DATASHEET - FAZ-D12/2



Miniature circuit breaker (MCB), 12A, 2p, type D characteristic

Powering Business Worldwide*

Part no. FAZ-D12/2 Catalog No. 278780 Alternate Catalog FAZ-D12/2

No.

EL-Nummer 0001691183 (Norway)

Similar to illustration

Delivery program			
Basic function			Miniature circuit-breakers
Number of poles			2 pole
Tripping characteristic			D
Application			Switchgear for industrial and advanced commercial applications
Rated current	In	Α	12
Rated switching capacity acc. to IEC/EN 60947-2	I _{cu}	kA	15
Product range			FAZ

Technical data Electrical

Standards			IEC/EN 60947-2 IEC/EN 60898
Rated operational voltage	U _e	V	
	U _e	V AC	240/415
Rated switching capacity acc. to IEC/EN 60947-2	I _{cu}	kA	15

Design verification as per IEC/EN 61439

Design verification as per IEC/EN 61439			
Technical data for design verification			
Rated operational current for specified heat dissipation	I_n	Α	12
Heat dissipation per pole, current-dependent	P _{vid}	W	0
Equipment heat dissipation, current-dependent	P _{vid}	W	3.6
Static heat dissipation, non-current-dependent	P _{vs}	W	0
Heat dissipation capacity	P _{diss}	W	0
Operating ambient temperature min.		°C	-40
Operating ambient temperature max.		°C	75
			linear, per +1 °C, results in a 0.5% reduction of current carrying capacity
IEC/EN 61439 design verification			
10.2 Strength of materials and parts			
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 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric 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 Insulation properties			

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.
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.

Technical data ETIM 7.0

Circuit breakers and fuses (EG000020) / Miniature circuit breaker (MCB) (EC000042)

Electric engineering, automation, process control engineering / Electrical installation, device / Miniature circuit breaker system (MCB) / Miniature circuit breaker (MCB) (ecl@ss10.0.1-27-14-19-01 [AAB905014])

