### DATASHEET - IZMX40B3-V16F-1



Circuit-breaker, 3 pole, 1600A, 66 kA, Selective operation, IEC, Fixed

IZMX40B3-V16F-1

183705

4398194



EL-Nummer (Norway)

Part no. Catalog No.

#### **Delivery program**

Product range			Air circuit-breakers/switch-disconnectors
Product range			Open circuit-breakers
Current Range			Up to 4000 A
Protective function			Selective operation
Installation type			Fixed
			Main terminals must be separately ordered.
Construction size			IZMX40
Release system			Electronic release
Standard/Approval			IEC
Number of poles			3 pole
Degree of Protection			IP31 with door seals, IP55 with protective cover
			suitable for zone selectivity optionally fittable by user with comprehensive accessories
Rated current = rated uninterrupted current	$I_n = I_u$	А	1600
up to 440 V 50/60 Hz	I <sub>cu</sub>	kA	66
up to 440 V 50/60 Hz	I <sub>cs</sub>	kA	66
Overload release, min.	l <sub>r</sub>	А	640
Overload release, max.	l <sub>r</sub>	А	1600
Non-delayed	l <sub>i</sub> = l <sub>n</sub> x		2 - 15, OFF
Delayed	$I_{sd} = I_r x \dots$		1,5 - 10

# **Technical data**

General			
Standards			IEC/EN 60947
Ambient temperature			
Storage	θ	°C	-20 - +70
Ambient temperature		°C	-20 - +70
Mounting position			
			30° 30°
Utilization category			В
Degree of Protection			IP31 with door seals, IP55 with protective cover
Direction of incoming supply			as required
Main conducting paths			
Rated current = rated uninterrupted current	$I_n = I_u$	А	1600

