### DATASHEET - FAZ-C20/2

Miniature circuit breaker (MCB), 20 A, 2p, characteristic: C





Part no. FAZ-C20/2 Catalog No. 278761 Alternate Catalog FAZ-C20/2 No. EL-Nummer 1695169 (Norway)

### **Delivery program**

Basic function			Miniature circuit-breakers
Number of poles			2 pole
Tripping characteristic			C
Application			Switchgear for industrial and advanced commercial applications
Rated current	In	А	20
Rated switching capacity acc. to IEC/EN 60947-2	l <sub>cu</sub>	kA	15
Product range			FAZ

### **Technical data**

Electrical

Rada operational voltage         U         V         V           Rada operational voltage         U         V         V           Rada operational voltage         U         V         V           Rada voltage according to UL         U         V         V         V           Rada voltage according to UL         V         V         V         V           Rada voltage according to EECPK 00097-2         V         V         V         V           Rada voltage according to EECPK 00097-2         V         V         V         V           Rada voltage according to EECPK 00097-2         V         V         V         V           Rada voltage according to EECPK 00097-2         V         V         V         V           Rada voltage according to EECPK 00097-2         V         V         V         V           Rada voltage according to EECPK 00097-2         V         V         V         V           Rada voltage according to EECPK 00097-2         V         V         V         V           Rada voltage according to EECPK 00097-2         V         V         V         V           Rada voltage according to EECPK 00097-2         V         V         V         V           Rada voltage accord				
Non-         Non- <th< td=""><td>Standards</td><td></td><td></td><td></td></th<>	Standards			
NCVCSignal <t< td=""><td>Rated operational voltage</td><td>U<sub>e</sub></td><td>V</td><td></td></t<>	Rated operational voltage	U <sub>e</sub>	V	
Rated voltage according to UL     0,0     VAC     VAC       Rated switching capacity acc. to IEO/EN 6094-2     CA     10(U1077)       Max operational voltage according to IEC/EN 6094-7.     VAC     40       Rated switching capacity according to IEC/EN 6094-7.     VAC     40       Rated switching capacity according to IEC/EN 6094-7.     VAC     40       Rated switching capacity according to IEC/EN 6098-1     VAC     57.54       Rated switching capacity according to IEC/EN 6098-1     VAC     10.20       Rated switching capacity according to IEC/EN 6098-1     VAC     10.20       Parential Switching capacity according to IEC/EN 6098-1     VAC     10.20       Rated switching capacity according to IEC/EN 6098-1     VAC     10.20       Parential Switching capacity according to IEC/EN 6098-1     VAC     10.20       Parential Switching capacity according to IEC/EN 6098-1     VAC     10.20       Parential Switching capacity according to IEC/EN 6098-1     VAC     10.20       Characteristic     Ka     10.20     10.20       Characteristic     VAC     10.20     10.20       Direction of incoming supply     VAC     10.20     10.20       Vactor of incoming supply     VAC     10.20     10.20       Muting with ther pole     VAC     10.20     10.20		Ue	V AC	240/415
Rate         No         No         No         No           Breaking capacity acc. to IEC/EN 60947-2         No         No         No         No           Breaking capacity according to IEC/EN 60947-2         No         No         No         No           Bated switching capacity according to IEC/EN 60947-2         No         No         No         No           Bated switching capacity according to IEC/EN 60947-2         No         No         No         No           Bated switching capacity according to IEC/EN 6098-1         No         No         No         No           Bated switching capacity according to IEC/EN 6098-1         No         No         No         No           Bated switching capacity according to IEC/EN 6098-1         No         No         No         No           Characteristic         IEC/EN 6091-1         IEC/EN 6091-1         No         No         No           State switching capacity         IEC/EN 6091-1         No			V DC	60 (per pole)
