

Circuit-breaker, 3p, 1600 A, fixed

Powering Business Worldwide

Part no. IZMX40B3-A16F
Article no. 149424
Catalog No. RES6163B22-NMNN2MN1X

Delivery programme

Delivery programme			
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	1600
Breaking capacity Icu = Ics to 440 V 50/60 Hz	I _{cu}	kA	66
Breaking capacity Ics to 440 V 50/60 Hz	I _{cs}	kA	66
Overload release, min.	I _r	Α	800
Overload release, max.	I _r	Α	1600
Non-delayed I >	l _i = l _n x		2 - 12
Notes			
Main terminals must be separately ordered.			

Technical data

Rated operational voltage

General

General			
Standards			IEC/EN 60947
Ambient temperature			
Storage	9	°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	1600
Rated uninterrupted current at 50 °C	I _u	Α	1600
Rated uninterrupted current at 60 °C	I _u	Α	1600
Rated uninterrupted current at 70 °C	I _u	Α	1600
Rated impulse withstand voltage	U _{imp}	V AC	12000

V AC

690

Use in IT electrical power networks up to U = 440 V	I _{IT}	kA	36
Overvoltage category/pollution degree			III/3
Rated insulation voltage	Ui	V	1000
Switching capacity			
Rated short-circuit making capacity	I _{cm}		
up to 440 V 50/60 Hz	I _{cm}	kA	145
up to 690 V 50/60 Hz	I _{cm}	kA	145
Rated short-time withstand current 50/60 Hz			
t=1s	I _{cw}	kA	66
t = 3 s	I _{cw}	kA	53
Rated short-circuit breaking capacity I _{cn}	I _{cn}		
IEC/EN 60947 operating sequence I _{cu} 0-t-C0			
up to 240 V 50/60 Hz	I _{cu}	kA	66
up to 440 V 50/60 Hz	I _{cu}	kA	66
up to 690 V 50/60 Hz	I _{cu}	kA	66
IEC/EN 60947 operating sequence I _{cs} 0-t-CO-t-CO	·cu		
		LΛ	CC CC
up to 240 V 50/60 Hz	I _{cs}	kA	66
up to 440 V 50/60 Hz	I _{cs}	kA	66
up to 690 V 50/60 Hz	I _{cs}	kA	66
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 _n			
Fixed mounting		W	140
Weight			
Fixed mounting			
3-pole		kg	43
4-pole		kg	56
Terminal capacities Copper bar			
Fixed mounting			
Black		mm	1 x 80 x 10
Liden			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	1600
Equipment heat dissipation, current-dependent	P_{vid}	W	140
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])

Rated voltage Rated voltage Rated short-circuit breaking capacity lou at 400 V, 50 Hz Rated short-circuit breaking capacity lou at 400 V, 50 Hz Adjustment range short-term delayed short-circuit release Adjustment range undelayed short-circuit release A 0-0 Adjustment range undelayed short-circuit release Adjustment range undelayed short-circuit release A 200-19200 No Adjustment range undelayed short-circuit release A 3200-19200 No Adjustment range undelayed short-circuit release A 0-0 Adjustment range undelayed short-circuit release A 200-19200 No A 3200-19200 No Adjustment range undelayed short-circuit release A 200-19200 No Adjustment range undelayed short-circuit release A 200-19200 No Adjustment range undelayed short-circuit release A 200-19200 No Adjustment range undelayed short-circuit release A 300-19200 No Adjustment range undelayed short-circuit			
Rated short-circuit breaking capacity lou at 400 V, 50 Hz Overload release current setting Adjustment range short-term delayed short-circuit release Adjustment range undelayed short-circuit Adjustment range undelayed short-circuit release Adjustment range undelayed short-circuit r	Rated permanent current lu	Α	1600
Overload release current setting Al 800 - 1600 Adjustment range short-term delayed short-circuit release Al 0 - 0 Adjustment range undelayed short-circuit release Al 3200 - 19200 Integrated earth fault protection Type of electrical connection of main circuit Device construction Built-in device fixed built-in technique 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 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	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 No Type of electrical connection of main circuit Device construction Suitable for DIN rail (top hat rail) mounting DIN rail (top hat rail) mo	Rated short-circuit breaking capacity Icu at 400 V, 50 Hz	kA	66
Adjustment range undelayed short-circuit release A 3200 - 19200 Integrated earth fault protection No 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 change-over contact Switched-off indicator available With under voltage release With under voltage release Position of connection for main current circuit Support of control element Complete device with protection unit Motor drive integrated Motor drive integrated A 3200 - 19200 No Rail connection	Overload release current setting	Α	800 - 1600
Integrated earth fault protection 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 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 With under voltage release No Occording to the contact of the cont	Adjustment range short-term delayed short-circuit release	А	0 - 0
Type of electrical connection of main circuit Device construction Built-in device fixed built-in technique No No No No Number of auxiliary contacts as normally closed contact Number of auxiliary contacts as change-over contact Number of auxiliary contacts as change-over contact Number of indicator available With under voltage release No No No Yes Voltable of control element Complete device with protection unit No Rail connection Built-in device fixed built-in technique No No No No A No A Position of connection of main circuit Built-in device fixed built-in technique No No No No No Position of control element No No No No No No No No No N	Adjustment range undelayed short-circuit release	А	3200 - 19200
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 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 Moder of the poles of the pole of the	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 change-over contact Number of auxiliary contacts as change-over contact Switched-off indicator available Ves With under voltage release No No Number of poles Position of connection for main current circuit Specific of control element Complete device with protection unit 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 change-over 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 System of control element Complete device with protection unit Motor drive integrated No	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 Yes 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 O Auxiliary contacts as normally closed contact D Substitute of the sub	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 No Number of poles Position of connection for main current circuit Type of control element Complete device with protection unit Motor drive integrated O August 2 Switched-off indicator available Yes No August 3 August 3 Position of connection for main current circuit Push button Yes No	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 of poles Position of connection for main current circuit Type of control element Complete device with protection unit Motor drive integrated 2 Yes No Reside Push button Yes No No	Number of auxiliary contacts as normally closed contact		0
Switched-off indicator available 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 Yes No August 19 August 29 Aug	Number of auxiliary contacts as normally open contact		0
With under voltage release No Number of poles 3 Position of connection for main current circuit Type of control element Complete device with protection unit Motor drive integrated No	Number of auxiliary contacts as change-over contact		2
Number of poles 3 Position of connection for main current circuit Back side Type of control element Complete device with protection unit Motor drive integrated 3 Back side Push button Yes No	Switched-off indicator available		Yes
Position of connection for main current circuit Type of control element Complete device with protection unit Motor drive integrated Back side Push button Yes No	With under voltage release		No
Type of control element Complete device with protection unit Motor drive integrated Push button Yes No	Number of poles		3
Complete device with protection unit Yes Motor drive integrated No	Position of connection for main current circuit		Back side
Motor drive integrated No	Type of control element		Push button
	Complete device with protection unit		Yes
Motor drive optional Yes	Motor drive integrated		No
	Motor drive optional		Yes
Degree of protection (IP) IP20	Degree of protection (IP)		IP20