## DATASHEET - DE11-122D7FN-N20N



Speed starters, single-phase power supply connection, three-phase motor connection at 230 V, 2, 7 A and 0, 55 kW / 0, 5 HP, with integrated EMC filter

Part no. Catalog No. Eaton Catalog No.

DE11-122D7FN-N20N 180652 D. DE11-122D7FN-N20N

#### Technical data General

| Uellelal                                      |                  |     |  |
|---|------------------|-----|--|
| Standards                                     |                  |     | Specification for general requirements: IEC/EN 61800-2<br>EMC requirements: IEC/EN 61800-3<br>Safety requirements: IEC/EN 61800-5-1  |
| Certifications                                |                  |     | CE, UL, cUL, RCM   |
| Production quality                            |                  |     | RoHS, ISO 9001   |
| Climatic proofing                             | ρ <sub>w</sub>   | %   | < 95%, average relative humidity (RH), non-condensing, non-corrosive   |
| Ambient temperature                           |                  |     |  |
| operation (150 % overload)                    | 9                | °C  | -10 - +60  |
| Storage                                       | 9                | °C  | -40 - +70  |
| Radio interference level                      |                  |     |  |
| Radio interference class (EMC)                |                  |     | C1 (for conducted emissions only), C2, C3, depending on the motor cable length, the connected load, and ambient conditions. External radio interference suppression filters (optional) may be necessary. |
| Environment (EMC)                             |                  |     | 1st and 2nd environments as per EN 61800-3   |
| maximum motor cable length                    | I                | m   | C1 $\leq$ 5 m<br>C2 $\leq$ 10 m<br>C3 $\leq$ 25 m  |
| Mechanical shock resistance                   |                  | g   | 15 (11 m/s, EN 60068-2-27)   |
| Vibration                                     |                  |     | EN 61800-5-1   |
| Altitude                                      |                  | m   | 0 - 1000 m above sea level<br>Above 1000 m: 1% derating for every 100 m<br>max. 2000 m   |
| Degree of Protection                          |                  |     | IP20/NEMA 0  |
| Protection against direct contact             |                  |     | BGV A3 (VBG4, finger- and back-of-hand proof)  |
| Main circuit                                  |                  |     |  |
| Supply  |                  |     |  |
| Rated operational voltage                     | U <sub>e</sub>   |     | 230 V AC, 1-phase<br>240 V AC, single-phase  |
| Mains voltage (50/60Hz)                       | U <sub>LN</sub>  | V   | 200 (-10%) - 240 (+10%)  |
| Input current (150% overload)                 | I <sub>LN</sub>  | А   | 7.3  |
| Supply frequency                              | f <sub>LN</sub>  | Hz  | 50/60  |
| Frequency range                               | f <sub>LN</sub>  | Hz  | 45 - 66  |
| Mains switch-on frequency                     |                  |     | Maximum of one time every 30 seconds   |
| Power section                                 |                  |     |  |
| Overload current (150% overload)              | IL.              | А   | 4.05   |
| max. starting current (High Overload)         | I <sub>H</sub>   | %   | 200  |
| Note about max. starting current              |                  |     | for 1.875 seconds every 600 seconds  |
| Output voltage with $\mathrm{V}_{\mathrm{e}}$ | U <sub>2</sub>   |     | 230 V AC, 3-phase<br>240 V AC, 3-phase   |
| Output Frequency                              | f <sub>2</sub>   | Hz  | 0 - 50/60 (max. 300)   |
| Switching frequency                           | f <sub>PWM</sub> | kHz | 16<br>adjustable 4 - 32 (audible)  |
| Operation Mode                                |                  |     | U/f control<br>Speed control with slip compensation  |
| Frequency resolution (setpoint value)         | Δf               | Hz  | 0.03   |



| Rated operational current                            |                 |     |   |
|--|-----------------|-----|---|
| At 150% overload                                     | ۱ <sub>e</sub>  | А   | 2.7   |
| Note   |                 |     | Rated operational current at an operating frequency of 16 kHz and an ambient air temperature of +50 $^\circ\mathrm{C}$  |
| Maximum leakage current to ground (PE) without motor | I <sub>PE</sub> | mA  | < 3.5 AC, < 10 DC   |
| Fitted with  |                 |     | Radio interference suppression filter   |
| Frame size   |                 |     | FS1   |
| Motor feeder   |                 |     |   |