Braking capacity according to LLC         Note	Rated voltage according to UL	Un	V AC	480Y/277
Max operational voltage according to IEC/EN 60947-2 (max operational voltage)         VAC         4d           Rated switching capacity according to IEC/EN 60947-2 (max operational voltage)         kas         5.5 Å           Rated voltage according to IEC/EN 60987-1 (max operational voltage)         kas         5.5 Å           Rated voltage according to IEC/EN 60987-1         kas         VAC         45           Rated voltage according to IEC/EN 60987-1         kas         5.5 Å           Rated voltage according to IEC/EN 60987-1         kas         5.5 Å           Rated voltage according to IEC/EN 60987-1         kas         5.5 Å           Rated voltage according to IEC/EN 60987-1         kas         5.5 Å           Rated voltage according to IEC/EN 60987-1         kas         5.5 Å           Rated voltage according to IEC/EN 60987-1         kas         5.5 Å           Operational switching capacity according to IEC/EN 60987-1         kas         5.5 Å           State service short-circuit breaking capacity according to IEC/EN 60987-1         kas         5.5 Å           State service short-circuit breaking capacity according to IEC/EN 60988-1         kas         5.0 Å, K.5 C           State service short-circuit breaking capacity according to IEC/EN 60988-1         kas         5.0 Å           State service short-circuit breaking capacity according to IEC/EN 60988-1	Rated switching capacity acc. to IEC/EN 60947-2	l <sub>cu</sub>	kA	15
Rated switching capacity according to IEC/EN 60947-2 (max operational voltage)       Ica       KA       Ica	Breaking capacity according to UL		kA	10 (UL1077)
Rated service short-circuit breaking capacity according to EC/EN 60947-2 (max apareational voltage     Is     7.5 Å       Rated voltage according to IEC/EN 60898-1     Vn     V.C     15       Rated service short-circuit breaking capacity according to IEC/EN 60898-1     Is     7.5 Å       Rated service short-circuit breaking capacity according to IEC/EN 60898-1     Is     7.5 Å       Oparational switching capacity according to IEC/EN 60898-1     Is     7.5 Å       Nat back-up fuse     Is     7.5 Å       Characteristic     Kat     5.6 L, N, S, Z       Max back-up fuse     Is     5.6 L, N, S, Z       Selectivity Class     Is     5.6 L, N, S, Z       Selectivity Class     Is     5.6 L, N, S, Z       Ifrespan     Oparations     Selectivity Class     1.5 M       Mouting with per pole     Oparations     1.5 M       Mouting with per pole     Im     1.5 M       Mouting with per pole     Im     1.5 M       Mouting with per pole     Im     1.5 M       Terminal rotaction     Im     1.5 M       Terminal protection     Im     1.5 M       Terminal capacities     Im	Max operational voltage according to IEC/EN 60947-2		V AC	440
apprational voltage         Vac         File           Rated voltage according to IE//EN 60989-1         Ica         KA         10           Rated switching capacity according to IE//EN 60989-1         Ica         KA         15           Bated switching capacity according to IE//EN 60989-1         Ica         KA         15           Oparational switching capacity according to IE//EN 60989-1         Ica         KA         15           Oparational switching capacity according to IE//EN 60989-1         Ica         KA         15           Oparational switching capacity according to IE//EN 60989-1         Ica         KA         15           As back-up fuse         Ica         KA         15         15           Belevity (Class         Ica         KA         16         16           Belevity (Class         Ica         KA         16         16           Iffespan         Operations         Ica         Ica         16	Rated switching capacity according to IEC/EN 60947-2 (max operational voltage)	l <sub>cu</sub>	kA	10
