

REPLACING AN SE-125 WITH AN SE-135 GROUND-FAULT GROUND-CHECK MONITOR

The SE-135 Ground-Fault Ground-Check Monitor replaces SE-125 GF-GC Monitors. Improvements include maximum trailing-cable length, ground-fault filtering techniques, ground-check-trip diagnostics, control-voltage range, and set-point ranges. See Technical Note GC-05 Ground-Fault Ground-Check Comparison Sheet.

Table 1: Features Comparison

| CHARACTERISTICS | SE-135 | SE-125 | SE-125DC | SE-125XA |
|--------------------------------------|------------------------------|--------------------|--------------------|--------------------|
| Micro-processor-based | Yes | No | No | No |
| Control Voltage | 60 - 265 Vac 80 - 370 Vdc | 120 Vac or 240 Vac | 120 Vac or 240 Vac | 120 Vac or 240 Vac |
| Face-Plate and Remote Reset | Yes | Yes | Yes | Yes |
| Dimensions: H x W x D (mm) | 226 x 114 x 152 [†] | 216 x 146 x 104 | 216 x 146 x 104 | 216 x 146 x 104 |
| GF Harmonic Filter | Yes | No | No | No |
| GF Current Sensor | SE-CS10-series | CT200-series | CT200-series | CT200-series |
| GF Pickup (A) | 0.5, 0.75, 1.0, 1.5...12.5 | 0.5, 2.0, 4.0 | 0.5, 2.0, 4.0 | 0.5, 2.0, 4.0 |
| GF-Trip-Time Range (s) | 0.1 - 2.5 | 0.1 - 2.0 | 0.1 - 2.0 | 0.1 - 2.0 |
| GC Termination Assembly | SE-TA12A | SE-TA12A* | SE-TA12A* | SE-TA12A* |
| GC Nominal Voltage | 30 Vdc | 24 Vdc | 24 Vdc | 24 Vdc |
| GC Induced-ac Withstand (continuous) | 60 Vac | 25 Vac | 25 Vac | 25 Vac |
| GC Self-Test Function | Yes | No | No | No |
| GC Trip Mode | Latching/Non-Latching | Non-Latching | Non-Latching | Latching |
| GC Fuse Protection | 1.5 A | 0.5 A | 0.5 A | 0.5 A |
| Trip Contact Ratin (nominal) | 8 A, 250 Vac | 4 A, 240 Vac | 3 A, 150 Vac | 4 A, 240 Vac |

[†] SE-135 surface-mount dimensions.

* Prior to 1995, SE-125 monitors were supplied with SE-TA12 Termination Assemblies. These monitors are compatible with the SE-TA12A

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Monitor Installation

Refer to SE-125 and SE-135 manuals. Table 2 shows SE-125 and SE-135 terminal equivalents. Figure 1 shows SE-125 and surface-mount SE 135 dimensions and wiring connections. Differences in terminal locations may require longer conductors. Note the larger SE 135 depth dimension (D) from Table 1. SE-125 and SE-135 monitors have remote-indication contacts and reset connections, and the SE-135 can be panel mounted so that face-plate indication is visible and controls are accessible. The SE-135 ground-check fuse is located on the bottom of the relay and requires 29 mm (1.13") clearance below the surface-mount adapter for fuse access. Where tolerances are close, a surface-mounted SE 135 can be easily disconnected from the surface-mount adapter if it is necessary to replace a ground-check fuse. For SE-125XA-type latching ground-check trips, connect SE-135 terminals 14 and 15. For trip-relay shunt-trip (SH) operating mode, connect SE-135 terminals 12 and 13.

