

IZMX Series Air Circuit Breakers

IZMX16 / IZMX40

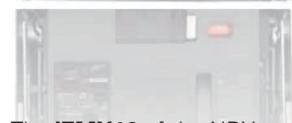


Small, flexible, efficient

EATON

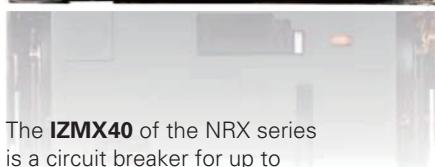
Powering Business Worldwide

Versatile circuit breakers up to 4000 A – for cost-effective, optimized solutions.



The **IZMX16** of the NRX series is the smallest air circuit-breaker (ACB) worldwide: With a volume of only 0.024 m³ and a front surface of only 0.092 m², it is just slightly bigger than the size of a A4 sheet of paper! And all this without any loss in terms of performance.

The innovative concept allows the user to install **two circuit** breakers side by side in withdrawable design, **in a 600 mm wide section**. This fact provides for a more cost-effective setup of the section and, in addition, it helps to save operating space. And where remote switching is required, this volume can even accommodate a motor for charging the stored-energy spring mechanism and releases for electrical operation. High performance combined with reduced space is exceptional value to customer.



The **IZMX40** of the NRX series is a circuit breaker for up to 4000 A with depth less than 400mm for the drawout version, without the need to install any additional "copper mines" in the connection area.

Tests to integrate it into Eaton switchgear systems, such as Modan, xEnergy, Power Xpert and Capitol 40 confirm its outstanding technical data and optimal compatibility thanks to the flexible connection system.



Horizontal Terminal



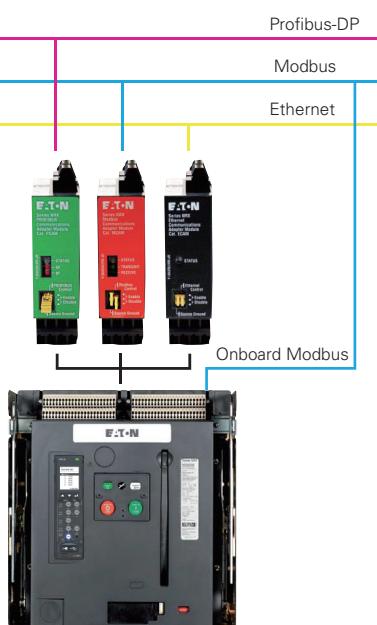
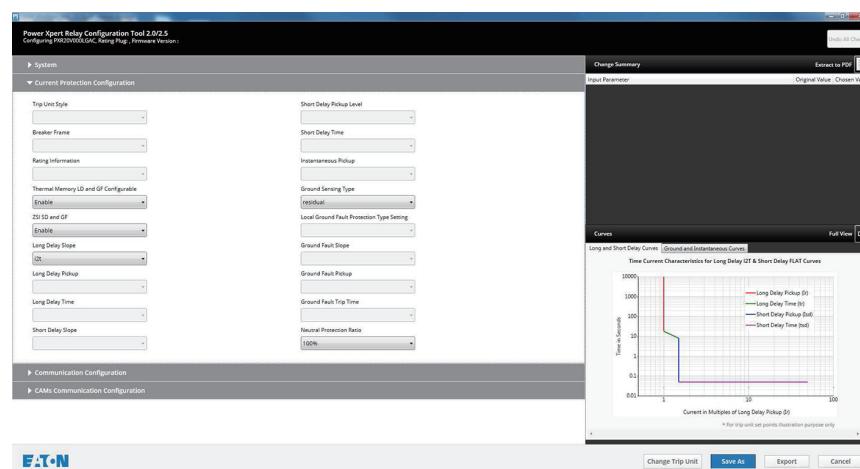
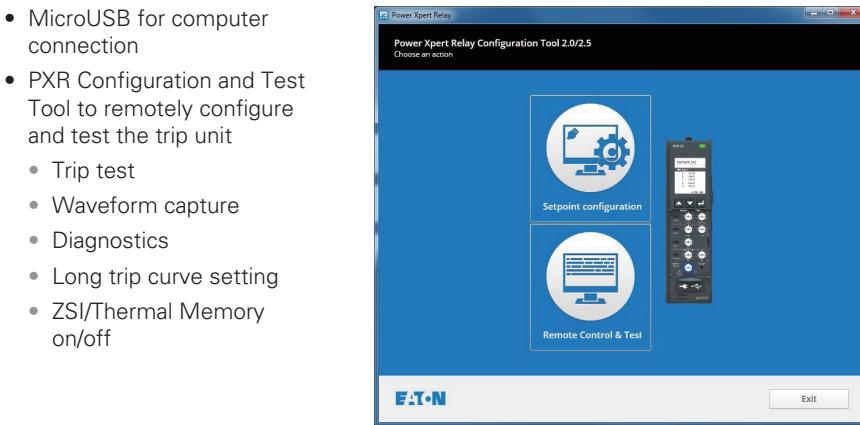
Vertical Terminal
(Available on B, N and H type.
E type can be configured as horizontal terminal only)

