

### Reversing starter 9A, SWD

EMS-R0-T-9-SWD Part no. Article no. 170109 Catalog No. EMS-RO-T-9-SWD



**6** 

### **Delivery program**

Delivery program			
Product range			Electronic motor starter
Product range			SmartWire-DT slave
Subrange			SmartWire-DT electronic motor starters
Basic function			Reversing starters (complete devices)
Function			For connecting to SmartWire-DT for expanded diagnostics.
Description			DOL starting Reversing start Motor protection Circuit design: safety output stage with bypass, three-phase disconnect. Motor current additionally adjustable via SmartWire-DT.
Messages			Operational readiness Operating direction feedback Motor current in % Motor current in A Thermal motor image in % Overload prewarning Trip indications (overload, phase failure, etc.) Set short-circuit release value Device Type
Commands			Operating the motor starter Manual reset Automatic reset
Motor ratings			
Max. rating for three-phase motors, 50 - 60 Hz			
AC-53a			
380 V 400 V 415 V	Р	kW	0.55 - 3
Setting range of overload releases	I <sub>r</sub>	A_x	1,5 - 7 (AC-53a) 9 (AC-51)
Actuating voltage			24 V DC
Connection technique			Push in terminals
Connection to SmartWire-DT			yes

## **Technical data**

### General

onora:			
Standards			IEC/EN 60947-4-2
Dimensions			
Width		mm	30
Height		mm	157
Depth		mm	124
Weight		kg	0.3
Mounting			Top-hat rail IEC/EN 60715, 35 mm
Protection type (IEC/EN 60529, EN50178, VBG 4)			IP20
Mounting position			Vertical
Lifespan, electrical	Operations		3 x 10 <sup>7</sup>
Max. switching frequency		Operation h	n\$/200 (pulse pause time 50:50)
Terminal capacity			
Solid		mm <sup>2</sup>	1 x (0.2 - 2.5) 1 x AWG20 - 14

flexible, with ferrule		mm <sup>2</sup>	2 x (0,2 - 2,5) 1 x AWG24 - 14
Notes			Minimum length 10 mm.
flexible, with twin ferrule		mm <sup>2</sup>	2 x (0,2 - 1,5) 2 x AWG24 - 16
Notes			Minimum length 10 mm.
Climatic environmental conditions			
Operating ambient temperature		°C	-5 - +60, in accordance with IEC 60068-2-1
Storage	8	°C	-40 - +80
Main conducting paths Rated impulse withstand voltage	U <sub>imp</sub>	V AC	6000
Overvoltage category/pollution degree			III/2
Rated operational voltage	U <sub>e</sub>	V	42 - 550
Rated operational current			
AC-51	I <sub>e</sub>	Α	1.20 - 9
AC-53a	l <sub>e</sub>	Α	1.20 - 7
Heat dissipation	$P_V$	W	1 - 12
Static heat dissipation, non-current-dependent	P <sub>vs</sub>	W	1
Basic insulation to IEC/EN60947-1	- vs		
between feedback signal output and switch voltage		V AC	500
		V AC	500
Current measurement		Δ	15 7/40 52-1
Setting range of overload releases  Release class	I <sub>r</sub>	A_x CLASS	1,5 - 7 (AC-53a) 9 (AC-51)
		CLASS	10 ( $lr \le 4A$ ) 10A ( $lr > 4A$ )
Recovery time	t <sub>W</sub>	min.	2 (manual startup) 20 (automatic restart)
Balance monitoring			
Magnitude $I_{max} > I_{rated} ((I_{max} - I_{min})/I_{max})$		%	If $\ge 33$ , pick-up time of 120 s If $\ge 67$ , pick-up time of 1.8 s
$Magnitude \ I_{max} < I_{rated} \ ((I_{max} - I_{min})/I_{rated})$		%	If $\cong$ 33, pick-up time of 120 s If $\cong$ 67, pick-up time of 1.8 s
Stall protection			
Pick-up time I (L1) or I (L3)		Α	60
Pick-up time		S	0.5
Short-circuit rating			
Type "1" coordination			
Short-circuit protective device			50 kA, 500 V AC: Fuse 16 A gG/gL 50 kA, 500 V AC: fuse 30 A CCMR 50 kA, 415 V AC: PKM0-4 15 kA, 415 V AC: PKM0-6,3 2.5 kA, 400 V AC: FAZ-B16/3
Control section			
Input data			
Supply voltage	U <sub>AUX</sub>	V DC	24 (-15 - +20 %)
Residual ripple on the input voltage		%	≦ <sub>5</sub>
Input current		mA	70
Current draw inrush	U <sub>AUX</sub>	mA	120
Current draw (operation)	U <sub>AUX</sub>	mA	50
Electromagnetic compatibility (EMC)			
Electrostatic discharge (ESD)			
applied standard			IEC EN 61000-4-2, Level 3
Air discharge		kV	8
Contact discharge		kV	6
Electromagnetic fields (RFI)			
applied standard			IEC/EN 61000-4-3
		V/m	800 - 1000 MHz: 10
			1.4 - 2 GHz: 10

