

# Switchboard with compact, innovative and flexible insulated case circuit breaker integration



Featuring Eaton's Pow-R-Line switchboard with integrated Series NRX insulated case circuit breaker

Eaton's Pow-R-Line C™ switchboard now has the capability of integrating the Series NRX™-RF and Series NRX-NF insulated case circuit breakers to deliver a compact footprint, innovative insulated case circuit breaker and trip unit technology, and flexible breaker stack configurations. It's the perfect solution for commercial construction, data centers, institutions, hospitals, government offices and industrial that are looking to upgrade or connect electrical distribution systems within limited space constraints.

## Features and benefits

### Intelligent communications

- Smart solution provides connectivity, reliability and diagnostics
- Full range of functionality ranging from basic protection to metering, system diagnostics and communications
- Integrated Power Xpert™ Release trip units enable easy protection and feature upgrades, internal secondary injection testing, multiple communication platforms, and programmable current sensor ratings

### Enhanced safety

- Designed for UL® 891 applications
- Integrated Power Xpert Release trip units increase worker safety with faster response
- Improved personnel safety and productivity through reduced PPE requirements and arc flash risk
- Standard safety interlock accessories and covers provide additional protection during maintenance

### Reduced footprint

- Uses one of the smallest air circuit breaker frames to provide flexible breaker configurations within a single section
- Configurable with front access in a single, two-high, or quad stack design, allowing for decreased amount of structures and room for Eaton metering or communication compartments
- Available with front access in a single and two-high configuration, decreasing structure width and leaving potential room for Eaton surge protection, metering or communication compartments

### Greater flexibility

- Seamless insulated case circuit breaker integration enables faster installation and commissioning
- Series NRX-NF configurations support switchboard amperage ranges from 800 A to 1200 A
- Series NRX-RF configurations support switchboard amperage ranges from 800 A to 3000 A
- Advanced Power Xpert Release trip unit technology accommodates all distribution system requirements



Powering Business Worldwide



Construction



Industrial






Government



Institutions

## Technical specifications

### Low-voltage power circuit breaker specifications

Description	Breaker cable orientation	Ampere range	Minimum width (inches)	Minimum depth (inches)	Front/rear accessibility	
<b>Series NRX-NF fixed</b>						
	One-high	One circuit breaker, top or bottom	800–1200	20	30	Front
	Two-high	Top circuit breaker, out top; and bottom circuit breaker, out bottom only	800–1200	20	30	Front
		One circuit breaker and provision or two circuit breakers, top or bottom	800–1200	26	30	Front
	Quad	Three circuit breakers or four circuit breakers, top or bottom	800–1200	45	30	Front
<b>Series NRX-RF fixed</b>						
	One-high	One circuit breaker, top or bottom	800–3000	30	30	Front
	Two-high	Two circuit breakers, top or bottom	800–2000	45	36	Front
<b>Series NRX-RF drawout</b>						
	One-high	One circuit breaker, top or bottom	800–3000	30	36	Front
	Two-high	Two circuit breakers, top or bottom	800–2000	45	36	Front
	Four-high	Four circuit breakers, top or bottom	800–3000	24	60/72/84	Rear