The next generation trip unit platform: Power Xpert Release (PXR)

- LCD display with multilingual capability
- Current metering on PXR20 and power metering on PXR25
- Extended range for pickup value and delay timing setting
- "OFF" setting available for ground fault(G) and non-delayed instantaneous trip(I)
- Onboard Modbus communication (standard on PXR25 and optional on PXR20)
- MicroUSB for computer connection
- PXR Configuration and Test Tool to remotely configure and test the trip unit
 - Trip test
 - Waveform capture
 - Diagnostics
 - Long trip curve setting
 - ZSI/Thermal Memory on/off



PXR Trip Unit



Increased operating safety and flexibility based on communication

With the respective communication module - PCAM, MCAM or ECAM (Profibus-DP / Modbus/ Ethernet Communications Adapter Module) - every circuit breaker of the NXR series is equipped for modern communication and is fit for the future. The databus not only allows to transmit information, but also to receive commands/settings.

Onboard Modbus communication is standard on the PXR25 (U type) trip unit and optional on the PXR20(V type) trip unit upon order. Additional PCAM, MCAM or ECAM module can be installed externally for PXR25 to expand the communication capability. (No more than one external CAM module can be installed)

Important functions and characteristics



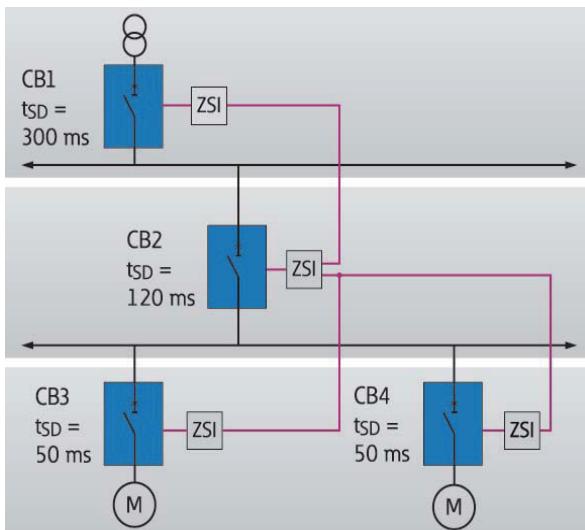
Arcflash Reduction Maintenance System™

Eaton's patented Arcflash Reduction Maintenance System technology provides maintenance staff improved safety of downstream maintenance locations using a simple and reliable method to reduce fault clearing times and energy in an arc flash event (radiation, sound, pressure, temperature).

Arcflash Reduction Maintenance System uses a separate analog trip circuit providing faster signal processing and interruption times than the standard (digital) "instantaneous" protection.

The Arcflash Reduction Maintenance System function is activated either directly on the circuit breaker through a local switch or remotely through communications or a contact input.

Arcflash Reduction Maintenance System is optional on both PXR20 and PXR25 trip units.



Zone selectivity ZSI

Circuit breakers are directly connected to a signal line, without any additional modules. So, in case of a malfunction, they ensure that only the circuit breaker immediately upstream the point of failure will break a short-circuit without delay.

The advantage of the zone selectivity feature - compared to ordinary time selectivity - is the significantly reduced time until switch-off and the reduced amount of energy released in case of a short-circuit.

For additional safety of maintenance staff we recommend combining ZSI functionality with Arcflash Reduction Maintenance System.



Breaker rear side (Drawout parent breaker)

Easy maintenance and service

Maintenance and service can be conveniently performed on the draw-out breaker as the primary finger clusters (blue) and levering mechanism are part of the breaker instead of the cassette.