		2.0 - 2.7 GHz: 3
Radio interference suppression		EN 55011, Class A (emitted interference, line-conducted) EN 61000-6-3, Class A (emitted interference, radiated)
Note on use		This product is designed for operation in industrial environments (environment 2). The use in residential environments (environment 1) could cause electrical interference so that addition suppression must be planned.
Burst	kV	2 IEC/EN 61000-4-4, level 3
power pulses (Surge)		1 kV (symmetrical) 2 kV (asymmetrical) according to IEC/EN 61000-4-5
Immunity to line-conducted interference to (IEC/EN 61000-4-6)	V	10

# Design verification as per IEC/EN 61439

2001gii 1011110441011 40 poi 120/211 01 100			
Technical data for design verification			
Rated operational current for specified heat dissipation	In	Α	6.5
Heat dissipation per pole, current-dependent	P <sub>vid</sub>	W	2.1
Equipment heat dissipation, current-dependent	P <sub>vid</sub>	W	6.3
Static heat dissipation, non-current-dependent	P <sub>vs</sub>	W	1
Heat dissipation capacity	P <sub>diss</sub>	W	0
Operating ambient temperature min.		°C	-5
Operating ambient temperature max.		°C	60
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**

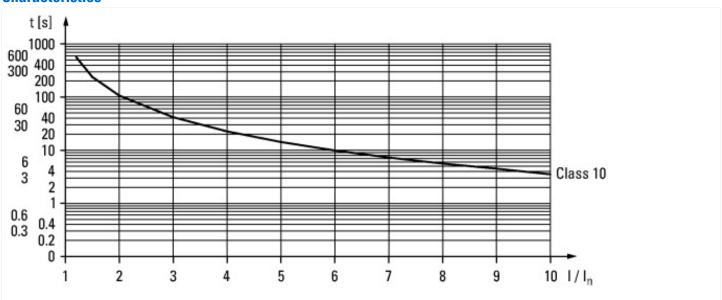
Low-voltage industrial components (EG000017) / Motor starter/Motor starter comb	bination (EC001037)

Electric engineering, automation, process control engineering / Low-voltage switch technology / Load breakout, motor breakout / Motor starter combination (ecl@ss8.1-27-37-09-05 [AJZ718010])

[AJZ718010])		
Kind of motor starter		Reversing starter
With short-circuit release		No
Rated control supply voltage Us at AC 50HZ	V	0 - 0
Rated control supply voltage Us at AC 60HZ	V	0 - 0

