

E-Frame Thermal Magnetic Circuit Breakers

Class 0515

Catalog

Release date 03/2024



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EDB, EGB, and EJB Circuit Breakers

125 A Frame Lighting Panelboard Circuit Breakers



- One-, two-, and three-pole bolt-on constructions for use in Square D™ NF panelboards
- Current ratings: 15–125 A
- 480Y / 277 Vac
- Optional factory-installed electrical accessories include:
 - 120 Vac shunt trip
 - 1A / 1B Auxiliary switch
 - Normally open alarm switch
- Optional handle padlock attachment
- Optional copper and compression lugs
- Visi-Trip™ feature
- HACR rated (15–125 A, 1–, 2–, and 3–pole)
- UL® Listed: file E84967, E84905, and E181374
- CSA® Certified: file LR 40970
- NOM® 117 Certified
- In compliance with Federal Specification W-C-375B/GEN

Ampere Interrupting Ratings

| Interrupting Rating | 240 V | 480Y / 277 V | 600Y / 347 V |
|---------------------|--------|--------------|--------------|
| D | 25 kA | 18 kA | 14 kA |
| G | 65 kA | 35 kA | 18 kA |
| J | 100 kA | 65 kA | 25 kA |

Powerlink™ ECB-G3 Circuit Breakers

Remotely Operated Circuit Breakers

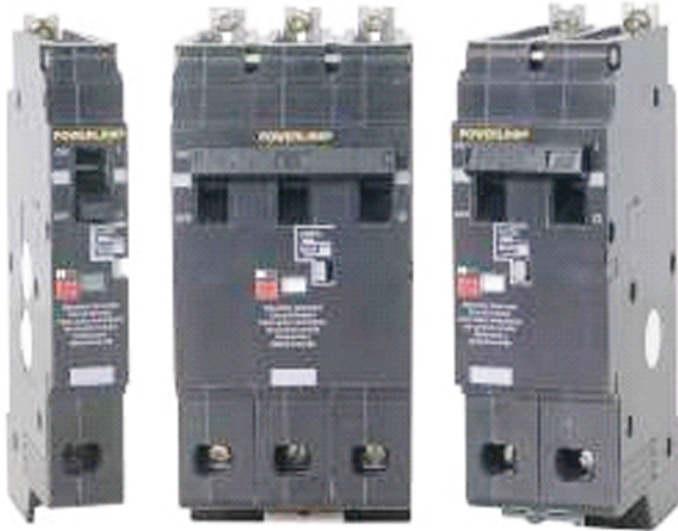
Powerlink G3 remotely operated circuit breakers are designed for installation in Schneider Electric NF lighting panelboards as part of the Powerlink G4 Lighting Control System. These circuit breakers provide the same overcurrent protection as found in standard circuit breakers.

- Robust 24 Vdc motor and trip mechanism provide remote operation capability in terms of compact size, electrical ratings, and mechanical life.
- Motor and drive train can open and close the contacts when the circuit breaker handle is in the ON position.
- Contacts cannot be closed remotely when the handle is in the OFF position, or the circuit breaker is tripped.
- Manual override selector located on the front of the circuit breaker provides bypass of automated control command.
- In manual mode, the motor drive train is disconnected from the contact, allowing the circuit breaker handle to operate the contacts like a conventional circuit breaker.

- Remote contact status indication determines the presence or absence of voltage on the load side terminal of the circuit breaker.

Tripping System with RMS Sensing

- Schneider Electric Powerlink ECB-G3 circuit breakers have a permanent trip unit that contains a factory preset thermal (overload) trip element and a magnetic (short circuit) trip element in each pole.
- The thermal trip element—true RMS sensing—is calibrated to carry the continuous current rating of the circuit breaker at 140°F (40°C) free air ambient temperature.



ECB-G3 Circuit Breakers

ECB-G3 Circuit Breakers, Bolt-On Remotely Operated

| Ampere Rating | One-Pole 277 Vac – 14,000 AIR 120 Vac – 65,000 AIR | Two-Pole 480Y / 277 Vac – 14,000 AIR 120 / 240 Vac – 65,000 AIR 240 Vac – 14,000 AIR Ground B Phase | Three-Pole 480Y / 277 Vac – 14,000 AIR 240 Vac – 42,000 AIR |
|---------------|--|--|---|
| 15 | ECB14015G3 | ECB24015G3 | ECB34015G3 |
| 20 | ECB14020G3 | ECB24020G3 | ECB34020G3 |
| 30 | ECB14030G3 | ECB24030G3 | ECB32030G3 |

