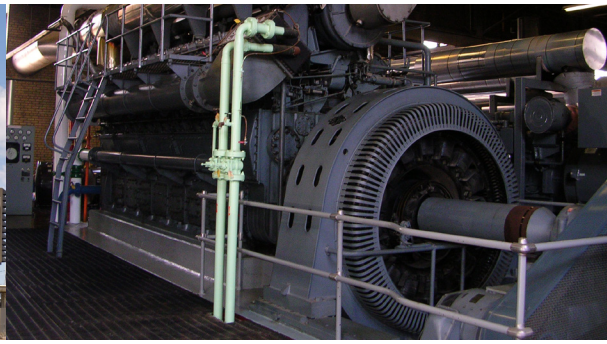
BE1-59N Ground Fault Overvoltage Relay



Overview

The BE1-59N provides accurate 100% stator-ground protection for ungrounded and high-resistance grounded generators.

Features

- Provides 100% stator ground fault protection.
- 100/120 Vac or 200/240 Vac nominal sensing input.
- Four sensitivity ranges for overvoltage: 1 to 20 and 10 to 50 Vac for a 100/120 Vac input and 2 to 40 and 20 to 100 Vac for a 200/240 Vac input.
- Four sensitivity ranges for undervoltage: 0.1 to 2.5 Vac and 0.5 to 12 Vac for a 100/120 Vac input and 0.2 to 5 Vac and 1 to 24 Vac for a 200/240 Vac input.
- Instantaneous, definite, and inverse time characteristics.
- 40 dB harmonic filtering.
- Low sensing input burden.
- Power supply status contact.

Benefits

- Limit generator damage with 100% stator ground-fault protection.
- Wide range of applications covered with four overvoltage and four undervoltage setting ranges.
- Meet protection timing requirements with instantaneous-, definite-, and inverse-time characteristics options.
- Accurate detection of fundamental and third harmonic content using 40 dB harmonic filtering.
- Minimized potential transformer (PT) costs as a result of low sensing burden.
- Reduced battery load with low burden power supply.
- Accurate, repeatable, and reliable operation.
- Simple human-machine interface (HMI) provides clear and intuitive settings for easy configuration.
- LED targets provide clear annunciation of status.
- Easily perform in-case system and device tests using test plugs.

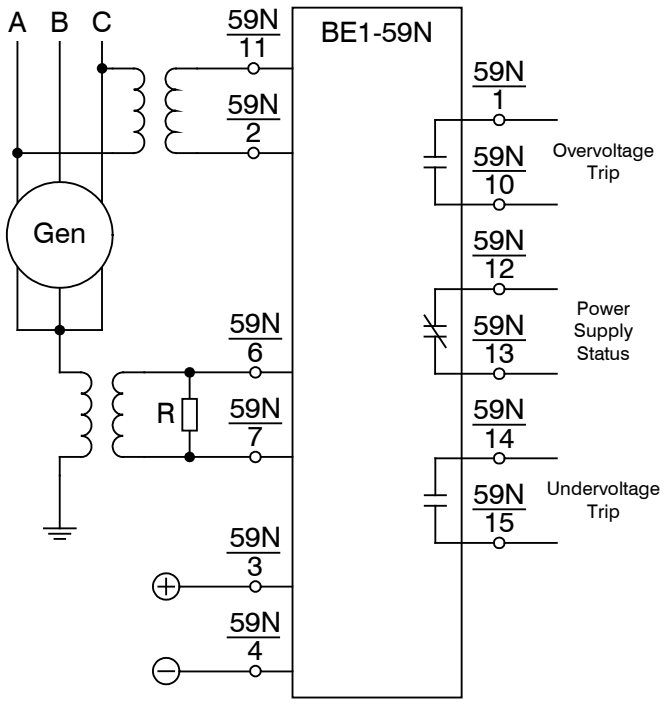


Figure 1 - BE1-59N Connection Diagram for a Typical Application (Auxiliary Contact Outputs not Shown)

BE1-59N Ground Fault Overvoltage Relay

Specifications

Power Supply (Nominal)

AXXXXJXXXXX: 125 Vdc/120 Vac (3.6 W/22.1 VA)
AXXXXKXXXXX: 48 Vdc (3.4 W)
AXXXXLXXXXX: 24 Vdc (3.5 W)
AXXXXYXXXXX: 48/125 Vdc (3.4 W/ 3.6 W)
AXXXXZXXXXX: 250 Vdc/240 Vac (3.7 W/37.6 VA)

Voltage Sensing (Single-Phase)

Maximum Continuous Voltage:
100/120 Vac Input: 360 V
200/240 Vac Input: 480 V
Burden: <2 VA per phase
Frequency: 50/60 Hz nominal

