DATASHEET - MSC-R-4-M7(24VDC)



Reversing starter, 3p, 1.5kW/450V/AC3, 150kA

MSC-R-4-M7(24VDC) Part no. Catalog No. 283198

XTSR004B007BTDNL

Alternate Catalog

No.

EL-Nummer 4365070

(Norway)



Delivery program			
Basic function			Reversing starters (complete devices)
Basic device			MSC
			IE3 ✓
Notes			Also suitable for motors with efficiency class IE3. IE3-ready devices are identified by the logo on their packaging.
Connection to SmartWire-DT			no
Motor ratings			
Motor rating			
AC-3			
380 V 400 V 415 V	Р	kW	1.1 1.5
Rated operational current			
AC-3			
380 V 400 V 415 V	l _e	Α	2.6 3.6
Rated short-circuit current 380 - 415 V	I_q	kA	150
Setting range			
Setting range of overload releases	I _r	Α	2.5 - 4
Coordination			Type of coordination "1" Type of coordination "2"
Contact sequence			M 3- 1111111
Actuating voltage			24 V DC
Meta-variativa circuit baseless DV7M0.4			DC voltage

Motor-protective circuit-breakers PKZM0-4 PKZM0-4

Contactor DILM7-01(...)

DOL starter wiring set

Mechanical connection element and electrical electric contact module PKZM0-XRM12

The reversing starter (complete unit) consists of a PKZM0 motor-protective circuit-breaker and two DILM contactors.

With the adapter-less top-hat rail mounting of starters up to 12 A, only the motor-protective circuit-breaker on the top-hat rail requires an adapter. The contactors are provided with mechanical support via a mechanical connection element.

Control wire guide with max. 6 conductors up to 2.5mm external diameter or 4 conductors up to 3.5mm external diameter.

From 16 A, the motor-protective circuit-breakers and contactors are mounted on the top-hat rail adapter plate.

The connection of the main circuit between PKZ and contactor is established with electrical contact modules.

Complete units with mechanical interlock, starters up to 12 A also feature electrical interlock.

When using the auxiliary contacts DILA-XHIT... (-> 101042) the plug-in electrical connector can be removed without the removal of the front mounting auxiliary contact.

For further information Technical data PKZM0 Accessories PKZ Technical data DILM Further actuating voltages
DILM accessories

Page → PKZM0 → 072896 \rightarrow DILM → 276537 → 281199

Technical data General

Standards				UL 508 (on request) CSA C 22.2 No. 14 (on request)
Mounting position Main conducting paths				000000000000000000000000000000000000000
Rated impulse withstand voltage	U _{ii}	mp	V AC	6000

III/3

230 - 415

Open, 3-pole: 50 – 60 Hz
380 V 400 V
Additional technical data

Rated operational voltage

Rated operational current

Overvoltage category/pollution degree

Motor protective circuit breaker PKZM0, PKE	PKZM0 motor-protective circuit-breakers, see motor-protective circuit-breakers/ PKZM0 product group DILM contactors, see contactor product group DILET timing relay, ETR, see contactors, electronic timing relays product group
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Power consumption

DC operated	Sealing	W	3		
Rating data for approved types					

Auxiliary contacts		
Pilot Duty		
AC operated		A600
DC operated		P300
General Use		
AC	V	600
AC	А	15
DC	V	250
DC	Α	1

Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	In	Α	4
Heat dissipation per pole, current-dependent	P_{vid}	W	2
Equipment heat dissipation, current-dependent	P _{vid}	W	6
Static heat dissipation, non-current-dependent	P_{vs}	W	2.6
Heat dissipation capacity	P _{diss}	W	0
Operating ambient temperature min.		°C	-25
Operating ambient temperature max.		°C	55
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) / Motor starter/Motor starter combination (EC001037)

Electric engineering, automation, process control engineering / Low-voltage switch technology / Load breakout, motor breakout / Motor starter combination (ecl@ss10.0.1-27-37-09-05 [AJZ718013])