ECB-G3 Circuit Breakers for Emergency Lighting (requires two pole spaces)

| Ampere Rating | One-Pole 480 Y/277 – 14,000 AIR 240 V – 65,000 AIR |
|---------------|--|
| 20 | ECB142020G3EL |

NOTE:

All are listed as HACR type for use with air conditioning, heating and refrigeration equipment having motor group combinations and marked for use with HACR type circuit breakers. UL® listed as HID rated for use with high intensity discharge lighting systems. (1) #10–8 Al or (1) #12–8 Cu. Suitable for use with 167°F (75°C) conductors.

Interrupting Ratings

| Interrupting Rating Level | Ampere Rating | Catalog Number | | | | | | Standard Al Lug Wire Range |
|---------------------------|---------------|------------------------|------------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------------------------------|
| | | 1-Pole | | 2-Pole ¹ | | 3-Pole | | |
| | | 277 Vac | 600Y / 347 Vac | 480Y / 277 Vac | 600Y / 347 Vac | 480Y / 277 Vac | 600Y / 347 Vac | |
| D | 15 | EDB14015 ₂₃ | EDB16015 ₂₃ | EDB24015 ₂ | EDB26015 ₂ | EDB34015 ₂ | EDB36015 ₂ | #12—6 AWG Al or #14—6 AWG Cu |
| | 20 | EDB14020 ₂₃ | EDB16020 ₂₃ | EDB24020 ₂ | EDB26020 ₂ | EDB34020 ₂ | EDB36020 ₂ | |
| | 25 | EDB14025 ₂ | EDB16025 ₂ | EDB24025 ₂ | EDB26025 ₂ | EDB34025 ₂ | EDB36025 ₂ | |
| | 30 | EDB14030 ₂ | EDB16030 ₂ | EDB24030 ₂ | EDB26030 ₂ | EDB34030 ₂ | EDB36030 ₂ | |
| | 35 | EDB14035 | EDB16035 | EDB24035 | EDB26035 | EDB34035 | EDB36035 | #12—2/0 AWG Al or #14—2/0 AWG Cu |
| | 40 | EDB14040 | EDB16040 | EDB24040 | EDB26040 | EDB34040 | EDB36040 | |
| | 45 | EDB14045 | EDB16045 | EDB24045 | EDB26045 | EDB34045 | EDB36045 | |
| | 50 | EDB14050 | EDB16050 | EDB24050 | EDB26050 | EDB34050 | EDB36050 | |
| | 60 | EDB14060 | EDB16060 | EDB24060 | EDB26060 | EDB34060 | EDB36060 | |
| | 70 | EDB14070 | EDB16070 | EDB24070 | EDB26070 | EDB34070 | EDB36070 | |
| | 80 | — | — | EDB24080 | EDB26080 | EDB34080 | EDB36080 | |
| | 90 | — | — | EDB24090 | EDB26090 | EDB34090 | EDB36090 | |
| | 100 | — | — | EDB24100 | EDB26100 | EDB34100 | EDB36100 | |
| | 110 | — | — | EDB24110 | — | EDB34110 | — | |
| 125 | — | — | EDB24125 | — | EDB34125 | — | | |
| G | 15 | EGB14015 ²³ | EGB16015 ²³ | EGB24015 ² | EGB26015 ² | EGB34015 ² | EGB36015 ² | #12—6 AWG Al or #14—6 AWG Cu |
| | 20 | EGB14020 ²³ | EGB16020 ²³ | EGB24020 ² | EGB26020 ² | EGB34020 ² | EGB36020 ² | |
| | 25 | EGB14025 ² | EGB16025 ² | EGB24025 ² | EGB26025 ² | EGB34025 ² | EGB36025 ² | |
| | 30 | EGB14030 ² | EGB16030 ² | EGB24030 ² | EGB26030 ² | EGB34030 ² | EGB36030 ² | |
| | 35 | EGB14035 | — | EGB24035 | — | EGB34035 | EGB36035 | #12—2/0 AWG Al or #14—2/0 AWG Cu |
| | 40 | EGB14040 | EGB16040 | EGB24040 | EGB26040 | EGB34040 | EGB36040 | |
| | 45 | EGB14045 | — | EGB24045 | — | EGB34045 | EGB36045 | |
| | 50 | EGB14050 | — | EGB24050 | EGB26050 | EGB34050 | EGB36050 | |
| | 60 | EGB14060 | EGB16060 | EGB24060 | EGB26060 | EGB34060 | EGB36060 | |
| | 70 | EGB14070 | — | EGB24070 | EGB26070 | EGB34070 | EGB36070 | |
| | 80 | — | — | EGB24080 | EGB26080 | EGB34080 | EGB36080 | |
| | 90 | — | — | EGB24090 | — | EGB34090 | EGB36090 | |
| | 100 | — | — | EGB24100 | EGB26100 | EGB34100 | EGB36100 | |
| | 110 | — | — | EGB24110 | — | EGB34110 | — | |
| 125 | — | — | EGB24125 | — | EGB34125 | — | | |

