DATASHEET - N4-4-1400-S15-DC



Switch-disconnector 4p 1400A 1500VDC

Part no. N4-4-1400-S15-DC Catalog No. 166416 Alternate Catalog N4-4-1400-S15-DC

No.



Similar to illustration

Delivery program			
Product range			Switch-disconnectors
Protective function			Disconnectors/main switches Photovoltaic applications
Product range			DC switch-disconnectors
Application field			Utility buildings Open areas
Part no.			NDC
Standard/Approval			IEC
Rated operational voltage			1500
Installation type			Fixed
Construction size			N4
Description			IEC/EN 60947-3 CCC China Compulsory Certificate Main switch characteristics including positive drive to IEC/EN 60204 and VDE 0113. Isolating characteristics to IEC/EN 60947-3 and VDE 0660. N switch-disconnectors can, in addition, be combined with NZMXU, NZMXA shunt releases and auxiliary contacts as well as with NZMXR remote operator. For DC switching, all 4 contacts must be connected in series. Refer to the information on jumper kit accessories. Supplied as standard: Screw connection; box terminal optional. When working with ungrounded systems (e.g., IT), the installation must ensure that a double ground fault will be impossible. Switch can not be combined with plug-in/withdrawable units and/or connection on rear.
Connection options			
Number of poles			4-pole basic device, usable in a 1-pole or 2-pole configuration depending on the type of connection
Standard equipment			Screw connection
Switch positions			l, +, 0
Rated current = rated uninterrupted current	$I_n = I_u$	А	1400
			Demoke a constitutive with about a lease of a constant
Remotely control / trip			Remote operation with shunt releases / remote operator

Technical data

Switch-disconnectors

Switch-disconnectors			
Rated operational voltage, max.	Ue	V DC	1500
Rated uninterrupted current with terminal jumpers			
at 40°			1400
at 65°			1400
			Values for rated uninterrupted current at 65 °C include jumpers.
Utilization category			DC-22A
Rated operational current	l _e	Α	
DC 22-A	le	Α	1400
Overvoltage category/pollution degree			III/3
Rated insulation voltage	Ui	V	1500
Ambient temperature			
Ambient temperature, storage		°C	- 40 - + 70
Operation		°C	-25 - +70
Rated short-time withstand current		J	20 110
t = 0.1 s	I _{cw}	kA	34
Lifespan, mechanical			
Max. operating frequency		Ops/h	60
Lifespan, mechanical	Operations		10000
			Lifespan, mechanical: of which max. 50 % trip by shunt/undervoltage release
Terminal capacity			
Standard equipment			Screw connection
Round copper conductor			
Tunnel terminal			
Stranded			
4-hole		mm ²	4 x (50 - 240)
Bolt terminals			
Direct on the switch			
Stranded		mm ²	1 x (120 - 185)
		"""	4 x (50 - 185)
Module plate			
Single hole	min.	mm^2	1 x (120 - 300)
Single hole	max.	mm ²	2 x (95 - 300)
Module plate			
Double hole	min.	mm ²	2 x (95 - 185)
Double hole			4 x (35 - 185)
	max.	mm ²	4 X (53 - 103)
Connection width extension		mm ²	
Connection width extension		mm ²	4 x 300 6 x (95 - 240)
Al conductors, Cu cable			
Tunnel terminal			
Stranded			
4-hole		mm ²	4 x (50 - 240)
Bolt terminal and rear-side connection			
Flat copper strip, with holes	min.	mm	(2 x) 10 x 50 x 1.0
Flat copper strip, with holes	max.	mm	(2 x) 10 x 50 x 1.0
Connection width extension		mm	(2 x) 10 x 80 x 1,0
Cu strip (number of segments x width x segment thickness)			
Flat conductor terminal			
	min.	mm	6 x 16 x 0.8
	max.	mm	(2 x) 10 x 32 x 1.0
Module plate			
Single hole		mm	(2 x) 10 x 50 x 1,0
Bolt terminal and rear-side connection			
Bott torrilliar and 16ar-3iu6 confilection			

