DATASHEET - IZMX40H4-P16F



Circuit-breaker, 4p, 1600 A, fixed

Part no. IZMX40H4-P16F

Catalog No. 149944

Eaton Catalog No. RESC164B12-NMNN2MN1X



Delivery program			
Product range			Air circuit-breakers/switch-disconnectors
Product range			Open circuit-breakers
Current Range			Up to 4000 A
Protective function			Professional protection
Installation type			Fixed
Construction size			IZMX40
Release system			Electronic release
Standard/Approval			IEC
Number of poles			4 pole
Degree of Protection			IP20, IP55 with protective cover, IP41 door sealing frame
			suitable for zone selectivity suitable for communication with integrated system monitor with integrated test possibility with graphic LCD color display optionally fittable by user with comprehensive accessories
Rated current = rated uninterrupted current	$I_n = I_u$	Α	1600
up to 440 V 50/60 Hz	I _{cu}	kA	105
up to 440 V 50/60 Hz	I _{cs}	kA	105
Overload release, min.	I _r	Α	800
Overload release, max.	I _r	Α	1600
Non-delayed	$I_i = I_n x \dots$		2 - 12, OFF
Delayed	$I_{sd} = I_r x \dots$		2 - 10

Technical data

General			
Standards			IEC/EN 60947
Ambient temperature			
Storage	θ	°C	-25 - +70 (device with LCD-display -20 - +70)
Operating (open)		°C	-25 - +70 (device with LCD-display -20 - +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	75
Rated impulse withstand voltage	U _{imp}	V AC	12000
Rated operational voltage	U _e	V AC	690
Use in IT electrical power networks up to U = 440 V	I _{IT}	kA	57.6
Overvoltage category/pollution degree	111	NA.	III/3
Rated insulation voltage	11.	V	1000
Switching capacity	Ui	V	1000
Rated short-circuit making capacity	I _{cm}		
up to 440 V 50/60 Hz	I _{cm}	kA	231
up to 690 V 50/60 Hz		kA	166
	I _{cm}	NA.	
Rated short-time withstand current 50/60 Hz		I. A	or .
t=1s	I _{cw}	kA	85
t = 3 s	I _{cw}	kA	66
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	105
up to 440 V 50/60 Hz	I _{cu}	kA	105
up to 690 V 50/60 Hz	I _{cu}	kA	75
IEC/EN 60947 operating sequence I _{cs} O-t-CO-t-CO			
up to 240 V 50/60 Hz	I _{cs}	kA	105
up to 440 V 50/60 Hz	I _{cs}	kA	105
up to 690 V 50/60 Hz	I _{cs}	kA	75
Operating times	-05		
Closing delay via spring release		ms	35
Total opening delay via shunt release		ms	22
Total opening delay via undervoltage release		ms	37
local opening delay via andervoltage release		1113	
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	100
Weight			
Fixed mounting			
3-pole		kg	43
4-pole		kg	56
Terminal capacities			
Copper bar			
Fixed mounting			
Black		mm	1 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.
Notes			IZMX-DTP-PTM external voltage measuring module required