| Note   |                 |     | for normal internally and externally ventilated 4 pole, three-phase asynchronous motors with 1500 rpm <sup>-1</sup> at 50 Hz or 1800 min <sup>-1</sup> at 60 Hz |
| Note   |                 |     | Overload cycle for 60 s every 600 s   |
| Note   |                 |     | at 230 V, 50 Hz   |
| 150 % Overload                                       | Р               | kW  | 0.55  |
| Note   |                 |     | at 220 - 240 V, 60 Hz   |
| 150 % Overload                                       | Р               | HP  | 0.5   |
| Apparent power                                       |                 |     |   |
| Apparent power at rated operation 230 V              | S               | kVA | 1.08  |
| Apparent power at rated operation 240 V              | S               | kVA | 1.12  |
| Braking function                                     |                 |     |   |
| Standard braking torque                              |                 |     | max. 30 % M <sub>N</sub>  |
| DC braking torque                                    |                 |     | adjustable to 100 %   |
| Control section                                      |                 |     |   |
| Reference voltage                                    | Us              | V   | 10 V DC (max. 0.2 mA)   |
| Analog inputs  |                 |     | 1, parameterizable, 0 - 10 V DC, 0/4 - 20 mA  |
| Digital inputs                                       |                 |     | 4, parameterizable, 10 - 30 V DC  |
| Relay outputs  |                 |     | 1, parameterizable, N/O, 6 A (250 V, AC-1) / 5 A (30 V, DC-1)   |
| Interface/field bus (built-in)                       |                 |     | OP-Bus (RS485)/Modbus RTU, CANopen <sup>®</sup>   |
| Assigned switching and protective elements           |                 |     |   |
| Power Wiring   |                 |     |   |
| Safety device (fuse or miniature circuit-breaker)    |                 |     |   |
| IEC (Type B, gG), 150 %                              |                 |     | FAZ-B10/1N  |
| UL (Class CC or J)                                   |                 | А   | 10  |
| Mains contactor                                      |                 |     |   |
| 150 % overload (CT/I <sub>H</sub> , at 50 °C)        |                 |     | DILEM + P1DILEM   |
| 110 % overload (VT/I <sub>L</sub> , at 40 °C)        |                 |     | DILM7 + DILM12-XP1  |
| Main choke   |                 |     |   |
| 150 % overload (CT/I <sub>H</sub> , at 50 °C)        |                 |     | DX-LN1-009  |
| Motor feeder   |                 |     |   |
| motor choke  |                 |     |   |
| 150 % overload (CT/I <sub>H</sub> , at 50 °C)        |                 |     | DX-LM3-005  |

# Design verification as per IEC/EN 61439

| Technical data for design verification                   |                   |    |  |
|--|-------------------|----|--|
| Rated operational current for specified heat dissipation | I <sub>n</sub>    | А  | 2.7  |
| Heat dissipation per pole, current-dependent             | P <sub>vid</sub>  | W  | 0  |
| Equipment heat dissipation, current-dependent            | P <sub>vid</sub>  | W  | 27   |
| Static heat dissipation, non-current-dependent           | P <sub>vs</sub>   | W  | 0  |
| Heat dissipation capacity                                | P <sub>diss</sub> | W  | 0  |
| Operating ambient temperature min.                       |                   | °C | -10  |
| Operating ambient temperature max.                       |                   | °C | 60   |
|  |                   |    | Operation (with 150 % overload)            |
| 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<br>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**

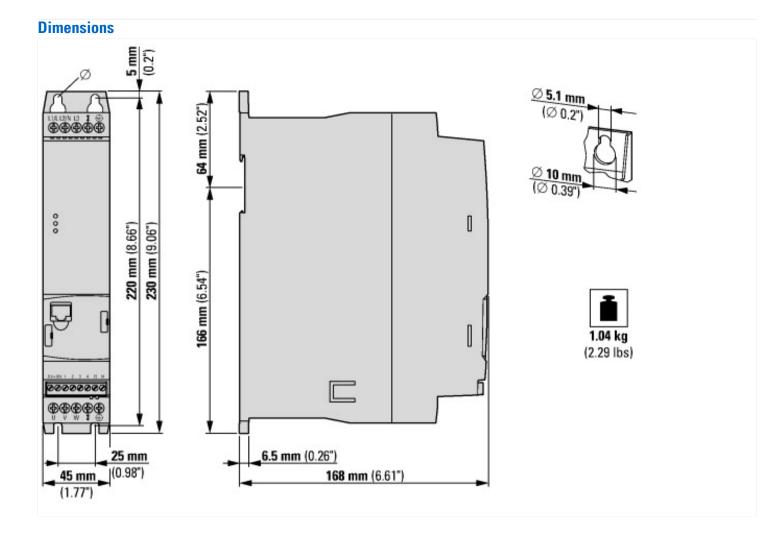
Low-voltage industrial components (EG000017) / Frequency converter =< 1 kV (EC001857)

| Number of phases input         S00 Hz           Number of phases output         1           Number of phases output         3           Max. output frequency         V         30           Max. output frequency         V         30           Max. output voltage         V         30           Read output current 2/2N         A         2           Max. output at linear load at rated output voltage         W         50           Max. output at linear load at rated output voltage         W         50           Max. output at linear load at rated output voltage         W         50           Mox. output at linear load at rated output voltage         W         50           Mox. output at linear load at rated output voltage         W         50           Mox. output at linear load at rated output voltage         W         50           Application in industrial area permitted         W         60           Supporting protocol for TCP/IP         No         50   | Electric engineering, automation, process control engineering / Electrical drive / Static frequency converter / Static frequency converter = < 1 kv (ecl@ss8.1-27-02-31-01 [AKE177011]) |    |           |  |