Flat copper strip, with holes	min.	mm	(2 x) 10 x 50 x 1.0
Flat copper strip, with holes	max.	mm	(2 x) 10 x 50 x 1.0
Connection width extension		mm	(2 x) 10 x 80 x 1,0
Copper busbar (width x thickness)	mm		
Bolt terminal and rear-side connection			
Screw connection			M10
Direct on the switch			
	min.	mm	25 x 5
	max.	mm	2 x (50 x 10) 2 x (80 x 10)
Module plate			
Single hole	min.	mm	25 x 5
Single hole	max.	mm	2 x (50 x 10)
Module plate			
Double hole		mm	2 x (50 x 10)
Connection width extension		mm	
Connection width extension	min.	mm	60 x 10
Connection width extension	max.	mm	2 x (10 x 80)

Design verification as per IEC/EN 61439Technical data for design verification

Technical data for design verification			
Rated operational current for specified heat dissipation	In	Α	1400
Equipment heat dissipation, current-dependent	P_{vid}	W	290
Operating ambient temperature min.		°C	-25
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 switch gear must be observed.
10.12 Electromagnetic compatibility			Is the panel builder's responsibility. The specifications for the switch gear must b observed. $\label{eq:builder}$
10.13 Mechanical function			The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.

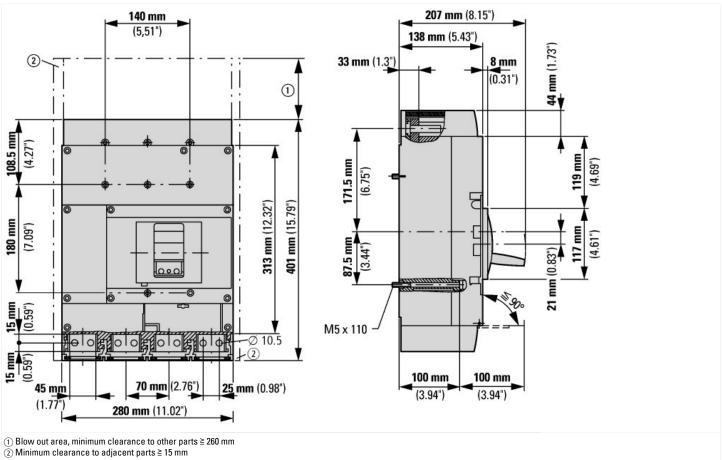
Technical data ETIM 7.0

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

Version as main nother here / Service switch (**) Yes Version as senargancy stap installation (**) No Version as senargancy stap installation (**) No Version as senargancy stap installation (**) No Number of switching (**) 1 Mack rated operation voltage Ue AC (**) 100-1900 Rated operation voltage Ue AC (**) 100-1900 Rated permanent current at AC-22,400 V (**) 100-1900 Rated permanent current at AC-23,400 V (**) 100-1900 Rated spermanent current at AC-23,400 V (**) 100-1900 Rated short-me withstand current (**) (**) 100-1900 Rated operation power at AC-23,400 V (**) 100-1900 Number of auxiliary contacts as change-vertice of the control	[AKF060013])	37.		
Version as safety switch No Version as reversing switch Yes Vorsion as reversing switch No Moz. rated operation voltage Us AC V Nate of operation voltage Us AC V Rated operation voltage Us AC V Rated operation voltage Us AC A Rated permanent current at AC-23, 400 V A Rated permanent current at AC-23, 400 V A Rated short-time withstand current town B Rated short-time withstand current town B Rated operation power at AC-23, 400 V B Williams of auxiliary contacts as normally closed contact B Number of poles B Motor of divicitimacy contacts as a normally open contact B	Version as main switch			Yes
Version as emergency stop installation Yes No. Version as reversing switch 0 1 Number of switches Y 0 Rated operation votinge Ue AC Y 0 Rated operating voltage Y 0 Rated permanent current at AC-23,400 V A 0 Rated operation power at AC-3,400 V A 0 Rated operation power at AC-3,400 V W 0 Rated operation power at AC-3,400 V W 0 Rated operation power at AC-3,400 V W 0 Rated operation spower at AC-3,400 V W 0 Conditioned rated short-circuit current lq A 0 Conditioned rated short-circuit current lq Y 0 Number of poles Y 0 Number of suxiliary contacts as normally closed contact Y 0 Number of suxiliary contacts as change-over contact Y 0 Number of suxiliary contacts as change-over contact Y 0 Number of suxiliary contacts as change-over contact Y 0 Number of pus	Version as maintenance-/service switch			Yes
Version as reversing switch Momen of switches 1 10 Max. ract operation voltage Ue AC V 150 - 1500 Rated operation voltage Ue AC V 150 - 1500 Rated operation voltage (act of protein voltage) V 150 - 1500 Rated operation voltage (act of protein voltage) A 1400 Rated permanent current und AC-23,400 V A 0 Rated sobration power at AC-23,400 V A 3 Rated operation power at AC-23,400 V A 3 Rated sobration power at AC-23,400 V A 3 Switching power at 400 V B 4 9 Conditioned rated short-circuit current Iq B 3 9 Number of auxiliary contacts as normally obed contact B 9 9 Number of auxiliary contacts as change-over contact Y 9 9 Notor drive optional Y 9 9 Notor drive optional Y 9 9 Notor drive optional Y 9 9 Suitable for front mounting 4-ble Y	Version as safety switch			No
Number of switches I	Version as emergency stop installation			Yes
