

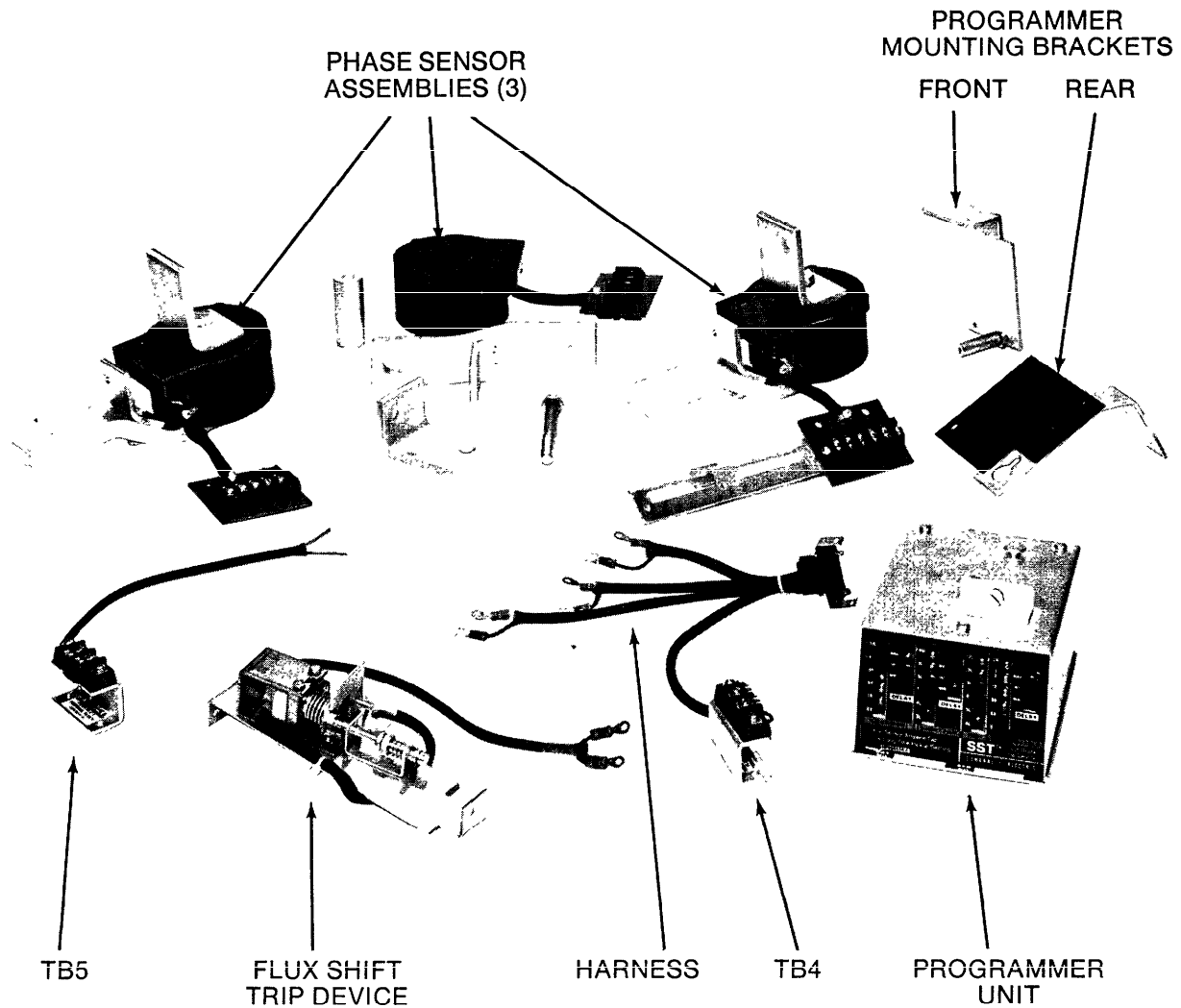
For Installing  
the SST Solid State  
Overcurrent Trip Device  
on Low Voltage  
Power Circuit Breaker  
Types AK-15 and AK/AKU-25



INSTRUCTIONS

GEI-86153  
Supplement to GEI-50299E

# Conversion Kits



## Components of SST Conversion Kit for AK-15/25

These instructions do not purport to cover all details or variations in equipment nor to provide for every possible contingency to be met in connection with installation, operation or maintenance. Should further information be desired or should particular problems arise which are not covered sufficiently for the purchaser's purposes, the matter should be referred to the General Electric Company.

## CONVERTING AK-15/25 BREAKERS TO THE SST TRIP DEVICE

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### I. INTRODUCTION

These instructions cover installation of the SST solid state overcurrent trip device conversion kits on AK-15 and AK-25 frame breakers originally equipped with EC or Power Sensor type trip devices. Each kit contains the variety of material necessary to convert either type. The kits are designed specifically for use on the following breakers:

**Table 1 — Convertible Breaker Models**

| Frame Size (Amp.) | Breaker Type |             |               | Trip Device |              |
|-------------------|--------------|-------------|---------------|-------------|--------------|
|                   | Stationary   | AKD Drawout | AKD-5 Drawout | EC          | Power Sensor |
| 225               | AK-2-15      | AK-2-15     | AK-2A-15      | x           |              |
| 600               | AK-2-25      | AK-2-25     | AK-2A-25      | x           |              |
|                   | AK-3-25      | AK-3-25     | AK-3A-25      |             | x            |
|                   | —            | AKU-2-25    | AKU-2A-25     | x           |              |
|                   | —            | AKU-3-25    | AKU-3A-25     |             | x            |

Kit installation is a straightforward operation but does require careful workmanship and attention to these instructions. Familiarity with the breaker itself is highly desirable. The general approach is to first strip the breaker of its existing trip devices (either EC or Power Sensor), then install the SST components. Following this, the converted breaker is performance tested prior to restoring it to service.

For the majority of breaker models listed in Table 1, kit installation does not require any customized assembly work. However, some conversions may involve unusual mounting circumstances or accessory combinations which necessitate minor modification/relocation of a component(s). In most instances this supplementary work can be done on site.

Preparatory to beginning the conversion, the installer should verify that the correct kit, current sensors and programmer unit have been furnished — see Tables 2, 3 and 4. Whenever the Ground Fault trip element is furnished for breakers applied on 4-wire systems, note that in addition to installing the kit on the breaker an associated neutral sensor (CT) must be separately mounted in the equipment. Insure also that retrofitted breakers are applied within their short circuit ratings; for example, assuming that as part of a conversion the breaker's trip elements are to be changed from LI to LS, then the short time rating would govern the application.

### TOOLS REQUIRED

|                           |                   |
|---------------------------|-------------------|
| Socket Set — 3/8" drive   | Pliers — Assorted |
| Open End Wrenches — Set   | Electric Drill    |
| Screwdrivers — Assorted   | Drill Bits        |
| Allen wrenches — Assorted | 6" Scale          |
| Tru-arc Pliers — Assorted | Crimping Tool     |

**Users are reminded that the installation of SST kits provides an excellent opportunity to perform normal maintenance on the breaker proper, particularly while the front and back frames are separated. Renewal parts are available as listed in Bulletin GEF-4149G, a copy of which is included with each SST Kit.**

**Table 2 — Basic Conversion Kits for AK-15/25, AKU-25**

| Breaker Mounting Type | Basic Kit Cat. 343L692-(Gp. No.) |       |                             |       |
|-----------------------|----------------------------------|-------|-----------------------------|-------|
|                       | With 4th-Wire Neutral Sensor     |       | W/O 4th-Wire Neutral Sensor |       |
|                       | Man.                             | Elec. | Man.                        | Elec. |
| Stationary            | G3                               | G4    | G1                          | G2    |
| AKD & AKD-5 Drawout   | G5                               | G6    |                             |       |

**Table 4 — Tapped Current Sensors for Use with SST Conversion Kits**

| Breaker Type  | Sensor Ampere Range | Cat. 343L692-(Gp. No.) |                         |
|---------------|---------------------|------------------------|-------------------------|
|               |                     | Phase Sensors          | 4th-Wire Neutral Sensor |
| AK-15         | 70-225              | G37                    | G67                     |
| AK-25, AKU-25 | 70-225              |                        |                         |
|               |                     | 200-600                | G38                     |

**Table 3 — Programmer Units for AK-15/25, AKU-25 SST Conversion Kits**

| Trip Elements<br>① | Cat. 343L692-(Gp. No.) |          |        |
|--------------------|------------------------|----------|--------|
|                    | Short-Time Pickup      |          |        |
|                    | None                   | 1.75L-4L | 3L-10L |
| LS                 | —                      | G19      | G13    |
| LI                 | G14                    | —        | —      |
| LSI                | —                      | G20      | G15    |
| LSG                | —                      | G21      | G16    |
| LIG                | G17                    | —        | —      |
| LSIG               | —                      | G22      | G18    |

① Trip Element Abbreviations

- L = Long Time
- S = Short Time
- I = Instantaneous
- G = Ground Fault

**II. PREPARING THE BREAKER**

**WARNING:** Before starting any work, disconnect the breaker from all power sources (primary and secondary) and place in a clean work area.

1. Remove the steel arc quencher retainer by loosening the two ¼ x 20 hex capnuts. On electrically operated AK-3/3A-25 breakers the “Y” relay is mounted on the left end of the retainer, but there is no need to remove it.
2. Remove the three arc quenchers by lifting upward and outward.
3. Separate the breaker’s front and back frames. Refer to Maintenance Manual GEI-50299 page 5; if Power Sensor, see pp. 28-31 also.

**CAUTION:** Be careful to avoid damage to breaker components during this operation.

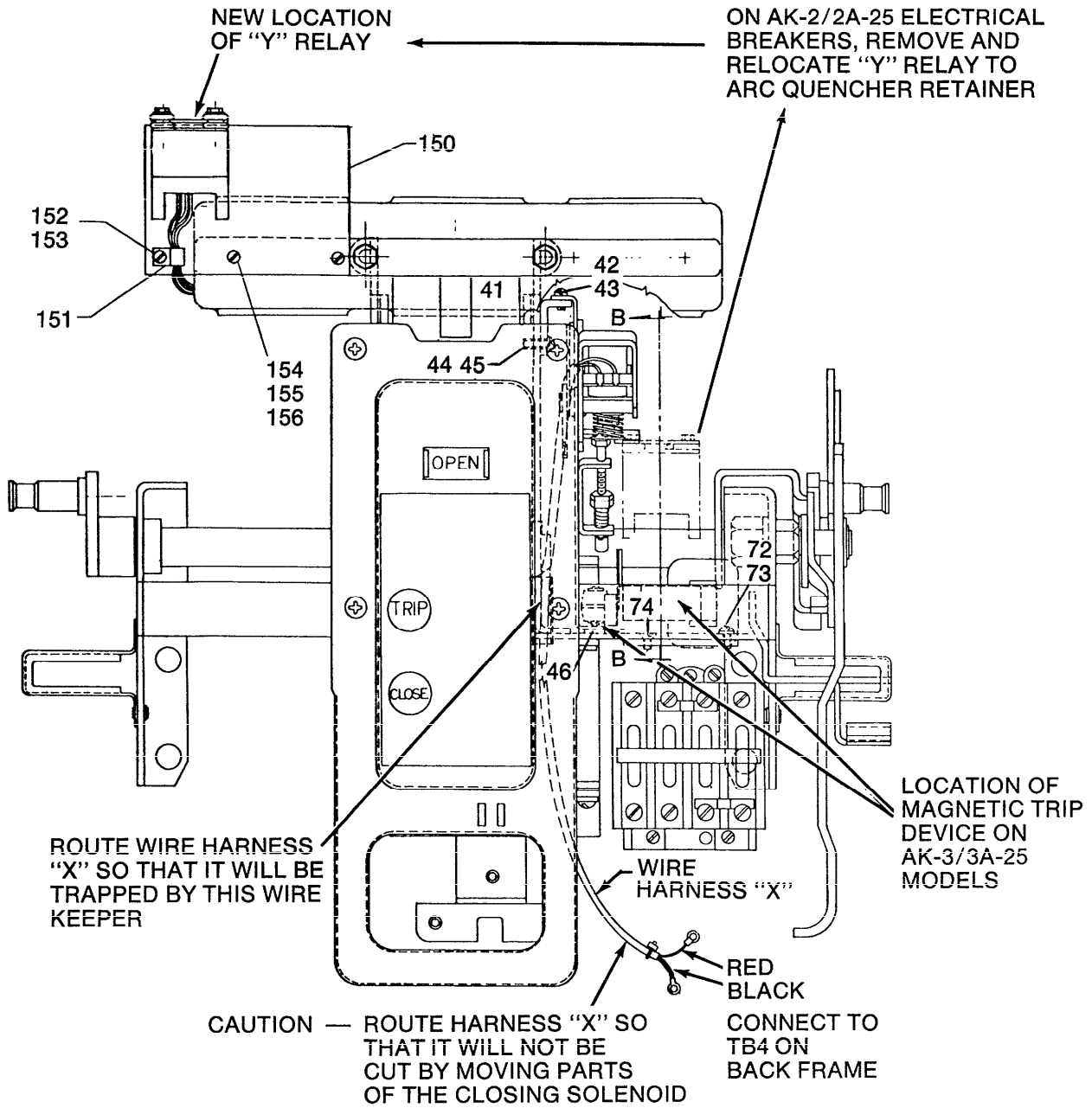
4. Remove the overcurrent trip devices. Refer to Maintenance Manual GEI-50299 pp. 23, 31.

5. On drawout breakers, remove the primary disconnect fingers from the bottom (loadside) copper studs. Refer to Maintenance Manual GEI-50299 page 7.

6. Remove the three bottom (loadside) copper stud assemblies. On Power Sensor equipped breakers this will have been done during Step 4 above.