Rated switching capacity according to IEC/EN 60898-1     Ic     KA       Rated switching capacity according to IEC/EN 60898-1     Ic     SA       Operational switching capacity according to IEC/EN 60898-1     KA     Sc       Operational switching capacity according to IEC/EN 60898-1     KA     Sc       Start acteristic     KA     Sc       Characteristic     KA     Sc     Sc       Max. back-up fuse     KA     Sc     Sc       Selectivity Class     Ye     Sc     Sc       Ifrespan     Operations     Ye     Sc     Sc       Direction of incoming supply     Ye     Sc     Sc       Standard front dimension     Ye     Sc     Sc       Rechanical     Ye     Sc     Sc       Standard front dimension     Ye     Sc     Sc       Noutning width per pole     Ye     Sc     Sc       Noutning     Ye     Sc     Sc     Sc       Terminal top and botom     Ye     Sc     Sc     Sc       Terminal rotaction     Ye     Sc     Sc       Terminal capacities     Ye     Sc     Sc       Terminal capacities     Ye     Sc     Sc       Terminal capacities     Ye     Sc     Sc       Sc	Rated service short-circuit breaking capacity according to IEC/EN 60947-2 (max operational voltage)	I <sub>cs</sub>		7,5 kA
Aled service short-circuit breaking capacity according to IEC/EN 60888-1       Is       7.5 kA         Operational switching capacity according to IEC/EN 60888-1       KA       7.5 kA         Operational switching capacity according to IEC/EN 60886-1       B.C.D.K.S.Z       B.C.D.K.S.Z         Characteristic       A gd/gd       125         Max. back-up fuse       Jood       Jood         Selectivity Class       Jood       Jood         Lifespan       Operations       Jood         Derection of incoming supply       Operations       Jood         Machandurf ford timension       Image: Selectivity Class       Jood         Beclosure height       Mounting       Selectivity Class       Selectivity Class         Mounting width per pole       Image: Selectivity Class       Selectivity Class       Selectivity Class         Terminal stop and bottom       Selectivity Class       Selectivity Class       Selectivity Class         Terminal capacities       Image: Selectivity Class       Selectivity Class       Selectivity Class         Terminal capacities       Image: Selectivity Class       Selectivity Class       Selectivity Class         Selectivity Class       Image: Selectivity Class       Selectivity Class       Selectivity Class         Selectivity Class       Selectivity Class <td>Rated voltage according to IEC/EN 60898-1</td> <td>Un</td> <td>V AC</td> <td>415</td>	Rated voltage according to IEC/EN 60898-1	Un	V AC	415
Operational switching capacity       KA       7.5         Characteristic       B.C.D.K.S.Z         Max. back-up fuse       J         Selectivity Class       J         lifespan       Operations         Direction of incoming supply       Operations         Bechanical       J         Selectivity Class       J         Lifespan       Operations         Direction of incoming supply       Operations         Bechanical       J         Selectivity Class       J         Benderd front dimension       Mom         Mounting width per pole       Mom         Mounting width per pole       Mom         Mounting       J         Ereinsal to pad bottom       J         Terminal rotection       Mom         Terminal capacities       Mom         Iterminal capacities       Mom         Iterminal capacities       J         Iterminal capacities       J         Iterminal capacities       J         Iterminal capacities       Iterminal capacities         Iterminal capacities       J         Iterminal capacities       Iterminal capacities         Iterminal capacities       Iterminal capacities     <	Rated switching capacity according to IEC/EN 60898-1	I <sub>cn</sub>	kA	10
