DATASHEET - FAZ-B13/1



Miniature circuit breaker (MCB), 13A, 1p, B-Char, AC

Part no. FAZ-B13/1 Catalog No. 278533 Eaton Catalog No. FAZ-B13/1 EL-Nummer 0001695102 (Norway)



Similar to illustration

Technical data Electrical

	Liectrical			
	Standards			
Rated voltage according to UL V DC 80 (per pole) Rated switching capacity acc. to IE/EN 69947-2 ka 177 Rated switching capacity according to UL ka 10 UL/0777 Max operational voltage according to IE/EN 69947-2 (max operational voltage) lea XA 10 UL/0777 Rated switching capacity according to IE/EN 69947-2 (max operational voltage) lea XA 10 UL/0777 Rated switching capacity according to IE/EN 69947-2 (max operational voltage) lea XA 10 UL/0777 Rated switching capacity according to IE/EN 699847-2 (max operational voltage) lea XA 10 UL/0779 Rated switching capacity according to IE/EN 699847-2 (max operational voltage) lea XA 24 Rated switching capacity according to IE/EN 69988-1 lea XA 24 Operational Switching capacity according to IE/EN 69988-1 lea XA 25 Characteristic XA 25 XA Characteristic XA 25 XA United space XA 25 XA Solucity Class XA 25 XA U	Rated operational voltage	U _e	V	
Reted voltage according to UL V_n V AC 27 Brate switching capacity acc. to IEC/EN 60947-2 I_o2 KA 10 ULI (177) Max operational voltage according to UL VAC 24 Max operational voltage according to IEC/EN 60947-2 I_o2 KA 10 ULI (177) Reted switching capacity according to IEC/EN 60947-2 (max operational voltage) I_o2 KA 10 C Reted switching capacity according to IEC/EN 60987-1 U_n VAC 24 O Reted switching capacity according to IEC/EN 60988-1 I_o2 I_O2 VAC 24 O Reted switching capacity according to IEC/EN 60988-1 I_o2 V_O2 VAC 25 A Reted switching capacity according to IEC/EN 60988-1 I_o2 V_O2 VAC 25 A Characteristic I_O2 X_O2 X_O2 X_O2 Characteristic I_O2 X_O2 X_O2 X_O2 Selectivity Class I_O2 X_O2 X_O2 X_O2 If Expan O_Derational Switching capacity X_O2 X_O2 X_O2 X_O2 <td< td=""><td></td><td>U_e</td><td>V AC</td><td>240/415</td></td<>		U _e	V AC	240/415
Rated switching capacity acc. to IEC/EN 60947-2 Ica IAA 15 (ULI 1077) Max operational voltage according to IEC/EN 60947-2 V AC 24 Rated switching capacity according to IEC/EN 60947-2 (max operational voltage) Ica XA 10 Rated switching capacity according to IEC/EN 60947-2 (max operational voltage) Ica XA 10 Rated switching capacity according to IEC/EN 60988-1 Up. V AC 240 Rated switching capacity according to IEC/EN 60988-1 Ica XA 10 Rated switching capacity according to IEC/EN 60988-1 Ica XA 10 Rated switching capacity according to IEC/EN 60988-1 Ica XA 15 Rated switching capacity according to IEC/EN 60988-1 Ica XA 15 Rated switching capacity according to IEC/EN 60988-1 Ica XA 15 Max. back-up fuse XA 2 Jug 5 2 2 Max. back-up fuse XA 2 Jug 5 2 2 Max. back-up fuse XA 2 Jug 5 2 2 Mountal switching capacity XA 3 Jug			V DC	60 (per pole)
Breaking capacity according to UL kA 10 (UL1077) Max operational voltage according to IEC/EN 60947-2 (max operational voltage) VAC 254 Rated servicine abort-circuit breaking capacity according to IEC/EN 60947-2 (max operational voltage) I _{cs} VAC 20 Rated voltage according to IEC/EN 60988-1 Un VAC 240 Rated voltage according to IEC/EN 60988-1 Un VAC 240 Rated service short-circuit breaking capacity according to IEC/EN 60988-1 I _{cs} I _{cs} V. 25 Rated service short-circuit breaking capacity according to IEC/EN 60988-1 I _{cs} X. 15 5 Operational switching capacity A gUg6 125 5 5 Max. back-up fuse A gUg6 125 3 125 Max. back-up fuse A gUg6 125 3 125 Selectivity Class Bug Class A gUg6 125 2 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125 125	Rated voltage according to UL	U_{n}	V AC	277
