Variable speed starter, Rated operational voltage 230 V AC, 1-phase, le 4.3 A, 0.75 kW, 1 HP, Radio interference suppression filter



Part no. DE1-124D3FN-N20N

174330

EL Number /Norwow\

4110094

(Norway)	
General specifications	
Product name	Eaton DE1 Variable speed starter
Part no.	DE1-124D3FN-N20N
EAN	4015081707928
Product Length/Depth	169 millimetre
Product height	230 millimetre
Product width	45 millimetre
Product weight	1.06 kilogram
Certifications	IEC/EN 61800-3 CE IEC/EN61800-3 UL File No.: E172143 CSA-C22.2 No. 14 Specification for general requirements: IEC/EN 61800-2 ROHS, ISO 9001 UL report applies to both US and Canada RCM Certified by UL for use in Canada UL IEC/EN61800-5 UL Category Control No.: NMMS, NMMS7 UL 508C CUL Safety requirements: IEC/EN 61800-5-1
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:	Radio interference suppression filter PC connection
General information	
Cable length	$C1 \le 5$ m, Radio interference level, maximum motor cable length $C2 \le 10$ m, Radio interference level, maximum motor cable length $C3 \le 25$ m, Radio interference level, maximum motor cable length
Communication interface	OP-Bus (RS485), built in Modbus RTU, built in
Connection to SmartWire-DT	Yes In conjunction with DX-NET-SWD3 SmartWire DT module
Degree of protection	IP20 NEMA Other
Electromagnetic compatibility	1st and 2nd environments (according to EN 61800-3)
Frame size	FS1
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	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. 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	Max. 2000 m
Ambient operating temperature - min	Above 1000 m with 1 % derating per 100 m
Ambient operating temperature - max	60 °C
Ambient operating temperature at 150% overload - min	-10 °C
Ambient operating temperature at 150% overload - max	60 °C
	-40 °C
Ambient storage temperature - min	70 °C
Ambient storage temperature - max Climatic proofing	
· · ·	< 95 average relative humidity (RH), no condensation, no corrosion
Main circuit	
Heat dissipation at current/speed	10.3 W at 25% current and 0% speed 10.3 W at 25% current and 50% speed 10.9 W at 50% current and 0% speed 12.3 W at 50% current and 50% speed 15.3 W at 50% current and 90% speed 28.9 W at 100% current and 50% speed 30.9 W at 100% current and 90% speed 31.8 W at 100% current and 90% speed
Input current ILN at 150% overload	11.3 A
Leakage current at ground IPE - max	< 10 mA (DC-operated) < 3.5 mA (AC-operated)
Mains switch-on frequency	Maximum of one time every 30 seconds
Mains voltage - min	200 V
Mains voltage - max	240 V
Operating mode	Speed control with slip compensation U/f control
Output frequency - min	0 Hz
Output frequency - max	300 Hz
Output voltage (U2)	240 V AC, 3-phase 230 V AC, 3-phase
Overload current IL at 150% overload	6.45 A
Rated control supply voltage	10 V DC (Us, max. 0.2 mA)
Rated frequency - min	45 Hz
Rated frequency - max	66 Hz
Rated operational current (Ie)	4.3 A at 150% overload (at an operating frequency of 16 kHz and an ambient air temperature of +50 °C)
Rated operational power at 220/230 V, 50 Hz, 1-phase	0.75 kW
Rated operational voltage	230 V AC, 1-phase 240 V AC, 1-phase
Resolution	0.025 Hz (Frequency resolution, setpoint value)
Short-circuit protection rating	15 A, UL (Class CC or J), Safety device (fuse or miniature circuit-breaker), Powe
Starting current - max	Wiring 200 %, IH, max. starting current (High Overload), For 1.875 seconds every 600
Supply fraguancy	seconds, Power section 50/60 Hz
Supply frequency	
Switching frequency	16 kHz, 4 - 32 kHz adjustable (audible), fPWM, Power section, Main circuit
Voltage rating - max	240 V
Motor rating	
Assigned motor current IM at 220 - 240 V, 60 Hz, 150% overload	3.2 A
Assigned motor current IM at 230 V, 50 Hz, 150% overload	3.2 A
Assigned motor current IM at 400 V, 50 Hz, 150% overload	3.2 A
Assigned motor current IM at 440 - 480 V, 60 Hz, 150% overload	3.2 A
Assigned motor power at 230/240 V, 60 Hz, 1-phase	1 HP
Assigned motor power at 460/480 V, 60 Hz, 3-phase	1 HP
Apparent power	
Apparent power at 230 V	1.71 kV·A
Apparent power at 240 V	1.79 kV·A
Braking function	
Braking torque	Max. 30 % MN, Standard - Main circuit

