Variable speed starter, Rated operational voltage 400 V AC, 3-phase, le 16 A, 7.5 kW, 10 HP, Radio interference suppression filter



DE1-34016FN-N20N Part no.

174340

EL Number (Norway)

4110104

(Norway)	
General specifications	
Product name	Eaton DE1 Variable speed starter
Part no.	DE1-34016FN-N20N
EAN	4015081708024
Product Length/Depth	169 millimetre
Product height	230 millimetre
Product width	90 millimetre
Product weight	1.6 kilogram
Compliances	Contact Manufacturer
Certifications	Safety requirements: IEC/EN 61800-5-1 UL 508C UL File No.: E172143 IEC/EN61800-5 CUL RoHS, ISO 9001 CSA-C22.2 No. 14 UL Category Control No.: NMMS, NMMS7 Certified by UL for use in Canada CE IEC/EN61800-3 IEC/EN 61800-3 UL report applies to both US and Canada RCM UL Specification for general requirements: IEC/EN 61800-2
Product Tradename	DE1
Product Type	Variable speed starter
Product Sub Type	None
Catalog Notes	Overload cycle for 60 s every 600 s
Features & Functions	
Features	Parameterization: drivesConnect Parameterization: drivesConnect mobile (App) Parameterization: Fieldbus Parameterization: Keypad
Fitted with:	PC connection Radio interference suppression filter
General information	
Cable length	$C2 \leq 10$ m, Radio interference level, maximum motor cable length $C3 \leq 25$ m, Radio interference level, maximum motor cable length
Communication interface	Modbus RTU, built in OP-Bus (RS485), built in
Connection to SmartWire-DT	In conjunction with DX-NET-SWD3 SmartWire DT module Yes
Degree of protection	IP20 NEMA Other
Electromagnetic compatibility	1st and 2nd environments (according to EN 61800-3)
Frame size	FS2
Product category	Variable speed starter
Protection	Finger and back-of-hand proof, Protection against direct contact (BGV A3, VBG4)
Protocol	MODBUS EtherNet/IP Other bus systems
Radio interference class	C2, C3: depending on the motor cable length, the connected load, and ambient conditions. External radio interference suppression filters (optional) may be necessary. Optional external radio interference suppression filter for longer motor cable lengths and for use in different EMC environments
Shock resistance	15 g, Mechanical, According to IEC/EN 60068-2-27, 11 ms
Suitable for	Branch circuits, (UL/CSA)

Vibration	Resistance: According to EN 61800-5-1
Climatic environmental conditions	
Altitude	Above 1000 m with 1 % derating per 100 m
	Max. 2000 m
Ambient operating temperature - min	-10 °C
Ambient operating temperature - max	60 °C
Ambient operating temperature at 150% overload - min	-10 °C
Ambient operating temperature at 150% overload - max	50 °C
Ambient operating temperature details	Derating between 50 °C and 60 °C: None if fPWM \leq 14 kHz up to a max. of 50 °C None if fPWM \leq 16 kHz up to a max. of 46 °C None if $l\# \leq$ 10.6 A and fPWM \leq 20 kHz None if $l\# \leq$ 14.9 A and fPWM \leq 10 kHz
Ambient storage temperature - min	-40 °C
Ambient storage temperature - max	70 °C
Climatic proofing	< 95 average relative humidity (RH), no condensation, no corrosion
Main circuit	
Heat dissipation at current/speed	116 W at 50% current and 0% speed 121 W at 50% current and 50% speed 126 W at 50% current and 90% speed 180 W at 100% current and 0% speed 198 W at 100% current and 50% speed 216 W at 100% current and 90% speed 78 W at 25% current and 50% speed 86 W at 25% current and 50% speed
Input current ILN at 150% overload	16.5 A
Leakage current at ground IPE - max	< 3.5 mA (AC-operated) < 10 mA (DC-operated)
Mains switch-on frequency	Maximum of one time every 30 seconds
Mains voltage - min	380 V
Mains voltage - max	480 V
Operating mode	U/f control Speed control with slip compensation
Output frequency - min	0 Hz
Output frequency - max	300 Hz
Output voltage (U2)	400 V AC, 3-phase 480 V AC, 3-phase
Overload current IL at 150% overload	24 A
Rated control supply voltage	10 V DC (Us, max. 0.2 mA)
Rated frequency - min	45 Hz
Rated frequency - max Rated operational current (Ie)	66 Hz
nateu operational current (1e)	16 A at 150% overload (at an operating frequency of 16 kHz and an ambient air temperature of +50 °C)
Rated operational power at 380/400 V, 50 Hz, 3-phase	7.5 kW
Rated operational voltage	400 V AC, 3-phase 480 V AC, 3-phase
Resolution	0.025 Hz (Frequency resolution, setpoint value)
Short-circuit protection rating	25 A, UL (Class CC or J), Safety device (fuse or miniature circuit-breaker), Power Wiring
Starting current - max	200 %, IH, max. starting current (High Overload), For 1.875 seconds every 600 seconds, Power section
Supply frequency	50/60 Hz
Switching frequency	16 kHz, 4 - 32 kHz adjustable (audible), fPWM, Power section, Main circuit
Voltage rating - max	480 V
Motor rating	
Assigned motor current IM at 220 - 240 V, 60 Hz, 150% overload	14 A
Assigned motor current IM at 230 V, 50 Hz, 150% overload	15.2 A
Assigned motor current IM at 400 V, 50 Hz, 150% overload	15.2 A
Assigned motor current IM at 440 - 480 V, 60 Hz, 150% overload	14 A
Assigned motor power at 230/240 V, 60 Hz, 1-phase	10 HP
Assigned motor power at 460/480 V, 60 Hz, 3-phase	10 HP

