

**Digital Filter**  
for harmonic  
rejection

Uses SE-TA6A, 6-Volt  
Termination Assembly

Manuals and additional  
information available at  
**www.startco.ca**

## SE-134

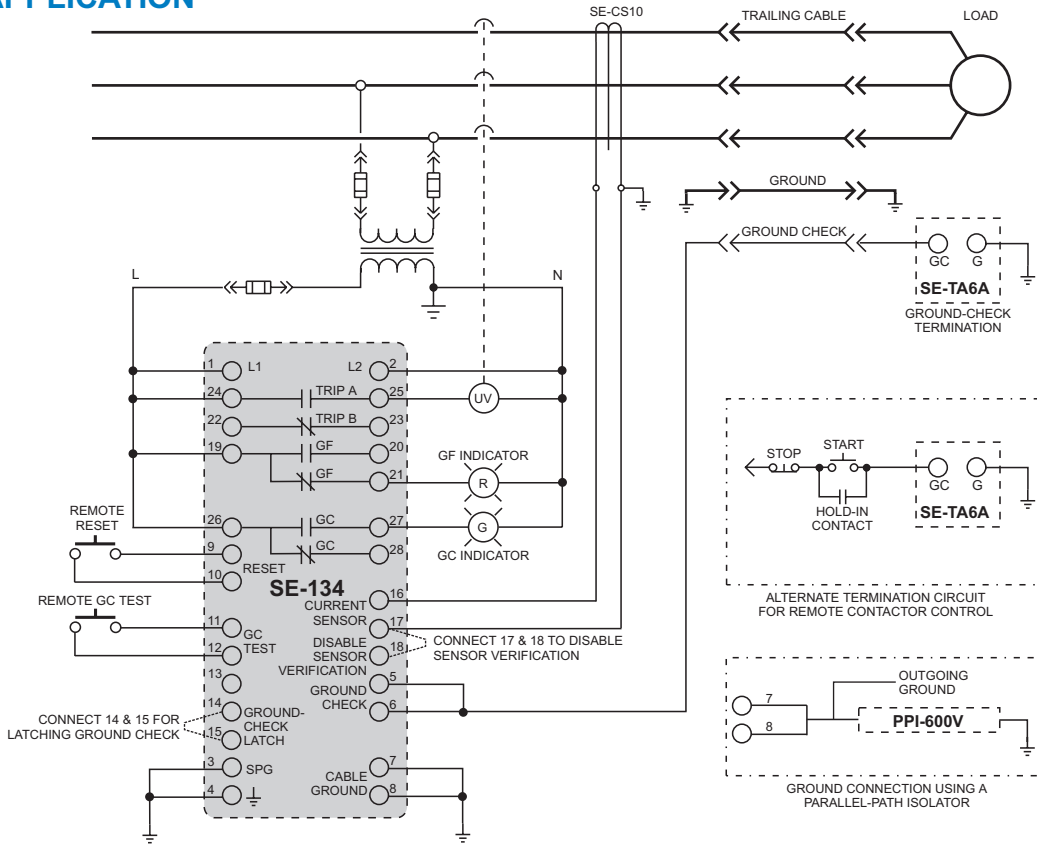
### GROUND-FAULT GROUND-CHECK MONITOR

The SE-134 is a microprocessor-based, combination ground-fault and ground-check monitor for resistance-grounded systems. It has a switching power supply that accepts a wide range of ac and dc voltages, its specifications apply over an industrial temperature range at high humidity, and it meets the IEEE surge-withstand-capability tests (oscillatory and fast transient) for protective relays and relay systems. All operating conditions are clearly indicated and two Form C contacts are provided for remote indication. Isolated, normally open and normally closed contacts are provided for contactor control or for undervoltage operation in a breaker-trip circuit.

The ground-fault circuit detects fundamental-frequency, zero-sequence current with a window-type current sensor and it verifies that the current sensor is connected and not shorted. A definite-time characteristic with 11 trip levels and 11 trip times allows coordination in virtually any resistance-grounded system. A ground-fault trip is latched.

The ground-check circuit has an output drive current above 100 mA for optimum performance in slip-ring, commutated-load, and high-induced-ac applications. Features include an externally accessible ground-check fuse, a resistance-insertion test, 3-kV isolation between the ground-check loop and the monitor electronics, and a PPI-600V accessory for parallel-ground-path rejection.