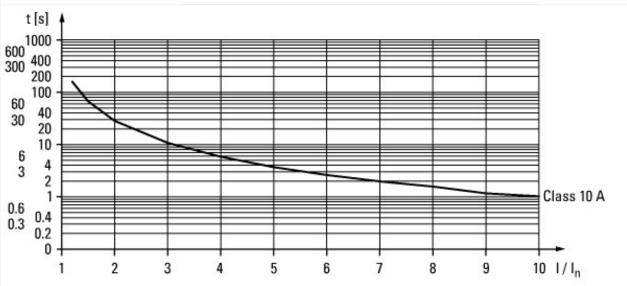
Riced common supply voltage last a DC         V         2 - 24           Voltage hype for catuating         CD           Riced operation power at AC-3, 200 V.3-planes         KW         1.5           Riced operation power at AC-3, 200 V.3-planes         KW         2.2           Riced operation current le         A         W         2.2           Riced operation current le         A         A         9           Riced operation current at AC-3, 200 V.3-planes         A         0         7           Riced operation current at AC-3, 400 V.3         A         0         7           Riced confortional short-circuit current, type 1, 400 Y/37 V.3         A         0         0           Riced confortional short-circuit current, type 2, 200 V.3         A         0         0           Riced confortional short-circuit current, type 2, 400 V.3         A         0         0           Riced confortional short-circuit current, type 2, 400 V.3         A         0         0           Riced confortional short-circuit current, type 2, 400 V.3         V         0         0           Riced confortional short-circuit current, type 2, 400 V.3         V         0         0           Riced confortional short-circuit current, type 2, 400 V.3         V         0         0 <t< th=""><th></th><th></th><th></th></t<>			
Read operation power at AC-3, 200 V-3 phases	Rated control supply voltage Us at DC	V	24 - 24
Rated operation power at AC 3, 460 V         KW         3           Rated operation current le         kW         0           Rated apperation current le         A         9           Rated apperation current at AC 3,400 V         A         7           Overland release current at AC 3,400 V         A         15 - 9           Rated conditional short-circuit current, type 1,400 Y/277 V         A         0           Rated conditional short-circuit current, type 2,400 Y         A         0           Rated ac 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 clease durated         "C         4           Number of auxiliary contacts as normally clease durated         "C         4           Temperature compressed deverload protection         "C         4           Temperature protection for auxiliary- and central current circuit         "C         4           Telegre of protection for auxiliary- and central current circuit         "C         4           Supporting protector for TCPIP         Na         Na           Supporting protector for PROFINES         Na         Na           Supporting protector for PROFINES         Na         Na <td>Voltage type for actuating</td> <td></td> <td>DC</td>	Voltage type for actuating		DC
Rated power, 760 V, 80 Hz, 2-phase         kW         22           Rated operation current Le         AW         0           Rated operation current AC-3,400 V         A         7           Ownfood ribbase current setting         A         15 - 9           Rated conditional short-circuic current, type 1,480 Y/27 V         A         0           Rated conditional short-circuic current, type 1,480 Y/27 V         A         0           Rated conditional short-circuic current, type 2,200 V         A         0           Rated conditional short-circuic current, type 2,200 V         A         0           Rated conditional short-circuic current, type 2,200 V         A         0           Rated conditional short-circuic current, type 2,200 V         A         0           Rated conditional short-circuic current, type 1,600 Y/37 V         A         0           Rated conditional short-circuic current, type 1,600 Y/37 V         A         0           Rated conditional short-circuic current, type 1,600 Y/37 V         A         0           Rated conditional short-circuic current, type 1,600 Y/37 V         A         0           Rated conditional short-circuic current, type 1,600 Y/37 V         A         0           Rated conditional short-circuic current, type 1,600 Y/37 V         0         0           Rate Carballia	Rated operation power at AC-3, 230 V, 3-phase	kW	1.5
Rated power, 51 % 18 Hz, 3-phase         kW         0           Rated operation current at ACS, 480 V         A         9           Overload release current setting         A         15 - 9           Rated operation current setting         A         0           Rated operation current setting         A         0           Rated conditional after-circuit current, type 1, 480 Y/27 V         A         0           Rated conditional after-circuit current, type 2, 200 V         A         0           Rated conditional after-circuit current, type 2, 400 V         A         0           Number of auxiliary contacts as normally open centact         C         0           Number of auxiliary contacts as normally open centact         C         0           Number of auxiliary contacts as normally open centact         C         0           Number of auxiliary contacts as normally open centact         C         0           Number of auxiliary contacts as normally open centact         C         0           Tomporature compressed or contact protecting protectical protection protecting protection and protection protecting protection protecting p	Rated operation power at AC-3, 400 V	kW	3
Rated opporation current le         A         9           Rated opporation current at ACJ, 400 V         A         7           Overloand release current at ACJ, 400 V         A         0           Rated conditional abort-circuit current, type 1, 480 V/277 V         A         0           Rated conditional abort-circuit current, type 1, 800 V/347 V         A         0           Rated conditional abort-circuit current, type 2, 200 V         A         0           Number of auxiliary contacts as normally open contact         B         0           Number of auxiliary contacts as normally closed contact         C         40           Temperature compensated overload protection         C         40           Temperature compensated everload protection         C         40           Temperature compensated overload protection         C         40           Temperature controlled protection of reliability and control current circuit         C         80           Release class         CLASS 10         CLASS 10           Type of electrical connection for auxiliary- and control current circuit         P         90           Supporting protocol for PROFIBUS         No         No           Supporting protocol for EVAL         No         No           Supporting protocol for Dute Chan         No	Rated power, 460 V, 60 Hz, 3-phase	kW	2.2