Max operational voltage according to IEC/EN 60947-2 (max operational voltage) VAC 254 Rated switching capacity according to IEC/EN 60947-2 (max operational voltage) I _{sc} X.A. 1.75 kA Rated switching capacity according to IEC/EN 6098-1 Un V.A.C. 240 Rated switching capacity according to IEC/EN 6098-1 I _{cn} kA 1.0 Rated switching capacity according to IEC/EN 6098-1 I _{cn} kA 1.0 Rated switching capacity according to IEC/EN 6098-1 I _{cn} kA 7.5 kA Operational switching capacity according to IEC/EN 6098-1 I _{cn} kA 7.5 kA Operational switching capacity according to IEC/EN 6098-1 I _{cn} kB 7.5 kA Observity Class A gL/g 1.2 kB C.0, K, S, Z Max. back-up fuse Secretivity Class a sequired Secretivity Class a sequired Idespan Operations y 10000	Rated switching capacity acc. to IEC/EN 60947-2	I _{cu}	kA	15
Rated switching capacity according to IEC/EN 60947-2 (max operational voltage) Rated service short-circuit breaking capacity according to IEC/EN 60947-2 (max operational voltage) Rated voltage according to IEC/EN 60898-1 Rated voltage according to IEC/EN 60898-1 Rated switching capacity according to IEC/EN 60898-1 Rated service short-circuit breaking capacity according to IEC/EN 60898-1 Rated service short-circuit breaking capacity according to IEC/EN 60898-1 Rated service short-circuit breaking capacity according to IEC/EN 60898-1 Rated service short-circuit breaking capacity according to IEC/EN 60898-1 Rated service short-circuit breaking capacity according to IEC/EN 60898-1 Rated service short-circuit breaking capacity according to IEC/EN 60898-1 Rated service short-circuit breaking capacity according to IEC/EN 60898-1 Rated service short-circuit breaking capacity according to IEC/EN 60898-1 Rated service short-circuit breaking capacity according to IEC/EN 60898-1 Rated service short-circuit breaking capacity according to IEC/EN 60898-1 Rated service short-circuit breaking capacity according to IEC/EN 60898-1 Rated service short-circuit breaking capacity according to IEC/EN 60898-1 Rated service short-circuit breaking capacity according to IEC/EN 60898-1 Rated service short-circuit breaking capacity according to IEC/EN 60898-1 Rated service short-circuit breaking capacity according to IEC/EN 60998-1 Rated service short-circuit breaking capacity according to IEC/EN 60998-1 Rated service short-circuit breaking capacity according to IEC/EN 60998-1 Rated service short-circuit breaking capacity according to IEC/EN 60998-1 Rated service short-circuit breaking capacity according to IEC/EN 60998-1 Rated service short-circuit breaking capacity according to IEC/EN 6098-1 Rated service short-circuit breaking capacity according to IEC/EN 6098-1 Rated service short-circuit breaking capacity according to IEC/EN 6098-1 Rated service short-circuit breaking capacity according to IEC/EN 6098-1 Rated service short-circuit brea	Breaking capacity according to UL		kA	10 (UL1077)
Rated service short-circuit breaking capacity according to IEC/EN 60947-2 (max operational voltage) Rated voltage according to IEC/EN 60988-1 Rated service short-circuit breaking capacity according to IEC/EN 60988-1 Rated service short-circuit breaking capacity according to IEC/EN 60988-1 Rated service short-circuit breaking capacity according to IEC/EN 60988-1 Rated service short-circuit breaking capacity according to IEC/EN 60988-1 Rated service short-circuit breaking capacity according to IEC/EN 60898-1 Rated service short-circuit breaking capacity according to IEC/EN 60898-1 Rated service short-circuit breaking capacity according to IEC/EN 60898-1 Rated