Specifications

Eaton 278821

Eaton Moeller series xEffect - FAZ MCB. Miniature circuit breaker (MCB), 4 A, 2p, characteristic: Z

General specifications	
PRODUCT NAME	Eaton Moeller series xEffect - FAZ MCB
CATALOG NUMBER	278821
MODEL CODE	FAZ-Z4/2
EAN	4015082788216
PRODUCT LENGTH/DEPTH	80 mm
PRODUCT HEIGHT	75.5 mm
PRODUCT WIDTH	36 mm
PRODUCT WEIGHT	0.225 kg
COMPLIANCES	UL CSA09 (with supplementary protector only) RoHS conform
CERTIFICATIONS	UL 1077 UL (File No. E177451) CSA (File No. 204453) North America (UL recognized, CSA certified) IEC/EN 60947-2 CE marking CSA-C22.2 No. 235 IEC/EN 60898 CSA (Class No. 3215-30) UL (Category Control Number QVNU2, QVNU8) EN45545-2 IEC 61373

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Delivery Programme

APPLICATION	• Branch circuits, not as BCPD • Switchgear for industrial and advanced commercial applications • xEffect - Switchgear for industrial and advanced commercial applications
NUMBER OF POLES	Two-pole
NUMBER OF POLES (TOTAL)	2
NUMBER OF POLES (PROTECTED)	2
TRIPPING CHARACTERISTIC	Z
RELEASE CHARACTERISTIC	Z
AMPERAGE RATING	4 A
TYPE	• FAZ • Miniature circuit breaker

Technical data - electrical

VOLTAGE TYPE	AC
VOLTAGE RATING	240 V AC / 415 V AC
VOLTAGE RATING AT DC	60 V DC (per pole)
VOLTAGE RATING (UL CSA 13)	480 Y/277 V AC; 96 V DC
RATED OPERATIONAL VOLTAGE (UE) - MAX	400 V
RATED INSULATION VOLTAGE (UI)	440 V
RATED IMPULSE WITHSTAND VOLTAGE (UIMP)	4 kV
FREQUENCY RATING - MIN	50 Hz
FREQUENCY RATING - MAX	60 Hz
RATED SWITCHING CAPACITY (IEC/EN 60947-2)	10 kA
OPERATIONAL SWITCHING CAPACITY	7.5 kA
RATED SHORT-CIRCUIT BREAKING CAPACITY (EN 60898) AT 230 V	0 kA
RATED SHORT-CIRCUIT BREAKING CAPACITY (EN 60898) AT 400 V	0 kA
RATED SHORT-CIRCUIT BREAKING CAPACITY (IEC 60947-2) AT 230 V	10 kA
RATED SHORT-CIRCUIT BREAKING CAPACITY (IEC 60947-2) AT 400 V	10 kA
ADMISSIBLE BACK-UP FUSE - MAX	125 A gL/gG
SELECTIVITY CLASS	3
OVERVOLTAGE CATEGORY	III
POLLUTION DEGREE	2
LIFESPAN, ELECTRICAL	10000 operations
DIRECTION OF INCOMING SUPPLY	As required

Technical data - mechanical

FRAME	45 mm
ENCLOSURE WIDTH	80 mm
WIDTH IN NUMBER OF MODULAR SPACINGS	2
BUILT-IN DEPTH	70.5 mm
MOUNTING WIDTH PER POLE	17.5 mm
MOUNTING WIDTH	17.5 mm
MOUNTING METHOD	Top-hat rail IEC/EN 60715
MOUNTING POSITION	As required
DEGREE OF PROTECTION	IP40 (when fitted) IP20 (IEC) IP20 UL/CSA Type: -
TERMINALS (TOP AND BOTTOM)	Twin-purpose terminals
CONNECTABLE CONDUCTOR CROSS SECTION (SOLID-CORE) - MIN	1 mm²
CONNECTABLE CONDUCTOR CROSS SECTION (SOLID-CORE) - MAX	25 mm²
CONNECTABLE CONDUCTOR CROSS SECTION (MULTI-WIRED) - MIN	1 mm²
CONNECTABLE CONDUCTOR CROSS SECTION (MULTI-WIRED) - MAX	25 mm²
TERMINAL CAPACITY OF SCREW TERMINALS FOR MAIN CABLE	10 mm² (2x)
TERMINAL CAPACITY (CONTROL CABLE)	25 mm² (1x)
TERMINAL PROTECTION	Finger and hand touch safe, DGUV VS3, EN 50274
BUSBAR MATERIAL THICKNESS	0.8 mm - 2 mm

Design verification as per IEC/EN 61439 - technical data

RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)	4 A
HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT	0 W
EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT	8 W
STATIC HEAT DISSIPATION, NON-CURRENT-DEPENDENT	0 W
HEAT DISSIPATION CAPACITY	0 W
AMBIENT OPERATING TEMPERATURE - MIN	-25 °C
AMBIENT OPERATING TEMPERATURE - MAX	75 °C

