



Variable Frequency Drive, 1-/1- 115 V, 7.0 A, 0.5 kW



Part no. DC1-S17D0NN-A66N
Catalog No. 169498
Eaton Catalog No. DC1-S17D0NN-A66N

Delivery program

			This item will continue to be available for a limited time only and is being replaced by the following item: 186074, DC1-S17D0NN-A66CE1
Product range			Variable frequency drives
Part group reference (e.g. DIL)			DC1
Rated operational voltage	U _e		115 V AC, single-phase
Output voltage with V _e	U ₂		115 V AC, single-phase
Mains voltage (50/60Hz)	U _{LN}	V	110 (-10%) - 115 (+10%)
Rated operational current			
At 150% overload	I _e	A	7
Note			Rated operational current at a switching frequency of 16 kHz and an ambient air temperature of +40 °C
Note			Overload cycle for 60 s every 600 s
Assigned motor rating			
Note			For AC motors with internal and external ventilation with 50/60 Hz without additional start capacitor
Note			Overload cycle for 60 s every 600 s
Note			at 115 V, 50 Hz
150 % Overload	P	kW	0.37
150 % Overload	I _M	A	7
Note			at 110 - 120 V, 60 Hz
150 % Overload	P	HP	0.5
150 % Overload	I _M	A	5.8
Degree of Protection			IP66/NEMA 4X
Interface/field bus (built-in)			OP-Bus (RS485)/Modbus RTU, CANopen®
Fieldbus connection (optional)			SmartWire-DT
Fitted with			7-digital display assembly
Frame size			FS1
Connection to SmartWire-DT			with SmartWire-DT module DX-NET-SWD2

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, RCM, UkrSEPRO, EAC
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 - +40
Storage	θ	°C	-40 - +60
Mounting position			Vertical
Altitude		m	0 - 1000 m above sea level Above 1000 m: 1% derating for every 100 m max. 4000 m
Degree of Protection			IP66/NEMA 4X
Protection against direct contact			BGV A3 (VBG4, finger- and back-of-hand proof)

Main circuit

Supply			
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Rated operational voltage	U_e		115 V AC, single-phase
Mains voltage (50/60Hz)	U_{LN}	V	110 (-10%) - 115 (+10%)
Input current (150% overload)	I_{LN}	A	12.9
System configuration			AC supply systems with earthed center point
Supply frequency	f_{LN}	Hz	50/60
Frequency range	f_{LN}	Hz	48 - 62
Mains switch-on frequency			Maximum of one time every 30 seconds
Power section			
Function			Frequency inverter with internal DC link and IGBT inverter
Overload current (150% overload)	I_L	A	10.5
max. starting current (High Overload)	I_H	%	175
Note about max. starting current			for 2 seconds every 20 seconds
Output voltage with V_e	U_2		115 V AC, single-phase
Output Frequency	f_2	Hz	0 - 50/60 (max. 120)
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	0.1
Rated operational current			
At 150% overload	I_e	A	7
Note			Rated operational current at a switching frequency of 16 kHz and an ambient air temperature of +40 °C
Power loss			
Heat dissipation at rated operational current $I_e = 150\%$	P_V	W	18.5
Efficiency	η	%	95
Maximum leakage current to ground (PE) without motor	I_{PE}	mA	2.49
Fitted with			7-digital display assembly
Frame size			FS1
Motor feeder			
Note			For AC motors with internal and external ventilation with 50/60 Hz without additional start capacitor
Note			Overload cycle for 60 s every 600 s
Note			at 115 V, 50 Hz
150 % Overload	P	kW	0.37
Note			at 110 - 120 V, 60 Hz
150 % Overload	P	HP	0.5
maximum permissible cable length	l	m	screened: 50 screened, with motor choke: 100 unscreened: 75 unscreened, with motor choke: 150
Braking function			
DC braking torque			adjustable to 100 %
Control section			
Reference voltage	U_s	V	10 V DC (max. 10 mA)
Analog inputs			2, parameterizable, 0 - 10 V DC, 0/4 - 20 mA
Analog outputs			1, parameterizable, 0 - 10 V
Digital inputs			4, parameterizable, max. 30 V DC
Digital outputs			1, parameterizable, 24 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®
Assigned switching and protective elements			
Power Wiring			
IEC (Type B, gG), 150 %			FAZ-B16/1N
UL (Class CC or J)		A	15
150 % overload (CT/ I_H , at 50 °C)			DX-LN1-018

Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	I_n	A	7
Heat dissipation per pole, current-dependent	P_{vid}	W	0
Equipment heat dissipation, current-dependent	P_{vid}	W	18.5
Static heat dissipation, non-current-dependent	P_{vs}	W	0
Heat dissipation capacity	P_{diss}	W	0
Operating ambient temperature max.		°C	-10
Operating ambient temperature max.		°C	40
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 5.0

