Smart breakers

BREM1020

Description

Eaton's Wi-Fi smart breakers provide circuit protection, cloud connectivity, remote control & precise metering all packaged in a standard miniature circuit breaker form factor.

Design features

• 1" per pole smart breaker in plug-on and bolt-on styles

• Ability to control breakers remotely – ON, OFF

• ±0.2% accurate metering as per ANSI C12.20

• Bi-directional communication via Wi-Fi

• Real-time access to device state: Open, Closed

• Access to the breaker through the internet (cloud connectivity)

• Local access to the breaker through User Datagram Protocol (UDP)

• Metering information: current, voltage, frequency, power, energy [4-quadrant: Forward, Reverse, Total, Net]

• Data streams: real-time & historical waveforms

• Waveform capture capability on power disturbances including Undervoltage, Overvoltage, and Overcurrent events. Waveform captures of a minimum of 200msec at a resolution of 1kHz or per-cycle RMS

• Wi-Fi signal strength indication

• 4MB of local data storage to limit the possibility of data loss

• EM Install app for iOS and Android to commission devices

• Open platform with API documentation available

Product selection

Table 1. Smart breakers selection chart

Amperes	Number of poles	kAIC	Catalog number
Type BR (1-inch BREM, plug-on)			
15	1	10	**BREM1015**
20	1	10	**BREM1020**
30	1	10	**BREM1030**
15	2	10	**BREM2015**
20	2	10	**BREM2020**
30	2	10	**BREM2030**
40	2	10	**BREM2040**
50	2	10	**BREM2050**
Type BAB (1-inch BABEM, bolt-on)			
15	1	10	**BABEM1015**
20	1	10	**BABEM1020**
30	1	10	**BABEM1030**
15	2	10	**BABEM2015**
20	2	10	**BABEM2020**
30	2	10	**BABEM2030**
40	2	10	**BABEM2040**
50	2	10	**BABEM2050**

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Applications

Advanced functionality built into these smart breakers allows customized energy usage and helps save on energy costs. This new level of control and insight at the branch-circuit level provides more efficient management of the grid.

Open APIs, powered by Brightlayer, allow flexibility to integrate with preferred software systems. Our documentation provides detailed instructions on functionality supported by the APIs to help developers incorporate our solutions into their applications. You can find the API documentation at: Eaton.com/smartbreakers

Scan QR code to see API documentation.

Table 2. Specifications

Description	Specification
Catalog number	BREM1015, BREM1020, BREM1030, BREM2015, BREM2020, BREM2030, BREM2040, BREM2050, BABEM1015, BABEM1020, BABEM1030, BABEM2015, BABEM2020, BABE2030, BABEM2040, BABEM2050
Footprint	1-pole: Takes 2 spaces in a loadcenter 2-pole: Takes 3 spaces in a loadcenter
Voltage rating	120Vac, 240Vac
Frequency rating	60Hz
Ambient operating temperature	−30 °C to +40 °C
Humidity	0% to 90%, noncondensing
kAIC rating	10kA
Warranty	Eaton Selling Policy 25-000, one (1) year from the date of installation of the Product or eighteen (18) months from the date of shipment of the Product, whichever occurs first.
Certifications	UL 489 – molded-case circuit breakers, molded-case switches and circuit breaker enclosures CSA C22.2 No. 5 – molded-case circuit breakers, molded-case switches and circuit breaker enclosures
UL file number	E7819

Table 3. BlinkUp™ LED indication (for commissioning)