Eaton also offers many field installable accessories and parts, extending the life of the breaker.

Technical data

IEC/EN 60947	IZMX16			IZMX40			
Rated Current (I_n)	630A, 800A, 1000A, 1250A, 1600A			800A, 1000A, 1250A, 1600A, 2000A, 2500A, 3200A, 4000A (E type:800A~2000A only)			
Type of circuit breaker	B	N	H	E	B	N	H
Rated impulse withstand voltage (U_{imp} , VAC)	12000	12000	12000	12000	12000	12000	12000
Rated insulation voltage (U_i , VAC)	1000	1000	1000	1000	1000	1000	1000
Rated operational voltage (U_e , VAC)	690	690	690	480	690	690	690
Ultimate breaking capacity (I_{cu} , kA)	240V 50/60Hz 480V 50/60Hz 690V 50/60Hz	42 42 42	85 50 42	85 66 42	66 66 66	85 85 75	105 105 75
Rated service breaking capacity (I_{cs} , kA)	240V 50/60Hz 480V 50/60Hz 690V 50/60Hz	42 42 42	50 50 42	65 50 42	66 66 66	85 85 75	105 105 75
Rated short-time withstand current (I_{cw} , kA)	1s/3s	42/-	42/-	42/-	66/-	66/53	85 ¹⁾ /66
Rated short-circuit making capacity (I_{cm} , kA)	480V 50/60Hz 690V 50/60Hz	88 88	105 88	145 88	145 145	187 165	231 165
Lifespan	630A-1600A		800A-1600A		2000A	2500A-4000A	
	Mechanical, w/o maintenance	12500		12500	10000	10000	
	Mechanical, w/ maintenance	25000		25000	20000	20000	
	Electrical, w/o maintenance	10000		10000	8000 ²⁾	6000 ³⁾	
Dimensions (H × W × D, mm)	Fixed 3P Fixed 4P Drawable 3P Drawable 4P	338 × 210 × 184 338 × 279 × 184 360 × 254 × 289 360 × 324 × 289		398 × 376 × 298 398 × 492 × 298 456 × 426 × 393 456 × 541 × 393			
Weight (kg)	Fixed 3P/4P Drawable 3P/4P	15/20 39/47		45/56 98/121			

Trip unit specifications

	PXRV Standard - current IZMX16/40...V...	PXRU Universal - power IZMX16/40...U...
Protective options	LSI, LSIG	LSI, LSIG
Overload protection (L)		
Overload trip (I_r)	(0.4 ~ 1.0) × I_n	(0.4 ~ 1.0) × I_n
Long delay time t_r (6 × I_r)	0.5 ~ 24s	0.5 ~ 24s
Short-time delayed short-circuit protection (S)		
Short delayed pickup (I_{sd})	(1.5 ~ 10) × I_r	(1.5 ~ 10) × I_r
Short delay time, flat characteristic curve (t_{sd})	0 ~ 0.5s ⁴⁾	0 ~ 0.5s ⁴⁾
Short delay time at 8 × I_r , I^2t curve (t_{sd})	0.1 ~ 0.5s	0.1 ~ 0.5s
Non-delayed short-circuit protection (I)		
Non-delayed pickup (I_i)	OFF, (2 ~ 15) × I_n	OFF, (2 ~ 15) × I_n
Optional ground fault protection (G)		
Ground/Earth fault alarm (A)	Optional	Optional
Ground/Earth pickup (I_g)	OFF, (0.2 ~ 1.0) × I_n	OFF, (0.2 ~ 1.0) × I_n
Short delay time, flat characteristic curve (t_g)	0.1 ~ 0.5s	0.1 ~ 0.5s
Short delay time at 0.625 × I_n , I^2t curve (t_g)	0.1 ~ 0.5s	0.1 ~ 0.5s
Standard functions	Current measurement, status/Overload LED, cause of trip LEDs, over-temperature trip, thermal memory, zone selectivity ZSI, closing releases MCR, LCD display	
	Voltage/power/energy measurement, waveform capture, communication(Modbus), trip log	
Optional functions	Communication, Arcflash Reduction Maintenance System ⁵⁾	Additional communication module, Arcflash Reduction Maintenance System ⁵⁾