1. UL Listed for use on 240 V corner-grounded delta systems (grounded B phase).
2. UL Listed as HID (High Intensity Discharge) rated.
3. UL Listed as SWD (Switching Duty) rated.

| Interrupting Rating Level | Ampere Rating | Catalog Number | | | | | | Standard Al Lug Wire Range |
|---------------------------|---------------|------------------------|------------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------------------------------|
| | | 1-Pole | | 2-Pole ⁴ | | 3-Pole | | |
| | | 277 Vac | 600Y / 347 Vac | 480Y / 277 Vac | 600Y / 347 Vac | 480Y / 277 Vac | 600Y / 347 Vac | |
| J | 15 | EJB14015 ⁵⁶ | EJB16015 ⁵⁶ | EJB24015 ⁵ | EJB26015 ⁵ | EJB34015 ⁵ | EJB36015 ⁵ | #12—6 AWG Al or #14—6 AWG Cu |
| | 20 | EJB14020 ⁵⁶ | EJB16020 ⁵⁶ | EJB24020 ⁵ | EJB26020 ⁵ | EJB34020 ⁵ | EJB36020 ⁵ | |
| | 25 | EJB14025 ⁵ | EJB16025 ⁵ | EJB24025 ⁵ | EJB26025 ⁵ | EJB34025 ⁵ | EJB36025 ⁵ | |
| | 30 | EJB14030 ⁵ | EJB16030 ⁵ | EJB24030 ⁵ | EJB26030 ⁵ | EJB34030 ⁵ | EJB36030 ⁵ | |
| | 35 | EJB14035 | EJB16035 | EJB24035 | — | EJB34035 | EJB36035 | #12—2/0 AWG Al or #14—2/0 AWG Cu |
| | 40 | EJB14040 | EJB16040 | EJB24040 | EJB26040 | EJB34040 | EJB36040 | |
| | 45 | EJB14045 | — | EJB24045 | — | EJB34045 | EJB36045 | |
| | 50 | EJB14050 | EJB16050 | EJB24050 | EJB26050 | EJB34050 | EJB36050 | |
| | 60 | EJB14060 | EJB16060 | EJB24060 | EJB26060 | EJB34060 | EJB36060 | |
| | 70 | EJB14070 | — | EJB24070 | — | EJB34070 | EJB36070 | |
| | 80 | — | — | EJB24080 | EJB26080 | EJB34080 | EJB36080 | |
| | 90 | — | — | EJB24090 | EJB26090 | EJB34090 | EJB36090 | |
| | 100 | — | — | EJB24100 | EJB26100 | EJB34100 | EJB36100 | |
| | 110 | — | — | EJB24110 | — | EJB34110 | — | |
| 125 | — | — | EJB24125 | — | EJB34125 | — | | |

4. UL Listed for use on 240 V corner-grounded delta systems (grounded B phase).

5. UL Listed as HID (High Intensity Discharge) rated.

6. UL Listed as SWD (Switching Duty) rated.

Circuit Breaker Selection

Select a catalog number from the preceding table.

For special applications, modify the catalog number as follows:

E D B 3 4 0 7 0 _____

Factory Installed Options ⁷

| Option | Meaning | Example: |
|--------|---|--|
| AABA | 1A1B Aux. Switch, Normally-open Alarm Switch Package | <p>To order a three-pole 480Y / 277 Vac 70 A "D" interrupting rating level circuit breaker with factory-installed copper lugs and an auxiliary switch and alarm switch package: EDB34070AABALC</p> |
| AABASA | 1A1B Aux. Switch, Normally-open Alarm Switch, 120 Vac Shunt Trip Package | |
| SA | 120 Vac Shunt Trip Package | |
| CA | Special Ambient Temperature: 122°F (50°C) (Not UL, CSA, or NOM Certified) | |
| LC | Copper Lugs | |
| LH | High Ampere Standard Lugs | |