04/18/2018

Technical data for design verification

Rated operational current for specified heat dissipation

1600

Equipment heat dissipation, current-dependent	P_{vid}	W	100
Operating ambient temperature min.		°C	-25
Operating ambient temperature max.		°C	70
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 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 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 permanent current lu Rated voltage Rated voltage Rated short-circuit breaking capacity lcu at 400 V, 50 Hz Roted short-circuit breaking capacity lcu at 400 V, 50 Hz Adjustment range short-term delayed short-circuit release Adjustment range undelayed short-circuit release Adju	protection (eci@sss.1-27-37-04-09 [AJZ/10010])		
Rated short-circuit breaking capacity lcu at 400 V, 50 Hz Overload release current setting A 800 - 1600 Adjustment range short-term delayed short-circuit release Adjustment range undelayed short-circuit release Adjustment range undelayed short-circuit release Adjustment range undelayed short-circuit release A 3200 - 19200 Adjustment range undelayed short-circuit release A 3200 - 19200 Adjustment range undelayed short-circuit release A 3200 - 19200 An 3200 - 19200 A	Rated permanent current lu	А	1600
Overload release current setting A 800 - 16000 Adjustment range short-term delayed short-circuit release A 3000 - 160000 Adjustment range undelayed short-circuit release A 3000 - 19200 Integrated earth fault protection No Type of electrical connection of main circuit Bease Built-in device fixed built-in technique Device construction Built (top hat rail) mounting Built-in device fixed built-in technique DIN rail (top hat rail) mounting Dit onal William outnoted Built-in device fixed built-in technique DIN rail (top hat rail) mounting Dit onal Built-in device fixed built-in technique DIN rail (top hat rail) mounting Dit onal Built-in device fixed built-in technique DIN rail (top hat rail) mounting Dit onal Built-in device fixed built-in technique DIN rail (top hat rail) mounting Dit onal Built-in device fixed built-in technique DIN rail (top hat rail) mounting Dit onal Built-in device fixed built-in technique DIN rail (top hat rail) mounting Dit onal Built-in device fixed built-in technique DIN rail (top hat rail) mounting Dit onal Built-in device fixed built-in technique DIN rail (top hat rail) mounting Dit onal Built-in device fixed built-in technique DIN rail (top hat rail) mounting Dit onal Built-in device fixed built-in technique DIN rail (top hat rail) mounting Dit onal Built-in device fixed built-in technique DIN rail (top hat rail) mounting Dit onal Built-in device fixed built-in technique DIN rail (top hat rail) mounting Dit onal Built-in device fixed built-in technique DIN rail (top hat rail) mounting Dit onal Built-in device fixed built-in technique DIN rail (top hat rail) mounting DIV rail (top hat rail) mounting	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 Adjustment range undelayed short-circuit release No Type of electrical connection 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 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 A 3200 - 18200 No Switched-off indicator available A 3200 - 18200 No	Rated short-circuit breaking capacity Icu at 400 V, 50 Hz	kA	105
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 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 connection for main current circuit Type of control element Complete device with protection unit A 3200 - 19200 No No No Rail connection Suiti-in device fixed built-in technique No No No O C Rail connection Suiti-in devince fixed built-in technique No No O C Rail connection Suiti-in devince fixed built-in technique No No O C Rail connection Suiti-in devince fixed built-in technique No No O C Rail connection Suiti-in devince fixed built-in technique No No O C Rail connection Suiti-in devince fixed built-in technique No No O C Rail connection Suiti-in devince fixed built-in technique No No O C Suiti-in devince fixed built-in technique No No O C Suiti-in devince fixed built-in technique No No O C Suiti-in devince fixed built-in technique No No O C Suiti-in devince fixed built-in technique No No O C Suiti-in devince fixed built-in technique No No O C Suiti-in devince fixed built-in technique No No O C Suiti-in devince fixed built-in technique No No O C Suiti-in devince fixed built-in technique No No O C Suiti-in devince fixed built-in technique No No O C Suiti-in devince fixed built-in technique No No O C Suiti-in devince fixed built-in technique No No O C Suiti-in devince fixed built-in technique No No O C Suiti-in devince fixed built-in technique No No O C Suiti-in devince fixed built-in technique No No O C Suiti-in devince fixed built-in technique No No O C Suiti-in devince fixed built-in technique No No O C Suiti-in devince fixed built-in technique No No No O C Suiti-in devince fixed built-in technique No No O C Suiti-	Overload release current setting	Α	800 - 1600
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 change-over contact Switched-off indicator available With under voltage release Number of poles Position of connection for main current circuit Complete device with protection unit No Rail connection Rail connec	Adjustment range short-term delayed short-circuit release	Α	3200 - 16000
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 No Number of poles Position of connection for main current circuit Type of control element Complete device with protection unit	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 Built-in device fixed built-in technique No No No Rumber of poles Built-in device fixed built-in technique No No Rumber of poles Built-in device fixed built-in technique No No Built-in device fixed built-in technique No Rumber of poles Pes Built-in device fixed built-in technique No Pes Pes Built-in device fixed built-in technique No Built-in device fixed built-in technique No Pes Built-in device fixed built-in technique Pos	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 Switched-off indicator available With under voltage release With under voltage release No Number of connection for main current circuit Type of control element Complete device with protection unit No No No No Rumber of poles A Push button Yes	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 No Number of poles A Position of connection for main current circuit Type of control element Complete device with protection unit No No A Position of connection for main current circuit Yes	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 With under voltage release No Number of poles Number of poles Position of connection for main current circuit Type of control element Complete device with protection unit 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 of poles No Number of poles Position of connection for main current circuit Type of control element Complete device with protection unit O O O O O O O O O O O O O	DIN rail (top hat rail) mounting optional		No
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 2 Yes	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 Yes No Back side Push button Yes	Number of auxiliary contacts as normally open contact		0
With under voltage release No Number of poles 4 Position of connection for main current circuit Type of control element Complete device with protection unit No Back side Push button Yes	Number of auxiliary contacts as change-over contact		2
Number of poles 4 Position of connection for main current circuit Type of control element Complete device with protection unit 4 Back side Push button Yes	Switched-off indicator available		Yes
Position of connection for main current circuit Type of control element Complete device with protection unit Back side Push button Yes	With under voltage release		No
Type of control element Push button Complete device with protection unit Yes	Number of poles		4
Complete device with protection unit Yes	Position of connection for main current circuit		Back side
	Type of control element		Push button
Motor drive integrated	Complete device with protection unit		Yes
Wilder universities area 190	Motor drive integrated		No

Motor drive optional	Yes
Degree of protection (IP)	IP20