

# BE1-11*d* DC Power Protection System



## Overview

The BE1-11*d* DC Power Protection System is designed with many features to address issues with reliability arising from the complexity of programming. With BESTspace™ files and multiple BESTlogic™*Plus* preprogrammed logic schemes, you can be confident that you have the complete dc power protection you need.

## Features

- Proven algorithms based on more than 50 years of relaying experience and design and more than 60 years of dc power experience.
- One proven, stable firmware package for all BE1-11 series relays.
- Automatic reclosing with line test provides for quick reestablishment of power.
- Automatic settings groups adapt protection based on any logic condition.
- Breaker monitoring provides three methods to measure the wear of a breaker: arc time duty, max arc clearing time, and breaker operations.
- Voltage protection detects dc over- or undervoltage.
- Overcurrent protection detects dc overcurrent.
- Power protection detects directional over- or underpower.
- Rate of rise protection detects non-local faults.
- Thermal overload protection protects cables from overheating due to excessive load.
- Three communication ports: Front USB, rear RS-485 and Ethernet RJ45 or fiber optic are available for BESTCOMSP*Plus*®, BESTnet™*Plus*, Modbus®, DNP, and IEC 61850 protocols, also featuring user configurable email notifications.
- Enhanced I/O options available: 10 inputs with 5 outputs or 7. inputs with 8 outputs.

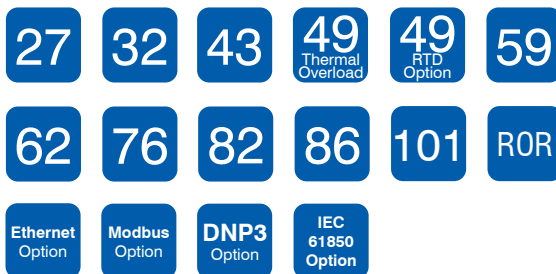


Figure 1 - BE1-11*d* Device Functions

## Benefits

### BE1-11*d* Protection System:

- The Offline Simulator, in BESTlogic™*Plus*, reduces commissioning errors by providing the ability to test and troubleshoot logic without the need for expensive physical hardware.
- Complete dc power protection and control system for dc traction equipment related to transportation systems and dc switchgear applications.
- BESTCOMSP*Plus*® software, provided free of charge, makes it easy to enter protection settings with confidence with its intuitive settings, built-in error checking, and summary screens.
- Complex protection is easy to configure and understand with preprogrammed schemes, drag-and-drop logic, user labels, and notes provided by BESTlogic™*Plus*.
- Quick and reliable fault clearing with minimal false operations.
- Easily navigate settings and metering with the intuitive HMI menu and large display.
- Customize displayed information to meet different application needs with user-defined indicators and labels.
- Select and Operate buttons, on the front panel, provide direct control of internal logic.
- Optional remote RTD module provides RTDs and analog input and output channels for expanded protection and control possibilities.
- Designed to IEEE and IEC protective relay standards.

### IT-D Isolation Transducer:

- Two-channel shunt input or dc voltage per IT-D module. Up to two per BE1-11*d*.
- Communicates and isolates via fiber optics to BE1-11*d*.
- Universal hardware accepts 100-2,000 Vdc or 25-100 mV.

## Specifications

### Power Supply

Range: 48/125 Vac/dc dc range 35 to 150 V  
ac range 55 to 135 V

Burden (BE1-11d): 10 W continuous, 12 W max (all options)

Burden (IT-D): 5 W max

### IT-D Voltage Measurement (Direct)

Range: 0 to ±2,000 Vdc

Continuous: ±2,200 Vdc

1-Second: ±2,500 Vdc

### IT-D Current Measurement (Shunt)

Range: 0 to ±1.0 Vdc

Continuous: ±1.5 Vdc

1-Second: ±1.7 Vdc

### BE1-11d Communications

USB: 2.0, Type-B

RS-485:  
Baud: Up to 115,200  
Protocols: DNP, Modbus®

Ethernet:  
Speed: 10/100 Mbit Copper  
100 Mbit Fiber

### BE1-11d Communications (continued)

Protocols: BESTnet™ Plus  
BESTCOMSPlus®  
DNP, Modbus, IEC 61850™

### Agency/Certifications

BE1-11d:  
UL recognized  
CSA certified per Standard C22.2 No. 14  
DNP3-2009, V2.6 compliant  
KEMA certified per IEC 61850 Certificate Level A  
CE and UKCA compliant  
China RoHS compliant