¹⁾ 75kA at 690VAC

²⁾ 6000 operations for B,N and H type at 690VAC, E type at 480VAC

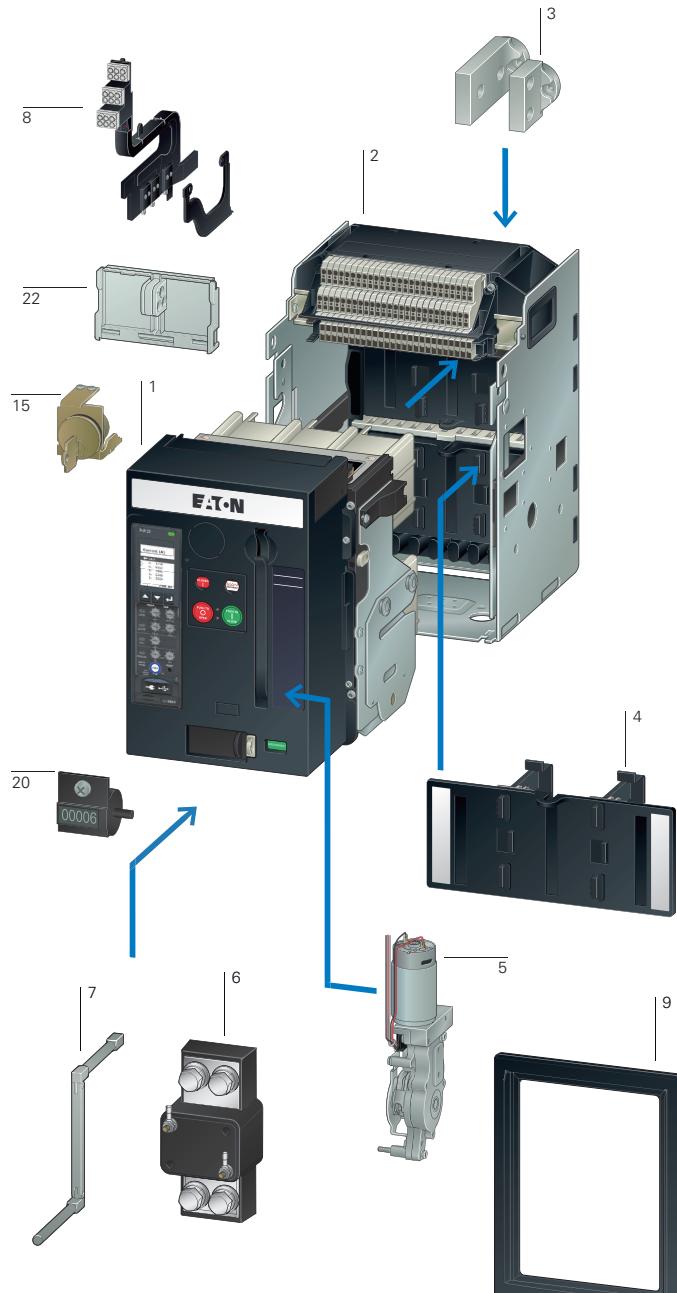
³⁾ 2500 operations at 690VAC

⁴⁾ 50ms delay when setting at "0"

