

Circuit-breaker, 3 p, 630A

Part no.LZMC3-AE630-IArticle no.111957

Powering Business Worldwide<sup>®</sup>

Similar to illustration

## **Delivery programme**

Product range			Circuit-breaker
Protective function			System and cable protection
Standard/Approval			IEC
Installation type			Fixed
Release system			Electronic release
Construction size			LZM3
Description			R.m.s. value measurement and "thermal memory"
Number of poles			3 pole
Standard equipment			Screw connection
Switching capacity			
400/415 V 50/60 Hz	I <sub>cu</sub>	kA	50
Rated current = rated uninterrupted current			
Rated current = rated uninterrupted current	$I_n = I_u$	А	630
Setting range			
Overload trip			
L	l <sub>r</sub>	A	315 - 630
Short-circuit releases			
Non-delayed	$I_i = I_n \mathbf{x} \dots$		2 - 8

## **Technical data**

General		
Standards		IEC/EN 60947, VDE 0660
Protection against direct contact		Finger and back-of-hand proof to VDE 0106 part 100
Climatic proofing		Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30
Mechanical shock resistance (10 ms half-sinusoidal shock) according to IEC 60068-2-27	g	20 (half-sinusoidal shock 20 ms)
Safe isolation to EN 61140		
Between auxiliary contacts and main contacts	V AC	500
between the auxiliary contacts	V AC	300
Weight	kg	6.34
Mounting position		Vertical and 90° in all directions With XFI earth-fault release: - NZM1, N1, NZM2, N2: vertical and 90° in all directions with plug-in unit - NZM1, N1, NZM2, N2: vertical, 90° right/left with withdrawable unit: - NZM3, N3: vertical, 90° left - NZM4, N4: vertical

12/12/2015

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with remote operator:

			- NZM2, N(S)2, NZM3, N(S)3, NZM4, N(S)4: vertical and 90° in all directions
Direction of incoming supply			as required
Degree of protection			
Device			In the area of the HMI devices: IP20 (basic protection type)
Enclosures			with insulating surround: IP40with door coupling rotary handle: IP66
Terminations			Tunnel terminal: IP10 Phase isolator and band terminal: IP00
Circuit-breakers			
Rated current = rated uninterrupted current	$I_n = I_u$	A	630
Rated surge voltage invariability	U <sub>imp</sub>		
Main contacts		V	8000
Auxiliary contacts		V	6000
Rated operational voltage	U <sub>e</sub>	V AC	690
Overvoltage category/pollution degree			111/3
Rated insulation voltage	Ui	V	1000
Use in unearthed supply systems		۷	≦ <sub>690</sub>
Switching capacity			
Rated short-circuit making capacity	I <sub>cm</sub>		
240 V 50/60 Hz	I <sub>cm</sub>	kA	187
400/415 V 50/60 Hz	I <sub>cm</sub>	kA	105
440 V 50/60 Hz	I <sub>cm</sub>	kA	74
525 V 50/60 Hz	I <sub>cm</sub>	kA	53
690 V 50/60 H	lc	kA	40
Rated short-circuit breaking capacity I <sub>cn</sub>	I <sub>cn</sub>		
Icu to IEC/EN 60947 test cycle O-t-CO	lcu	kA	
240 V 50/60 Hz	Icu	kA	85
400/415 V 50/60 Hz	I <sub>cu</sub>	kA	50
440 V 50/60 Hz	I <sub>cu</sub>	kA	35
525 V 50/60 Hz	I <sub>cu</sub>	kA	25
690 V 50/60 Hz	I <sub>cu</sub>	kA	20
Ics to IEC/EN 60947 test cycle 0-t-C0-t-C0	lcs	kA	
230 V 50/60 Hz	I <sub>cs</sub>	kA	85
400/415 V 50/60 Hz	I <sub>cs</sub>	kA	50
		kA	
440 V 50/60 Hz	I <sub>cs</sub>		35
525 V 50/60 Hz	I <sub>cs</sub>	kA	13
690 V 50/60 Hz	Ics	kA	5 Maximum back-up fuse, if the expected short-circuit currents at the installation location exceed the switching capacity of the circuit-breaker.
Rated short-time withstand current			
t = 0.3 s	I <sub>cw</sub>	kA	3.3
t = 1 s	I <sub>cw</sub>	kA	3.3
Utilization category to IEC/EN 60947-2			A
Rated making and breaking capacity			
Rated operational current AC-1	I <sub>e</sub>	A	
380 V 400 V	1	A	630
	l <sub>e</sub>		
415 V	l <sub>e</sub>	A	500
690 V	le	A	630
AC3			
380 V 400 V	le	A	450
415 V	le	А	450