Pre-BlinkUp Patterns

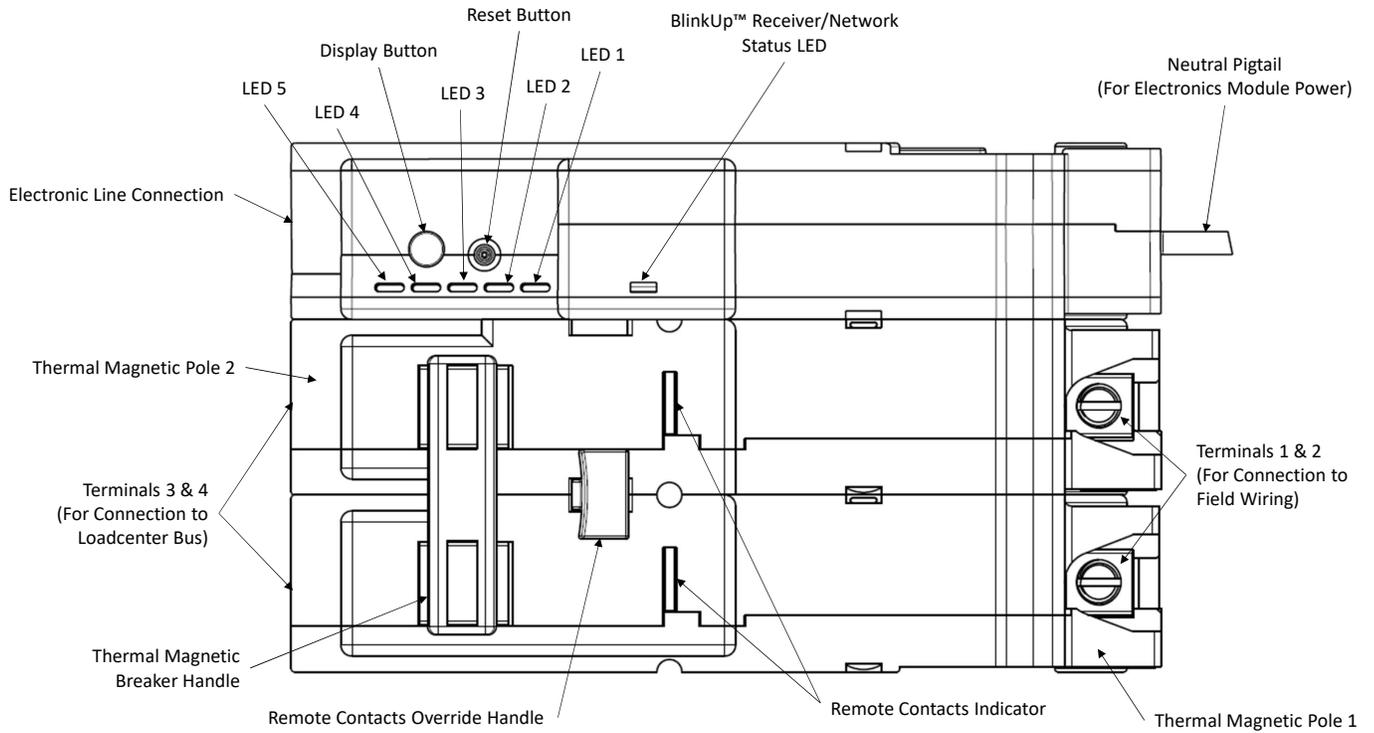|							
No network settings or enrollment credentials	500ms	500ms					
BlinkUp™ successful	3000ms						

BlinkUp™ Patterns

Connected to Server	500ms	500ms					
Searching for WiFi network	500ms	500ms	500ms	250ms	250ms	250ms	
Joining WiFi network	500ms	500ms	500ms	250ms	250ms	250ms	250ms	250ms

Please consult the EM Install app for additional troubleshooting information if the BlinkUp pattern is not shown in Table above.

