

### Circuit-breaker, 3p, 2000 A, fixed

Powering Business Worldwide<sup>™</sup>

Part no. IZMX40N3-A20F Article no. 149697

Catalog No. RES8203B22MNMNN2MN1X

## **Delivery program**

zonio, program			
Product range			Air circuit-breakers/switch-disconnectors
Product range			Open circuit-breakers
Current Range			Up to 4000 A
Protective function			System protection
Installation type			Fixed
Construction size			IZMX40
Release system			Electronic release
Standard/Approval			IEC
Number of poles			3 pole
Degree of Protection			IP20, IP55 with protective cover, IP41 door sealing frame
			optionally fittable by user with comprehensive accessories
Rated current = rated uninterrupted current	$I_n = I_u$	Α	2000
Bemessungsgrenzkurzschlussausschaltvermögen bis 440V/690V 42/42	I <sub>cu</sub>	kA	85
Bemessungsbetriebskurzschlussausschaltvermögen bis 440V/690V 42/42	I <sub>cs</sub>	kA	85
Overload release, min.	I <sub>r</sub>	Α	1000
Overload release, max.	I <sub>r</sub>	Α	2000
Non-delayed	$I_i = I_n x \dots$		2 - 12
I>			
Notes			
Main terminals must be separately ordered.			

### **Technical data**

Rated operational voltage

General			
Standards			IEC/EN 60947
Ambient temperature			
Storage	θ	°C	-40 - +70
Operating (open)		°C	-25 - +70
Mounting position			30° 30°
			30° 30°
Utilization category			В
Degree of Protection			IP20, IP55 with protective cover, IP41 door sealing frame
Direction of incoming supply			as required
Main conducting paths			
Rated current = rated uninterrupted current	$I_n = I_u$	Α	2000
Rated uninterrupted current at 50 °C	I <sub>u</sub>	Α	2000
Rated uninterrupted current at 60 °C	I <sub>u</sub>	Α	2000
Rated uninterrupted current at 70 °C	I <sub>u</sub>	Α	2000
Rated impulse withstand voltage	U <sub>imp</sub>	V AC	12000

V AC

690

Use in IT electrical power networks up to U = 440 V	I <sub>IT</sub>	kA	57.6
Overvoltage category/pollution degree			III/3
Rated insulation voltage	Ui	V	1000
Switching capacity			
Rated short-circuit making capacity	I <sub>cm</sub>		
up to 440 V 50/60 Hz	I <sub>cm</sub>	kA	187
up to 690 V 50/60 Hz	I <sub>cm</sub>	kA	166
Rated short-time withstand current 50/60 Hz			
t=1s	I <sub>cw</sub>	kA	85
t = 3 s	I <sub>cw</sub>	kA	66
Rated short-circuit breaking capacity $I_{\rm cn}$	I <sub>cn</sub>		
IEC/EN 60947 operating sequence I <sub>cu</sub> 0-t-C0			
up to 240 V 50/60 Hz	I <sub>cu</sub>	kA	85
up to 440 V 50/60 Hz	I <sub>cu</sub>	kA	85
up to 690 V 50/60 Hz	I <sub>cu</sub>	kA	75
IEC/EN 60947 operating sequence I <sub>cs</sub> 0-t-C0-t-C0	·cu		
		LΛ	OF.
up to 240 V 50/60 Hz	I <sub>cs</sub>	kA	85
up to 440 V 50/60 Hz	I <sub>cs</sub>	kA	85
up to 690 V 50/60 Hz	I <sub>cs</sub>	kA	75
Operating times			
Closing delay via spring release		ms	35
Total opening delay via shunt release		ms	22
Total opening delay via undervoltage release		ms	37
Total opening delay on non-delayed short-circuit release (up to complete arc quenching)		ms	45
Maximum operating frequency	Operations/h		60
Heat dissipation at rated current I <sub>n</sub>			
Fixed mounting		W	150
Weight			
Fixed mounting			
3-pole		kg	43
4-pole		kg	56
Terminal capacities			
Copper bar			
Fixed mounting			
Black		mm	2 x 80 x 10
			These are values used in separate switchgear. The actual values will depend on the temperature around the circuit-breaker, which is influenced by the ambient temperature, the degree of protection (IP), the mounting height, the partitions, and any external ventilation. Depending on the specific switchgear design, this may result in derating, which can then be compensated for by increasing the cross-sectional area. Temperature rise tests in the specific switchgear can provide specific and detailed information.
			Permissible continuous current for circuit-breakers operating in switchboards at various internal ambient temperatures. The switchboard's internal ambient temperature should be estimated using the calculation methods of IEC regulation.

# Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	In	Α	2000
Equipment heat dissipation, current-dependent	P <sub>vid</sub>	W	150
Operating ambient temperature min.		°C	-25
Operating ambient temperature max.		°C	70
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 6.0**

Low-voltage industrial components (EG000017) / Power circuit-breaker for trafo/generator/installation prot. (EC000228)

Electric engineering, automation, process control engineering / Low-voltage switch technology / Circuit breaker (LV < 1 kV) / Circuit breaker for power transformer, generator and system protection (ecl@ss8.1-27-37-04-09 [AJZ716010])

Switched-off indicator available With under voltage release With protection unit  Yes  Yes  No  No  Sack side  Back side  Push button  Complete device with protection unit  Yes			
Rated short-circuit breaking capacity lou at 400 V, 50 Hz         KA         85           Overload release current setting         A         1000 - 2000           Adjustment range short-term delayed short-circuit release         A         0 - 0           Adjustment range undelayed short-circuit release         A         4000 - 24000           Integrated earth fault protection         No         Rail connection           Type of electrical connection of main circuit         Built-in device fixed built-in technique           Device construction         Built-in device fixed built-in technique           Suitable for DIN rail (top hat rail) mounting         No           Number of auxiliary contacts as normally closed contact         No           Number of auxiliary contacts as normally open contact         P           Switched-off indicator available         Yes           With under voltage release         No           With under voltage release         No           With under voltage release         No           Visual position of connection for main current circuit         Sex Sack side           Type of control element         Push button           Complete device with protection unit         Yes           Motor drive integrated         No           Motor drive integrated         Yes	Rated permanent current lu	Α	2000
Overload release current setting         A         1000 - 2000           Adjustment range short-term delayed short-circuit release         A         0 - 0           Adjustment range undelayed short-circuit release         A         4000 - 24000           Integrated earth fault protection         B         A         4000 - 24000           Type of electrical connection of main circuit         B         A         8 ali connection           Device construction         Built-in device fixed built-in technique         Built-in device fixed built-in technique           DIN rail (top hat rail) mounting optional         No         No           Number of auxiliary contacts as normally closed contact         Yo         1000 - 2000           Number of auxiliary contacts as change-over contact         Yo         1000 - 2000           Switched-off indicator available         Yo         Yo           With under voltage release         Yo         Yo           Number of poles         3         3           Position of connection for main current circuit         Yo         Yo           Type of control element         Yo         Yo         Yo           Complete device with protection unit         Yo         Yo         Yo           Motor drive integrated         Yo         Yo         Yo	Rated voltage	V	690 - 690
Adjustment range short-term delayed short-circuit release Adjustment range undelayed short-circuit release Adjustment range undelayed short-circuit release Integrated earth fault protection Type of electrical connection of main circuit Device construction Powice construction Suitable for DIN rail (top hat rail) mounting DIN rail (top hat rail) mounting optional Number of auxiliary contacts as normally closed contact Number of auxiliary contacts as normally open contact Number of auxiliary contacts as change-over contact Switched-off indicator available With under voltage release Number of poles Number of poles Number of poles Number of poles Number of connection for main current circuit Type of control element Complete device with protection unit Motor drive integrated Motor drive integrated Number of poles Number of p	Rated short-circuit breaking capacity Icu at 400 V, 50 Hz	kA	85
Adjustment range undelayed short-circuit release Integrated earth fault protection Type of electrical connection of main circuit Device construction Suitable for DIN rail (top hat rail) mounting Suitable fo	Overload release current setting	Α	1000 - 2000
Integrated earth fault protection Type of electrical connection of main circuit Device construction Suitable for DIN rail (top hat rail) mounting DIN rail (top hat rail) mounting optional Number of auxiliary contacts as normally closed contact Number of auxiliary contacts as normally open contact Number of auxiliary contacts as normally open contact Number of auxiliary contacts as change-over contact Switched-off indicator available With under voltage release With under voltage release Number of poles Position of connection for main current circuit Type of control element Complete device with protection unit Motor drive integrated Motor drive integrated Motor drive optional	Adjustment range short-term delayed short-circuit release	Α	0 - 0