Max. rated operation voltage Ue AC V 1500 - 1500 Rated operating voltage V 1500 - 1500 Rated permanent current us A 1400 Rated permanent current at AC-21,400 V A 0 Rated operation power at AC-3,400 V KW 0 Rated operation power at AC-24,400 V KW 3 Rated short-time withstand current low KW 0 Number of power at AC-24, 400 V KW 0 Number of auxiliary contacts as normally closed contact KW 0 Number of auxiliary contacts as normally closed contact KW 0 Number of auxiliary contacts as change-over contact KW 0 Number of auxiliary contacts as change-over contact	Version as reversing switch			No
Rated operating voltage V 1500-1500 Rated permanent current Iu A 1400 Rated permanent current at AC-23,400 V A 0 Rated permanent current at AC-21,400 V A 0 Rated short-ine withstand current Ew A 34 Rated short-ine withstand current Ew B 4 Rated short-ine withstand current Ew B 4 Number of polos B 4 9 Number of polos B 4 9 Number of auxiliary contacts as normally open contact B 9 9 Motor drive optional B 9 9 9 Motor drive integrated B 9 9 <td>Number of switches</td> <td></td> <td></td> <td>1</td>	Number of switches			1
Rated permanent current lu A 1400 Rated permanent current at AC-23,400 V A 0 Rated permanent current at AC-24,000 V A 0 Rated permanent current at AC-3,400 V MW 0 Rated operation power at AC-23,400 V MW 0 Rated operation power at AC-23,400 V WW 0 Switching power at 400 V WW 0 Conditioned rated short-circuit current Iq KA 0 Number of polos W 0 Number of auxiliary contacts as normally closed contact W 0 Number of auxiliary contacts as normally copen contact W 0 Motor drive optional W 0 Motor drive integrated W 0 Motor drive integrated W 0 Voltage release optional W 0 Device construction W 0 Suitable for front mounting 4-tole W 0 Suitable for front mounting 4-tole W 0 Suitable for front mounting centre W 0	Max. rated operation voltage Ue AC		V	0
Rated permanent current at AC-21, 400 V A 0 Rated permanent current at AC-21, 400 V A 0 Rated operation power at AC-3, 400 V W 0 Rated short-time withstand current lew A 34 Rated permanent current at AC-23, 400 V W 0 Switching power at 400 V W 0 Conditioned rated short-circuit current lq A 0 Number of poles B 4 4 Number of auxiliary contacts as normally closed contact B 0 0 Number of auxiliary contacts as normally open contact B 0 0 Motor drive optional B 6 9 9 Motor drive optional B 7 9 9 Motor drive optional B 9 9 9 Voltage release optional B 9 9 9 Suitable for ground mounting B 9 9 9 Suitable for front mounting centre B 9 9 9 Suitable fo	Rated operating voltage		V	1500 - 1500
Rated permanent current at AC-21,400 V A 0 Rated operation power at AC-3,400 V WW 0 Rated short-time withstand current low AA 34 Rated operation power at AC-23,400 V WW 0 Switching power at 400 V WW 0 Conditioned rated short-circuit current Iq AA 0 Number of poles 4 0 Number of auxiliary contacts as normally closed contact AA 0 Number of auxiliary contacts as normally open contact AA 0 Number of auxiliary contacts as change-over contact AA 0 Motor drive optional AA 0 0 Motor drive integrated Yes Yes Motor drive integrated Yes Yes Voltage release optional Yes Yes Suitable for ground mounting Yes Yes Suitable for front mounting 4-hole Yes No Suitable for front mounting centre Yes Yes Suitable for intermediate mounting Yes Res Suitable for	Rated permanent current lu		Α	1400
Rated operation power at AC-3, 400 V kW 34 Rated short-time withstand current lcw kA 34 Rated operation power at AC-23, 400 V kW 0 Switching power at 400 V kW 0 Conditioned rated short-circuit current lq kA 0 Number of poles KA 0 Number of auxiliary contacts as normally closed contact KA 0 Number of auxiliary contacts as change-over contact CA 0 Mottor drive optional Yes Ves Motor drive integrated Yes Wes Voltage release optional Yes Wes Device construction Yes Wes Suitable for ground mounting Yes Wes Suitable for front mounting 4-hele Yes No Suitable for front mounting centre Yes Yes Suitable for front mounting centre Yes Yes Suitable for intermediate mounting Yes Yes Suitable for intermediate mounting Yes Yes Colour control element Ye	Rated permanent current at AC-23, 400 V		Α	0