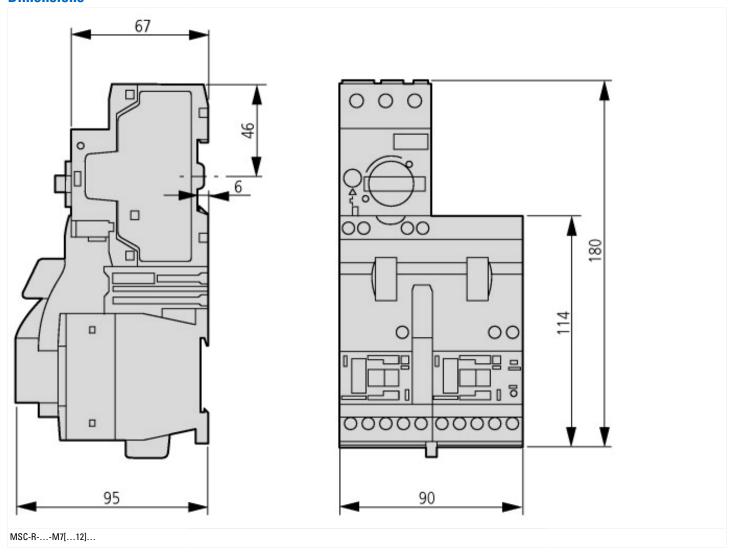
Kind of motor starter Kenersing starter With short-circuit elease Yes Rated control supply voltage Us at AC 59HZ V 0 Rated control supply voltage Us at AC 69HZ W 0 Rated control supply voltage Us at AC 69HZ W 0 Voltage type for actuating C 0 Voltage type for actuating W 0 Rated operation power at AC-3,280 V.3-phase W 0 Rated operation power at AC-3,480 V W 1 Rated operation power at AC-3,480 V.3-phase W 1 Rated operation current for current type 1,490 V.3-phase W 0 Rated operation current at AC-3,400 V A 3 Rated operation current type 1,490 V.3-phase A 3 Rated operation current at AC-3,400 V A 3 Rated operation current at AC-3,400 V A 3 Rated operation current at AC-3,400 V A 6 Rated operation current at AC-3,400 V A 6 Rated operation current at AC-3,400 V A 6 Rated operation current at			
Rated control supply voltage Us at AC 50HZ V 0 - 0 Rated control supply voltage Us at AC 60HZ V 0 - 0 Rated control supply voltage Us at DC V 24 - 24 Voltage type for actuating DC DC Rated operation power at AC-3, 220 V, 3-phase W 0.75 Rated operation power at AC-3, 400 V W 1.5 Rated operation current at AC-3, 400 V W 0.2 Rated operation current at AC-3, 400 V W 0.5 Rated operation current at AC-3, 400 V W 0.5 Rated operation current at AC-3, 400 V W 0.5 Rated operation current at AC-3, 400 V A 3.6 Rated operation current at AC-3, 400 V A 2.5 - 4 Rated conditional short-circuit current, type 1, 480 V;277 V A 0 Rated conditional short-circuit current, type 2, 230 V A 50000 Rated conditional short-circuit current, type 2, 400 V A 5000 Number of auxiliary contacts as normally closed contact C 6 Release class C 6 6	Kind of motor starter		Reversing starter
Rated control supply voltage Us at DC V 0 - 0 Voltage type for actuating DC Voltage type for actuating DC Rated operation power at AC-3, 220 V, 3-phase WW 0.5 Rated operation power at AC-3, 200 V, 3-phase WW 1.5 Rated operation power at AC-3, 400 V WW 0.0 Rated operation power at AC-3, 400 V WW 0.0 Rated operation current at AC-3, 400 V WW 0.0 Rated operation current at AC-3, 400 V WW 0.0 Rated operation current at AC-3, 400 V WW 0.0 Rated operation current at AC-3, 400 V A 3.6 Rated operation current at AC-3, 400 V A 0.0 Verload release current setting A 0.0 Rated conditional short-circuit current, type 1, 480 V;277 V A 0.0 Rated conditional short-circuit current, type 2, 230 V A 0.0 Rated conditional short-circuit current, type 2, 240 V A 0.0 Number of auxiliary contacts as normally cencotact Y 6.0 Release class Y 6.0 </td <td>With short-circuit release</td> <td></td> <td>Yes</td>	With short-circuit release		Yes
Rated control supply voltage Us at DC V 24-24 Voltage type for actuating DC Rated operation power at AC-3, 230 V,3-phase KW 0.5 Rated operation power at AC-3, 400 V KW 1.5 Rated power, 575 V, 60 Hz, 3-phase KW 0 Rated power, 575 V, 50 Hz, 3-phase KW 0 Rated power, 575 V, 50 Hz, 3-phase KW 0 Rated power, 575 V, 50 Hz, 3-phase KW 0 Rated power, 575 V, 50 Hz, 3-phase KW 0 Rated power, 575 V, 50 Hz, 3-phase KW 0 Rated operation current teal AC-3, 400 V A 3.6 Rated conditional short-circuit current, type 1,480 Y/277 V A 0 Rated conditional short-circuit current, type 1,480 Y/277 V A 0 Rated conditional short-circuit current, type 2,400 V A 50000 Rated conditional short-circuit current, type 2,400 V A 50000 Number of auxiliary contacts as normally closed contact Yes 60 Ambient temperature, upper operating limit C 60 Type of electrical connectio	Rated control supply voltage Us at AC 50HZ	V	0 - 0
Voltage type for actuating DC Rated operation power at AC-3, 230 V, 3-phase W 0.75 Rated operation power at AC-3, 400 V W 1.5 Rated operation power at AC-3, 400 V W 0 Rated operation power at AC-3, 400 V W 0 Rated operation current let A 3.6 Rated operation current at AC-3, 400 V A 3.6 Rated operation current at AC-3, 400 V A 2.5 - 4 Rated operation current, type 1, 480 Y/277 V A 0 Rated conditional short-circuit current, type 1, 500 Y/347 V A 0 Rated conditional short-circuit current, type 2, 230 V A 50000 Rated conditional short-circuit current, type 2, 400 Y A 0 Number of auxiliary contacts as normally open contact C 0 Number of auxiliary contacts as normally closed contact C 0 Ambient temperature, upper operating limit °C 0 Temperature compensated overload protection C 0 Release class C CLASS 10 Type of electrical connection of main c	Rated control supply voltage Us at AC 60HZ	V	0 - 0