Rated uninterrupted current at 50 °CIuA1600Rated uninterrupted current at 60 °CIuA600Rated uninterrupted current at 70 °CIuA600Rated impulse withstand voltageUmpVAC2000Rated operational voltageUeVAC600Use in IT electrical power networks up toUeVAC600Overvoltage category/pollution degreeUiV440Rated insulation voltageUiV1000Switching capacityIcmKA145up to 440 V 50/60 HzIcmKA145up to 690 V 50/60 HzIcmKA66t = 1 sIcwKA66t = 3 sIcwIcm66IEC/EN 60947 operating sequence Icw 0-t-COIcwKA66up to 240 V 50/60 HzIcuKA66up to 690 V 50/60 HzIcuKA66up to 690 V 50/60 HzIcuKA66up to 240 V 50/60 HzIcuKA66up to 690 V 50/60 HzIcuKA6	
Rated uninterrupted current at 70 °CIuA1600Rated inpulse withstand voltageUimpV AC12000Rated operational voltageUeV AC680Use in IT electrical power networks up toUV440Overvoltage category/pollution degreeUiV1000Rated insulation voltageUiV1000Switching capacityIcmV1000In to 680 V 50/60 HzIcmIcmKA145It to 15 Solfon HzIcmKA145It to 580 V 50/60 HzIcmKA66It to 580 V 50/60 HzIcmIcm53Rated short-circuit mexing capacity IcmIcmKA53Rated short-circuit breaking capacity IcmIcmKA66It to 580 V 50/60 HzIcuKA6666It coll to 580 V 50/60 HzIcuKA66It coll to 580 V 50/60 Hz <t< td=""><td></td></t<>	
Rated inpulse withstand voltage   VAC   12000     Rated operational voltage   Ue   VAC   690     Use in IT electrical power networks up to   U   VaC   690     Overvoltage category/pollution degree   Uinp   VaC   600     Rated insulation voltage   Ui   VaC   1000     Switching capacity   U   V   1000     Switching capacity   Icm   KA   145     up to 440 V 50/60 Hz   Icm   KA   145     up to 690 V 50/60 Hz   Icm   KA   145     Rated short-time withstand current 50/60 Hz   Icm   KA   53     Rated short-circuit breaking capacity Icm   Icm   KA   53     IEC/EN 60947 operating sequence Icu 0-t-CO   Icu   KA   66     up to 240 V 50/60 Hz   Icu   KA   66     up to 680 V 50/60 Hz   Icu   KA   66     Up to 240 V 50/60 Hz   Icu   KA   66     up to 240 V 50/60 Hz   Icu   KA   66     Up to 240 V 50/60 Hz   Icu   KA   66     Up to 240 V 50/60 Hz	
Rated operational voltage   Ue   VAC   690     Use in IT electrical power networks up to   U   V   440     Overvoltage category/pollution degree   Ui   V   111/3     Rated insulation voltage   Ui   V   1000     Switching capacity   Ui   V   1000     Switching capacity   Icm   KA   145     up to 440 V 50/60 Hz   Icm   KA   145     up to 690 V 50/60 Hz   Icm   KA   66     t = 1 s   Icw   KA   66     t = 3 s   Icw   KA   53     Rated short-circuit breaking capacity Icm   Icm   KA   66     t = 3 s   Icw   KA   66     t = 3 s   Icw   KA   66     up to 240 V 50/60 Hz   Icu   KA   66     up to 690 V 50/60 Hz   Icu   KA   66     up to 690 V 50/60 Hz   Icu   KA   66     up to 240 V 50/60 Hz   Icu   KA   66     up to 240 V 50/60 Hz   Icu   KA   66     up to 240 V 50/60 Hz<	
Use in IT electrical power networks up toUV440Overvoltage category/pollution degreeIII/3Rated insulation voltageUiVSwitching capacityUiVRated short-circuit making capacityIcmKAup to 440 V 50/60 HzIcmKAup to 690 V 50/60 HzIcmKARated short-tircuit breaking capacityIcmKAt = 1 sIcwKAt = 3 sIcwKARated short-circuit breaking capacity IcnIcnS3Rated short-circuit breaking capacity IcnIcuKAiup to 240 V 50/60 HzIcuKAup to 240 V 50/60 HzIcuKAiup to 690 V 50/60 HzIcuKAiup to 240 V 50/60 HzIcuKAiup to 690 V 50/60 HzIcuKAiup to 690 V 50/60 HzIcuKAiup to 240 V 50/60 HzIcuKAiup to 690 V 50/60 HzIcuiup to 690 V 50/60 HzIcui	
Overvoltage category/pollution degree     III/3       Rated insulation voltage     Ui     V     1000       Switching capacity     Iom     S     1000       Rated short-circuit making capacity     Iom     KA     145       up to 440 V 50/60 Hz     Iom     KA     145       Rated short-circuit making capacity     Iom     KA     145       up to 690 V 50/60 Hz     Iom     KA     66       t = 1 s     Iow     KA     66       t = 3 s     Iow     KA     53       Rated short-circuit breaking capacity Ion     Ion     KA     66       up to 240 V 50/60 Hz     Iou     KA     66       up to 240 V 50/60 Hz     Iou     KA     66       up to 690 V 50/60 Hz     Iou     KA     66       up to 240 V 50/60 Hz     Iou     KA     66       up to 240 V 50/60 Hz     Iou     KA     66       up to 240 V 50/60 Hz     Iou     KA     66       up to 240 V 50/60 Hz     Iou     KA     66       up to 2	
