

Variable Frequency Drive, 3-/3- 400 V, 2.2 A, 0.75 kW

Powering Business Worldwide*

Part no. DC1-342D2NN-A66N Article no. 169454 Catalog No. DC1-342D2NN-A66N

Technical data

Supply Rated operational voltage Rated operational voltage Mains voltage (50/050Hz) Un	General			
Production quality	Standards			EMC requirements: IEC/EN 61800-3
Climatic prouting	Certifications			CE, UL, cUL, c-Tick, UkrSepro, EAC
Ambient temperature operation 150 % overhead 0 0 ° C 10 - 40 Storage Mounting position	Production quality			RoHS, ISO 9001
Speciation (150 % overload)	Climatic proofing	ρ_{W}	%	< 95%, average relative humidity (RH), non-condensing, non-corrosive
Speciation (150 % overload)	Ambient temperature			
Storage Part		9	°C	-10 - +40
Manufang position	· · ·	9	°C	-40 - +60
Degree of Protection	Mounting position			Vertical
Protection against direct contact Main circuit Supply	Altitude		m	Above 1000 m: 1% derating for every 100 m
Main circuit Supply Us 480 V AC. 3-phase Rated operational voltage Us 480 V AC. 3-phase Mains voltage (\$0,000 kg) Us 300 V AC. 3-phase Mains voltage (\$0,000 kg) Us 3 5 System configuration AC supply systems with earthed centor point Supply frequency full Hz 50,00 Frequency range full Hz 50,00 Mains switch-on frequency full Hz 48 - 92 Mains switch-on frequency full Hz A3 Power section Frequency inverter with internal DC link and IGST inverter Power section Frequency inverter with internal DC link and IGST inverter Note about mass starting current full A 3.3 Move about mass starting current full Main Scale	Degree of Protection			IP66/NEMA 4X
Supply Rated operational voltage Rated operational voltage Mains voltage (50/050Hz) Un	Protection against direct contact			BGV A3 (VBG4, finger- and back-of-hand proof)
Reted operational voltage Mains voltage (50/00Hz) Input current (150% overload) System configuration Supply frequency Frequency range Mains writch-on frequency Power section Overload current (150% overload) In N A So (80 0 Ac supply systems with earthed center point Maximum of one time every 30 seconds Powers section Frequency range Function Overload current (150% overload) In N A 3.3 Trequency inverter with internal DC link and IGBT invertor Frequency inverto	Main circuit			
Mains voltage (50/60Hz)	Supply			
Input current (150% overload) System configuration Supply frequency fil Frequency range fil Mains witch-on frequency Overload current (150% overload) It Overload current (150%	Rated operational voltage	U _e		
System configuration Supply frequency Supply frequency In Hz Supply frequency In Supply frequency In Hz Supply frequency In S	Mains voltage (50/60Hz)	U _{LN}	V	380 (-10%) - 480 (+10%)
Supply frequency Frequency range final fin	Input current (150% overload)	I _{LN}	Α	3.5
Frequency range fix fix fix fix fix fix fix fi	System configuration			AC supply systems with earthed center point
Mains switch-on frequency Power section Function Overload current (150% overload) max. starting current (High Overload) Output voltage with Ve Output voltage with Ve Output requency Switching frequency Output frequency Output requency Output requency At 150% overload Fequency resolution (setpoint value) At 150% overload Power loss Power loss Heat dissipation at rated operational current I e = 150 % Mains witch-on frequency I Rated operational current to ground (PE) without motor I Reade operation of the current to ground (PE) without motor I Reade operation Power loss Fitted with Fitted with Fitted with Fitted with Fitted with Fitted with Fitted size Maximum of one time every 30 seconds Maximum leakage current in go seconds Maximum leakage current in go seconds Maximum leakage current in ground (PE) without motor Maximum leakage current to ground (PE) without motor Power loss Fitted with Fitted	Supply frequency	f _{LN}	Hz	50/60