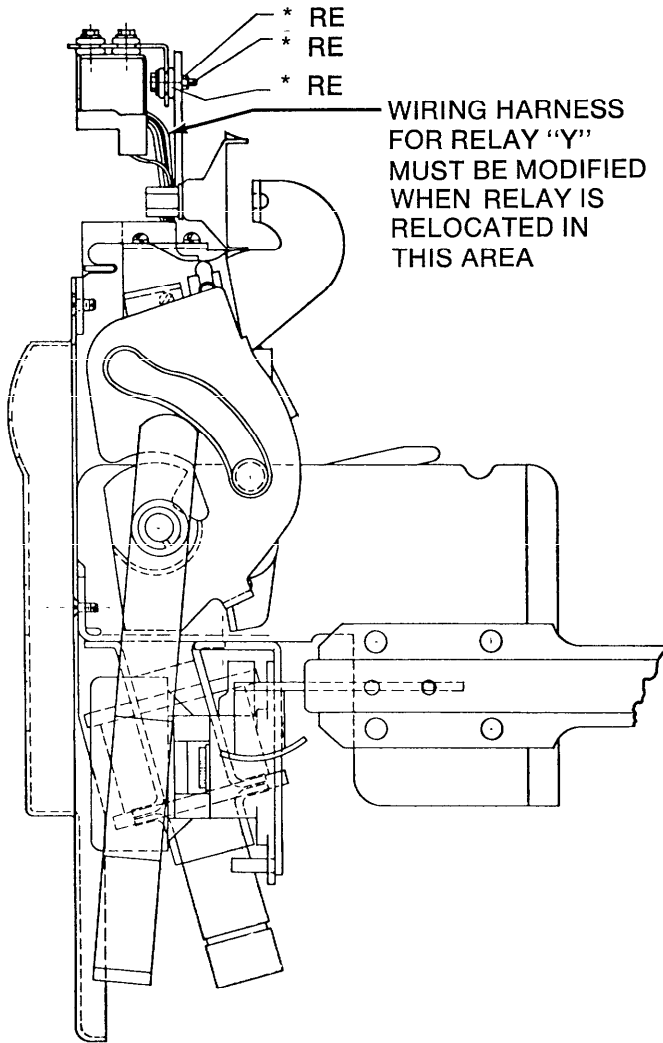
7. On electrically operated breakers equipped with EC trip devices, the “Y” relay is mounted on the front frame at the right side of the operating mechanism. To provide mounting space for the SST flux shift trip device, remove the “Y” relay and remount it on the left end of the arc quencher retainer as shown in Figs. 1 and 2 (using hardware and parts included). Modify the breaker’s wiring harness to suit.

8. On EC equipped breakers, remove and discard the four trip device support brackets mounted along the lower front of the back frame. See Fig. 3. At this point the breaker back frame is ready for installation of the kit.

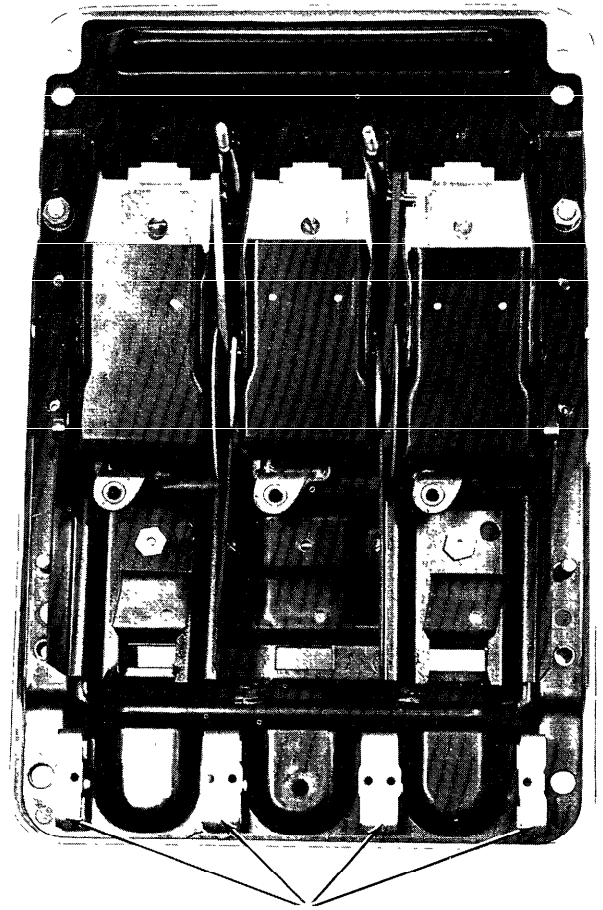


**Fig. 1 — Front view of front frame (AKD type drawout shown)**

\* RE denotes reuse of existing hardware



**Fig. 2 — Right side view of front frame**

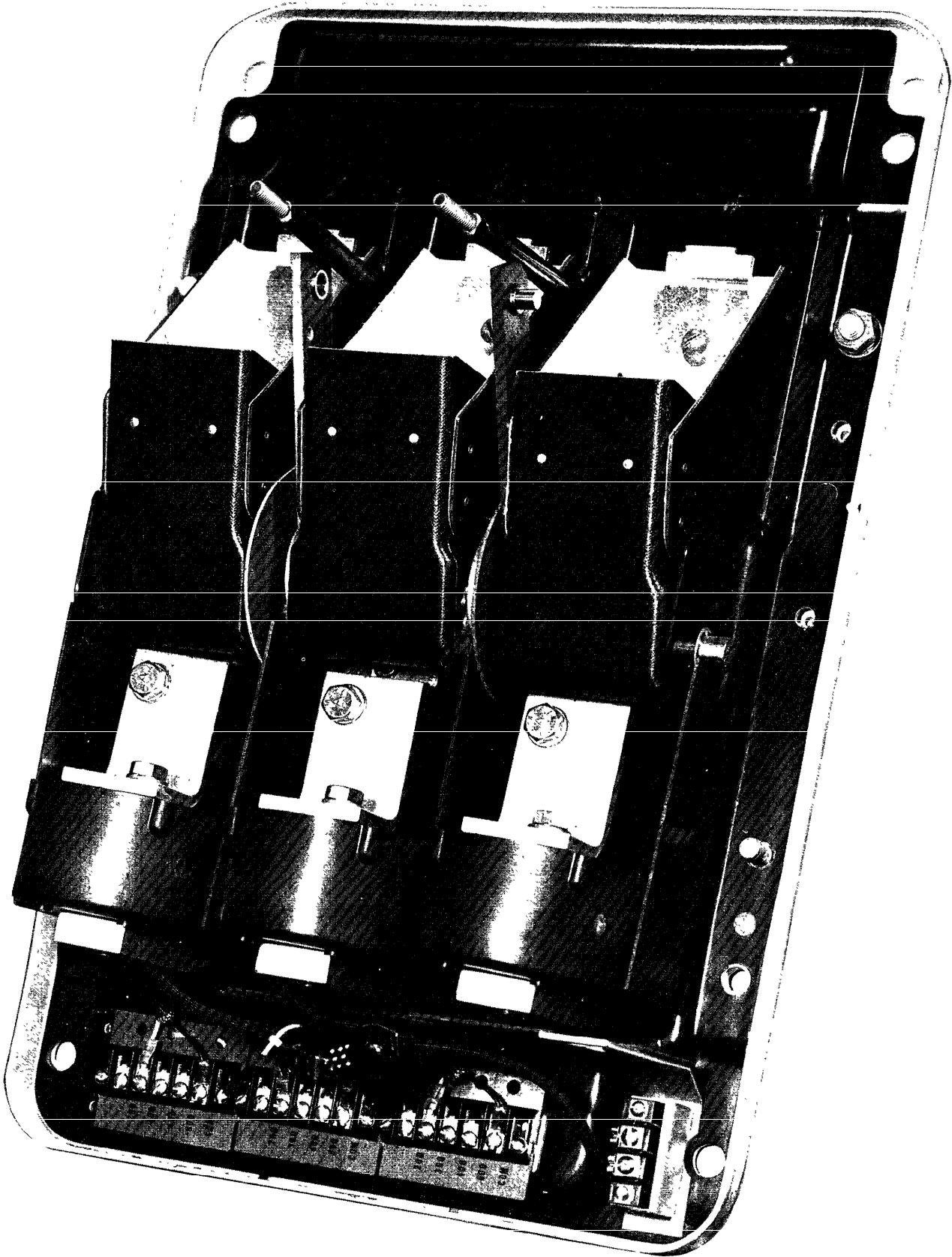


**EC TRIP SUPPORT BRACKETS**

**Fig. 3 — Front view of rear frame**

### III INSTALLING THE KIT

1. Modify the left and right pole lower stud insulator shields per Fig. 8; remount on back plate using original screws and special nut (Item 93 on Fig. 7) supplied with kit.
  2. Assemble and mount the three current sensor (CT) assemblies to the back frame. See Figs. 5, 6 and 7. Proceed with each pole by first inserting lower copper stud 90 through the back plate and attaching it via the mounting screw; then position CT 18 with its terminals toward the rear and loosely mount it to stud 90 with copper parts 91 and 92; align the assembly and torque the two  $\frac{3}{8}$ " bolts in strap 91 to 25 ft.-lbs. each to assure proper contact integrity.
  3. Install CT terminal board mounting bracket 80 below the CT's using the (2) 8-32 x  $\frac{1}{2}$ " screws provided. See Fig. 5. Mount terminal boards TB1, TB2 and TB3 to the bracket using the (6) 6-32 x  $\frac{1}{2}$ " screws and washers provided.
  4. On drawout type breakers, remount the primary disconnect fingers on the new lower studs. Refer to Maintenance Manual GEI-50299 pp. 7 and 13.
- NOTE: On all AK-15 drawout breakers modify primary disconnects per GEH 4642 included with kit.
- CAUTION:** Adequate primary contact force is mandatory. Tighten the nuts on the  $\frac{1}{4}$  x 20 mounting bolts to obtain a spring dimension of  $\frac{13}{16}$  to  $\frac{27}{32}$ . The proper dimensions between contact fingers is  $\frac{7}{16}$ ". Proper contact force is 60 to 70 lbs. with the contacts spread to  $\frac{1}{2}$ ".
5. Mount programmer rear mounting bracket 70 together with flux shift trip device terminal board TB4 (part of wire harness 100) to the lower right corner of the back frame utilizing existing holes — See Figs. 5 and 6.
  6. Install wire harness 100 on back frame and connect per instructions on Figs. 9, 12 or 16 as applicable to the particular breaker type involved. For tie-down and forming details, see Fig. 5.
- This step completes conversion of the back frame — see example illustrated in Fig. 4.
7. Proceeding next to the front frame, mount the flux shift trip paddle on the breaker's trip shaft per Figs. 17 and 18.
  8. Mount the flux shift trip device per Figs. 17 and 19. NOTE: Adjustment of trip rod length will be performed later in Step 13.
  9. Install programmer front mounting bracket 71 to the underside of the front frame per Fig. 21. On AK-2/2A electrically operated models, this bracket replaces the existing bracket which mounts the "X" contactor. This step is not required on AK-3/3A models; they have the proper bracket already in place.
  10. Reference Fig. 6, install flux shifter actuating bushing 49 in the right hand operating link; enlarge the link hole if necessary. See Fig. 4 also.
  11. Rejoin the front and back frames. Refer to Maintenance Manual GEI-50299, Page 5.
  12. Connect wire harness "X" (attached to flux shift trip device) to terminal block TB4 per Fig. 20. Exercise care in routing to prevent leads being damaged by moving breaker components such as contact assemblies.
  13. Adjust flux shift trip rod gap per instructions on Fig. 17.
  14. Mount programmer unit 17 to breaker and plug harness connector into programmer. See Fig. 21.
- CAUTION:** To avoid shock hazard and possible damage to wire harness and sensor coils, the harness connector must be securely mated with the programmer unit before the breaker is energized.
- Conversion of the breaker is now complete. A typical example is shown in Fig. 22.
- Proceed next to Section IV — EQUIPMENT MODIFICATIONS. If these are not required, proceed directly to Section V — FUNCTIONAL TESTING.



