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## SE-325

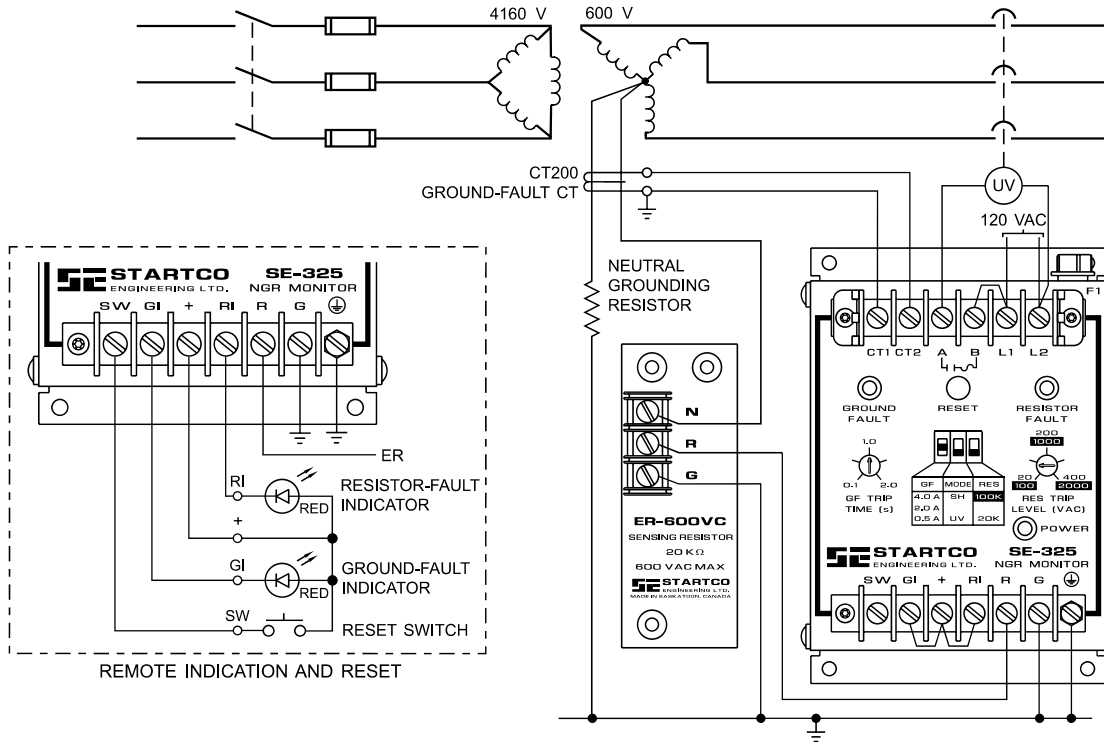
### NEUTRAL-GROUNDING-RESISTOR MONITOR

The SE-325 is a neutral-grounding-resistor (NGR) monitor for resistance-grounded systems up to 25 kVac. It measures current in a transformer or generator neutral, neutral-to-ground voltage, and continuity of the NGR. The SE-325 coordinates these three measurements to detect a failed NGR or a ground fault and provides one output contact for shunt or undervoltage operation in a main-breaker trip circuit. Trips are latched and indicated by LED's.

Ground-fault current is sensed by a CT200 window-type current transformer. Either CT input can be grounded to meet electrical codes. A trip level of 0.5, 2.0, or 4.0 A is switch selectable for use with a 5-, 15-, or 25-A grounding resistor. Trip time is adjustable from 0.1 to 2.0 seconds.

Neutral-to-ground voltage and continuity of the NGR are continuously measured through an ER-series external sensing resistor connected to the neutral. A resistor fault will be detected if ground-fault current is not detected and neutral-to-ground voltage exceeds the trip-level setting, or if NGR resistance exceeds the trip resistance. A resistor-fault hold-off circuit prevents nuisance trips in alarm-only systems.

