DATASHEET - LN3-630-I

Switch-disconnector, 3 p, 630A, frame size 3

Part no. LN3-630-I
Catalog No. 112009

Powering Business Worldwide™

Delivery program

Product range			Switch-disconnectors
Protective function			Disconnectors/main switches
Standard/Approval			IEC
Installation type			Fixed
Construction size			LN3
Description			Main switch characteristics including positive drive to IEC/EN 60204 and VDE 0113. Isolating characteristics to IEC/EN 60947-3 and VDE 0660. Busbar tag shroud to VDE 0160 Part 100.
Number of poles			3 pole
Standard equipment			Screw connection
Switch positions			I, +, 0
Rated current = rated uninterrupted current	$I_n = I_u$	A	630
Short-circuit protection max. fuse gL-characteristic		A gL	630

Technical data

Switch-disconnectors

Rated surge voltage invariability	U_{imp}		
Main contacts		V	8000
Auxiliary contacts		V	6000
Rated operational voltage	Ue	V AC	690
Rated operating frequency	f	Hz	50/60
Rated current = rated uninterrupted current	$I_n = I_u$	A	630
Overvoltage category/pollution degree			III/3
Rated insulation voltage	U_i	V	1000
Use in unearthed supply systems		V	≦ 690

Rated short-circuit making capacity

690 V 50/60 H	Ic	kA	25

Rated short-time withstand current

t = 0.3 s	I_{cw}	kA	12
t = 1 s	I_{cw}	kA	12

Rated conditional short-circuit current

With back-up fuse		A gG/gL	PN3(N3)-400…630: 630
400 … 415 V		kA	100
690 V		kA	80
With downstream fuse		A gG/gL	PN3(N3)-400…630: 630
400 … 415 V		kA	100
690 V		kA	80

Rated making and breaking capacity

Rated operational current	I_e	A	
415 V	I_e	A	630
690 V	I_e	A	630
415 V	I_e	A	630
690 V	I_e	A	630
Lifespan, mechanical	Operations		15000
Max. operating frequency		Ops/h	60

Lifespan, electrical

400 V 50/60 Hz	Operations		5000
415 V 50/60 Hz	Operations		5000
690 V 50/60 Hz	Operations		3000
400 V 50/60 Hz	Operations		3000
415 V 50/60 Hz	Operations		3000
690 V 50/60 Hz	Operations		2000
Total break time at short-circuit		ms	< 10

Terminal capacity

Standard equipment			Screw connection
Round copper conductor			
Box terminal			
Solid		mm^2	2 x 16
Stranded		mm^2	1 x (35 - 240) 2 x (25 - 120)
Tunnel terminal			
Solid		mm^2	1 x (16 - 185)
Stranded			
Stranded		mm^2	1 x (25 - 185)
Double hole		mm^2	1 x (50 - 240) 2 x (50 - 240)
Bolt terminal and rear-side connection			
Direct on the switch			
Solid		mm^2	1 x 16 2 x 16
Stranded		mm^2	1 x (25 - 240) 2 x (25 - 240)
Connection width extension		mm^2	
Connection width extension		mm^2	2 x 300
Al conductors, Cu cable			
Tunnel terminal			
Solid		mm^2	1 x 16
Stranded			
Stranded		mm^2	1 x (25 - 185)
Double hole		mm^2	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^2	1 x (0.75 - 2.5) 2 x (0.75 - 1.5)