Design verification as per IEC/EN 61439

10.2.2 CORROSION RESISTANCE	Meets the product standard's requirements.
10.2.3.1 VERIFICATION OF THERMAL STABILITY OF ENCLOSURES	Meets the product standard's requirements.
10.2.3.2 VERIFICATION OF RESISTANCE OF INSULATING MATERIALS TO NORMAL HEAT	Meets the product standard's requirements.
10.2.3.3 RESIST. OF INSUL. MAT. TO ABNORMAL HEAT/FIRE BY INTERNAL ELECT. EFFECTS	Meets the product standard's requirements.
10.2.4 RESISTANCE TO ULTRA-VIOLET (UV) RADIATION	Meets the product standard's requirements.
10.2.5 LIFTING	Does not apply, since the entire switchgear needs to be evaluated.
10.2.6 MECHANICAL IMPACT	Does not apply, since the entire switchgear needs to be evaluated.
10.2.7 INSCRIPTIONS	Meets the product standard's requirements.
10.3 DEGREE OF PROTECTION OF ASSEMBLIES	Does not apply, since the entire switchgear needs to be evaluated.
10.4 CLEARANCES AND CREEPAGE DISTANCES	Meets the product standard's requirements.
10.5 PROTECTION AGAINST ELECTRIC SHOCK	Does not apply, since the entire switchgear needs to be evaluated.
10.6 INCORPORATION OF SWITCHING DEVICES AND COMPONENTS	Does not apply, since the entire switchgear needs to be evaluated.
10.7 INTERNAL ELECTRICAL CIRCUITS AND CONNECTIONS	Is the panel builder's responsibility.
10.8 CONNECTIONS FOR EXTERNAL CONDUCTORS	Is the panel builder's responsibility.
10.9.2 POWER-FREQUENCY ELECTRIC STRENGTH	Is the panel builder's responsibility.
10.9.3 IMPULSE WITHSTAND VOLTAGE	Is the panel builder's responsibility.
10.9.4 TESTING OF ENCLOSURES MADE OF INSULATING MATERIAL	Is the panel builder's responsibility.
10.10 TEMPERATURE RISE	The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices.
10.11 SHORT-CIRCUIT RATING	Is the panel builder's responsibility. The specifications for the switchgear must be observed.

Additional information

CURRENT LIMITING CLASS	3
FEATURES	Additional equipment possible
SPECIAL FEATURES	Ambient temperature hint: a 1 °C increase results in a 0.5% linear reduction of current carrying capacity
USED WITH	FAZ Miniature circuit breaker

10.12 ELECTROMAGNETIC COMPATIBILITY	Is the panel builder's responsibility. The specifications for the switchgear must be observed.
10.13 MECHANICAL FUNCTION	The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.

Resources

CATALOGUES	eaton-xeffect-industrial-switchgear-range-catalog-ca003002en-en-us.pdf
CHARACTERISTIC CURVE	eaton-mcb-characteristic-xeffect-faz-characteristic-curve.eps eaton-mcb-tripping-characteristic-xeffect-faz-characteristic-curve-002.eps eaton-mcb-xeffect-faz-characteristic-curve.eps eaton-mcb-characteristic-xeffect-faz-characteristic-curve-007.eps eaton-mcb-characteristic-xeffect-faz-characteristic-curve-004.eps eaton-xeffect-faz-mcb-characteristic-curve-006.jpg eaton-xeffect-faz-mcb-characteristic-curve-005.jpg eaton-mcb-current-xeffect-faz-characteristic-curve.eps eaton-mcb-xeffect-faz-characteristic-curve-002.eps eaton-mcb-current-xeffect-faz-characteristic-curve-002.eps
DECLARATIONS OF CONFORMITY	DA-DC-03_FAZ-B-C-D
DRAWINGS	eaton-xeffect-faz-mcb-dimensions-002.jpg eaton-mcb-xeffect-faz-dimensions-002.eps eaton-xeffect-faz-mcb-3d-drawing-006.jpg eaton-mcb-faz-xeffect-faz-3d-drawing-002.eps
ECAD MODEL	DA-CE-ETN.FAZ-Z4_2
INSTALLATION INSTRUCTIONS	eaton-pdd-rcbo-mcb-installations-il019140zu.pdf
MCAD MODEL	faz_1pn_2p.stp faz_1pn_2p.dwg
PEP ECO-PASSPORT	EATO-00047-V01.01-EN
WIRING DIAGRAMS	eaton-mcb-xeffect-faz-wiring-diagram-002.eps eaton-xpole-mmc4-6-m-mcb-wiring-diagram-003.jpg

PROJECT NAME:	
PROJECT NUMBER:	
PREPARED BY:	
DATE:	

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