## DATASHEET - IZMX16H4-V16F-1



Circuit-breaker, 4 pole, 1600A, 66 kA, Selective operation, IEC, Fixed

IZMX16H4-V16F-1 183558

4398112



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			IZMX16
Release system			Electronic release
Standard/Approval			IEC
Number of poles			4 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	50
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 <sub>sd</sub> = I <sub>r</sub> x		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

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And operational valueUpVACVACUse independence integrational logic extegrational discover integrational logic extegrational logic extegration	ted uninterrupted current at 70 °C	lu	A	1350
Les in It discrited power networks up toUV40Deventing category/pullition relayersUVNoRend involve housesVVNoSwitching capacityKau15Rend shult house status and graph (A)Kau15ig to 40 V900 hr (A)Kau16ig to 40 V900 hr (A)Kau16It 1 aKau16It 1 aKau16ig to 40 V900 hr (A)Kau16ig to 40 V900 hr (A)Kau16ig to 40 V900 hr (A)Kau60ig to 40 V900 hr (A)Ka	ted impulse withstand voltage	U <sub>imp</sub>	V AC	12000
Noncollage catagory gluitation degreeIn all and the second se	ted operational voltage	U <sub>e</sub>	V AC	690
Rate discission using cancer by Switching cancer by Retact short-rich making cancer by ty to 460 Y 5050 HzInInInRate discission cancer by Sub Xi up to 660 Y 5050 HzInInInInRate discission cancer by Sub Xi to 1 = 1 = 1InInInInRate discission cancer by Sub Xi to 1 = 1 = 1InInInInRate discission cancer by Sub Xi to 1 = 1 = 1InInInInRate discission cancer by Sub Xi to 1 = 1 = 1InInInInIFECK B087 operating sequence by Or COInInInInup to 240 Y 5050 HzInInInInInup to 580 Y 5050 HzInInInInInUp	e in IT electrical power networks up to	U	V	440
Number of the state of the s	ervoltage category/pollution degree			111/3
Bated short-circuit making capacity     Ion     Ion     Ion       ip to 600 V5000 H2     Ion     Ion       Bated 300-rine shorts and curren 5000 H2     Ion     Ion       int 1 in     Ion     Ion     Ion       Int 2 in 1 in	ted insulation voltage	Ui	V	1000
up to 480 V SNB0 H2kmkA18up to 880 V SNB0 H2kmkmkmRarse Antr-circuit treaking capacity kmkmkmkmIncl 4 h1kmkmkmkmRarse Antr-circuit treaking capacity kmkmkmkmIncl 240 V SNB0 H2kmkmkmup to 880 V SNB0 H2kmkmkmUp to 840 V SNB0 H2km	vitching capacity			
up to 800 V5000 H/zHermKAReference intermediation of the second of the	ted short-circuit making capacity	l <sub>cm</sub>		
Rated short-time with stand current 5000 Hz     Iow     Iow     Iow       t=1 s     Iow     Iow     Iow       Rated short-trievith trasking sequence Iow 0-tCO     Iow     Iow       IEC/EN 0097 Operating sequence Iow 0-tCO     Iow     Iow       up to 400 V 5000 Hz     Iow     Iow     Iow       IEC/EN 0097 Operating sequence Iow 0-tCO-CO     Iow     Iow     Iow       up to 400 V 5000 Hz     Iow     Iow     Iow     Iow       Iow 500 V Diz     Iow     Iow     Iow     Iow       Up to 500 V 5000 Hz     Iow     Iow     Iow     Iow       Up to 500 V 5000 Hz     Iow     Iow     Iow     Iow       Up to 500 V 5000 Hz     Iow     Iow     Iow     Iow       Up to 500 V 5000 Hz     Iow     Iow     Iow     Iow       Operating times     Iow     Iow     Iow     Iow       Total opening delay via shurt release     Iow     Iow     Iow       Total opening delay via shurt release (up to complete arc cycles (W)     Iow     Iow       Idespan, mechanicial     Switching Cycles (W)     Iow     Iow       Idespan, idectrical     Switching Cycles (W)     Iow     Iow       Idespan, idectrical with maintenance     Switching Cycles (W)     Iow	up to 440 V 50/60 Hz	I <sub>cm</sub>	kA	145
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Reted short-circuit breaking capacity (and the second s	ted short-time withstand current 50/60 Hz			
IECCEN 08947 operating sequence Ise 0-t-CO       Icu	t = 1 s	I <sub>cw</sub>	kA	42
IECCEN 08947 operating sequence Ise 0-t-CO       Icu	ted short-circuit breaking capacity log			
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up to 440 Y 50%0 HzIcaKA66up to 580 V 50%0 HzIcaKA2IECEN 68947 oporating sequence Ica 0-+C0-C0			kΛ	25
up to 680 V 50/60 Hz         run         Kat         4           LEC/EN 60847 operating sequence 1rg 0+0-0-0-00         rss         Kat         5           up to 240 V 50/60 Hz         rss         Kat         5           up to 680 V 50/60 Hz         rss         Kat         5           up to 680 V 50/60 Hz         rss         Kat         5           Operating sinus         rss         80         3           Closing dalay vis spring ralease         rss         80         3           Total opening dalay vis undervoltage release         rss         80         3           Total opening dalay vis undervoltage release         rss         80         3           Ufespan, mechanical         rss         80         3           Ufespan, mechanical         rss         8         2           Ufespan, mechanical with maintenance         rss         rss         3           Ufespan, nechanical with maintenance         rss         10000         10000           Vereiting         rest opening         rest opening         2           Ufespan, nechanical with maintenance         rest opening         2         2           Ufespan, nechanical with maintenance         rest opening         2         2				