DC-1			
500 V DC	l <sub>e</sub>	CSA	500
750 V DC	I <sub>e</sub>	CSA	500
DC - 3			
500 V DC	le	CSA	500
750 V DC	le	CSA	500
Lifespan, mechanical	Operations		15000
Lifespan, electrical			
AC-1			
400 V 50/60 Hz	Operations		5000
415 V 50/60 Hz	Operations		5000
690 V 50/60 Hz	Operations		3000
AC-2, AC-3	operations		
400 V 50/60 Hz	Operations		2000
			2000
415 V 50/60 Hz 690 V 50/60 Hz	Operations Operations		2000
	operations		2000
		0	- 5000
500 V DC		Operatio	
750 V DC		Operatio	112000
DC - 3	0		2020
500 V DC	Operations		2000
750 V DC	Operations	0 "	2000
Max. operating frequency		Ops/h	60
Current heat losses per pole at $\mathbf{I}_{u}$ are based on the maximum rated operational current of the frame size.		W	40
			For current heat loss per pole the specification refers to the maximum rated
			operational current of the frame size.
Total downtime in a short-circuit		ms	< 10
Terminal capacity			
Standard equipment			
Standard equipment			Screw connection
Overview			Basic equipment
			Basic equipment Box ●
			Basic equipment Box • terminal Screw - • • •
			Basic equipment Box • terminal Screw - • • • • connection accessory
			Basic equipment Box • terminal Screw - connection accessory consideration
			Basic equipment Box • terminal Screw - • • • connection accessory consideration Box - • • • - terminals
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			Basic equipment Box terminal Screw connection accessory consideration Box terminals Screw terminals Screw terminale Screw
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			Basic equipment Box • terminal Screw - • • • • connection accessory consideration Box - • • • - terminals Screw • terminals Screw • • - • • terminals Screw • • • • • terminals Screw • • • • • Connection Tunnel • • • • •
			Basic equipment Box terminal Screw connection accessory consideration Box terminals Screw terminals Screw terminal connection Tunnel terminal connection terminal connection terminal connection terminal connection terminal connection terminal connection terminal connection terminal connection terminal connection terminal connection terminal connection terminal connection terminal
Overview			Basic equipment Box terminal Screw connection accessory consideration Box terminals Screw terminals Screw terminal connection Tunnel terminal connection terminal connection terminal
Overview Round copper conductor			Basic equipment Box terminal Screw connection accessory consideration Box terminals Screw terminals Screw terminal connection Tunnel terminal connection terminal connection terminal connection terminal connection terminal connection terminal connection terminal connection terminal connection terminal connection terminal connection terminal connection terminal connection terminal
Overview          Round copper conductor         Box terminal			Basic equipment Box terminal Screw connection accessory consideration Box terminals Screw connection Tunnel terminal connection terminal connection terminal connection terminal connection terminal
Overview		mm <sup>2</sup>	Basic equipment Box terminal Screw connection Box terminals Screw terminals Screw connection Tunnel terminal connection terminal connection terminal connection terminal connection terminal Connection terminal Connection Strip
Overview          Round copper conductor         Box terminal		mm <sup>2</sup> mm <sup>2</sup>	Basic equipment Box terminal Screw connection accessory consideration Box terminals Screw connection Tunnel terminal connection terminal connection terminal connection terminal connection terminal
Overview			Basic equipment Box terminal Screw - connection Box terminals Screw terminals Screw connection Tunnel terminal connection terminal connection terminal terminal terminal terminal terminal terminal terminal terminal terminal terminal terminal terminal terminal terminal terminal terminal terminal
Overview			Basic equipment Box terminal Screw - connection Box terminals Screw terminals Screw connection Tunnel terminal connection terminal connection terminal terminal terminal terminal terminal terminal terminal terminal terminal terminal terminal terminal terminal terminal terminal terminal terminal
Overview Overview Round copper conductor Box terminal Solid Stranded Tunnel terminal		mm <sup>2</sup>	Basic equipment Box terminal Screw connection accessory consideration Box terminals Screw connection Tunnel terminal connection Tunnel terminal connection Tunnel terminal connection accessory consideration Tunnel terminal connection terminal connection Strip connection Connec
Overview		mm <sup>2</sup> mm <sup>2</sup> mm <sup>2</sup>	Basic equipment Box terminal Screw connection Box consideration Box consideration Box consideration Box - terminals Screw - connection Tunnel terminal connection 0 0 rear Strip - terminal 2 x 16 1 x (16 - 185) - - - - - - - - - - - - -
Overview     Round copper conductor   Box terminal   Solid   Stranded   Tunnel terminal   Solid   Stranded   Stranded   Stranded		mm <sup>2</sup> mm <sup>2</sup> mm <sup>2</sup> mm <sup>2</sup>	Basic equipment Box terminal Screw connection accessory consideration Box terminals Screw connection Tunnel terminal connection on rear Strip - terminal connection 1 x (25 - 185) - 1 x (25 - 185)
Overview		mm <sup>2</sup> mm <sup>2</sup> mm <sup>2</sup>	Basic equipment Box terminal Screw connection Box consideration Box consideration Box consideration Box - terminals Screw - connection Tunnel terminal connection 0 0 rear Strip - terminal 2 x 16 1 x (16 - 185) - - - - - - - - - - - - -
Overview         Overview         Round copper conductor         Box terminal         Solid         Stranded         Tunnel terminal         Solid         Stranded         Stranded         Stranded		mm <sup>2</sup> mm <sup>2</sup> mm <sup>2</sup> mm <sup>2</sup>	Basic equipment Box terminal Screw connection Box consideration Box consideration Box consection Tunnel terminal connection on rear Strip terminal Connection 1 x (25 - 185) 1 x (50 - 240) 2 x 240 1 x (50 - 240) 2 x 240 1 x (50 - 240) 1 x (50 - 240)
Overview     Round copper conductor   Box terminal   Solid   Stranded   Tunnel terminal   Solid   Stranded   Stranded   Stranded   Double hole fitting		mm <sup>2</sup> mm <sup>2</sup> mm <sup>2</sup> mm <sup>2</sup>	Basic equipment Box terminal Screw connection Box consideration Box consideration Box consection Tunnel terminal connection on rear Strip terminal 2 x 16 1 x (25 - 185) 1 x (50 - 240) 2 x 240 1 x (50 - 240) 2 x 240 1 x (50 - 240)
Overview     Round copper conductor   Box terminal   Solid   Stranded   Tunnel terminal   Solid   Stranded   Stranded   Double hole fitting   Bolt terminal and rear-side connection		mm <sup>2</sup> mm <sup>2</sup> mm <sup>2</sup> mm <sup>2</sup>	Basic equipment Box terminal Screw connection Box consideration Box consideration Box consection Tunnel terminal connection on rear Strip terminal 2 x 16 1 x (25 - 185) 1 x (50 - 240) 2 x 240 1 x (50 - 240) 2 x 240 1 x (50 - 240)