**Fig. 4 — AK-25 back frame with SST conversion components installed and ready for reassembly to front frame.**

FRONT VIEW OF BACK FRAME

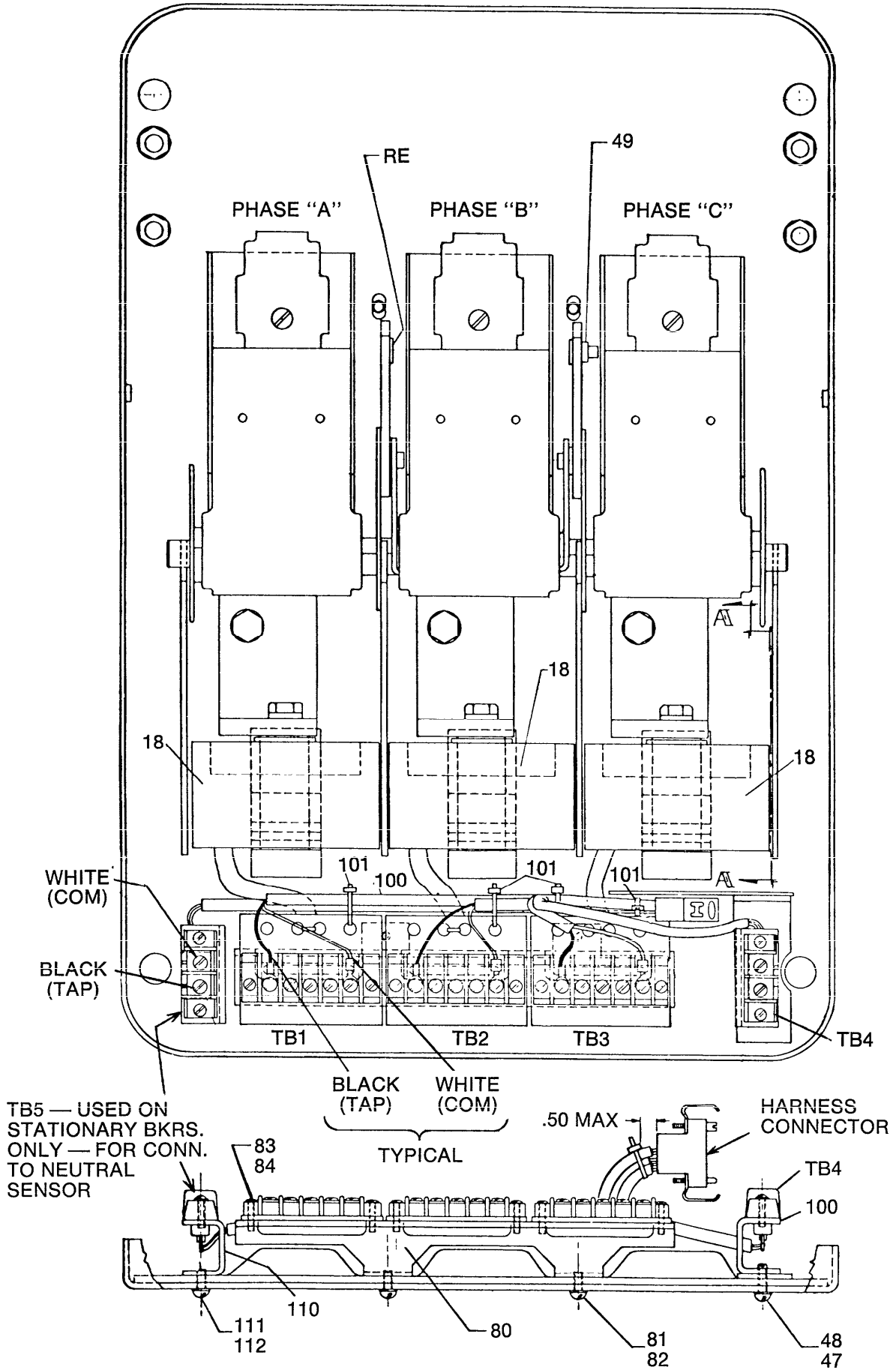


Fig. 5 — Back frame assembly



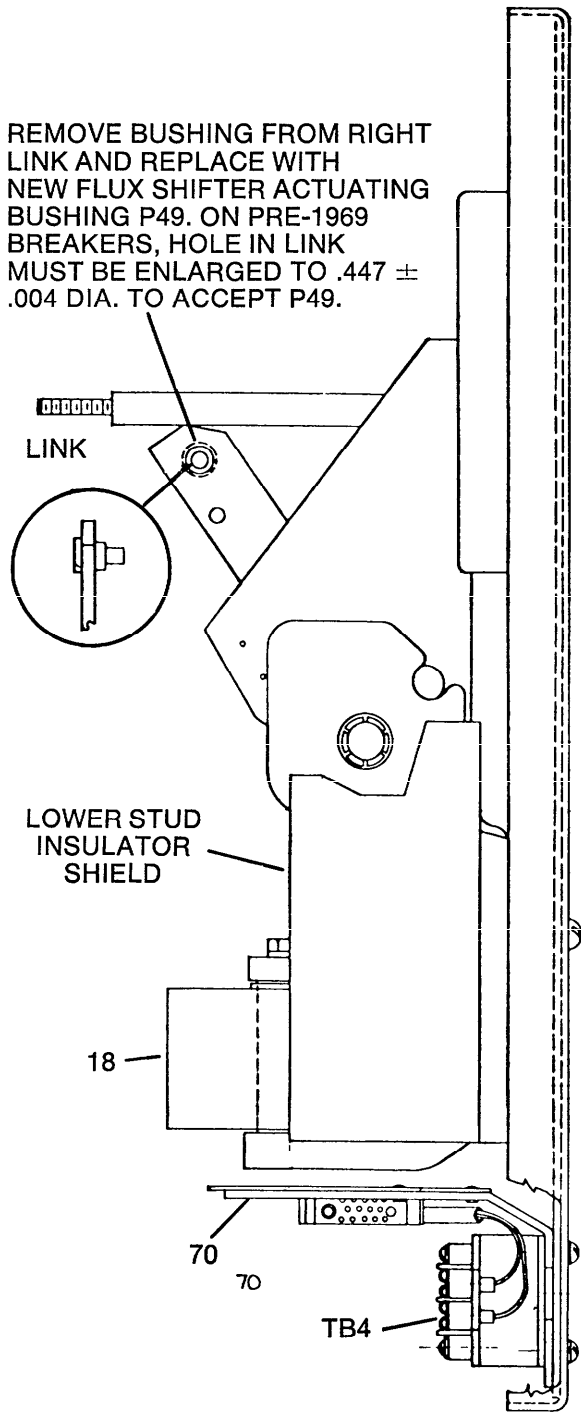


Fig. 6 — Right side view of back frame

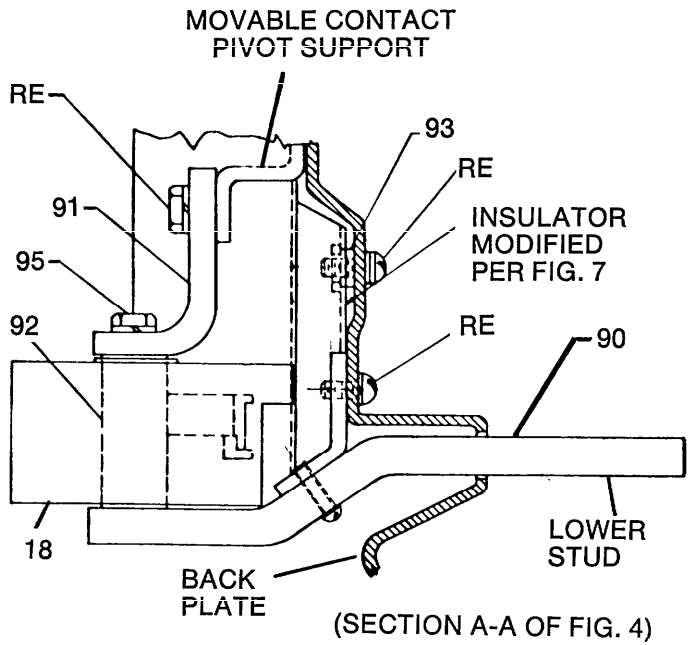


Fig. 7 — Phase sensor assembly, right side view

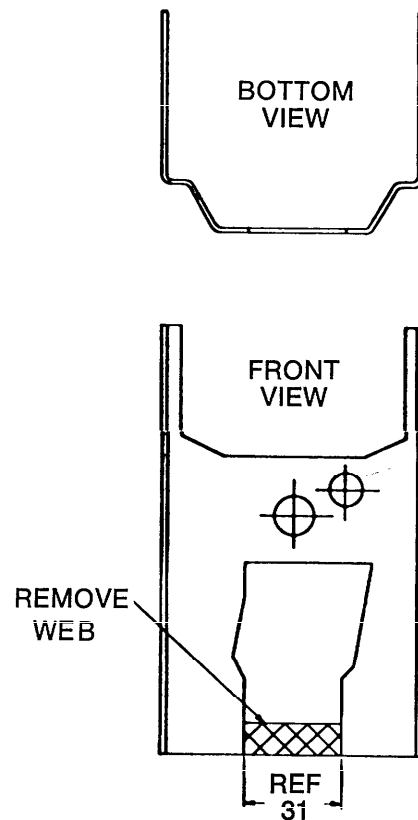
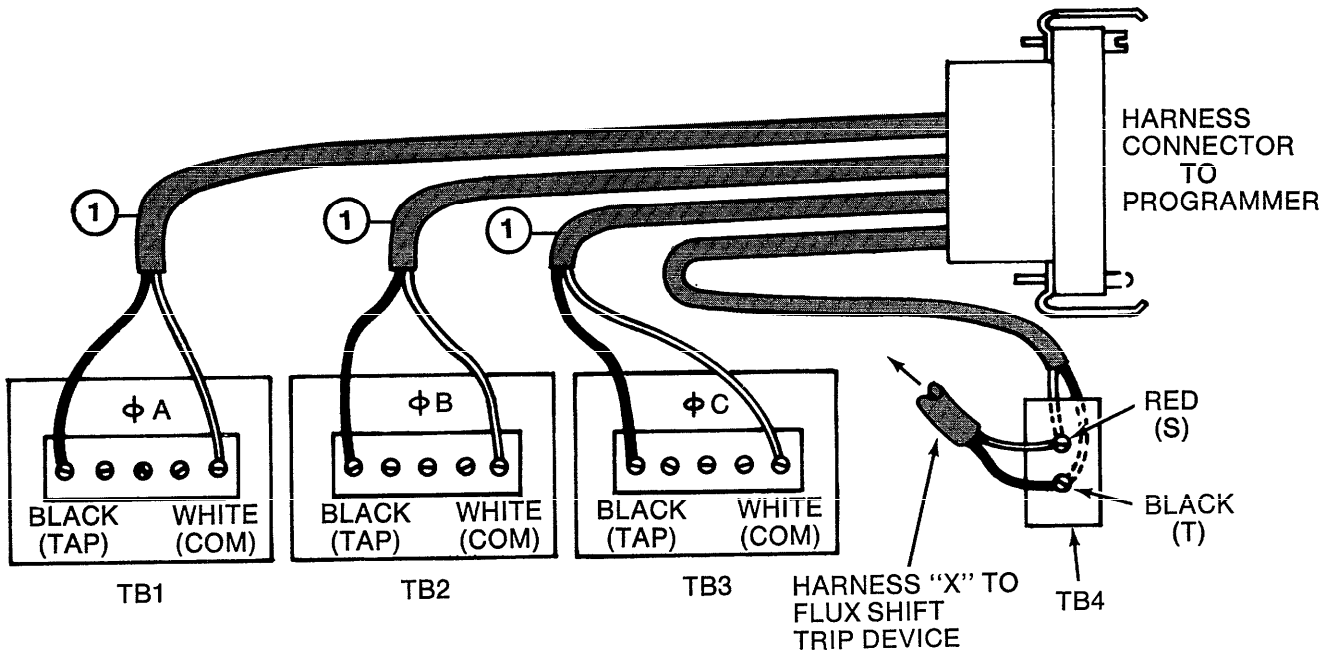


Fig. 8 — Stud insulator modification

FRONT VIEW OF BACK FRAME



**FIG. 9** Harness connections for all drawout and stationary breakers used on 3-wire systems — with and without ground fault. For elementary diagram see Figs. 10 & 11.

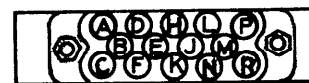
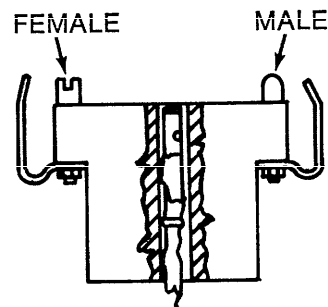
**INSTALLATION STEPS**

1. Connect the A, B and C Phase Sensor Leads respectively to TB1, TB2 and TB3. Identify per Table 5.

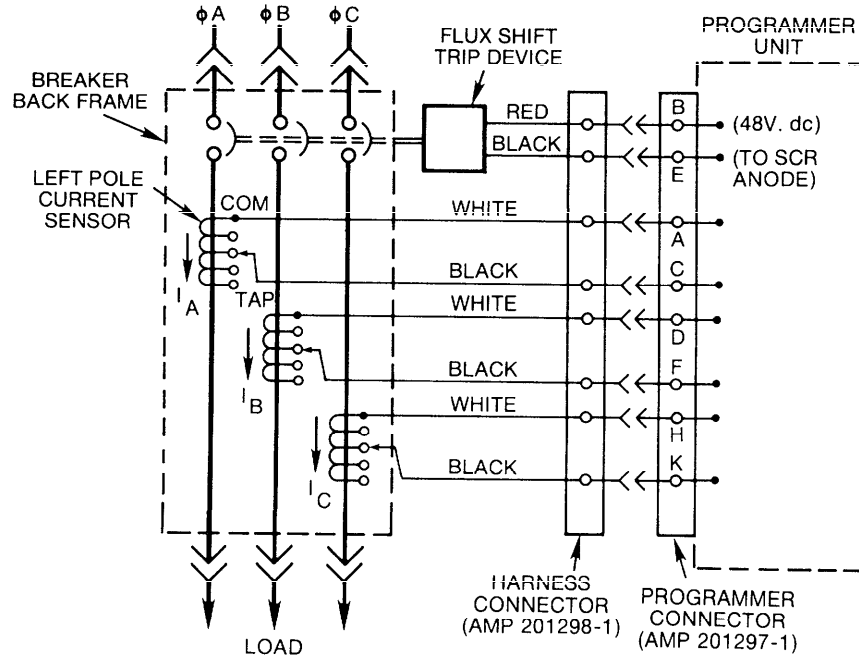
**TABLE 5 — Harness Connections**

| Component                | From Terminal Board         | Wire Color     | To Harness Connector Socket Number |
|--------------------------|-----------------------------|----------------|------------------------------------|
| Phase A Sensor           | TB1                         | White<br>Black | A<br>C                             |
| Phase B Sensor           | TB2                         | White<br>Black | D<br>F                             |
| Phase C Sensor           | TB3                         | White<br>Black | H<br>K                             |
| Flux Shift Trip Device   | TB4                         | Red<br>Black   | B<br>E                             |
| 4th-Wire Neutral* Sensor | TB5 or Secondary Disconnect | White<br>Black | L<br>N                             |

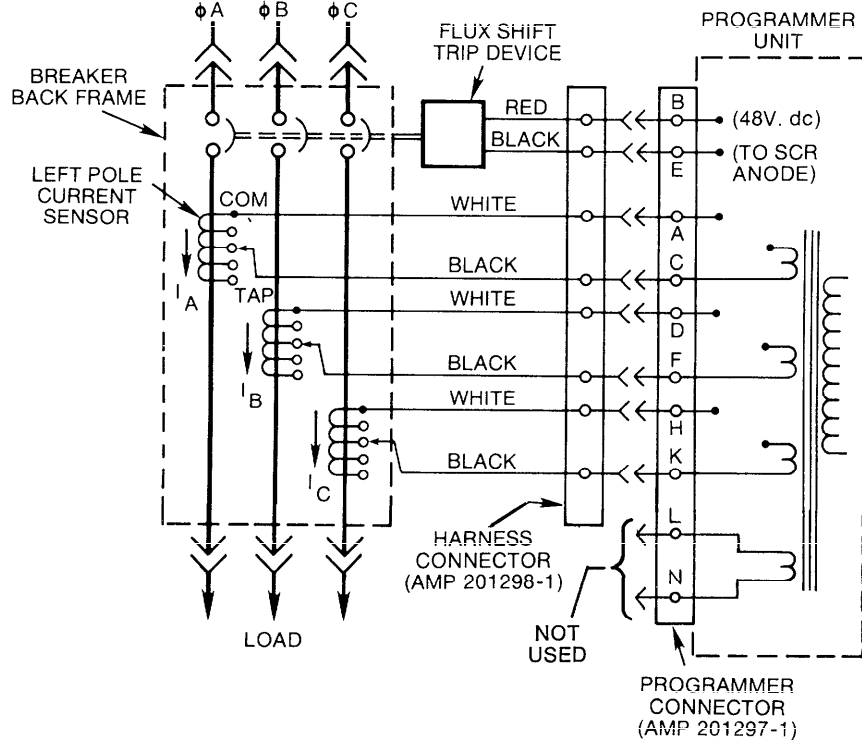
\*Used only with 4-wire Ground Fault.