Undervoltage Sensing Input Range

High Pickup Range:
100/120 Vac Input: 0.5 to 12 Vac
200/240 Vac Input: 1.0 to 24 Vac
Low Pickup Range:
100/120 Vac Input: 0.1 to 2.5 Vac
200/240 Vac Input: 0.2 to 5.0 Vac
Pickup Accuracy:
1 to 24 Vac: ±2% or 20 mV
All Other Ranges: ±2% or 10 mV

Overvoltage Sensing Input Range

Pickup Range:
100/120 Vac Input: 1 to 20 Vac or 10 to 50 Vac
200/240 Vac Input: 2 to 40 Vac or 20 to 100 Vac
Pickup Accuracy:
100/120 Vac Input: ±2% or 100 mV
200/240 Vac Input: ±2% or 200 mV
Dropout: 98% of pickup within seven cycles

Timing Characteristics

Instantaneous: <70 ms (60 Hz relays)
<84 ms (50 Hz relays)
Definite: 0.1 to 99.9 s, ±2% accuracy
Inverse: 99 curve settings for each style

Output Contacts

Resistive:
120/240 Vac: Make, break, and carry 7 Aac continuously.
250 Vdc: Make and carry 30 Adc for 0.2 s, carry 7 Adc continuously, break 0.3 Adc.
500 Vdc: Make and carry 15 Adc for 0.2 s, carry 7 Adc continuously, break 0.3 Adc.
Inductive:
120 Vac, 125 Vdc, 250 Vdc: Break 0.3 A (L/R=0.04)

Environmental

Shock: 15 G in three perpendicular planes
Vibration: 2 G in three perpendicular planes, 10 to 500 Hz for six sweeps, 15 minutes each sweep
Surge Withstand: Qualified to IEEE C37.90.1, Standard Surge Withstand Capability (SWC) Tests for Protective Relays and Relay Systems.
Operating Temp: -40°C to 70°C (-40°F to 158°F)
Storage Temp: -65°C to 100°C (-85°F to 212°F)

Agency/Certifications

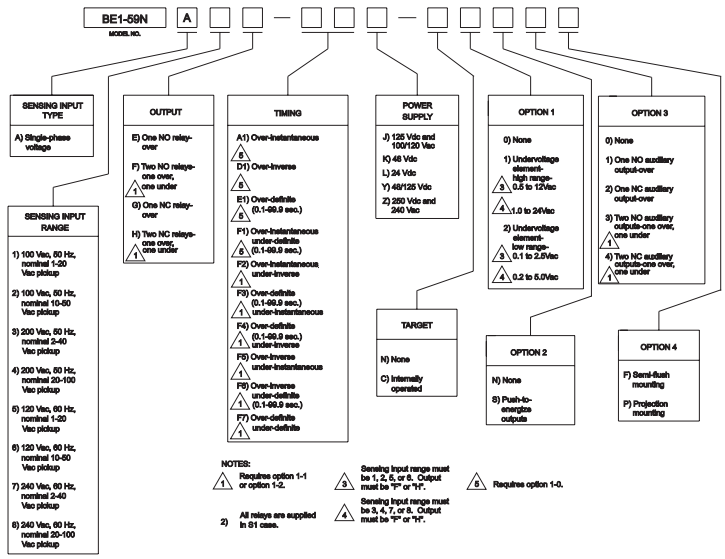
UL recognized

Physical

Weight: 13.6 lb (6.17 kg)
S1 Case Dimensions (WxHxD):
Double Ended, Semi-Flush Mount:
5.56" x 8.68" x 6.94"
(141.2 mm x 220.5 mm x 176.3 mm)
Single Ended, Semi-Flush Mount:
5.56" x 8.38" x 6.94"
(141.2 mm x 212.9 mm x 176.3 mm)
Double Ended, Projection Mount:
5.56" x 8.68" x 8.14"
(141.2 mm x 220.5 mm x 206.8 mm)
Single Ended, Projection Mount:
5.56" x 8.38" x 8.14"
(141.2 mm x 212.9 mm x 206.8 mm)

For complete specifications, download the instruction manual at www.basler.com.

Style Chart



Related Products

BE1-FLEX Protection, Automation and Control System
A versatile digital excitation control system for synchronous generators and motors.

DECS-250 Digital Excitation Control System
Provides precise voltage, var and Power Factor regulation, exceptional system response, and generator protection.

DECS-2100 Digital Excitation Control System
Powerful and flexible excitation system that precisely controls, protects, and monitors synchronous generators and motors.

DGC-2020HD Digital Genset Controller
An advanced but rugged, genset control system designed for paralleling and complete load sharing schemes.

Accessories

Cases, Covers, Connectors, Mounting, Misc.
Designed for adaptive customization with your protective device.

Test Plugs
To allow testing of the relay without removing system wiring. Basler ElectricP/N 10095 (order 2 plugs).

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