	Adjustable to 100 %, DC - Main circuit
Control circuit	
Number of inputs (analog)	1 (parameterizable, 0 - 10 V DC, 0/4 - 20 mA)
Number of inputs (digital)	4 (parameterizable, 10 - 30 V DC)
Number of outputs (analog)	0
Number of outputs (digital)	0
Number of relay outputs	1 (parameterizable, N/O, 6 A (250 V, AC-1) / 5 A (30 V, DC-1))
Design verification	
Equipment heat dissipation, current-dependent Pvid	32 W
Heat dissipation capacity Pdiss	0 W
Heat dissipation per pole, current-dependent Pvid	0 W
Rated operational current for specified heat dissipation (In)	4.3 A
Static heat dissipation, non-current-dependent Pvs	0 W
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 Resist. of insul. mat. to abnormal heat/fire by internal elect. 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.
10.9.2 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 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])

Electric engineering, automation, process control engineering / Electrical unive / Sta	alic irequericy converter	/ Static frequency / Servo converter = < 1 kV (eci@5515-27-02-51-01 [ARE177015])
Mains voltage	V	200 - 240
Mains frequency		50/60 Hz
Number of phases input		1
Number of phases output		3
Max. output frequency	Hz	300
Max. output voltage	V	250
Nominal output current I2N	Α	4.3
Max. output at quadratic load at rated output voltage	kW	0.75
Max. output at linear load at rated output voltage	kW	0.75
Power consumption	W	32
Relative symmetric net frequency tolerance	%	10
Relative symmetric net voltage tolerance	%	10
Number of analogue outputs		0
Number of analogue inputs		1
Number of digital outputs		0