service short-circuit breaking capacity according to IEC/EN 60898-1 Rated service short-circuit breaking capacity according to IEC/EN 60898-1 Rated service short-circuit breaking capacity according to IEC/EN 60898-1 Rated service short-circuit breaking capacity according to IEC/EN 60898-1 Rated service short-circuit breaking capacity according to IEC/EN 60898-1 Rated service short-circuit breaking capacity according to IEC/EN 60898-1 Rated service short-circuit breaking capacity according to IEC/EN 60898-1 Rated service short-circuit breaking capacity according to IEC/EN 60898-1 Rated service short-circuit breaking capacity according to IEC/EN 60898-1 Rated service short-circuit breaking capacity according to IEC/EN 60898-1 Rated service short-circuit breaking capacity according to IEC/EN 60898-1 Rated service short-circuit breaking capacity according to IEC/EN 60898-1 Rated service short-circuit breaking capacity according to IEC/EN 60898-1 Rated service short-circuit breaking capacity according to IEC/EN 60898-1 Rated service short-circuit breaking capacity according to IEC/EN 60898-1 Rated service short-circuit breaking capacity according to IEC/EN 60898-1 Rated service short-circuit breaking capacity according to IEC/EN 60898-1 Rated service short-circuit breaking capacity according to IEC/EN 60898-1 Rated service short-circuit breaking capacity accordin	Max operational voltage according to IEC/EN 60947-2		V AC	254
Rated voltage according to IEC/EN 60888-1 Rated switching capacity according to IEC/EN 60888-1 Rated switching capacity according to IEC/EN 60888-1 Rated switching capacity according to IEC/EN 60888-1 Rated service short-circuit breaking capacity according to IEC/EN 60898-1 Rated service short-circuit breaking capacity according to IEC/EN 60898-1 Rated service short-circuit breaking capacity according to IEC/EN 60898-1 Rated service short-circuit breaking capacity according to IEC/EN 60898-1 Rated service short-circuit breaking capacity according to IEC/EN 60898-1 Rated service short-circuit breaking capacity according to IEC/EN 60898-1 Rated service short-circuit breaking capacity according to IEC/EN 60898-1 Rated service short-circuit breaking capacity according to IEC/EN 60898-1 Rated service short-circuit breaking capacity according to IEC/EN 60898-1 Rated service short-circuit breaking capacity according to IEC/EN 60898-1 Rated service short-circuit breaking capacity according to IEC/EN 60898-1 Rated service short-circuit breaking capacity according to IEC/EN 60898-1 Rated service short-circuit breaking capacity according to IEC/EN 60898-1 Rated service short-circuit breaking capacity according to IEC/EN 60898-1 Rated service short-circuit breaking capacity according to IEC/EN 60898-1 Rated service short-circuit breaking capacity according to IEC/EN 60898-1 Rated service short-circuit breaking capacity according to IEC/EN 60898-1 Rated service short-circuit breaking capacity according to IEC/EN 60898-1 Rated service short-circuit breaking capacity according to IEC/EN 60898-1 Rated service short-circuit breaking capacity according to IEC/EN 60898-1 Rated service short-circuit breaking capacity according to IEC/EN 60898-1 Rated service short-circuit breaking capacity according to IEC/EN 60895-1 Rated service short-circuit breaking capacity according to IEC/EN 60895-1 Rated service short-circuit breaking capacity according to IEC/EN 60895-1 Rated service short-circuit breaking capacity according to IEC/EN 608	Rated switching capacity according to IEC/EN 60947-2 (max operational voltage)	I _{cu}	kA	10