|--|---|----|-----------|--|
| Number of phases input         Image: sinput         Image: sinput           Number of phases output         Image: sinput         I | Mains voltage   | V  | 200 - 240 |  |
| Number of phases output         Image: Phases output frequency         Pace         Pace <t< td=""><td>Mains frequency</td><td></td><td>50/60 Hz</td></t<>   | Mains frequency   |    | 50/60 Hz  |  |
| Max. output frequery         Hz         Bit  | Number of phases input  |    | 1         |  |
| Name         Note         Note         Note           Base output voltage         KM         2           Max. output at quadratic load at rated output voltage         KM         0           Max. output at linear load at rated output voltage         KM         0           Max. output at linear load at rated output voltage         KM         0           Application in industrial area permitted         KM         No           Application in domestic - and commercial area permitted         KM         No           Supporting protocol for TCP/IP         No         No           Supporting protocol for TCP/IP         No         No           Supporting protocol for TRNGFIBUS         No         No           Supporting protocol for NNX         No         No           Supporting protocol for MNDBUS         No         No           Supporting protocol for DRNGN         No         No           Supporting protocol for DNNX         No         No           Supporting protocol for DNNX         No         No           Supporting protocol for SUCONFT         No         No           Supporting protocol for NPROFINET DA         No         No           Supporting protocol for PROFINET CBA         No         No           Suppor   | Number of phases output   |    | 3         |  |
| Rated output current I2N       A       2         Max. output at quadratic load at rated output voltage       KW       05         Max. output at linear load at rated output voltage       KW       No         Application in industrial area permitted       KW       Seporting protocol for TCP/IP         Supporting protocol for CAN       KM       No         Supporting protocol for CAN       No       No         Supporting protocol for KNX       No       No         Supporting protocol for GNUS       No       No         Supporting protocol for GNUS       No       No         Supporting protocol for CAN       No       No         Supporting protocol for MNX       No       No         Supporting protocol for SUPS       No       No         Supporting protocol for NNX       No       No         Supporting protocol for NNX       No       No         Supporting protocol for SUPS       No       No         Supporting protocol for NDN       No       No </td <td>Max. output frequency</td> <td>Hz</td> <td>300</td>   | Max. output frequency   | Hz | 300       |  |
| Nax. output at quadratic load at rated output voltage       6         Max. output at linear load at rated output voltage       6         Max. output at linear load at rated output voltage       6         With control unit       0         Application in industrial area permitted       Yes         Supporting protocol for CP/IP       No         Supporting protocol for CAN       No         Supporting protocol for INTERBUS       No         Supporting protocol for KNX       No         Supporting protocol for Dat-Highway       No         Supporting protocol for LND       Yes         Supporting protocol for LND       No         Supporting protocol for SUGONET       No         Supporting protocol for Dat-Highway       No         Supporting protocol for LND       No         Supporting protocol for LND       No         Supporting protocol for PROFINET IO       No         Supporting protocol for PROFINET CBA       No         Supporting protocol for FORDENCES       No         Supporting proto   | Max. output voltage   | V  | 250       |  |