With control olement No Application in industrial area permitted Yea Application in industrial area permitted Yea Supporting protocol for TCPIP No Supporting protocol for TCPIPS No Supporting protocol for TCNIP No Supporting protocol for TCNIP No Supporting protocol for TCNIP No Supporting protocol for INTERBUS No Supporting protocol for INTERBUS No Supporting protocol for Modulus Yea Supporting protocol for SUCONET No Supporting protocol for TRUTHER TUB Yea Supporting protocol for FRORET TO No Supporting protocol for FRORET TO No Supporting protocol for Tellenter Subset No Supporting protocol for Tellenter Subset No Supporting protocol for Tellenter Subset			
Application in infustrial area permitted Yes Application in infustrial area permitted Yes Supporting probes for TOPP No Supporting probes for TOPP No Supporting probes for EAN No Supporting probes for INTERIUS No Supporting pr	Number of digital inputs		4
Application in damastic- and commercial area permitted Supporting praces for TCP/IP	With control element		No
Supporting protocol for PRDFIBUS No Supporting protocol for CAN No Supporting protocol for INTERBUS No Supporting protocol for ASI No Supporting protocol for KNCX No Supporting protocol for ENX No Supporting protocol for Data-Highway No Supporting protocol for ENX No Supporting protocol for SUDINET No Supporting protocol for SUDINET No Supporting protocol for SERIOS No Supporting protocol for FORFINET CBA No Supporting protocol for SERIOS No Supporting protocol for SE	Application in industrial area permitted		Yes
Supporting protocol for PROFIBUS No Supporting protocol for CAN No Supporting protocol for KMX No Supporting protocol for Data-Highway No Supporting protocol for PEDRHETE DA No Supporting protocol for PEDRHETE DA No Supporting protocol for FERDES No Supporting protocol for FerDRHETE DA No Supporting protocol for Pedrelated Safety at Work No Supporting protocol for Pedrelated Safety No Supporting protocol for PROFESEI No Supporting protocol	Application in domestic- and commercial area permitted		Yes
Supporting protect for CAN No Supporting protect for INTERBUS No Supporting protect for KNX No Supporting protect for KNXX No Supporting protect for Modbus No Supporting protect for SUCONET No Supporting protect for SUCONET No Supporting protect for FDROFINET CDA No Supporting protect for PDROFINET CDA No Supporting protect for FDROFINET CDA No Supporting protect for PDROFINET CDA No Supporting protect for PDROFIN	Supporting protocol for TCP/IP		No
Supporting protocol for INTERBUS No. Supporting protocol for ASI No. Supporting protocol for Medius Yes Supporting protocol for Dratt-Highway No. Supporting protocol for Dratt-Highway No. Supporting protocol for Dratt-Highway No. Supporting protocol for SUCINET No. Supporting protocol for SUCINET No. Supporting protocol for FDRIFIET ID No. Supporting protocol for SERCOS No. Supporting protocol for FDRIFIET ID No. Supporting protocol for PDRIFIET ID ID N	Supporting protocol for PROFIBUS		No
Supporting protocel for KIXX No Supporting protocel for KIXX No Supporting protocel for Modeus Yes Supporting protocel for Device Net No Supporting protocel for Device Net No Supporting protocel for Device Net No Supporting protocel for EUCN No Supporting protocel for FURTHS ID No Supporting protocel for FROFINET EBA No Supporting protocel for FORDINET EBA No Supporting protocel for Foundation Fieldbus No Supporting protocel for Policia Net Suffey No Supporting protocel for Policia Net Suffey No Supporting protocel for SuffeyBUS p No Supporting protocel for SuffeyBUS p No Supporting protocel for SuffeyBUS p	Supporting protocol for CAN		No
Supporting protocol for KNXX Yas Supporting protocol for Modubus No Supporting protocol for DeviceNet 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 PROFINET CBA No Supporting protocol for PROFINET CBA No Supporting protocol for SEROS No Supporting protocol for SEROS No Supporting protocol for Poundstain Fieldbus No Supporting protocol for SEROS No Supporting protocol for Poundstain Fieldbus No Supporting protocol for SEROS No Supporting protocol for Poundstain Fieldbus No Supporting protocol for SEROS No Supporting protocol for DeviceNet SEROS No Supporting protocol for PROFISEI No Supporting protocol for Seros SEROS No Supporting protocol for Seros SEROS No Supporting protocol for Seros SEROS No Supporting protocol for S	Supporting protocol for INTERBUS		No
Supporting protocol for Data-Highway Supporting protocol for Data-Highway Supporting protocol for Data-Highway Supporting protocol for Data-Highway Supporting protocol for LON Supporting protocol for LON Supporting protocol for PROFINET IO Supporting protocol for FRORINET IO Supporting protocol for Developed Safety at Work Supporting protocol for Developed Safety Supporting protocol for Developed Safety Supporting protocol for Developed Safety Supporting protocol for PROFISafe Supporting protocol for BALL Safety Supporting protocol for Safety Sully Supporting protocol for BALL Safety Supporting protocol for Safety Sully Supporting protocol for BALL Safety Supporting protocol for Safety Sully Supporting protocol for BALL Safety Supporting protocol for Safety Sully Supporting Safety Sul	Supporting protocol for ASI		No
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Supporting protocol for SUCONET No Supporting protocol for PROFINET IO No Supporting protocol for PROFINET GBA No Supporting protocol for PROFINET GBA No Supporting protocol for FRECOS No Supporting protocol for FROWARD No Supporting protocol for EtherWelt/P Yes Supporting protocol for DeviceNet Safety at Work No Supporting protocol for DeviceNet Safety No Supporting protocol for INTERBUS-Safety No Supporting protocol for INTERBUS-Safety No Supporting protocol for PROFISE No Supporting protocol for PROFISE No Supporting protocol for PROFISE No Supporting protocol for DeviceNet Safety No Supporting protocol for PROFISE No Supporting protocol for PROFISE No Supporting protocol for DeviceNet Safety No Number of HW-interfaces industrial Ethernet No Number of HW-interfaces RS-428 1 Number of HW-interfaces RS-428 1 Number of HW-interfaces serial No Nu	Supporting protocol for Data-Highway		No