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up to 440 VS080 Hz         Fa         Ka         Ka           up to 680 VS080 Hz         Fa         Ka         Ka           Operating times         Fa         Ka         Ka           Closing delay via spring release         Fa         Ma         30           Total opening delay via spring release         Fa         Ma         30           Total opening delay via shurt release         Fa         Ma         30           Total opening delay via shurt release         Fa         Ma         30           Total opening delay on non-delayed short-circuit release (up to complete ar quenching)         Fa         50         50           Lifespan, mechanical         Switching vices (NN vice of	IEC/EN 60947 operating sequence I <sub>cs</sub> 0-t-C0-t-C0			
up to 690 V 50/60 Hz         Ica         Ka         4           Operating times	up to 240 V 50/60 Hz	I <sub>cs</sub>	kA	50
Operating times       Image: Cosing delay via spring release       30         Total opening delay via shurt release       ms       30         Total opening delay via shurt release       ms       50         Total opening delay via undervoltage release       ms       50         Total opening delay on onon-delayed short-circuit release (up to complete arc quenching)       ms       7         Lifespan       So       So       So         Lifespan, mechanical       Soviching OPFP       Soviching OPFP       Soviching OPFP         Lifespan, mechanical with maintenance       Soviching OPFP       Soviching OPFP       Soviching OPFP         Lifespan, electrical       Soviching OPFP       Soviching OPFP       Soviching OPFP       Soviching OPFP         Lifespan, electrical with maintenance       Soviching OPFP       Soviching OPFP       Soviching OPFP       Soviching OPFP       Soviching OPFP       Soviching OP       Sovich	up to 440 V 50/60 Hz	I <sub>cs</sub>	kA	50
Closing delay via spring release       sms       30         Total opening delay via shunt release       sms       30         Total opening delay via undervoltage release       sms       50         Total opening delay on non-delayed short-circuit release (up to complete arc quenching)       sms       7         Lifespan, mechanical       Switching cycles (NN science)       sms       2500         Lifespan, mechanical with maintenance       Switching cycles (NN science)       science)       science)         Lifespan, electrical       Switching cycles (NN science)       science)       science)       science)         Lifespan, electrical with maintenance       Switching cycles (NN science)       science)       science)       science)         Lifespan, electrical with maintenance       Switching cycles (NN science)       science)       science)       science)         Lifespan, electrical with maintenance       Switching cycles (NN science)       science)       science)       science)         Maximum operating frequency       Operations/h       science)       science)       science)       science)         Heat dissipation at rated current I <sub>N</sub> Science)       scien	up to 690 V 50/60 Hz	I <sub>cs</sub>	kA	42
Closing delay via spring release       sms       30         Total opening delay via undervoltage release       sms       30         Total opening delay on non-delayed short-circuit release (up to complete arc quenching)       ms       7         Total opening delay on non-delayed short-circuit release (up to complete arc quenching)       ms       7         Lifespan, mechanical       Switching cycles (NN sch       sch         Lifespan, mechanical with maintenance       Switching cycles (NN sch       con         Lifespan, mechanical with maintenance       Switching cycles (NN sch       con         Lifespan, mechanical with maintenance       Switching cycles (NN sch       con         Lifespan, mechanical with maintenance       Switching cycles (NN sch       con         Lifespan, electrical       Switching cycles (NN sch       con         Lifespan, electrical with maintenance       Switching cycles (NN sch       con         Switching cycles (NN sch       con       con         Lifespan, electrical with maintenance       Switching cycles (NN sch       con         Switching cycles (NN sch       con       con         Kief documing       Operations/t       con       con         Maximum operating frequency       Switching cycles (NN sch       con       con         Fixed mounting	erating times			