| As. output at linear load at rated output voltage       6         With control unit       0         Application in industrial area permitted       6         Application in industrial area permitted       6         Application in domestic- and commercial area permitted       6         Supporting protocol for CP/IP       0         Supporting protocol for PROFIBUS       0         Supporting protocol for NAN       6         Supporting protocol for NAN       6         Supporting protocol for DoviceNet       6         Supporting protocol for DoviceNet       6         Supporting protocol for NANS       6         Supporting protocol for NDBUS       6         Supporting protocol for NONE       6         Supporting protocol for NONE       6         Supporting protocol for NDRUE       6         Supporting protocol for NONE       6         Supporting protocol for NONE       6         Supporting protocol for NONE       6         Supporting protocol for PROFINET IO       6         Supporting protocol for SRECOS       6         Supporting protocol for FordNAtion Fieldbus       6   | Rated output current I2N  | Α  | 2.7       |  |
| With control unitNoApplication in industrial area permittedYesApplication in domestic- and commercial area permittedYesSupporting protocol for TCP/IPNoSupporting protocol for TCP/IPNoSupporting protocol for TCP/IBUSNoSupporting protocol for TANNoSupporting protocol for TANNoSupporting protocol for SAINoSupporting protocol for MNXNoSupporting protocol for MDBUSNoSupporting protocol for Data-HighwayNoSupporting protocol for SUCONETNoSupporting protocol for SUCONETNoSupporting protocol for PROFINET IONoSupporting protocol for PROFINET CBANoSupporting protocol for FROFINET CBANoSupporting protocol for FROFINET CBANoSupporting protocol for FROFINET CBANoSupporting prot   | Max. output at quadratic load at rated output voltage   | kW | 0.5       |  |
| Application in industrial area permitted         Yes           Application in domestic- and commercial area permitted         Yes           Supporting protocol for CP/IP         No           Supporting protocol for CP/IP         No           Supporting protocol for CAN         No           Supporting protocol for CAN         No           Supporting protocol for CAN         No           Supporting protocol for KNX         No           Supporting protocol for KNX         No           Supporting protocol for CDVIP         No           Supporting protocol for SUCONET         No           Supporting protocol for SUCONET         No           Supporting protocol for SUCONET         No           Supporting protocol for PROFINET IO         No           Supporting protocol for SUCONET         No           Supporting protocol for SUCONET         No           Supporting protocol for SUCONET         No           Supporting protocol for PROFINET IOS         No           Supporting protocol for SUCONET         No           Supporting protocol for SUCONET         No           Supporting protocol for PROFINET CBA         No           Supporting protocol for SUCONET         No           Supporting protocol for SUCONET         No <td>Max. output at linear load at rated output voltage</td> <td>kW</td> <td>0.5</td>  | Max. output at linear load at rated output voltage  | kW | 0.5       |  |
| Application in domestic- and commercial area permitted         Yes           Supporting protocol for TCP/IP         No           Supporting protocol for CAN         No           Supporting protocol for CAN         No           Supporting protocol for INTERBUS         No           Supporting protocol for NTX         No           Supporting protocol for CAN         No           Supporting protocol for Data-Highway         No           Supporting protocol for SUCONET         No           Supporting protocol for PROFINET IO         No           Supporting protocol for PROFINET CBA         No           Supporting protocol for PROFINET CBA         No           Supporting protocol for SUCONET         No           Supporting protocol for PROFINET CBA         No           Supporting protocol for PROFINET CBA         No           Supporting protocol for SERCOS         No           Supporting protocol for Foundation Fieldbus         No   | With control unit   |    | No        |  |
| Supporting protocol for TCP/IP         No           Supporting protocol for PROFIBUS         No           Supporting protocol for CAN         No           Supporting protocol for INTERBUS         No           Supporting protocol for KNX         No           Supporting protocol for KNX         No           Supporting protocol for Data-Highway         No           Supporting protocol for SUCONET         No           Supporting protocol for SUCONET         No           Supporting protocol for PROFINET IO         No           Supporting protocol for PROFINET CBA         No           Supporting protocol for SERCOS         No           Supporting protocol for For Of SERCOS         No   | Application in industrial area permitted  |    | Yes       |  |