Characteristic       B, C, D, K, S, Z         Max. back-up fuse       B, C, D, K, S, Z         Max. back-up fuse       Iz5         Selectivity Class       Iz6         Lifespan       Iz6         Lifespan       Iz6         Mochanical       Iz8         Mechanical       Iz8         Mouting supply       Iz8         Selectivity Class       Iz8         Stadard front dimension       Iz8         Enclosure height       mm         Mouting width per pole       Iz8         Mouting       Iz8         Degree of Protection       mm         Terminal stop and bottom       Iz9         Terminal capacities       Iz9         Ireminal capacities       Iz9         Iremina	Rated service short-circuit breaking capacity according to IEC/EN 60898-1	I <sub>cs</sub>		7,5 kA
Max.back-up fuse       A gL/g6       Jack         Selectivity Class       Jack       Jack         Lifespan       Operations       > 10000         Lifespan       Jack       Jack         Direction of incoming supply       Jack       Jack         Mechanical       se required       Jack         Standard front dimension       mm       Selectivity Class         Mounting width per pole       mm       Selectivity Class         Mounting       Jack       Jack         Degree of Protection       mm       Selectivity Class         Terminal sop and bottom       Jack       Jack         Terminal capacities       mm²       Selectivity Class         Lifespan       mm²       Selectivity Class         Lifespan       Jack       Jack         Terminal capacities       mm²       Selectivity Class         Lifespan       mm²       Selectivity Class         Lifespan       Jack       Jack         Lifespan       Jack       Jack         Selectivity Class       Jack       Jack         Degree of Protection       Jack       Jack         Terminal capacities       Jack       Jack         Jack	Operational switching capacity		kA	7.5
Selectivity Class       A a constraint of the second	Characteristic			B, C, D, K, S, Z
lifespan       Operations       >10000         Direction of incoming supply       as required         Mechanical       se quired         Standard front dimension       mm       \$1         Brolosure height       mm       \$1         Mounting width per pole       mm       \$1         Digree of Protection       Pole       Pole         Terminals top and bottom       Pole       Pole         Terminal capacities       mm <sup>2</sup> Toringurant back-of-hand proof to BGV A2         Interminal capacities       mm <sup>2</sup> \$2<	Max. back-up fuse		A gL/gG	125
Lifespan       Operations       > 0000         Direction of incoming supply       sequired         Mechanical       mm       Sold         Standard front dimension       mm       Sold         Enclosure height       mm       Sold         Mounting width per pole       mm       E/C/KN 60715 top-hat rail         Direction       F/C/KN 60715 top-hat rail       F/C/KN 60715 top-hat rail         Terminal stop and bottom       F/C/KN 60715 top-hat rail       F/C/KN 60715 top-hat rail         Terminal rotection       F/C/KN 60715 top-hat rail       F/C/KN 60715 top-hat rail         Terminal protection       F/C/KN 60715 top-hat rail       F/C/KN 60715 top-hat rail         Terminal capacities       mm       F/C/KN 60715 top-hat rail       F/C/KN 60715 top-hat rail         Terminal capacities       mm       F/C/KN 60715 top-hat rail       F/C/KN 60715 top-hat rail         Terminal capacities       mm       F/C/KN 60715 top-hat rail       F/C/KN 60715 top-hat rail         Terminal capacities       mm       F/C/KN 60715 top-hat rail       F/C/KN 60715 top-hat rail         Terminal capacities       mm       F/C/KN 60715 top-hat rail       F/C/KN 60715 top-hat rail         Terminal capacities       Mm       F/C/KN 60715 top-hat rail       F/C/KN 60715 top-hat rail	Selectivity Class			3
