

Variable speed starter, three-phase power supply connection, three-phase motor connection at 400 V, 3.6 A and 1.5 kW / 2 HP



Part no. DE1-343D6NN-N20N
Article no. 177367
Catalog No. DE1-343D6NN-N20N

Delivery program

Product range			Variable speed starter
Part group reference (e.g. DIL)			DE1
Rated operational voltage	U_e		400 V AC, 3-phase 480 V AC, 3-phase
Output voltage with V_e	U_2		400 V AC, 3-phase 480 V AC, 3-phase
Mains voltage (50/60Hz)	U_{LN}	V	380 (-10%) - 480 (+10%)
Rated operational current			
At 150% overload	I_e	A	3.6
Note			Rated operational current at an operating frequency of 16 kHz and an ambient air temperature of +50 °C
Note			Overload cycle for 60 s every 600 s
Assigned motor rating			
Note			for normal internally and externally ventilated 4 pole, three-phase asynchronous motors with 1500 rpm^{-1} at 50 Hz or 1800 min^{-1} at 60 Hz
Note			Overload cycle for 60 s every 600 s
Note			at 400 V, 50 Hz
150 % Overload	P	kW	1.5
150 % Overload	I_M	A	3.6
Note			at 440 - 480 V, 60 Hz
150 % Overload	P	HP	2
150 % Overload	I_M	A	3.4
Degree of Protection			IP20/NEMA 0
Interface/field bus (built-in)			OP-Bus (RS485)/Modbus RTU
Frame size			FS1
Connection to SmartWire-DT			with SmartWire-DT module DX-NET-SWD3

Technical data

General			
Standards			Specification for general requirements: IEC/EN 61800-2 EMC requirements: IEC/EN 61800-3 Safety requirements: IEC/EN 61800-5-1
Certifications			CE, UL, cUL, c-Tick
Production quality			RoHS, ISO 9001
Climatic proofing	ρ_w	%	< 95%, average relative humidity (RH), non-condensing, non-corrosive
Ambient temperature			
operation (150 % overload)	θ	°C	-10 - +50
			Derating between 50 °C and 60 °C: None if $f_{PWM} \geq 16 \text{ kHz}$ None if $I_e \leq 3.2 \text{ A}$ None up to a max. of 57 °C
Storage	θ	°C	-40 - +70
Radio interference level			

Radio interference class (EMC)			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
maximum motor cable length	l	m	C2 ≤ 10 m C3 ≤ 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 Above 1000 m: 1% derating for every 100 m 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_e		400 V AC, 3-phase 480 V AC, 3-phase
Mains voltage (50/60Hz)	U_{LN}	V	380 (-10%) - 480 (+10%)
Input current (150% overload)	I_{LN}	A	4.9
Supply frequency	f_{LN}	Hz	50/60
Frequency range	f_{LN}	Hz	45 - 66
Mains switch-on frequency			Maximum of one time every 30 seconds
Power section			
Overload current (150% overload)	I_L	A	5.4
max. starting current (High Overload)	I_H	%	200
Note about max. starting current			for 1.875 seconds every 600 seconds
Output voltage with V_e	U_2		400 V AC, 3-phase 480 V AC, 3-phase
Output Frequency	f_2	Hz	0 - 50/60 (max. 300)
Switching frequency	f_{PWM}	kHz	16 adjustable 4 - 32 (audible)
Operation Mode			U/f control Speed control with slip compensation
Frequency resolution (setpoint value)	Δf	Hz	0.025
Rated operational current			
At 150% overload	I_e	A	3.6
Note			Rated operational current at an operating frequency of 16 kHz and an ambient air temperature of +50 °C
Maximum leakage current to ground (PE) without motor	I_{PE}	mA	< 3,5 AC, < 10 DC
Frame size			FS1
Motor feeder			
Note			for normal internally and externally ventilated 4 pole, three-phase asynchronous motors with 1500 rpm ⁻¹ at 50 Hz or 1800 min ⁻¹ at 60 Hz
Note			Overload cycle for 60 s every 600 s
Note			at 400 V, 50 Hz
150 % Overload	P	kW	1.5
Note			at 440 - 480 V, 60 Hz
150 % Overload	P	HP	2
Apparent power			
Apparent power at rated operation 400 V	S	kVA	2.49
Apparent power at rated operation 480 V	S	kVA	2.99
Braking function			
Standard braking torque			max. 30 % M_N
DC braking torque			adjustable to 100 %