HARNESS CONNECTOR

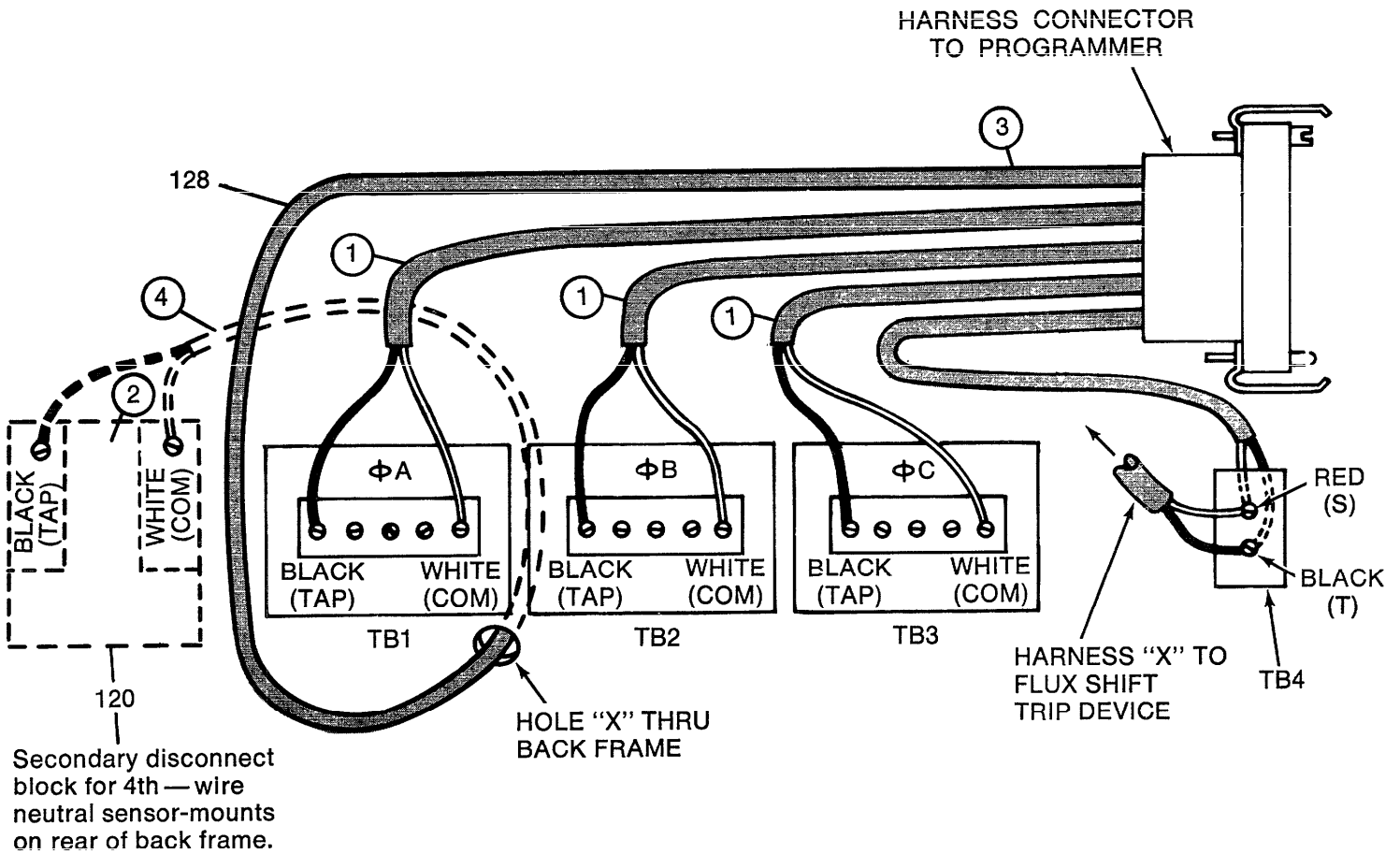


**Fig. 10 — Cabling Diagram — SST without ground fault.**



**Fig. 11 — Cabling Diagram — SST with ground fault on 3-wire load.**

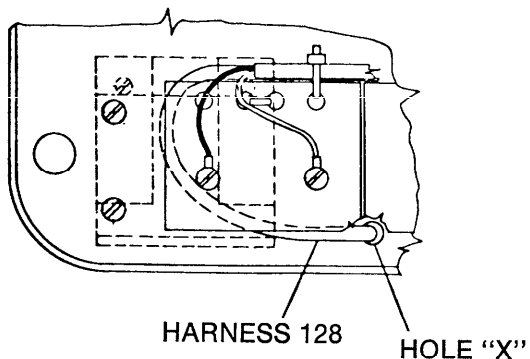
FRONT VIEW OF BACK FRAME



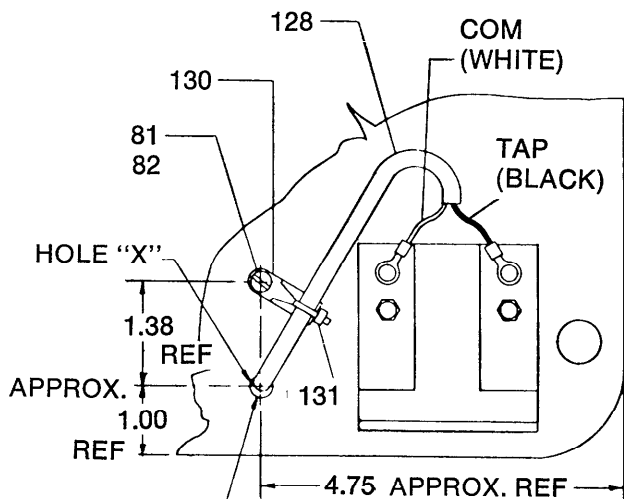
**FIG. 12** Harness connections for all drawout breakers equipped with 4-wire ground fault. For elementary diagram see Fig. 14.

**INSTALLATION STEPS**

1. Connect the A, B, and C phase sensor leads respectively to TB1, TB2 & TB3. Identify per Table 5.
2. Mount the neutral sensor disconnect block 120 to the rear of the back frame per Fig. 13. Use existing mounting holes.
3. Insert the two prepared leads of harness 128 into the harness connector: Black to socket N, white to socket L.
4. Feed the opposite end of harness 128 thru hole "X" in the back frame and connect leads to block 120 as shown in Fig. 13.

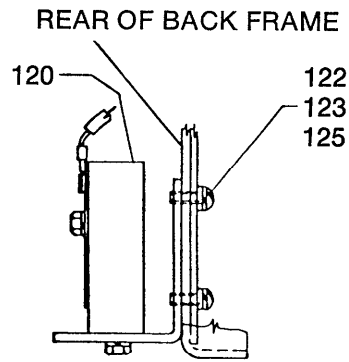


FRONT VIEW OF BACK FRAME



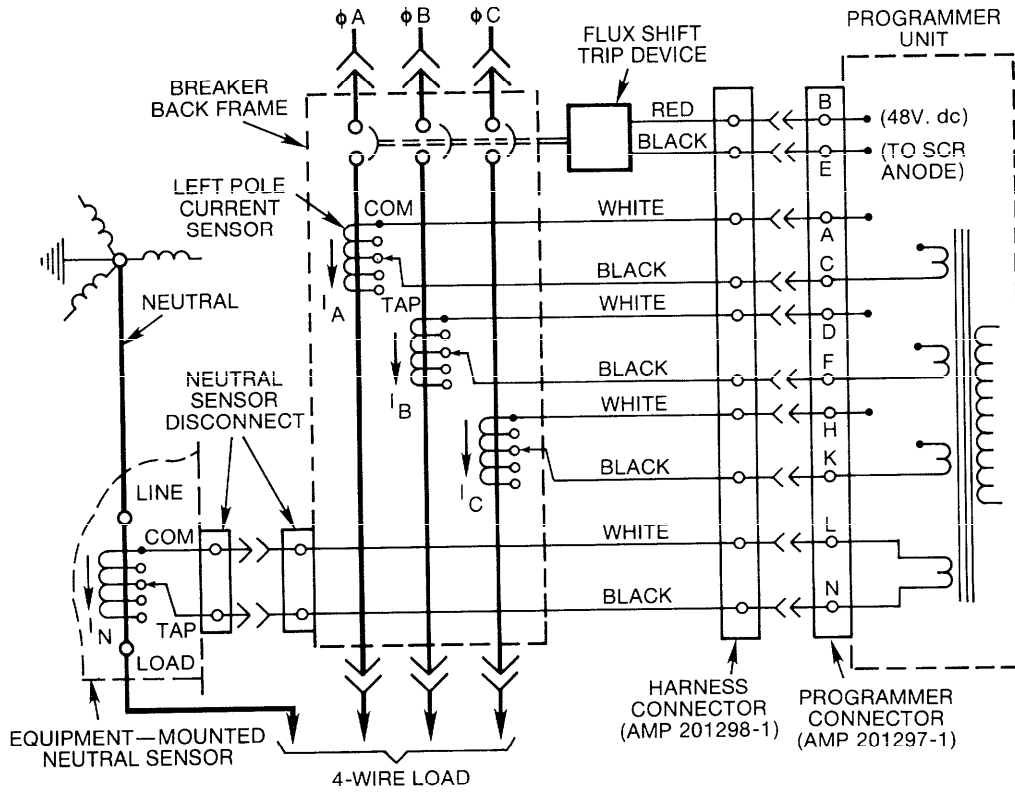
ENLARGE THIS HOLE TO .312 DIA.