| Supporting protocol for PROFIBUS         No           Supporting protocol for CAN         No           Supporting protocol for CAN         No           Supporting protocol for INTERBUS         No           Supporting protocol for ASI         No           Supporting protocol for MDBUS         No           Supporting protocol for MDDBUS         No           Supporting protocol for Data-Highway         No           Supporting protocol for SUCONET         No           Supporting protocol for PROFINET IO         No           Supporting protocol for SERCOS         No           Supporting protocol for SERCOS         No  | Application in domestic- and commercial area permitted  |    | Yes       |  |
| Supporting protocol for CAN         No           Supporting protocol for INTERBUS         No           Supporting protocol for INTERBUS         No           Supporting protocol for ASI         No           Supporting protocol for KNX         No           Supporting protocol for MDDBUS         No           Supporting protocol for Data-Highway         Yes           Supporting protocol for DuceNet         No           Supporting protocol for SUCONET         No           Supporting protocol for PROFINET IO         No           Supporting protocol for SERCOS         No           Supporting protocol for Foundation Fieldbus         No  | Supporting protocol for TCP/IP  |    | No        |  |
| Supporting protocol for INTERBUS       No         Supporting protocol for ASI       No         Supporting protocol for KNX       No         Supporting protocol for MODBUS       No         Supporting protocol for MODBUS       No         Supporting protocol for Data-Highway       No         Supporting protocol for Data-Highway       No         Supporting protocol for SUCONET       No         Supporting protocol for PROFINETON       No         Supporting protocol for PROFINETOBA       No         Supporting protocol for PROFINETOBA       No         Supporting protocol for SERCOS       No         Supporting protocol for SERCOS       No         Supporting protocol for Fordation Fieldbus       No   | Supporting protocol for PROFIBUS  |    | No        |  |
| Supporting protocol for ASI         No           Supporting protocol for KNX         No           Supporting protocol for MODBUS         No           Supporting protocol for Data-Highway         Yes           Supporting protocol for DeviceNet         No           Supporting protocol for SUCONET         No           Supporting protocol for PROFINET IO         No           Supporting protocol for PROFINET CBA         No           Supporting protocol for SERCOS         No           Supporting protocol for Sercos         No  | Supporting protocol for CAN   |    | No        |  |
| Supporting protocol for KNX       No         Supporting protocol for MDBUS       Yes         Supporting protocol for Data-Highway       No         Supporting protocol for DeviceNet       No         Supporting protocol for SUCONET       No         Supporting protocol for PROFINET IO       No         Supporting protocol for PROFINET CBA       No         Supporting protocol for SUCONET       No         Supporting protocol for PROFINET CBA       No         Supporting protocol for SUCONET       No         Supporting protocol for SUCONET       No         Supporting protocol for PROFINET IO       No         Supporting protocol for SUCONET       No         Supporting protocol for SUCONET       No         Supporting protocol for SUCONET       No         Supporting protocol for PROFINET CBA       No         Supporting protocol for SUCONET       No         Supporting protocol for Foundation Fieldbus       No  | Supporting protocol for INTERBUS  |    | No        |  |
| Supporting protocol for MODBUS       Yes         Supporting protocol for Data-Highway       No         Supporting protocol for DeviceNet       No         Supporting protocol for SUCONET       No         Supporting protocol for PROFINET IO       No         Supporting protocol for PROFINET CBA       No         Supporting protocol for SERCOS       No         Supporting protocol for SERCOS       No         Supporting protocol for Foundation Fieldbus       No   | Supporting protocol for ASI   |    | No        |  |
| Supporting protocol for Data-Highway       Mo         Supporting protocol for DeviceNet       No         Supporting protocol for SUCONET       Mo         Supporting protocol for LON       Mo         Supporting protocol for PROFINET IO       Mo         Supporting protocol for SUCONET       Mo         Supporting protocol for PROFINET IO       Mo         Supporting protocol for SERCOS       Mo         Supporting protocol for SERCOS       Mo         Supporting protocol for Foundation Fieldbus       Mo   | Supporting protocol for KNX   |    | No        |  |