Type of electrical connection of main circuit  Device construction  Device construction  Suitable for DIN rail (top hat rail) mounting  DIN rail (top hat rail) mounting optional  Number of auxiliary contacts as normally closed contact  Number of auxiliary contacts as normally open contact  Number of auxiliary contacts as normally open contact  Number of auxiliary contacts as change-over contact  Switched-off indicator available  Viss  With under voltage release  With under voltage release  Number of poles  Position of connection for main current circuit  Type of control element  Complete device with protection unit  Motor drive integrated  Motor drive optional  Rail connection  Built-in device fixed built-in technique  No  No  No  Sea  Built-in device fixed built-in technique  No  Sea  Suitable (Push Duxnella	Adjustment range undelayed short-circuit release	Α	4000 - 24000
Device construction Suitable for DIN rail (top hat rail) mounting DIN rail (top hat rail) mounting optional Number of auxiliary contacts as normally closed contact Number of auxiliary contacts as normally open contact Number of auxiliary contacts as change-over contact Number of auxiliary contacts as change-over contact  Switched-off indicator available With under voltage release With under voltage release Number of poles Position of connection for main current circuit  Type of control element Complete device with protection unit Motor drive integrated Motor drive optional  Motor drive optional	Integrated earth fault protection		No
Suitable for DIN rail (top hat rail) mounting DIN rail (top hat rail) mounting optional Number of auxiliary contacts as normally closed contact Number of auxiliary contacts as normally open contact Number of auxiliary contacts as normally open contact Number of auxiliary contacts as change-over contact Number of pulse No	Type of electrical connection of main circuit		Rail connection
DIN rail (top hat rail) mounting optional  Number of auxiliary contacts as normally closed contact  Number of auxiliary contacts as normally open contact  Number of auxiliary contacts as normally open contact  Number of auxiliary contacts as change-over contact  Switched-off indicator available  With under voltage release  With under voltage release  No  Number of poles  Position of connection for main current circuit  Type of control element  Complete device with protection unit  Motor drive integrated  Motor drive optional	Device construction		Built-in device fixed built-in technique
Number of auxiliary contacts as normally closed contact  Number of auxiliary contacts as normally open contact  Number of auxiliary contacts as change-over contact  Number of auxiliary contacts as change-over contact  Switched-off indicator available  Ves  With under voltage release  With under voltage release  No  Number of poles  Sack side  Position of connection for main current circuit  Type of control element  Complete device with protection unit  Motor drive integrated  Motor drive optional  O  O  O  O  O  O  O  O  O  O  O  O  O	Suitable for DIN rail (top hat rail) mounting		No
Number of auxiliary contacts as normally open contact  Number of auxiliary contacts as change-over contact  Switched-off indicator available  With under voltage release  With under voltage release  No  Number of poles  Position of connection for main current circuit  Type of control element  Complete device with protection unit  Motor drive integrated  Motor drive optional	DIN rail (top hat rail) mounting optional		No
Number of auxiliary contacts as change-over contact  Switched-off indicator available  With under voltage release  With under voltage release  No  Number of poles  Position of connection for main current circuit  Type of control element  Complete device with protection unit  Motor drive integrated  Motor drive optional	Number of auxiliary contacts as normally closed contact		0
Switched-off indicator available With under voltage release With under of poles Number of poles Position of connection for main current circuit Type of control element Complete device with protection unit Motor drive integrated Motor drive optional  Yes  Yes  Yes  Yes  Yes  Yes  Yes  Ye	Number of auxiliary contacts as normally open contact		0
With under voltage release Number of poles Solition of connection for main current circuit Solition of control element Complete device with protection unit Motor drive optional Solition of connection for main current circuit Solition of connection for main current circu	Number of auxiliary contacts as change-over contact		2
Number of poles  Position of connection for main current circuit  Type of control element  Complete device with protection unit  Motor drive optional  Salak side  Push button  Yes  No  Yes  No  Yes	Switched-off indicator available		Yes
Position of connection for main current circuit  Type of control element  Complete device with protection unit  Motor drive optional  Back side  Push button  Yes  No  No  Yes	With under voltage release		No
Type of control element Complete device with protection unit Motor drive optional  Push button Yes  No Yes	Number of poles		3
Complete device with protection unit  Notor drive optional  Yes  No  Yes	Position of connection for main current circuit		Back side
Motor drive integrated No Yes	Type of control element		Push button
Motor drive optional Yes	Complete device with protection unit		Yes
·	Motor drive integrated		No
Degree of protection (IP) IP20	Motor drive optional		Yes
	Degree of protection (IP)		IP20