Release characteristic Image of poles (total) Image of poles (total) Image of protected poles Image of protected poles Image of protected poles Image of protected poles Image of poles (total) Image of protected poles Image of poles (total) Image of pole	(ecl@ss10.0.1-27-14-19-01 [AAB905014])		
Number of protected poles 2 Rated current A 12 Rated voltage V 40 Rated insulation voltage Ui V 40 Rated insulation voltage Uimp V 4 Rated short-circuit breaking capacity Icn EN 60898 at 230 V KA 10 Rated short-circuit breaking capacity Icn EN 60898 at 400 V KA 10 Rated short-circuit breaking capacity Icu IEC 60947-2 at 230 V KA 15 Rated short-circuit breaking capacity Icu IEC 60947-2 at 400 V KA 15 Rated short-circuit breaking capacity Icu IEC 60947-2 at 400 V KA 15 Voltage type KA 15 Current limiting class S 50 Suitable for flush-mounted installation N No Concurrently switching N-neutral Y 10 Over voltage category Y 10 Pollution degree Y 2 Additional equipment possible Y Yes With in number of modular spacings Y Y Built-in depth Y Y <td>Release characteristic</td> <td></td> <td>D</td>	Release characteristic		D
Rated current A 12 Rated voltage V 400 Rated insulation voltage Ui V 40 Rated insulation voltage Uimp VV 40 Rated short-circuit breaking capacity Icn EN 60898 at 230 V KA 10 Rated short-circuit breaking capacity Icu IEC 60947-2 at 230 V KA 15 Rated short-circuit breaking capacity Icu IEC 60947-2 at 230 V KA 15 Rated short-circuit breaking capacity Icu IEC 60947-2 at 2400 V KA 15 Voltage type KA 15 Current limiting class A 12 Suitable for flush-mounted installation Y 30 Concurrently switching N-neutral Y 3 Over voltage category Y 3 Pollution degree Y 2 Additional equipment possible Y 2 With in number of modular spacings Y 2 Built-in depth Y 2 Degree of protection (IP) Y 2 Amient temperature during operating Y 2	Number of poles (total)		2
Rated voltage V 400 Rated insulation voltage Ui V 440 Rated inpulse withstand voltage Uimp kV 4 Rated short-circuit breaking capacity Icn EN 60898 at 230 V kA 10 Rated short-circuit breaking capacity Icn EN 60898 at 400 V kA 15 Rated short-circuit breaking capacity Icu IEC 60947-2 at 230 V kA 15 Rated short-circuit breaking capacity Icu IEC 60947-2 at 400 V kA 15 Voltage type KA 15 Current limiting class Suitable for flush-mounted installation KA 3 Concurrently switching N-neutral V No Over voltage category V Y 3 Pollution degree V Y 3 Additional equipment possible V Y Y Width in number of modular spacings T Y 2 Built-in depth T P 2 2 Concertable conductor cross section multi-wired T P 2 2 Connectable conductor cross section multi-wired <td>Number of protected poles</td> <td></td> <td>2</td>	Number of protected poles		2
Rated insulation voltage Ui V 440 Rated impulse withstand voltage Uimp kV 4 Rated short-circuit breaking capacity Icn EN 60898 at 230 V kA 10 Rated short-circuit breaking capacity Icn EN 60898 at 400 V kA 15 Rated short-circuit breaking capacity Icu IEC 60947-2 at 230 V kA 15 Rated short-circuit breaking capacity Icu IEC 60947-2 at 400 V kA 15 Voltage type kA 20 20 Current limiting class kA 3 3 Suitable for flush-mounted installation kA No 4 Concurrently switching N-neutral kA No 4 Ver voltage category kA 3 4 Pollution degree kA 2 4 2 Additional equipment possible kA 2 2 2 Width in number of modular spacings kA 2 2 2 Built-in depth kA 2 2 2 Degree of protection (IP) kA 2 2 2<	Rated current	Α	12
Rated impulse withstand voltage Uimp Rated short-circuit breaking capacity Icn EN 60898 at 230 V Rated short-circuit breaking capacity Icn EN 60898 at 400 V Rated short-circuit breaking capacity Icn EN 60894 -2 at 230 V Rated short-circuit breaking capacity Icn IEC 60947-2 at 230 V	Rated voltage	V	400
Rated short-circuit breaking capacity Icn EN 60898 at 230 V kA 10 Rated short-circuit breaking capacity Icn EN 60898 at 400 V kA 15 Rated short-circuit breaking capacity Icu IEC 60947-2 at 230 V kA 15 Rated short-circuit breaking capacity Icu IEC 60947-2 at 400 V kA 15 Voltage type C AC Frequency 50 - 60 30 Current limiting class Suitable for flush-mounted installation No No Concurrently switching N-neutral No No Over voltage category 2 3 2 Pollution degree 2 4 2 Additional equipment possible 2 4 2 Width in number of modular spacings mm 70.5 1 Built-in depth pm 70.5 1 Degree of protection (IP) pro 25-75 Ambient temperature during operating pm² 1-25	Rated insulation voltage Ui	V	440
Rated short-circuit breaking capacity Icn EN 60898 at 400 V Rated short-circuit breaking capacity Icu IEC 60947-2 at 230 V Rated short-circuit breaking capacity Icu IEC 60947-2 at 400 V Voltage type Voltage type Requency Current limiting class Suitable for flush-mounted installation Concurrently switching N-neutral Over voltage category Pollution degree Additional equipment possible Width in number of modular spacings Built-in depth Degree of protection (IP) Ambient temperature during operating Connectable conductor cross section multi-wired KA 15 50 60 70 80 90	Rated impulse withstand voltage Uimp	kV	4
Rated short-circuit breaking capacity Icu IEC 60947-2 at 230 V Rated short-circuit breaking capacity Icu IEC 60947-2 at 400 V Voltage type Current limiting class Suitable for flush-mounted installation Concurrently switching N-neutral Over voltage category Pollution degree Additional equipment possible Width in number of modular spacings Built-in depth Degree of protection (IP) Ambient temperature during operating Connectable conductor cross section multi-wired kA 5 5 6 7 8 9	Rated short-circuit breaking capacity Icn EN 60898 at 230 V	kA	10