| Supporting protocol for DeviceNet       Mo         Supporting protocol for SUCONET       Mo         Supporting protocol for LON       Mo         Supporting protocol for PROFINET IO       Mo         Supporting protocol for PROFINET CBA       Mo         Supporting protocol for SERCOS       Mo         Supporting protocol for Foundation Fieldbus       Mo   | Supporting protocol for MODBUS  |    | Yes       |  |
| Supporting protocol for SUCONET     Mo       Supporting protocol for LON     Mo       Supporting protocol for PROFINET IO     Mo       Supporting protocol for PROFINET CBA     Mo       Supporting protocol for SERCOS     Mo       Supporting protocol for Foundation Fieldbus     Mo  | Supporting protocol for Data-Highway  |    | No        |  |
| Supporting protocol for LONModelSupporting protocol for PROFINET IOModelSupporting protocol for PROFINET CBAModelSupporting protocol for SERCOSModelSupporting protocol for Foundation FieldbusModelSupporting protocol for Foundation FieldbusModel   | Supporting protocol for DeviceNet   |    | No        |  |
| Supporting protocol for PROFINET IO     No       Supporting protocol for PROFINET CBA     Mo       Supporting protocol for SERCOS     Mo       Supporting protocol for Foundation Fieldbus     Mo  | Supporting protocol for SUCONET   |    | No        |  |
| Supporting protocol for PROFINET CBA     Mo       Supporting protocol for SERCOS     Mo       Supporting protocol for Foundation Fieldbus     Mo   | Supporting protocol for LON   |    | No        |  |
| Supporting protocol for SERCOS     No       Supporting protocol for Foundation Fieldbus     No   | Supporting protocol for PROFINET IO   |    | No        |  |
| Supporting protocol for Foundation Fieldbus No   | Supporting protocol for PROFINET CBA  |    | No        |  |
|  | Supporting protocol for SERCOS  |    | No        |  |
| Supporting protocol for EtherNet/IP Yes  | Supporting protocol for Foundation Fieldbus   |    | No        |  |
|  | Supporting protocol for EtherNet/IP   |    | Yes       |  |

| Supporting protocol for INTERBUS-Safety         Image: Supporting protocol for PROFIsefe         No           Supporting protocol for SafetyBUS p         Image: Supporting protocol for other bus systems         Image: Supporting protocol for other bus systems           Supporting protocol for other bus systems         Image: Supporting protocol for other bus systems         Image: Supporting Protocol for other bus systems           Number of HW-interfaces RPOFINET         Image: Supporting Protocol for other bus systems         Image: Supporting Protocol for other bus systems           Number of HW-interfaces RPOFINET         Image: Supporting Protocol for other bus systems         Image: Supporting Protocol for other bus systems           Number of HW-interfaces RPOFINET         Image: Supporting Protocol for other bus systems         Image: Supporting Protocol for Other bus systems           Number of HW-interfaces RPOFINET         Image: Supporting Protocol for Other bus systems         Image: Supporting Protocol for Other bus systems           Number of HW-interfaces RPOFINET         Image: Supporting Protocol for Other bus systems         Image: Supporting Protocol for Other bus systems           Number of HW-interfaces RPOFINET         Image: Supporting Protocol for Other bus systems         Image: Supporting Protocol for Other bus systems           Number of HW-interfaces Support Bus systems         Image: Support Bus systems         Image: Support Bus systems           Number of HW-interfaces Sup sup systems         Image: Support Bus syste   |   |    |             |
|--|---|----|-------------|
| Supporting protocol for INTERBUS-Safety         Image: Supporting protocol for PROFIsefe         No           Supporting protocol for SafetyBUS p         Image: Supporting protocol for other bus systems         Image: Supporting protocol for other bus systems           Supporting protocol for other bus systems         Image: Supporting protocol for other bus systems         Image: Supporting Protocol for other bus systems           Number of HW-interfaces RPOFINET         Image: Supporting Protocol for other bus systems         Image: Supporting Protocol for other bus systems           Number of HW-interfaces RPOFINET         Image: Supporting Protocol for other bus systems         Image: Supporting Protocol for other bus systems           Number of HW-interfaces RPOFINET         Image: Supporting Protocol for other bus systems         Image: Supporting Protocol for Other bus systems           Number of HW-interfaces RPOFINET         Image: Supporting Protocol for Other bus systems         Image: Supporting Protocol for Other bus systems           Number of HW-interfaces RPOFINET         Image: Supporting Protocol for Other bus systems         Image: Supporting Protocol for Other bus systems           Number of HW-interfaces RPOFINET         Image: Supporting Protocol for Other bus systems         Image: Supporting Protocol for Other bus systems           Number of HW-interfaces Support Bus systems         Image: Support Bus systems         Image: Support Bus systems           Number of HW-interfaces Sup sup systems         Image: Support Bus syste   |   |    | No          |
| Number of HW-interfaces industrial Ethernet         No           Number of HW-interfaces RS-522         Ves           Number of HW-interfaces RS-522         0           Number of HW-interfaces RS-523         Ves           Number of HW-interfaces RS-624         Ves           Number of HW-interfaces RS-625         Ves           Number of HW-interfaces RS-626         Ves           Number of HW-interfaces RS-627         Ves           Number of HW-interfaces RS-628         Ves           Number of HW-interfaces RS-629         Ves   | Supporting protocol for DeviceNet Safety    |    | No          |
| Supporting protocol for safetyBUS p       No         Supporting protocol for other bus systems       Yes         Number of HW-interfaces RPOFINET       0         Number of HW-interfaces RS-322       0         Number of HW-interfaces RS-422       0         Number of HW-interfaces RS-435       1         Number of HW-interfaces RS-435       1         Number of HW-interfaces RS-435       1         Number of HW-interfaces parallel       1         Number of HW-interfaces other       0         Number of HW-interfaces other       No         Number of HW-interfaces other       No         Number of HW-interfaces other       No         Number of HW-interfaces   | Supporting protocol for INTERBUS-Safety     |    | No          |
| Kupportion protocol for other bus systems         Main         Yes           Number of HW-interfaces industrial Ethernet         0         0           Number of HW-interfaces PROFINET         0         0           Number of HW-interfaces RS-232         0         0           Number of HW-interfaces RS-425         0         0           Number of HW-interfaces RS-485         0         0           Number of HW-interfaces serial TTY         0         0           Number of HW-interfaces other         0         0           Inter  | Supporting protocol for PROFIsafe           |    | No          |
| Number of HW-interfaces industrial Ethernet         Image: second se | Supporting protocol for SafetyBUS p         |    | No          |
| Number of HW-interfaces PROFINET <ul> <li>Aumber of HW-interfaces RS-232</li> <li>Number of HW-interfaces RS-422</li> <li>Composed FM-interfaces RS-426</li> <li>Composed FM-interfaces RS-485</li> <li>Composed FM-interfaces RS-485</li> <li>Composed FM-interfaces RS-485</li> <li>Composed FM-interfaces Serial TY</li> <li>Composed FM-interfaces Serial TY</li></ul>   | Supporting protocol for other bus systems   |    | Yes         |
| Number of HW-interfaces RS-232         0           Number of HW-interfaces RS-422         0           Number of HW-interfaces RS-435         1           Number of HW-interfaces RS-435         0           Number of HW-interfaces Start TY         0           Number of HW-interfaces Start TY         0           Number of HW-interfaces observation         No           Number of HW-interfaces observation   | Number of HW-interfaces industrial Ethernet |    | 0           |
| Number of HW-interfaces RS-422         I           Number of HW-interfaces RS-485         I           Number of HW-interfaces RS-485         I           Number of HW-interfaces SR-485         I           Number of HW-interfaces serial TTY         I           Number of HW-interfaces serial TTY         I           Number of HW-interfaces SR-485  | Number of HW-interfaces PROFINET            |    | 0           |
| Number of HW-interfaces RS-485       I         Number of HW-interfaces serial TTY       I         Number of HW-interfaces serial TTY       I         Number of HW-interfaces userial TTY       I         Number of HW-interfac   | Number of HW-interfaces RS-232              |    | 0           |
| Number of HW-interfaces serial TTY         Image: seri   | Number of HW-interfaces RS-422              |    | 0           |