# TYPICAL APPLICATION



# TECHNICAL SPECIFICATIONS

Supply:  
 ac . . . . . 120 or 240 Vac (+10, -50%), 50/60 Hz, 10 VA  
 ac/dc . . . . . 120 Vdc (+40, -8%), 5 W or  
 120 Vac (+10, -29%), 47 to 440 Hz, 5 VA

Ground-Fault Circuit:  
 CT Ratio . . . . . 200:5  
 CT Input Burden . . . . . 0.02 Ω  
 Trip Level\* . . . . . 0.5, 2.0, or 4.0 A  
 Frequency Response . . . . . 25 to 400 HZ, 25 to 110 Hz with Option H  
 Trip Time . . . . . 0.1 to 2.0 s, 0.1 to 5.0 s with Option T  
 Thermal Withstand\* . . . . . 200 A Continuous, 2,500 A for 2 s  
 Trip-Level Accuracy . . . . . +10, -20%  
 Trip-Time Accuracy . . . . . 10%  
 Operating Mode . . . . . Latching, Non-Latching with Option N

\* Currents referred to primary of CT200 for prospective ground-fault currents less than 4,000 A.

Resistor-Fault Circuit:  
 Neutral-To-Ground  
 Trip Voltage (V<sub>N</sub>) . . . . . 20 to 2,000 Vac Adjustable  
 Trip Resistance, V<sub>N</sub> = 0  
 ER-600VC or ER-5KV . . . . . 2 kΩ  
 ER-15KV or ER-25KV . . . . . 6 kΩ, 50 kΩ with Option S  
 Trip-Resistance Accuracy . . . . . +5, -2% of Sensing Resistor Resistance  
 Trip Time . . . . . 5 ± 0.5 s, 20 ± 3 s with Option S  
 Operating Mode . . . . . Latching, Non-Latching with Option N

Output Relay:  
 CSA/UL Contact Rating . . . . . 1mA to 4 A Resistive, 240 Vac or 28 Vdc  
 Supplemental Contact ratings:  
 Make/carry 0.2 s . . . . . 10 A  
 Carry continuous . . . . . 4 A  
 Break:  
 dc . . . . . 20 W resistive, 10 W inductive (L/R = 0.04 s)  
 ac . . . . . 960 VA resistive, 700 VA inductive (PF = 0.4)  
 Subject to maximums of 4.0 A and 240 V (ac or dc)  
 Contact Configuration . . . . . N.O. (Form A)  
 Fuse Rating (F1) . . . . . 4.0 A, 250 Vac, Time Delay  
 Fuse Part Number . . . . . Bussman MSL-4 or Littelfuse 313.004  
 Operating Mode . . . . . UV (Fail-Safe) or SH (Non-Fail-Safe)

Remote Indication:  
 + . . . . . 12 Vdc  
 GI/RI . . . . . Current Sink, 560 Ω Internal

Specifications are subject to change without notice. Startco Engineering Ltd. is not liable for contingent or consequential damages, or for expenses sustained as a result of incorrect application, incorrect adjustment, or a malfunction.

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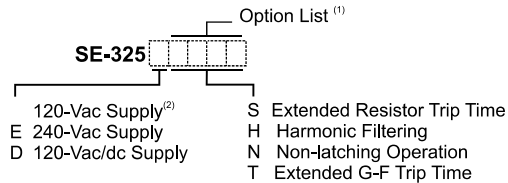
Dimensions  
 Height . . . . . 150 mm (5.9")  
 Width . . . . . 109 mm (4.3")  
 Depth . . . . . 100 mm (4.0")

Shipping Weight . . . . . 1 kg (2.2 lbs)

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

PWB Conformal Coating . . . . . MIL-1-46058 qualified, UL QMJU2 recognized

# ORDERING INFORMATION



(1) List options required in order shown above.

(2) Standard, leave blank.

Ground-Fault CT:  
 CT200 . . . . . 56 mm (2.2") Window

Continuously Rated Sensing Resistors:  
 ER-600VC (20 kΩ) . . . . . For system voltages up to 1 kVac  
 ER-5KV (20 kΩ) . . . . . For system voltages up to 5 kVac  
 One-Minute-Rated Sensing Resistors:  
 ER-15KV (100 kΩ) . . . . . For system voltages up to 15 kVac  
 ER-25KV (100 kΩ) . . . . . For system voltages up to 25 kVac

Remote Indication and Reset:\*  
 RK-302 . . . . . 22-mm Component Kit  
 RK-325 . . . . . Indication-and-Reset Assembly  
 RK-325I . . . . . Indication Assembly  
 RK-13 . . . . . Relay Interface Module

\* Use only Startco remote-indication components.



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