IT-D:  
CE and UKCA compliant

### Environment

BE1-11d:  
Operating Temperature: -40 to +70°C (-40 to 158°F)  
Storage Temperature: -40 to +70°C (-40 to 158°F)

IT-D:  
Operating Temperature: -40 to +60°C (-40 to 140°F)  
Storage Temperature: -40 to +65°C (-40 to 149°F)

### Physical

Weight:  
BE1-11d: 5.1 lb (2.3 kg)  
IT-D: 2.7 lb (1.22 kg)

IP class: IP20

Dimensions (WxHxD):  
BE1-11d:  
7.00 x 9.12 x 7.91 inches with mounting flanges  
(177.8 x 231.65 x 200.91 mm)  
5.33 x 8.41 x 7.29 inches behind panel  
(135.38 x 213.61 x 185.17 mm)

IT-D:  
9.77 x 10.38 x 1.76 inches with mounting flanges  
(248.3 x 263.7 x 44.8 mm)

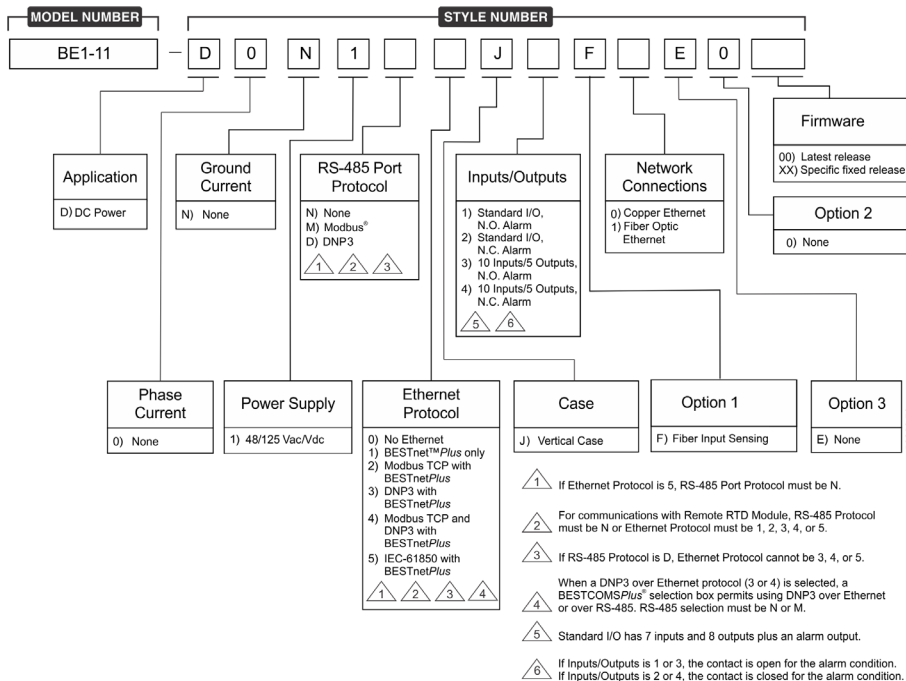
For complete specifications, download the instruction manual at [www.basler.com](http://www.basler.com).

Visit the Basler website!

Scan the QR code for more information on the BE1-11d DC Power Protection System.



## Style Chart



### IT-D Ordering Information:

At least one IT-D module is required. Each IT-D has two input channels per module. Order p/n 9587000101 (60-Hz rectified) or p/n 9587000102 (50-Hz rectified). Two 30-foot fiber optic cables included with each IT-D.

## Related Products

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

Designed to be configurable for nearly any Power System Application.

### RTD Module

Provides up to 12 remote RTD inputs, four remote analog inputs, and four remote analog outputs.

(p/n 9444100100 - Ethernet, Copper)

(p/n 9444100101 - Dual Ethernet, Fiber & Copper)

## Accessories

Two 30-foot fiber optic cables with connectors (p/n 9587003101)

Test terminal block assembly kit for J case systems (p/n 9424226100)