Table 2: Terminal Equivalents

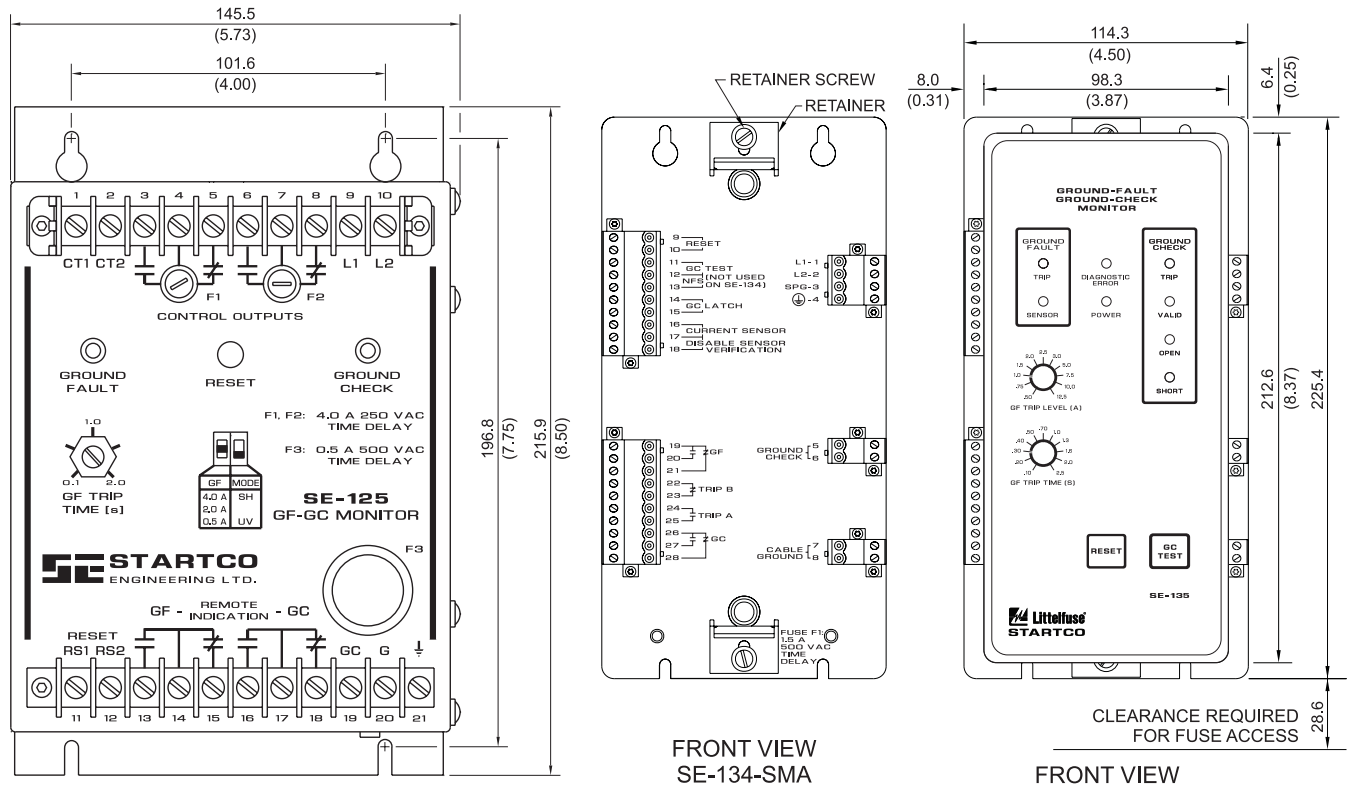
| CONNECTION TERMINAL | SE-125 | SE-135 |
|---------------------|-------------------|----------------|
| CT Inputs | 1, 2 | 16, 17 |
| Trip Contacts | 3, 4, 5, 6, 7, 8* | 22, 23, 24, 25 |
| Control - L1, L2 | 9, 10 | 1, 2 |
| Reset | 11, 12** | 9, 10** |
| GF Indication | 13, 14, 15 | 20, 19, 21 |
| GC Indication | 16, 17, 18 | 27, 26, 28 |
| Cable GC | 19 | 5, 6 |
| Cable G | 20 | 7, 8 |
| Case Gnd | 21 | 4 |
| SPG | n/a | 3 |
| NFS | n/a | 12, 13 |
| GC Test | n/a | 11, 12 |
| GC Latch | n/a | 14, 15 |
| Sensor Verify | n/a | 18 |

*An SE-125 has two Form-C trip contacts that operate simultaneously according to the face-plate Mode switch. An SE-135 has isolated N.O. and N.C. trip contacts that operate according to the connection of terminals 12 and 13. Consult the application wiring schematic.