EDB24030



EDB34125

7. Factory-installed options must be listed in the catalog number in the sequence shown.

Lug Kit Information

Mechanical Lug Kits

| Kit Catalog Number | Circuit Breaker Application | | | Number of Wires per Lug and Wire Range | Torque | Lugs per Kit | |
|---|-----------------------------|------------------------|---------------|--|---|--|---|
| | Standard Ampere Rating | Optional Ampere Rating | | | | | |
| Aluminum Lugs for use with Al or Cu Wire | | | | | | | |
| AL30FD | EDB, EGB, EJB | 15—30 | — | — | (1) #12—6 AWG Al or (1) #14—6 AWG Cu | 30 lb-in. (4.0 N•m) #14—10 | 3 |
| AL100FD | | 35—125 | EDB, EGB, EJB | 15—30 | (1) #12—2/0 AWG Al or (1) #14—2/0 AWG Cu | 35 lb-in. (3.4 N•m) #14—10 50 lb-in. (5.5 N•m) #8—2/0 | 3 |
| Copper Lugs for use with Cu Wire Only | | | | | | | |
| CU100FD | EDB, EGB, EJB | 15—125 | — | — | (1) #14—1/0 AWG Cu | 35 lb-in. (3.4 N•m) #14—10 40 lb-in. (4.5 N•m) #8 45 lb-in. (5.1 N•m) #6—4 50 lb-in. (5.5 N•m) #8—2/0 | 3 |

Compression Lug Kit Information⁸

| Circuit Breaker Type | VERSAtile™ System Range | Dimension A | | Versa-Crimp™ Tool Type | Max. Lugs per Terminal | Kit Catalog Number | Lugs per Kit |
|--------------------------------------|-------------------------|-------------|----|------------------------|------------------------|--------------------|--------------|
| | | in. | mm | | | | |
| Aluminum Compression Lug Kits | | | | | | | |
| EDB, EGB, EJB | #8—1/0 AWG | 1.375 | 35 | VC-6 Series | 1 | VC100FD | 3 |

Handle Accessories

| Circuit Breaker Type | Catalog Number |
|---|----------------|
| Handle Padlock Attachment (locks ON or OFF) | |
| EDB, EGB, EJB | HPAFD |

Terminal Insert Kit

| Circuit Breaker Type | Catalog Number | Inserts per Lug |
|----------------------|----------------|-----------------|
| EDB, EGB, EJB | TIKFD | 3 |

8. Terminal insert kit TIKFD required for application of compression lugs.

EDB-EPD, EGB-EPD, and EJB-EPD

Equipment Protection Device Circuit Breakers for Ground Fault Protection in NF Panelboards

Square D brand EDB-EPD, EGB-EPD, and EJB-EPD (Equipment Protection Device) circuit breakers are one-pole thermal-magnetic circuit breakers with integral equipment ground fault protection. The ground fault protection level is fixed at 30 milliamperes per UL 1053 and is designed to protect equipment from damage. 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-EPD Circuit Breakers

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 preventative maintenance to be scheduled before damage occurs, thus minimizing costly downtime.

- 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 preventative maintenance
- Reduced potential for hazards associated with ground fault-related fires and equipment malfunction

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 and gas / chemical
- Pharmaceuticals
- Water and waste treatment
- Food and 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, 20, 30, 40 and 50 A available
- Push-to-test button to test ground fault protection circuitry
- A wide range of interrupting ratings (AIR at 480Y / 277 Vac): EDB = 18 kA; EGB = 35 kA; EJB = 65 kA
- 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 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 UL 489 and CSA C22.2 No. 5-02

How Equipment Protection Devices 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 ground fault interrupters (GFCIs), EPDs are not designed for people protection (UL 943 Class A calls for protection above 6 mA). EPDs are designed to meet the UL 1053 standard for equipment protection.

Although not designed for people protection, they do reduce 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 circuit 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.



