<sub>e</sub> = 400 V AC.

# SIRCOVER BY-PASS

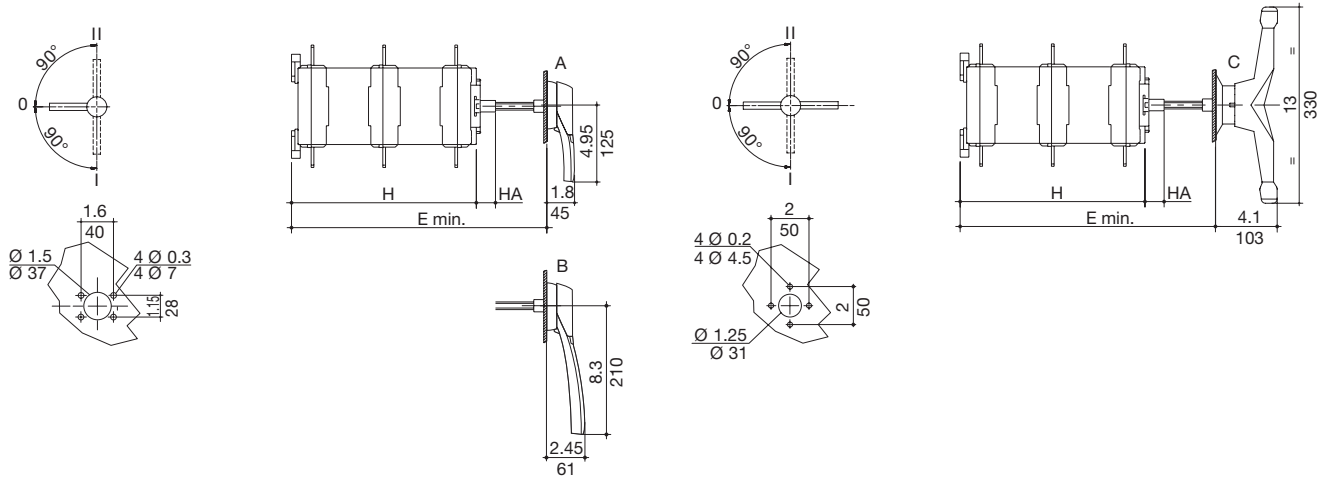
## Dimensions (in / mm) for SIRCOVER BY-PASS 125-1600 A

### Direct front operation



1. Terminal shrouds
2. Direct handle  
125 to 200 A: L1 = Ø 5.1 / 140;  
L2 = 2.8 / 70  
250 to 630 A: L1 = Ø 8.27 / 210;  
L2 = 4.2 / 106
3. Direct double handle  
800 A to 1600 A: L1 = Ø 13 / 330;  
L2 = 4.7 / 120

### External front operation



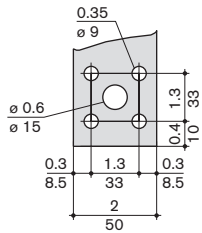
|            | Overall dimensions (in) |        |      |        |      |      | Switch mounting (in) |        |        |        |     | Connection terminals (in) |     |     |         |        |        |     |     |      |      |      |     |     |  |
|------------|-------------------------|--------|------|--------|------|------|----------------------|--------|--------|--------|-----|---------------------------|-----|-----|---------|--------|--------|-----|-----|------|------|------|-----|-----|--|
| Rating (A) | A 3+6p                  | A 4+8p | C    | E mini | AC   | H    | J 3+6p               | J 4+8p | M 3+6p | M 4+8p | N   | T                         | U   | V   | W       | X 3+6p | X 4+8p | Y   | Z   | Z1   | Z2   | AA   | BA  | CA  |  |
| 125        | 8.7                     | 9.9    | 12.3 | 12.6   | 9.3  | 9.6  | 7.2                  | 8.3    | 6.1    | 7.3    | 4.0 | 1.4                       | 0.8 | 1.0 | 0.3     | 2.2    | 2.0    | 0.1 | 1.1 | 4.9  | 8.6  | 5.3  | 4.5 | 0.4 |  |
| 160        | 8.7                     | 9.9    | 12.3 | 12.6   | 9.3  | 9.6  | 7.2                  | 8.3    | 6.1    | 7.3    | 4.0 | 1.4                       | 0.8 | 1.0 | 0.3     | 2.2    | 2.0    | 0.1 | 1.1 | 4.9  | 8.6  | 5.3  | 4.5 | 0.4 |  |
| 200        | 8.7                     | 9.9    | 12.3 | 12.6   | 9.3  | 9.6  | 7.2                  | 8.3    | 6.1    | 7.3    | 4.0 | 1.4                       | 0.8 | 1.0 | 0.3     | 2.2    | 2.0    | 0.1 | 1.1 | 4.9  | 8.6  | 5.3  | 4.5 | 0.4 |  |
| 250        | 10.3                    | 12.3   | 12.3 | 11.7   | 11.0 | 9.6  | 8.8                  | 10.7   | 7.7    | 9.7    | 4.6 | 2.0                       | 1.0 | 1.2 | 0.4     | 2.4    | 2.4    | 0.1 | 1.2 | 4.9  | 8.6  | 6.3  | 5.1 | 0.4 |  |
| 400        | 10.3                    | 12.3   | 12.3 | 11.7   | 11.0 | 9.6  | 8.8                  | 10.7   | 7.7    | 9.7    | 4.6 | 2.0                       | 1.4 | 1.4 | 0.4     | 2.4    | 2.4    | 0.1 | 1.2 | 4.9  | 8.6  | 6.7  | 5.5 | 0.6 |  |
| 630        | 12.6                    | 14.9   | 17.0 | 16.4   | 15.7 | 14.3 | 10.7                 | 13.1   | 9.7    | 12.0   | 6.9 | 2.6                       | 1.8 | 2.0 | 0.5     | 2.8    | 2.6    | 0.2 | 1.7 | 7.1  | 12.5 | 10.2 | 8.7 | 0.8 |  |
| 800        | 13.3                    | 18.3   | 22.0 | 21.7   | 18.1 | 18.9 | 12.1                 | 15.2   | 10.0   | 13.2   | 9.8 | 3.1                       | 2.0 | 2.4 | 0.6     | 1.9    | 1.9    | 0.3 | 2.6 | 10.0 | 17.3 | 12.6 | —   | 1.0 |  |
| 1250       | 15.2                    | 18.3   | 22.0 | 21.7   | 18.1 | 18.9 | 12.1                 | 15.2   | 10.0   | 13.2   | 9.8 | 3.1                       | 2.4 | 2.6 | 0.6x0.4 | 1.9    | 1.9    | 0.3 | 2.6 | 10.0 | 17.3 | 13.0 | —   | 1.2 |  |
| 1600       | 18.8                    | 23.5   | 22.0 | 24.7   | 18.1 | 18.9 | 15.3                 | 20.4   | 13.7   | 18.4   | 9.8 | 4.7                       | 3.5 | 1.7 | 0.5x0.2 | 2.1    | 2.1    | 0.3 | 2.6 | 10.0 | 17.3 | 11.3 | -   | 0.6 |  |

|            | Overall dimensions (mm) |        |     |        |     |     | Switch mounting (mm) |        |        |        |     | Connection terminals (mm) |    |      |       |        |        |     |      |       |       |     |     |       |  |
|------------|-------------------------|--------|-----|--------|-----|-----|----------------------|--------|--------|--------|-----|---------------------------|----|------|-------|--------|--------|-----|------|-------|-------|-----|-----|-------|--|
| Rating (A) | A 3+6p                  | A 4+8p | C   | E mini | AC  | H   | J 3+6p               | J 4+8p | M 3+6p | M 4+8p | N   | T                         | U  | V    | W     | X 3+6p | X 4+8p | Y   | Z    | Z1    | Z2    | AA  | BA  | CA    |  |
| 125        | 221                     | 251    | 313 | 320    | 235 | 243 | 182                  | 212    | 156    | 186    | 101 | 36                        | 20 | 25   | 8.5   | 56     | 50     | 3.5 | 28   | 124   | 219   | 135 | 115 | 10    |  |
| 160        | 221                     | 251    | 313 | 320    | 235 | 243 | 182                  | 212    | 156    | 186    | 101 | 36                        | 20 | 25   | 8.5   | 56     | 50     | 3.5 | 28   | 124   | 219   | 135 | 115 | 10    |  |
| 200        | 221                     | 251    | 313 | 320    | 235 | 243 | 182                  | 212    | 156    | 186    | 101 | 36                        | 20 | 25   | 8.5   | 56     | 50     | 3.5 | 28   | 124   | 219   | 135 | 115 | 10    |  |
| 250        | 262                     | 312    | 313 | 298    | 280 | 243 | 223                  | 273    | 196    | 246    | 116 | 50                        | 25 | 30   | 11    | 61     | 61     | 3.5 | 30   | 124   | 219   | 160 | 130 | 10    |  |
| 400        | 262                     | 312    | 313 | 298    | 280 | 243 | 223                  | 273    | 196    | 246    | 116 | 50                        | 25 | 30   | 11    | 61     | 61     | 3.5 | 30   | 124   | 219   | 170 | 140 | 10    |  |
| 630        | 319                     | 379    | 432 | 417    | 400 | 362 | 272                  | 332    | 246    | 306    | 176 | 65                        | 45 | 50   | 13    | 70.5   | 65.5   | 5   | 43   | 180   | 317   | 260 | 220 | 20    |  |
| 800        | 338                     | 466    | 560 | 550    | 459 | 479 | 306.5                | 386.5  | 255    | 335    | 250 | 80                        | 50 | 60.5 | 15    | 48     | 48     | 7   | 66.5 | 253.5 | 439.5 | 321 | -   | 26.5  |  |
| 1250       | 338                     | 466    | 560 | 550    | 459 | 479 | 306.5                | 386.5  | 255    | 335    | 250 | 80                        | 60 | 65   | 16x11 | 48     | 48     | 7   | 66.5 | 253.5 | 439.5 | 330 | -   | 29.25 |  |
| 1600       | 478                     | 598    | 560 | 550    | 461 | 479 | 388.5                | 518.5  | 347    | 467    | 250 | 120                       | 90 | 43.5 | 125x5 | 54     | 54     | 8   | 66.5 | 253.5 | 439.5 | 288 | -   | 15    |  |

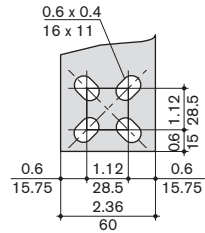
## SIRCOVER BY-PASS

### Dimensions (in / mm) for connection terminals

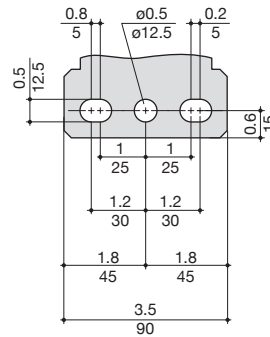
SIRCOVER BY-PASS  
800 A



SIRCOVER BY-PASS  
1250 A



SIRCOVER BY-PASS  
1600 A



# ENGINEERED SWITCHES

## Fusible Shunt Trip



### Highlights:

- 3-Pole Fused Switch
- 120 VAC Shunt Trip
- Class J fuse block (fuses not included)
- Ground Lug as per NEC
- Control Power brought to terminals
- Modular components
- NEMA 1 Industrial
- Enclosure Standard

### Applications:

- Elevators
- Building emergency systems
- Data processing rooms
- Miscellaneous fusible shunt trip applications

### Features/benefits:

- Fused switch – provides high current limitation and short circuit withstand
- Padlockable handle – allows panel to be locked with switch in the off position ensuring load side power isolation during servicing
- Shunt trip – allows for remote tripping of the main line power prior to the application of water in elevator
- sprinkler system applications

### Recommended Fuse Usage:

**ES Series**.....use with **AJT, A4J, HSJ**

Ferraz Shawmut's Engineered Switches offer modular industrial control panels featuring a fusible shunt trip to allow for remote disconnection. An array of available options allows for maximum functionality to be built into a single compact panel.

Panels built for elevator applications feature control transformers (fusing both primary and secondary sides), a fire safety interface relay with a fire alarm voltage monitoring relay and mechanically interlocked auxiliary contacts.

Use of Ferraz Shawmut's Amp-Trap 2000® AJT Class J fuses permits easy selectivity coordination, while providing the panel and its components with superior current limitation and the ability to withstand high fault conditions. AJT fuses provide added system reliability since no maintenance or periodic testing is required as with other electromechanical overcurrent devices.

### Optional Features:

- Industrial Control circuit transformer
- Primary (208, 240, 480 or 600 VAC)
- Fire safety relay for control interface (3PDT Relay, choice of Coil Voltage: 120 VAC, 24 VDC or 24VAC)
- Oil-tight Key Switch to test 2 position selector switch.
- Oil-tight Power enabled power light (choice of colors: Red, Green, White or Yellow)
- Isolated neutral lug – 100%. Oversized 200% for excessive Non-Linear loads.
- Auxiliary and Alarm Contacts are both Form C contacts. The Auxiliary contacts change state when the switch is in the on position. Alarm contacts change state when the switch is in the tripped position. The Alarm contact is located in place of the second auxiliary contact.
- NEMA 12, 3R, 4 or 4X enclosure available.

### Ratings

- 600 VAC: 30A, 60A,
- 100A, 200A & 400A

### Approvals

- UL 1087 Molded-Case Switch
- UL 50
- NEMA 1, 12, 3R, 4, 4x
- UL512
- UL/cUL Listed Control Panel



# ENGINEERED SWITCHES

## Fusible Shunt Trip

An example of an Engineered Switch Catalog number is listed below with the ordering process detail.

### ES2T20R1KRN2A2

Select fusible shunt trip switch:

| Ampacity Rating | Catalog Number |
|-----------------|----------------|
| 30              | ES3            |
| 60              | ES6            |
| 100             | ES1            |
| 200             | ES2            |
| 400             | ES4            |

Select options:

| Option No. | Description                                                                                                                                                                              | Catalog No.              |
|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| 1          | <b>Control Transformer</b><br>208 VAC to 120VAC<br>240 VAC to 120VAC<br>480 VAC to 120VAC<br>600 VAC to 120VAC                                                                           | T20<br>T24<br>T48<br>T60 |
| 2          | <b>Fire Safety Relay 3PDT with Voltage Monitoring</b><br>120VAC coil<br>24VDC coil<br>24VAC coil                                                                                         | R1<br>R2<br>R3           |
| 3          | <b>Keyswitch</b><br>Key to test switch, 120V, with legend plate                                                                                                                          | K                        |
| 4          | <b>Pilot light - power enabled</b><br>Red<br>Green<br>White<br>Yellow                                                                                                                    | R<br>G<br>W<br>Y         |
| 5          | <b>Isolated Neutral Lug<sup>3</sup></b><br>0-60A (for 200% oversize use N1)<br>100A (for 200% oversize use N2)<br>200A (for 200% oversize use N4)<br>400A (for 200% oversize use two N4) | N6<br>N1<br>N2<br>N4     |
| 6          | <b>Mechanical Interlocked Auxiliary Contacts</b><br>1 Form C auxiliary contact<br>2 Form C auxiliary contacts<br>1 Form C auxiliary contacts<br>and 1 Form C auxiliary alarm contact     | A<br>B<br>C              |
| 7          | <b>Enclosure options</b><br>NEMA 1 standard<br>NEMA 12<br>NEMA 3R<br>NEMA 4<br>NEMA 4X                                                                                                   | —<br>2<br>3<br>4<br>X    |

Notes:

- Options must be selected in above order for part number to be valid.
- Elevator panels must include a control transformer, fire safety relay with voltage monitoring and mechanical interlocked auxiliary contact.
- Options 1, 2, and 6 are required. Options 3, 4, 5, and 7 are optional.