Related operation current at AC-3,400 V         A         7           Overload creation cleases current setting         A         15 - 9           Rated conditional short-circuit current, type 1, 480 Y/37 V         A         0           Rated conditional short-circuit current, type 2, 400 Y         A         0           Rated conditional short-circuit current, type 2, 400 Y         A         0           Number of auxiliary contacts as normally open contact         B         0           Number of auxiliary contacts as normally open contact         B         0           Ambient temperature, upper operating limit         C         Yes           Temperature componsated overload protection         C         Yes           Relate classic connection for auxiliary- and control current circuit         Yes         No           Type of electrical connection for auxiliary- and control current circuit         Yes         No           Supporting protocol for TCP/IP         Yes         No           Supporting protocol for TCP/IP         No         No           Supporting protocol for TCAN         No         No           Supporting protocol for No         Yes         No           Supporting protocol for No         Yes         No           Supporting protocol for No         Yes         No	Rated power, 575 V, 60 Hz, 3-phase	kW	0
Overload roleases current setting         A         15 - 9           Rated conditional short-circuit current, type 1,489/Y277 V         A         0           Rated conditional short-circuit current, type 2,400 V         A         0           Rated conditional short-circuit current, type 2,400 V         A         0           Number of auxiliary contacts as normally open contact         C         0           Number of auxiliary contacts as normally open contact         C         0           Number of auxiliary contacts as normally open contact         C         0           Ambient temperature, upper operating limit         C         0           Temperature compensated overload protection         C         0           Release class         C         CLASS TO           Type of electrical connection of main circuit         Spring clamp connection           Type of electrical connection for auxiliary- and control current circuit         Spring clamp connection           Rail mounting pessable         Yes         No           Begree of protection ITP         No         No           Supporting protocol for TCP/IP         No         No           Supporting protocol for TXERIBUS         No         No           Supporting protocol for TXERIBUS         No         No           Supporti	Rated operation current le	Α	9
Bate deconditional 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 1,500 Y/347 V         A         0           Rated conditional short-circuit current, type 1,500 Y/347 V         A         0           Number of auxiliary contacts as normally open contact         C         0           Number of auxiliary contacts as normally open contact         PC         4           Ambient tamperature, upper operating limit         C         4           Temperature compensated overload protection         PS         Yes           Release class         Spring clamp connection         PS           Type of elactrical connection of main circuit         Spring clamp connection         Yes           Type of elactrical connection of main circuit         PS         Yes           Supporting protected for Textiliary and control current circuit         Yes         Yes           Supporting protected for Textiliary and control current circuit         Yes         Yes           Supporting protected for Textiliary and control current circuit         Yes         Yes           Supporting protected for Textiliary and control current circuit         Yes         Yes           Supporting protected for Textiliary and contr	Rated operation current at AC-3, 400 V	Α	7
Rated conditional short-circuit current, type 1,600 y/347 V         A         0           Rated conditional short-circuit current, type 2,200 V         A         0           Number of auxiliary contacts as normally one contact         C         0           Number of auxiliary contacts as normally closed contact         C         0           Ambient engerature, upper operaing limit         C         4         0           Temperature compensated overload protection         C         4         2           Time per sture compensated overload protection         C         4         2           Type of electrical connection of main circuit         F         2         2         2           Type of electrical connection for puxiliary- and control current circuit         F         2	Overload release current setting	Α	1.5 - 9
Rated conditional short-circuit current, type 2, 280 V	Rated conditional short-circuit current, type 1, 480 Y/277 V	Α	0
Rated conditional short-circuit current, type 2, 400 V         A         0           Number of auxiliary contacts as normally open contact         C         0           Number of auxiliary contacts as normally closed contact         °C         0           Anhibent temperature, upper operating limit of auxiliary contacts as normally closed contact         °C         Yes           Generature companied overload protection         C         CASS 10           Release class         C         CASS 10           Type of electrical connection for auxiliary and control current circuit         Per Spring clamp connection           Rail mounting possible         Per Spring clamp connection           Bugger air protection (PP         Per Spring clamp connection           Supporting protector for PROFIBEUS         Per Spring protector for PROFIBEUS           Supporting protector for PROFIBEUS         No           Supporting protector for MODBUS         No           Supporting protector for DeviceNe         Per Spring protector for DeviceNe           Supporting protector for DeviceNe         Per Spring protector for DeviceNe           Supporting protector for PROFINET (B         Per Spring protector for PROFINET (B           Supporting protector for FRORMET (B         Per Spring protector for FRORMET (B           Supporting protector for Froundation Fieldbus         Per Spring protector for Fr	Rated conditional short-circuit current, type 1, 600 Y/347 V	Α	0