| Number of HW-interfaces USB       0         Number of HW-interfaces parallel       0         Number of HW-interfaces other       0         With optical interfaces other       0         With optical interfaces other       No         With Optical interfaces other       No         With Optical interfaces other       No         With Optical interfaces       No         Page of protection (IP)       Vorverter         Page of protection (IP)       Imm         Height       mm         Withh       Sold         Popth       mm         Bage of protection (IP)       Imm         With NB       Sold         Muth NB       Sold <tr< td=""><td>Number of HW-interfaces RS-485</td><td></td><td>1</td></tr<>   | Number of HW-interfaces RS-485              |    | 1           |
| Number of HW-interfaces parallel       I   | Number of HW-interfaces serial TTY          |    | 0           |
| Number of HW-interfaces other       Image: Status of the sta         | Number of HW-interfaces USB                 |    | 0           |
| With optical interfaceNoWith PC connectionMoIntegrated breaking resistanceMo4-quadrant operation possibleNoType of converterMoDegree of protection (IP)MoHeightMoWith PCMoDepthMoDepthMoBelaive symmetric net frequency tolerance%Sector Stream%Sector Stream% <td>Number of HW-interfaces parallel</td> <td></td> <td>0</td>  | Number of HW-interfaces parallel            |    | 0           |
| With PC connection     No       Integrated breaking resistance     No       4-quadrant operation possible     No       Type of converter     Vo       Degree of protection (IP)     Vo       Height     mm       Vithh     mm       Depth     mm       Best of the symmetric net frequency tolerance     Mit       Set of the symmetric net frequency tolerance     Mit  | Number of HW-interfaces other               |    | 0           |
| Integrated breaking resistance     Mo       4-quadrant operation possible     Mo       Type of converter     Mo       Degree of protection (IP)     Imm       Height     mm       Width     Mn       Depth     mm       Betwee of protection (IP)     Mo   | With optical interface                      |    | No          |
| 4-quadrant operation possibleNoType of converterU converterDegree of protection (IP)ImmHeightmmWidthmmDepthmmRelative symmetric net frequency tolerance%Main%<   | With PC connection                          |    | No          |
| Type of converter     Image: Converter     Image: Converter       Degree of protection (IP)     Image: Converter     IP20       Height     Image: Converter     S0       Width     Image: Converter     S0       Depth     Image: Converter     Image: Converter       Relative symmetric net frequency tolerance     Image: Converter     Image: Converter  | Integrated breaking resistance              |    | No          |
| Degree of protection (IP)     IP20       Height     mm     230       Width     mm     45       Depth     mm     168       Relative symmetric net frequency tolerance     %     %   | 4-quadrant operation possible               |    | No          |
| Heightmm20Widthmm5Depthmm168Relative symmetric net frequency tolerance%%   | Type of converter                           |    | U converter |
| Widthmm45Depthmm168Relative symmetric net frequency tolerance%%  | Degree of protection (IP)                   |    | IP20        |
| Depth     mm     168       Relative symmetric net frequency tolerance     %     5  | Height                                      | mm | 230         |
| Relative symmetric net frequency tolerance % 5   | Width                                       | mm | 45          |
|  | Depth                                       | mm | 168         |
| Relative symmetric net current tolerance % 10  | Relative symmetric net frequency tolerance  | %  | 5           |
|  | Relative symmetric net current tolerance    | %  | 10          |

### **Approvals**

| - PP                                 |   |
|--------------------------------------|---|
| Product Standards                    | UL 508C; CSA-C22.2 No. 14; IEC/EN61800-3; IEC/EN61800-5; CE marking |
| UL File No.                          | E172143   |
| UL Category Control No.              | NMMS, NMMS7   |
| CSA File No.                         | UL report applies to both US and Canada                             |
| North America Certification          | UL listed, certified by UL for use in Canada                        |
| Specially designed for North America | No  |
| Suitable for                         | Branch circuits   |
| Max. Voltage Rating                  | 1~ 240 V AC IEC: TN-S UL/CSA: "Y" (Solidly Grounded Wey)            |
| Degree of Protection                 | IEC: IP20   |
|                                      |   |



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