Direction of incoming supply       is required         Mechanical       srequired         Standard front dimension       mm       45         Enclosure height       mm       10         Mounting width per pole       mm       15.         Mounting       IEC/EN 60715 top-hat rail       120         Degree of Protection       IEC       120, IP40 (when fitted)         Terminal stop and bottom       IEC       Tori purpose terminals         Terminal capacities       mm <sup>2</sup> Finger and back-of-hand proof to BGV A2         Imm       Imm <sup>2</sup> Imm <sup>2</sup>	lifespan			
Mechanical         mm         45           Standard front dimension         mm         45           Enclosure height         mm         80           Mounting width per pole         mm         17.5           Mounting         Enclosure height         Enclosure height           Mounting         Enclosure height         Enclosure height           Mounting width per pole         mm         17.5           Mounting         Enclosure height         Enclosure height           Terminals top and bottom         Enclosure height         Figer and back-of-hand proof to BGV A2           Terminal capacities         mm <sup>2</sup> 1×25           Terminal capacities         mm <sup>2</sup> 2×10	Lifespan	Operations		> 10000
Standard front dimension       mm       45         Enclosure height       mm       80         Mounting width per pole       mm       17.5         Mounting       EC/EN 60715 top-hat rail       EC/EN 60715 top-hat rail         Degree of Protection       EC/EN 60715 top-hat rail       EC/EN 60715 top-hat rail         Terminals top and bottom       EC/EN 60715 top-hat rail       Finger and back-of-hand proof to BGV A2         Terminal capacities       mm <sup>2</sup> Finger and back-of-hand proof to BGV A2         Immediate       mm <sup>2</sup> 1 × 25         Immediate       mm <sup>2</sup> 2 × 10	Direction of incoming supply			as required
Enclosure height       mm       80         Mounting width per pole       mm       1.5         Mounting       EC/EN 60715 top-hat rail       120, 1240 (when fitted)         Degree of Protection       Freminals top and bottom       Freminals top and bottom       Freminals top and bottom         Terminal protection       Mm       Freminals top and bottom       Freminals top and bottom       Freminals         Terminal capacities       Mm       Freminals       Freminals       Freminals         Internation       Internation       Internation       Freminals         Internation       Internation       Freminals       Freminals	Mechanical			
Mounting width per pole     mm     1.5       Mounting     IEV/EN 60715 top-hat rail       Degree of Protection     IEV/EN 60715 top-hat rail       Terminals top and bottom     IEV     IEV/EN 60715 top-hat rail       Terminal protection     IEV     IPO, IP40 (when fitted)       Terminal protection     IEV     Impre and back-of-hand proof to BGV A2       Terminal capacities     Imm2     Imm2       Imm2     Imm2     Imm2       Imm2     Imm2     Imm2	Standard front dimension		mm	45
Mounting       Image: Ima	Enclosure height		mm	80
Degree of Protection       IP20, IP40 (when fitted)         Terminals top and bottom       Twin-purpose terminals         Terminal protection       mm <sup>2</sup> Terminal capacities       mm <sup>2</sup> Imm <sup>2</sup> x 1x 25         Imm <sup>2</sup> x 10	Mounting width per pole		mm	17.5
Terminals top and bottom     Image: marking set	Mounting			IEC/EN 60715 top-hat rail
Terminal protection   Terminal capacities   Immetric tape in the sector of the BGV A2   Immetric tape in the sector of tape in tape	Degree of Protection			IP20, IP40 (when fitted)
Terminal capacities     mm <sup>2</sup> mm <sup>2</sup> 1x 25       mm <sup>2</sup> 2x 10	Terminals top and bottom			
$mn^{2} = 1 \times 25$ $mm^{2} = 2 \times 10$	Terminal protection			Finger and back-of-hand proof to BGV A2
mm <sup>2</sup> 2 × 10	Terminal capacities		mm <sup>2</sup>	
			mm <sup>2</sup>	1 x 25
Thickness of bushar material mm 0.8 2			mm <sup>2</sup>	2 x 10
Thickness of husbar material mm 0.8 2				
	Thickness of busbar material		mm	0.8 2