⁵⁾ Arcflash Reduction Maintenance System™

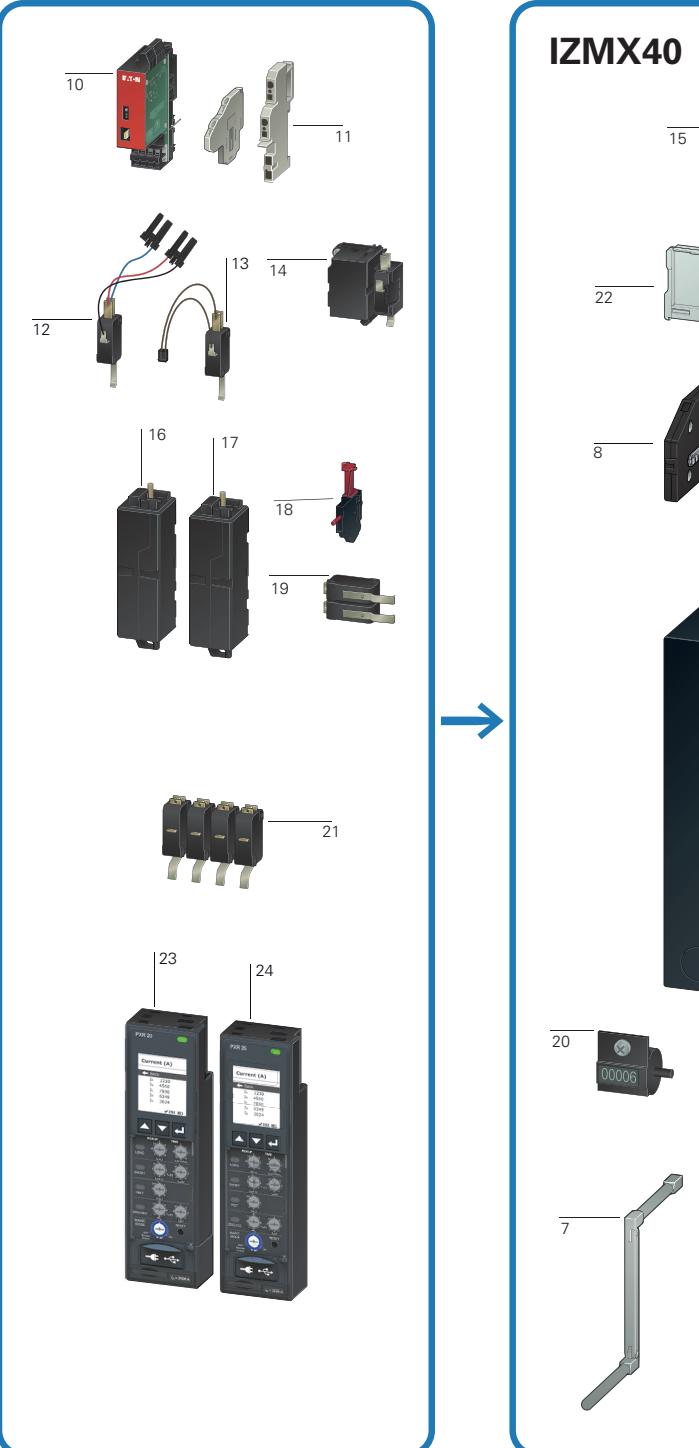
IZMX system overview

IZMX16



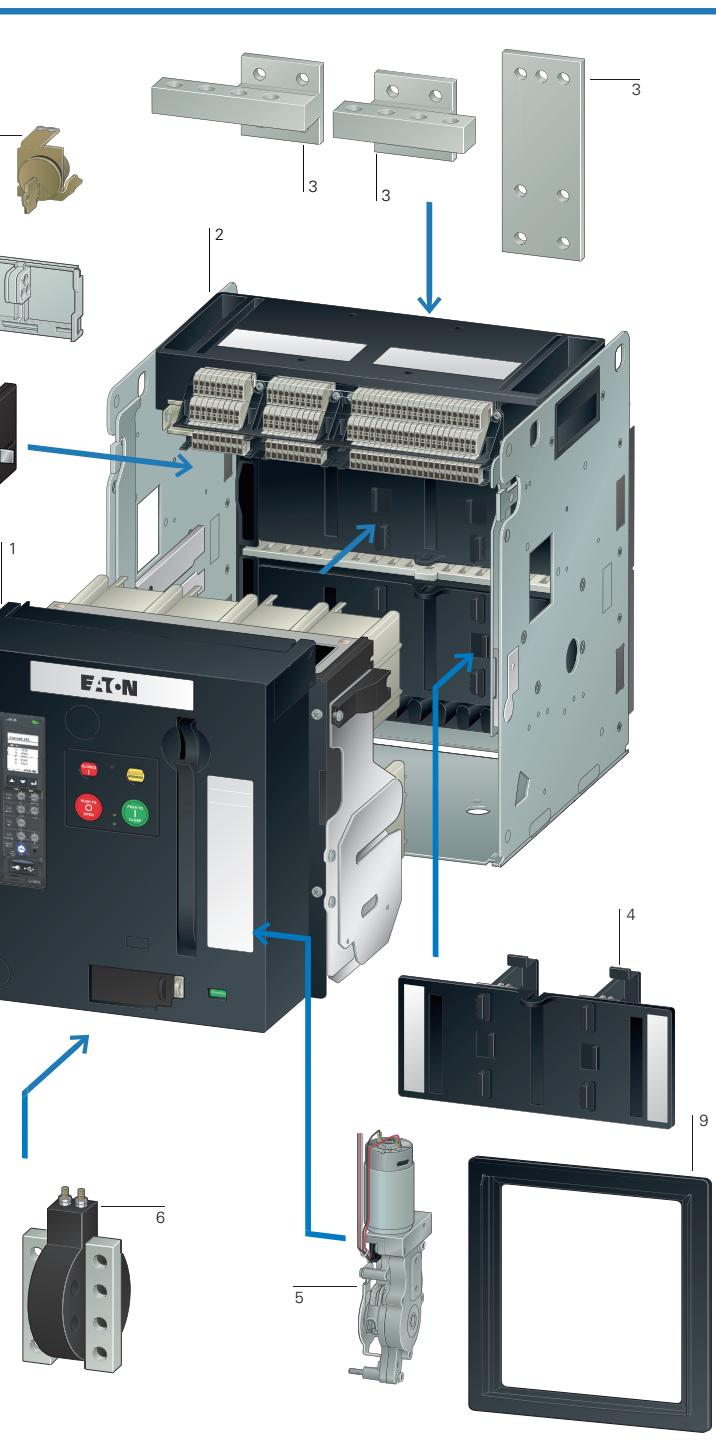
Unique parts and accessories for -IZMX16