Control section

Reference voltage	U_s	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
Assigned switching and protective elements			
Power Wiring			
Safety device (fuse or miniature circuit-breaker)			
IEC (Type B, gG), 150 %			FAZ-B6/3
UL (Class CC or J)		A	6
Mains contactor			
150 % overload (CT/I _H , at 50 °C)			DILEM-...
110 % overload (VT/I _L , at 40 °C)			DILM7-...
Main choke			
150 % overload (CT/I _H , at 50 °C)			DX-LN3-006
Radio interference suppression filter (external, 150 %)			DX-EMC34-008
Radio interference suppression filter, low leakage currents (external, 150 %)			DX-EMC34-008-L
Note regarding radio interference suppression filter			Optional external radio interference suppression filter for longer motor cable lengths and for use in different EMC environments
Motor feeder			
motor choke			
150 % overload (CT/I _H , at 50 °C)			DX-LM3-005

Design verification as per IEC/EN 61439

Technical data for design verification			
Operating ambient temperature min.		°C	-10
Operating ambient temperature max.		°C	50

Technical data ETIM 6.0

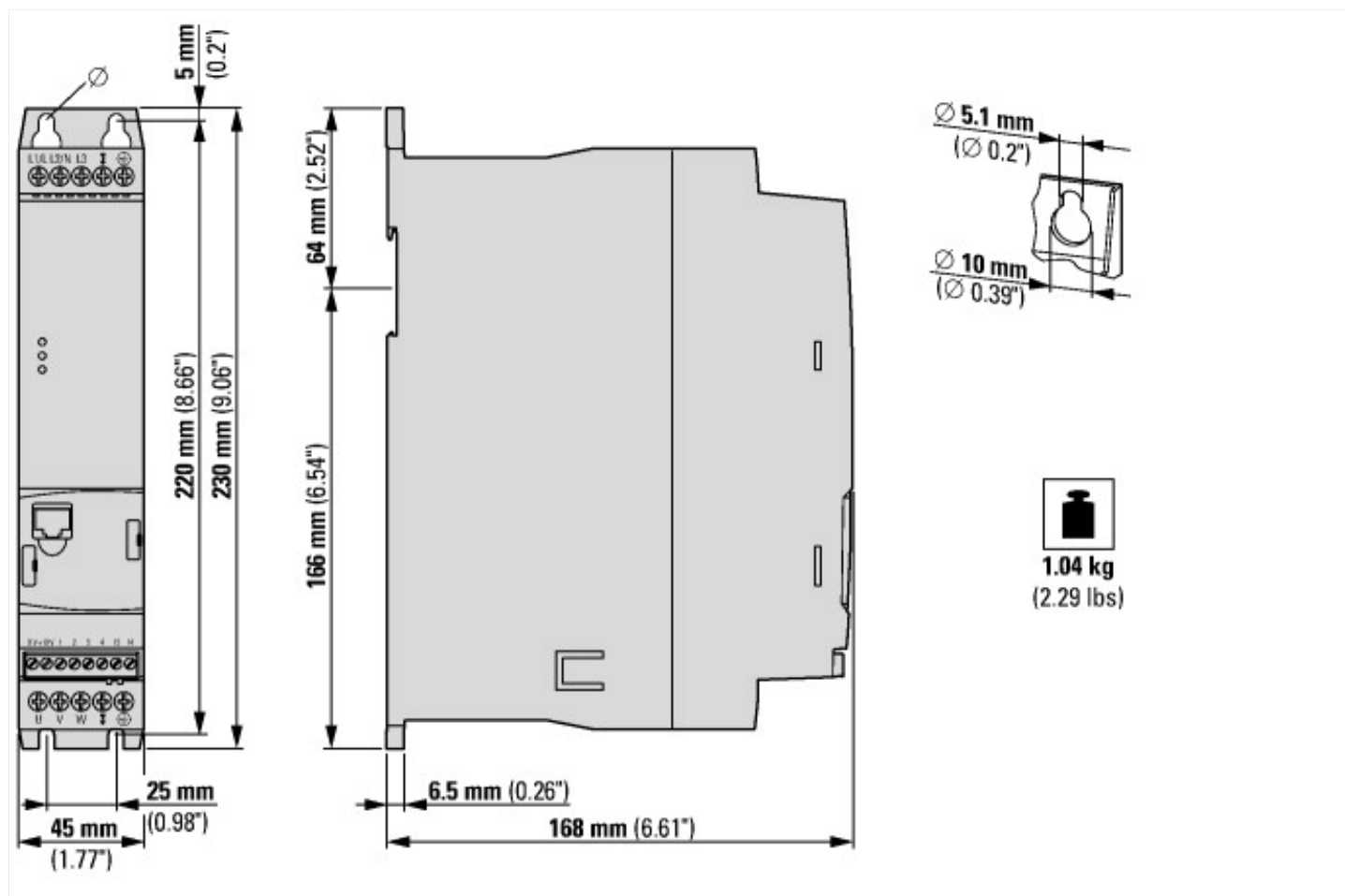
Low-voltage industrial components (EG000017) / Frequency converter =< 1 kv (EC001857)			
Electric engineering, automation, process control engineering / Electrical drive / Static frequency converter / Static frequency converter = < 1 kv (ecl@ss8.1-27-02-31-01 [AKE177011])			
Mains voltage		V	380 - 480
Mains frequency			50/60 Hz
Number of phases input			3
Number of phases output			3
Max. output frequency		Hz	300
Max. output voltage		V	480
Rated output current I _{2N}		A	3.6
Max. output at quadratic load at rated output voltage		kW	0.5
Max. output at linear load at rated output voltage		kW	0.5
With control unit			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
Supporting protocol for ASI			No
Supporting protocol for KNX			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 LON			No
Supporting protocol for PROFINET IO			No
Supporting protocol for PROFINET CBA			No
Supporting protocol for SERCOS			No
Supporting protocol for Foundation Fieldbus			No
Supporting protocol for EtherNet/IP			No