# Design verification as per IEC/EN 61439

Design vernication as per reo, en ortos			
Technical data for design verification			
Rated operational current for specified heat dissipation	l <sub>n</sub>	А	20
Heat dissipation per pole, current-dependent	P <sub>vid</sub>	W	0
Equipment heat dissipation, current-dependent	P <sub>vid</sub>	W	6.6
Static heat dissipation, non-current-dependent	P <sub>vs</sub>	W	0
Heat dissipation capacity	P <sub>diss</sub>	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
EC/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.

As required

#### **Technical data ETIM 7.0**

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

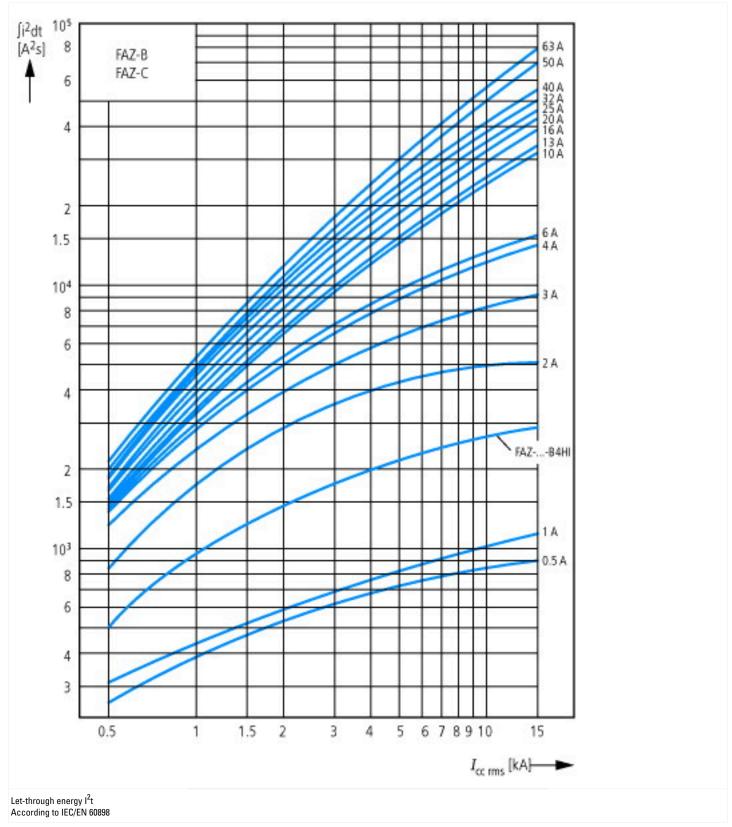
Electric engineering, automation, process control engineering / Electrical installation, device / Miniature circuit breaker system (MCB) / Miniature circuit breaker (MCB) (ecl@ss10.0.1-27-14-19-01 [AAB905014]) Release characteristic Number of poles (total)
Number of polos (total)
Number of poles (total) 2
Number of protected poles 2
Rated current A 20
Rated voltage V 400
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 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

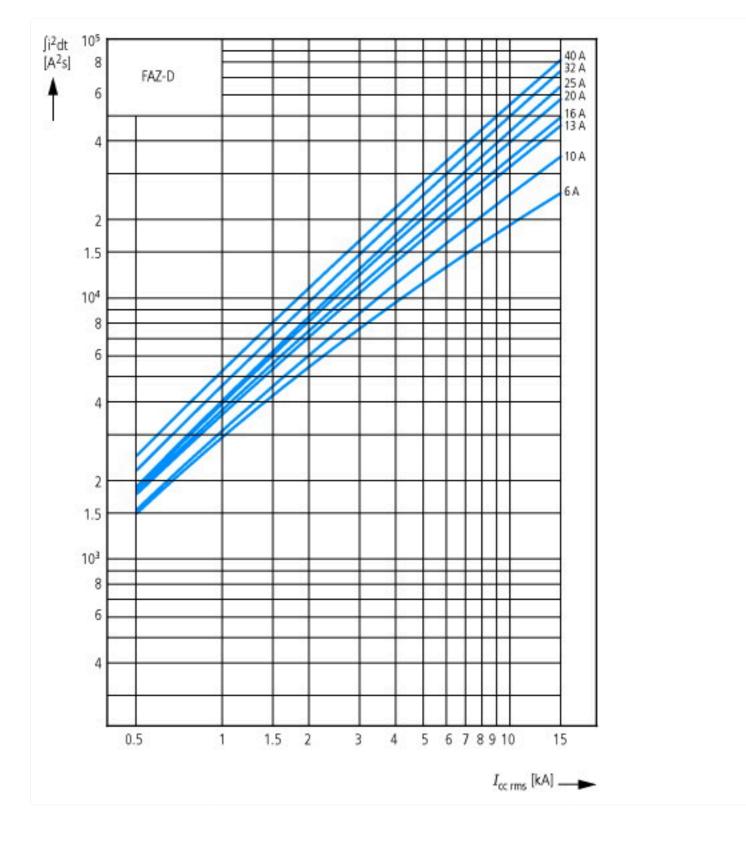
Voltage type		AC
Frequency	Hz	50 - 60
Current limiting class		3
Suitable for flush-mounted installation		No
Concurrently switching N-neutral		No
Over voltage category		3
Pollution degree		2
Additional equipment possible		Yes
Width in number of modular spacings		2
Built-in depth	mm	70.5
Degree of protection (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