Number of auxiliary contacts as normally closed contact         6         0         0           Number of auxiliary contacts as normally closed contact         "C         40           Ambient temperature, upper operating limit         "C         40           Temperature compensated overload protection         "C         40           Release class         CLASS 10           Rolesse class         CLASS 10           Yep of electrical connection of main circuit         Spring clamp connection           Type of electrical connection for auxiliary- and control current circuit         Yes           Supporting protection (IP)         Yes           Supporting protection (IP)         No           Supporting protect for TCP/IP         No           Supporting protect of ro TRIFIBUS         No           Supporting protect of ro TRIFIBUS         No           Supporting protect of ro MORBUS         No           Supporting protect of ro MORBUS         No           Supporting protect for DeviceNet         No           Supporting protect for PoliceNet         No           Supporting protect for EVONE         No           Supporting protect for FORFINET (BA         No           Supporting protect for FORFINET (BA         No           Supporting protect for FORFINET (BA	Rated conditional short-circuit current, type 2, 230 V	Α	0
Number of auxiliary contacts as normally closed contact         C         40           Ambient temperature, upper operating limit         *C         40           Temperature compensated overload protection         *C         40           Release class         CASS 10           Type of electrical connection of main circuit         CAST 10         Apring clamp connection           Type of electrical connection of main circuit         Yes         Pring clamp connection           Build mounting passible         Yes         Yes           Degree of protection (IP)         Yes         No           Supporting protect for TCP/IP         No         No           Supporting protect for CAN         No         No           Supporting protect for ASI         No         No           Supporting protect for MITERBUS         No         No           Supporting protect for MITERBUS         No         No           Supporting protect for MITERBUS         No         No           Supporting protect for DeviceMat         No         No           Supporting protect for BeviceMat         No         No           Supporting protect for PROFINET IO         No         No           Supporting protect for PROFINET IO         No         No           Suppor	Rated conditional short-circuit current, type 2, 400 V	A	0
Ambient temperature, upper operating limit         *C         40           Temperature compensated overload protection         4         Yes           Release class         CLASS 10         CLASS 10           Type of electrical connection of main circuit         5         Spring clamp connection           Type of electrical connection for auxiliary- and control current circuit         6         5           Beginning possible         7         Pea           Degree of protection (IP)         8         1P20           Supporting protection for TCP/IP         No         1P20           Supporting protector for RDRIBUS         No         1P20           Supporting protector for INTERBUS         No         1P20           Supporting protector for MDIBUS         No         1P20           Supporting protector for MDIBUS         No         1P20           Supporting protector for Davisant         1P20         No           Supporting protector for Davisant         1P20         No           Supporting protector for SUONET         No         No           Supporting protector for PROFINET CBA         No         No           Supporting protector for PROFINET CBA         No         No           Supporting protect for SERCOS         No         No </td <td>Number of auxiliary contacts as normally open contact</td> <td></td> <td>0</td>	Number of auxiliary contacts as normally open contact		0
Temperature compensated overload protection         Yes           Release class         CLASS 10           Type of electrical connection of main circuit         Spring clamp connection           Type of electrical connection for auxiliary- and control current circuit         Spring clamp connection           Rail mounting possible         Yes           Degree of protection (IP)         P20           Supporting protect of TCP/IP         No           Supporting protect of CAN         No           Supporting protect of for NTERBUS         No           Supporting protect of for MDBUS         No           Supporting protect of for MDBUS         No           Supporting protect of or Data-Highway         No           Supporting protect of DeviceNet         No           Supporting protect of DeviceNet         No           Supporting protect of or SUCONET         No           Supporting protect of or PROFINET IO         No           Supporting protect of or PROFINET ECA         No           Supporting protect of PROFINET ECA         No           Supporting protect of PROFINET ECA         No           Supporting protect of Fendation Fieldbus         No           Supporting protect of For Forter Forter Forter         No           Supporting protect of for Alterface Safety at Wor	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 Degree of protection (IP) Supporting protocol for TCP/IP Supporting protocol for PROFIBUS Supporting protocol for CAN Supporting protocol for CAN Supporting protocol for INTERBUS Supporting protocol for INTERBUS Supporting protocol for Data-Highway Supporting protocol for Data-Highway Supporting protocol for Data-Highway Supporting protocol for Success Supporting protocol for Success Supporting protocol for PROFINET IO Supporting protocol for PROFINET IO Supporting protocol for Data-Highway Supporting protocol for Data-Highway Supporting protocol for Data-Highway Supporting protocol for Data-Highway Supporting protocol for PROFINET IO Supporting protocol for Success Supporting protocol for Success Supporting protocol for PROFINET IO Supporting protocol for PROFINET IO Supporting protocol for PROFINET IO Supporting protocol for SERCOS Supporting protocol for EtherNet/IP Supporting protocol for DaviceNet Safety Supporting protocol for DaviceNet Safety Supporting protocol for INTERBUS-Safety Supporting protocol for PROFISafe	Ambient temperature, , upper operating limit	°C	40