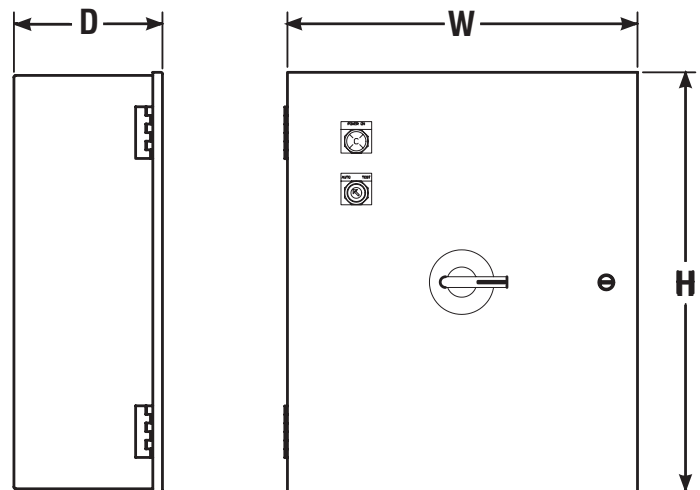
| Fusible Shunt Trip Switch Maximum Horsepower Ratings based on Motor Load |            |     |        |     |     |        |     |     |         |     |     |         |     |     |         |     |     |     |
|--------------------------------------------------------------------------|------------|-----|--------|-----|-----|--------|-----|-----|---------|-----|-----|---------|-----|-----|---------|-----|-----|-----|
|                                                                          |            |     | 30 AMP |     |     | 60 AMP |     |     | 100 AMP |     |     | 200 AMP |     |     | 400 AMP |     |     |     |
| FLA %                                                                    | 150        | 175 | 225    | 150 | 175 | 225    | 150 | 175 | 225     | 150 | 175 | 225     | 150 | 175 | 225     | 150 | 175 | 225 |
| VOLTAGE                                                                  | 208 VAC 3Φ | 5   | 5      | 3   | 10  | 10     | 10  | 10  | 20      | 15  | 15  | 40      | 40  | 30  | 75      | 75  | 60  |     |
|                                                                          | 240 VAC 3Φ | 5   | 5      | 5   | 10  | 10     | 10  | 20  | 20      | 15  | 50  | 40      | 30  | 125 | 75      | 75  |     |     |
|                                                                          | 480 VAC 3Φ | 10  | 10     | 10  | 30  | 25     | 20  | 50  | 40      | 30  | 100 | 75      | 75  | 250 | 150     | 150 |     |     |
|                                                                          | 600 VAC 3Φ | 15  | 15     | 10  | 30  | 30     | 25  | 60  | 50      | 40  | 125 | 100     | 100 | 250 | 200     | 200 |     |     |

**150**...Light duty maximum allowable motor horsepower based on Class J fuses

**175**...General duty maximum allowable motor horsepower based on Class J fuses

**225**...Heavy duty maximum allowable motor horsepower based on Class J fuses

Horsepower values in the above table are intended for estimating the size of the switch only. For light duty applications size switch for a minimum of 1.5 times the motors full load amps. Medium or General duty applications size for a minimum of 1.75 times the full load amps of the motor. For Heavy Duty applications use a maximum of 2.25 times the full load amps of the motor.



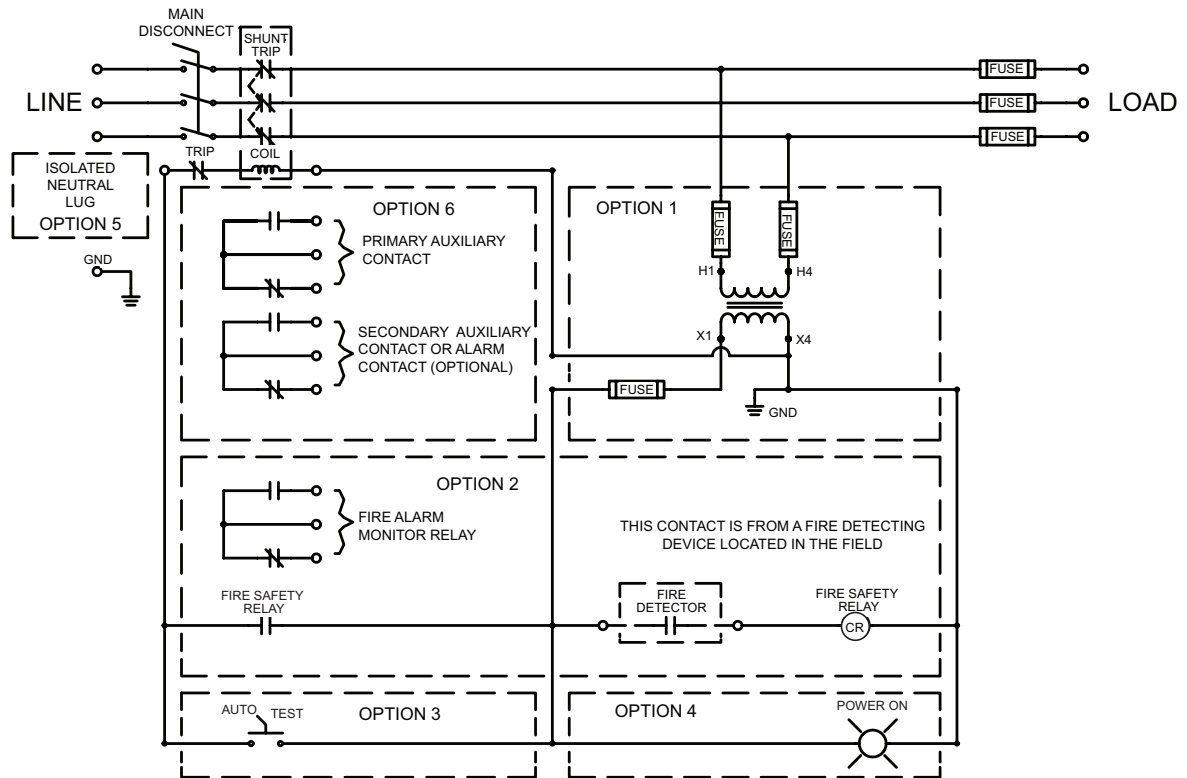
| Fusible Shunt Trip Switch Dimensions and Optional Neutral Lug Sizes |             |             |             |             |             |
|---------------------------------------------------------------------|-------------|-------------|-------------|-------------|-------------|
|                                                                     | 30 AMP      | 60 AMP      | 100 AMP     | 200 AMP     | 400 AMP     |
| VOLTAGE                                                             | H x W x D   | H x W x D   | H x W x D   | H x W x D   | H x W x D   |
| 208 VAC 3Φ                                                          | 24 x 20 x 8 | 24 x 20 x 8 | 24 x 20 x 8 | 30 x 24 x 8 | 36 x 30 x 8 |
| 240 VAC 3Φ                                                          | 24 x 20 x 8 | 24 x 20 x 8 | 24 x 20 x 8 | 30 x 24 x 8 | 36 x 30 x 8 |
| 480 VAC 3Φ                                                          | 24 x 20 x 8 | 24 x 20 x 8 | 24 x 20 x 8 | 30 x 24 x 8 | 36 x 30 x 8 |
| 600 VAC 3Φ                                                          | 24 x 20 x 8 | 24 x 20 x 8 | 24 x 20 x 8 | 30 x 24 x 8 | 36 x 30 x 8 |
| Neutral Lug Size                                                    | 350 - #6    | 350 - #6    | 350 - #6    | 500 - #4    | 600 - #2    |

# ENGINEERED SWITCHES

## Fusible Shunt Trip

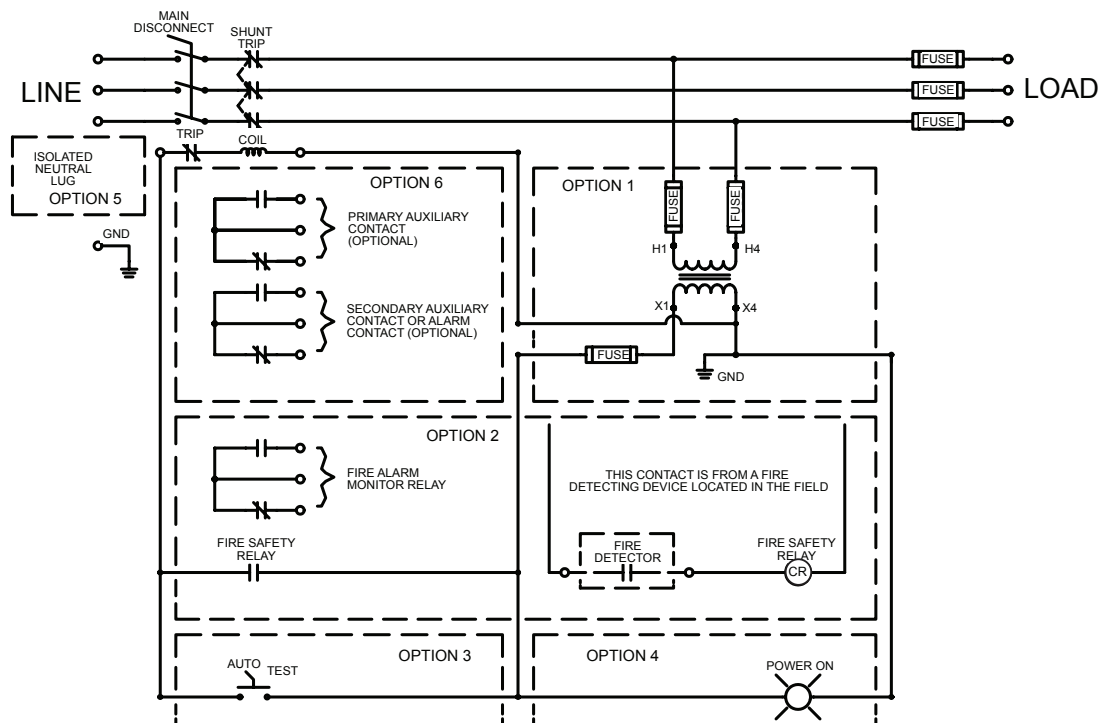
### FUSIBLE SHUNT TRIP SWITCH

#### 120 VAC Fire Safety Control Interface



### FUSIBLE SHUNT TRIP SWITCH

#### 24 VDC Fire Safety Control Interface



## AC DISCONNECT SWITCHES



### Features/Benefits

- Side opening cover affords large work area and maximum visibility during installation and use.
- Pre-wired 15A GFCI and standard receptacles with stripped wire ends makes for quick and easy installations.
- Angled receptacle mounting eliminates the possibility of crushing portable electrical cord plugs when closing “while in use” cover.
- Cord holders provided on receptacle models via retaining clips to secure cord with “while in use” cover.
- Finger Safe Contacts provides IP20 grade of protection to safeguard both installers and end users.
- Integrated hanger bracket for easy wall mounting.
- Captive set screws on wiring compartment cover ensures screws can never be lost. Combination flat, phillips and hex screw heads further simplify installation.
- Safety Lockout – integrated safety latch prevents unauthorized access.
- Switched versions eliminate the risk of losing or mis-installing the pullout and clearly identifies whether the switch is in the ON or OFF position.

### INNOVATIVE DESIGN PROVIDES FEATURE PACKED AC DISCONNECT

Built for maximum performance, durability and ease of use, Ferraz Shawmut’s AC disconnects are the solution today’s single phase commercial and residential applications require. Available in a full range of fusible, non-fusible, switched and pullout styles, these disconnects are easy to install, easy to use, and rugged enough to ensure years of reliable service. The innovative versions with GFCI receptacles are the easiest to install in the industry.

Designed to meet the requirements of NEC210.63, 406.8(B)(1), 440-14, Ferraz Shawmut’s AC disconnects feature both UL and cUL approvals. The 30 and 60 ampere units are rated for 3 and 10 horsepower at 240 VAC respectively.

### Ratings

- 240VAC
- 30 or 60 amperes
- 10kA Short Circuit Current Rating

### Approvals

#### SWITCHED MODELS

- UL Listed  
Guide W1AX  
File E198597
- cUL Guide W1AX7  
File E198597

#### PULLOUT MODELS

- UL Listed  
Guide WGEU  
File E198598
- cUL  
Guide WGEU7  
File E198598

- NEMA 3R enclosure with high quality gray powder coat finish featuring ultra UV protection for long life and durability.
- Multiple knockouts provide maximum installation flexibility and mounts easily anywhere.

# AC DISCONNECT SWITCHES

## AC Disconnect Nomenclature

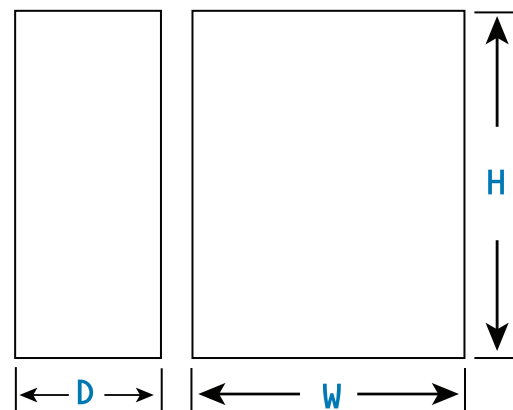
Example Catalog Number

| DS                   | F                          | P                           | 30            | M                   | GFCI                                                                                                                        |
|----------------------|----------------------------|-----------------------------|---------------|---------------------|-----------------------------------------------------------------------------------------------------------------------------|
| Disconnect switch    | Type                       | Operation                   | Ampere Rating | Enclosure Type      | Option                                                                                                                      |
| DS=Disconnect switch | F = Fused<br>N = Non-fused | P = Pullout<br>S = Switched | 30<br>60      | M = Metal Enclosure | GFCI = self contained 15A<br>GFCI receptacle present<br>R = self contained<br>15A standard (non-GFCI)<br>receptacle present |

AC Disconnect Switch Family - Typical Configurations

| Non-Fused AC Disconnects                                                  | 60A         | WxHxD (Inches) | Weight        |
|---------------------------------------------------------------------------|-------------|----------------|---------------|
| Pullout disconnect in metal enclosure                                     | DSNP60M     | 5.25x8.75x2.25 | 3 lbs.        |
| Pullout disconnect with GFCI receptacle in metal enclosure                | DSNP60MGFCI | 6x10.5x3       | 4 lbs. 10 oz. |
| Pullout disconnect with standard (non-GFCI) receptacle in metal enclosure | DSNP60MR    | 6x10.5x        | 4 lbs. 10 oz. |
| Switched disconnect in metal enclosure                                    | DSNS60M     | 5.25x8.75x2.25 | 3 lbs. 2 oz.  |
| Switched disconnect with GFCI receptacle in metal enclosure               | DSNS60MGFCI | 6x10.5x3       | 5 lbs. 5 oz.  |

## Dimensions



| Fused AC Disconnects                                       | 30A         | WxHxD (Inches) | Weight        |
|------------------------------------------------------------|-------------|----------------|---------------|
| Pullout disconnect in metal enclosure                      | DSFP30M     | 5.5x9x2.75     | 3 lbs. 12 oz. |
| Pullout disconnect with GFCI receptacle in metal enclosure | DSFP30MGFCI | 6x10.5x3       | 4 lbs. 12 oz. |
|                                                            | 60A         |                |               |
| Pullout disconnect in metal enclosure                      | DSFP60M     | 5.5x9x2.75     | 4 lbs.        |
| Pullout disconnect with GFCI receptacle in metal enclosure | DSFP60MGFCI | 6x10.5x3       | 5 lbs.        |

## Wire Range

|                       | Cu         | AL         | Cu/AL      |
|-----------------------|------------|------------|------------|
| Line + Load Connector | #2-#14 AWG | #2-#12 AWG | —          |
| Ground Connector      | —          | —          | #4-#12 AWG |

