



TECHNICAL INFORMATION

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

The SE-135 Ground-Fault Ground-Check Monitor was designed to replace the older-technology 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 Information 6.1 Startco Ground-Fault Ground-Check Comparison Sheet.

Table 1: Features Comparison

	Micro-processor-based	Control Voltage	Face-Plate and Remote Reset	Mounting: Surface/Panel	Dimensions: H x W x D (mm)	GF Harmonic Filter	GF Current Sensor	GF Pickup (A)
SE-135	Yes	60 - 265 Vac 80 - 370 Vdc	Yes	Yes/Yes	226 x 114 x 152 [†]	Yes	SE-CS10-series	.5, .75, 1, 1.5...12.5
SE-125	No	120 Vac or 240 Vac	Yes	Yes/No	216 x 146 x 104	No	CT200-series	0.5, 2, 4
SE-125DC	No	120 Vac or 240 Vac	Yes	Yes/No	216 x 146 x 104	No	CT200-series	0.5, 2, 4
SE-125XA	No	120 Vac or 240 Vac	Yes	Yes/No	216 x 146 x 104	No	CT200-series	0.5, 2, 4

Continued

	GF-Trip-Time Range (s)	GC Termination Assembly	GC Nominal Voltage	GC Induced-ac Withstand (continuous)	GC Self-Test Function	GC Trip Mode	GC Fuse Protection	Trip Contact Rating (nominal)
SE-135	0.1 – 2.5	SE-TA12A	30 Vdc	60 Vac	Yes	Latching / Non-Latching	1.5 A	8 A, 250 Vac
SE-125	0.1 - 2	SE-TA12A*	24 Vdc	25 Vac	No	Non-Latching	0.5 A	4 A, 240 Vac
SE-125DC	0.1 - 2	SE-TA12A*	24 Vdc	25 Vac	No	Non-Latching	0.5 A	3 A, 150 Vdc
SE-125XA	0.1 - 2	SE-TA12A*	24 Vdc	25 Vac	No	Latching	0.5 A	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.

DATE	REV	AUTHOR	DOCUMENT LOCATION	PAGE
2008-May-26	1	MS	http://www.startco.ca/library/techinfo/section6/6.4.pdf	1 of 4



TECHNICAL INFORMATION

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

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

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

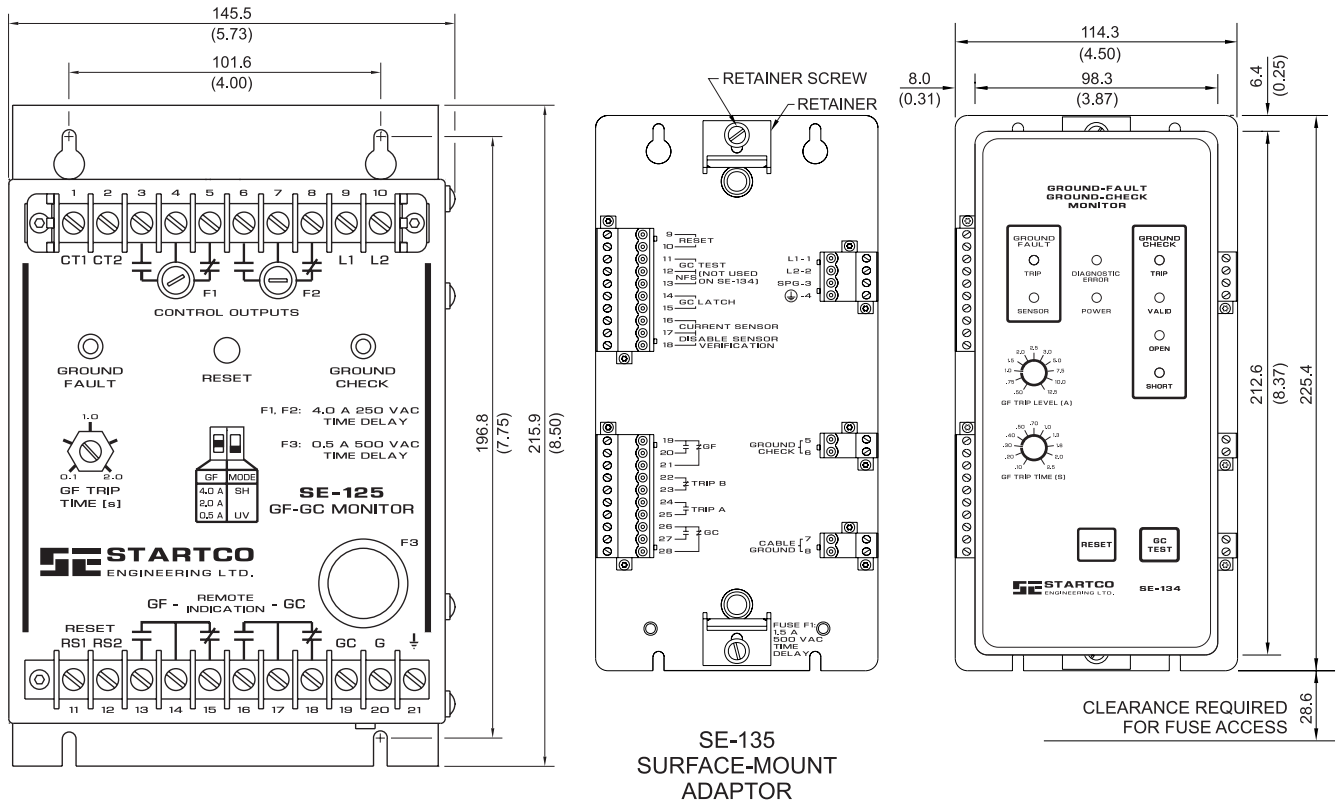
DATE	REV	AUTHOR	DOCUMENT LOCATION	PAGE
2008-May-26	1	MS	http://www.startco.ca/library/techinfo/section6/6.4.pdf	2 of 4