Voltage type for actuating DC Rated operation power at AC-3, 230 V.3-phase kW 0.75 Rated operation power at AC-3, 400 V kW 1.5 Rated power, 480 V, 60 Hz, 3-phase kW 0 Rated power, 575 V, 50 Hz, 3-phase kW 0 Rated power, 575 V, 50 Hz, 3-phase KW 3.6 Rated operation current at AC-3, 400 V A 3.6 Neel operation current at AC-3, 400 V A 2.5 - 4 Verload release current setting A 0 Rated conditional short-circuit current, type 1, 480 Y/277 V A 0 Rated conditional short-circuit current, type 1, 500 Y/347 V A 0 Rated conditional short-circuit current, type 2, 230 V A 50000 Rated conditional short-circuit current, type 2, 400 V A 6 Number of auxiliary contacts as normally closed contact C 6 Number of auxiliary contacts as normally closed contact T 6 Ambient temperature compensated overload protection *C CLASS 10 Type of electrical connection of main circuit *C Screw connection	Rated control supply voltage Us at DC	V	24 - 24
Rated operation power at AC-3, 230 V, 3-phase kW 1.5 Rated operation power at AC-3, 400 V kW 1.5 Rated power, 460 V, 60 Hz, 3-phase kW 0 Rated power, 575 V, 60 Hz, 3-phase kW 0 Rated operation current le A 3.6 Rated operation current at AC-3, 400 V A 4 Overload release current setting A 2.5 - 4 Rated conditional short-circuit current, type 1, 480 Y/277 V A 0 Rated conditional short-circuit current, type 1, 600 Y/347 V A 0 Rated conditional short-circuit current, type 2, 230 V A 50000 Rated conditional short-circuit current, type 2, 400 V A 50000 Number of auxiliary contacts as normally open contact A 60 Number of auxiliary contacts as normally closed contact Y 60 Temperature, upper operating limit Y 60 Release class C 60 Release class C 60 Type of electrical connection of main circuit Y 8 8 Type of electr	Voltage type for actuating		DC
Rated operation power at AC-3, 400 V kW 1.5 Rated power, 460 V, 60 Hz, 3-phase kW 0 Rated power, 575 V, 60 Hz, 3-phase kW 3.6 Rated operation current le A 3.6 Rated operation current at AC-3, 400 V A 4 Overload release current setting A 5.5 - 4 Rated conditional short-circuit current, type 1, 480 V/277 V A 0 Rated conditional short-circuit current, type 2, 230 V A 50000 Rated conditional short-circuit current, type 2, 400 V A 50000 Number of auxiliary contacts as normally contacts an anomally contact as an ormally contact as an ormally closed contact A 6 Number of auxiliary contacts as normally contact as an ormally closed contact B 6 6 Release class CLASS 10 CLASS 10 Release class CLASS 10 CLASS 10 Type of electrical connection of main circuit F Screw connection Type of electrical connection of main circuit F Screw connection Rail mounting possible F No With transformer <td>Voltage type for actuating</td> <td></td> <td>DC</td>	Voltage type for actuating		DC
Rated power, 46 V, 60 Hz, 3-phase Rated power, 575 V, 60 Hz, 3-phase Rated operation current le Rated operation current a AC-3, 400 V Rated operation current at AC-3, 400 V Rated conditional short-circuit current, type 1, 480 Y/277 V Rated conditional short-circuit current, type 1, 480 Y/277 V Rated conditional short-circuit current, type 2, 230 V Rated conditional short-circuit current, type 2, 230 V Rated conditional short-circuit current, type 2, 230 V Rated conditional short-circuit current, type 2, 240 V Rated conditional short-circuit current, type 2, 230 V Rated conditional short-circuit current, type 2, 240 V Rated conditional short-circuit current, type 2, 240 V Rated conditional short-circuit current, type 2, 400 V Rated conditional short-circuit current type 2, 400 V Rated conditional short-circuit current circuit current circuit current circuit current circuit current circuit compensated overload protection Real mounting possible Very connection Ratinounting possible Very	Rated operation power at AC-3, 230 V, 3-phase	kW	0.75
Rated power, 575 V, 60 Hz, 3-phase Rated operation current Ie Rated operation current at AC-3, 400 V Overload release current setting Rated conditional short-circuit current, type 1, 480 Y/277 V Rated conditional short-circuit current, type 1, 600 Y/347 V Rated conditional short-circuit current, type 2, 230 V Rated conditional short-circuit current, type 2, 230 V Rated conditional short-circuit current, type 2, 400 V Rated conditional short-circuit current, type 2,	Rated operation power at AC-3, 400 V	kW	1.5