Stranded		mm <sup>2</sup>	1 x (25 - 240) 2 x (25 - 240)
Connection width extension		mm <sup>2</sup>	
Connection width extension		mm <sup>2</sup>	2 x 300
Al conductors, Cu cable			
Solid		mm <sup>2</sup>	1 x 16
Stranded		mm <sup>2</sup>	
Stranded		mm <sup>2</sup>	1 x (25 - 185)
Double hole fitting		mm <sup>2</sup>	1 x (50 - 240) 2 x (50 - 240)
Bolt terminal and rear-side connection			
Flat copper strip, with holes	min.	mm	6 x 16 x 0.8
Flat copper strip, with holes	max.	mm	10 x 32 x 1.0 + 5 x 32 x 1.0
Connection width extension		mm	(2 x) 10 x 50 x 1.0
Cu strip (number of segments x width x segment thickness)			
Box terminal			
	min.	mm	6 x 16 x 0.8
	max.	mm	10 x 24 x 1.0 + 5 x 24 x 1.0 (2 x) 8 x 24 x 1.0
Bolt terminal and rear-side connection			
Flat copper strip, with holes	min.	mm	6 x 16 x 0.8
Flat copper strip, with holes	max.	mm	10 x 32 x 1.0 + 5 x 32 x 1.0
Connection width extension		mm	(2 x) 10 x 50 x 1.0
Copper busbar (width x thickness)	mm		
Bolt terminal and rear-side connection			
Screw connection			M10
Direct on the switch			
	min.	mm	20 x 5
	max.	mm	30 x 10 + 30 x 5
Connection width extension		mm	
Connection width extension	max.	mm	2 x (10 x 50)
Control cables			
		mm <sup>2</sup>	1 x (0.75 - 2.5) 2 x (0.75 - 1.5)

# Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	In	А	630
Equipment heat dissipation, current-dependent	P <sub>vid</sub>	W	119.07
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])

Reted voltage       600       600       600         Reted voltage       600       600       600         Reted voltage carcerit setting       600       600       600         Overload release current setting       600       600       600         Adjustment range short-circuit release       600       0       0         Adjustment range undelayed short-circuit release       600       500       500         Integrated earth fault protection       600       500       500       500         Type of electrical connection of main circuit       600       500 </th <th>Rated permanent current lu</th> <th>А</th> <th>A 630</th>	Rated permanent current lu	А	A 630
Act         Act           Batel short-circuit breaking capacity lou at 400 V, 50 Hz         36           Overload release current setting         A           Adjustmeit range short-terr delayed short-circuit release         A           Adjustmeit range undelayed short-circuit release         A           Adjustmeit range undelayed short-circuit release         A           Adjustmeit range undelayed short-circuit release         A           No         Screw connection           Integrated earth fault protection         B           Divice construction         B           Divice construction         B           Divice for DIN rail (top hat rail) mounting         E           Divite do auxiliary contacts as normally closed contact         E           Number of auxiliary contacts as change-over contact         E           With under voltage release         No           Number of auxiliary contacts as change-over contact         E           With under voltage release         No           Number of poles         No           Postion of connection for main current circuit         E           Type of control element         F           Complete device with protection unit         F           Motor drive integrated         F           Motor driv		V	V 690 - 690
Overlad release current stringImage and the sector of the sec	•		
Ajustment range short-circuit release     Ajustment range undelayed short-circuit release     Adjustment range undelayed release		A	A 315 - 630
Adjustment range undelayed short-circuit release         A         260 - 5040           Integrated earth fault protection         Socrew connection         Socrew connection           Type of electrical connection of main circuit         Socrew connection         Socrew connection           Davice construction         Socrew connection         Socrew connection           Suitable for DIN rail (top hat rail) mounting optional         Socrew connection         Socrew connection           Number of auxiliary contacts as normally closed contact         Socrew connection         Socrew connection           Number of auxiliary contacts as change-over contact         Socrew connection         Socrew connection           With under voltage release         Socrew connection         Socrew connection         Socrew connection           Number of poles         Socrew connection formain current circuit         Socrew connection         Socrew connection           Yee of control element         Socrew connection         Socrew connection         Socrew connection           Socrew connection unit         Socrew connection         Socrew connection         Socrew connection           Socrew connection unit         Socrew connection         Socrew connection         Socrew connection           Socrew connection unit         Socrew connection         Socrew connection         Socrew connection	-	A	A 0-0
Integrate dearth fault protection       Mo         Type of electrical connection of main circuit       Screw connection         Device construction       Built-in device fixed built-in technique         Suitable for DIN rail (top hat rail) mounting       Mo         DIN rail (top hat rail) mounting optional       Mo         Number of auxiliary contacts as normally closed contact       Mo         Number of auxiliary contacts as normally closed contact       Mo         Number of auxiliary contacts as change-over contact       Mo         With under voltage release       Mo         Number of poles       Mo         Position of connection for main current circuit       Mo         Type of control element       Mo         Complete device with protection unit       Mo         Motor drive integrated		А	A 1260 - 5040
Type of electrical connection of main circuit         Market of plan circuit         Serve connection           Davice construction         Built-in device fixed built-in technique           Suitable for DIN rail (top hat rail) mounting         Mo           DIN rail (top hat rail) mounting optional         Mo           Number of auxiliary contacts as normally closed contact         Mo           Number of auxiliary contacts as normally closed contact         Mo           Number of auxiliary contacts as change-over contact         Mo           With under voltage release         Mo           Number of poles         Mo           Position of connection for main current circuit         Mo           Type of control element         Mo           Complete device with protection unit         Mo           Motor drive integrated         Mo           Motor drive protection         Mo	Integrated earth fault protection		No