REAR VIEW OF BACK FRAME

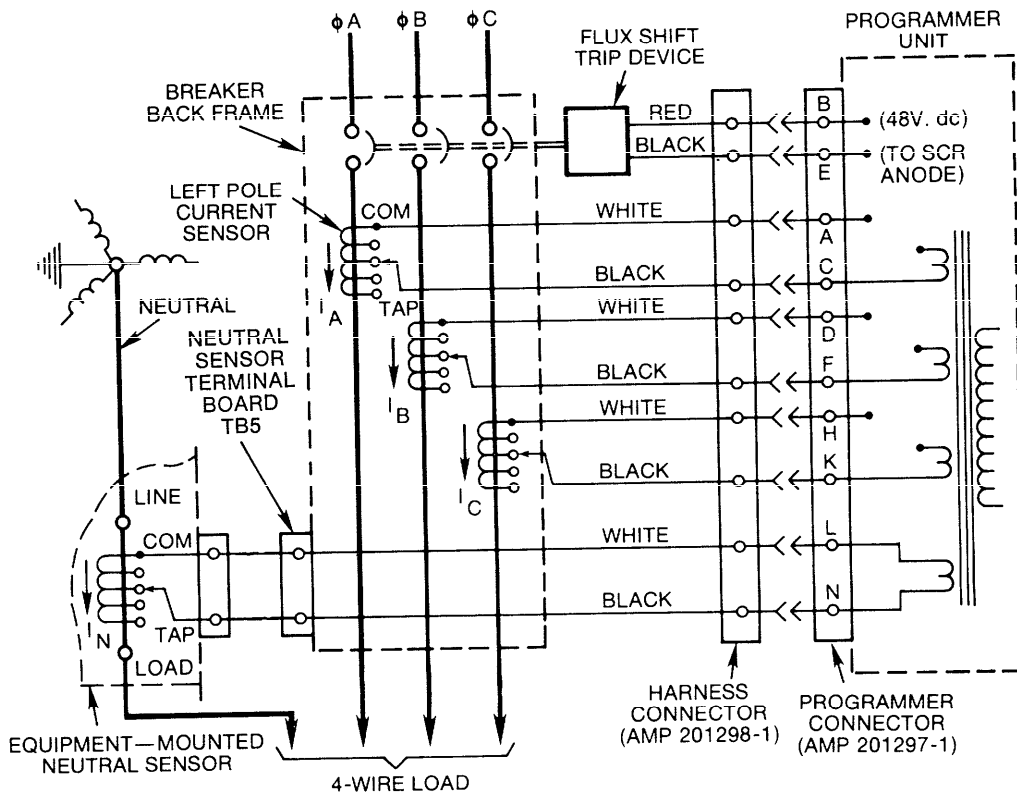


SIDE VIEW

**Fig. 13 — Mounting detail for secondary disconnect block 120 for 4th-wire neutral sensor (drawout breakers only).**

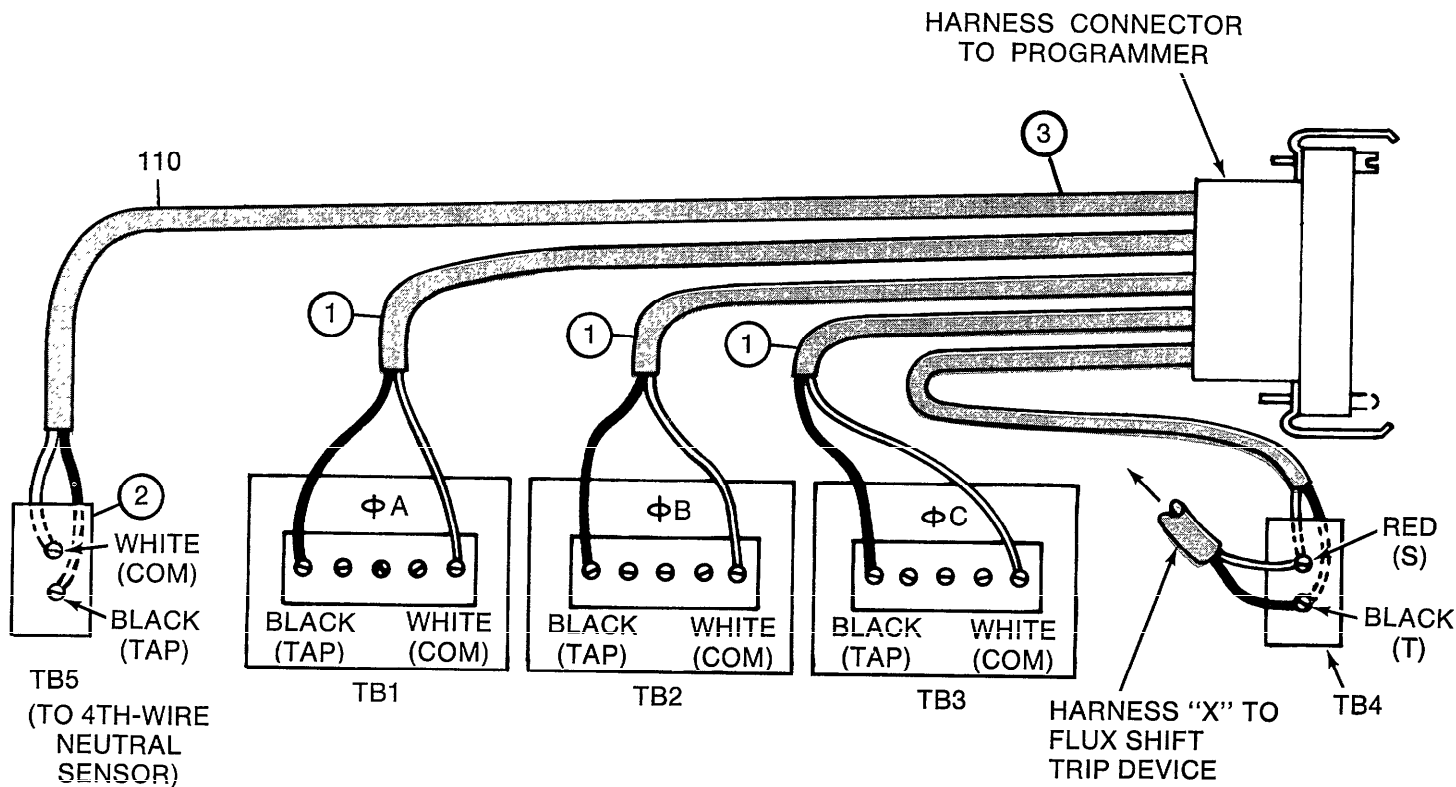


**Fig. 14 — Cabling Diagram — SST with ground fault on 4-wire load — drawout breaker.**



**Fig. 15 — Cabling Diagram — SST with ground fault on 4-wire load — stationary breaker.**

FRONT VIEW OF BACK FRAME



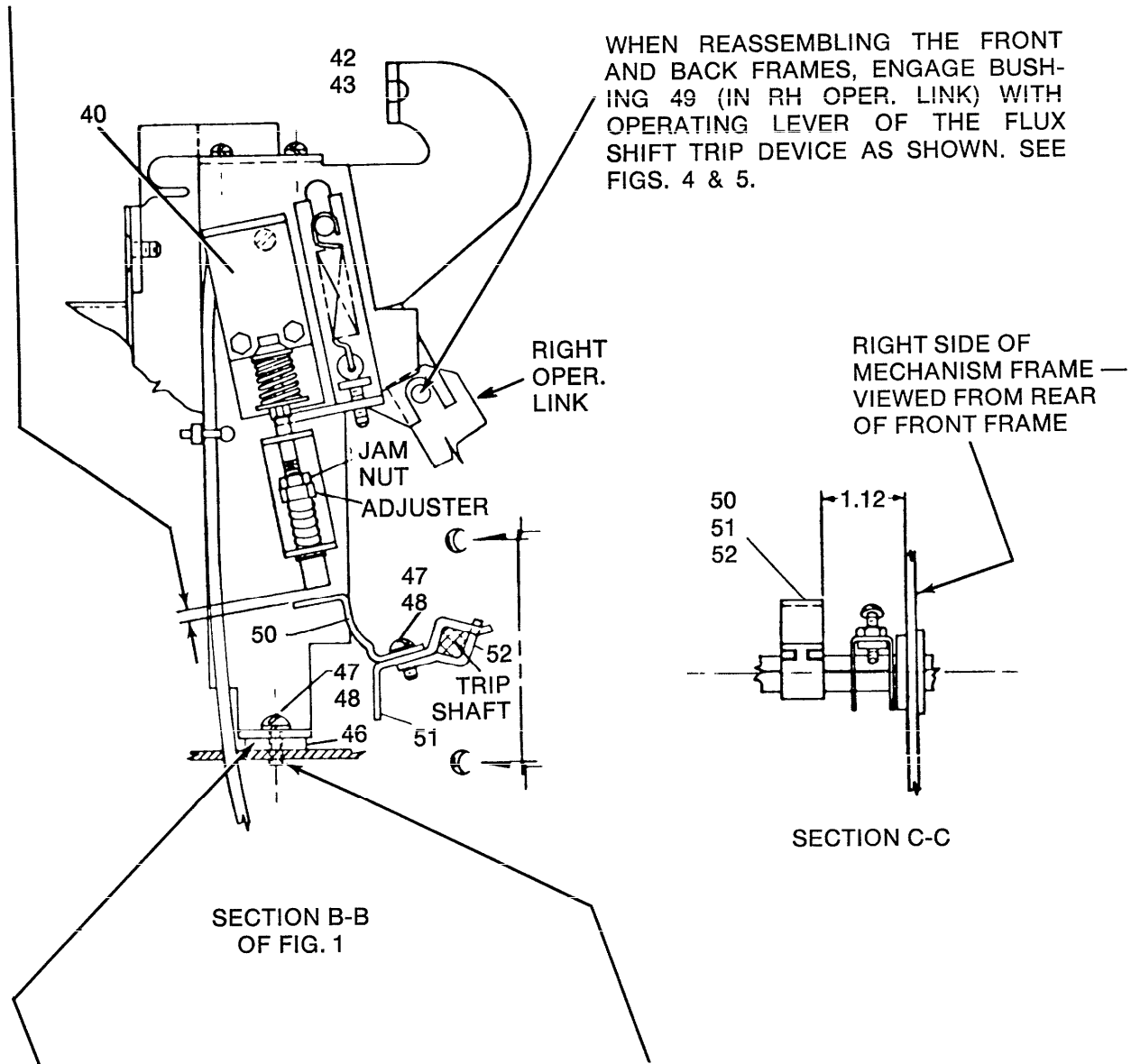
**Fig. 16** Harness connections for stationary breakers equipped with 4-wire ground fault. For elementary diagram see Fig. 15.

**INSTALLATION STEPS**

1. Connect the A, B and C phase sensor leads respectively to TB1, TB2 & TB3. Identify per Table 5.
2. Mount neutral sensor terminal board TB5 (part of harness 110) to the back frame.
3. Insert the prepared leads on the opposite end of harness 110 into the harness connector: Black to socket N, white to socket L.

AFTER BREAKER IS REASSEMBLED, ADJUST THE FLUX SHIFT TRIP ROD AS FOLLOWS: WITH BREAKER OPEN AND THE TRIP SHAFT RESET, TURN ADJUSTER UNTIL GAP IS .093 TO .125, THEN LOCK WITH JAM NUT.

WHEN REASSEMBLING THE FRONT AND BACK FRAMES, ENGAGE BUSHING 49 (IN RH OPER. LINK) WITH OPERATING LEVER OF THE FLUX SHIFT TRIP DEVICE AS SHOWN. SEE FIGS. 4 & 5.

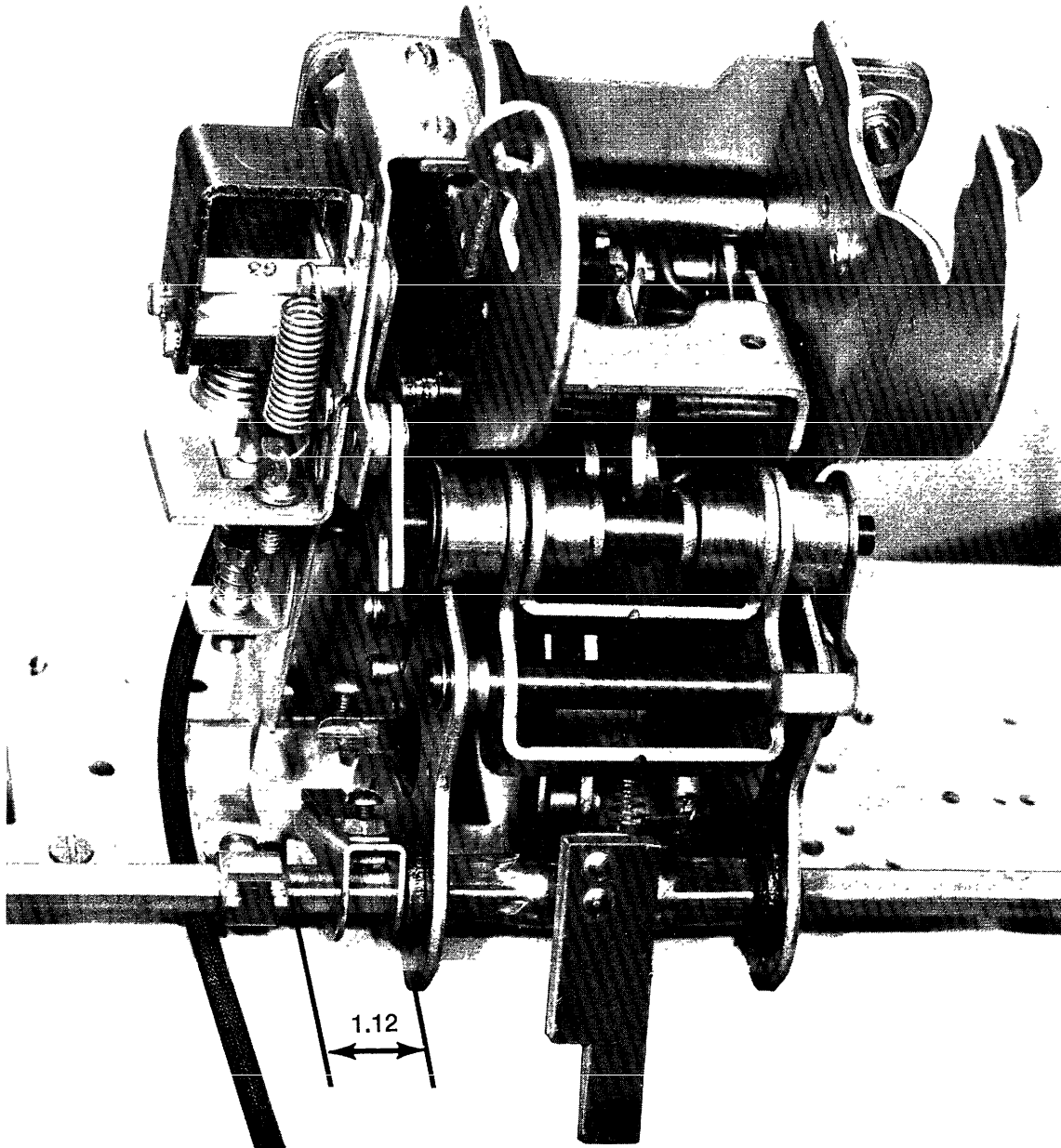


ON POWER SENSOR BKRS. EQUIPPED WITH SHUNT TRIP, MOUNT FLUX SHIFT TRIP DEVICE ON TOP OF THE SHUNT TRIP BRACKET. IF NO SHUNT TRIP, USE SPACER 46 PROVIDED.

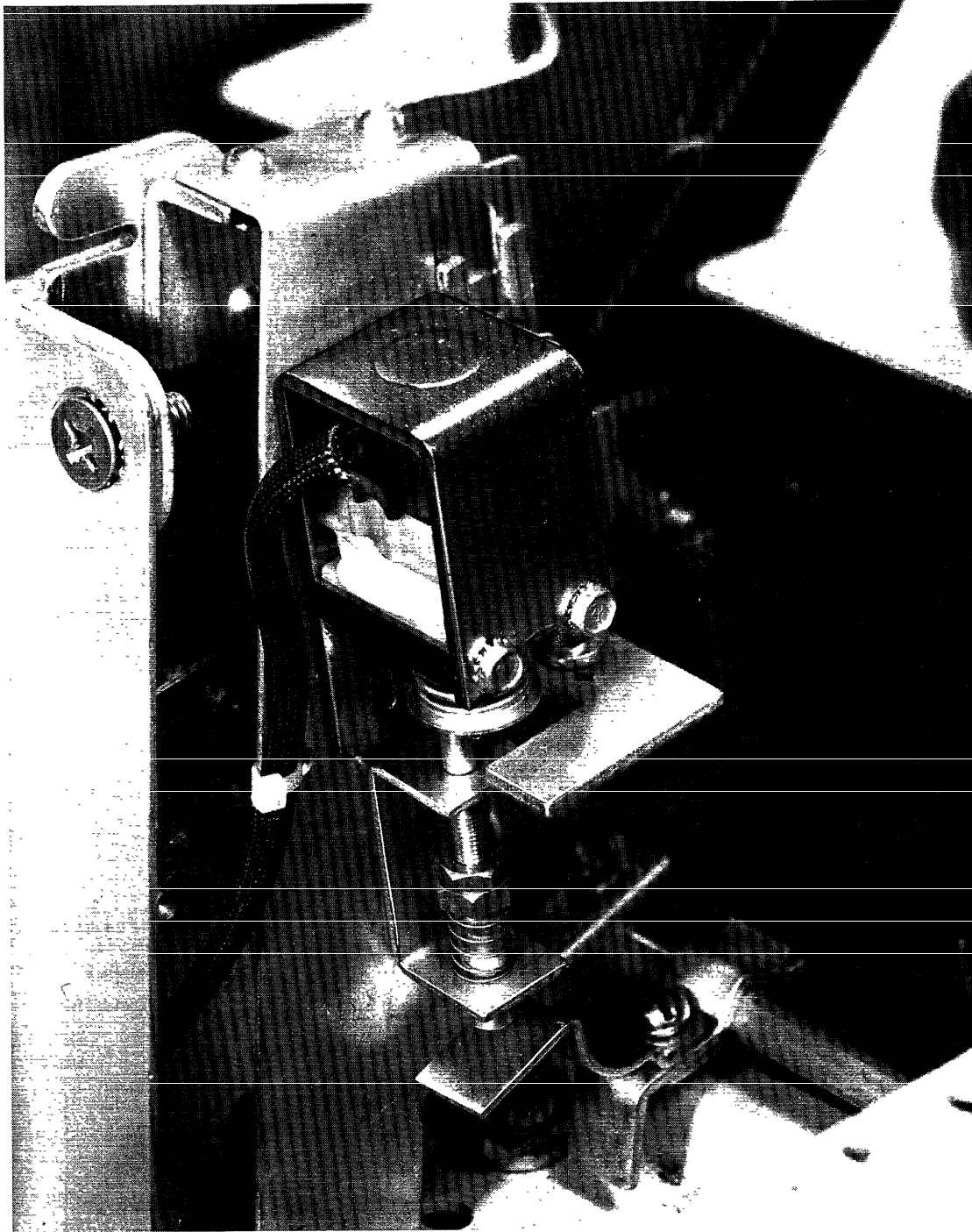
ON EC EQUIPPED BKRS. IT WILL BE NECESSARY TO DRILL & TAP THIS #10-32 HOLE IN THE FRONT FRAME. USE THE FLUX SHIFT TRIP DEVICE BRACKET AS TEMPLET.

**Fig. 17 — Right side view of mechanism frame showing mounting of flux shift trip device 40.**





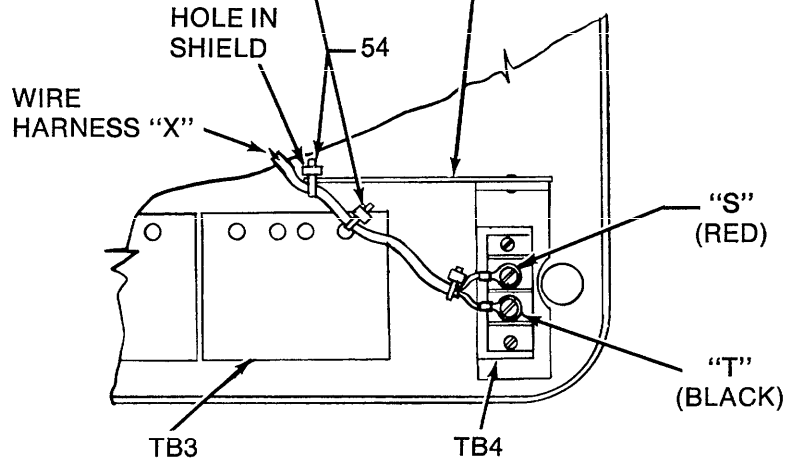
**Fig. 18** — Rear view of front frame showing location of trip paddle for flux shift trip device.



**Fig. 19 — Right side view of operating mechanism showing mounting of flux shift trip device.**

SECURE WIRE HARNESS "X" WITH TIES P54 AFTER ASSEMBLY OF FRONT FRAME TO BACK FRAME.