Total opening delay via shunt release       ms       30         Total opening delay via undervoltage release       ms       50         Total opening delay via undervoltage release       ms       27         Total opening delay via undervoltage release (up to complete arc quenching)       ms       27         Lifespan       ms       2500         Lifespan, mechanical       grees (0N) OFF       S000         Lifespan, mechanical with maintenance       grees (0N) OFF       S000         Lifespan, electrical       grees (0N) OFF       S000         Lifespan, electrical with maintenance       grees (0N) OFF       S000         OFF       OPF       OP       OP         Kaat dussipation at rated current I <sub>h</sub> ms       OP         Fixed mounting       W       S000       S000         Veight       W       S000       S000         Fixed mounting       Maximum operating frequency       W       S000         Heat dissipation at rated current I <sub>h</sub> Maximum operating frequency       Maximum operating frequency       Maximu	-		ms	30
Total opening delay via undervoltage release       ms       5         Total opening delay on non-delayed short-circuit release (up to complete arc quenching)       ms       7         Lifespan       S       5         Lifespan, mechanical       s       5         Lifespan, mechanical with maintenance       sciencing       25000-         Lifespan, electrical       sciencing       sciencing         Lifespan, electrical       sciencing       sciencing         Lifespan, electrical with maintenance       sciencing       sciencing         Sciencing       sciencing       sciencing       sciencing         Raximum operating frequency       Operationsh       sciencing       sciencing         Heat dissipation at rated current 1 <sub>n</sub> with maintenance       wwwwwwwwwwwwwwwwwwwwwwwwwwwwwwwwwwww				
Instrume       Instrum       Instrum       Instrum       In				
interval       interval <td< td=""><td></td><td></td><td></td><td></td></td<>				
Lifespan, mechanical       Switching cycles (DN/ OFF)       1250         Lifespan, mechanical with maintenance       Switching cycles (DN/ OFF)       <			ms	27
if expan, mechanical with maintenance       switching vcles (0N/ VFF)       2000.         Lifespan, electrical       switching vcles (0N/ VFF)       image: constraint of the second of the s	espan		S	
Lifespan, electrical       cycles (ON/ OFF)       0000         Lifespan, electrical with maintenance       Switching cycles (ON/ OFF)       0000.         Maximum operating frequency       Operations/h CYF)       0000.         Maximum operating frequency       Operations/h CYF)       0000.         Heat dissipation at rated current I <sub>n</sub> 0       0000.         Fixed mounting       VW       235         Veight       1       1         Fixed mounting       Maximum operating frequency       Maximum operations/h         If exed mounting       Maximum operations/h       1         Fixed mounting       Maximum operations/h       235         Terminal capacities       Maximum operations/h       1         Fixed mounting       Maximum operations/h       1	Lifespan, mechanical	cycles (ON/		12500
Lifespan, electrical with maintenance       Switching cycles (DN/ OFF)       20000.         Maximum operating frequency       Operations/h       60         Heat dissipation at rated current In       0       0         Fixed mounting       V       35         Veight         Terminal capacities         Copper bar         Fixed mounting       Image: Colspan="2">Image: Colspan="2">Colspan= Colspan="2">Colspan= Colspan="2"         Colspan== Colspan="2">Cols	Lifespan, mechanical with maintenance	cycles (ON/		25000.
Maximum operating frequency       Operations/h       60         Heat dissipation at rated current In       Maximum operating frequency       60         Fixed mounting       W       235         Weight         Fixed mounting       Image: Solution of the second of the se	Lifespan, electrical	cycles (ON/		10000
Heat dissipation at rated current In     Image: Constraint of the second s	Lifespan, electrical with maintenance	cycles (ON/		20000.
Fixed mounting W   Stream outling W   Pixed mounting Image: Comparison of the second of the seco	aximum operating frequency	Operations/h		60
Weight       Fixed mounting       4-pole       kg       24	at dissipation at rated current I <sub>n</sub>			
Weight       Fixed mounting       4-pole       kg       24	Fixed mounting		W	235
Fixed mounting     kg       4-pole     kg       24       Terminal capacities       Copper bar     Fixed mounting				
Terminal capacities       Copper bar       Fixed mounting	-			
Copper bar     Image: Copper bar       Fixed mounting     Image: Copper bar	4-pole		kg	24
Fixed mounting	rminal capacities			
	pper bar			
Black mm 2 x 5 x 100	Fixed mounting			
	Black		mm	2 x 5 x 100
the temperature around the circuit-breaker, which is influenced by the temperature, the degree of protection (IP), the mounting height, the par any external ventilation. Depending on the specific switchgear design, result in derating, which can then be compensated for by increasing th				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**

Design vernication as per IEG/EN 01439			
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	235
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])

Rated permanent current lu	А	1600
Rated voltage	V	690 - 690
Rated short-circuit breaking capacity Icu at 400 V, 50 Hz	kA	65
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	4
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