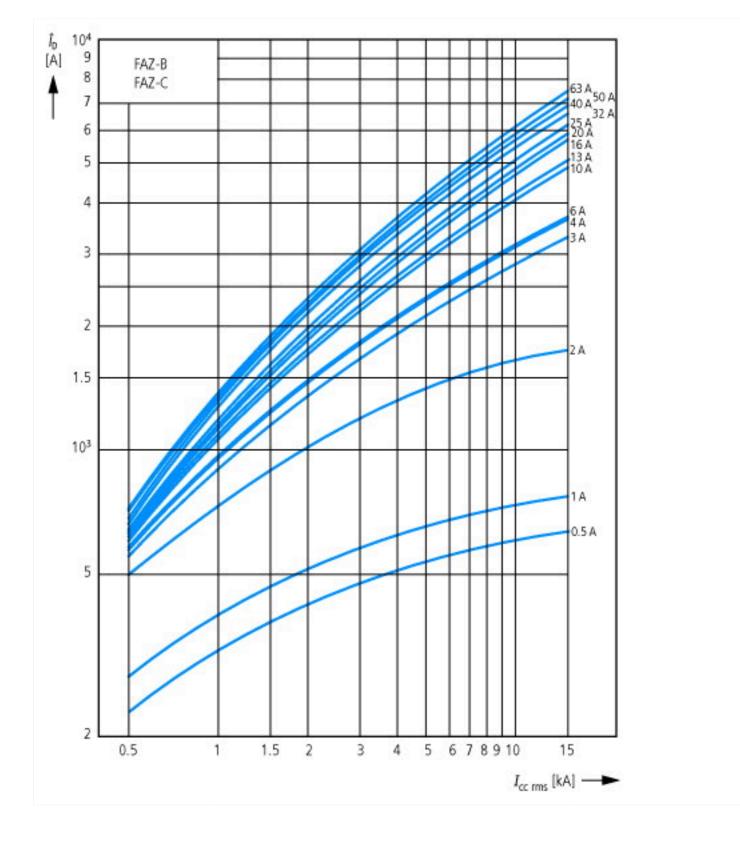
### **Approvals**

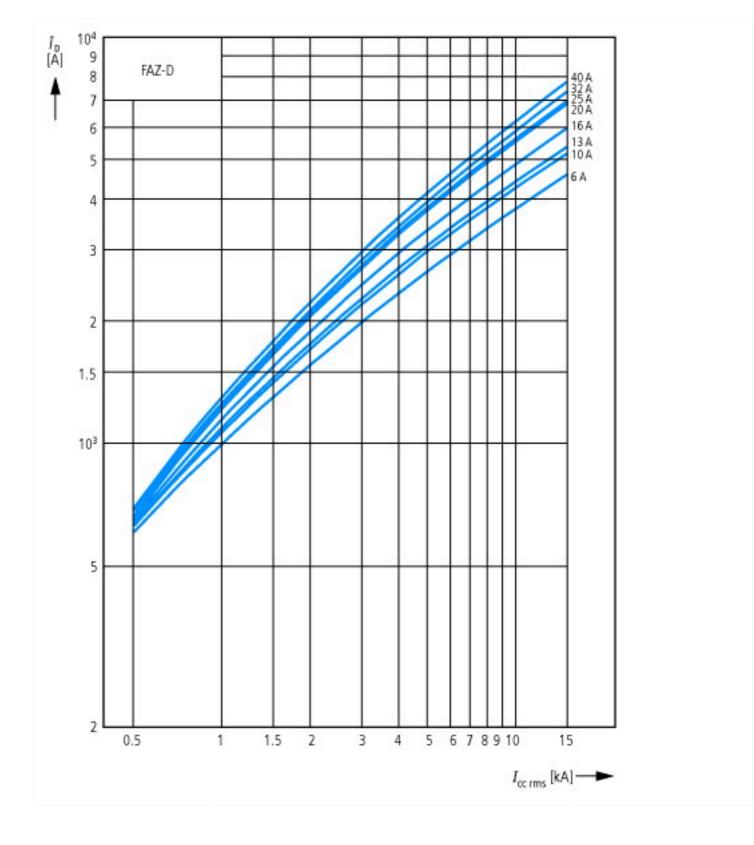
••	
Product Standards	IEC/EN 60947-2; IEC/EN 60898; EN 45545-2; IEC 61373; UL 1077; CSA-C22.2 No. 235; CE marking
UL File No.	E177451
UL Category Control No.	QVNU2, QVNU8
CSA File No.	204453
CSA Class No.	3215-30
North America Certification	UL recognized, CSA certified
Conditions of Acceptability	Supplementary 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: -