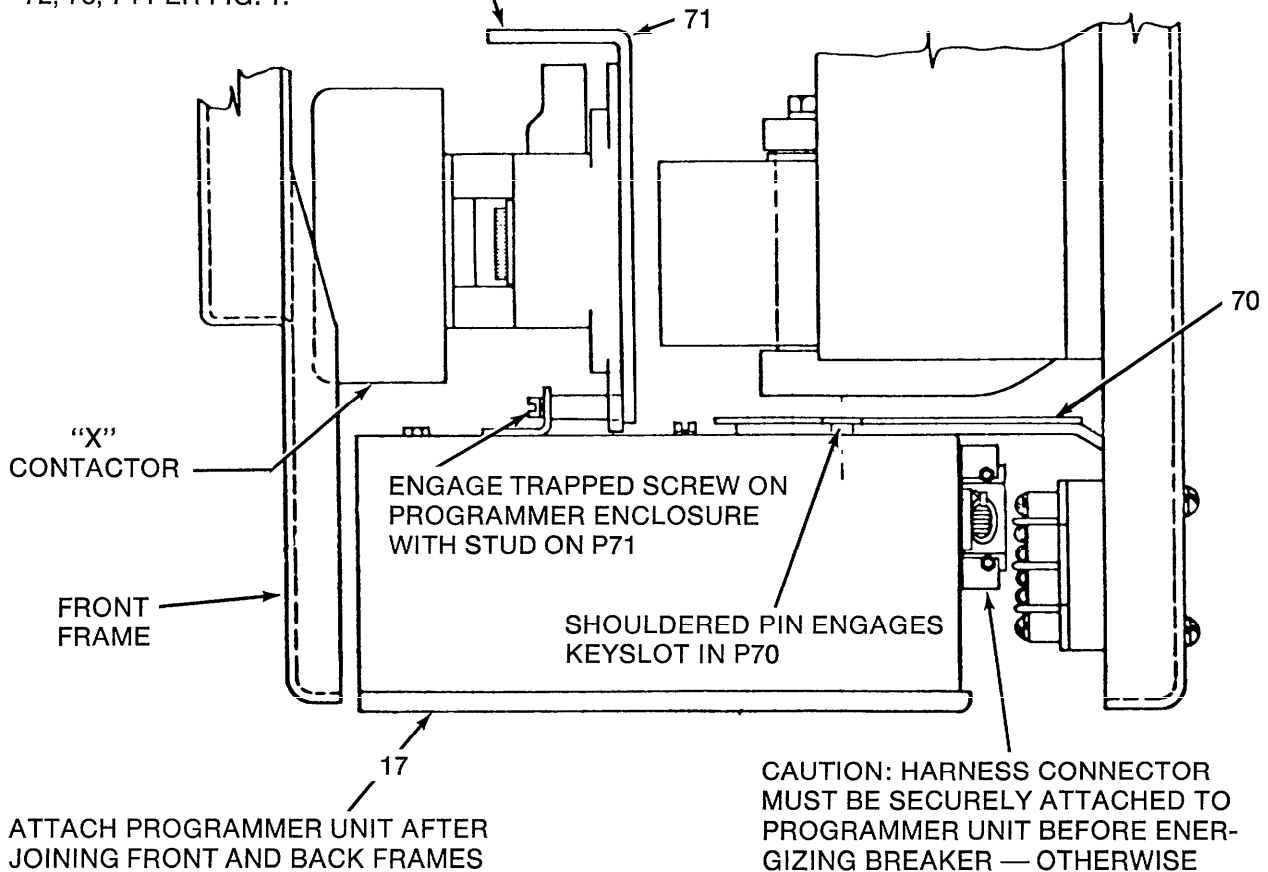
PROGRAMMER SHIELD AND BRACKET



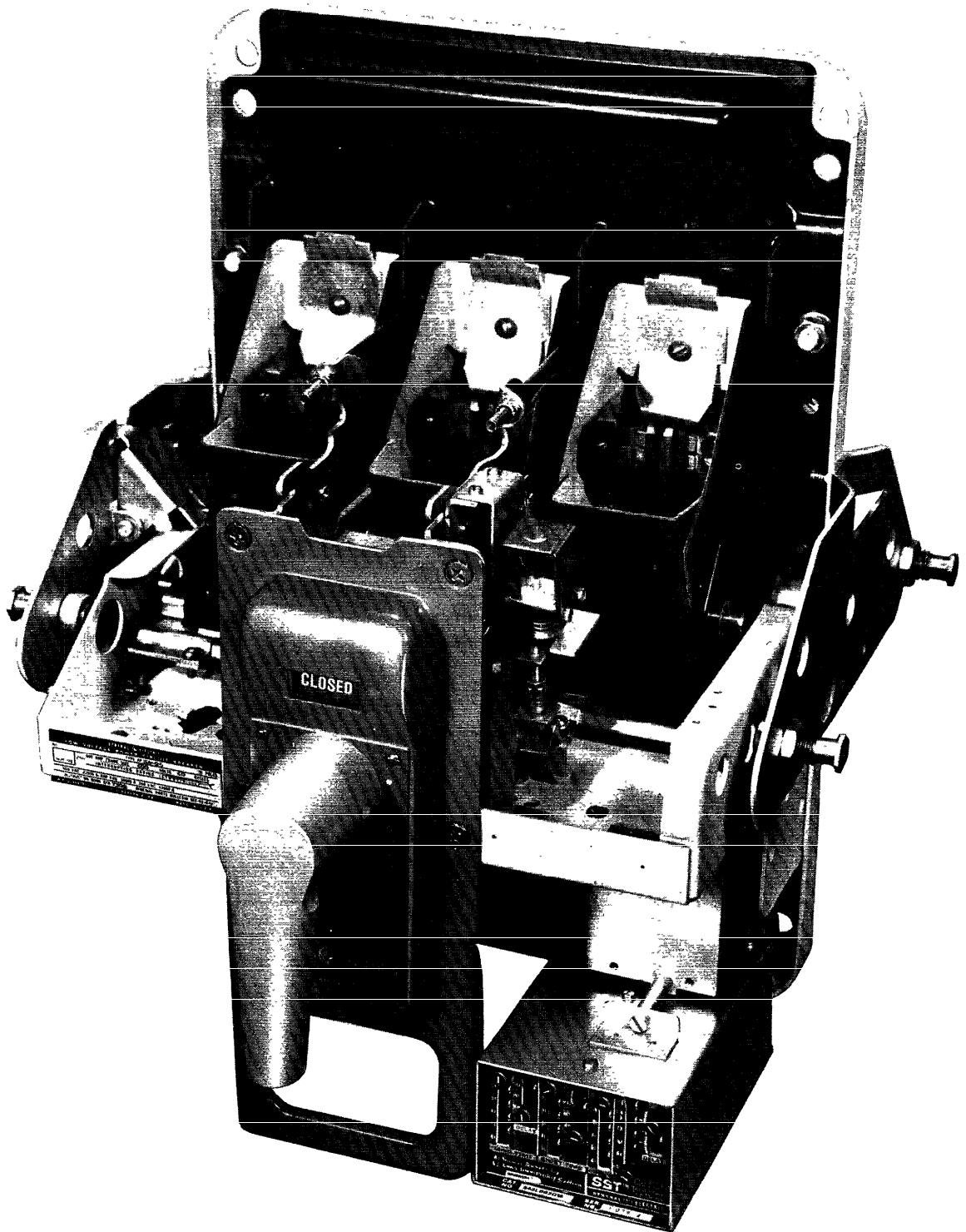
**Fig. 20 — Connection of Harness "X" from flux shift trip device to terminal board TB4 on back frame.**

INSTALL NEW BRACKET 71 ON ALL AK-2/2A MODELS; USE EXISTING BRACKET FOR ALL AK-3/3A MODELS. USE MOUNTING HARDWARE 72, 73, 74 PER FIG. 1.

USE EXISTING BRACKET FOR ALL AK-3/3A MODELS.



**Fig. 21 — Right side view of breaker showing mounting of programmer unit.**



**Fig. 22 — AK-25 breaker with SST conversion completed.  
(AKD-5 type drawout shown)**

### IV. EQUIPMENT MODIFICATIONS

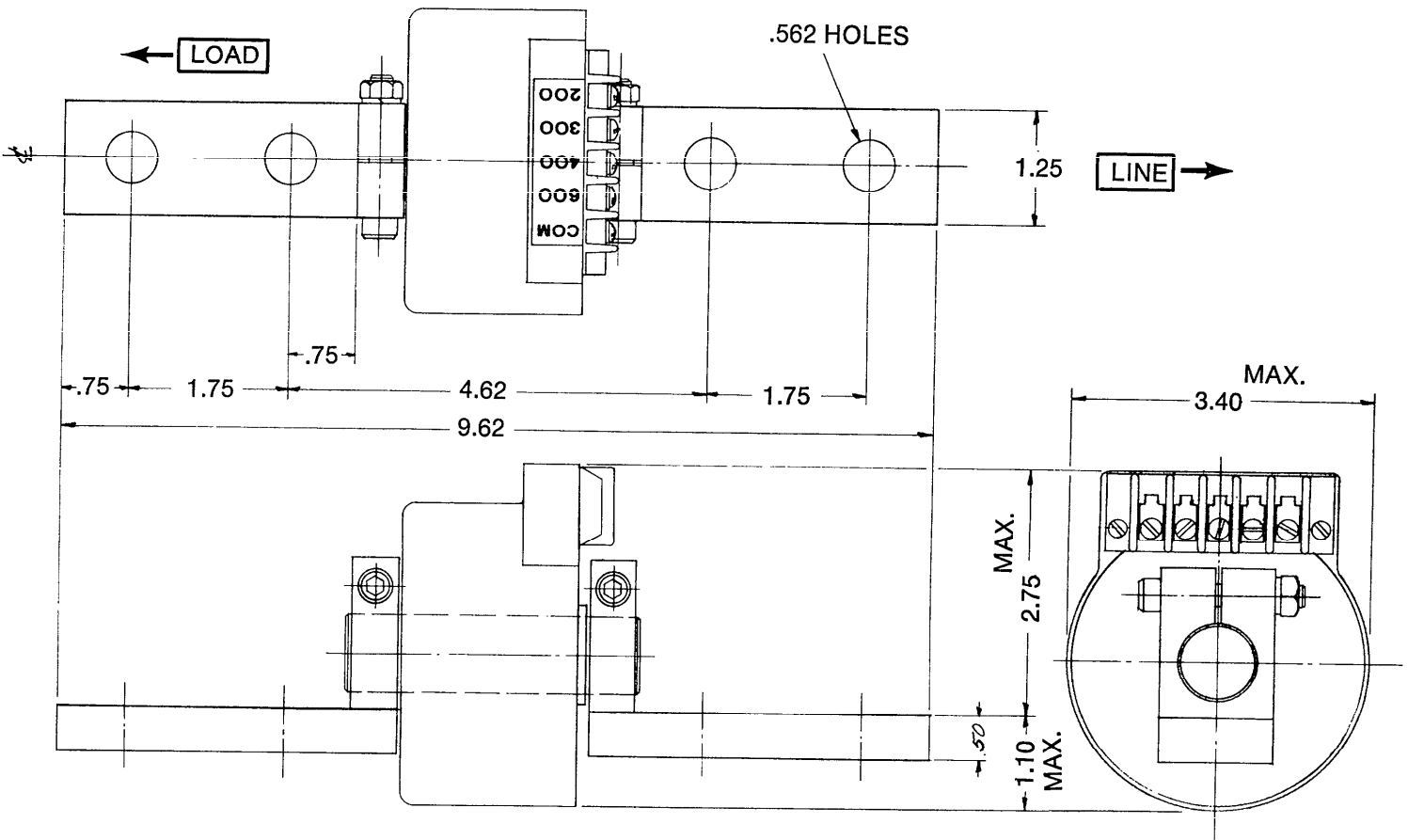
**NOTE:**

The following modifications are required **ONLY** in conjunction with breakers being equipped with 4-wire Ground Fault trip elements.

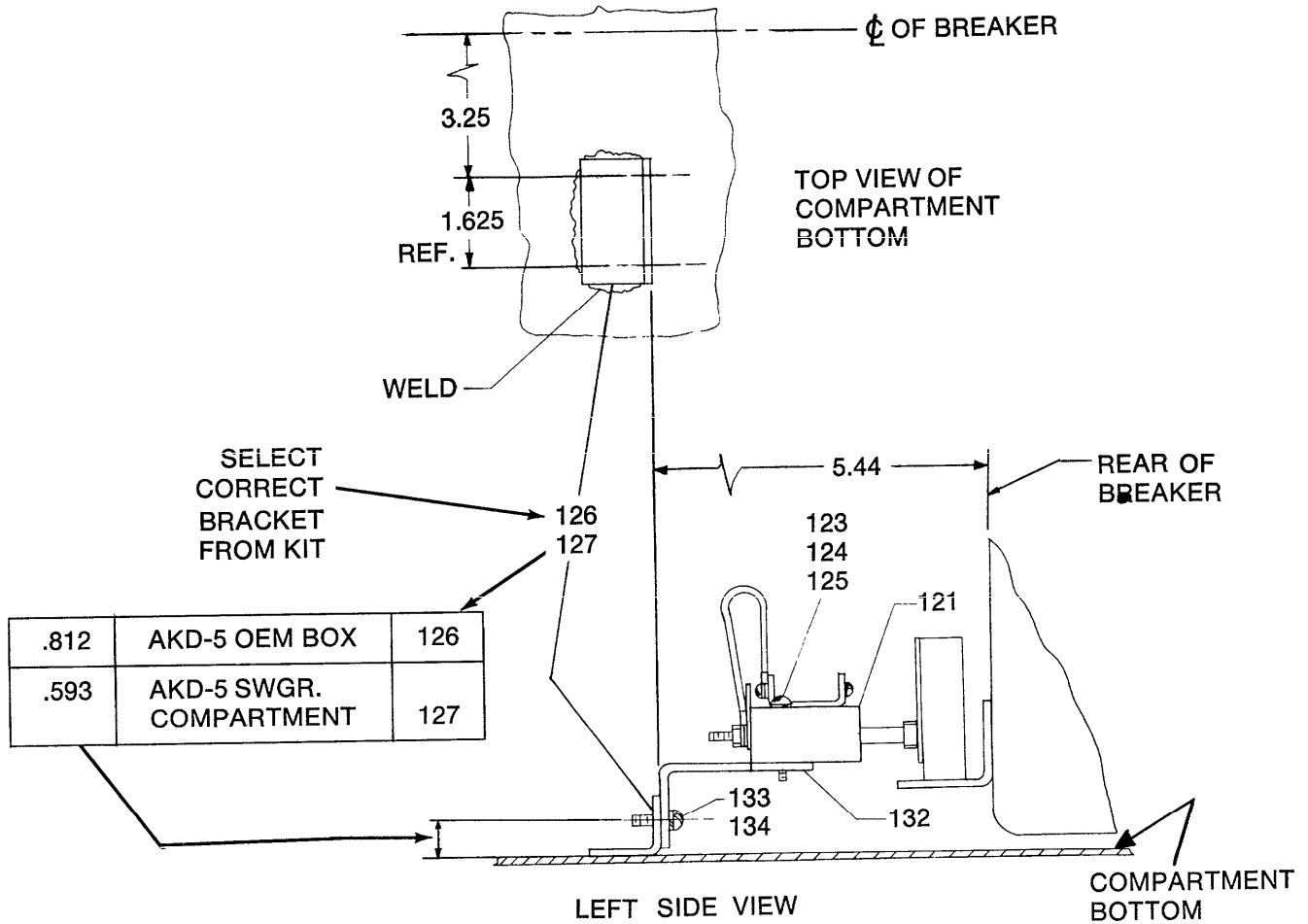
1. Mount the neutral sensor (CT) in the outgoing neutral lead, normally in the equipment's bus or cable compartment. See Fig. 23 for the sensor's bar drilling plan. Check to insure that the neutral and phase sensors match, i.e., have the same ampere range.
2. On drawout type breakers, mount the 4th-wire

neutral sensor stationary disconnect block 121 inside the breaker compartment at the lower rear as shown in Figs. 24 or 25, whichever applies. For the AKD-5 type equipments of Fig. 24, be careful to select the correct mounting bracket (Part 126 or 127).