EGB14030EPD

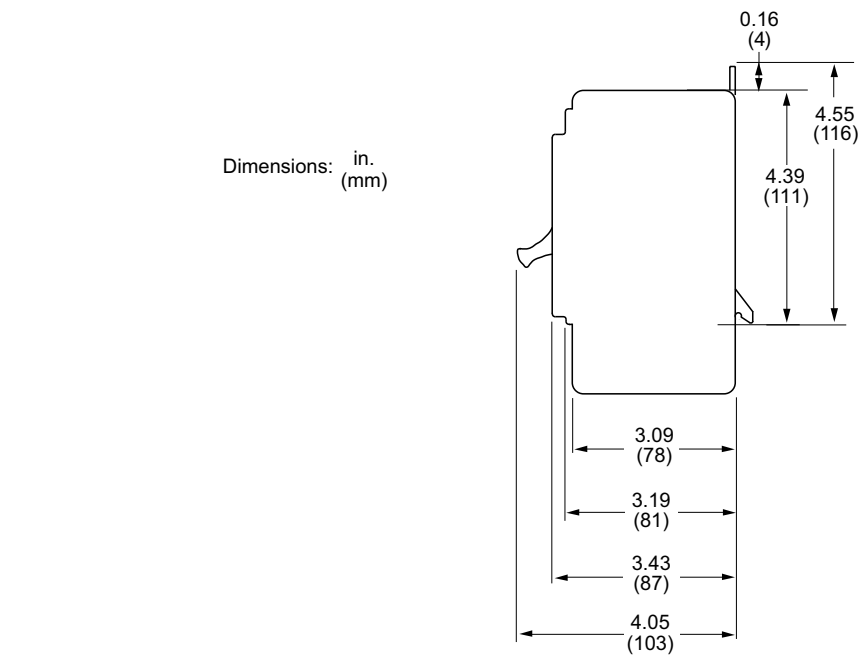
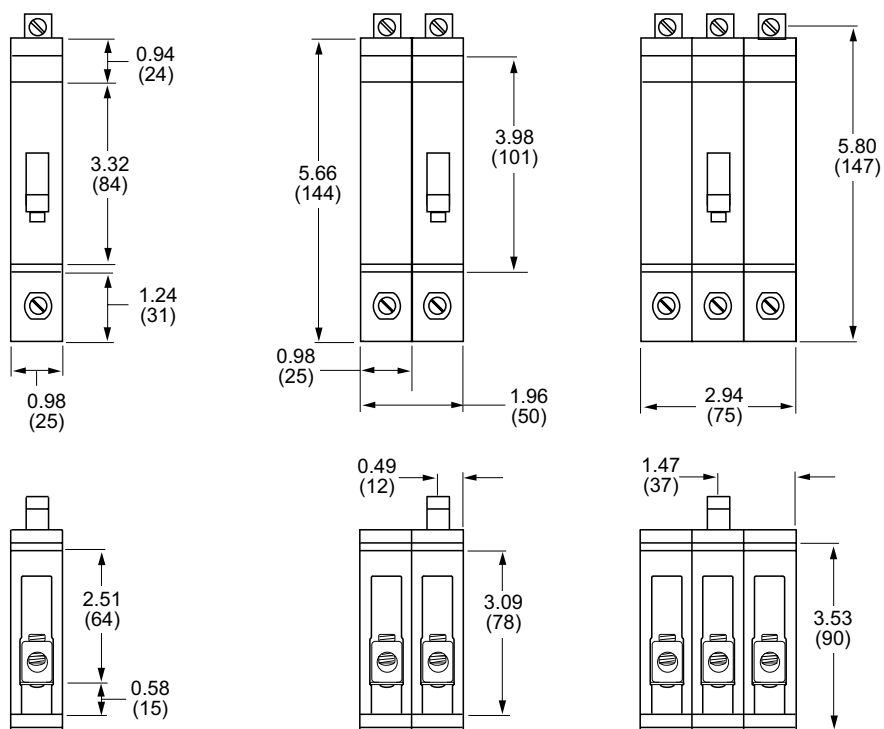
Catalog Numbers for EDB-EPD, EGB-EPD, and EJB-EPD Circuit Breakers

| Continuous Current Rating at 40°C | AC Magnetic Trip (Amperes @277 V) | | Catalog Numbers | | | Terminal Wire Range (AWG) |
|-----------------------------------|-----------------------------------|------|-----------------|-------------|-------------|------------------------------|
| | Trip | Hold | EDB (18 kA) | EGB (35 kA) | EJB (65 kA) | |
| 15 | 270 | 875 | EDB14015EPD | EGB14015EPD | EJB14015EPD | #6—14 AWG Cu or #4—12 AWG Al |
| 20 | | | EDB14020EPD | EGB14020EPD | EJB14020EPD | |
| 30 | | | EGB14030EPD | EGB14030EPD | EJB14030EPD | |
| 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)

Dimensions



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