## Power Xpert Release trip unit options and specifications



**PXR 20**



**PXR 25**

### Trip unit

#### Diagnostics and indication features

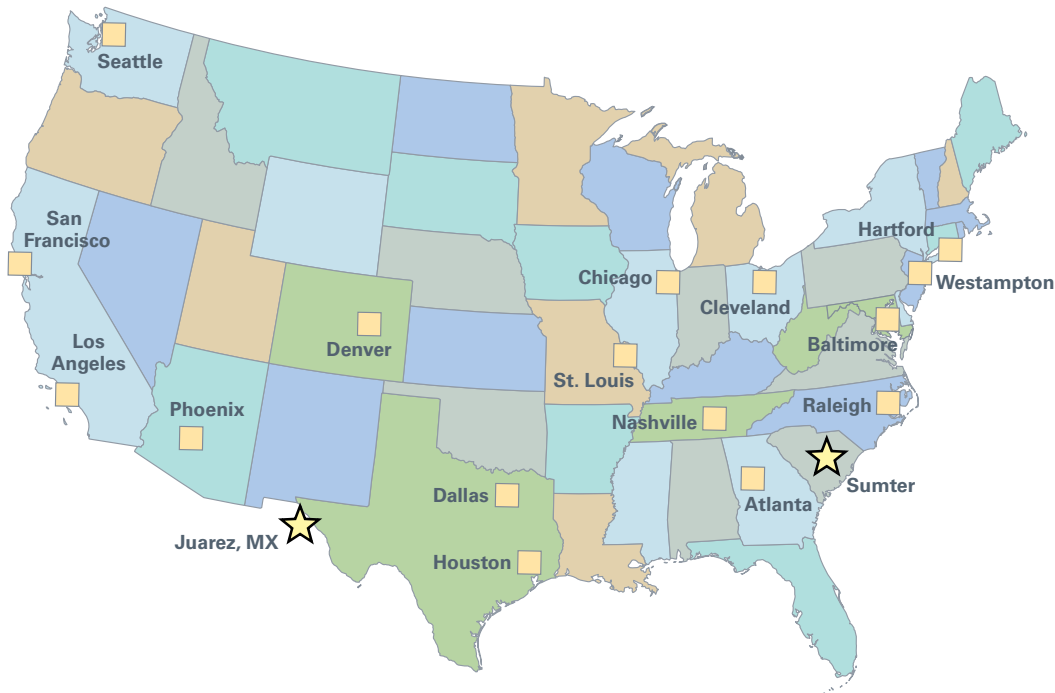
Trip log	<ul style="list-style-type: none"> <li>• 10 trip events</li> <li>• 200 summary</li> </ul>	<ul style="list-style-type: none"> <li>• Additional storage available via CAM module</li> </ul>	<ul style="list-style-type: none"> <li>• 10 trip events</li> <li>• 200 summary</li> </ul>	<ul style="list-style-type: none"> <li>• Additional storage available via CAM module</li> </ul>
Alarm log	10 alarm events—through COM		10 alarm events—through COM	
Waveform capture	One waveform event captured in ETU		One waveform event captured in ETU	
Display	LCD dot matrix		LCD dot matrix	
LEDs	<ul style="list-style-type: none"> <li>• ETU status</li> <li>• Long trip</li> <li>• Short trip</li> <li>• Instantaneous trip</li> </ul>	<ul style="list-style-type: none"> <li>• Ground trip</li> <li>• Arcflash Reduction Maintenance System™ status</li> </ul>	<ul style="list-style-type: none"> <li>• ETU status</li> <li>• Long trip</li> <li>• Short trip</li> <li>• Instantaneous trip</li> </ul>	<ul style="list-style-type: none"> <li>• Ground trip</li> <li>• Arcflash Reduction Maintenance System status</li> </ul>
Power for cause-of-trip LEDs	Control power or battery		Control power or battery	
Battery indication	Display (no PTT)		Display (no PTT)	
Maintenance/wellness health and diagnostics	<ul style="list-style-type: none"> <li>• ETU temperature and maximum</li> <li>• Trip count</li> <li>• Operations count/last date</li> </ul>	<ul style="list-style-type: none"> <li>• Operating (run) time</li> <li>• Health bar (algorithm)</li> </ul>	<ul style="list-style-type: none"> <li>• ETU temperature and maximum</li> <li>• Trip count</li> <li>• Operations count/last date</li> </ul>	<ul style="list-style-type: none"> <li>• Operating (run) time</li> <li>• Health bar (algorithm)</li> </ul>

#### Metering, communications and other features

Metering—current	Yes	<ul style="list-style-type: none"> <li>• Phase, neutral, ground</li> <li>• Min., max., demand, peak</li> </ul>	Yes	<ul style="list-style-type: none"> <li>• Phase, neutral, ground</li> <li>• Min., max., demand, peak</li> </ul>
Metering—voltage	No		Yes	<ul style="list-style-type: none"> <li>• L-L, L-N, avg. min., max.</li> <li>• Frequency, min., max.</li> </ul>
Metering—power	No		Yes	<ul style="list-style-type: none"> <li>• kW, kVA, kvar</li> <li>• Demand—kW, kVA, kvar</li> <li>• Peak demands</li> </ul>
Metering—energy	No		Yes	<ul style="list-style-type: none"> <li>• kWh—fwd, rev, net, tot</li> <li>• kvarh—lead, lag, net, tot</li> </ul>
Metering—PF apparent	No		Yes	<ul style="list-style-type: none"> <li>• Min., max.</li> </ul>
Communications	<ul style="list-style-type: none"> <li>• Modbus® RTU optional</li> </ul>	<ul style="list-style-type: none"> <li>• CAM modules optional</li> </ul>	<ul style="list-style-type: none"> <li>• Modbus RTU native</li> </ul>	<ul style="list-style-type: none"> <li>• CAM modules optional</li> </ul>
Testing method	PC via USB port—internal secondary injection test circuit		PC via USB port—internal secondary injection test circuit	
Relay outputs—alarms or trips	3		3	
QR code—support information	Yes		Yes	
Password—setting menu and test	Yes		Yes	
RoHS	Yes		Yes	