Rated short-time withstand current low kA 34 Rated operation power at AG-23, 400 V kW 0 Switching power at 400 V kW 0 Conditioned rated short-circuit current lq kA 0 Number of poles KA 4 4 Number of poles (Number of auxiliary contacts as normally closed contact CA 0 0 Number of auxiliary contacts as normally open contact CA 0 0 Number of auxiliary contacts as normally open contact CA 0 0 Number of auxiliary contacts as normally open contact CA 0 0 Motor drive integrated VE VE VE Motor drive integrated VE VE VE Voltage release optional VE VE VE Suitable for ground mounting VE VE VE Suitable for from mounting A-hole VE No VE Suitable for front mounting centre VE VE VE Suitable for front mounting centre VE VE VE	Rated permanent current at AC-21, 400 V		Α	0
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Switching power at 400 V Conditioned rated short-circuit current Iq Number of poles Number of poles Number of auxiliary contacts as normally closed contact Number of auxiliary contacts as normally open contact Number of auxiliary contacts as change-over contact Number of auxiliary contacts as normally open contact Number of auxiliary co	Rated short-time withstand current lcw		kA	34
Conditioned rated short-circuit current Iq KA 0 Number of poles 4 4 Number of auxiliary contacts as normally closed contact 6 0 Number of auxiliary contacts as change-over contact 6 0 Motor drive optional 7 Yes Motor drive integrated 7 Yes Voltage release optional 7 Yes Device construction 8 1 Built-in device fixed built-in technique Suitable for ground mounting 7 Yes Suitable for front mounting 4-hole No No Suitable for distribution board installation 7 Yes Suitable for intermediate mounting 7 Yes Colour control element 7 Yes Colour control element 8 1 Black Type of control element 8 8 Rocker lever Interlockable 7 Yes Type of electrical connection of main circuit 8 Yes Type of electrical connection of main circuit 8 Yes	Rated operation power at AC-23, 400 V		kW	0
Number of poles Number of auxiliary contacts as normally closed contact Number of auxiliary contacts as normally open contact Number of auxiliary contacts as change-over contact Notor drive optional Notor drive integrated interlined	Switching power at 400 V		kW	0
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Number of auxiliary contacts as change-over contact Motor drive optional Motor drive integrated No Voltage release optional Device construction Suitable for ground mounting Suitable for front mounting 4-hole Suitable for front mounting centre Suitable for front mounting centre Suitable for front mounting centre Suitable for fortn mounting centre Suitable for fortn mounting centre Suitable for font mounting centre Suitable for intermediate mounting Colour control element Type of control element Type of control element Type of electrical connection of main circuit Degree of protection (IP), front side	Number of auxiliary contacts as normally closed contact			0
Motor drive optionalYesMotor drive integratedNoVoltage release optionalYesDevice constructionBuilt-in device fixed built-in techniqueSuitable for ground mountingYesSuitable for front mounting 4-holeNoSuitable for front mounting centreNoSuitable for distribution board installationYesSuitable for intermediate mountingYesColour control elementBlackType of control elementRocker leverInterlockableYesType of electrical connection of main circuitScrew connectionDegree of protection (IP), front sideIP20	Number of auxiliary contacts as normally open contact			0
Motor drive integratedNoVoltage release optionalYesDevice constructionBuilt-in device fixed built-in techniqueSuitable for ground mountingYesSuitable for front mounting 4-holeNoSuitable for front mounting centreNoSuitable for distribution board installationYesSuitable for intermediate mountingYesColour control elementBlackType of control elementRocker leverInterlockableYesType of electrical connection of main circuitScrew connectionDegree of protection (IP), front sideIP20	Number of auxiliary contacts as change-over contact			0