## AC Disconnect Cross Reference

| Description            | Ferraz Shawmut | Bussmann    | Cutler Hammer | Midwest    | GE      | Siemens | Square D | Milbank |
|------------------------|----------------|-------------|---------------|------------|---------|---------|----------|---------|
| <b>Non-Fused</b>       |                |             |               |            |         |         |          |         |
| 60A, Pullout           | DSNP60M        | B222-60NF   | DPU222R       | U065P      | TFN60R  | WNF2060 | UFS221R  | U3800   |
| 60A, Pullout with GFCI | DSNP60MGFCI    | B222-60NFGF | DPU222RGF     | U065P010   | -       | -       | -        | U3822   |
| 60A, Switch            | DSNS60M        | -           | DPB222R       | U065NA1    | TNA60R1 | -       | QO200TR  | -       |
| 60A, Switch with GFCI  | DSNS60MGFCI    | -           | -             | U065NA1010 | -       | -       | -        | -       |
| <b>Fused</b>           |                |             |               |            |         |         |          |         |
| 30A Pullout            | DSFP30M        | B221-30F    | DPF221B       | U035F1     | TF30R   | WFS2030 | FS221R   | U3803   |
| 30A Pullout with GFCI  | DSFP30MGFCI    | -           | -             | -          | -       | -       | -        | -       |
| 60A, Pullout           | DSFP60M        | B222-60F    | DPF222B       | U065F1     | TF60R   | WFS2060 | FS222R   | U3806   |
| 60A, Pullout with GFCI | DSFP60MGFCI    | -           | -             | -          | -       | -       | -        | -       |

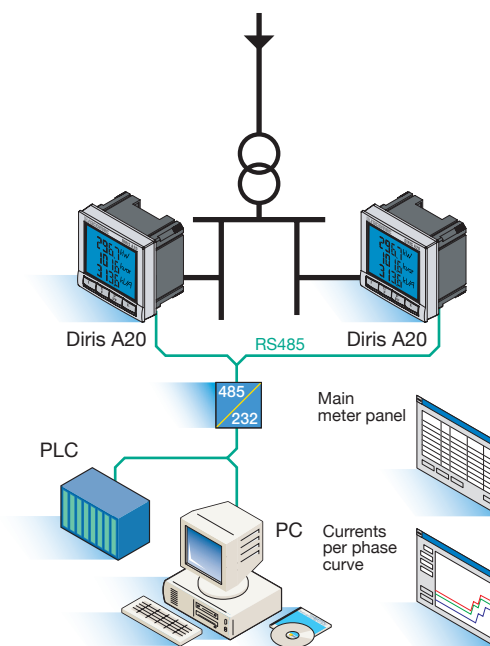
## Product presentation



A universal multi-function solution:

The DIRIS® A are multi-function measurement devices which optimize the operation of your electrical networks by:

- reducing operating costs,
- cutting down production losses,
- optimizing maintenance costs,
- improving the performance of the installation.



### Highlights

- Measure: all electrical values
- Monitor: electrical networks using alarms
- Analyze: energy quality by breaking down the harmonics
- Meter: energy used by installation
- Control: to open or close feeder control gear
- Centralize: all data using digital or analog communication

### Applications

- Utility metering
- Substations
- Power generation
- Switchgear
- Submetering
- Analog meter replacement

### Models

- DIRIS® A 20: LV networks
- DIRIS® A 40: HV/LV networks
- Large range of modules that can be added at any time

### Approvals

- UL Listed Guide PICO, File E257746, UL61010-1
- IEC 62053-22 class 0.5S  
IEC 62053-23 class 2  
IEC 61010-1  
IEC 61000-4-2  
IEC 61000-4-3  
IEC 61000-4-4  
IEC 61000-4-5  
IEC 61000-4-6  
IEC 61000-4-8  
IEC 61000-4-11  
IEC 60068-2-6  
IEC 60068-2-11  
IEC 60068-2-30
- CSA 22.2  
No. 610 10-1-04  
Class 3631 35  
File 112964 0000



ASIC® technology component inside for improving the quality and accuracy of measurements

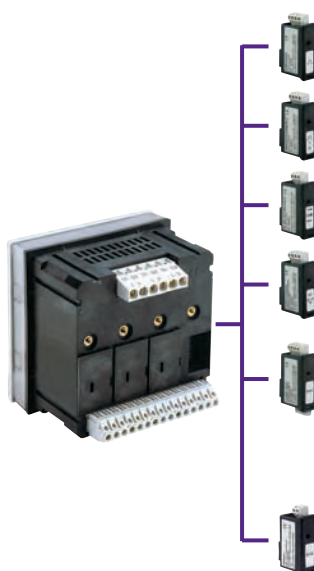
## Standard functions



|                                                                                          | DIRIS® A20 | DIRIS® A40 |
|------------------------------------------------------------------------------------------|------------|------------|
| Instantaneous, rms values                                                                |            |            |
| Current (3I, In)                                                                         | ▪          | ▪          |
| Phase to neutral and phase to phase voltage (3V, 3U)                                     | ▪          | ▪          |
| Frequency (F)                                                                            | ▪          | ▪          |
| Total active, reactive and apparent power (+ ΣP, + ΣQ, ΣS)                               | ▪          |            |
| Total and per phase active, reactive and apparent power (± 3P, ± 3Q, 3S, ± ΣP, ± ΣQ, ΣS) |            | ▪          |
| Total power factor (ΣPF)                                                                 | ▪          |            |
| Total and per phase power factor (3PF <sup>LC</sup> , ΣPF <sup>LC</sup> )                |            | ▪          |
| Average and maximum values                                                               |            |            |
| Current (3I, In)                                                                         | ▪          | ▪          |
| Phase-to-neutral and phase-to-phase voltage and frequency (3U, 3V, F)                    |            | ▪          |
| Total active power (Σ P+)                                                                | ▪          |            |
| Total active, reactive and apparent power (± ΣP, ± ΣQ, ΣS)                               |            | ▪          |
| Power - quality values                                                                   |            |            |
| Voltage and current harmonic distortion level up to row 51 (THD 3I, In, 3V, 3U)          |            | ▪          |
| Meters                                                                                   |            |            |
| Active and reactive energy 2 quadrants (+ kWh, + kvarh)                                  | ▪          |            |
| Active, reactive and apparent energy 4 quadrants (± kWh, ± kvarh, kVAh)                  |            | ▪          |

## Optional functions

For specific requirements, plug-in modules can be used to give the following additional functions (maximum 4).



|                                                                                                                                                      | DIRIS® A20 | DIRIS® A40 |
|------------------------------------------------------------------------------------------------------------------------------------------------------|------------|------------|
| Pulse outputs                                                                                                                                        |            |            |
| 1 configurable pulse output (type, weight and duration)                                                                                              | ▪          |            |
| 2 configurable pulse outputs (type, weight and duration)                                                                                             |            | ▪          |
| Pulse outputs and harmonics                                                                                                                          |            |            |
| 2 configurable pulse outputs (type, weight and duration)                                                                                             |            | ▪          |
| Harmonics spectral analysis per rating and per phase for 3I, In, 3V and 3U up to rate 25                                                             |            | ▪          |
| Communication                                                                                                                                        |            |            |
| RS485 link with JBUS/MODBUS protocol (speed up to 38400 bauds): 1 module                                                                             | ▪          | ▪          |
| RS485 link with PROFIBUS DP protocol (speed up to 1.5 Mbauds): 2 modules                                                                             |            | ▪          |
| Analog outputs                                                                                                                                       |            |            |
| 2 configurable outputs on 3I, In, 3V, 3U, F, ±ΣP, ±ΣQ, ΣS and ΣPF <sup>LC</sup>                                                                      |            | ▪          |
| Maximum 2 modules connection for 4 analog outputs                                                                                                    |            | ▪          |
| 2 inputs - 2 outputs                                                                                                                                 |            |            |
| 2 to 6 outputs for monitoring of 3I, In, 3V, 3U, F, ±ΣP, ±ΣQ, ΣS, ΣPF <sup>LC</sup> , THD 3I, THD In, THD 3V, THD 3U and hours run or remote control |            | ▪          |
| 2 to 6 inputs for pulse metering                                                                                                                     |            | ▪          |
| Memory                                                                                                                                               |            |            |
| Storing P+, P-, Q+, Q- values with internal/external synchronization signal (5, 8, 10, 15, 20 and 30 minutes during 31 and 62 days)                  |            | ▪          |
| Storing last 10 time-stamped alarms                                                                                                                  |            | ▪          |
| Storing min/max instantaneous values for 3U, 3V, 3I, In, F, ±ΣP, ±ΣQ, ΣS, THD3U, THD3V, THD3I, THDIn                                                 |            | ▪          |
| Storing last 10 time-stamped voltage dips, surges and outage (EN 50160)                                                                              |            | ▪          |
| Storing average values according to synchronization signal for 3U, 3V and F                                                                          |            | ▪          |

## Technical characteristics

|                                                                               | DIRIS® A20                                               | DIRIS® A40                                               |
|-------------------------------------------------------------------------------|----------------------------------------------------------|----------------------------------------------------------|
| Type of measurement                                                           |                                                          |                                                          |
| Network (3 P, 3P+N, and single phase)                                         | LV                                                       | LV / HV                                                  |
| True RMS value up to harmonic                                                 | 51                                                       | 51                                                       |
| Accuracy of measurements <sup>(1)</sup>                                       |                                                          |                                                          |
| Current and voltage                                                           | 0.2 %                                                    | 0.2 %                                                    |
| Power                                                                         | 0.5 %                                                    | 0.5 %                                                    |
| Frequency                                                                     | 0.1 %                                                    | 0.1 %                                                    |
| Active energy                                                                 | IEC 62053-22 class 0.5S                                  | IEC 62053-22 class 0.5S                                  |
| Reactive energy                                                               | IEC 62053-23 class 2                                     | IEC 62053-23 class 2                                     |
| Display refresh rate                                                          |                                                          |                                                          |
| Time                                                                          | 1 s                                                      | 1 s                                                      |
| Current inputs                                                                |                                                          |                                                          |
| Primary CT                                                                    | 5 to 10000 A                                             | 5 to 10000 A                                             |
| Secondary CT                                                                  | 5 A                                                      | 5 A and 1 A                                              |
| Sensing range                                                                 | 5 mA to 6 A                                              | 10 mA to 10 A                                            |
| Permissible overload                                                          | 50 A - 1 s                                               | 50 A - 1 s                                               |
| Consumption                                                                   | < 0.6 VA                                                 | < 0.1 VA                                                 |
| CT earth connection (secondary)                                               | yes                                                      | yes                                                      |
| Voltage inputs                                                                |                                                          |                                                          |
| Direct measurement phase to phase                                             | 50 to 500 V AC                                           | 50 to 500 V AC                                           |
| Voltage sensing transformer (secondary 60, 100, 110, 115, 120, 173 and 190 V) | n / a                                                    | up to 500 kV AC                                          |
| Impulse Withstand Voltage                                                     | 4kV                                                      | 4kV                                                      |
| Frequency                                                                     | 45 to 65 Hz                                              | 45 to 65 Hz                                              |
| Auxiliary power supply                                                        |                                                          |                                                          |
| UL Approved                                                                   | 110 to 240 V AC $\pm$ 10 %<br>120 to 250 V DC $\pm$ 20%  | 110 to 240 V AC $\pm$ 10 %<br>120 to 250 V DC $\pm$ 20 % |
| Product Limits (not UL Approved)                                              | 110 to 400 V AC $\pm$ 10 %<br>120 to 350 V DC $\pm$ 20 % | 110 to 400 V AC $\pm$ 10 %<br>120 to 350 V DC $\pm$ 20 % |
| Others                                                                        | n / a                                                    | 12 to 48 V DC -6/+20% (not UL)                           |
| Inputs                                                                        |                                                          |                                                          |
| Type                                                                          | n / a                                                    | Optocouplers (10 to 30 V DC)                             |
| Monitoring or command outputs                                                 |                                                          |                                                          |
| Type                                                                          | n / a                                                    | REED relays (230 V AC - 5 A - 1150 VA)                   |
| Pulse output/s                                                                |                                                          |                                                          |
| Type                                                                          | REED relays (100 V DC - 0.5 A - 10 VA)                   | REED relays (100 V DC - 0.5 A - 10 VA)                   |
| Analog outputs 0/4 - 20 mA                                                    |                                                          |                                                          |
| Load resistance                                                               | n / a                                                    | 0 to 600 Ohms                                            |
| Response time                                                                 | n / a                                                    | 1 s                                                      |
| Memory                                                                        |                                                          |                                                          |
| Memory size                                                                   |                                                          | 512                                                      |





# DIRIS® A20

## Product presentation



1. LCD display
2. Direct access key for instantaneous and max. currents values
3. Direct access key for voltages and frequency
4. Direct access key for active, reactive and apparent power (instantaneous and max. values) and power factor
5. Direct access key for energies

Using electrical parameters means using several analog or digital single-function products such as ammeters, voltmeters or watt meters.

DIRIS A20, with its four direct access keys and LCD displays, helps you use all the parameters in an LV installation.

These parameters can be centralized on a PC or PLC through an RS 485 link using JBUS/MODBUS protocol. The casing is designed so that the installer can easily fit the DIRIS A20 to the door of a cabinet. To facilitate and optimize the operator's work, the DIRIS A20 uses one of the most functional principles for integrating communications or metering.

Simply fit a module to the rear of the casing to add a function.

In addition, DIRIS A20 has a function for correcting connection errors.

## DIRIS® A20



Select a DIRIS®

| Auxiliary power supply $U_s$                       | Catalog number |
|----------------------------------------------------|----------------|
| 110 ... 400 VAC / 120 ... 350 VDC (Product Limits) | 4825 0A20      |
| 110 ... 240 V DC / 120 ... 250 V DC (UL Approved)  |                |

## Optional functions



Select a module

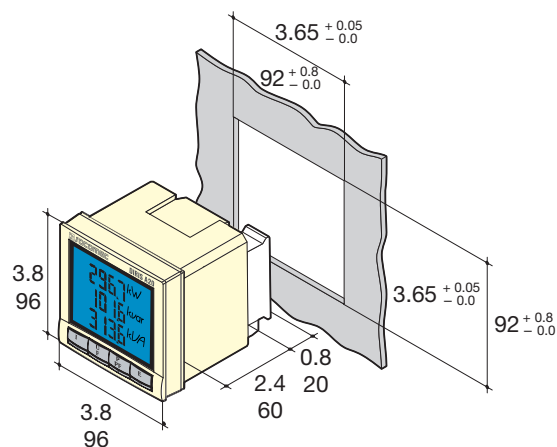
| Description                                                                    | Catalog number |
|--------------------------------------------------------------------------------|----------------|
| Pulse output                                                                   | 4825 0080      |
| 1 configurable output impulses (type, weight and duration) for kWh+ and kvarh+ | 4825 0082      |
| Communication                                                                  |                |
| RS 485 link with JBUS/MODBUS protocol (speed up to 38 400 bauds)               |                |

## Technical characteristics

|                                      |                |
|--------------------------------------|----------------|
| Current measurement on inputs (TRMS) |                |
| CT primary                           | 9 999 A        |
| CT secondary                         | 5 A            |
| Measurement range                    | 0 ... 11 kA    |
| Input consumption                    | 0.6 VA         |
| Measurement updating period          | 1 s            |
| Accuracy                             | 0.2 %          |
| Sustained overload                   | 6 A            |
| Intermittent overload                | 10 In for 1 s  |
| Impulse withstand voltage            | 4 kV           |
| Voltage measurement (TRMS)           |                |
| Direct measurement between phases    | 50 ... 500 VAC |
| Input consumption                    | ≤ 0.1 VA       |
| Measurement updating period          | 1 s            |
| Accuracy                             | 0.2 %          |
| Sustained overload                   | 780 VAC        |
| Power measurement                    |                |
| Measurement updating period          | 1 s            |
| Accuracy                             | 0.5 %          |
| Power factor measurement             |                |
| Measurement updating period          | 1 s            |
| Accuracy                             | 0.5 %          |
| Frequency measurement                |                |
| Measurement range                    | 45 ... 65 Hz   |
| Measurement updating period          | 1 s            |
| Accuracy                             | 0.1 %          |

