SUPPLEMENTARY INSTRUCTION LEAFLET
KD-10 AND KD-11
RELAYS
CLASS 1E - INSULATION

These relays have been specially designed and tested to establish their suitability for Class 1E applications in accordance with the ABB Relay Division program for Class 1E Qualification Testing as detailed in bulletin STR-1.

Class 1E relays have been specially designed and tested to establish their suitability for Class 1E applications in accordance with the ABB Relay Division Program for Class 1E Qualification Testing, as detailed in Bulletin STR-1. Materials have been selected and tested to insure that the relays will perform their intended function for their design life when operated in a normal environment as defined by ANSI/IEEE standard C37.90, when exposed to radiation levels up to 10^4 rads, and when subjected to seismic events producing a Shock Response Spectrum within the limits of the relay rating.

"Class 1E" is the safety classification of the electric equipment and systems in nuclear power generating stations that are essential to emergency shutdown of the reactor, containment isolation, cooling of the reactor, and heat removal from the containment and reactor, or otherwise are essential in preventing significant release of radioactive material to the environment.

The KD-10 and KD-11 relays described in this supplementary I.L. have specially designed Indicating Contactor Switch unit (ICS) that will operate within the limits of its rating when subjected to seismic events.

CONSTRUCTION AND OPERATION

This relay is similar to standard KD-11 relays except for Indicating Contactor Switch (ICS).

Indicating Contactor Switch Unit (ICS)

The indicating contactor switch is a small dc operated clapper type device. A magnetic armature, to which leaf-spring mounted contacts are attached, is attracted to the magnetic core upon energi-

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zation of the switch. When the switch closes, the moving contacts bridge two stationary contacts, completing the trip circuit. Also during this operation two fingers on the armature deflect a spring located on the front of the switch, which allows the operation indicator target to drop. The target is reset from the outside of the case by a push rod located at the bottom of the cover.

The front spring; in addition to holding the target, provides restraint for the armature and thus controls the pickup value of the switch.

CHARACTERISTICS

Same as for I.L. 41-490 except:

Trip Circuit Constants

Indicating Contactor Switch (ICS)

0.2 Amp Rating 8.5 OHMS DC
1.0 Amp Rating 0.37 OHMS DC
2.0 Amp Rating 0.10 OHMS DC

SETTINGS

Same as for I.L. 41-490 except for Indicating Contactor Switch (ICS) which requires no setting.

ADJUSTMENTS AND MAINTENANCE

Same as for I.L. 41-490 except for ICS, Acceptance Check.

Indicating Contactor Switch (ICS) - Close the main relay contacts and pass sufficient dc current through the trip circuit to close the contacts of the ICS. This value of current should not be greater than the particular ICS nameplate rating. The indicator target should drop freely.

Repeat above except pass 85% of ICS nameplate rating current. Contacts should not pickup and target should not drop.

Calibration

Same procedure as in I.L. 41-490 except for Indicating Contactor Switch (ICS).

Indicating Contactor Switch (ICS)

Initially adjust unit on the pedestal so that armature fingers do not touch the yoke in the reset position. This can be done by loosening the mounting screw in the molded pedestal and moving the ICS in the downward direction.

1. **Contact Wipe**. Adjust the stationary contacts so that both stationary contacts make with the moving contacts simultaneously and wipe 1/64" to 3/64" when the armature is against the core.
2. **Target**. Manually raise the moving contacts and check to see that the target drops at the same time as the contacts make or up to 1/16" ahead. The cover may be removed and the tag holding the target reformed slightly if necessary. However care should be exercised so that the target will not drop with a slight jar.

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3. Pickup. Unit should pickup at 98% Rating and not pickup at 85% of rating. If necessary the cover leaf springs may be adjusted. To lower the pickup current use a tweezer or similar tool and squeeze each leaf spring approximately equal by applying the tweezer between the leaf spring and the front surface of the cover at the bottom of the lower window.

   If the pickup is low the front cover must be removed and the leaf springs bent outward equally.