Rated insulation voltage   Ui   V   1000     Switching capacity   Icm   Icm   Icm   Icm   Idm     up to 440 V 50/60 Hz   Icm   KA   145     up to 690 V 50/60 Hz   Icm   KA   145     Rated short-time withstand current 50/60 Hz   Icm   KA   66     t = 1 s   Icw   KA   66     t = 3 s   Icw   KA   53     Rated short-circuit breaking capacity Icn   Icn   KA   53     IEC/EN 60947 operating sequence Icu 0-t-CO   Icu   KA   66     up to 540 V 50/60 Hz   Icu   KA   66     up to 500 V 50/60 Hz   Icu   KA   66     up to 690 V 50/60 Hz   Icu   KA   66     up to 690 V 50/60 Hz   Icu   KA   66     up to 240 V 50/60 Hz   Icu   KA   66     up to 240 V 50/60 Hz   Icu   KA   66     up to 440 V 50/60 Hz   Icu   KA   66     up to 440 V 50/60 Hz   Icu   KA   66     up to 690 V 50/60 Hz   Icu   KA <td></td>	
Switching capacity     Icm     Icm       Rated short-circuit making capacity     Icm     KA     145       up to 440 V 50/60 Hz     Icm     KA     145       up to 690 V 50/60 Hz     Icm     KA     145       Rated short-time withstand current 50/60 Hz     Icm     KA     66       t = 1 s     Icw     KA     66       t = 3 s     Icw     KA     66       Rated short-circuit breaking capacity Icn     Icn     KA     66       IEC/EN 60947 operating sequence Icu 0-t-CO     Icu     KA     66       up to 240 V 50/60 Hz     Icu     KA     66       up to 690 V 50/60 Hz     Icu     KA     66       up to 690 V 50/60 Hz     Icu     KA     66       up to 240 V 50/60 Hz     Icu     KA     66       up to 690 V 50/60 Hz     Icu     KA     66       up to 240 V 50/60 Hz     Icu     KA     66       up to 240 V 50/60 Hz     Icu     KA     66       up to 690 V 50/60 Hz     Icu     KA     66	
Switching capacity       Rated short-circuit making capacity     Icm	
up to 440 V 50/60 Hz     Icm     KA     145       up to 690 V 50/60 Hz     Icm     KA     145       Rated short-time withstand current 50/60 Hz     Icm     KA     66       t = 1 s     Icw     KA     66       t = 3 s     Icw     KA     53       Rated short-circuit breaking capacity Icn     Icn     Icm     Icm       IEC/EN 60947 operating sequence Icu 0-t-CO     Icu     KA     66       up to 240 V 50/60 Hz     Icu     KA     66       up to 690 V 50/60 Hz     Icu     KA     66       up to 690 V 50/60 Hz     Icu     KA     66       up to 690 V 50/60 Hz     Icu     KA     66       up to 240 V 50/60 Hz     Ics     KA     66       up to 240 V 50/60 Hz     Icu     KA     66       up to 240 V 50/60 Hz     Icu     KA     66       up to 240 V 50/60 Hz     Icu     KA     66       up to 240 V 50/60 Hz     Icu     KA     66       up to 690 V 50/60 Hz     Icu     KA     66	
up to 690 V 50/60 Hz     Icm     KA     145       Rated short-time withstand current 50/60 Hz     Icm     KA     60       t = 1 s     Icw     KA     60       t = 3 s     Icw     KA     53       Rated short-circuit breaking capacity Icn     Icm     Icm     Icm       IEC/EN 60947 operating sequence Icu O-t-CO     Icu     KA     66       up to 240 V 50/60 Hz     Icu     KA     66       up to 690 V 50/60 Hz     Icu     KA     66       up to 690 V 50/60 Hz     Icu     KA     66       up to 690 V 50/60 Hz     Icu     KA     66       up to 240 V 50/60 Hz     Icu     KA     66       up to 690 V 50/60 Hz     Icu     KA     66       up to 240 V 50/60 Hz     Icu     KA     66       up to 240 V 50/60 Hz     Icu     KA     66       up to 240 V 50/60 Hz     Icu     KA     66       up to 240 V 50/60 Hz     Icu     KA     66       up to 690 V 50/60 Hz     Icu     66     66 <	
Rated short-time withstand current 50/60 Hz     Image: Constraint of the stand short of the	
t = 1 s   Icw   KA   66     t = 3 s   Icw   KA   53     Rated short-circuit breaking capacity Icn   Icn   Icn   Icn     IEC/EN 60947 operating sequence Icu 0-t-CO   Icu   KA   66     up to 240 V 50/60 Hz   Icu   KA   66     up to 690 V 50/60 Hz   Icu   KA   66     up to 690 V 50/60 Hz   Icu   KA   66     up to 690 V 50/60 Hz   Icu   KA   66     up to 240 V 50/60 Hz   Icu   KA   66     up to 240 V 50/60 Hz   Icu   KA   66     up to 240 V 50/60 Hz   Icu   KA   66     up to 240 V 50/60 Hz   Icus   KA   66     up to 690 V 50/60 Hz   Icus   KA   66     up to 690 V 50/60 Hz   Icus   KA   66     up to 690 V 50/60 Hz   Icus   KA   66     up to 690 V 50/60 Hz   Icus   KA   66     Up to 690 V 50/60 Hz   Icus   KA   66     Up to 690 V 50/60 Hz   Icus   KA   66     Up to 690	
t = 3 s     Icw     KA     53       Rated short-circuit breaking capacity Icn	