Rated switching capacity according to IEC/EN 60898-1 lcs	Rated service short-circuit breaking capacity according to IEC/EN 60947-2 (max operational voltage)	I _{cs}		7,5 kA
Rated service short-circuit breaking capacity according to IEC/EN 60898-1 Ics 7.5 kA Departional switching capacity Ka 7.5 kA Characteristic Ka 7.5 kA Max. back-up fuse Ka 7.5 kA Max. required Max. required Max. required Max. required Max. serious fusion of incoming suply Max. required Max. required Max. required Max. serious fusion of incoming suply Max. serious fusion fusion of incoming suply Max. serious fusion	Rated voltage according to IEC/EN 60898-1	U_n	V AC	240
Operational switching capacity KA 7.5 Characteristic B, C, D, K, S, Z Max. back-up fuse A gL/g6 125 Selectivity Class 3 3 lifespan > 10000 10000 Direction of incoming supply y 10000 10000 Mechanical mm 45 Standard front dimension mm 45 Enclosure height mm 80 Mounting mm 17.5 Mounting EC/EN 60715 top-hat rail Degree of Protection mm 17.0 Terminal stop and bottom mm 17.0 17.0 Terminal protection mm² 1 kg-2 1 kg-2 Terminal capacities mm² 1 x 25 mm² 1 x 25 mm² 2 x 10 Thickness of busbar material mm² 8 mm² 2 x 10	Rated switching capacity according to IEC/EN 60898-1	I _{cn}	kA	10
Characteristic Max. back-up fuse Selectivity Class lifespan Lifespan Operations Operations Tireminal protection Terminal capacities Thickness of busbar material Max. back-up fuse B, C, D, K, S, Z B, C, D, K, S, C B,	Rated service short-circuit breaking capacity according to IEC/EN 60898-1	I _{cs}		7,5 kA
Max. back-up fuse Selectivity Class Selectivity Class Lifespan Claspan Operations Tirection of incoming supply Mounting Standard front dimension Enclosure height Mounting width per pole Mounting Degree of Protection Terminals top and bottom Terminal capacities Terminal capacities Thickness of busbar material Max. back-up fuse A gL/g 3 3 3 3 3 3 3 4 4 5 5 6 6 7 7 7 7 7 7 7 7 7 7 7	Operational switching capacity		kA	7.5
Selectivity Class Lifespan Departions Direction of incoming supply Mechanical Standard front dimension Enclosure height Mounting width per pole Mounting Degree of Protection Terminals top and bottom Terminal capacities Terminal capacities Thickness of busbar material Degree of busar material Mounting Mounting Base a sequired AD000 AS a sequired AS 5 AS 6 AS 9	Characteristic			B, C, D, K, S, Z
Lifespan Operations > 10000 Lifespan Operations > 10000 Direction of incoming supply as required Mechanical Standard front dimension	Max. back-up fuse		A gL/gG	125
Lifespan Operations > 10000 Direction of incoming supply as required Wechanical Standard front dimension	Selectivity Class			3
Direction of incoming supply Mechanical Standard front dimension Enclosure height Mounting width per pole Mounting Degree of Protection Terminal protection Terminal capacities mm² Indicates of busbar material mm 0.8 2 as required as require require	lifespan			
Mechanical Standard front dimension mm 45 Enclosure height mm 80 Mounting width per pole mm 17.5 Mounting IEC/EN 60715 top-hat rail Degree of Protection IP20, IP40 (when fitted) Terminals top and bottom Twin-purpose terminals Terminal protection Finger and back-of-hand proof to BGV A2 Terminal capacities mm² mm² 1 x 25 mm² 2 x 10 Thickness of busbar material mm 0.8 2	Lifespan	Operations		> 10000
Standard front dimension mm 45 Enclosure height mm 80 Mounting width per pole mm 17.5 Mounting Degree of Protection Iterminals top and bottom Terminal protection Iterminal capacities mm² 1x 25 Terminal capacities mm² 1x 25 Thickness of busbar material mm 0.8 2	Direction of incoming supply			as required