Rated operation current le A 3.6 Rated operation current at AC-3, 400 V A 4 Overload release current setting A 2.5 - 4 Rated conditional short-circuit current, type 1, 480 Y/277 V A 0 Rated conditional short-circuit current, type 2, 230 V A 50000 Rated conditional short-circuit current, type 2, 400 V A 50000 Number of auxiliary contacts as normally open contact B 0 Number of auxiliary contacts as normally closed contact C 0 Ambient temperature, upper operating limit C 8 Temperature compensated overload protection CLASS 10 Release class CLASS 10 Type of electrical connection of main circuit Screw connection Type of electrical connection for auxiliary- and control current circuit Screw connection Rail mounting possible Yes With transformer No Number of command positions No Suitable for emergency stop No	Rated power, 460 V, 60 Hz, 3-phase	kW	0
Rated operation current at AC-3, 400 V Overload release current setting Rated conditional short-circuit current, type 1, 480 Y/277 V Rated conditional short-circuit current, type 1, 600 Y/347 V Rated conditional short-circuit current, type 2, 230 V Rated conditional short-circuit current, type 2, 230 V Rated conditional short-circuit current, type 2, 400 V Number of auxiliary contacts as normally open contact Number of auxiliary contacts as normally closed contact Number of auxiliary contacts as normally closed contact Release class Release class Type of electrical connection of main circuit Type of electrical connection of main circuit Type of electrical connection for auxiliary- and control current circuit Rail mounting possible With transformer Number of command positions Stiable for emergency stop	Rated power, 575 V, 60 Hz, 3-phase	kW	0
Overload release current setting Rated conditional short-circuit current, type 1, 480 Y/277 V Rated conditional short-circuit current, type 1, 600 Y/347 V Rated conditional short-circuit current, type 2, 230 V Rated conditional short-circuit current, type 2, 400 V Rated conditional short-circuit current, type 2, 400 V Number of auxiliary contacts as normally open contact Number of auxiliary contacts as normally closed contact Ambient temperature, upper operating limit Temperature compensated overload protection Release class Type of electrical connection of main circuit Type of electrical connection for auxiliary- and control current circuit Rail mounting possible With transformer Number of command positions Sutable for emergency stop	Rated operation current le	Α	3.6
Rated conditional short-circuit current, type 1, 480 Y/277 V Rated conditional short-circuit current, type 2, 230 V Rated conditional short-circuit current, type 2, 230 V Rated conditional short-circuit current, type 2, 400 V Rumber of auxiliary contacts as normally open contact Rumber of auxiliary contacts as normally closed contact Release class Release class Release class Type of electrical connection of main circuit Type of electrical connection for auxiliary- and control current circuit Rail mounting possible With transformer Rumber of command positions Suitable for emergency stop Rated conditional short-circuit current, type 1, 480 Y/277 V A A B C C C B C C C C C C C C C C C C C	Rated operation current at AC-3, 400 V	Α	4
Rated conditional short-circuit current, type 1,600 Y/347 V Rated conditional short-circuit current, type 2,230 V Rated conditional short-circuit current, type 2,400 V Rated conditional short-circuit current, type 2,400 V Rumber of auxiliary contacts as normally open contact Number of auxiliary contacts as normally closed contact Ambient temperature, upper operating limit C C 60 Temperature compensated overload protection Release class Type of electrical connection of main circuit Type of electrical connection for auxiliary- and control current circuit Rail mounting possible With transformer Number of command positions Suitable for emergency stop No C C Rated Conditional short-circuit current, type 2, 230 V A C C C C C C C C C C C C C C C C C C	Overload release current setting	Α	2.5 - 4
Rated conditional short-circuit current, type 2, 230 V Rated conditional short-circuit current, type 2, 400 V Number of auxiliary contacts as normally open contact Number of auxiliary contacts as normally closed contact Number of auxiliary contacts as normally closed contact Abbient temperature, upper operating limit C C Release class Release class Type of electrical connection of main circuit Type of electrical connection for auxiliary- and control current circuit Rail mounting possible With transformer Number of command positions Substable for emergency stop	Rated conditional short-circuit current, type 1, 480 Y/277 V	Α	0
