DATASHEET - LN3-4-400-I

Switch-disconnector, 4 p, 400A, frame size 3

Part no. **LN3-4-400-I**
112010

Powering Business Worldwide

General specifications

Product name	Eaton Moeller series Power Defense molded case switch-disconnector
Part no.	LN3-4-400-I
EAN	4015081115587
Product Length/Depth	166 millimetre
Product height	275 millimetre
Product width	185 millimetre
Product weight	6.349 kilogram
Compliances	RoHS conform
Certifications	IEC
Product Tradename	Power Defense
Product Type	Molded case switch-disconnector
Product Sub Type	None

Delivery program

Application	Use in unearthed supply systems at 690 V
Type	Switch-disconnector
Circuit breaker frame type	LN3
Number of poles	Four-pole
Amperage Rating	400 A
Features	Motor drive optional Version as maintenance-/service switch Version as main switch Version as emergency stop installation
Special features	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. Rated current = rated uninterrupted current: 400 A

Technical Data - Electrical

Voltage rating	690 V - 690 V
Rated operating voltage (Ue) at AC - max	400 V
Rated insulation voltage (Ui)	1000 V
Rated impulse withstand voltage (Uimp) at auxiliary contacts	6000 V
Rated impulse withstand voltage (Uimp) at main contacts	8000 V
Rated conditional short-circuit current (Iq)	100 kA
Rated operational current	630 A (415 V AC-22/23A, making and breaking capacity) 630 A (415 V AC-1, making and breaking capacity) 630 A (690 V AC-1, making and breaking capacity) 630 A (690 V AC-22/23A, making and breaking capacity)
Rated permanent current at AC-21, 400 V	0 A
Rated conditional short-circuit current with back-up fuse	PN3(N3)-400…630: 630 AgGgL 80 kA at 690 V 100 kA at 400/415 V
Rated conditional short-circuit current with downstream fuse	80 kA at 690 V PN3(N3)-400…630: 630 AgGgL 100 kA at 400/415 V
Rated short-time withstand current (Icw)	12 kA
Rated short-time withstand current (t = 0.3 s)	12 kA
Rated short-time withstand current (t = 1 s)	12 kA
Rated operating frequency	50 Hz
Rated short-circuit making capacity Icm at 690 V, 50/60 Hz	25 kA
Rated operating power at AC-3, 400 V	0 kW
Rated operating power at AC-23, 400 V	200 kW
Switching power at 400 V	0 kW
Short-circuit total breaktime	< 10 ms

Short-circuit protective device fuses - max	630 A gL
Electrical connection type of main circuit	Screw connection
Number of operations per hour - max	60
Handle type	Rocker lever
Overvoltage category	III
Pollution degree	3
Lifespan, electrical	5000 operations at 400 V AC-1 2000 operations at 690 V AC-3 3000 operations at 400 V AC-3 3000 operations at 415 V AC-3 3000 operations at 690 V AC-1 5000 operations at 415 V AC-1

Technical Data - Mechanical

Mounting Method	Ground mounting Distribution board installation Fixed Built-in device fixed built-in technique Intermediate mounting
Degree of protection (IP), front side	IP20
Number of auxiliary contacts (change-over contacts)	0
Number of auxiliary contacts (normally closed contacts)	0
Number of auxiliary contacts (normally open contacts)	0
Handle color	Gray
Switch positions	I, +, 0
Special features	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. Rated current = rated uninterrupted current: 400 A
Lifespan, mechanical	15000 operations

Technical Data - Mechanical - Terminals

Standard terminals	Screw terminal
Terminal capacity (control cable)	0.75 mm^2 - 2.5 mm^2 (1x) 0.75 mm^2 - 1.5 mm^2 (2x)
Terminal capacity (aluminum solid conductor/cable)	16 mm^2 (1x) at tunnel terminal
Terminal capacity (aluminum stranded conductor/cable)	25 mm^2 - 185 mm^2 (1x) at tunnel terminal
Terminal capacity (copper busbar)	Min. 20 mm x 5 mm direct at switch rear-side connection Max. 10 mm x 50 mm (2x) at rear-side width extension M10 at rear-side screw connection Max. 30 mm x 10 mm + 30 mm x 5 mm direct at switch rear-side connection
Terminal capacity (copper solid conductor/cable)	16 mm^2 - 185 mm^2 (1x) at tunnel terminal 16 mm^2 (2x) direct at switch rear-side connection 16 mm^2 (2x) at box terminal 16 mm^2 (1x) direct at switch rear-side connection 300 mm^2 (2x) at rear-side width extension
Terminal capacity (copper stranded conductor/cable)	25 mm^2 - 240 mm^2 (1x) direct at switch rear-side connection 25 mm^2 - 240 mm^2 (2x) direct at switch rear-side connection 50 mm^2 - 240 mm^2 (2x) at 2-hole tunnel terminal 35 mm^2 - 240 mm^2 (1x) at box terminal 25 mm^2 - 120 mm^2 (2x) at box terminal 25 mm^2 - 185 mm^2 (1x) at tunnel terminal 50 mm^2 - 240 mm^2 (1x) at 2-hole tunnel terminal
Terminal capacity (copper strip)	10 segments of 50 mm x 1 mm (2x) at rear-side width extension Max. 8 segments of 24 mm x 1 mm (2x) at box terminal Min. 6 segments of 16 mm x 0.8 mm at rear-side connection (punched) Max. 10 segments of 24 mm x 1 mm + 5 segments of 24 mm x 1 mm Max. 10 segments of 32 mm x 1 mm + 5 segments of 32 mm x 1 mm at rear-side connection (punched) Min. 6 segments of 16 mm x 0.8 mm at box terminal

Design verification as per IEC/EN 61439 - technical data

Rated operational current for specified heat dissipation (In)	400 A
Equipment heat dissipation, current-dependent	43.2 W

Design verification as per IEC/EN 61439

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 Resist. of insul. mat. to abnormal heat/fire by internal elect. 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.
10.9.2 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.

Additional information

Functions		Voltage release optional Interlockable Disconnectors/main switches