Enclosure height Mounting width per pole Mounting Mounting Degree of Protection Terminals top and bottom Terminal protection Terminal capacities Terminal capacities Thickness of busbar material mm 80 ITAS IEC/EN 60715 top-hat rail IP20, IP40 (when fitted) Twin-purpose terminals Tivin-purpose terminals Twin-purpose t	Mechanical			
Mounting width per pole Mounting Degree of Protection Terminals top and bottom Terminal protection Terminal capacities mm² mm² 17.5 IEC/EN 60715 top-hat rail IP20, IP40 (when fitted) Twin-purpose terminals Finger and back-of-hand proof to BGV A2 mm² mm² 1 x 25 mm² 2 x 10 Thickness of busbar material mm 0.8 2	Standard front dimension		mm	45
Mounting IEC/EN 60715 top-hat rail Degree of Protection IP20, IP40 (when fitted) Terminals top and bottom Twin-purpose terminals Terminal protection Finger and back-of-hand proof to BGV A2 Terminal capacities mm² 1 x 25 mm² 2 x 10 Thickness of busbar material mm 0.8 2	Enclosure height		mm	80
Degree of Protection Terminals top and bottom Terminal protection Terminal capacities Thickness of busbar material Thickness of busbar material Terminal capacities Thickness of busbar material	Mounting width per pole		mm	17.5
Terminals top and bottom Terminal protection Terminal capacities mm² 1 x 25 mm² 2 x 10 Thickness of busbar material Terminals top and bottom Twin-purpose terminals Finger and back-of-hand proof to BGV A2 Finger and back-of-hand proof to BGV A2 Finger and back-of-hand proof to BGV A2 Thickness of busbar material Twin-purpose terminals Finger and back-of-hand proof to BGV A2 Twin-purpose terminals Finger and back-of-hand proof to BGV A2 Twin-purpose terminals Finger and back-of-hand proof to BGV A2 Twin-purpose terminals Finger and back-of-hand proof to BGV A2 Twin-purpose terminals Finger and back-of-hand proof to BGV A2 Twin-purpose terminals Finger and back-of-hand proof to BGV A2 Twin-purpose terminals Finger and back-of-hand proof to BGV A2 Twin-purpose terminals Finger and back-of-hand proof to BGV A2 Twin-purpose terminals Finger and back-of-hand proof to BGV A2 Twin-purpose terminals Finger and back-of-hand proof to BGV A2 Twin-purpose terminals Finger and back-of-hand proof to BGV A2 Twin-purpose terminals Finger and back-of-hand proof to BGV A2 Twin-purpose terminals Finger and back-of-hand proof to BGV A2 Twin-purpose terminals Finger and back-of-hand proof to BGV A2 Twin-purpose terminals Finger and back-of-hand proof to BGV A2 Twin-purpose terminals Finger and back-of-hand proof to BGV A2 Twin-purpose terminals Finger and back-of-hand proof to BGV A2 Twin-purpose terminals Finger and back-of-hand proof to BGV A2 Twin-purpose terminals Finger and back-of-hand proof to BGV A2 Twin-purpose terminals Finger and back-of-hand proof to BGV A2 Twin-purpose terminals Finger and back-of-hand proof to BGV A2 Twin-purpose terminals Finger and back-of-hand proof to BGV A2 Fi	Mounting			IEC/EN 60715 top-hat rail
Terminal protection Finger and back-of-hand proof to BGV A2 Terminal capacities mm ² 1 x 25 mm ² 2 x 10 Thickness of busbar material mm 0.8 2	Degree of Protection			IP20, IP40 (when fitted)
Terminal capacities mm ² 1 x 25 mm ² 2 x 10 Thickness of busbar material mm 0.8 2	Terminals top and bottom			Twin-purpose terminals
$\frac{mm^2}{mm^2} = \frac{1 \times 25}{2 \times 10}$ Thickness of busbar material $\frac{mm}{m} = \frac{1 \times 25}{2 \times 10}$	Terminal protection			Finger and back-of-hand proof to BGV A2
Thickness of busbar material mm 0.8 2	Terminal capacities		mm ²	
Thickness of busbar material mm 0.8 2			mm^2	1 x 25
			mm ²	2 x 10
Mounting position As required	Thickness of busbar material		mm	
	Mounting position			As required

Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	In	Α	13
Heat dissipation per pole, current-dependent	P_{vid}	W	0

Equipment heat dissipation, current-dependent	P _{vid}	W	2.5
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 switch gear must be observed. $\label{eq:constraint}$
10.12 Electromagnetic compatibility			Is the panel builder's responsibility. The specifications for the switch gear must be observed. $\label{eq:constraint}$
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) (lect/@ss10.01-27-14-19-01 [AAR005014])

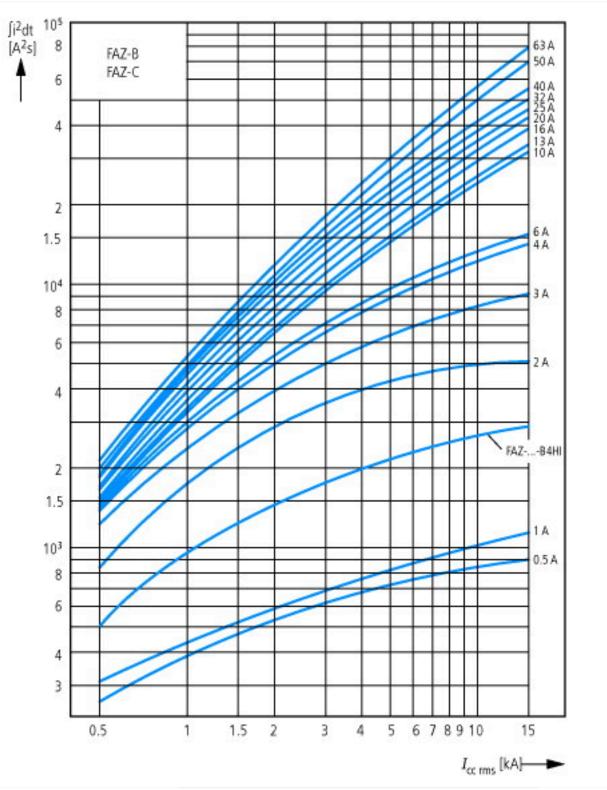
(ecl@ss10.0.1-27-14-19-01 [AAB905014])			
Release characteristic			В
Number of poles (total)			1
Number of protected poles			1
Rated current	A	4	13
Rated voltage	V	V	230
Rated insulation voltage Ui	V	V	440
Rated impulse withstand voltage Uimp	k	κV	4
Rated short-circuit breaking capacity Icn EN 60898 at 230 V	k	κA	10
Rated short-circuit breaking capacity Icn EN 60898 at 400 V	k	kΑ	10
Rated short-circuit breaking capacity Icu IEC 60947-2 at 230 V	k	kΑ	15
Rated short-circuit breaking capacity Icu IEC 60947-2 at 400 V	k	kΑ	15
Voltage type			AC
Frequency	H	Hz	50 - 60
Current limiting class			3
Suitable for flush-mounted installation			No
Concurrently switching N-neutral			No
Over voltage category			3

Pollution degree		2
Additional equipment possible		Yes
Width in number of modular spacings		1
Built-in depth	mm	70.5
Degree of protection (IP)		IP20
Ambient temperature during operating	°C	-25 - 75
Connectable conductor cross section multi-wired	mm²	1 - 25
Connectable conductor cross section solid-core	mm²	1 - 25