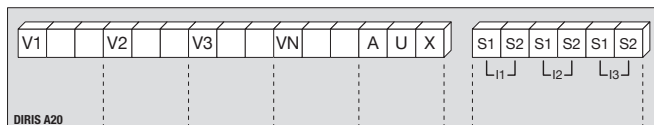
|                                      |                            |
|--------------------------------------|----------------------------|
| Energy accuracy                      |                            |
| Active (according to IEC 62053-22)   | Class 0.5 S                |
| Reactive (according to IEC 62053-23) | Class 2                    |
| Auxiliary power supply               |                            |
| AC voltage                           | 110 ... 400 VAC            |
| AC tolerance                         | ± 10 %                     |
| DC voltage                           | 120 ... 350 VDC            |
| DC tolerance                         | ± 20 %                     |
| Frequency                            | 50 / 60 Hz                 |
| Consumption                          | 5 VA                       |
| Outputs (pulsed)                     |                            |
| Number of relays                     | 1                          |
| Type                                 | 100 VDC - 0.5 A - 10 VA    |
| Max. number of operations            | ≤ 10 <sup>8</sup>          |
| Communication                        |                            |
| Link                                 | RS485                      |
| Type                                 | 2 ... 3 wires half duplex  |
| Protocol                             | JBUS / MODBUS® in RTU mode |
| JBUS / MODBUS® speed                 | 1400 ... 38400 bauds       |
| Operating conditions                 |                            |
| Operating temperature                | - 10 ... + 55 °C           |
| Storage temperature                  | - 20 ... + 85 °C           |
| Relative humidity                    | 95 %                       |

## Dimensions (in / mm)



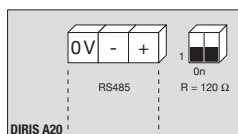
|                                      |                             |
|--------------------------------------|-----------------------------|
| Type                                 | panel mounting              |
| Dimensions H x W x D                 | 96 x 96 x 60 mm             |
| Case protection rating               | IP 30                       |
| Front protection rating              | IP 52                       |
| Display type                         | LCD                         |
| Terminal block type                  | fixed and pull-out          |
| Voltage and other connection section | 0.2 ... 2.5 mm <sup>2</sup> |
| Current connection section           | 0.5 ... 6 mm <sup>2</sup>   |
| Weight                               | 400 g                       |

## Terminal blocks



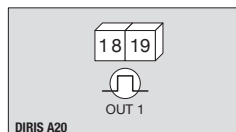
S1 - S2: current inputs  
AUX: auxiliary power supply  $U_s$   
V1, V2, V3 & VN: voltage inputs

### Communication module



RS485 link  
 $R = 120 \Omega$ : internal resistance for the RS485 link

### Pulse output module



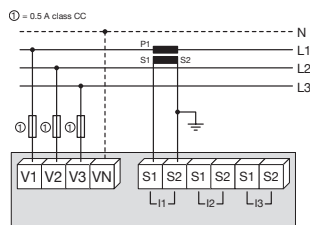
18 - 19: pulse output no. 1

## Connections

Recommendation: when disconnecting the DIRIS, the secondaries of each current transformer must be short-circuited. This operation can be carried out automatically from a product in the SOCOMEC catalogue, PTI: please consult us.

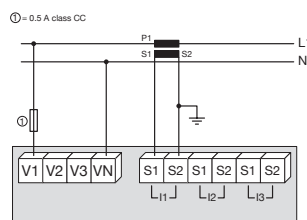
### Low voltage balanced network

- 3/4 wires with 1 CT

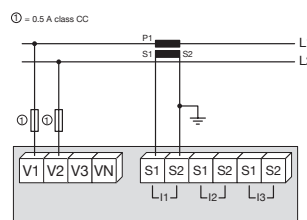


The use of 1 CT reduces by 0.5 % the accuracy of the phases whose current is determined by vector calculation.

- Single phase

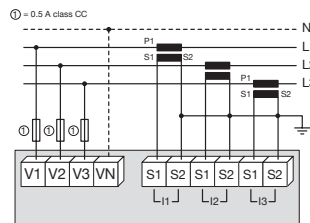


- Two phases

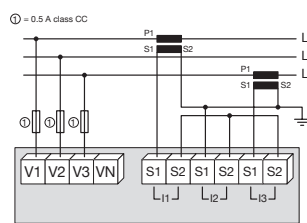


### Low voltage unbalanced network

- 3/4 wires with 3 CTs

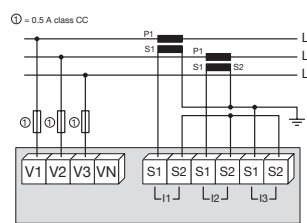


- 3 wires with 2 CTs



The use of 2 CTs reduces by 0.5 % the accuracy of the phase whose current is determined by vector calculation.

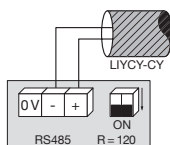
- 3 wires with 2 CTs



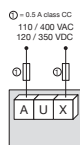
The use of 2 CTs reduces by 0.5 % the accuracy of the phase whose current is determined by vector calculation.

### Other information

- Communication via RS485 link



- AC & DC auxiliary power supply



It is recommended that the auxiliary power supply be protected by the use of 0.5 A class CC fuses.



# DIRIS® A40

## Product presentation



1. Backlit LDC screen
2. Pushbutton for currents and setup wiring correction
3. Pushbutton for voltages and frequency
4. Pushbutton for active, reactive, apparent power and power factor
5. Pushbutton for maximal and average current and power values
6. Pushbutton for harmonics values
7. Pushbutton for energies and hour run meter

Using electrical parameters means using several analog or digital single-function products such as ammeters, voltmeters or watt meters.

DIRIS A40 and A41, with its six direct access keys and LCD displays, helps you use all the parameters in an LV or HV installation.

These parameters can be centralized on a PC or PLC through an RS 485 link using JBUS/MODBUS® or PROFIBUS® DP protocol. The unit is designed so that the installer can easily fit the DIRIS A40 or A41 to the door of a cabinet. To facilitate and optimize the operator's work, the DIRIS A40 and A41 uses one of the most functional principles for integrating communications, metering, harmonics, analog outputs or alarm relays. Simply fit a module to the rear of the casing to add a function.

In addition, DIRIS A40 has a function for correcting connection errors.

### DIRIS® A40



Select a DIRIS®

| Auxiliary power supply Us                          | Catalog number |
|----------------------------------------------------|----------------|
| 110 ... 400 VAC / 120 ... 350 VDC (Product Limits) | 4825 0A40      |
| 110 ... 240 VAC / 120 ... 250 VDC (UL Approved)    |                |

### Optional functions



Select a module

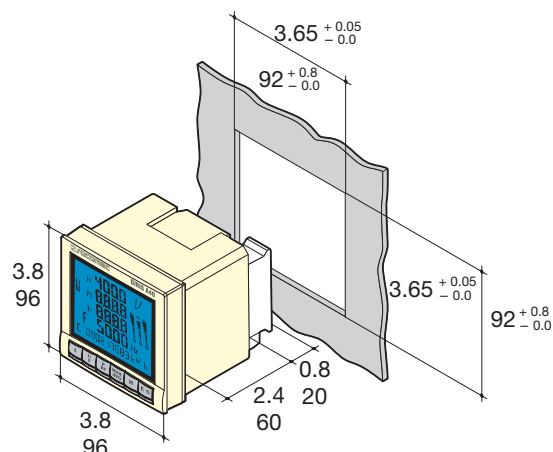
| Description                                                                                                                                              | Catalog number |
|----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| Pulse output                                                                                                                                             | 4825 0090      |
| 2 configurable outputs impulses (type, weight and duration) for +/- kWh, +/- kvarh and KVAh                                                              | 4825 0091      |
| Pulse output + harmonics                                                                                                                                 |                |
| 2 configurable outputs impulses (type, weight and duration) for +/- kWh, +/- kvarh and KVAh                                                              | 4825 0092      |
| Harmonic analysis by row up to 25 and by phase for 3I, In, 3V and 3U                                                                                     |                |
| Communication: RS 485 JBUS/MODBUS                                                                                                                        | 4825 0093      |
| RS 485 link with JBUS/MODBUS protocol (speed up to 38 400 bauds)                                                                                         |                |
| Analog outputs                                                                                                                                           | 4825 0094      |
| 2 configurable outputs on 3I, In, 3V, 3U, F, +/-ΣP, +/-ΣQ, ΣS and ΣPF <sup>LC</sup>                                                                      |                |
| 2 modules may be installed, for 4 analog outputs max                                                                                                     | 4825 0096      |
| 2 inputs – 2 outputs                                                                                                                                     |                |
| 2 to 6 outputs for monitoring 3I, In, 3V, 3U, F, +/-ΣP, +/-ΣQ, ΣS and ΣPF <sup>LC</sup> , THD 3I, THD In, THD 3V, THD 3U and hours run or remove control | 4825 0097      |
| Communication PROFIBUS®DP                                                                                                                                |                |
| 1 module RS 485 and 1 module protocol PROFIBUS®DP (speed up to 1.5 Mbauds)                                                                               | 4825 0097      |
| Memory                                                                                                                                                   |                |
| Storing P+, P-, Q+, Q- values with internal/external synchronisation signal (5, 8, 10, 15, 20 and 30 minutes during 31 and 62 days)                      | 4825 0097      |
| Storing last 10 time-stamped alarms                                                                                                                      |                |
| Storing min/max instantaneous values for 3I, In, 3V, 3U, F, +/-ΣP, +/-ΣQ, ΣS, THD 3U, THD 3V, THD 3I, THDIn                                              | 4825 0097      |
| Storing last 10 time-stamped voltage dips, surges and outage (EN 50 160)                                                                                 |                |
| Storing average values according to synchronisation signal for 3U, 3V and F                                                                              | 4825 0097      |

## Technical characteristics

|                                      |                                      |
|--------------------------------------|--------------------------------------|
| Current measurement on inputs (TRMS) |                                      |
| CT primary                           | 10 000 A                             |
| CT secondary                         | 1 and 5 A                            |
| Measurement range                    | 0 ... 11 kA                          |
| Input consumption                    | ≤ 0.1 VA                             |
| Measurement updating period          | 1 s                                  |
| Accuracy                             | 0.2 %                                |
| Sustained overload                   | 6 A                                  |
| Intermittent overload                | 10 In for 1 s                        |
| Impulse withstand voltage            | 4 kV                                 |
| Voltage measurement (TRMS)           |                                      |
| Direct measurement between phases    | 18 ... 500 VAC                       |
| VT primary                           | 500 000 VAC                          |
| VT secondary                         | 60, 100, 110, 115, 120, 173, 190 VAC |
| Frequency                            | 50 / 60 Hz                           |
| Input consumption                    | ≤ 0.1 VA                             |
| Measurement updating period          | 1 s                                  |
| Accuracy                             | 0.2 %                                |
| Sustained overload                   | 760 VAC                              |
| Current-voltage product              |                                      |
| Limitation for 1A CT                 | 10 000 000                           |
| Limitation for 5A CT                 | 10 000 000                           |
| Power measurement                    |                                      |
| Measurement updating period          | 1 s                                  |
| Accuracy                             | 0.5 %                                |
| Power factor measurement             |                                      |
| Measurement updating period          | 1 s                                  |
| Accuracy                             | 0.5 %                                |
| Frequency measurement                |                                      |
| Measurement range                    | 45 ... 65 Hz                         |
| Measurement updating period          | 1 s                                  |
| Accuracy                             | 0.1 %                                |
| Energy accuracy                      |                                      |
| Active (according to IEC 62053-22)   | Class 0.5 S                          |
| Reactive (according to IEC 62053-23) | Class 2                              |

|                                   |                                 |
|-----------------------------------|---------------------------------|
| Auxiliary power supply            |                                 |
| AC voltage                        | 110 ... 400 VAC                 |
| AC tolerance                      | ± 10 %                          |
| DC voltage                        | 120 ... 350 VDC / 12 ... 48 VDC |
| DC tolerance                      | ± 20 % / - 6 ... + 20 %         |
| Frequency                         | 50 / 60 Hz                      |
| Consumption                       | ≤ 10 VA                         |
| Inputs                            |                                 |
| Number                            | 2 ... 6                         |
| Power supply                      | 10 ... 30 VDC                   |
| Minimum signal width              | 10 ms                           |
| Minimum length between 2 impulses | 18 ms                           |
| Type                              | phototransistor                 |
| Outputs (alarms / control)        |                                 |
| Number of relays                  | 2 ... 6                         |
| Type                              | 230 VAC - 6 A - 1 150 VA        |
| Outputs (pulsed)                  |                                 |
| Number of relays                  | 2                               |
| Type                              | 100 VDC - 0.5 A - 10 VA         |
| Max. number of operations         | ≤ 10 <sup>8</sup>               |
| Outputs (analog)                  |                                 |
| Number of outputs                 | 2 ... 4                         |
| Type                              | isolated                        |
| Range                             | 0 / 4 ... 20 mA                 |
| Charging resistance               | 600 Ω                           |
| Maximum current                   | 30 mA                           |
| Communication                     |                                 |
| Link                              | RS485                           |
| Type                              | 2 ... 3 wires half duplex       |
| Protocol                          | JBUS / MODBUS® in RTU mode      |
| JBUS / MODBUS® speed              | 1400 ... 38400 bauds            |
| Protocol                          | PROFIBUS® DP                    |
| PROFIBUS® DP speed                | 9.8 kbauds ... 1.5 Mbauds       |
| Operating conditions              |                                 |
| Operating temperature             | - 10 ... + 55 °C                |
| Storage temperature               | - 20 ... + 85 °C                |
| Relative humidity                 | 95 %                            |

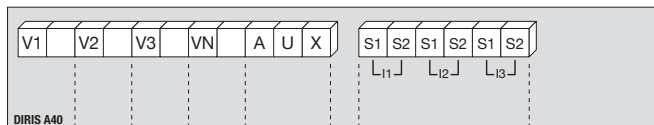
## Dimensions (in / mm)



|                                      |                             |
|--------------------------------------|-----------------------------|
| Type                                 | panel mounting              |
| Dimensions H x W x D                 | 96 x 96 x 60 mm             |
| Case protection rating               | IP 30                       |
| Front protection rating              | IP 52                       |
| Display type                         | LCD                         |
| Terminal block type                  | fixed or pull-out           |
| Voltage and other connection section | 0.2 ... 2.5 mm <sup>2</sup> |
| Current connection section           | 0.5 ... 6 mm <sup>2</sup>   |
| Weight                               | 400 g                       |

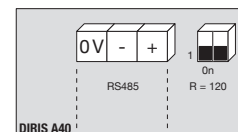
## Terminal blocks

### DIRIS A40



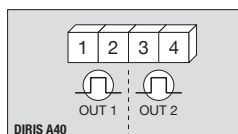
S1 - S2: current inputs  
AUX: auxiliary power supply  $U_s$   
V1, V2, V3 & VN: voltage inputs

### Communication module



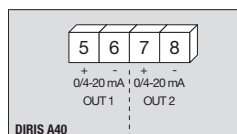
RS485 link  
R = termination resistance

### Metering module



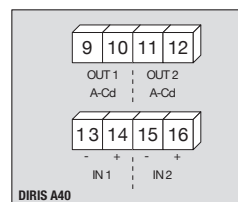
1 - 2: pulse output no. 1  
3 - 4: pulse output no. 2

### Analog output module



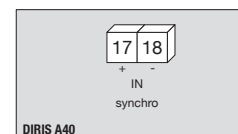
5 - 6: analog output n° 1  
7 - 8: analog output n° 2

### 2 inputs / 2 outputs module



9 - 10: relay output no. 1  
11 - 12: relay output no. 2  
13 - 14: opto input no. 1  
15 - 16: opto input no. 2

### Memory module



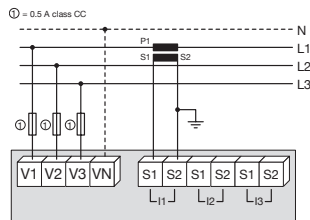
17 - 18: synchronization input

## Connections

Recommendation: when disconnecting the DIRIS, the secondaries of each current transformer must be short-circuited. This operation can be carried out automatically from a product in the Disconnect Switch catalog, PTI, please consult us.