Type of electrical connection of main circuit Type of electrical connection for auxiliary- and control current circuit Rail mounting possible Degree of protection (IP) Supporting protocol for TCP/IP Supporting protocol for PROFIBUS Supporting protocol for CAN Supporting protocol for CAN Supporting protocol for INTERBUS Supporting protocol for MDDBUS Supporting protocol for MDDBUS Supporting protocol for MDDBUS Supporting protocol for Data-Highway Supporting protocol for Data-Highway Supporting protocol for DaviceNet Supporting protocol for SucoNet Supporting protocol for PROFINET IO Supporting protocol for PROFINET IO Supporting protocol for SucoNet Supporting protocol for Foundation Fieldbus Supporting protocol for SucoNet Supporting protocol for Foundation Fieldbus Supporting protocol for Foundation Fieldbus Supporting protocol for Foundation Fieldbus Supporting protocol for SucoNet Supporting protocol for SucoNet Supporting protocol for SucoNet Supporting protocol for SucoNet Supporting protocol for Foundation Fieldbus Supporting protocol for SucoNet Supporting p	Temperature compensated overload protection		Yes
Type of electrical connection for auxillary- and control current circuit  Rail mounting possible  Degree of protection (IP)  Supporting protocol for TCP/IP  Supporting protocol for PROFIBUS  Supporting protocol for PROFIBUS  Supporting protocol for REDEBUS  Supporting protocol for REDEBUS  Supporting protocol for INTERBUS  Supporting protocol for MITERBUS  Supporting protocol for MITERBUS  Supporting protocol for MOBBUS  Supporting protocol for Data-Highway  Supporting protocol for Data-Highway  Supporting protocol for Data-Highway  Supporting protocol for Success  Supporting protocol for Success  Supporting protocol for Success  Supporting protocol for Success  Supporting protocol for PROFINET IO  Supporting protocol for PROFINET IO  Supporting protocol for Secos  Supporting protocol for Secos  Supporting protocol for Federalety  Supporting protocol for Secos  Supporting protocol for Federalety  Supporting protocol for Federalety  Supporting protocol for Secos  Supporting protocol for Federalety  Supporting protocol for Secos  Supporting protocol for Sec	Release class		CLASS 10
Rail mounting possible  Degree of protection (IP)  Supporting protocol for TCP/IP  Supporting protocol for PROFIBUS  Supporting protocol for CAN  Supporting protocol for LAN  Supporting protocol for INTERBUS  Supporting protocol for MODBUS  Supporting protocol for MODBUS  Supporting protocol for Data-Highway  Supporting protocol for Data-Highway  Supporting protocol for SUCONET  Supporting protocol for SUCONET  Supporting protocol for SUCONET  Supporting protocol for PROFINET IO  Supporting protocol for PROFINET IO  Supporting protocol for PROFINET OB  Supporting protocol for PROFINET OB  Supporting protocol for PROFINET OB  Supporting protocol for Suconecation Suconecation Supporting protocol for PROFINET OB  Supporting protocol for PROFINET OB  Supporting protocol for Suconecation Suconecation Supporting protocol for Suconecation Suconecati	Type of electrical connection of main circuit		Spring clamp connection
Degree of protection (IP)  Supporting protocol for CP/IP  Supporting protocol for PROFIBUS  Supporting protocol for CAN  Supporting protocol for INTERBUS  Supporting protocol for INTERBUS  Supporting protocol for MODBUS  Supporting protocol for MODBUS  Supporting protocol for But-Highway  Supporting protocol for SUCONET  Supporting protocol for SUCONET  Supporting protocol for PROFINET IO  Supporting protocol for PROFINET IO  Supporting protocol for PROFINET GBA  Supporting protocol for SERCOS  Supporting protocol for SeRCOS  Supporting protocol for SeRCOS  Supporting protocol for SeRCOS  Supporting protocol for EtherNet/IP  Supporting protocol for DeviceNet Safety  Supporting protocol for PROFINET GBA  Supporting protocol for DeviceNet Safety at Work  Supporting protocol for DeviceNet Safety  Supporting protocol for PROFINET GBA  Supporting protocol for PROFINET GBA  Supporting protocol for Serce Safety at Work  Supporting protocol for Serce Safety at Work  Supporting protocol for PROFINET GBA  Supporting protocol for Serce Safety at Work  Supporting protocol for PROFINET GBA  Supporting protocol for PROFINET GBA  Supporting protocol for Serce Safety at Work  Supporting protocol for Serce Safety at Work  Supporting protocol for Serce Safety at Work  Supporting protocol for PROFINET GBA  Supporting protocol for Serce Safety Supporting Protocol for PROFINET GBA  Supporting Protocol for PROFINET G	Type of electrical connection for auxiliary- and control current circuit		Spring clamp connection
Supporting protocol for TCP/IP  Supporting protocol for PROFIBUS  Supporting protocol for CAN  Supporting protocol for INTERBUS  Supporting protocol for INTERBUS  Supporting protocol for MODBUS  Supporting protocol for Data-Highway  Supporting protocol for DeviceNet  Supporting protocol for SUCONET  Supporting protocol for SUCONET  Supporting protocol for PROFINET IO  Supporting protocol for PROFINET US  Supporting protocol for PROFINET US  Supporting protocol for PROFINET US  Supporting protocol for SERCOS  Supporting protocol for EtherNet/IP  Supporting protocol for SucoNet  Supporting protocol for EtherNet/IP  Supporting protocol for AS-Interface Safety at Work  Supporting protocol for DeviceNet Safety  Supporting protocol for INTERBUS-Safety  Supporting protocol for PROFINETE  Supporting protocol for INTERBUS-Safety  Supporting protocol for PROFINETE  Supporting protocol for INTERBUS-Safety  Supporting protocol for PROFINETE  Supporting protocol for PROFINETE  Supporting protocol for PROFINETE  Supporting protocol for INTERBUS-Safety  Supporting protocol for PROFINETE  Supporting protocol for INTERBUS-Safety  Supporting protocol for PROFINETE  Suppo	Rail mounting possible		Yes
Supporting protocol for CAN Supporting protocol for INTERBUS Supporting protocol for INTERBUS Supporting protocol for MODBUS Supporting protocol for Data-Highway Supporting protocol for DeviceNet Supporting protocol for SUCONET Supporting protocol for SUCONET Supporting protocol for PROFINET IO Supporting protocol for PROFINET IO Supporting protocol for PROFINET US Supporting protocol for PROFINET US Supporting protocol for SERCOS Supporting protocol for EtherNevIP Supporting protocol for Suconet	Degree of protection (IP)		IP20