Design verification as per IEC/EN 61439

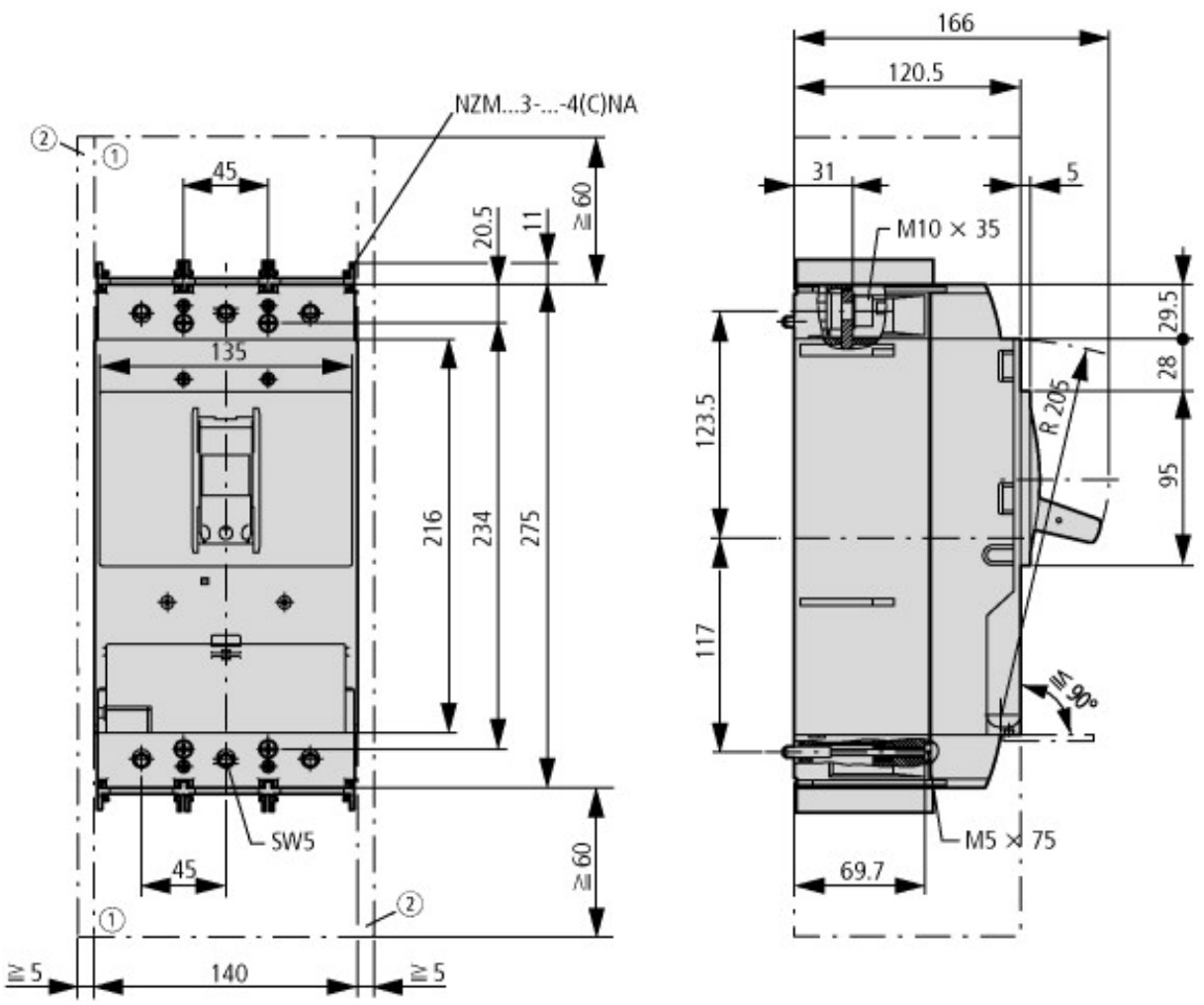
Technical data for design verification			
Rated operational current for specified heat dissipation	I_n	A	630
Equipment heat dissipation, current-dependent	P_{vid}	W	107.163
IEC/EN 61439 design verification			
10.2 Strength of materials and parts			
10.2.2 Corrosion resistance			Meets the product standard's 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