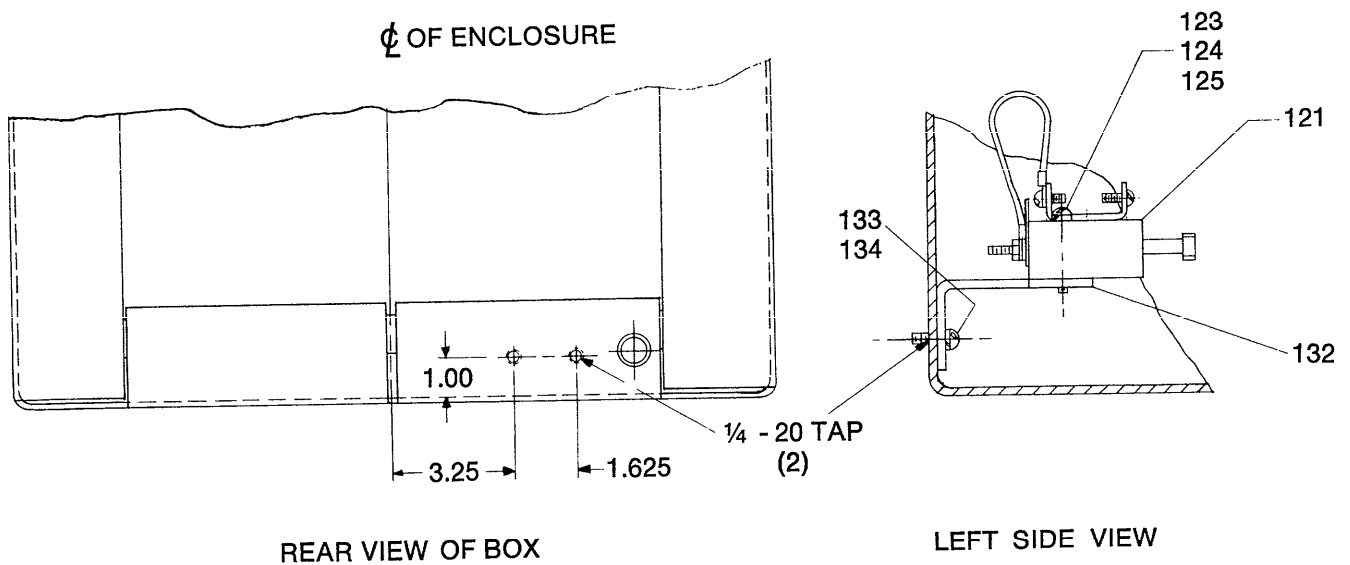
3. Connect the neutral sensor to disconnect block 121 per wiring instructions of Fig. 26. For stationary breakers, the neutral sensor is connected to TB5.



**Fig. 23 — Outline of SST Neutral Sensors:**  
 Cat. 139C4475G1 70-225 amp  
 Cat. 139C4475G2 200-600 amp  
 (from outline dwg. 139C4476)



**Fig. 24 — Mounting of 4th-wire neutral sensor disconnect block in AKD-5 switchgear compartments and AKD-5 type OEM boxes.**



**Fig. 25 — Mounting of 4th-wire neutral sensor disconnect block in AKD type OEM box.**

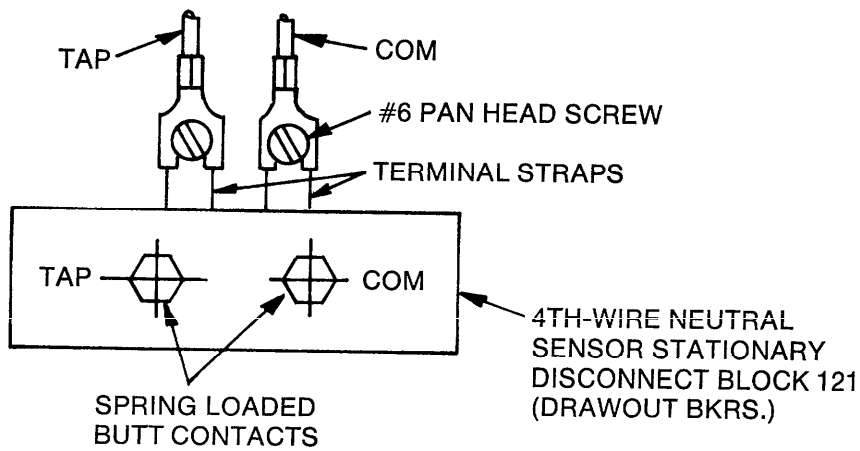
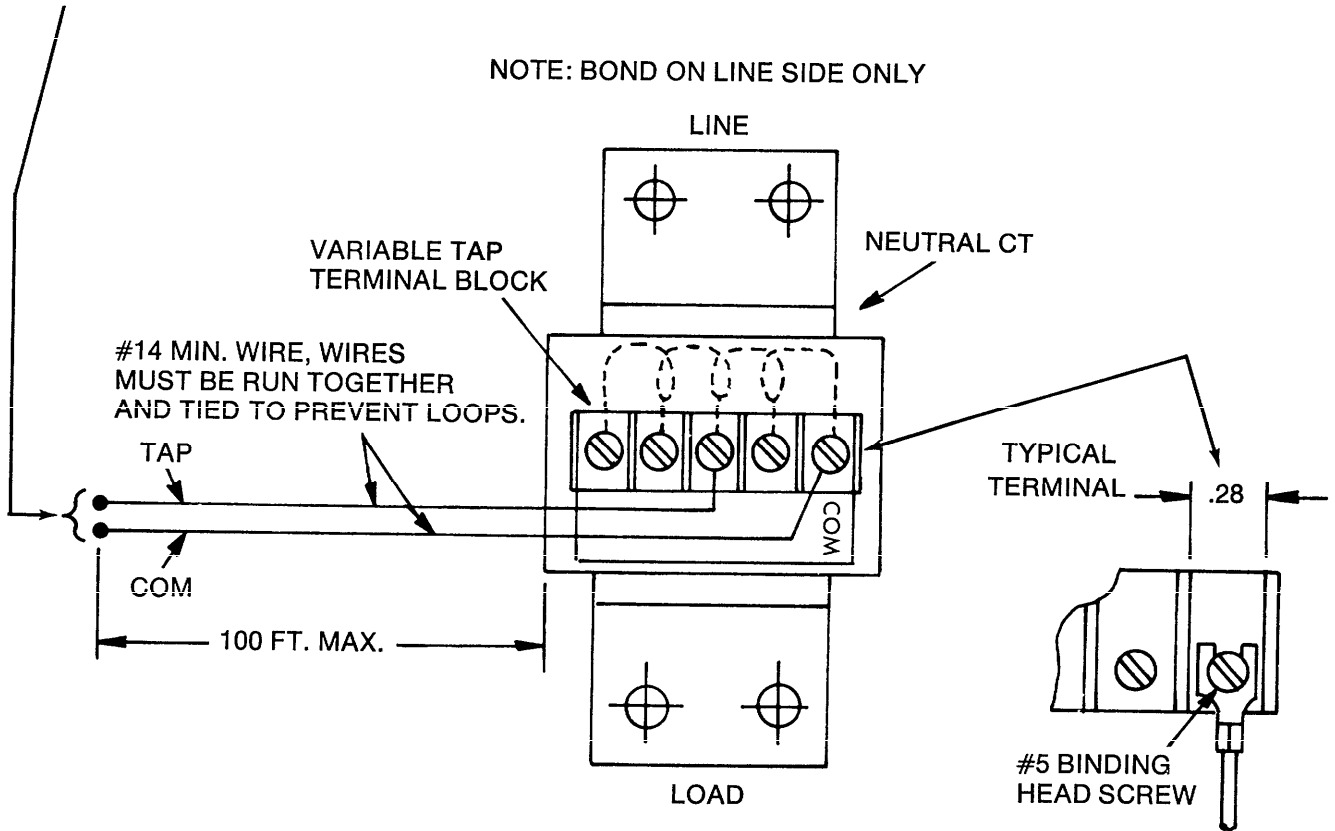
**NOTE:**

Neutral CT markings of LINE and LOAD must be respected when making bus or cable connections.

Polarity of connecting wires from Secondary of Neutral CT to Terminal Block or CT Disconnect Block must also be respected: Tap to Tap, Com. to Com.

CONNECT TO TERMINAL BOARD TB5 ON STATIONARY BREAKERS, OR TO NEUTRAL SENSOR STATIONARY DISCONNECT BLOCK FOR DRAWOUT BREAKERS.

NOTE: BOND ON LINE SIDE ONLY



FRONT VIEW LOOKING INTO BREAKER COMPARTMENT

**Fig. 26 — Connecting the 4th-wire neutral sensor.**

## V. FUNCTIONAL TESTING

Before the breaker is reinstalled to service:

1. Megger breaker primary circuit using a 1000V megger.

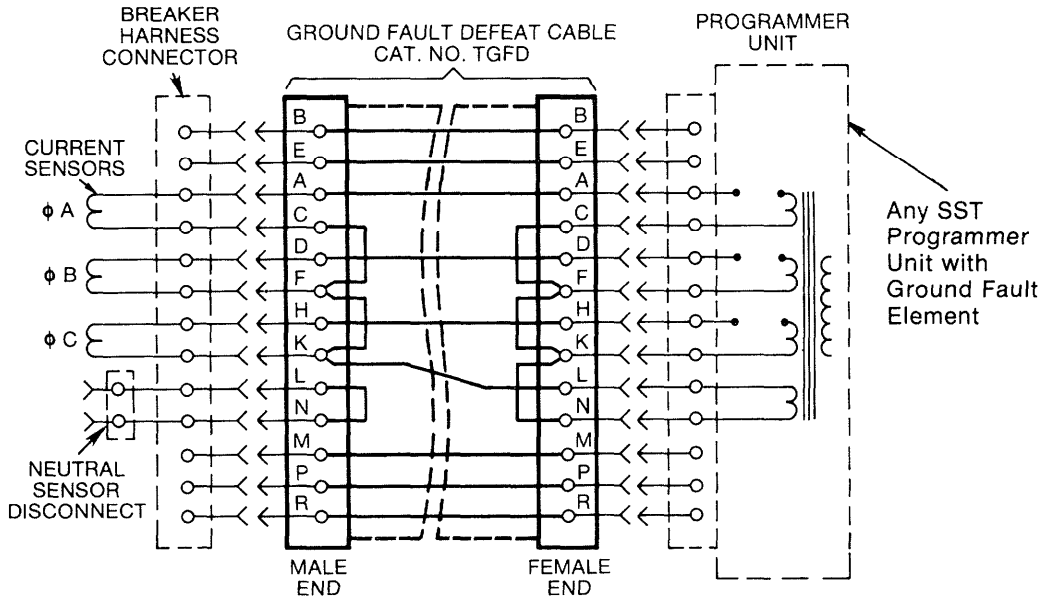
Perform either of the following tests:

- A — Using ECS/SST test set Catalog #TAK-TS1, test per Instructions GEK-64454 to assure proper operation of the breaker and its trip device Or,

- B — Using a single-phase, high current-low voltage test set, test each trip element (L, S, I, G) to assure proper protective device operation. Compare results with applicable time-current characteristic curves reproduced on pages 26 & 27.

### NOTE:

When testing units equipped with a ground fault trip element, the latter must be deactivated by using Ground Fault Defeat Cable Catalog #TGFD as shown in Fig. 27 below. If this defeat cable is not available, the breaker can be tested by connecting two poles in series.



**Fig. 27 — Cabling diagram with Ground Fault Defeat Cable inserted between breaker harness and SST Programmer Unit — for use during single-phase, high current — low voltage testing.**