Rated short-circuit breaking capacity l <sub>cn</sub> I <sub>cn</sub> I <sub>cn</sub> IEC/EN 60947 operating sequence l <sub>cu</sub> 0-t-CO   I <sub>cu</sub> KA   66     up to 240 V 50/60 Hz   I <sub>cu</sub> KA   66     up to 690 V 50/60 Hz   I <sub>cu</sub> KA   66     up to 690 V 50/60 Hz   I <sub>cu</sub> KA   66     up to 690 V 50/60 Hz   I <sub>cu</sub> KA   66     Up to 240 V 50/60 Hz   I <sub>cu</sub> KA   66     up to 240 V 50/60 Hz   I <sub>cu</sub> KA   66     up to 240 V 50/60 Hz   I <sub>cu</sub> KA   66     up to 240 V 50/60 Hz   I <sub>cu</sub> KA   66     up to 690 V 50/60 Hz   I <sub>cu</sub> KA   66     up to 690 V 50/60 Hz   I <sub>cu</sub> KA   66     Up to 690 V 50/60 Hz   I <sub>cu</sub> KA   66     Up to 690 V 50/60 Hz   I <sub>cu</sub> KA   66     Up to 690 V 50/60 Hz   I <sub>cu</sub> KA   66     Up to 690 V 50/60 Hz   I <sub>cu</sub> KA   66     Up to 690 V 50/60 Hz   I <sub>cu</sub> KA   66     Up to 690 V 50/60 Hz   I <sub>cu</sub> KA   66 </td <td></td>	
IEC/EN 60947 operating sequence I <sub>cu</sub> 0-t-CO     Icu     KA     66       up to 240 V 50/60 Hz     Icu     KA     66       up to 440 V 50/60 Hz     Icu     KA     66       up to 690 V 50/60 Hz     Icu     KA     66       up to 690 V 50/60 Hz     Icu     KA     66       Up to 240 V 50/60 Hz     Icu     KA     66       up to 240 V 50/60 Hz     Icus     KA     66       up to 240 V 50/60 Hz     Icus     KA     66       up to 690 V 50/60 Hz     Icus     KA     66       0 per to 690 V 50/60 Hz     Icus     KA     66       0 per ating times     Icus     KA     66	
IEC/EN 60947 operating sequence I <sub>cu</sub> 0-t-CO     Icu     KA     66       up to 240 V 50/60 Hz     Icu     KA     66       up to 440 V 50/60 Hz     Icu     KA     66       up to 690 V 50/60 Hz     Icu     KA     66       up to 690 V 50/60 Hz     Icu     KA     66       Up to 240 V 50/60 Hz     Icu     KA     66       up to 240 V 50/60 Hz     Icus     KA     66       up to 240 V 50/60 Hz     Icus     KA     66       up to 690 V 50/60 Hz     Icus     KA     66       0 per to 690 V 50/60 Hz     Icus     KA     66       0 per ating times     Icus     KA     66	
up to 240 V 50/60 Hz     Icu     KA     66       up to 440 V 50/60 Hz     Icu     KA     66       up to 690 V 50/60 Hz     Icu     KA     66       IEC/EN 60947 operating sequence I <sub>cs</sub> 0-t-C0-t-C0     Icu     KA     66       up to 240 V 50/60 Hz     Ics     KA     66       up to 240 V 50/60 Hz     Ics     KA     66       up to 240 V 50/60 Hz     Ics     KA     66       up to 690 V 50/60 Hz     Ics     KA     66       0perating times     Ics     KA     66	
Instrume	
up to 690 V 50/60 Hz     Icu     KA     66       IEC/EN 60947 operating sequence I <sub>cs</sub> 0-t-CO-t-CO     Ics     KA     66       up to 240 V 50/60 Hz     Ics     KA     66       up to 440 V 50/60 Hz     Ics     KA     66       up to 690 V 50/60 Hz     Ics     KA     66       0 perating times     Ics     KA     66	
IEC/EN 60947 operating sequence I <sub>cs</sub> 0-t-C0-t-C0     Ics     KA     66       up to 240 V 50/60 Hz     I <sub>cs</sub> KA     66       up to 690 V 50/60 Hz     I <sub>cs</sub> KA     66       0perating times     I	
up to 240 V 50/60 Hz     Ics     KA     66       up to 440 V 50/60 Hz     Ics     KA     66       up to 690 V 50/60 Hz     Ics     KA     66       Operating times     Ics     Ics     Ics     Ics	
up to 440 V 50/60 Hz Ics kA 66   up to 690 V 50/60 Hz Ics kA 66   Operating times KA 66	
up to 690 V 50/60 Hz Ics KA 66 Operating times	
Operating times	
Closing delay via spring release ms 35	
Total opening delay via shunt release ms 35	
Total opening delay via undervoltage release ms 40	
Total opening delay on non-delayed short-circuit release (up to complete arc ms 52	
quenching)	
Lifespan S	
Lifespan, mechanical Switching 12500 cycles (ON/ OFF)	
Lifespan, mechanical with maintenance Switching cycles (ON/ OFF) 25000.	
Lifespan, electrical Switching 10000 cycles (ON/ OFF)	
Lifespan, electrical with maintenance Switching 20000. cycles (ON/ OFF)	
Maximum operating frequency Operations/h 60	
Heat dissipation at rated current In	
Fixed mounting W 140	
Weight	
Fixed mounting	
3-pole kg 43	
Terminal capacities	
Copper bar	
Fixed mounting	
Black mm 1 x 80 x 10	
the temper temperatur	values used in separate switchgear. The actual values will depend on rature around the circuit-breaker, which is influenced by the ambient re, the degree of protection (IP), the mounting height, the partitions, and al ventilation. Depending on the specific switchgear design, this may