Power section Function Overload current (150% overload) max. starting current (High Overload) Note about max. starting current Output voltage with Ve Output Frequency Output Frequency Switching frequency Operation Mode Operation Mode Frequency resolution (setpoint value) At 150% overload At 150% overload Power loss Heat dissipation at rated operational current I _e =150% Maximum leakage current to ground (PE) without motor Fitted with Frequency Frequency Frequency At 65 Frequency resolution (setpoint or ground (PE) without motor I per max size Frequency resolution (setpoint or ground (PE) without motor I per max size Frequency resolution (setpoint value) At 150% overload I per max size Frequency resolution (setpoint value) At 150% overload I per max size Fitted with Frequency Frequency resolution (setpoint value) At 150% overload I per max size Fitted with Frequency resolution (setpoint value) Frequency resolution (setpoint value) At 150% overload I per max size Fitted with Frequency resolution (setpoint value) Frequency resolution (setpoint value) Frequency resolution (setpoint value) Frequency resolution (setpoint value) At 150% overload Frequency resolution (setpoint value)	Frequency range	f _{LN}	Hz	48 - 62
Function Overload current (150% overload) IL A 3.3 max. starting current (High Overload) Note about max. starting current Output voltage with Ve Output Frequency Output Frequency Frequency Output Frequency Frequency Operation Mode Frequency resolution (setpoint value) At 150% overload At 150% overload At 150% overload Power loss Heat dissipation at rated operational current I _a = 150 % Frequency Maximum leakage current to ground (PE) without motor Frequency Frequency Power loss Frequency Maximum leakage current to ground (PE) without motor Frequency Frequency inverter with internal DC link and IGBT inverter 3.3 3.3 175 for 2 seconds every 20 seconds for 2 seconds every 20 seconds For 2 seconds every 20 seconds 400 V AC, 3-phase 480 V AC, 3-phase	Mains switch-on frequency			Maximum of one time every 30 seconds
Overload current (150% overload) max. starting current (High Overload) Note about max. starting current Output voltage with V _o Output voltage with V _o Output Prequency for 2 seconds every 20 seconds 400 V AC, 3-phase 480 V AC, 3-phase Output Frequency for 2 seconds every 20 seconds 400 V AC, 3-phase 480	Power section			
max. starting current (High Overload) Note about max. starting current Output voltage with Ve Output Frequency for 2 seconds every 20 seconds Output Frequency (Frequency Frequency Frequency Frequency Frequency Frequency Frequency Frequency Frequency frequency resolution (setpoint value) At 150% overload At 150% overload Ie Fower loss Heat dissipation at rated operational current Ie = 150 % Pv W 63.75 Efficiency n % 91.5 Maximum leakage current to ground (PE) without motor IpE mA A 6.5 Fitted with Frame size Fital display assembly Frame size	Function			Frequency inverter with internal DC link and IGBT inverter
Note about max. starting current Output voltage with Ve Output Frequency Fequency Switching frequency Frequency Frequency Operation Mode Frequency resolution (setpoint value) At 150% overload At 150% overload Power loss Heat dissipation at rated operational current I _e = 150 % Heat dissipation at rated operational current I _e = 150 % Frequency Maximum leakage current to ground (PE) without motor Frequency esconds for 2 seconds every 20 seconds 400 V AC, 3-phase 400 V AC, 4-phase 400 V AC, 4	Overload current (150% overload)	IL	Α	3.3
Note about max. starting current U2 400 V AC, 3-phase 480 V AC, 3-phase Output Frequency f2 Hz 0-50/60 (max. 500) Switching frequency fPWM kHz 16 adjustable 4-32 (audible) Operation Mode Uf control Speed control with slip compensation Frequency resolution (setpoint value) AF Hz 1 Rated operational current I A 2.2 Note Rated operational current at a switching frequency of 16 kHz and an ambient air temperature of +40 °C Rated operational current at a switching frequency of 16 kHz and an ambient air temperature of +40 °C Power loss V W 63.75 Heat dissipation at rated operational current I _e =150 % Pv W 63.75 Efficiency η % 91.5 Maximum leakage current to ground (PE) without motor Pe mA 4.65 Fitted with Fitted with Fitted with Fitted with Fitted with	max. starting current (High Overload)	IH	%	175