IZMX40



Interchangeable accessories between IZMX16 and IZMX40

IZMX16, INX16, IZMX40, INX40

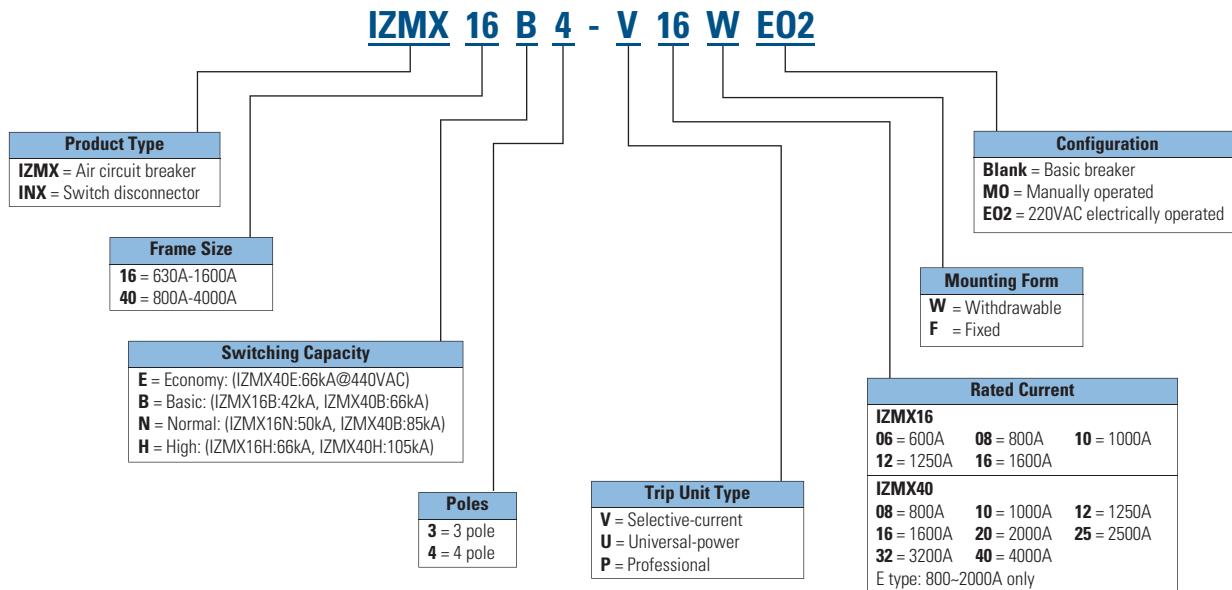


Unique parts and accessories for IZMX40

- 1 IZMX Circuit-breaker**
IZMX16: 630 - 1600A
IZMX40: 800 - 4000A
- 2 Cassette for withdrawable units**
+IZMX-CAS163-1600 X16, 1600A, 3P
+IZMX-CAS164-1600 X16, 1600A, 4P
+IZMX-CAS403-2000 X40, 2000A, 3P
+IZMX-CAS404-2000 X40, 2000A, 4P
+IZMX-CAS403-2500 X40, 2500A, 3P
+IZMX-CAS404-2500 X40, 2500A, 4P
+IZMX-CAS403-3200 X40, 3200A, 3P
+IZMX-CAS404-3200 X40, 3200A, 4P
+IZMX-CAS403-4000 X40, 4000A, 3P
+IZMX-CAS404-4000 X40, 4000A, 4P
- 3 Main terminal kits**
Universal terminals, 3- and 4-pole horizontal/vertical
IZMX-THV163-2 X16, 3P
IZMX-THV164-2 X16, 4P
IZMX-THV403-3200-2 X40, 3P, 3200A
IZMX-THV404-3200-2 X40, 4P, 3200A
IZMX-TH403-2 X40, 3P, 4000A, horizontal
IZMX-TV403-2 X40, 3P, 4000A, vertical
IZMX-TH404-2 X40, 4P, 4000A, horizontal
IZMX-TV404-2 X40, 4P, 4000A, vertical
- 4 Safety Shutter**
+IZMX-SH163 X16, 3P
+IZMX-SH164 X16, 4P
+IZMX-SH403 X40, 3P
+IZMX-SH404 X40, 4P
- 5 Motor operator**
Automatic charging of the spring force storage for remote or local operations
+IZMX-M16-24DC X16, 24VDC
+IZMX-M16-110AD X16, 110VAC/DC
+IZMX-M40-230AD X16, 220VAC/DC
+IZMX-M40-24DC X40, 24VDC
+IZMX-M40-110AD X40, 110VAC/DC
+IZMX-M40-230AD X40, 110VAC/DC
- 6 Current sensor for neutral conductor**
Current sensor for sensing the neutral-conductor current.
IZMX-CT16-N-2 X16
IZMX-CT40-N-2 X40
- 7 Levering tool**
Lev-in tool to move the breaker in and out of the cassette. Standard Omega shaped handle is included in D/O breaker. Optional collapsible handle can be ordered separately
- 8 Position cell switches**
Cell switch signals the position of the breaker inside of the cassette.
Connect, Test and Disconnect Position.
IZMX-CS16-1-2 X16
IZMX-CS40-L-2 X40, left
IZMX-CS40-R-2 X40, right
- 9 Door escutcheon**
Closes the gap between Breaker and Switchgear-door.