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	А	1600
Equipment heat dissipation, current-dependent	P <sub>vid</sub>	W	140
Operating ambient temperature min.		°C	-20
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 7.0**

Low-voltage industrial components (EG000017) / Power circuit-breaker for trafo/generator/installation protection (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@ss10.0.1-27-37-04-09 [AJZ716013])	

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Rated permanent current lu	А	1600
Rated voltage	V	690 - 690
Rated short-circuit breaking capacity Icu at 400 V, 50 Hz	kA	66
Overload release current setting	А	640 - 1600
Adjustment range short-term delayed short-circuit release	А	960 - 16000
Adjustment range undelayed short-circuit release	А	3200 - 24000
Integrated earth fault protection		No
Type of electrical connection of main circuit		Rail connection
Device construction		Built-in device fixed built-in technique
Suitable for DIN rail (top hat rail) mounting		No
DIN rail (top hat rail) mounting optional		No
Number of auxiliary contacts as normally closed contact		0
Number of auxiliary contacts as normally open contact		0

Number of auxiliary contacts as change-over contact	2
With switched-off indicator	Yes
With under voltage release	No
Number of poles	3
Position of connection for main current circuit	Back side
Type of control element	Push button
Complete device with protection unit	Yes
Motor drive integrated	No
Motor drive optional	Yes
Degree of protection (IP)	IP31

## Dimensions