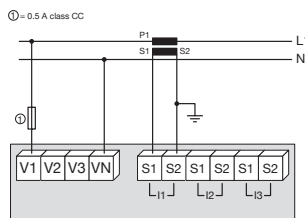
### Low voltage balanced network

- 3/4 wires with 1 CT

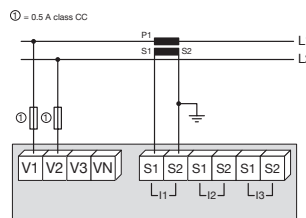


The use of 1 CT reduces by 0.5 % the accuracy of the phase whose current is determined by vector calculation.

- Single phase

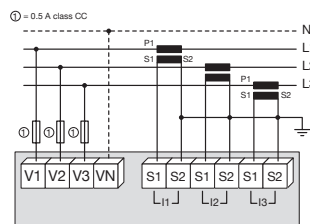


- Two phases

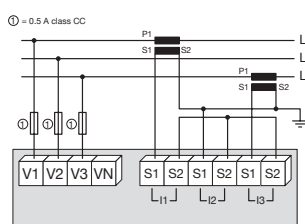


### Low voltage unbalanced network

- 3/4 wires with 3 CTs

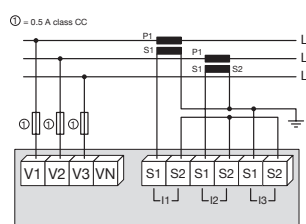


- 3 wires with 2 CTs



The use of 2 CTs reduces by 0.5 % the accuracy of the phase whose current is determined by vector calculation.

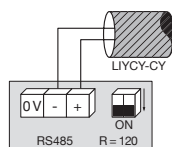
- 3 wires with 2 CTs



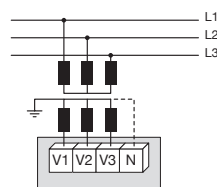
The use of 2 CTs reduces by 0.5 % the accuracy of the phase whose current is determined by vector calculation.

### Other information

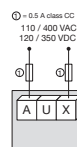
- Communication via RS485 link



- Voltage transformer connection for HV networks



- AC or DC voltage auxiliary power supply



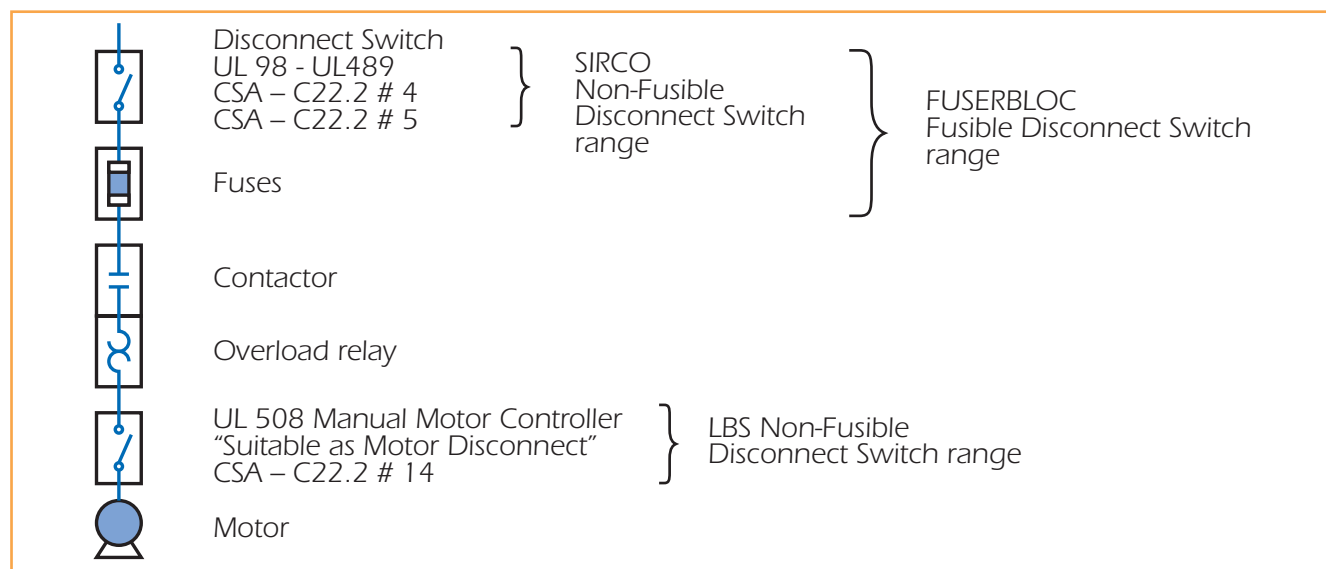
It is recommended that the auxiliary power supply be protected by the use of 0.5 A class CC fuses.



# Application Guide

## General information about motor protection

### Typical construction of a motor starter



### Essential parts of a motor branch circuit required by the national electrical code

- Disconnect means
- Branch-circuit short-circuit protective device
- Motor-controller
- Motor overload protective devices

#### Disconnect means

The Disconnect means can be a Manual Disconnect Switch according to UL 98.

A manual Motor Controller (according to UL 508) additionally marked "Suitable as Motor Disconnect" is only permitted as a disconnecting means where installed between the final branch-circuit short-circuit and ground-fault protective device and the motor (NEC 2005 Article 430.109).

#### Branch-circuit short-circuit protective device

The short-circuit protective device can be either a Fuse or an Inverse-time Circuit-breaker.

#### Motor-controller

Any switch or device that is normally used to start and stop a motor according to the National Electrical Code article 430.81.

#### Motor overload protective devices

The National Electrical Code permits fuses to be used as the sole means of overload protection for motor branch circuits. This approach is often practical only with small single phase motors.

Most integral horsepower 3 phase motors are controlled by a motor starter which includes an overload relay. Since the overload relay provides overload protection for the motor branch circuit, the fuses may be sized for short-circuit protection.

## Product features of non-fusible & fusible disconnect switches

### Door interlock in ON position



The handles allow opening the door in the OFF position only.

In the ON position the door can not be opened.

This interlocking can be by-passed by authorized personnel (defeater option on handle) for maintenance, testing or commissioning.

### Touch safe



Our design reduces or eliminates the danger of accidental contact with live, energized parts.

All products are supplied standard with line side shrouding.

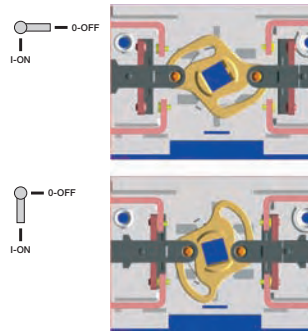
### Defeater



The defeat function allows qualified personnel to by-pass the door interlock when the switch is in the ON position by means of a tool.

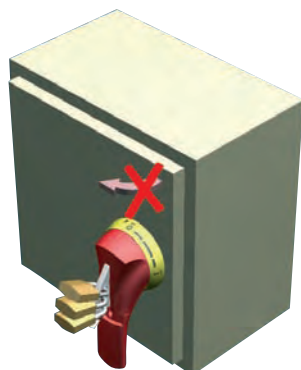
This exclusive design is also available in a NEMA 4 and 4X rating.

### Positive opening operation



The positive opening operation feature of our switches means that all the main contacts are ensured to be in the open position when the handle is in the "OFF" position.

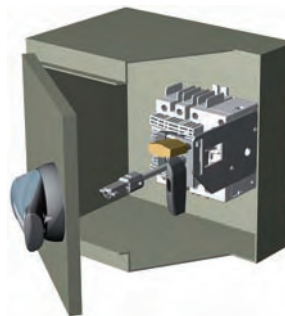
### Padlocking



Handles can be padlocked in the OFF position with up to 3 padlocks. Meets OSHA requirement for lockout / tagout.

For safety reasons, the door can not be opened when the handle is padlocked.

### New NFPA 79 requirements and solutions



As defined in the NFPA 79 Standard section 5.3.3.1 and 6.2.3.2, our disconnecting devices fully comply with all of the following requirements:

1. Isolate the electrical equipment from the supply circuit and have one off (open) and one on (closed) position only.
2. Have an external operating means (e.g., handle).
3. Be provided with a permanent means permitting it to be locked in the off (open) position only (e.g., by padlocks) independent of the door position. When so locked, remote as well as local closing shall be prevented.
4. Be operable, by qualified persons, independent of the door position without the use of accessory tools or devices.

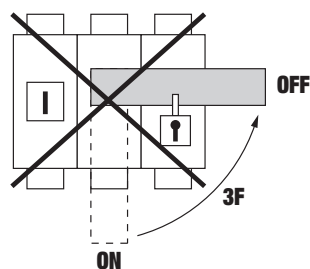
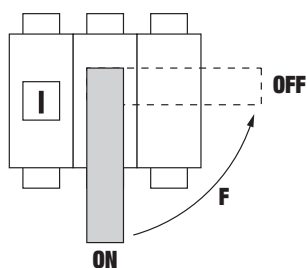
However the closing of the disconnecting means while door is open is not permitted unless an interlock is operated by deliberate action.

Flange and side operation:

Our side operated switches used with flange handles meet the requirements of the NFPA 79 without any additional parts being added.

# Product features of non-fusible & fusible disconnect switches

## Welded contact protection



Positive opening operation safeguards users in case of welded contacts due to an overload or short-circuit. The handle can not reach the "OFF" position unless the contacts are truly open.

According to the IEC 947-3 standard if the contacts are welded due to an overload or short-circuit, the switch will not reach the "OFF" position and can not be padlocked in this position as long as operating force applied to the operating mechanism is less than a force three times the standard operating force. Thus, this unusual operation alerts the user that a problem has occurred.

## Contact principle



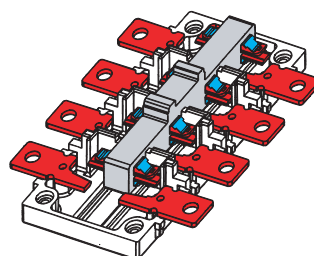
### Up to 400 A

All switches use silver tipped contacts technology providing the following advantages:

- best solution for harsh environments (humidity, sulphide, chloride...),
- high on-load break characteristics,
- longer mechanical and electrical life,
- maintenance free switches without grease.

### Above 400 A

Our switches use a self-cleaning moving contact technology allowing high short-circuit withstand.

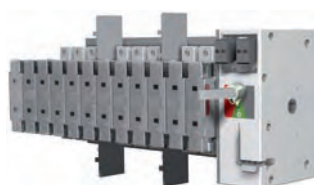


## Clear position indicator



All switches and handles have clear "ON" and "OFF" designations.

## Tailor-made solutions



- Multipolar switches (examples: 12-pole 160 A switch; 18-pole 30 A switch...).
- Rear connections (top or/and bottom).
- Mixed pole (example: 3-pole 200 A + 2-pole 30 A switch...).

Please consult us.

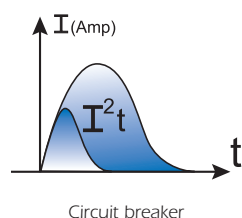
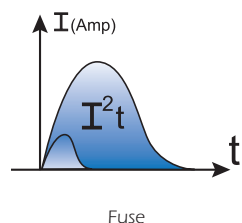


## Fast make and break contacts

All the Non-Fusible and Fusible Disconnect switches' contacts work independently of the speed and force of the operator providing better electrical characteristics (making capacities on short-circuits, highly inductive load operation possibilities).

# Product features of fusible disconnect switches

## Exceptional 200 kA short-circuit protection with

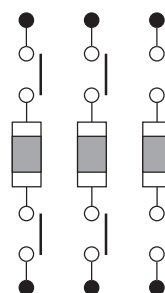


The Fuserbloc Series with class CC, J or L fuses provides exceptional high level of short-circuit protection, up to 200 kA.

The CC and J fuses are more current limiting than older classes of fuses or circuit breakers. In other words, fuses have higher breaking capacities than most of the circuit breakers. Moreover discrimination (selectivity) and coordination are easily achieved with fuses.

The fuse solution brings the following advantages: high performance, reliability, safety, savings and ease of use.

## Practical safeguard

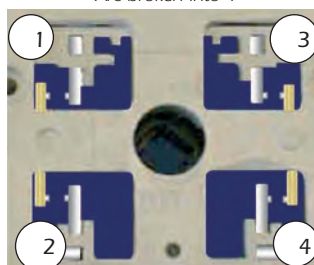


Arc broken into 4

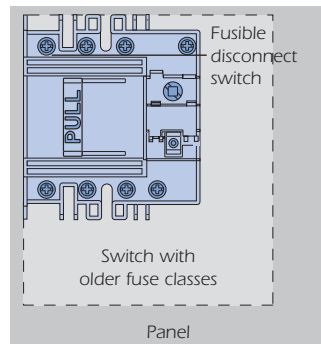
### Double break

The modern designed mechanism of our Fusible Disconnect Switches disconnects both sides of the fuses using two double breaking contacts per pole. This ensures the complete isolation of the fuses in the "OFF" position and allows the switch to be fed from either top or bottom side.

This feature allows the switch to operate on highly inductive loads.



## Panel space saving



This proven switch technology has the fuses incorporated on the top of the switch mechanism to reduce the footprint of the product and save you valuable real estate in your panel.

The space saving can be as much as 50% from the switches designed with use of older fuse classes.

## Touch safe

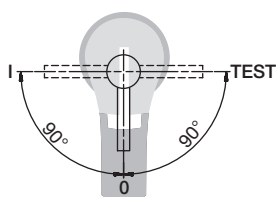


Our design reduces or eliminates the danger of accidental contact with live, energized parts.

All switches are supplied standard with fuse cover and line side shrouding.



## Fast and safe commissioning



The TEST feature enables the testing of the control circuit auxiliaries without switching the main contacts or removing the fuses.

This function provides a serious technical and commercial alternative to a separately wired push button.

## Fusible disconnect switches' association chart with UL fuses

### 208 V according to typical motor acceleration times

#### Three phase motor fuse and fusible disconnect switch selection UL class CC

| Motor HP | Full load amperes | Recommended fuse ampere rating for typical* 5 secs motor acceleration times | Recommended fuse | Recommended fusible disconnect switch |                                                       |
|----------|-------------------|-----------------------------------------------------------------------------|------------------|---------------------------------------|-------------------------------------------------------|
| 208 V    |                   | Ampere rating (A)                                                           | Catalog number   | Ampere rating (A)                     | Catalog number                                        |
| 1/2      | 2.4               | 8                                                                           | ATDR8            | 30                                    | FBCC30CDT<br>FBCC30 - FBCC304<br>FBCC30SO - FBCC304SO |
| 3/4      | 3.5               | 10                                                                          | ATDR10           |                                       |                                                       |
| 1        | 4.6               | 15                                                                          | ATDR15           |                                       |                                                       |
| 1-1/2    | 6.6               | 20                                                                          | ATDR20           |                                       |                                                       |
| 2        | 7.5               | 20                                                                          | ATDR20           |                                       |                                                       |
| 3        | 10.6              | 30                                                                          | ATDR30           |                                       |                                                       |

#### Three phase motor fuse and fusible disconnect switch selection UL class J

| Motor HP | Full load amperes | Recommended fuse ampere rating for typical* 5 secs motor acceleration times | Recommended fuse | Recommended fusible disconnect switch |                                                  |
|----------|-------------------|-----------------------------------------------------------------------------|------------------|---------------------------------------|--------------------------------------------------|
| 208 V    |                   | Ampere rating (A)                                                           | Catalog number   | Ampere rating (A)                     | Catalog number                                   |
| 1/2      | 2.4               | 3-1/2                                                                       | AJT3-1/2         | 30                                    | FBJ30CDT<br>FBJ30 - FBJ304<br>FBJ30SO - FBJ304SO |
| 3/4      | 3.5               | 5                                                                           | AJT5             |                                       |                                                  |
| 1        | 4.6               | 7                                                                           | AJT7             |                                       |                                                  |
| 1-1/2    | 6.6               | 10                                                                          | AJT10            |                                       |                                                  |
| 2        | 7.5               | 10                                                                          | AJT10            |                                       |                                                  |
| 3        | 10.6              | 15                                                                          | AJT15            |                                       |                                                  |
| 5        | 16.8              | 25                                                                          | AJT25            | 60                                    | FBJ60 - FBJ604<br>FBJ60SO - FBJ604SO             |
| 7-1/2    | 24.2              | 35                                                                          | AJT35            |                                       |                                                  |
| 10       | 30.8              | 45                                                                          | AJT45            | 100                                   | FBJ100 - FBJ1004<br>FBJ100SO - FBJ1004SO         |
| 15       | 46.2              | 70                                                                          | AJT70            |                                       |                                                  |
| 20       | 60                | 90                                                                          | AJT90            | 200                                   | FBJ200 - FBJ2004<br>FBJ200SO - FBJ2004SO         |
| 25       | 75                | 110                                                                         | AJT110           |                                       |                                                  |
| 30       | 88                | 150                                                                         | AJT150           |                                       |                                                  |
| 40       | 114               | 175                                                                         | AJT175           |                                       |                                                  |
| 50       | 143               | 225                                                                         | AJT225           | 400                                   | FBJ400 - FBJ4004<br>FBJ400SO - FBJ4004SO         |
| 60       | 169               | 250                                                                         | AJT250           |                                       |                                                  |
| 75       | 211               | 350                                                                         | AJT350           |                                       |                                                  |
| 100      | 273               | 400                                                                         | AJT400           |                                       |                                                  |
| 125      | 343               | 500                                                                         | AJT500           | 600                                   | FBJ600 - FBJ6004                                 |
| 150      | 396               | 600                                                                         | AJT600           |                                       |                                                  |

\* Typical: suggested for most applications. Will coordinate with NEMA Class 20 overload relays. Suitable for motor acceleration times up to 5 seconds.