Internal Schematic 3520A82

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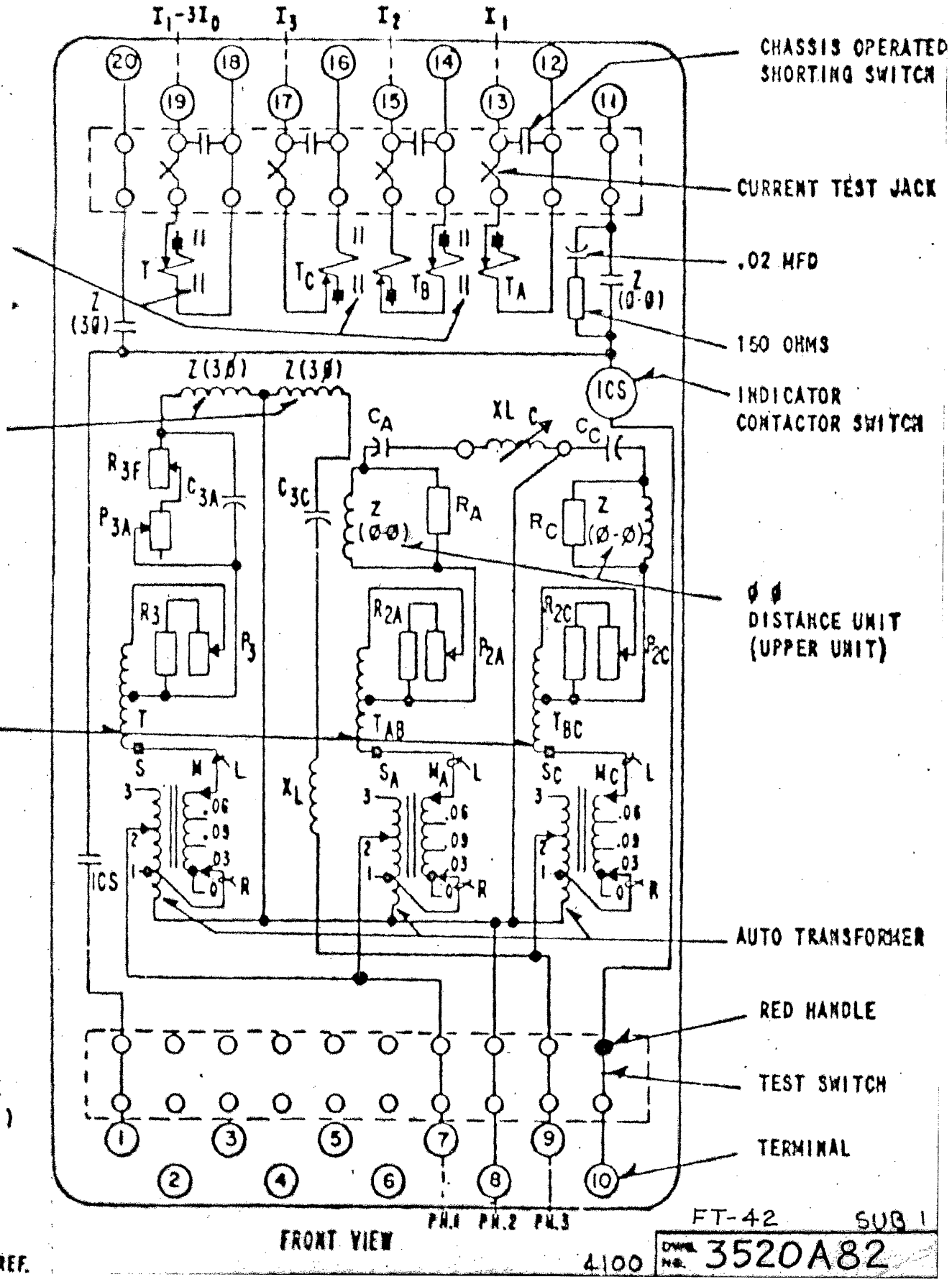
RELAY-TYPE KD-10 DISTANCE- (.75-20 Ω)
IN TYPE FT-42 CASE
INTERNAL SCHEMATIC



FT-42 SUB 1

MFG. BTC1330D39 REF.

4100

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