IP41 included in breaker
For IP55:
IZMX-DC16-W-2 X16
IZMX-DC40-W-2 X40
- 10 Communication modules**
External modules
IZMX-MCAM-2 Modbus
IZMX-ECAM-2 Ethernet
IZMX-PCAM-2 Profibus DP
- 11 Control circuit terminal units**
Modular design
- 12 Latch check switch**
For external application
Usage
+IZMX-LCS
- 13 Latch check switch**
For use with closing release.
+IZMX-LCS-SR
- 14 Closing releases**
Closes the breaker by an electrical signal.
+IZMX-SR24DC 24VDC
+IZMX-SR110AD 110VAC/DC
+IZMX-SR230AD 220VAC/DC
- 15 Key locking**
Locking of the breaker by a keylock.
IZMX-KLP-SO-CES-2
IZMX-KLP-SO-KIRK-2
IZMX-KLP-SO-RONIS-2
IZMX-KLP-SO-CASTELL-2
- 16 Shunt releases**
Opens the breaker by an electrical signal.
+IZMX-ST24DC 24VDC
+IZMX-ST110AD 110VAC/DC
+IZMX-ST230AD 220VAC/DC
- 17 Undervoltage releases**
Opens the breaker by a voltage-drop in the control circuit.
+IZMX-UVR24DC 24VDC
+IZMX-UVR110AD 110VAC/DC
+IZMX-UVR220AD 220VAC/DC
+IZMX-UVR400AC 380VAC
- 18 Red-pop trip indicator**
Red-pop trip indicator signals a trip by the trip unit.
Included in breaker with trip unit
- 19 Trip indicator switches**
Overcurrent trip switch (OTS) signals a trip by the trip unit.
+IZMX-OTS
- 20 Switching operations counters**
Counts the number of operations.
+IZMX-OC
- 21 Auxiliary contacts**
Signaling switch ON-OFF.
2a2b standard. 4a4b maximum for IZMX16 and 12a12b for IZMX40
+IZMX-AS22 X16/X40, add 2a2b
+IZMX-AS44 X40, add 4a4b
+IZMX-AS66 X40, add 6a6b
+IZMX-AS88 X40, add 8a8b
+IZMX-AS1010 X40, add 10a10b
- 22 Locking facilities**
Plastic or metal
IZMX-PLPC16-P-2 X16, plastic
IZMX-PLPC16-M-2 X16, metal
IZMX-PLPC40-P-2 X40, plastic
IZMX-PLPC40-M-2 X40, metal
- 23 Trip unit**
PX20, V-type, current metering
C - Onboard Modbus
G - Ground fault protection
M - Arcflash Reduction Maintenance System™
+IZMX-PXRV-C
+IZMX-PXRV-G
+IZMX-PXRV-GC
+IZMX-PXRV-GM
+IZMX-PXRV-GMC
- 24 Trip unit**
PX25, U-type, power metering
+IZMX-PXRU-G
+IZMX-PXRU-M
+IZMX-PXRU-GM