## Fusible disconnect switches' association chart with UL fuses

### 230 V according to typical motor acceleration times

#### Three phase motor fuse and fusible disconnect switch selection UL class CC

| Motor HP | Full load amperes | Recommended fuse ampere rating for typical* 5 secs motor acceleration times | Recommended fuse | Recommended fusible disconnect switch |                                                       |
|----------|-------------------|-----------------------------------------------------------------------------|------------------|---------------------------------------|-------------------------------------------------------|
| 230 V    |                   | Ampere rating (A)                                                           | Catalog number   | Ampere rating (A)                     | Catalog number                                        |
| 1/2      | 2.2               | 7                                                                           | ATDR7            | 30                                    | FBCC30CDT<br>FBCC30 - FBCC304<br>FBCC30SO - FBCC304SO |
| 3/4      | 3.2               | 10                                                                          | ATDR10           |                                       |                                                       |
| 1        | 4.2               | 12                                                                          | ATDR12           |                                       |                                                       |
| 1-1/2    | 6                 | 17-1/2                                                                      | ATDR17-1/2       |                                       |                                                       |
| 2        | 6.8               | 20                                                                          | ATDR20           |                                       |                                                       |
| 3        | 9.6               | 30                                                                          | ATDR30           |                                       |                                                       |

#### Three phase motor fuse and fusible disconnect switch selection UL class J

| Motor HP | Full load amperes | Recommended fuse ampere rating for typical* 5 secs motor acceleration times | Recommended fuse | Recommended fusible disconnect switch |                                                  |
|----------|-------------------|-----------------------------------------------------------------------------|------------------|---------------------------------------|--------------------------------------------------|
| 230 V    |                   | Ampere rating (A)                                                           | Catalog number   | Ampere rating (A)                     | Catalog number                                   |
| 1/2      | 2.2               | 3-1/2                                                                       | AJT3-1/2         | 30                                    | FBJ30CDT<br>FBJ30 - FBJ304<br>FBJ30SO - FBJ304SO |
| 3/4      | 3.2               | 5                                                                           | AJT5             |                                       |                                                  |
| 1        | 4.2               | 6-1/4                                                                       | AJT6-1/4         |                                       |                                                  |
| 1-1/2    | 6                 | 9                                                                           | AJT9             |                                       |                                                  |
| 2        | 6.8               | 10                                                                          | AJT10            |                                       |                                                  |
| 3        | 9.6               | 15                                                                          | AJT15            |                                       |                                                  |
| 5        | 15.2              | 25                                                                          | AJT25            | 60                                    | FBJ60 - FBJ604<br>FBJ60SO - FBJ604SO             |
| 7-1/2    | 22                | 35                                                                          | AJT35            |                                       |                                                  |
| 10       | 28                | 40                                                                          | AJT40            |                                       |                                                  |
| 15       | 42                | 60                                                                          | AJT60            | 100                                   | FBJ100 - FBJ1004<br>FBJ100SO - FBJ1004SO         |
| 20       | 54                | 80                                                                          | AJT80            |                                       |                                                  |
| 25       | 68                | 100                                                                         | AJT100           |                                       |                                                  |
| 30       | 80                | 125                                                                         | AJT125           | 200                                   | FBJ200 - FBJ2004<br>FBJ200SO - FBJ2004SO         |
| 40       | 104               | 150                                                                         | AJT150           |                                       |                                                  |
| 50       | 130               | 200                                                                         | AJT200           |                                       |                                                  |
| 60       | 154               | 225                                                                         | AJT225           | 400                                   | FBJ400 - FBJ4004<br>FBJ400SO - FBJ4004SO         |
| 75       | 192               | 300                                                                         | AJT300           |                                       |                                                  |
| 100      | 248               | 350                                                                         | AJT350           |                                       |                                                  |
| 125      | 312               | 450                                                                         | AJT450           | 600                                   | FBJ600 - FBJ6004                                 |
| 150      | 360               | 500                                                                         | AJT500           |                                       |                                                  |

\* Typical: suggested for most applications. Will coordinate with NEMA Class 20 overload relays. Suitable for motor acceleration times up to 5 seconds.



## Fusible disconnect switches' association chart with UL fuses

### 460 V according to typical motor acceleration times

#### Three phase motor fuse and fusible disconnect switch selection UL class CC

| Motor HP | Full load amperes | Recommended fuse ampere rating for typical* 5 secs motor acceleration times | Recommended fuse | Recommended fusible disconnect switch |                                                       |
|----------|-------------------|-----------------------------------------------------------------------------|------------------|---------------------------------------|-------------------------------------------------------|
| 460 V    |                   | Ampere rating (A)                                                           | Catalog number   | Ampere rating (A)                     | Catalog number                                        |
| 1/2      | 1.1               | 3-1/2                                                                       | ATDR3-1/2        | 30                                    | FBCC30CDT<br>FBCC30 - FBCC304<br>FBCC30SO - FBCC304SO |
| 3/4      | 1.6               | 5                                                                           | ATDR5            |                                       |                                                       |
| 1        | 2.1               | 6-1/4                                                                       | ATDR6-1/4        |                                       |                                                       |
| 1-1/2    | 3                 | 9                                                                           | ATDR9            |                                       |                                                       |
| 2        | 3.4               | 10                                                                          | ATDR10           |                                       |                                                       |
| 3        | 4.8               | 15                                                                          | ATDR15           |                                       |                                                       |
| 5        | 7.6               | 25                                                                          | ATDR25           |                                       |                                                       |
| 7-1/2    | 11                | 30                                                                          | ATDR30           |                                       |                                                       |

#### Three phase motor fuse and fusible disconnect switch selection UL class J

| Motor HP | Full load amperes | Recommended fuse ampere rating for typical* 5 secs motor acceleration times | Recommended fuse | Recommended fusible disconnect switch |                                                  |
|----------|-------------------|-----------------------------------------------------------------------------|------------------|---------------------------------------|--------------------------------------------------|
| 460 V    |                   | Ampere rating (A)                                                           | Catalog number   | Ampere rating (A)                     | Catalog number                                   |
| 1/2      | 1.1               | 1-6/10                                                                      | AJT1-6/10        | 30                                    | FBJ30CDT<br>FBJ30 - FBJ304<br>FBJ30SO - FBJ304SO |
| 3/4      | 1.6               | 2-1/4                                                                       | AJT2-1/4         |                                       |                                                  |
| 1        | 2.1               | 3-2/10                                                                      | AJT3-2/10        |                                       |                                                  |
| 1-1/2    | 3                 | 4-1/2                                                                       | AJT4-1/2         |                                       |                                                  |
| 2        | 3.4               | 5                                                                           | AJT5             |                                       |                                                  |
| 3        | 4.8               | 8                                                                           | AJT8             |                                       |                                                  |
| 5        | 7.6               | 12                                                                          | AJT12            |                                       |                                                  |
| 7-1/2    | 11                | 17-1/2                                                                      | AJT17-1/2        |                                       |                                                  |
| 10       | 14                | 20                                                                          | AJT20            | 60                                    | FBJ60 - FBJ604<br>FBJ60SO - FBJ604SO             |
| 15       | 21                | 30                                                                          | AJT30            |                                       |                                                  |
| 20       | 27                | 40                                                                          | AJT40            |                                       |                                                  |
| 25       | 34                | 50                                                                          | AJT50            |                                       |                                                  |
| 30       | 40                | 60                                                                          | AJT60            | 100                                   | FBJ100 - FBJ1004<br>FBJ100SO - FBJ1004SO         |
| 40       | 52                | 80                                                                          | AJT80            |                                       |                                                  |
| 50       | 65                | 100                                                                         | AJT100           | 200                                   | FBJ200 - FBJ2004<br>FBJ200SO - FBJ2004SO         |
| 60       | 77                | 125                                                                         | AJT125           |                                       |                                                  |
| 75       | 96                | 150                                                                         | AJT150           |                                       |                                                  |
| 100      | 124               | 200                                                                         | AJT200           | 400                                   | FBJ400 - FBJ4004<br>FBJ400SO - FBJ4004SO         |
| 125      | 156               | 225                                                                         | AJT225           |                                       |                                                  |
| 150      | 180               | 250                                                                         | AJT250           |                                       |                                                  |
| 200      | 240               | 350                                                                         | AJT350           |                                       |                                                  |
| 250      | 302               | 450                                                                         | AJT450           | 600                                   | FBJ600 - FBJ6004                                 |
| 300      | 361               | 600                                                                         | AJT600           |                                       |                                                  |

\* Typical: suggested for most applications. Will coordinate with NEMA Class 20 overload relays. Suitable for motor acceleration times up to 5 seconds.



## Fusible disconnect switches' association chart with UL fuses

### 575 V according to typical motor acceleration times

#### Three phase motor fuse and fusible disconnect switch selection UL class CC

| Motor HP | Full load amperes | Recommended fuse ampere rating for typical* 5 secs motor acceleration times | Recommended fuse | Recommended fusible disconnect switch |                                                       |
|----------|-------------------|-----------------------------------------------------------------------------|------------------|---------------------------------------|-------------------------------------------------------|
| 575 V    |                   | Ampere rating (A)                                                           | Catalog number   | Ampere rating (A)                     | Catalog number                                        |
| 1/2      | 0.9               | 2-8/10                                                                      | ATDR2-8/10       | 30                                    | FBCC30CDT<br>FBCC30 - FBCC304<br>FBCC30SO - FBCC304SO |
| 3/4      | 1.3               | 4                                                                           | ATDR4            |                                       |                                                       |
| 1        | 1.7               | 5-6/10                                                                      | ATDR5-6/10       |                                       |                                                       |
| 1-1/2    | 2.4               | 8                                                                           | ATDR8            |                                       |                                                       |
| 2        | 2.7               | 8                                                                           | ATDR8            |                                       |                                                       |
| 3        | 3.9               | 12                                                                          | ATDR12           |                                       |                                                       |
| 5        | 6.1               | 17-1/2                                                                      | ATDR17-1/2       |                                       |                                                       |
| 7-1/2    | 9                 | 30                                                                          | ATDR30           |                                       |                                                       |
| 10       | 11                | 30                                                                          | ATDR30           |                                       |                                                       |

#### Three phase motor fuse and fusible disconnect switch selection UL class J

| Motor HP | Full load amperes | Recommended fuse ampere rating for typical* 5 secs motor acceleration times | Recommended fuse | Recommended fusible disconnect switch |                                                  |
|----------|-------------------|-----------------------------------------------------------------------------|------------------|---------------------------------------|--------------------------------------------------|
| 575 V    |                   | Ampere rating (A)                                                           | Catalog number   | Ampere rating (A)                     | Catalog number                                   |
| 1/2      | 0.9               | 1-1/2                                                                       | AJT1-1/2         | 30                                    | FBJ30CDT<br>FBJ30 - FBJ304<br>FBJ30SO - FBJ304SO |
| 3/4      | 1.3               | 2                                                                           | AJT2             |                                       |                                                  |
| 1        | 1.7               | 2-1/2                                                                       | AJT2-1/2         |                                       |                                                  |
| 1-1/2    | 2.4               | 3-1/2                                                                       | AJT3-1/2         |                                       |                                                  |
| 2        | 2.7               | 4                                                                           | AJT4             |                                       |                                                  |
| 3        | 3.9               | 6                                                                           | AJT6             |                                       |                                                  |
| 5        | 6.1               | 10                                                                          | AJT10            |                                       |                                                  |
| 7-1/2    | 9                 | 15                                                                          | AJT15            |                                       |                                                  |
| 10       | 11                | 17-1/2                                                                      | AJT17-1/2        |                                       |                                                  |
| 15       | 17                | 25                                                                          | AJT25            | 60                                    | FBJ60 - FBJ604<br>FBJ60SO - FBJ604SO             |
| 20       | 22                | 35                                                                          | AJT35            |                                       |                                                  |
| 25       | 27                | 40                                                                          | AJT40            |                                       |                                                  |
| 30       | 32                | 50                                                                          | AJT50            |                                       |                                                  |
| 40       | 41                | 60                                                                          | AJT60            | 100                                   | FBJ100 - FBJ1004<br>FBJ100SO - FBJ1004SO         |
| 50       | 52                | 80                                                                          | AJT80            |                                       |                                                  |
| 60       | 62                | 90                                                                          | AJT90            | 200                                   | FBJ200 - FBJ2004<br>FBJ200SO - FBJ2004SO         |
| 75       | 77                | 125                                                                         | AJT125           |                                       |                                                  |
| 100      | 99                | 150                                                                         | AJT150           |                                       |                                                  |
| 125      | 125               | 200                                                                         | AJT200           | 400                                   | FBJ400 - FBJ4004<br>FBJ400SO - FBJ4004SO         |
| 150      | 144               | 225                                                                         | AJT225           |                                       |                                                  |
| 200      | 192               | 300                                                                         | AJT300           |                                       |                                                  |
| 250      | 240               | 350                                                                         | AJT350           |                                       |                                                  |
| 300      | 289               | 450                                                                         | AJT450           | 600                                   | FBJ600 - FBJ6004                                 |

\* Typical: suggested for most applications. Will coordinate with NEMA Class 20 overload relays. Suitable for motor acceleration times up to 5 seconds.