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Supporting protocol for PROFINET ID No Supporting protocol for PROFINET CBA No Supporting protocol for SERCOS No Supporting protocol for Ebundheid Fieldbus No Supporting protocol for Fundation Fieldbus No Supporting protocol for Ebundheit Fieldbus No Supporting protocol for AS-Interface Safety at Work No Supporting protocol for Device, Next Safety No Supporting protocol for INTERBUS-Safety No Supporting protocol for SafetyBUS Safety No Number of HW-interfaces Reveals SafetyBUS Safety Number of HW-interfaces BROFINET 0 Number of HW-interfaces Safety Safety 0 Number	Supporting protocol for SUCONET		No
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Supporting protocol for Foundation Fieldbus Supporting protocol for EtherNavIP Supporting protocol for EtherNavIP Supporting protocol for DeviceNet Safety at Work Supporting protocol for DeviceNet Safety Supporting protocol for INTERBUS-Safety Supporting protocol for PROFIsafe Supporting protocol for SafetyBUS p Supporting protocol for BACnet Supporting protocol for BACnet Supporting protocol for SafetyBUS p Supporting protocol for HW-interfaces industrial Ethernet Supporting protocol for HW-interfaces industrial Ethernet Supporting protocol for HW-interfaces RS-322 Supporting protocol for HW-interfaces RS-422 Supporting protocol for HW-interfaces RS-422 Supporting protocol for HW-interfaces RS-425 Supporting prot	Supporting protocol for PROFINET CBA		No
Supporting protocol for EtherNeVIP Yes Supporting protocol for AS-Interface Safety at Work No Supporting protocol for DeviceNet Safety No Supporting protocol for PROFIsafe No Supporting protocol for PROFIsafe No Supporting protocol for SafetyBUS p No Supporting protocol for BACnet No Supporting protocol for other bus systems Yes Number of HW-interfaces industrial Ethernet 0 Number of HW-interfaces PROFINET 0 Number of HW-interfaces RS-422 0 Number of HW-interfaces RS-422 0 Number of HW-interfaces RS-428 0 Number of HW-interfaces Sarial TTY 0 Number of HW-interfaces sarial TTY 0 Number of HW-interfaces stafe 0 Vith potical interface No	Supporting protocol for SERCOS		No
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Supporting protocol for PROFIsafe Supporting protocol for SafetyBUS p Supporting protocol for BACnet Supporting protocol for other bus systems Supporting protocol for other bus systems Number of HW-interfaces industrial Ethernet O Number of HW-interfaces RS-232 Number of HW-interfaces RS-422 Number of HW-interfaces RS-428 Number of HW-interfaces RS-488 Number of HW-interfaces Systems N	Supporting protocol for DeviceNet Safety		No
Supporting protocol for SafetyBUS p No Supporting protocol for BACnet No Supporting protocol for other bus systems Yes Number of HW-interfaces industrial Ethernet 0 Number of HW-interfaces RS-232 0 Number of HW-interfaces RS-232 0 Number of HW-interfaces RS-485 1 Number of HW-interfaces RS-485 0 Number of HW-interfaces serial TTY 0 Number of HW-interfaces aprallel 0 Number of HW-interfaces aprallel 0 Number of HW-interfaces other 0 With optical interface No With pC connection Yes 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) mm 230 Width mm 45	Supporting protocol for INTERBUS-Safety		No
Supporting protocol for BACnet No 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 other 0 With optical interface No With optical interface other No With Optical interface No U converter No Degree of protection (IP) U converter Degree of protection (NEMA) With Optical interface	Supporting protocol for PROFIsafe		No
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 other 0 With optical interface No With optical interface No With Optical interface No 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 Witth mm 45	Supporting protocol for SafetyBUS p		No
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Number of HW-interfaces RS-232 0 Number of HW-interfaces RS-422 1 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 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) mm 230 Width mm 45	Number of HW-interfaces industrial Ethernet		0
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Number of HW-interfaces other With optical interface With PC connection With PC connection Integrated breaking resistance Integrated breaking possible Aquadrant operation possible Type of converter Degree of protection (IP) Degree of protection (NEMA) Height Width Integrated breaking resistance No Voconverter U converter IP20 Other mm 230 mm 45	Number of HW-interfaces USB		0
With optical interface With PC connection With PC connection Ves Integrated breaking resistance Integrated operation possible Vequadrant operation possible Vegree of protection (IP) Degree of protection (NEMA) Width Width No Type of converter U converter IP20 Uther Width Mm 230 Width Mm 45	Number of HW-interfaces parallel		0
With PC connection Integrated breaking resistance Integrated	Number of HW-interfaces other		0
Integrated breaking resistance 4-quadrant operation possible No Type of converter U converter Degree of protection (IP) Degree of protection (NEMA) Height Midth No No Vonverter U converter Other Have a substitute of the substitu	With optical interface		No
A-quadrant operation possible Type of converter Degree of protection (IP) Degree of protection (NEMA) Height Width No U converter IP20 Other Associated in mm 230 mm 45	With PC connection		Yes
Type of converter Degree of protection (IP) Degree of protection (NEMA) Height Mm Width U converter U converter U converter U converter Degree of protection (NEMA) Nther Where Mm Width Mm Width	Integrated breaking resistance		No
Degree of protection (IP) Degree of protection (NEMA) Height mm 230 Width mm 45	4-quadrant operation possible		No
Degree of protection (NEMA) Height mm 230 Width mm 45	Type of converter		U converter
Height mm 230 Width mm 45	Degree of protection (IP)		IP20
Width mm 45	Degree of protection (NEMA)		Other
	Height	mm	230
Depth mm 169	Width	mm	45
	Depth	mm	169