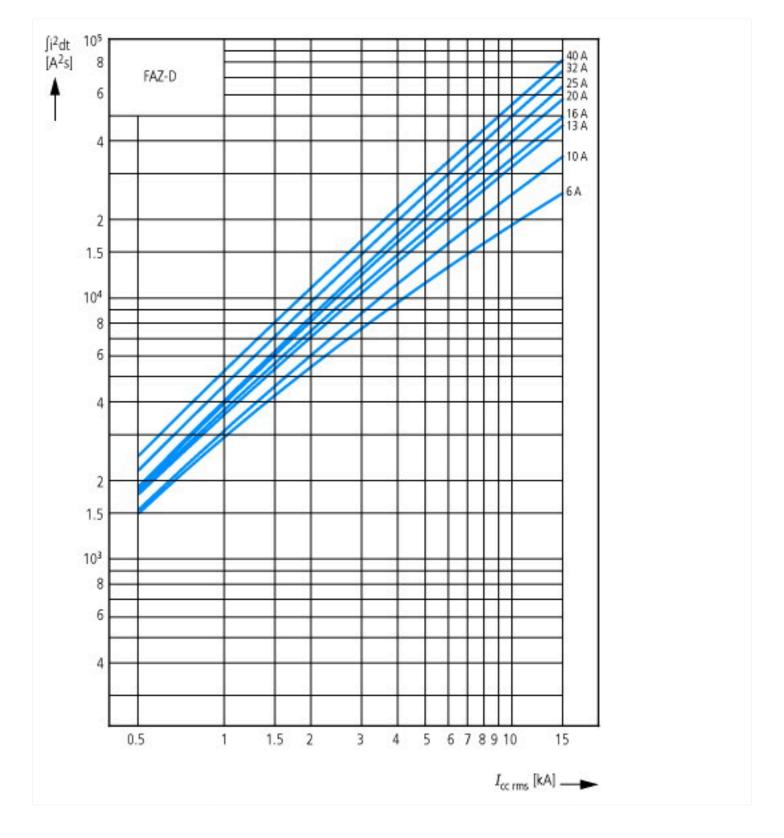
Approvals

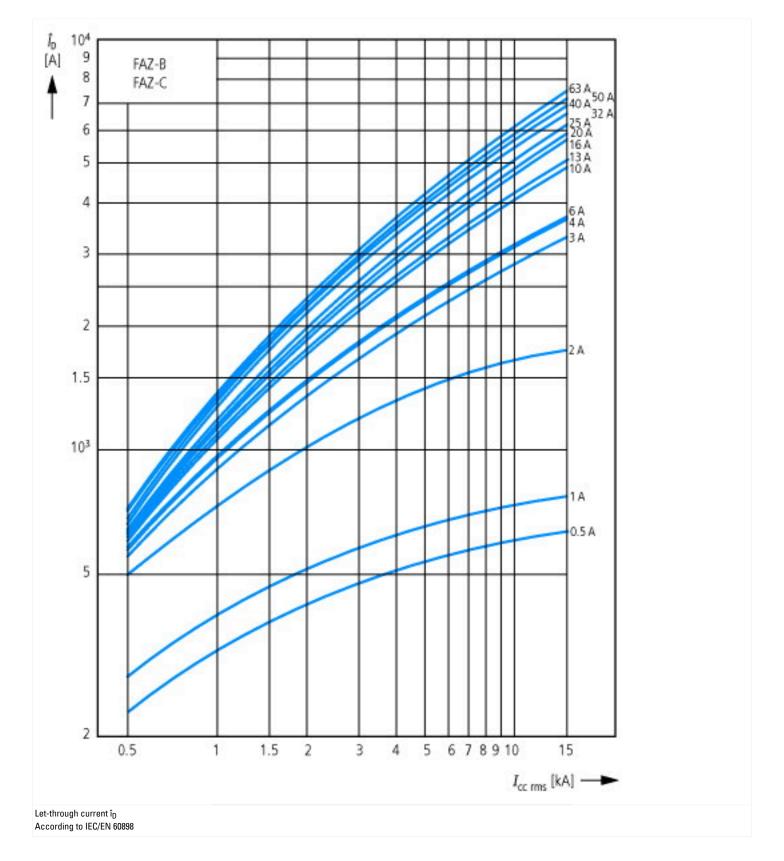
••	
Product Standards	IEC/EN 60947-2; IEC/EN 60898; UL 1077; CSA-C22.2 No. 235; CE marking
UL File No.	E177451
UL Category Control No.	QVNU2, QVNU8
CSA File No.	204453
CSA Class No.	3215-30
North America Certification	UL recognized, CSA certified
Conditions of Acceptability	Supplementary Protector only
Suitable for	Branch Circuits; not as BCPD
Current Limiting Circuit-Breaker	No
Max. Voltage Rating	277 VAC; 48 VDC
Degree of Protection	IEC: IP20; UL/CSA Type: -