Supporting protocol for CAN Supporting protocol for INTERBUS Supporting protocol for ASI Supporting protocol for MODBUS Supporting protocol for MODBUS Supporting protocol for Data-Highway Supporting protocol for DeviceNet Supporting protocol for SUCONET Supporting protocol for SUCONET Supporting protocol for SUCONET Supporting protocol for PROFINET IO Supporting protocol for PROFINET CBA Supporting protocol for Fundation Fieldbus Supporting protocol for Serecos Supporting protocol for Serecos Supporting protocol for Serecos Supporting protocol for Serecos Supporting protocol for DeviceNet JIP Supporting protocol for Serecos Supporting protocol for Serecos Supporting protocol for Serecos Supporting protocol for Serecos Supporting protocol for DeviceNet Safety at Work Supporting protocol for DeviceNet Safety Supporting protocol for DeviceNet Safety Supporting protocol for DeviceNet Safety Supporting protocol for PROFIsafe Supporting protocol for PROFIsafe Supporting protocol for PROFIsafe Supporting protocol for SafetyBUS p Supporting protocol for SafetyBUS p Supporting protocol for SafetyBUS p	Supporting protocol for TCP/IP		No
Supporting protocol for INTERBUS Supporting protocol for ASI Supporting protocol for MODBUS Supporting protocol for Data-Highway Supporting protocol for DeviceNet Supporting protocol for DeviceNet Supporting protocol for SUCONET Supporting protocol for SUCONET Supporting protocol for PROFINET IO Supporting protocol for PROFINET CBA Supporting protocol for SERCOS Supporting protocol for Fundation Fieldbus Supporting protocol for EtherNet/IP Supporting protocol for AS-Interface Safety at Work Supporting protocol for DeviceNet Safety Supporting protocol for INTERBUS-Safety Supporting protocol for FROFINETE Supporting protocol for FROFISA Supporting protocol for INTERBUS-Safety Supporting protocol for SafetyBUS p No	Supporting protocol for PROFIBUS		No
Supporting protocol for ASI  Supporting protocol for MODBUS  Supporting protocol for Data-Highway  Supporting protocol for Detained by Detained Bus Potocol for DeviceNet  Supporting protocol for SUCONET  Supporting protocol for SUCONET  Supporting protocol for PROFINET IO  Supporting protocol for PROFINET CBA  Supporting protocol for SERCOS  Supporting protocol for Foundation Fieldbus  Supporting protocol for Foundation Fieldbus  Supporting protocol for EtherNet/IP  Supporting protocol for EtherNet/IP  Supporting protocol for DeviceNet Safety at Work  Supporting protocol for DeviceNet Safety  Supporting protocol for INTERBUS-Safety  Supporting protocol for SafetyBUS p  No  Supporting protocol for SafetyBUS p	Supporting protocol for CAN		No
Supporting protocol for MODBUS  Supporting protocol for Data-Highway  Supporting protocol for Data-Highway  Supporting protocol for DeviceNet  Supporting protocol for SUCONET  Supporting protocol for PROFINET IO  Supporting protocol for PROFINET CBA  Supporting protocol for SERCOS  Supporting protocol for Foundation Fieldbus  Supporting protocol for Foundation Fieldbus  Supporting protocol for EtherNet/IP  Supporting protocol for AS-Interface Safety at Work  Supporting protocol for DeviceNet Safety  Supporting protocol for INTERBUS-Safety  Supporting protocol for SafetyBUS p  No  Supporting protocol for SafetyBUS p	Supporting protocol for INTERBUS		No
Supporting protocol for DeviceNet Supporting protocol for DeviceNet Supporting protocol for SUCONET No Supporting protocol for SUCONET No Supporting protocol for PROFINET IO Supporting protocol for PROFINET CBA Supporting protocol for PROFINET CBA Supporting protocol for SERCOS No Supporting protocol for Foundation Fieldbus Supporting protocol for Foundation Fieldbus Supporting protocol for EtherNet/IP No Supporting protocol for AS-Interface Safety at Work 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 ASI		No
Supporting protocol for DeviceNet  Supporting protocol for SUCONET  Supporting protocol for SUCONET  Supporting protocol for LON  Supporting protocol for PROFINET IO  Supporting protocol for PROFINET CBA  Supporting protocol for SERCOS  Supporting protocol for Foundation Fieldbus  Supporting protocol for EtherNet/IP  Supporting protocol for AS-Interface Safety at Work  Supporting protocol for DeviceNet Safety  Supporting protocol for INTERBUS-Safety  Supporting protocol for PROFIsafe  Supporting protocol for PROFIsafe  No  Supporting protocol for SafetyBUS p  No	Supporting protocol for MODBUS		No
Supporting protocol for SUCONET  Supporting protocol for LON  Supporting protocol for PROFINET IO  Supporting protocol for PROFINET CBA  Supporting protocol for SERCOS  Supporting protocol for Foundation Fieldbus  Supporting protocol for EtherNet/IP  Supporting protocol for AS-Interface Safety at Work  Supporting protocol for DeviceNet Safety  Supporting protocol for INTERBUS-Safety  Supporting protocol for PROFIsafe  Supporting protocol for PROFIsafe  No  Supporting protocol for SafetyBUS p  No	Supporting protocol for Data-Highway		No
Supporting protocol for LON 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 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 DeviceNet		No
Supporting protocol for PROFINET IO  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  Supporting protocol for DeviceNet Safety  No  Supporting protocol for INTERBUS-Safety  No  Supporting protocol for PROFIsafe  No  Supporting protocol for PROFIsafe  No  Supporting protocol for SafetyBUS p  No	Supporting protocol for SUCONET		No
Supporting protocol for PROFINET CBA  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  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 LON		No
Supporting protocol for SERCOS  Supporting protocol for Foundation Fieldbus  No Supporting protocol for EtherNet/IP  No Supporting protocol for AS-Interface Safety at Work  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 PROFINET IO		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 PROFINET CBA		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 SERCOS		No
Supporting protocol for AS-Interface Safety at Work  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 Foundation Fieldbus		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 EtherNet/IP		No
Supporting protocol for INTERBUS-Safety  No Supporting protocol for PROFIsafe  No Supporting protocol for SafetyBUS p  No	Supporting protocol for AS-Interface Safety at Work		No
Supporting protocol for PROFIsafe No Supporting protocol for SafetyBUS p No	Supporting protocol for DeviceNet Safety		No
Supporting protocol for SafetyBUS p	Supporting protocol for INTERBUS-Safety		No
	Supporting protocol for PROFIsafe		No
Supporting protocol for other bus systems  Yes	Supporting protocol for SafetyBUS p		No
	Supporting protocol for other bus systems		Yes