Selection guide

Breaker catalog number



Recommended selection examples

IZMX16 fixed 220VAC motorized example (EO2):

*IZMX16B3-V16F	Fixed breaker, including 2a2b Aux contact
+IZMX-M16-230AD	220-240 VAC/DC Charging motor
+IZMX-ST230AD	220-240 VAC/DC Shunt trip
+IZMX-SR230AD	220-240 VAC/DC Closing spring release
+IZMX-AS22	Additional 2a2b Aux contact (4a4b total)
+IZMX-OTS	Over current trip switch(OTS) 2CO
*IZMX-THV163-2	Main terminal adapter - horizontal
EASY400-POW	External power module to converter 220VAC to 24VDC to power trip unit

IZMX16 withdrawable 220VAC motorized example (EO2):

*IZMX16B3-U16W	Withdrawable parent breaker, including 2a2b Aux contact
+IZMX-M16-230AD	220-240 VAC/DC Charging motor
+IZMX-ST230AD	220-240 VAC/DC Shunt trip
+IZMX-SR230AD	220-240 VAC/DC Closing spring release
+IZMX-AS22	Additional 2a2b Aux contact (4a4b total)
+IZMX-OTS	Over current trip switch(OTS) 2CO
*+IZMX-CAS163-1600	Cassette(including interphase barriers and handle)
*+IZMX-SH163	Safety shutters
*IZMX-THV163-2	Main terminal adapter - horizontal
EASY400-POW	External power module to converter 220VAC to 24VDC to power trip unit

IZMX40 fixed 220VAC motorized example (EO2):

*IZMX40B3-V16F	Fixed parent breaker, including 2a2b Aux contact
+IZMX-M40-230AD	220-240 VAC/DC Charging motor
+IZMX-ST230AD	220-240 VAC/DC Shunt trip
+IZMX-SR230AD	220-240 VAC/DC Closing spring release
+IZMX-AS22	Additional 2a2b Aux contact (4a4b total)
+IZMX-OTS	Over current trip switch(OTS) 2CO
*IZMX-THV403-3200-2	Main terminal adapter – horizontal (3200A and below)
EASY400-POW	External power module to converter 220VAC to 24VDC to power trip unit

IZMX40 withdrawable 220VAC motorized example (EO2):

*IZMX40B3-U16W	Withdrawable parent breaker, including 2a2b Aux contact
+IZMX-M40-230AD	220-240 VAC/DC Charging motor
+IZMX-ST230AD	220-240 VAC/DC Shunt trip
+IZMX-SR230AD	220-240 VAC/DC Closing spring release
+IZMX-AS22	Additional 2a2b Aux contact (4a4b total)
+IZMX-OTS	Over current trip switch(OTS) 2CO
*+IZMX-CAS403-2000	Cassette(2000A and below)
*+IZMX-SH403	Safety shutters
*IZMX-THV403-3200-2	Main terminal adapter – horizontal (3200A and below)
EASY400-POW	External power module to converter 220VAC to 24VDC to power trip unit

* Manually Operated(MO) components

Option for ground fault protection:

- Add +IZMX-PXRV-G (V type trip unit) or +IZMX-PXRU-G(U type trip unit) for ground fault protection
- For 3-pole ACB, external neutral censor is recommended for ground fault protection. Order IZMX-CT16-N-2 (IZMX16) or IZMX-CT40-N-2 (IZMX40)

The technical data and parameters are subject to change before the official launch. Please confirm with Eaton when placing the order.

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