Rated conditional short-circuit current, type 2, 400 V Number of auxiliary contacts as normally open contact Number of auxiliary contacts as normally closed contact Ambient temperature, upper operating limit °C Temperature compensated overload protection Release class Type of electrical connection of main circuit Type of electrical connection for auxiliary- and control current circuit Rail mounting possible With transformer Number of command positions Suitable for emergency stop	Rated conditional short-circuit current, type 1, 600 Y/347 V	Α	0
Number of auxiliary contacts as normally open contact Number of auxiliary contacts as normally closed contact Ambient temperature, upper operating limit CO Release class Release class Type of electrical connection of main circuit Type of electrical connection for auxiliary- and control current circuit Rail mounting possible With transformer With transformer Number of command positions Suitable for emergency stop O O O O O O O O O O O O O	Rated conditional short-circuit current, type 2, 230 V	Α	50000
Number of auxiliary contacts as normally closed contact Ambient temperature, upper operating limit CC CE CE CLASS 10 CLASS 10 Type of electrical connection of main circuit Type of electrical connection for auxiliary- and control current circuit Type of electrical connection for auxiliary- and control current circuit Rail mounting possible With transformer With transformer Number of command positions Suitable for emergency stop O O O O O O O O O O O O O	Rated conditional short-circuit current, type 2, 400 V	Α	50000
Ambient temperature, upper operating limit Temperature compensated overload protection Release class Type of electrical connection of main circuit Type of electrical connection for auxiliary- and control current circuit Rail mounting possible With transformer Number of command positions Suitable for emergency stop Ambient temperature, upper operating limit Page of 60 Auxiliary Pyes CLASS 10 Screw connection Screw connection Yes No No No No No No No No No N	Number of auxiliary contacts as normally open contact		0
Temperature compensated overload protection Release class Type of electrical connection of main circuit Type of electrical connection for auxiliary- and control current circuit Rail mounting possible With transformer Number of command positions Suitable for emergency stop Yes Yes CLASS 10 Screw connection Screw connection Yes No No No No No No No No No N	Number of auxiliary contacts as normally closed contact		0
Release class Type of electrical connection of main circuit Type of electrical connection for auxiliary- and control current circuit Rail mounting possible With transformer Number of command positions Suitable for emergency stop CLASS 10 Screw connection Screw connection No Screw connection S	Ambient temperature, upper operating limit	°C	60
Type of electrical connection of main circuit Type of electrical connection for auxiliary- and control current circuit Rail mounting possible With transformer Number of command positions Suitable for emergency stop Screw connection Yes No No No No No No No No No N	Temperature compensated overload protection		Yes
Type of electrical connection for auxiliary- and control current circuit Rail mounting possible With transformer With transformer Number of command positions Suitable for emergency stop No No No No No No No No No	Release class		CLASS 10
Rail mounting possible With transformer With transformer Number of command positions Suitable for emergency stop Yes No No No No No No No No No N	Type of electrical connection of main circuit		Screw connection
With transformer No Number of command positions 0 Suitable for emergency stop No	Type of electrical connection for auxiliary- and control current circuit		Screw connection
Number of command positions 0 Suitable for emergency stop No	Rail mounting possible		Yes
Suitable for emergency stop No	With transformer		No
	Number of command positions		0
Coordination class according to IEC 60947-4-3 Class 2	Suitable for emergency stop		No
	Coordination class according to IEC 60947-4-3		Class 2