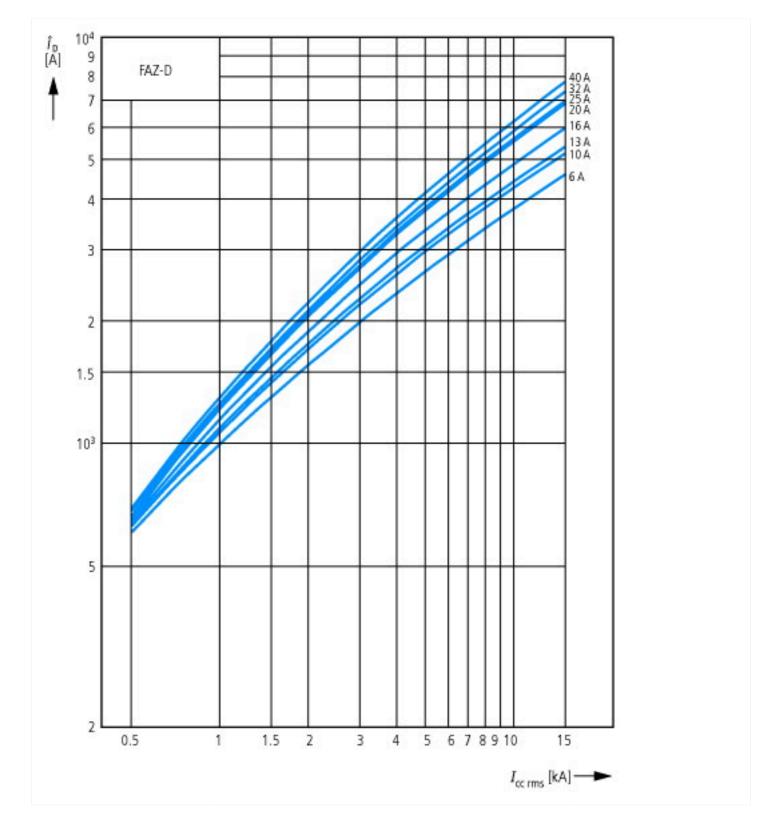
Characteristics

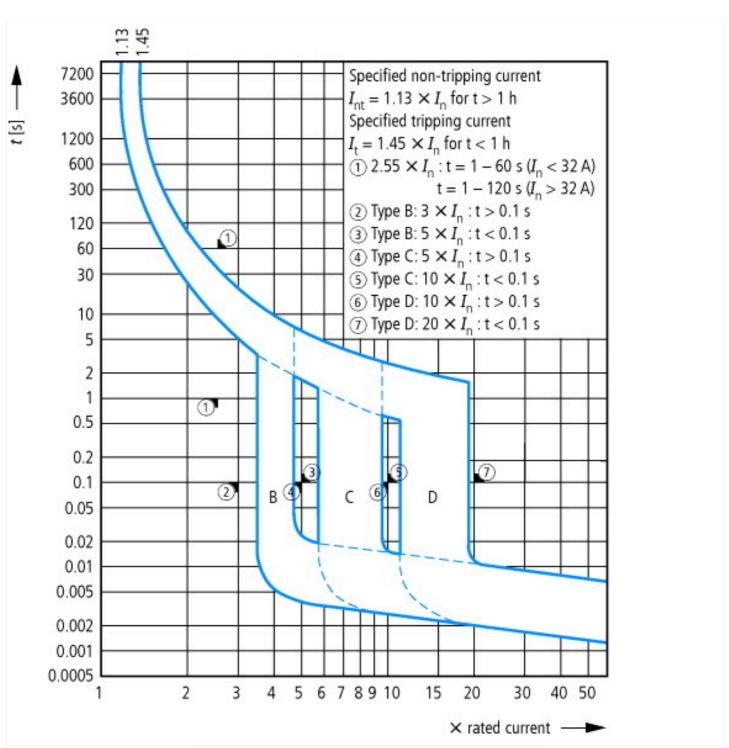


Let-through energy I²t According to IEC/EN 60898









Tripping characteristic at 30 °C: B, C, D to IEC/EN 60898

Dimensions 8 17.5 5.5 44 60