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10.7 Internal electrical circuits and connections 1s the panel builder's responsibility. 10.9.2 Power-frequency electric strength 1s the panel builder's responsibility. 1s the panel builder is responsibility. 1n panel builder is responsibility.	10.5 Protection against electric shock	Does not apply, since the entire switchgear needs to be evaluated.
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10.10 Temperature rise The panel builder is responsible for the temperature rise calculation. Eaton provide heat dissipation data for the devices. 10.11 Short-circuit rating Is the panel builder's responsibility. The specifications for the switchgear robserved. 10.12 Electromagnetic compatibility Is the panel builder's responsibility. The specifications for the switchgear robserved. 10.13 Mechanical function The device meets the requirements, provided the information in the instruction	10.9.3 Impulse withstand voltage	Is the panel builder's responsibility.
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observed. 10.13 Mechanical function The device meets the requirements, provided the information in the instruc	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 9.0

Low-voltage industrial components (EG000017) / Frequency converter =< 1 kV (EC001857) Electric engineering, automation, process control engineering / Electrical drive / Static frequency converter / Static frequency / Servo converter = < 1 kV (ecl@ss13-27-02-31-01 [AKE177019]) ٧ 380 - 480 Mains voltage 50/60 Hz Mains frequency Number of phases input 3 Number of phases output 3 Max. output frequency Hz 300 500 Max. output voltage ٧ 16 Nominal output current I2N Α Max. output at quadratic load at rated output voltage kW 7.5 kW 7.5 Max. output at linear load at rated output voltage Power consumption W 240 Relative symmetric net frequency tolerance 10

Relative symmetric net voltage tolerance	%	10
Number of analogue outputs	70	0
Number of analogue inputs		1
Number of digital outputs		0
Number of digital inputs		4
With control element		No
Application in industrial area permitted		Yes
Application in domestic- and commercial area permitted		Yes
Supporting protocol for TCP/IP		No
Supporting protocol for PROFIBUS		No
Supporting protocol for CAN		No
Supporting protocol for INTERBUS		No
		No
Supporting protocol for ASI Supporting protocol for KNX		No
Supporting protocol for Modbus Supporting protocol for Data-Highway		Yes No
		No
Supporting protocol for SUCONET		No No
Supporting protocol for SUCONET		No No
Supporting protocol for LON Supporting protocol for PROFINET IO		No
Supporting protocol for PROFINET CBA		No No
Supporting protocol for SERCOS Supporting protocol for Equadation Fieldhus		No No
Supporting protocol for Foundation Fieldbus		No Voa
Supporting protocol for EtherNet/IP		Yes
Supporting protocol for AS-Interface Safety at Work		No No
Supporting protocol for DeviceNet Safety		No No
Supporting protocol for INTERBUS-Safety		No No
Supporting protocol for PROFIsafe		No No
Supporting protocol for SafetyBUS p		No No
Supporting protocol for BACnet		No V
Supporting protocol for other bus systems		Yes
Number of HW-interfaces industrial Ethernet		0
Number of interfaces PROFINET		0
Number of HW-interfaces RS-232		0
Number of HW-interfaces RS-422		0
Number of HW-interfaces RS-485		1
Number of HW-interfaces serial TTY		0
Number of HW-interfaces USB		0
Number of HW-interfaces parallel		0
Number of HW-interfaces other		0
With optical interface		No V
With PC connection		Yes
Integrated breaking resistance		No
4-quadrant operation possible		No
Type of converter		U converter
Degree of protection (IP)		IP20
Degree of protection (NEMA)		Other
Height	mm	230
Width	mm	90
Depth	mm	169