



## Overview

A microprocessor-based relay that provides versatile overload and fault protection on 50 Hz or 60 Hz systems. Adaptable for a wide range of applications, with voltage control and voltage restraint models available.

## Features

- A microprocessor-based relay that provides versatile overload and fault protection on 50 Hz or 60 Hz systems. Adaptable for a wide range of applications, with voltage control and voltage restraint mode. One relay can simultaneously monitor three phases plus neutral currents.
- 16 field-selectable characteristic curves, including inverse, definite,  $I^2t$ , and BS 142 functions.
- Wide range sensing inputs with continuously adjustable pickup.
- Up to two instantaneous elements available.
- Large array of options, including voltage control, and voltage restraint.

## Benefits

- Flexible pickup is continually adjustable over a wide range.
- Easily match system configuration with single-phase, two-phase-with-neutral, three-phase, and three-phase-with-neutral input configurations.
- Timings can be tailored to the application with 16 field-selectable curves.
- Minimized CT costs as a result of low sensing burden.
- Reduced battery load with low burden power supply.
- Accurate, repeatable, and reliable operation.
- Simple HMI provides clear and intuitive settings for easy configuration without the use of a computer.
- LED targets provide clear annunciation of status.
- Easily perform in-case system and device tests using test paddles.

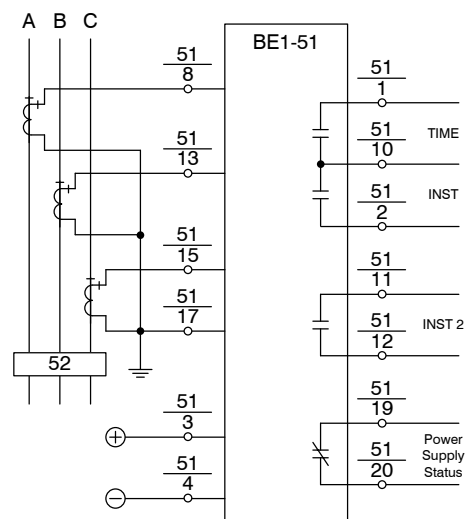


Figure 1 - BE1-51 Connection Diagram for a Typical Application

## Specifications

### Power Supply (Nominal)

XXXXXOXXXX:	48 Vdc (1.6 W)
XXXXXPXXXX:	125 Vdc (1.9 W), 120 Vac (8.9 VA)
XXXXXRXXXX:	24 Vdc (1.7 W)
XXXXSXXXXX:	48 Vdc (1.6 W), 125 Vdc (1.9 W)
XXXXTXXXXX:	250 Vdc (2.1 W), 240 Vac (14.2 VA)

### Voltage Sensing (BE1-51/27C and BE1-5127R only)

Rated:	160 Vac
Frequency:	40 to 70 Hz (50/60 Hz nominal)
Burden:	<1 VA

### Current Sensing

Rating:	
Max Continuous:	20 A
One-Second:	50 times max tap current or 500 A (whichever is less)
Range:	See Style Chart
Burden:	<0.1 $\Omega$ per phase or neutral

### Outputs

Resistive:	
120 Vac:	Make, break, and carry 7 Aac continuously.

250 Vdc: Make and carry 30 Adc for 0.2 s, carry 7 Aac 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)

### Agency/Certifications

UL recognized

### Environmental

Operating Temp: -40°C to 70°C (-40°F to 158°F)  
Storage Temp: -65°C to 100°C (-85°F to 212°F)

RFI: Tested at random frequencies centered around 144 MHz and 440 MHz, antenna located six inches from relay in both horizontal and vertical planes.

Surge Withstand: Qualified to IEEE C37.90.1

Isolation: IEC 255-5, ANSI/IEEE C37.90

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

### Physical

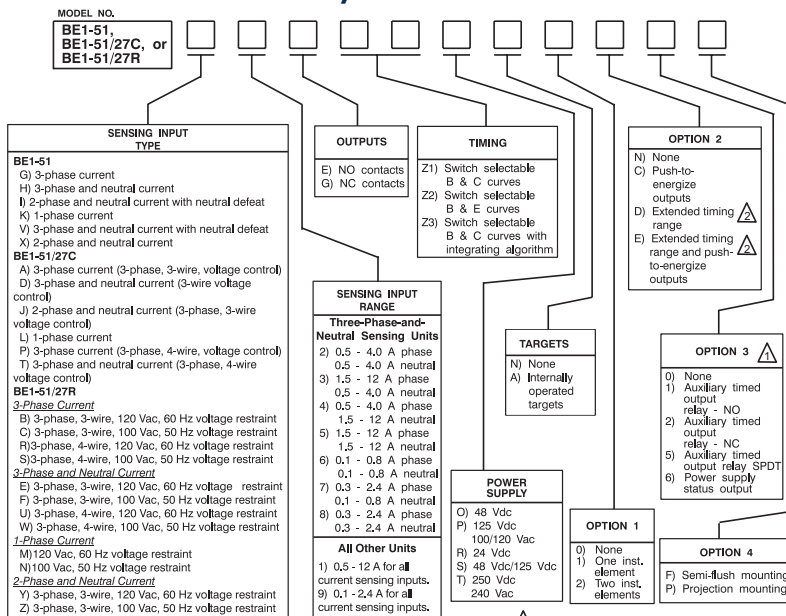
Weight:	
Single-Phase:	13.0 lb (5.90 kg)
Two-Phase and Neutral:	14.0 lb (6.35 kg)
Three-Phase:	14.0 lb (6.35 kg)
Three-Phase and Neutral:	14.4 lb (6.53 kg)

### S1 Case Dimensions (WxHxD):

Double Ended, Semi-Flush Mount:	5.56 x 8.68 x 6.94 inches (141.2 x 220.5 x 176.3 mm)
Single Ended, Semi-Flush Mount:	5.56 x 8.38 x 6.94 inches (141.2 x 212.9 x 176.3 mm)
Double Ended, Projection Mount:	5.56 x 8.68 x 8.14 inches (141.2 x 220.5 x 206.8 mm)
Single Ended, Projection Mount:	5.56 x 8.38 x 8.14 inches (141.2 x 212.9 x 206.8 mm)

For complete specifications, download the instruction manual at [www.basler.com](http://www.basler.com).

## Style Chart



⚠ Option 3-5 is only available on single-phase units.

⚠ Not available if Timing option is Z2.

3 All relays are supplied in an S1 size case.

## Related Products

### BE1-FLEX Protection, Automation and Control System

Designed to be configurable for nearly any Power System Application.

## Accessories

### Cases, Covers, Connectors, Mounting, Batteries, and Miscellaneous

Designed for adaptive customization with your protective device.

### Test Plugs

To allow testing of the relay without removing system wiring, order two test plugs. Basler part number 10095.