### **Characteristics**

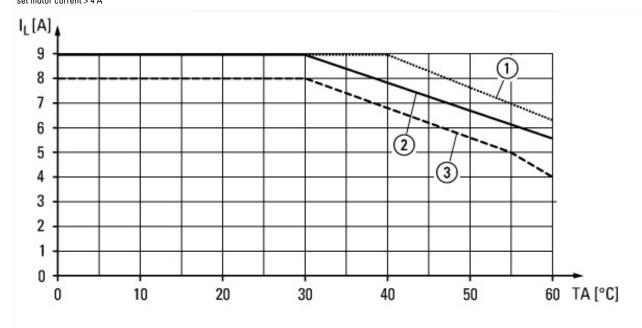


Tripping characteristics CLASS 10

set motor current = 4 A



Tripping characteristics CLASS 10A set motor current > 4 A

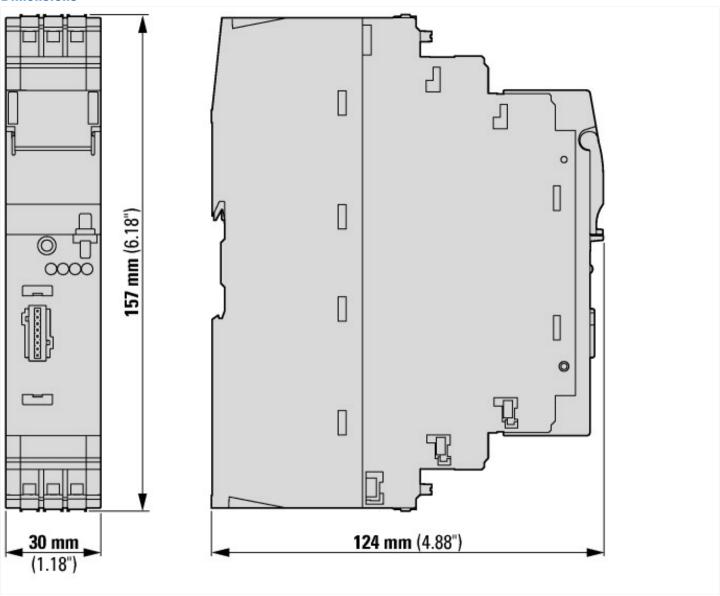


Current derating

(1) Single device

- (2) connected in series with 30 mm clearance
- 3 connected in series without clearance

## **Dimensions**



### **Additional product information (links)**

Additional product information (miks)				
IL120002ZU Electronic motor starter with SWD connection				
IL120002ZU Electronic motor starter with SWD connection	ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL120002ZU2015_04.pdf			
Produktinformation EMS, Hinweise zur Projektierung	http://www.eaton.eu/ecm/groups/public/@pub/@europe/@electrical/documents/content/pct_1040938_de.pdf			