Voltage release optional Device construction Suitable for ground mounting Suitable for front mounting 4-hole Suitable for front mounting centre Suitable for distribution board installation Suitable for intermediate mounting Colour control element Type of control element Interlockable Type of electrical connection of main circuit Degree of protection (IP), front side Yes Suitable for intermediate mounting Yes Screw connection Pego Built-in device fixed built-in technique No No No Ves Ves Suitable for distribution board installation Yes Suitable for intermediate mounting Yes Screw connection IP20	Motor drive optional			Yes
Device construction Built-in device fixed built-in technique Yes Suitable for ground mounting 4-hole No Suitable for front mounting centre No Suitable for distribution board installation Yes Suitable for intermediate mounting Yes Colour control element Type of control element Interlockable Type of electrical connection of main circuit Degree of protection (IP), front side Built-in device fixed built-in technique No No Rocker lever Serew connection Built-in device fixed built-in technique No No Suitable for intermediate mounting Yes Screw connection Interlockable Type of electrical connection of main circuit Degree of protection (IP), front side	Motor drive integrated			No
Suitable for ground mounting Suitable for front mounting 4-hole No Suitable for front mounting centre No Suitable for distribution board installation Suitable for intermediate mounting Yes Colour control element Suitable for control element Rocker lever Interlockable Type of electrical connection of main circuit Degree of protection (IP), front side Yes Interlockable Pes Screw connection IP20	Voltage release optional			Yes
Suitable for front mounting 4-hole Suitable for front mounting centre No Suitable for distribution board installation Suitable for intermediate mounting Colour control element Type of control element Interlockable Type of electrical connection of main circuit Degree of protection (IP), front side No No No Yes Yes Yes Recker lever Screw connection IP20	Device construction			Built-in device fixed built-in technique
Suitable for front mounting centre Suitable for distribution board installation Yes Suitable for intermediate mounting Colour control element Type of control element Interlockable Type of electrical connection of main circuit Degree of protection (IP), front side No Yes No Yes Yes Recker lever Rocker lever Yes Screw connection IP20	Suitable for ground mounting			Yes
Suitable for distribution board installation Yes Suitable for intermediate mounting Yes Colour control element Black Type of control element Rocker lever Interlockable Type of electrical connection of main circuit Degree of protection (IP), front side Yes IP20	Suitable for front mounting 4-hole			No
Suitable for intermediate mounting Yes Colour control element Type of control element Interlockable Type of electrical connection of main circuit Degree of protection (IP), front side Yes IP20	Suitable for front mounting centre			No
Colour control element Black Type of control element Rocker lever Interlockable Type of electrical connection of main circuit Degree of protection (IP), front side Black Rocker lever Yes Interlockable IP20	Suitable for distribution board installation			Yes
Type of control element Interlockable Type of electrical connection of main circuit Degree of protection (IP), front side Rocker lever Yes Screw connection IP20	Suitable for intermediate mounting			Yes
Interlockable Yes Type of electrical connection of main circuit Screw connection Degree of protection (IP), front side IP20	Colour control element			Black
Type of electrical connection of main circuit Degree of protection (IP), front side Screw connection IP20	Type of control element			Rocker lever
Degree of protection (IP), front side	Interlockable			Yes
	Type of electrical connection of main circuit			Screw connection
Degree of protection (NEMA)	Degree of protection (IP), front side			IP20
	Degree of protection (NEMA)			

Dimensions



Additional product information (links)

CurveSelect characteristics program	http://www.eaton.eu/DE/Europe/Electrical/CustomerSupport/ConfigurationTools/CharacteristicsProgram/index.htm
Eaton configurator	http://www.eaton.eu/DE/Europe/Electrical/CustomerSupport/ConfigurationTools/ConfiguratorCircuitBreaker/index.htm
Additional technical data: Photovoltaics catalog (starting on page 35)	http://www.moeller.net/binary/pdf_kat/br01601001z_en.pdf