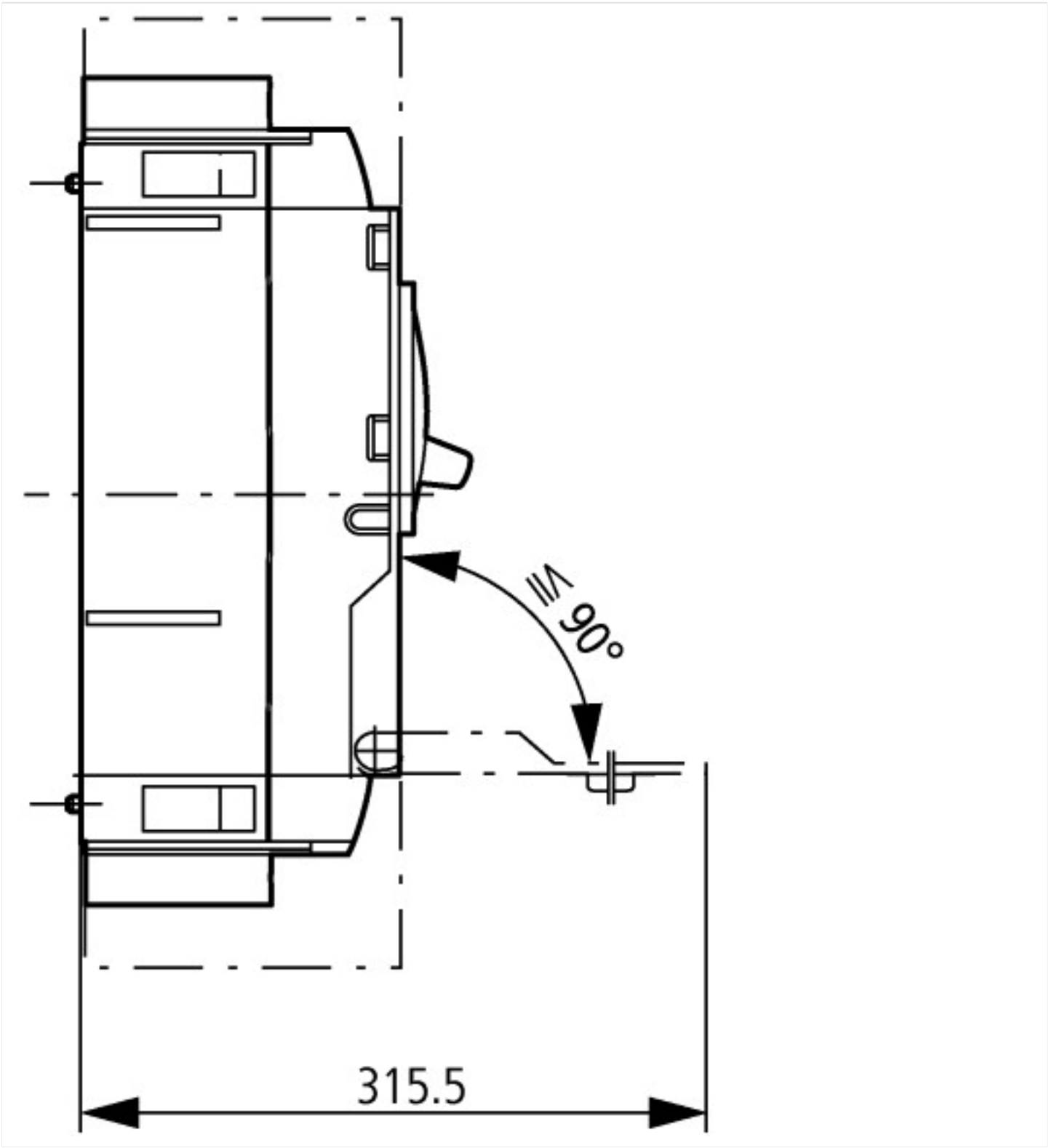
Low-voltage industrial components (EG000017) / Switch disconnector (EC000216)			
Electric engineering, automation, process control engineering / Low-voltage switch technology / Off-load switch, circuit breaker, control switch / Switch disconnector (ecl@ss10.0.1-27-37-14-03 [AKF060013])			
Version as main switch			Yes
Version as maintenance-/service switch			Yes
Version as safety switch			No
Version as emergency stop installation			Yes
Version as reversing switch			No
Number of switches			
Max. rated operation voltage Ue AC		V	400
Rated operating voltage		V	690 - 690
Rated permanent current Iu		A	630
Rated permanent current at AC-23, 400 V		A	
Rated permanent current at AC-21, 400 V		A	0
Rated operation power at AC-3, 400 V		kW	0
Rated short-time withstand current Icw		kA	12
Rated operation power at AC-23, 400 V		kW	315
Switching power at 400 V		kW	0

Conditioned rated short-circuit current Iq	kA	100
Number of poles		3
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		0
Motor drive optional		Yes
Motor drive integrated		No
Voltage release optional		Yes
Device construction		Built-in device fixed built-in technique
Suitable for ground mounting		Yes
Suitable for front mounting 4-hole		No
Suitable for front mounting centre		No
Suitable for distribution board installation		Yes
Suitable for intermediate mounting		Yes
Colour control element		Grey
Type of control element		Rocker lever
Interlockable		Yes
Type of electrical connection of main circuit		Screw connection
Degree of protection (IP), front side		IP20
Degree of protection (NEMA)		

Dimensions



① Blow out area, minimum clearance to other parts
② Minimum clearance to adjacent parts



Additional product information (links)

IL01208013Z LZMC3 circuit-breaker, LN3 switch-disconnector	
IL01208013Z LZMC3 circuit-breaker, LN3 switch-disconnector	https://es-assets.eaton.com/DOCUMENTATION/AWA_INSTRUCTIONS/IL01208013Z2017_05.pdf