Smart breaker diagram

Figure 1. Two-pole smart breaker

Product dimensions
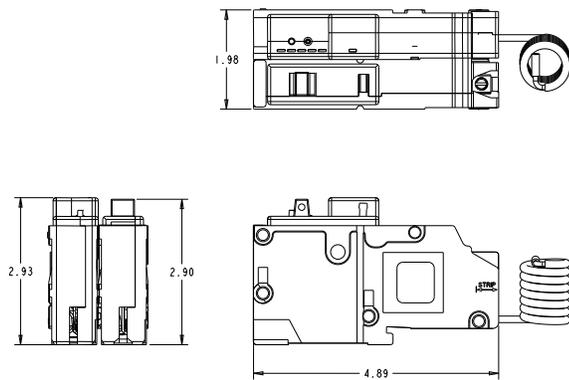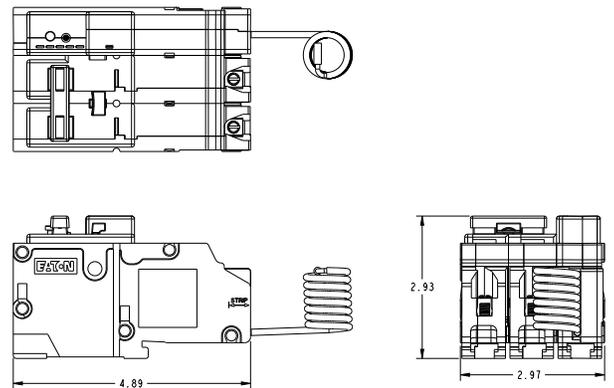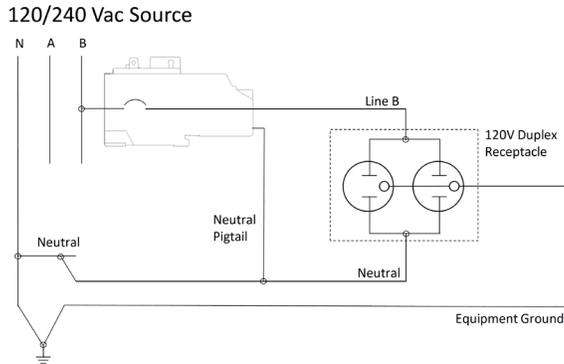
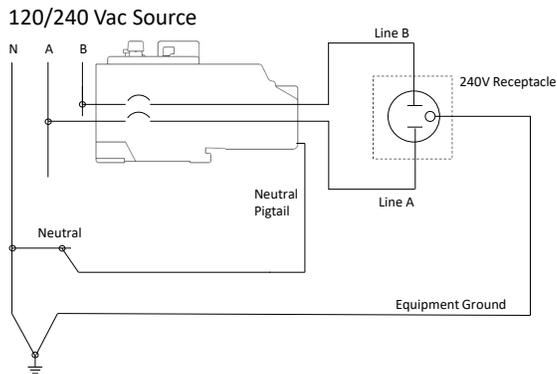**Figure 2. Single-pole smart breaker**

Figure 3. Two-pole smart breaker

Compliances, specifications and availability are subject to change without notice.

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Wiring diagrams

Figure 4. Single-pole 120V load application sourced by 120/240 Vac

120/240 Vac Source

N   A   B

Line B

120V Duplex Receptacle

Neutral

Neutral Pigtail

Neutral

Equipment Ground

Figure 5. Single-pole 120V wiring diagram

Coiled White Wire Connects to Loadcenter Neutral

Load Power Wire

120V Duplex Receptacle

Load Neutral Wire

Figure 6. Two-pole 240V load application sourced by 120/240 Vac

120/240 Vac Source

N   A   B

Line B

240V Receptacle

Neutral

Neutral Pigtail

Line A

Equipment Ground
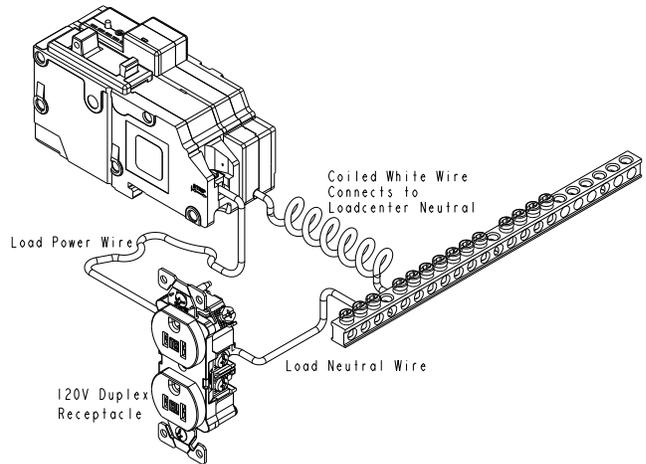
Figure 7. Two-pole 240V wiring diagram

Coiled White Wire Connects to Loadcenter Neutral

Load Power Wire

Load Power Wire
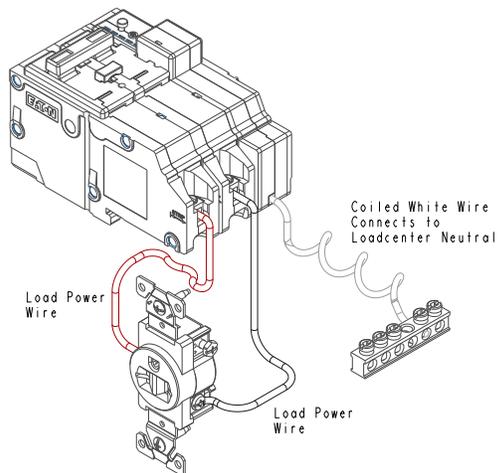
Contact the Eaton Technical Resource Center at **1-877-ETN-CARE (386-2273)** for further assistance.

Scan QR code for product information, documents, and more

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