## Fusible disconnect switches' association chart with HSJ fuses

### HSJ and FBJ coordination

Maximum current can be below fuse rating due to HSJ high watt loss

| Rating of the HSJ fuse (A) | Watt loss at In | Type of fusible disconnect switches | Current max (A) | Type of fusible disconnect switches | Current max (A) |
|----------------------------|-----------------|-------------------------------------|-----------------|-------------------------------------|-----------------|
| 15                         | 2.6             | 30 J CD                             | 15              | 30 J                                | 15              |
| 17,5                       | 3.5             | 30 J CD                             | 17              | 30 J                                | 17.5            |
| 20                         | 3.7             | 30 J CD                             | 18              | 30 J                                | 20              |
| 25                         | 4               | 30 J CD                             | 21              | 30 J                                | 24              |
| 30                         | 4.1             | 30 J CD                             | 24              | 30 J                                | 24              |
| 35                         | 5.3             | 60 J                                | 35              | -                                   | -               |
| 40                         | 5.5             | 60 J                                | 40              | -                                   | -               |
| 45                         | 6               | 60 J                                | 45              | -                                   | -               |
| 50                         | 6.8             | 60 J                                | 48              | -                                   | -               |
| 60                         | 8.4             | 60 J                                | 48              | -                                   | -               |
| 70                         | 10              | 100 J                               | 70              | -                                   | -               |
| 80                         | 11              | 100 J                               | 80              | -                                   | -               |
| 90                         | 13              | 100 J                               | 80              | -                                   | -               |
| 100                        | 14              | 100 J                               | 80              | -                                   | -               |
| 110                        | 18              | 200 J                               | 110             | -                                   | -               |
| 125                        | 19              | 200 J                               | 125             | -                                   | -               |
| 150                        | 22              | 200 J                               | 150             | -                                   | -               |
| 175                        | 24              | 200 J                               | 160             | -                                   | -               |
| 200                        | 26              | 200 J                               | 160             | -                                   | -               |
| 225                        | 30              | 400 J                               | 225             | -                                   | -               |
| 250                        | 36              | 400 J                               | 229             | -                                   | -               |
| 300                        | 38              | 400 J                               | 250             | -                                   | -               |
| 350                        | 40              | 400 J                               | 270             | -                                   | -               |
| 400                        | 42              | 400 J                               | 280             | -                                   | -               |

# Correction factors for non-fusible & fusible disconnect switches

## Correction factors due to ambient air temperature

Method:  $I_{thu} \leq I_{th} \times K_t$

$t_a$ : ambient temperature

$I_{th}$ : thermal switch current

$K_t$ : correction factor due to ambient temperature  $t_a$

$I_{thu}$ : maximum thermal current after correction

### Non-Fusible Disconnect Switches

| I <sub>th</sub> | T (°C)                             |                                    |                                    |
|-----------------|------------------------------------|------------------------------------|------------------------------------|
|                 | 40°C < $t_a \leq 50^\circ\text{C}$ | 50°C < $t_a \leq 60^\circ\text{C}$ | 60°C < $t_a \leq 70^\circ\text{C}$ |
| V30 A           | 1                                  | 0.8                                | 0.7                                |
| V60 A           | 1                                  | 1                                  | 1                                  |
| V100 A          | 1                                  | 1                                  | 1                                  |
| V200 A          | 1                                  | 1                                  | 0.9                                |
| V400 A          | 1                                  | 0.9                                | 0.8                                |
| 400 A           | 1                                  | 1                                  | 1                                  |
| 600 A           | 1                                  | 1                                  | 0.9                                |
| 800 A           | 1                                  | 1                                  | 1                                  |
| 1000 A          | 1                                  | 1                                  | 0.9                                |
| 1200 A          | 1                                  | 0.9                                | 0.8                                |

### Fusible Disconnect Switches

| I <sub>th</sub> | T (°C)                             |                                    |                                    |
|-----------------|------------------------------------|------------------------------------|------------------------------------|
|                 | 40°C < $t_a \leq 50^\circ\text{C}$ | 50°C < $t_a \leq 60^\circ\text{C}$ | 60°C < $t_a \leq 70^\circ\text{C}$ |
| 30 A CC CD type | 0.9                                | 0.8                                | 0.7                                |
| 30 A J CD type  | 0.9                                | 0.8                                | 0.7                                |
| 30 A CC         | 1                                  | 1                                  | 1                                  |
| 30 A J          | 1                                  | 1                                  | 1                                  |
| 60 A J          | 1                                  | 1                                  | 1                                  |
| 100 A J         | 1                                  | 1                                  | 1                                  |
| 200 A J         | 1                                  | 1                                  | 1                                  |
| 400 A J         | 0.9                                | 0.8                                | 0.7                                |
| 600 A J         | 1                                  | 1                                  | 1                                  |
| 800 A L         | 1                                  | 1                                  | 1                                  |

## Correction factors due to frequency

Method:  $I_{thu} \leq I_{th} \times K_f$

$f$ : rated operating frequency

$I_{th}$ : thermal switch current

$K_f$ : correction factor due to operating frequency  $F$

$I_{thu}$ : maximum thermal current after correction

### Non-Fusible Disconnect Switches

| I <sub>th</sub> | f (Hz)                    |                            |                             |
|-----------------|---------------------------|----------------------------|-----------------------------|
|                 | 100 Hz < $f \leq 2000$ Hz | 2000 Hz < $f \leq 6000$ Hz | 6000 Hz < $f \leq 10000$ Hz |
| V30 A           | 1                         | 0.7                        | 0.6                         |
| V60 A           | 1                         | 1                          | 1                           |
| V100 A          | 1                         | 1                          | 1                           |
| V200 A          | 1                         | 1                          | 1                           |
| V400 A          | 0.9                       | 0.8                        | 0.7                         |
| 400 A           | 1                         | 1                          | 1                           |
| 600 A           | 1                         | 0.9                        | 0.8                         |
| 800 A           | 1                         | 1                          | 0.9                         |
| 1000 A          | 1                         | 0.9                        | 0.8                         |
| 1200 A          | 1                         | 0.7                        | 0.6                         |

### Fusible Disconnect Switches

| I <sub>th</sub> | f (Hz)                    |                            |                             |
|-----------------|---------------------------|----------------------------|-----------------------------|
|                 | 100 Hz < $f \leq 2000$ Hz | 2000 Hz < $f \leq 6000$ Hz | 6000 Hz < $f \leq 10000$ Hz |
| 30 A CC CD type | 0.8                       | 0.7                        | 0.6                         |
| 30 A J CD type  | 0.8                       | 0.7                        | 0.6                         |
| 30 A CC         | 1                         | 1                          | 1                           |
| 30 A J          | 1                         | 1                          | 1                           |
| 60 A J          | 1                         | 1                          | 1                           |
| 100 A J         | 1                         | 1                          | 1                           |
| 200 A J         | 1                         | 0.9                        | 0.8                         |
| 400 A J         | 0.8                       | 0.7                        | 0.6                         |
| 600 A J         | 1                         | 1                          | 1                           |
| 800 A L         | 1                         | 1                          | 1                           |

## NEMA ratings and IP cross-reference

This table provides a guide for converting from NEMA Enclosure Type Numbers to IP Ratings. The NEMA Types meet or exceed the test requirements for the associated European Classifications; for this reason the table should not be used to convert “from IP Rating to NEMA” and the “NEMA to IP Rating” should be verified by test.

| NEMA type | Intended use and description                                                                                                                                                                                                      | NEMA ratings and IP cross-reference |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| 1         | Indoor use primarily to provide a degree of protection against contact with the enclosed equipment and against a limited amount of falling dirt.                                                                                  | NEMA 1 meets or exceeds IP10        |
| 2         | Indoor use to provide a degree of protection against a limited amount of falling water and dirt.                                                                                                                                  | NEMA 2 meets or exceeds IP11        |
| 3         | Intended for outdoor use primarily to provide a degree of protection against rain, sleet, windblown dust, and damage from external ice formation.                                                                                 | NEMA 3 meets or exceeds IP54        |
| 3R        | Intended for outdoor use primarily to provide a degree of protection against rain, sleet, and damage from external ice formation.                                                                                                 | NEMA 3R meets or exceeds IP14       |
| 3S        | Intended for outdoor use primarily to provide a degree of protection against rain, sleet, windblown dust, and to provide for operation of external mechanisms when ice laden.                                                     | NEMA 3S meets or exceeds IP54       |
| 4         | Intended for indoor or outdoor use primarily to provide a degree of protection against windblown dust and rain, splashing water, hose-directed water, and damage from external ice formation.                                     | NEMA 4 meets or exceeds IP56        |
| 4X        | Intended for indoor or outdoor use primarily to provide a degree of protection against corrosion, windblown dust and rain, splashing water, hose-directed water, and damage from ice formation.                                   | NEMA 4X meets or exceeds IP56       |
| 6         | Intended for indoor or outdoor use primarily to provide a degree of protection against hose-directed water, the entry of water during occasional temporary submersion at a limited depth, and damage from external ice formation. | NEMA 6 meets or exceeds IP67        |
| 6P        | Intended for indoor or outdoor use primarily to provide a degree of protection against hose-directed water, the entry of water during prolonged submersion at a limited depth, and damage from external ice formation.            | NEMA 6P meets or exceeds IP67       |
| 12        | Intended for indoor use primarily to provide a degree of protection against circulating dust, falling dirt, and dripping non-corrosive liquids.                                                                                   | NEMA 12 meets or exceeds IP52       |
| 12K       | Type 12 with knockouts.                                                                                                                                                                                                           | NEMA 12K meets or exceeds IP52      |

## Wire size cross reference

| AWG | mm <sup>2</sup> |
|-----|-----------------|
| 14  | 2.1             |
| 12  | 3.3             |
| 10  | 5.3             |
| 8   | 8.4             |
| 6   | 13.3            |
| 4   | 21.2            |
| 3   | 26.7            |
| 2   | 33.6            |
| 1   | 42.4            |
| 1/0 | 53.5            |
| 2/0 | 67.4            |
| 3/0 | 85.0            |
| 4/0 | 107.2           |

| kcmil/mcm | mm <sup>2</sup> |
|-----------|-----------------|
| 250       | 127             |
| 300       | 152             |
| 350       | 177             |
| 400       | 203             |
| 500       | 253             |
| 600       | 304             |
| 700       | 355             |
| 750       | 380             |
| 800       | 405             |
| 900       | 456             |
| 1000      | 507             |
| 1250      | 633             |
| 1500      | 760             |
| 1750      | 887             |
| 2000      | 1014            |

## Degrees of protection (IP codes according to IEC 60529 standard)

The degrees of protection are defined by two numbers and sometimes by an additional letter.

For example: IP 55 or IP xx B (x indicates: any value).

The numbers and additional letters are defined below:

| First number<br>protection against solid body penetration                    |                                                                                     |                                                      | Second number<br>protection against liquid penetration |                                                                                     |                                                                   | Additional<br>letter <sup>(2)</sup> | Degree of<br>protection                    |
|------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------|-------------------------------------|--------------------------------------------|
| IP                                                                           | Tests                                                                               |                                                      | IP                                                     | Tests                                                                               |                                                                   |                                     | Brief description                          |
| 0                                                                            |                                                                                     | No protection                                        | 0                                                      |                                                                                     | No protection                                                     |                                     |                                            |
| 1                                                                            |    | Protected against solid bodies greater than 50 mm    | 1                                                      |    | Protected against water drops falling vertically (condensation)   | A                                   | Protected against access with back of hand |
| 2 <sup>(1)</sup>                                                             |    | Protected against solid bodies greater than 12 mm    | 2                                                      |    | Protected against water drops falling up to 15° from the vertical | B                                   | Protected against access with finger       |
| 3                                                                            |    | Protected against solid bodies greater than 2.5 mm   | 3                                                      |    | Protected against water showers up to 60° from the vertical       | C                                   | Protected against access with tool         |
| 4                                                                            |    | Protected against solid bodies greater than 1 mm     | 4                                                      |    | Protected against water splashes from any direction               | D                                   | Protected against access with wire         |
| 5                                                                            |  | Protected against dust (excluding damaging deposits) | 5                                                      |  | Protected against water jets from any hosed direction             |                                     |                                            |
| 6                                                                            |  | Total protection against dust                        | 6                                                      |  | Protected against water splashes comparable to heavy seas         |                                     |                                            |
| The first two numbers are defined by<br>NF EN 60 529, IEC 529 and DIN 40 050 |                                                                                     |                                                      | 7                                                      |  | Protected against total immersion                                 |                                     |                                            |

Note:

(1) Fig. 2 is established by 2 tests:

- non penetration of a sphere with the diameter of 12.5 mm
- non accessibility of a test probe with a diameter of 12 mm.

(2) This additional letter only defines the access to dangerous components

Example: A device has an aperture allowing access with a finger. This will not be classified as IP 2x. However, if the components which are accessible with a finger are not dangerous (electric shock, burns, etc.), the device will be classified as xx B.

## IEC 947-1 & IEC 947-3 standards

### Selecting switches according to IEC 947 -3 standard

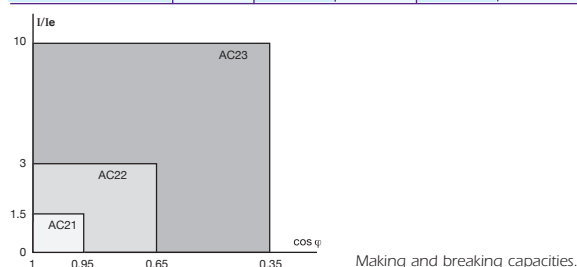
| Utilization category |      | Use                                                              | Application                                                                                                        |
|----------------------|------|------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| AC                   | DC   |                                                                  |                                                                                                                    |
| AC20                 | DC20 | No-load making and breaking                                      | Disconnecter (device without on-load making and breaking capacity)                                                 |
| AC21                 | DC21 | Resistive including moderate overloads                           | Switches at installation head or for resistive circuits (heating, lighting, except discharge lamps, etc.)          |
| AC22                 | DC22 | Inductive and resistive mixed loads including moderate overloads | Switches in secondary circuits or reactive circuits (capacitor banks, discharge lamps, shunt motors, etc.)         |
| AC23                 | DC23 | Loads made of motor or other highly inductive loads              | Switches feeding one or several motors or inductive circuits (electric carriers, brake magnet, series motor, etc.) |

### Breaking and making capacities

Unlike circuit breakers, where these criteria indicate tripping or short-circuit making characteristics and perhaps requiring device replacement, switch making and breaking capacities correspond to utilization category maximum performance values.

In these uses, the switch must still maintain its characteristics, in particular its resistance to leakage current and temperature rise.

|                  | Making   |       | Breaking |       | N° of operating cycles |
|------------------|----------|-------|----------|-------|------------------------|
|                  | I/le     | cos φ | I/le     | cos φ |                        |
| AC 21            | 1.5      | 0.95  | 1.5      | 0.95  | 5                      |
| AC 22            | 3        | 0.65  | 3        | 0.65  | 5                      |
| AC 23 I ≤ 100 A  | 10       | 0.45  | 8        | 0.45  | 5                      |
| AC 23 Ie > 100 A | 10       | 0.35  | 8        | 0.35  | 3                      |
|                  | L/R (ms) |       | L/R (ms) |       |                        |
| DC 21            | 1.5      | 1     | 1.5      | 1     | 5                      |
| DC 22            | 4        | 2.5   | 4        | 2.5   | 5                      |
| DC 23            | 4        | 15    | 4        | 15    | 5                      |



### Short circuit characteristics

- Short-time withstand current (Icw): allowable rms current for 1 second.
- Short circuit making capacity (Icm): peak current value which the device can withstand when closed on a short-circuit.
- Conditional short circuit current: the rms current the switch can withstand when associated with a protection device limiting both the current and short circuit duration.
- Dynamic withstand: peak current the device can withstand in a closed position.

The characteristic established by this standard is the short-time withstand current (Icw) from which minimal dynamic withstand is deduced. This essential withstand value corresponds to what the switch can stand without welding.

### Electrical and mechanical endurance

This standard establishes the minimum number of electrical (full load) and mechanical (no-load) operating cycles that must be performed by devices. These characteristics also specify the device's theoretical lifespan during which it must maintain its characteristics, particularly resistance to leakage current and temperature rise.