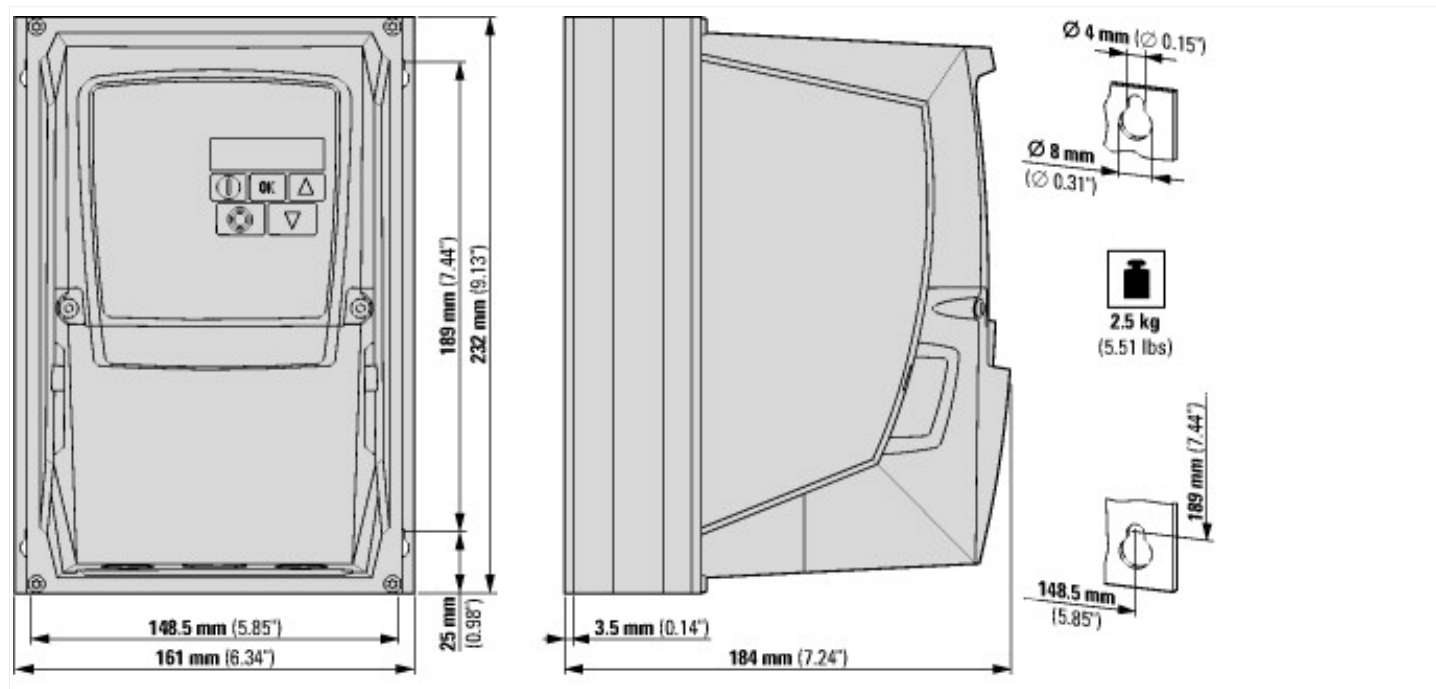
Low-voltage industrial components (EG000017) / Frequency controller =< 1 kV (EC001857)			
Electric engineering, automation, process control engineering / Electrical drive / Static frequency converter / Static frequency converter = < 1 kv (ecI@ss8-27-02-31-01 [AKE177010])			
Mains voltage		V	110 - 115
Mains frequency			50/60 Hz
Number of phases input			1
Number of phases output			1
Max. output frequency		Hz	500
Rated output voltage		V	115
Measuring output current		A	7
Output power at rated output voltage		kW	0.37
Max. output at quadratic load at rated output voltage		kW	0.37
Max. output at linear load at rated output voltage		kW	0.37
With control unit			Yes
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			Yes
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 PROFIsafe			No
Supporting protocol for SafetyBUS p			No
Supporting protocol for other bus systems			No
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			1
Number of HW-interfaces parallel			0
Number of HW-interfaces other			0
With optical interface			No
With PC connection			Yes
Integrated braking resistance			No
4-quadrant operation possible			No
Type of converter			U converter
Degree of protection (IP)			IP66
Height		mm	184
Width		mm	81
Depth		mm	124
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			1~ 120 V AC IEC: TN-S UL/CSA: "Y" (Solidly Grounded Wey)
Degree of Protection			IEC: IP66

Dimensions



Assets (Links)

Declaration of Conformity

00002521

Additional product information (links)

IL040001ZU DC1 variable frequency drive (FS1 - FS3, IP66)	
IL040001ZU DC1 variable frequency drive (FS1 - FS3, IP66)	ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL040001ZU2017_01.pdf
IL04020013Z Frequenzumrichter DC1 (FS1 - FS3, IP66)	ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL04020013Z2016_07.pdf
MN04020003Z DC1 variable frequency drives, Installation manual	
MN04020003Z Frequenzumrichter DC1, Installationshandbuch - Deutsch	ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN04020003Z_DE.pdf
MN04020003Z DC1 variable frequency drives, Installation manual - English	ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN04020003Z_EN.pdf
MN04020003Z Frekvenční měnič DC1, manuál Instalace - čeština	ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN04020003Z_CZ.pdf
MN04020003Z Convertitore di frequenza DC1, manuale Installazione - italiano	ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN04020003Z_IT.pdf
MN04020004Z DC1 variable frequency drives, Parameters manual	
MN04020004Z Frequenzumrichter DC1, Parameterhandbuch - Deutsch	ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN04020004Z_DE.pdf
MN04020004Z DC1 variable frequency drives, Parameters manual - English	ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN04020004Z_EN.pdf
CA04020001Z-EN Product Range Catalog: Efficient Engineering for Starting and Controlling Motors	http://www.eaton.eu/DE/ecm/groups/public/@pub/@europe/@electrical/documents/content/pct_1095238.pdf