EDB-EPD, EGB-EPD and EJB-EPD (Equipment Protection Device) Circuit Breakers for Ground Fault Protection in NF Panelboards

One-pole EDB-EPD with optional alarm switch

Square D® EDB-EPD, EGB-EPD and EJB-EPD (Equipment Protection Device) Circuit Breakers are 1-pole thermal-magnetic circuit breakers with integral equipment ground fault protection. The ground fault protection level is fixed at 30 milliamperes per UL1053 and is designed to protect equipment from damage. Like standard branch breakers, these EPDs also provide branch circuit overload and short-circuit protection per UL 489 at 277 Vac. The EDB-EPD, EGB-EPD and EJB-EPD Circuit Breakers mount in NF circuit breaker panelboards and interiors, each circuit breaker occupying two poles of space.

Benefits of EDB-EPD, EGB-EPD and EJB-EPDs

More than 90% of short circuits initially involve ground faults (also called earth leakage or residual current). Detecting ground faults before they reach hazardous levels helps to avoid damage to critical equipment. This allows preventive maintenance to be scheduled before damage occurs, thus minimizing costly downtime.

Benefits to the Equipment User

- Protects expensive electrical equipment from damage due to ground faults
- Reduces equipment and employee downtime by preventing damage from ground faults
- Provides warning that the equipment needs preventive maintenance
- Reduced potential for hazards associated with ground fault-related fires and equipment malfunction

Benefits for OEMs

- Provides a more reliable machine for your customers – a competitive advantage
- Reduces warranty expense by limiting damage to equipment that might have otherwise occurred during the warranty period

EDB-EPD, EGB-EPD and EJB-EPD (Equipment Protection Device) Circuit Breakers for ground fault Protection in NF Panelboards

Applications

The NEC permits the use of an EPD for heat trace as a means of preventing freezing of pipes, rain gutters, etc. Other applications include protection of well pumps and other electrical equipment.

- Oil & gas/chemical
- Pharmaceuticals
- Water and waste treatment
- Food & beverage
- Other applications that require 30 mA ground fault protection

Key Features

- Designed for 30 mA equipment protection in commercial and industrial applications. Ideal for use with heat trace, pumps, etc.
- Can be installed in any Square D® NF Circuit Breaker Panelboard (each EPD occupies two pole spaces)
- Provides equipment protection at 30 mA
- One pole at 277 Vac
- Continuous current ratings of 15 A, 20 A, 30 A, 40 A and 50 A available
- Push-to-test button to test ground fault protection circuitry
- A wide range of interrupting ratings (AIR): EDB = 18kA; EGB = 35kA; EJB = 65kA
- Thermal-magnetic trip curve identical to equivalent circuit breaker without ground fault protection
- Optional alarm switch with one normally open contact
- All amperages are UL Listed as HID (high intensity discharge); 15 A and 20 A are UL Listed as SWD (switching duty rated)
- ground fault protection meets UL 1053 and CSA C22.2 No. 144-M91 standards
- Overload and short circuit protection meets UL489 and CSA C22.2 No. 5-02

How EPDs Operate

An EPD compares outgoing load currents with returning currents to determine if there is leakage of current to ground. If it detects a ground fault greater than 30 mA, the EPD will trip and display the “red flag” of the Visi-Trip® indicator.

NOTE: Unlike residential GFCIs (ground fault circuit interrupters), EPDs are not designed for people protection (UL943 Class A calls for protection above 6 mA). EPDs are designed to meet the UL1053 standard for equipment protection. Although not designed for people protection, they do create a safer environment by reducing the potential for hazards associated with ground faults including fires, and equipment malfunction.

These Square D® EPDs are also designed to minimize nuisance tripping in an environment with electrical noise or harmonics.

An optional factory-installed alarm switch provides a set of contacts to remotely indicate if the EPD is in the tripped position. The alarm switch does not distinguish between ground fault, thermal, or magnetic trip.

Testing

EPD Circuit Breakers include a black test button to test the ground fault circuitry, as required by UL 1053. Pushing the test button causes the circuit breaker to trip, placing the handle into the tripped (middle) position. When the breaker is tripped (by ground fault, short-circuit, or overload conditions), the Visi-Trip trip indication (red flag) appears in a window on the front of the circuit breaker case.

Catalog Numbers for EDB-EPD, EGB-EPD and EJB-EPDs

Continuous Current Rating @ 40 C	AC Magnetic Trip (Amps @277V)		Catalog Numbers			Terminal Wire Range (AWG)
	Trip	Hold	EDB (18kA)	EGB (35kA)	EJB (65kA)	
15	270	875	EDB14015EPD	EGB14015EPD	EJB14015EPD	#6 - #14 AWG CU
20			EDB14020EPD	EGB14020EPD	EJB14020EPD	or
30			EDB14030EPD	EGB14030EPD	EJB14030EPD	#4 - #12 AWG AL
40	630	1800	EDB14040EPD	EGB14040EPD	EJB14040EPD	
50			EDB14050EPD	EGB14050EPD	EJB14050EPD	

Accessories

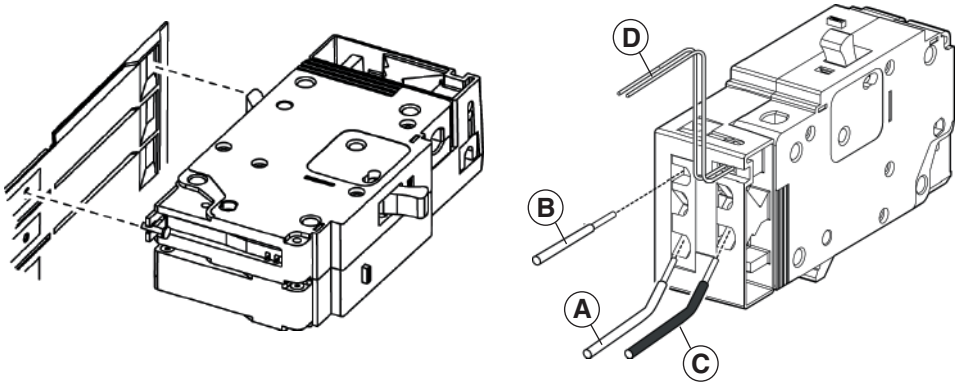
- Optional alarm switch (bell alarm), Factory-installed only – Add BA suffix; (Cable with #12-#22 AWG CU wire only)
- No other electrical accessories are available
- HPAFD handle padlock attachment (locks ON or OFF)

EDB-EPD, EGB-EPD and EJB-EPD (Equipment Protection Device) Circuit Breakers for ground fault Protection in NF Panelboards

Installation

The EDB-EPD, EGB-EPD and EJB-EPDs occupy two pole positions in NF Circuit Breaker Panelboards. They are approximately one inch longer than the EDB, EGB, or EJB breakers, yet still allow wire bending space in the gutter of the panelboard.

See Instruction Bulletin 48840-522-01 for installation details.



A. Panel Neutral

B. Load Neutral

C. Load Power

D. Optional Alarm Switch

A Complete Range of Ground Fault Protection Equipment

Schneider Electric provides ground fault protection products for a wide range of applications, from QO® GFCIs and EPDs to large Masterpact® Circuit Breakers with Micrologic® Trip Units.

Schneider Electric North American Operating Division

1415 S. Roselle Road
Palatine, IL 60067
Tel: 847-397-2600
Fax: 847-925-7500