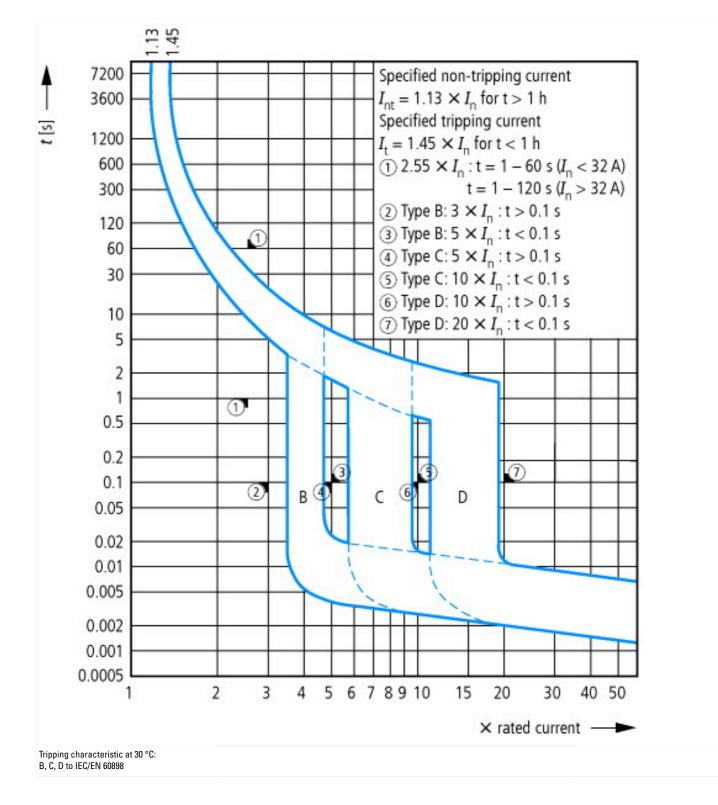
### **Characteristics**



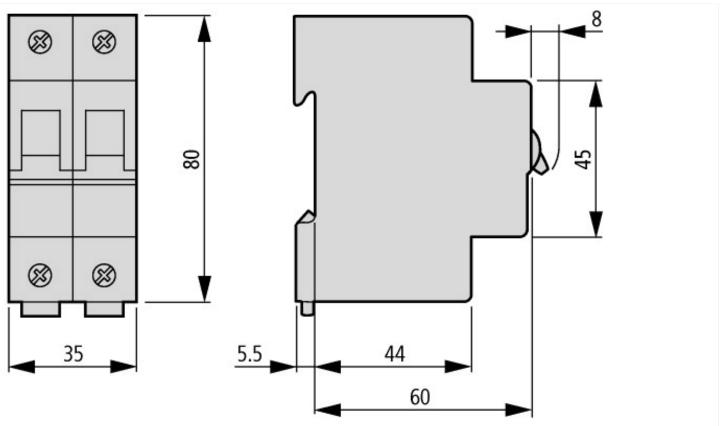








### **Dimensions**



## Additional product information (links)

Temperature dependency, derating

 $\label{eq:https://www.eaton.com/content/dam/eaton/technicaldocumentation/technical-data-tables/Derating table FAZ.pdf$