This performance is linked to the device's use and rating. According to anticipated use, two additional application categories are offered:

- category A: frequent operations (in close proximity to the load),
- category B: infrequent operations (at installation head or wiring system).

| Ie (A)                     | ≤ 100 | ≤ 315 | ≤ 630 | ≤ 2500 | > 2500 |
|----------------------------|-------|-------|-------|--------|--------|
| N° cycles/hour             | 120   | 120   | 60    | 20     | 10     |
| N° of operations in cat. A |       |       |       |        |        |
| without current            | 8500  | 7000  | 4000  | 2500   | 1500   |
| with current               | 1500  | 1000  | 1000  | 500    | 500    |
| Total                      | 10000 | 8000  | 5000  | 3000   | 2000   |
| N° of operations in cat. B |       |       |       |        |        |
| without current            | 1700  | 1400  | 800   | 500    | 300    |
| with current               | 300   | 200   | 200   | 100    | 100    |
| Total                      | 2000  | 1600  | 1000  | 600    | 400    |

### Definitions

**Conventional thermal current (Ith):** Value of the current the disconnect switch can withstand with pole in closed position, in free air for an eight hour duty, without the temperature rise of its various parts exceeding the limits specified by the standards.

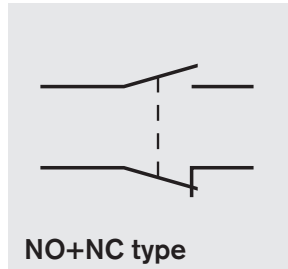
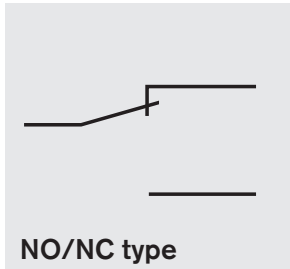
**Rated insulation voltage (Ui):** Voltage value which designates the unit and to which dielectric tests, clearance and creepage distances are referred.

**Rated impulse withstand voltage (Uimp):** Peak value of an impulse voltage of prescribed form and polarity which the equipment is capable of withstanding without failure under specified conditions of test and to which the values of the clearances are referred.

**Rated operating current (Ie):** Current value determined by endurance tests (both mechanical and electrical) and by making and breaking capacity tests.

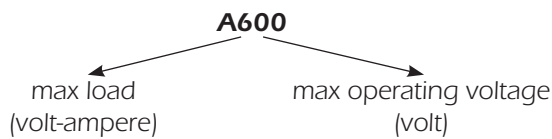
## Auxiliary contacts

### Auxiliary contact wiring diagrams



### Auxiliary contact rating codes (according to UL508 standard item 139)

#### Designation



#### Example

A contactor used at 600 VAC - 60 Hz has the following specifications:

Average consumption: - inrush 60 Hz: 1200 VA  
- sealed 60 Hz: 120 VA

These codes concern the auxiliary contacts and give the maximum load they can make or break. The numerical suffix designates the maximum voltage design values, which are to be 600, 300 and 150 volts for suffixes 600, 300 and 150 respectively. The table below gives some typical rating codes:

Thus a C600 rated auxiliary device is the minimum rating required.

| Contact rating code designation | Max operating voltage (V) | Network type | Making max load (VA) | Breaking max load (VA) |
|---------------------------------|---------------------------|--------------|----------------------|------------------------|
| A600                            | 600                       | AC           | 7200                 | 720                    |
| B600                            | 600                       | AC           | 3600                 | 360                    |
| C600                            | 600                       | AC           | 1800                 | 180                    |
| D300                            | 300                       | AC           | 432                  | 72                     |
| E150                            | 150                       | AC           | 216                  | 36                     |
| N600                            | 600                       | DC           | 275                  | 275                    |
| P600                            | 600                       | DC           | 138                  | 138                    |
| Q600                            | 600                       | DC           | 69                   | 69                     |
| R300                            | 300                       | DC           | 28                   | 28                     |

Note: A600 and N600 are the highest categories and may be used to cover all cases.







## Other Products Available

# A complete range of IEC products

## Load-break switches

### Load-break switches



- SIRCO®**
- 3, 4, 6 or 8 pole
  - From 40 to 4000 A ; 21 ratings
  - Direct operation or external front or side operation

### Modular load-break switches with visible break-



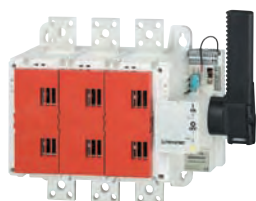
- SIRCO® VM**
- 3 or 4 pole
  - From 63 to 200 A ; 8 ratings
  - Direct operation or external, front or left/right side operation

### Remote-trip load-break switches

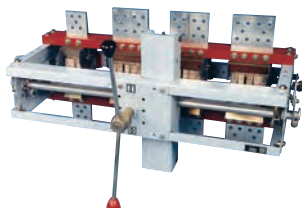


- IDE**
- 3 or 4 pole
  - From 32 to 160 A ; 5 ratings
  - Direct operation or external, front operation

### Remote-trip load-break switches



- SIDERMAT**
- 3 or 4 pole
  - From 250 to 1800 A ; 7 ratings
  - Direct operation or external, front or side operation



- CMP**
- 3 or 4 pole
  - From 2500 to 5000 A ; 4 ratings
  - Direct operation or external, front or side operation

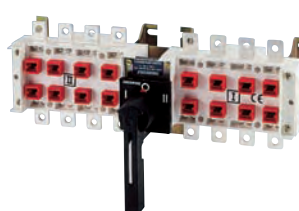
## Changeover switches

### Modular changeover switches with visible breaking



- SIRCO® VM1 changeover**
- 3 or 4 pole ; 3 positions (I / 0 / II or I / I+II / II)
  - From 63 to 125 A ; 4 ratings
  - Direct operation or external, front operation

### Manual changeover switches with visible breaking



- SIDER® changeover switches**
- 3 or 4 pole ; 3 positions (I - 0 - II)
  - From 125 to 1600 A ; 7 ratings
  - Direct operation or external, front operation

### Automatic transfer switch



- ATyS**
- 3 or 4 pole
  - From 125 to 3150 A
  - Position I, 0 and II by remote control
  - Integrated control unit version for automatic transfer

# A complete range of IEC products

## Fuse combination switches

### Fuse combination switches



- FUSERBLOC®
- 2, 3, 4, 6 or 8 pole as standard
- From 32 to 400 A ; 9 ratings
- IEC, NF, DIN, BS, UL and 'UR' multi-standard fuses
- Direct operation or external front or left/right side operation
- Operation with TEST function auxiliaries



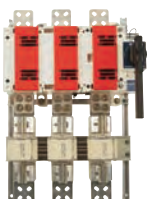
- FUSERBLOC® V
- 3 or 4 pole
- From 400 to 1250 A ; 4 ratings
- IEC, NF, DIN, BS and 'UR' multi-standard fuses
- Direct operation or external, front or side operation

### Remote trip fuse combination switches



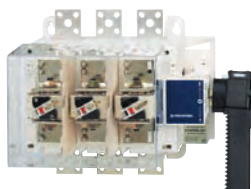
- FUSOMAT®
- 3 or 4 pole
- From 250 to 1250 A ; 5 ratings
- IEC, NF, DIN, BS and 'UR' multi-standard fuses
- Direct operation or external, front or side operation
- Shunt-trip opening
- Under voltage release

### Remote trip switch fuses and visible breaking



- SIDERMAT combination
- 3 or 4 pole
- From 630 to 1800 A ; 5 ratings
- Direct operation or external front operation

### UR fuse combination switches



- FUSERBLOC®
- 2, 3 or 4 pole
- From 10 to 2000 A ; 9 ratings
- Direct operation or external, front or side operation

## Energy control & management - DIRIS system

### Multi-measurement and metering



- DIRIS® Am
- For LV and HV network
- Multi measurements (3U, 3V, 3I, In, 3P,  $\Sigma P$ , 3Q,  $\Sigma Q$ , 3S,  $\Sigma S$ , 3PF,  $\Sigma PF$  and F)
- Hours run meters
- Max demand and last demand 3I,  $\Sigma P$  +/-,  $\Sigma Q$  +/-,  $\Sigma S$
- kWh (+/-), kvarh (+/-) and kVAh metering (option)
- Communication (option)
- Alarms (option)
- Analog output (option)
- Harmonics (option)



- DIRIS® M
- For LV networks
- Multi-measurements (3U, 3V, 3I,  $\Sigma P$ ,  $\Sigma Q$ ,  $\Sigma S$ ,  $\Sigma PF$  and F)
- Max demand 3I and P
- kWh and kvarh metering
- Communication (option)

### Network analysis



- DIRIS® Mh
- Identical features as DIRIS® M
- kWh and kvarh metering on 4 quadrants
- 3- phase current and voltage for harmonics 3 to 15 and THD
- 3I, 3U,  $\Sigma P$ , F and  $\Sigma PF$  (option) monitoring

### Monitoring of parameters



- DIRIS® C
- For LV and HV network
- Multi measurements (3U, 3V, 3I,  $\Sigma P$ ,  $\Sigma Q$ ,  $\Sigma S$ ,  $\Sigma PF$  and F)
- kWh and kvarh metering
- 3I, 3U,  $\Sigma P$  and  $\Sigma PF$  monitoring
- Communication (option)

# A complete range of IEC products

## Energy control & management - DIRIS system    Energy control & management - COUNTIS system

### Energy management



#### DIRIS® CMv2

- Identical features as DIRIS® C
- kWh and kvarh metering on 4 quadrants
- Storage of power demand 10 minutes up to 28 days
- 4 inputs for sub-metering of energy or impulses
- 8 kWh sub-meters, depending on time segment

### Control / Command



#### DIRIS® CC

- Identical features as DIRIS® C
- Status indication and number of operation with 8 inputs
- Remote operation of 6 outputs

### Single-phase networks



#### COUNTIS® AM10

- Compact
- Direct input up to 32 A
- IEC 62053-21 class 1

#### COUNTIS® AMd/AMt

- Direct input up to 32 A (AMd)
- CT input up to 100 A (AMt)
- 1 fixed 100 Wh impulse output with programmable duration from 60 to 900ms
- IEC 61036 class 1

### Three-phase networks LV



#### COUNTIS® ATv2/ATiv2

- Non insulated current inputs on CT (ATv2)
- Insulated current inputs on CT (ATiv2)
- 1 configurable impulse output with duration fixed at 100 ms
- IEC 61036 class 2 (ATv2) and class 1 (ATiv2)



#### COUNTIS® ATd

- Direct input up to 80 A
- 1 impulse output fixed at 100 Wh with programmable duration from 60 to 900 ms
- IEC 61036 class 1

### Three-phase networks LV/HV



#### COUNTIS® ATp

- Insulated current inputs on CT
- Direct readings kWh and MWh
- 1 configurable impulse output with programmable duration of 60 to 900 ms
- IEC 61036 class 1

### Centralized consumption



#### COUNTIS® Ci

- 7 programmable input (kWh or pulses)
- Monthly consumption over 12-month period, plus 8-days average values (10 min. power demand)
- Compatible with CG software
- JBUS/MODBUS RS485 serial port

# A complete range of IEC products

## Network protection

### Protection of LV networks



#### DIRIS® Ptm

- $I >$ ,  $I_o >$ ,  $I >>$ ,  $I_o >>$  protection
- $P \rightarrow <$  Power recovery protection
- U, I,  $I_o$ , P, Q, S, F, PF,  $I_{max}$  and  $P_{max}$  measuring
- Hour meter
- Communication (option)

## Insulation monitoring

### Permanent insulation controllers



#### ISOM® AS 130

- Live monitoring of AC distribution networks for split IT load control circuits
- Measurement by DC signal injection
- One alarm threshold adjustable from 1 to 200 k $\Omega$

### Fault finding and localization systems



#### INJ 204 / INJ 471

- Search signal injection in hospital environments and control circuit (INJ 204)
- Search signal injection in industrial environments (INJ 471)
- Synchronization by RS485 link

### Portable fault finding and localization systems



#### ISOM DLD 3065 ISOM DLD 3204

- Search signal injection for any type of application

## Earth leakage relays

### RESYS® M20



- Class AC and class A residual current monitoring
- Tripping threshold with time delay
- Modular case

### RESYS® M40



- Class AC and class A residual current monitoring
- Tripping threshold with time delay
- Pre-alarm with LED and relay
- Modular case

### RESYS® P40



- Class AC and class A residual current monitoring
- Tripping threshold with time delay
- Pre-alarm with LED and relay
- Panel-mounted case



# A complete range of IEC products

## Electrical measurements

### Panel equipment



#### Analog meters

- Ammeters, voltmeters, frequency meters...
- ROTEX or DIN panel-mounted cases
- Dimensions 48 / 72 / 96 / 144
- Modular cases for DIN rail mounting



#### Changeover switches

- For ammeters, voltmeters...
- Centrally mounted or screw mounted



#### MULTIS<sup>®</sup> Ep / Eg

- Three-phase, insulated inputs
- Displays U, I (Ep) + F, I<sub>max</sub>, h (Eg)

### Measuring probes



#### Current transformers

- From 1 to 6000 A
- All types of busbar and cable openings
- Measurement and protection transformers

## Safety enclosures

### Safety-switching enclosures



- Sheet metal or plastic enclosure
- Equipped with a SIDER<sup>®</sup> switch disconnecter with visible breaking
- Load break switches from 50 to 1600 A
- Fuse combination switches from 32 to 1000 A
- Changeover switches from 80 to 1250 A
- Double locking door
- Triple padlocking of the handle
- Front or side operation
- Optional extra: mechanical indicator

### Switch enclosures



- Sheet metal or polyester enclosure
- Equipped with a SIDER<sup>®</sup> switch disconnecter with visible breaking
- 32 to 125 A connection socket with pins in compliance with CEI 309-1 and 2 standards
- Double locking door
- Complies with Decree of 14/11/88: plugging in and unplugging with no load (rated 63 A and 125 A)

### Breaking enclosures



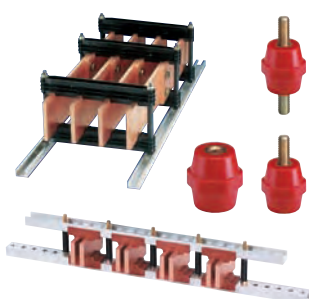
- Sheet metal, plastic or polyester enclosure
- Load break switches from 20 to 500 A
- Fuse combination switches from 32 to 400 A
- Changeover switches from 125 to 1600 A
- Fuse combination switches from 50 to 400 A
- Front or side operation

## A complete range of IEC products

### Mounting & cabling accessories

### SOCOMEC, it's also :

#### Busbar-support systems



- Flat or edge mounted
- Single or multi-pole supports (3 or 4 pole)
- Insulators
- Up to 6000 A

#### Power terminal blocks



- From 250 to 630 A
- Multi-pole (3 or 4 pole)
- Terminal lug, cable with or without end-cap and terminal shroud connection

#### Distributing frames



- From 80 to 630 A
- Single or multi-pole (3 or 4 pole)
- Terminal lug or cable clamp connection
- Range of distributing frames designed to be connected to SOCOMEC apparatus

#### Approvals



#### Independent and official Test Laboratory



All our products are qualified by our A.S.E.F.A. (French Association of Certified Testing Stations) and LOVAG-certified testing platform. This platform is also open to manufacturers

wishing to carry out certified tests : mechanical, electrical, climatic, thermal, etc.

The power station can perform short circuit tests up to 120 MVA in low voltage.

The laboratory has all facilities and is approved for standard type testing such as IEC 60947 series, IEC 439-1, IEC 269 series.

Socomec's testing station works with KEMA, UL, CSA, CEPEC.

#### Fuse promotion



This association brings together the main fuse producers worldwide, and aims at promoting the fuse

protection and its associated applications.

Indeed, the fuse offers a highly efficient solution to stringent safety demands for existing and future markets : protection for public electrical networks, industrial installation power supplies, motor protection, electronic equipment.

ProFuse International provides many publications (references, technical documents) originating from member companies.







**A relentless pursuit of protection  
for electrical components, systems—  
and the people who use them.**

Ferraz Shawmut is an international company manufacturing the widest range of circuit protection solutions in the electrical industry. Drawing on a century of experience—and an ongoing commitment to critical research in electrical safety—we provide industrial, commercial, and OEM customers with innovative products and technical support teams to increase effectiveness, simplify applications, and enhance productivity. Learn more about our circuit protection solutions at [us.ferrazshawmut.com](http://us.ferrazshawmut.com).

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