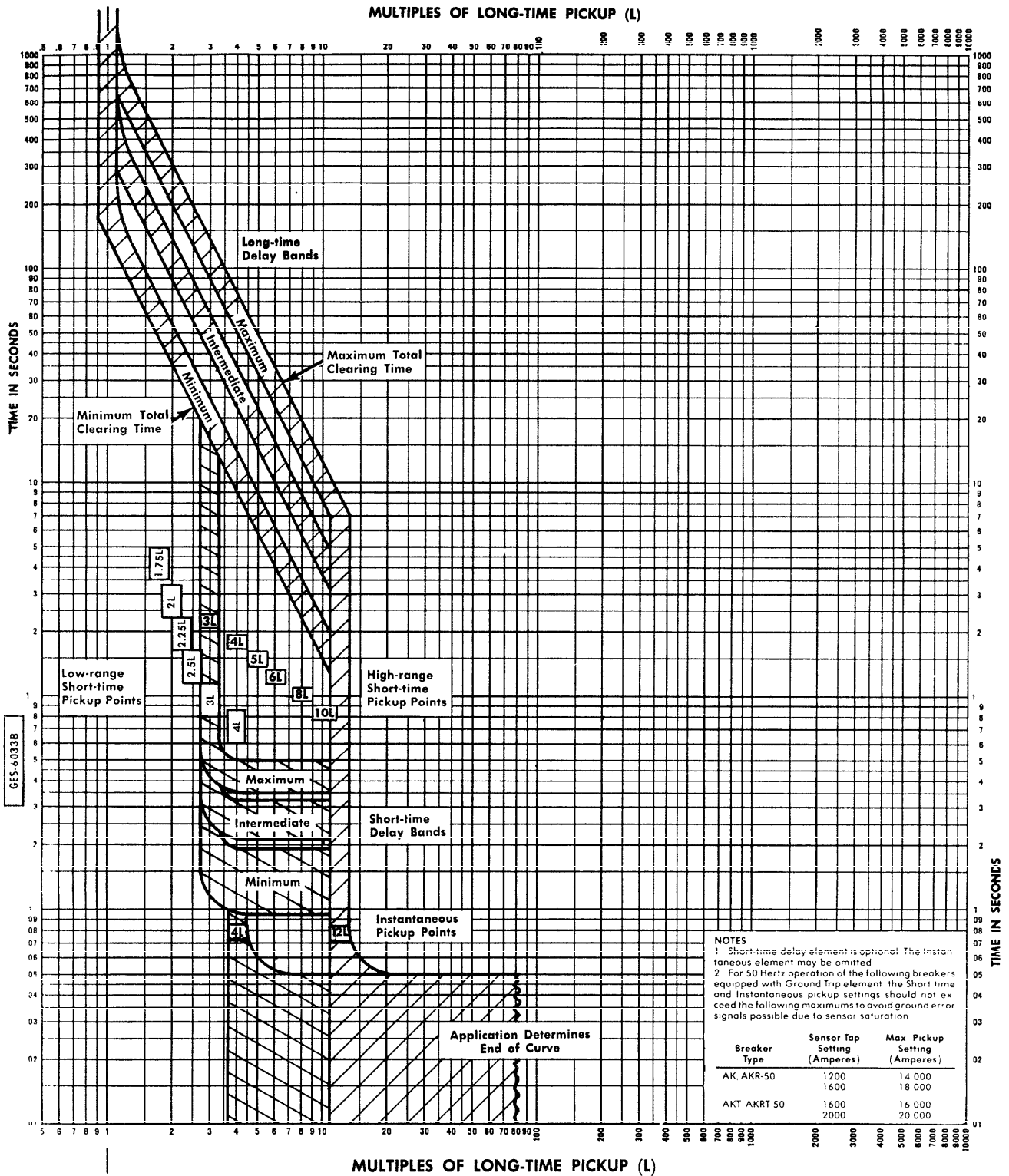
**TABLE 6 — TRIP CHARACTERISTICS — SST CONVERSION KITS**

Applicable time-current Curves: GES-6033B, 6034A, 6035B

| Breaker Frame Type | Frame Size (Amperes) | Sensor Taps (X) (Amperes)                        | SST Programmer Adjustment Range (Set Points) |                      |                            |                      |                              |                      |                                      |                    |                 |                   |                  |              |                  |                             |                                |                                |
|--------------------|----------------------|--|--|----------------------|----------------------------|----------------------|------------------------------|----------------------|--------------------------------------|--------------------|-----------------|-------------------|------------------|--------------|------------------|-----------------------------|--------------------------------|--------------------------------|
|                    |                      |  | Ground Fault                                 |                      | Long Time                  |                      | Short Time                   |                      | Instantaneous Pickup (Multiple of L) |                    |                 |                   |                  |              |                  |                             |                                |                                |
|                    |                      |  | Pickup (Multiple of X)                       | Delay Band (Seconds) | Pickup (L) (Multiple of X) | Delay Band (Seconds) | Pickup (Multiple of L)       | Delay Band (Seconds) |                                      |                    |                 |                   |                  |              |                  |                             |                                |                                |
| AK-15              | 225                  | 70, 100, 150, 225                                | .5, .6, .8, 1, 1.5, 2 (X)                    | Maximum<br>0.30      | .6, .7, .8, .9, 1, 1.1 (X) | Maximum<br>22        | 1.75, 2, 2.25, 2.5, 3, 4 (L) | Maximum<br>0.35      | 4, 5, 6, 8, 10, 12 (L)               |                    |                 |                   |                  |              |                  |                             |                                |                                |
| AK-25              | 600                  | 70, 100, 150, 225<br>or<br>200, 300, 400, 600    |  |                      |                            |                      |                              |                      |                                      | Intermed.<br>0.165 | Intermed.<br>10 | Intermed.<br>0.21 |                  |              |                  |                             |                                |                                |
| AK-50              | 1600                 | 300, 400, 600, 800<br>or<br>600, 800, 1200, 1600 |  |                      |                            |                      |                              |                      |                                      |                    |                 |                   | Minimum<br>0.065 | Minimum<br>4 | Minimum<br>0.095 |                             |                                |                                |
| AKT-50             | 2000                 | 800, 1200, 1600, 2000                            |  |                      |                            |                      |                              |                      |                                      |                    |                 |                   |                  |              |                  | .2, .25, .3, .4, .5, .6 (X) | .2, .22, .25, .3, .35, .37 (X) | .18, .2, .22, .25, .27, .3 (X) |
| AK-75              | 3000                 | 1200, 1600, 2000, 3000                           |  |                      |                            |                      |                              |                      |                                      |                    |                 |                   |                  |              |                  |                             |                                |                                |
| AK-100             | 4000                 | 1600, 2000, 3000, 4000                           |  |                      |                            |                      |                              |                      |                                      |                    |                 |                   |                  |              |                  |                             |                                |                                |
| NOTES              | ①                    | ②  | ④  | ②                    | ③                          | ②                    | ④                            | ②                    |                                      |                    |                 |                   |                  |              |                  |                             |                                |                                |

- ① x = Sensor ampere tap = trip rating
- ② Pickup tolerance = ± 10%

- ③ Time delay at lower limit of band @ 6L
- ④ Time delay at lower limit of band



**NOTES**

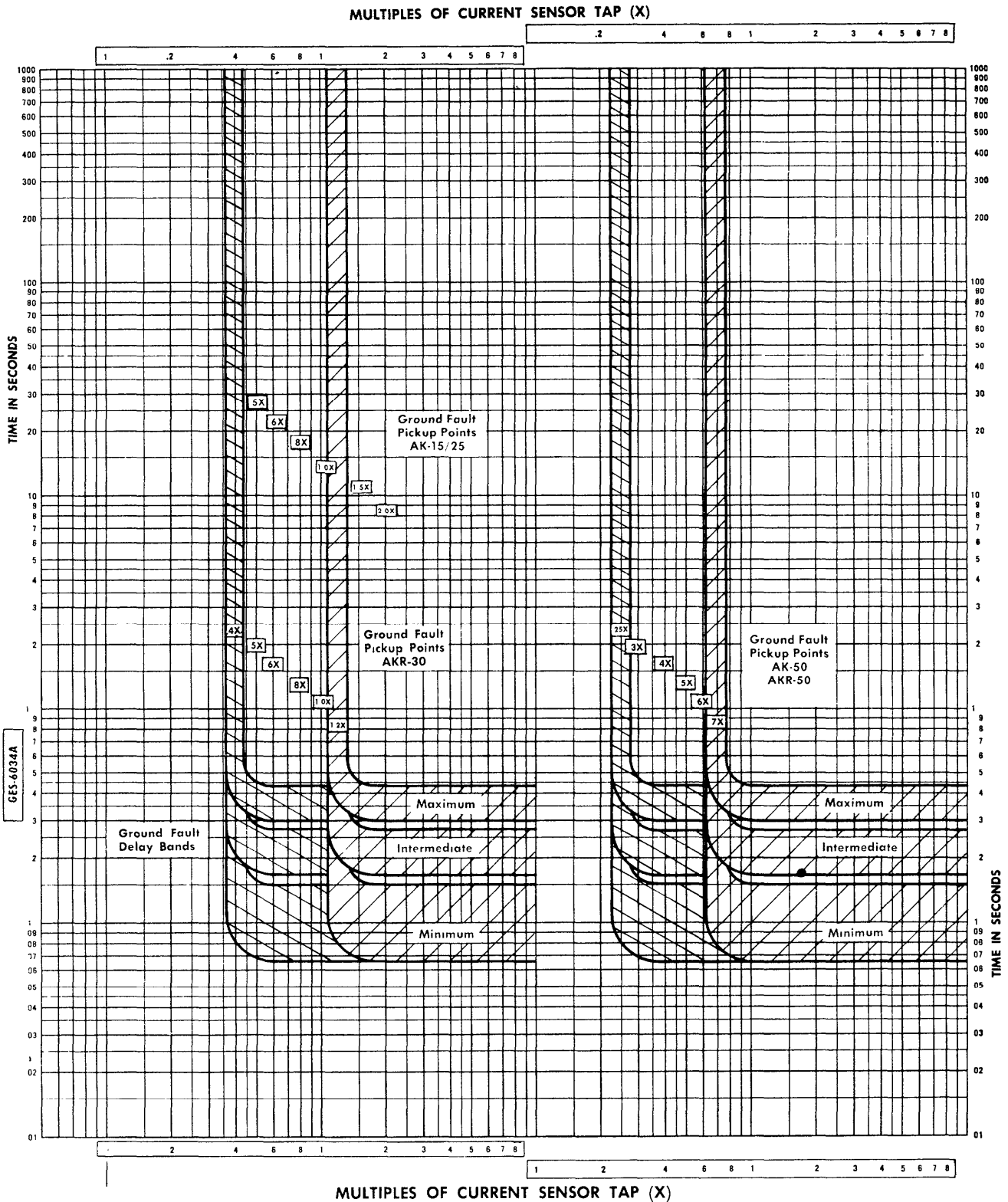
- Short-time delay element is optional. The instantaneous element may be omitted.
- For 50 Hertz operation of the following breakers equipped with Ground Trip element, the Short-time and Instantaneous pickup settings should not exceed the following maximums to avoid ground error signals possible due to sensor saturation.

| Breaker Type | Sensor Tap Setting (Amperes) | Max Pickup Setting (Amperes) |
|--------------|------------------------------|------------------------------|
| AK, AKR-50   | 1200                         | 14 000                       |
|              | 1600                         | 18 000                       |
| AKT, AKRT 50 | 1600                         | 16 000                       |
|              | 2000                         | 20 000                       |

|   |   |   |       |                |       |                                   |        |                                    |           |                                      |             |                    |       |                     |        |                     |            |                     |
|---|---|---|-------|----------------|-------|-----------------------------------|--------|------------------------------------|-----------|--------------------------------------|-------------|--------------------|-------|---------------------|--------|---------------------|------------|---------------------|
|   | <b>AK/AKR LOW-VOLTAGE POWER CIRCUIT BREAKERS</b><br><b>SST™</b> SOLID-STATE OVERCURRENT TRIP DEVICE | <b>GES-6033B</b><br>Programmer Set Points |       |                |       |                                   |        |                                    |           |                                      |             |                    |       |                     |        |                     |            |                     |
| <p><b>X = Current Sensor Taps (Amperes)</b></p> <table border="0" style="width: 100%;"> <tr> <td>AK 15</td> <td>70 100 150 225</td> </tr> <tr> <td>AK 25</td> <td>70 100 150 225 or 200 300 400 600</td> </tr> <tr> <td>AKR 30</td> <td>100 150 225 300 or 300 400 600 800</td> </tr> <tr> <td>AK AKR-50</td> <td>300 400 600 800 or 600 800 1200 1600</td> </tr> <tr> <td>AKT AKRT 50</td> <td>800 1200 1600 2000</td> </tr> <tr> <td>AK-75</td> <td>1200 1600 2000 3000</td> </tr> <tr> <td>AKR 75</td> <td>1200 1600 2000 3200</td> </tr> <tr> <td>AK AKR 100</td> <td>1600 2000 3000 4000</td> </tr> </table> |   |   | AK 15 | 70 100 150 225 | AK 25 | 70 100 150 225 or 200 300 400 600 | AKR 30 | 100 150 225 300 or 300 400 600 800 | AK AKR-50 | 300 400 600 800 or 600 800 1200 1600 | AKT AKRT 50 | 800 1200 1600 2000 | AK-75 | 1200 1600 2000 3000 | AKR 75 | 1200 1600 2000 3200 | AK AKR 100 | 1600 2000 3000 4000 |
| AK 15   | 70 100 150 225  |   |       |                |       |                                   |        |                                    |           |                                      |             |                    |       |                     |        |                     |            |                     |
| AK 25   | 70 100 150 225 or 200 300 400 600   |   |       |                |       |                                   |        |                                    |           |                                      |             |                    |       |                     |        |                     |            |                     |
| AKR 30  | 100 150 225 300 or 300 400 600 800  |   |       |                |       |                                   |        |                                    |           |                                      |             |                    |       |                     |        |                     |            |                     |
| AK AKR-50   | 300 400 600 800 or 600 800 1200 1600  |   |       |                |       |                                   |        |                                    |           |                                      |             |                    |       |                     |        |                     |            |                     |
| AKT AKRT 50   | 800 1200 1600 2000  |   |       |                |       |                                   |        |                                    |           |                                      |             |                    |       |                     |        |                     |            |                     |
| AK-75   | 1200 1600 2000 3000   |   |       |                |       |                                   |        |                                    |           |                                      |             |                    |       |                     |        |                     |            |                     |
| AKR 75  | 1200 1600 2000 3200   |   |       |                |       |                                   |        |                                    |           |                                      |             |                    |       |                     |        |                     |            |                     |
| AK AKR 100  | 1600 2000 3000 4000   |   |       |                |       |                                   |        |                                    |           |                                      |             |                    |       |                     |        |                     |            |                     |
| <p><b>Long-time-delay, Short-time-delay and Instantaneous Time-current Curves</b></p> <p>Curves apply at 50/60 Hertz<br/>From -20C to +70C Programmer Ambient</p>   |   |   |       |                |       |                                   |        |                                    |           |                                      |             |                    |       |                     |        |                     |            |                     |
| <p><b>PICKUP</b><br/>                 Long-time 6 7 8 9 10 8 11 multiples of current sensor tap setting (X) (Settings higher than 100% of the frame size do not increase the continuous current rating).<br/>                 Short-time 1.75 2 2.25 2.5 3 &amp; 4 or 3 4 5 6 8 &amp; 10 multiples of Long-time pickup setting (L) For 50 Hz operation see Note 2.<br/>                 Instantaneous 4 5 6 8 10 &amp; 12 multiples of Long-time pickup setting (L) For 50 Hz operation see Note 2.<br/> <b>TIME DELAY BANDS</b><br/>                 Long-time and Short-time Max Int &amp; Min</p>              |   |   |       |                |       |                                   |        |                                    |           |                                      |             |                    |       |                     |        |                     |            |                     |

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NOTE 4th wire Ground sensor tap must be set same as phase sensor tap

|  |   |  |
|--|---|--|
| <b>GENERAL ELECTRIC</b><br>Current Sensor Taps (Amperes)<br>AK 15    70 100 150 225<br>AK 25    70 100 150 225 or 200 300 400 600<br>AKR 30    100, 150 225, 300 or 300 400 600, 800<br>AK AKR 50    300 400, 600 800 or 600, 800 1200, 1600 | TYPE AKR LOW-VOLTAGE POWER CIRCUIT BREAKERS<br><b>SST™</b> SOLID-STATE OVERCURRENT TRIP DEVICE<br>Ground Trip Time-current Curves | <b>GES-6034A</b><br>Programmer Set Points<br>Ground Fault Pickup:<br>AK 15/25    5x, 6x, 8x, 10x, 15x, & 20x<br>AKR 30    4x, 5x, 6x, 8x, 10x, & 12x<br>AK AKR 50    25x, 3x, 4x, 5x, 6x, & 7x<br>Where X = sensor tap setting<br>Ground Fault Delay Bands:<br>Maximum, Intermediate & Minimum |
|  | Curves apply at 50/60 Hertz<br>From - 20C to + 70C Programmer Ambient   |  |

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