** CAUTION: SE-125 Remote-Reset input is rated 24-120 Vac/Vdc. SE-135 Remote-Reset input is DRY CONTACT ONLY.

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Figure 1: SE-125 and SE-135 Outline and Surface-Mounting Details



Termination Assembly:

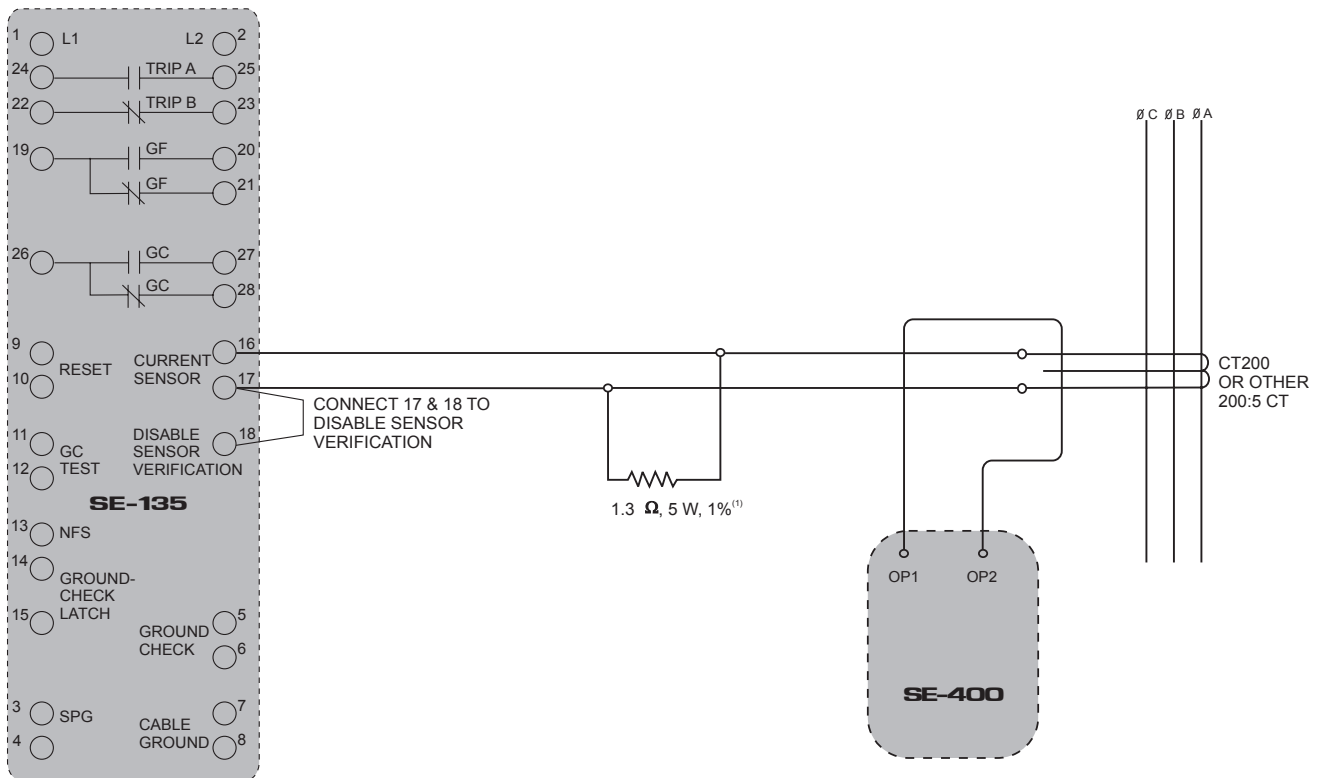
Both SE-125 and SE-135 Ground-Fault Ground-Check Monitors use the SE-TA12A Termination Assembly. Prior to 1995, SE-125's used an SE-TA12 Termination Assembly. These older relays are compatible with the upgraded SE-TA12A; replace SE-TA12's when changing to an SE-135. Mounting dimensions of the two assemblies are identical.

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Current Transformer:

For ground-fault current measurement, SE-125's use a CT200-series current transformer and SE-135's use an SE-CS10-series current sensor. Most SE-125 replacements should include replacing the CT200 with an SE-CS10. However, for those applications in which CT-replacement is difficult, an externally-mounted 1.3-ohm 5-W shunt resistor¹ can be installed across the SE-135 current-sensor input to scale the CT200 output. Disable the sensor-failure detection circuit by connecting terminals 17 and 18. See Fig. 2. When this adaptation is used, confirm proper SE-135 ground-fault operation by testing with CT-primary current injection. An SE-400 Ground-Fault-Relay Tester can be used as the current source, as shown.

Figure 2: SE-135 Using a CT200



¹ Littelfuse Startco Part Number RWW013G5000JA