## TYPICAL APPLICATION



## TECHNICAL SPECIFICATIONS

### Supply:

60 to 265 Vac, 47 to 440 Hz, 25 VA  
80 to 370 Vdc, 15 W

### Monitor Dimensions (Panel Mount):

Height . . . . . 213 mm (8.4")  
Width . . . . . 99 mm (3.9")  
Depth:  
Behind Panel . . . . . 145 mm (5.7")  
In Front of Panel . . . . . 16 mm (0.7")

### Ground-Fault Circuit:

Digital Filter . . . . . 50 to 60 Hz, Bandpass  
Trip-Level Settings . . . . . 0.5, 0.75, 1.0, 1.5, 2.0, 2.5, 3.0, 5.0, 7.5, 10.0, and 12.5 A  
Trip-Time Settings . . . . . Inst., 0.2, 0.3, 0.4, 0.5, 0.7, 1.0, 1.3, 1.6, 2.0, and 2.5 s  
Thermal Withstand . . . . . 150 A Continuous, 1000 A for 2.5 s (Ground-Fault Current)  
Trip-Level Accuracy . . . . .  $\pm 5\%$  or 0.1 A  
Trip-Time Accuracy . . . . . +50, -15 ms  
Sensor Verification . . . . . Enabled or Disabled  
Operating Mode . . . . . Latching

### Ground-Check Circuit:

Open-Circuit Voltage . . . . . 24 Vdc  
Output Impedance . . . . . 136  $\Omega$   
Loop Current . . . . . 105 mA  
Induced ac Withstand . . . . . 60 Vac Continuous, 120 Vac for 10 s, 250 Vac for 0.25 s  
Pull-In Time . . . . .  $\leq 750$  ms  
Trip Time @ 50  $\Omega$  . . . . . 220  $\pm$  30 ms  
GC-Loop Trip Resistance . . . . . 28  $\Omega \pm 10\%$   
Isolation . . . . . 3 kV, 60 Hz, 1 s  
Test . . . . . Front-Panel Switch and Remote, N.O. Contact  
Fuse Rating (F1) . . . . . 1.5 A, 500 Vac, Time Delay  
Fuse Part Number . . . . . FNQ 1½ Buss Fusetron  
Operating Mode . . . . . Latching or Non-Latching

### Trip Relay:

CSA/UL Contact Rating . . . . . 8 A Resistive 250 Vac  
Supplemental Contact Ratings:  
Make/Carry (0.2 s) . . . . . 30 A  
Break dc . . . . . 75 W Resistive, 35 W Inductive (L/R < 0.04)  
Break ac . . . . . 2000 VA Resistive, 1500 VA Inductive (PF > 0.4)  
Subject to maximums of 8 A and 250 V (ac or dc)  
Contact Configuration . . . . . Isolated N.O. and N.C. Contacts  
Operating Mode . . . . . Fail-Safe

### Remote-Indication Relays:

CSA/UL Contact Rating . . . . . 8 A Resistive 250 Vac  
Supplemental Contact Ratings:  
Make/Carry (0.2 s) . . . . . 20 A  
Break dc . . . . . 50 W Resistive, 25 W Inductive (L/R < 0.04)  
Break ac . . . . . 2000 VA Resistive, 1500 VA Inductive (PF > 0.4)  
Subject to maximums of 8 A and 250 V (ac or dc)  
Contact Configuration . . . . . Form C  
Operating Mode . . . . . Fail-Safe

### Environment:

Operating Temperature . . . . . -40°C to 60°C  
Storage Temperature . . . . . -55°C to 80°C  
Humidity . . . . . 85% Non-Condensing

Surge Withstand . . . . . ANSI/IEEE 37.90.1-1989 (Oscillatory and Fast Transient)

## ORDERING INFORMATION

SE-134 . . . . . GF-GC Monitor c/w SE-134-SMA  
SE-TA6A . . . . . Termination Assembly  
SE-CS10-4 . . . . . Current Sensor, 108 mm (4.2") Window  
SE-CS10-6 . . . . . Current Sensor, 160 mm (6.3") Window  
SE-CS10-8 . . . . . Current Sensor, 209 mm (8.2") Window  
PPI-600V . . . . . Parallel-Path Isolator

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Printed in Canada.  
Publication: SE-134-D  
Revised: 20010814



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