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         O           Number of auxiliary contacts as normally open contact         O           Number of auxiliary contacts as normally open contact         O           Number of auxiliary contacts as normally open contact         O           Number of auxiliary contacts as change-over contact         O           Number of auxiliary contacts as change-over contact         O           Number of auxiliary contacts as normally open contact         O           Number of auxiliary contacts as normally open contact         O           Number of auxiliary contacts as normally open contact         O           Number of auxiliary contacts as change-over contact         O           Switched-off indicator available         Mo           Number of poles         No           Number of poles         So           Position of connection formain current circuit         Front side           Type of control element         Socker lever           Notor drive integrated         No           Motor drive optional         Socker lever	Type of electrical connection of main circuit		Screw connection
DN rail (top hat rail) mounting optionalNoNumber of auxiliary contacts as normally closed contact0Number of auxiliary contacts as normally open contact0Number of auxiliary contacts as change-over contact0Number of auxiliary contacts as change-over contact0Switched-off indicator availableNoWith under voltage releaseNoNumber of poles3Position of connection for main current circuitForn sideType of control elementRocker leverComplete device with protection unitSectorMotor drive integratedNoMotor drive optionalSectorMotor drive optionalSector<	Device construction		Built-in device fixed built-in technique
Number of auxiliary contacts as normally closed contactImage: Contact of auxiliary contacts as normally open contactImage: Contact of auxiliary contacts as normally open contactImage: Contact of auxiliary contacts as normally open contactImage: Contact of auxiliary contacts as change-over contactImage: Contact of auxiliary contactImage: Contact of auxiliary contactImage: Contact of auxiliary contact<	Suitable for DIN rail (top hat rail) mounting		No
Number of auxiliary contacts as normally open contactImage: Contact of auxiliary contacts as change-over cont	DIN rail (top hat rail) mounting optional		No
Number of auxiliary contacts as change-over contact       0         Switched-off indicator available       No         With under voltage release       No         Number of poles       3         Position of connection for main current circuit       Ford Side         Type of control element       Socker lever         Complete device with protection unit       Socker lever         Motor drive integrated       Socker lever         Motor drive optional       Socker lever	Number of auxiliary contacts as normally closed contact		0
Switched-off indicator availableNoWith under voltage releaseNoNumber of polesSPosition of connection for main current circuitCType of control elementCComplete device with protection unitCMotor drive integratedNoMotor drive optionalCSolor drive optionalCSolor drive optionalSSolor drive optionalS <t< td=""><td>Number of auxiliary contacts as normally open contact</td><td></td><td>0</td></t<>	Number of auxiliary contacts as normally open contact		0
With under voltage releaseNoNumber of poles3Position of connection for main current circuitFont sideType of control elementRocker leverComplete device with protection unitYesMotor drive integratedNoMotor drive optionalSecter lever	Number of auxiliary contacts as change-over contact		0
Number of poles     3       Position of connection for main current circuit     Font side       Type of control element     Rocker lever       Complete device with protection unit     Yes       Motor drive integrated     No       Motor drive optional     Sector	Switched-off indicator available		No
Position of connection for main current circuitFort sideType of control elementRocker leverComplete device with protection unitYesMotor drive integratedNoMotor drive optionalSector	With under voltage release		No
Type of control element     Rocker lever       Complete device with protection unit     Yes       Motor drive integrated     No       Motor drive optional     Yes	Number of poles		3
Complete device with protection unit     Yes       Motor drive integrated     No       Motor drive optional     Ses	Position of connection for main current circuit		Front side
Motor drive optional     Motor drive optional     Motor drive optional     Motor drive optional	Type of control element		Rocker lever
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

#### **Characteristics**











## Additional product information (links)

#### IL01208013Z LZMC3 circuit-breaker, LN3 switch-disconnector

IL01208013Z LZMC3 circuit-breaker, LN3 ftp://ftp.moeller.net/D0CUMENTATION/AWA\_INSTRUCTIONS/IL01208013Z2012\_02.pdf switch-disconnector