6.4 TECHNICAL INFORMATION

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

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.

DATE	REV	AUTHOR	DOCUMENT LOCATION	PAGE
2008-May-26	1	MS	http://www.startco.ca/library/techinfo/section6/6.4.pdf	3 of 4

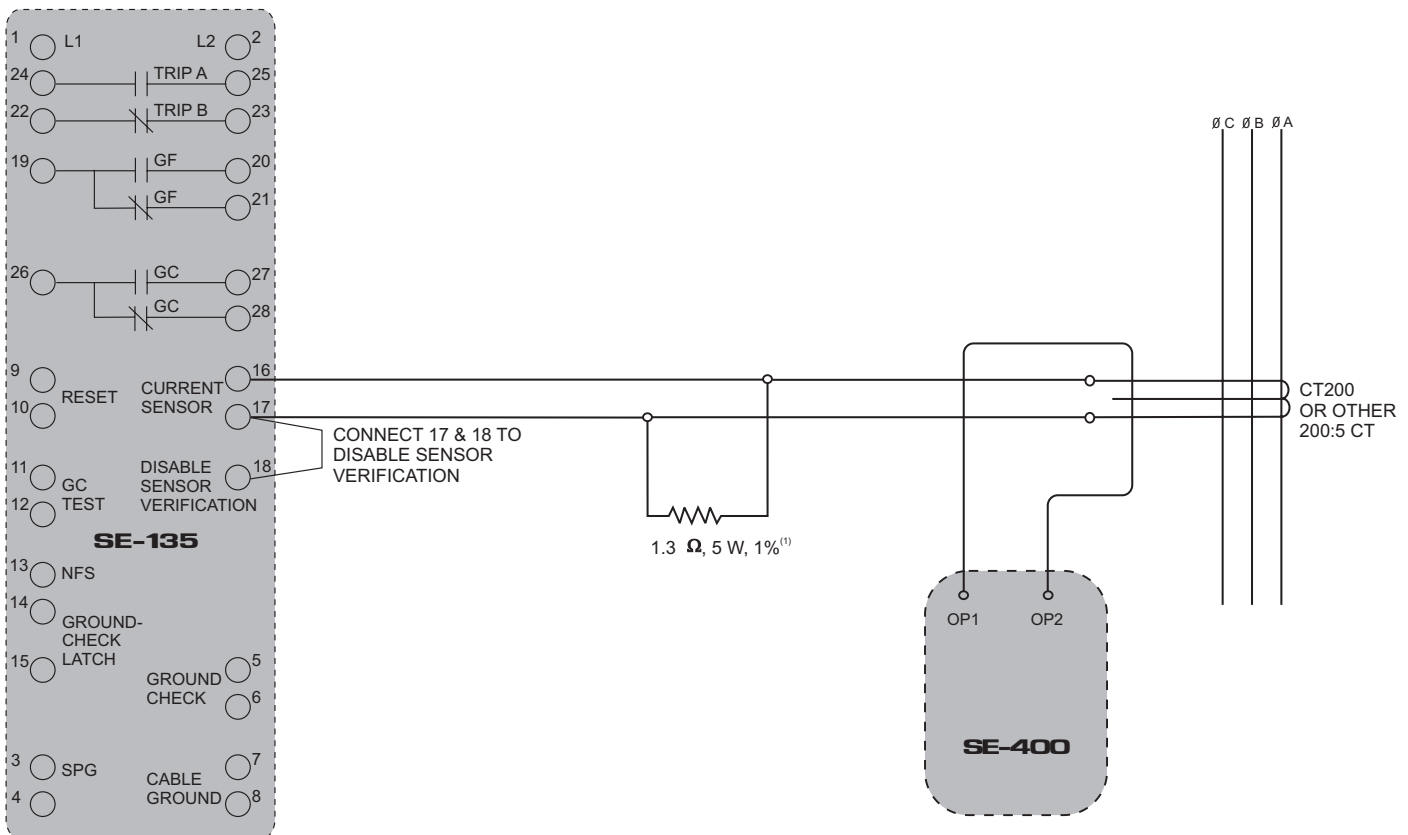


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Current Transformer:

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 resistor⁽¹⁾ 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



Note 1: Startco part number RWW013G5000JA

DATE	REV	AUTHOR	DOCUMENT LOCATION	PAGE
2008-May-26	1	MS	http://www.startco.ca/library/techinfo/section6/6.4.pdf	4 of 4