Supporting protocol for AS-Interface Safety at Work			No
Supporting protocol for DeviceNet Safety			No
Supporting protocol for INTERBUS-Safety			No
Supporting protocol for PROFI-safe			No
Supporting protocol for SafetyBUS p			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-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
With PC connection			Yes
Integrated breaking resistance			No
4-quadrant operation possible			No
Type of converter			U converter
Degree of protection (IP)			IP20
Height		mm	230
Width		mm	45
Depth		mm	168
Relative symmetric net frequency tolerance		%	5
Relative symmetric net current tolerance		%	10

Approvals

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			3~ 480 V AC IEC: TN-S UL/CSA: "Y" (Solidly Grounded Wey)
Degree of Protection			IEC: IP20

Dimensions



Additional product information (links)

IL040005ZU DE1 variable frequency drive

IL040005ZU DE1 variable frequency drive ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL040005ZU2016_03.pdf

MN040011 DE1 Variable speed starter, Manual

MN040011 Drehzahlstarter DE1, Handbuch - Deutsch ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN040011_DE.pdf

MN040011 DE1 Variable speed starter, Manual - English ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN040011_EN.pdf

MN040011 Démarreur à vitesse variable DE1, manuel d'utilisation - français ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN040011_FR.pdf

MN040011 Avviatore a velocità variabile DE1, Manuale - italiano ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN040011_IT.pdf

MN040011 DE1 Variable speed starter, Manual ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN040011_NO.pdf

MN040011 Rozrusznik silnikowy z regulacją prędkości DE1, podręcznik - polski ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN040011_PL.pdf

MN040011 DE1 Variable speed starter, Manual - русский ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN040011_RU.pdf

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