#### Protection features

Ordering options	LSI, LSIG/A		LSI, LSIG/A	
Number of sensors	<ul style="list-style-type: none"> <li>• One sensor—NF</li> </ul>	<ul style="list-style-type: none"> <li>• One sensor—RF</li> </ul>	<ul style="list-style-type: none"> <li>• One sensor—NF</li> </ul>	<ul style="list-style-type: none"> <li>• One sensor—RF</li> </ul>
Sensor (rating) plug ( $I_n$ )	<ul style="list-style-type: none"> <li>• No plug</li> </ul>	<ul style="list-style-type: none"> <li>• Programmable <math>I_n</math> (21)</li> </ul>	<ul style="list-style-type: none"> <li>• No plug</li> </ul>	<ul style="list-style-type: none"> <li>• Programmable <math>I_n</math> (21)</li> </ul>
Slopes	<ul style="list-style-type: none"> <li>• <math>I_t</math>, <math>I^2t</math>, <math>I^2t</math></li> </ul>	<ul style="list-style-type: none"> <li>• IEEE®—MI, VI, EI</li> </ul>	<ul style="list-style-type: none"> <li>• <math>I_t</math>, <math>I^2t</math>, <math>I^2t</math></li> </ul>	<ul style="list-style-type: none"> <li>• IEEE—MI, VI, EI</li> </ul>
System frequency	50/60 Hz		50/60 Hz	
Long delay pickup ( $I_r$ )	0.4–1.0 x ( $I_n$ ) (10)		0.4–1.0 x ( $I_n$ ) (10)	
Long delay time $I^2t$ at 6x ( $I_r$ )	0.5–24 s (10)		0.5–24 s (10)	
Long delay thermal memory	Yes	<ul style="list-style-type: none"> <li>• Program disable</li> </ul>	Yes	<ul style="list-style-type: none"> <li>• Program disable</li> </ul>
Short delay pickup	1.5–10 x ( $I_n$ ) (10)		1.5–10 x ( $I_n$ ) (10)	
Short delay time $I^2t$ at 8x ( $I_r$ )	0.1, 0.3, 0.4, 0.5 s		0.1, 0.3, 0.4, 0.5 s	
Short delay time flat	0.0, 0.1, 0.2, 0.3, 0.4, 0.5 s		0.0, 0.1, 0.2, 0.3, 0.4, 0.5 s	
Instantaneous pickup	2–15 x ( $I_n$ ) (10)		2–15 x ( $I_n$ ) (10)	
Ground (earth) fault pickup	<ul style="list-style-type: none"> <li>• Trip: 0.2–1.0 x (<math>I_n</math>) (5)</li> <li>• Alarm: 0.2–1.0 x (<math>I_n</math>) (4)</li> </ul>	<ul style="list-style-type: none"> <li>• Off</li> </ul>	<ul style="list-style-type: none"> <li>• Trip: 0.2–1.0 x (<math>I_n</math>) (5)</li> <li>• Alarm: 0.2–1.0 x (<math>I_n</math>) (4)</li> </ul>	<ul style="list-style-type: none"> <li>• Off</li> </ul>
Ground (earth) fault time $I^2t$ at 0.625 x ( $I_n$ )	0.1, 0.2, 0.3, 0.4, 0.5 s		0.1, 0.2, 0.3, 0.4, 0.5 s	
Ground (earth) fault time flat	0.1, 0.2, 0.3, 0.4, 0.5 s		0.1, 0.2, 0.3, 0.4, 0.5 s	
ZSI, short-delay and ground	<ul style="list-style-type: none"> <li>• Programmable</li> </ul>	<ul style="list-style-type: none"> <li>• Display indication</li> </ul>	<ul style="list-style-type: none"> <li>• Programmable</li> </ul>	<ul style="list-style-type: none"> <li>• Display indication</li> </ul>
Neutral protection	Yes	<ul style="list-style-type: none"> <li>• Off, 60, 100%</li> </ul>	Yes	<ul style="list-style-type: none"> <li>• Off, 60, 100%</li> </ul>
Arcflash Reduction Maintenance System—arc flash—mode/settings	<ul style="list-style-type: none"> <li>• Optional—on or off/remote</li> </ul>	<ul style="list-style-type: none"> <li>• 5 settings (x <math>I_n</math>)</li> </ul>	<ul style="list-style-type: none"> <li>• Optional—on or off/remote</li> </ul>	<ul style="list-style-type: none"> <li>• 5 settings (x <math>I_n</math>)</li> </ul>



Eaton Pow-R-Line panelboards and switchboards are built to your requirements at our world-class manufacturing plants in Sumter, SC and Juarez, MX. In addition, Eaton has 16 regional satellite facilities located across the country to meet your panelboard and switchboard service needs.

**For an unparalleled commitment to your specific needs, please visit your local satellite facility.**

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