Rated short-circuit breaking capacity Icu IEC 60947-2 at 400 V Voltage type Voltage type AC Frequency Lurent limiting class Suitable for flush-mounted installation Concurrently switching N-neutral Over voltage category Pollution degree Additional equipment possible Width in number of modular spacings Built-in depth Degree of protection (IP) Ambient temperature during operating Connectable conductor cross section multi-wired AC AC AC AC AC AC AC AC AC A	Rated short-circuit breaking capacity Icn EN 60898 at 400 V	kA	10
Voltage type Frequency Current limiting class Suitable for flush-mounted installation Concurrently switching N-neutral Over voltage category Pollution degree Additional equipment possible Width in number of modular spacings Built-in depth Degree of protection (IP) Ambient temperature during operating Connectable conductor cross section multi-wired AC BU PA BO PO BO	Rated short-circuit breaking capacity Icu IEC 60947-2 at 230 V	kA	15
Frequency Current limiting class Suitable for flush-mounted installation Concurrently switching N-neutral Over voltage category Pollution degree Additional equipment possible Width in number of modular spacings Built-in depth Degree of protection (IP) Ambient temperature during operating Connectable conductor cross section multi-wired Hz So 60 S	Rated short-circuit breaking capacity Icu IEC 60947-2 at 400 V	kA	15
Current limiting class Suitable for flush-mounted installation Concurrently switching N-neutral Over voltage category Pollution degree Additional equipment possible Width in number of modular spacings Built-in depth Degree of protection (IP) Ambient temperature during operating Connectable conductor cross section multi-wired Middle of flush-mounted installation No No Sala And No Sala Sala No No Sala Sala No No Sala Sala No No Sala Sal	Voltage type		AC
Suitable for flush-mounted installation Concurrently switching N-neutral Over voltage category Pollution degree Additional equipment possible Width in number of modular spacings Built-in depth Degree of protection (IP) Ambient temperature during operating Connectable conductor cross section multi-wired No No No No No No 2 4 7 8 9 1 1 1 1 1 1 1 1 1 1 1 1	Frequency	Hz	50 - 60
Concurrently switching N-neutral Over voltage category Pollution degree Additional equipment possible Width in number of modular spacings Built-in depth Degree of protection (IP) Ambient temperature during operating Connectable conductor cross section multi-wired No No 2 2 Pollution degree mm 70.5 Poly Poly Poly Poly 1-25	Current limiting class		3
Over voltage category Pollution degree Additional equipment possible Width in number of modular spacings Built-in depth Degree of protection (IP) Ambient temperature during operating Connectable conductor cross section multi-wired Pollution degree 3 Pollution degree Yes Ves 2 Pollution degree Pollution d	Suitable for flush-mounted installation		No
Pollution degree Additional equipment possible Width in number of modular spacings Built-in depth Degree of protection (IP) Ambient temperature during operating Connectable conductor cross section multi-wired Pollution degree 2 2 3 4 7 7 8 9 1 9 1 1 1 1 1 1 1 1 1 1	Concurrently switching N-neutral		No
Additional equipment possible Width in number of modular spacings Built-in depth Degree of protection (IP) Ambient temperature during operating Connectable conductor cross section multi-wired Yes 1 2 1 1 1 1 1 1 1 1 1 1 1	Over voltage category		3
Width in number of modular spacings Built-in depth mm 70.5 Degree of protection (IP) Ambient temperature during operating "C" 25-75 Connectable conductor cross section multi-wired mm² 1-25	Pollution degree		2
Built-in depth 70.5 Degree of protection (IP) P20 Ambient temperature during operating Pc	Additional equipment possible		Yes
Degree of protection (IP) Ambient temperature during operating Connectable conductor cross section multi-wired P20 1P20 25 - 75 1 - 25	Width in number of modular spacings		2
Ambient temperature during operating °C -25 - 75 Connectable conductor cross section multi-wired mm² 1 - 25	Built-in depth	mm	70.5
Connectable conductor cross section multi-wired mm² 1 - 25	Degree of protection (IP)		IP20
	Ambient temperature during operating	°C	-25 - 75
Connectable conductor cross section solid-core mm² 1 - 25	Connectable conductor cross section multi-wired	mm²	1 - 25
	Connectable conductor cross section solid-core	mm²	1 - 25

Approvals

FP 5 5 5	
Product Standards	IEC/EN 60947-2; IEC/EN 60898; UL 1077; CSA-C22.2 No. 235; CE marking
UL File No.	E177451
UL Category Control No.	QVNU2, QVNU8
CSA File No.	204453
CSA Class No.	3215-30
North America Certification	UL recognized, CSA certified
Conditions of Acceptability	Supplementary Protector only
Suitable for	Branch Circuits; not as BCPD
Current Limiting Circuit-Breaker	No
Max. Voltage Rating	480Y/277 VAC; 96 VDC
Degree of Protection	IEC: IP20; UL/CSA Type: -

Additional product information (links)

Temperature dependency, derating	https://www.eaton.com/content/dam/eaton/technicaldocumentation/technical-data-tables/Derating table
	FAZ.pdf