Number of indicator lights		0
External reset possible		No
With fuse		No
Degree of protection (IP)		IP20
Degree of protection (NEMA)		Other
Supporting protocol for TCP/IP		No
Supporting protocol for PROFIBUS		No
Supporting protocol for CAN		No
Supporting protocol for INTERBUS		No
Supporting protocol for ASI		No
Supporting protocol for MODBUS		No
Supporting protocol for Data-Highway		No
		No
Supporting protocol for DeviceNet		No
Supporting protocol for SUCONET		
Supporting protocol for LON		No
Supporting protocol for PROFINET IO		No
Supporting protocol for PROFINET CBA		No
Supporting protocol for SERCOS		No
Supporting protocol for Foundation Fieldbus		No
Supporting protocol for EtherNet/IP		No
Supporting protocol for AS-Interface Safety at Work		No
Supporting protocol for DeviceNet Safety		No
Supporting protocol for INTERBUS-Safety		No
Supporting protocol for PROFIsafe		No
Supporting protocol for SafetyBUS p		No
Supporting protocol for other bus systems		No
Width	mm	90
Height	mm	180
Depth	mm	95

Approvals

Product Standards	UL60947-4-1A; CSA-C22.2 No. 14-10; IEC60947-4-1; CE marking
UL File No.	E123500
UL Category Control No.	NKJH
CSA File No.	12528
CSA Class No.	3211-24
North America Certification	UL listed, CSA certified
Specially designed for North America	No

Dimensions



Assets (links)

Declaration of CE Conformity

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Instruction Leaflets

IL03402006Z2018_04