Output voltage with Ve 400 V AC, 3-phase 480 V AC, 3-phase 480 V AC, 3-phase Output Frequency f2 Hz 0 - 50/60 (max. 500) Switching frequency fPWM kHz 16 adjustable 4 - 32 (audible) Operation Mode Uf control Speed control with slip compensation Frequency resolution (setpoint value) Δf Hz 0.1 Rated operational current He A 2.2 Note Rated operational current at a switching frequency of 16 kHz and an ambient air temperature of +40 °C Power loss Rated operational current at a switching frequency of 16 kHz and an ambient air temperature of +40 °C Fifficiency η % 91.5 Maximum leakage current to ground (PE) without motor IPE mA 4.65 Fitted with 7-digital display assembly FS1	Note about max. starting current			for 2 seconds every 20 seconds
Switching frequency fpWM kHz l6 adjustable 4 - 32 (audible) U/f control Speed control with slip compensation Frequency resolution (setpoint value) At 150% overload At 150% overload Note Power loss Heat dissipation at rated operational current I _e = 150 % Efficiency Maximum leakage current to ground (PE) without motor Fitted with Frame size A Hz l6 adjustable 4 - 32 (audible) U/f control Speed control with slip compensation 2/2 0.1 At 2.2 Rated operational current at a switching frequency of 16 kHz and an ambient air temperature of +40 °C 8.3.75 MAXIMUM leakage current to ground (PE) without motor IPE MA A 65 7-digital display assembly FS1	-	U ₂		400 V AC, 3-phase
Operation Mode	Output Frequency	f ₂	Hz	0 - 50/60 (max. 500)
Frequency resolution (setpoint value) At 150% overload At 150% overload Note Power loss Heat dissipation at rated operational current I _e =150 % Efficiency Maximum leakage current to ground (PE) without motor Fitted with Frame size Speed control with slip compensation At 2.0. At 2.2 Rated operational current at a switching frequency of 16 kHz and an ambient air temperature of +40 °C Power loss Pv W 63.75 63.75 Maximum leakage current to ground (PE) without motor PE mA 4.65 Fitted with Frame size FS1	Switching frequency		kHz	
Rated operational current At 150% overload Note Power loss Heat dissipation at rated operational current I _e =150 % Efficiency Maximum leakage current to ground (PE) without motor Fitted with Frame size A 2.2 Rated operational current at a switching frequency of 16 kHz and an ambient air temperature of +40 °C Rated operational current at a switching frequency of 16 kHz and an ambient air temperature of +40 °C Rated operational current at a switching frequency of 16 kHz and an ambient air temperature of +40 °C Rated operational current at a switching frequency of 16 kHz and an ambient air temperature of +40 °C Rated operational current at a switching frequency of 16 kHz and an ambient air temperature of +40 °C Fitted with Pv W 63.75 65. 7-digital display assembly Frame size	Operation Mode			
At 150% overload Note Note Power loss Heat dissipation at rated operational current I _e =150 % Efficiency Maximum leakage current to ground (PE) without motor Fitted with Frame size A 2.2 Rated operational current at a switching frequency of 16 kHz and an ambient air temperature of +40 °C Rated operational current at a switching frequency of 16 kHz and an ambient air temperature of +40 °C Rated operational current at a switching frequency of 16 kHz and an ambient air temperature of +40 °C Rated operational current at a switching frequency of 16 kHz and an ambient air temperature of +40 °C 8.75 M. 4.65 7-digital display assembly FS1	Frequency resolution (setpoint value)	Δf	Hz	0.1
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 % Py W 63.75 Efficiency n % 91.5 Maximum leakage current to ground (PE) without motor IPE mA 4.65 Fitted with Frame size FS1	Rated operational current			
Frame size temperature of +40 °C temperatur	At 150% overload	I _e	Α	2.2
Heat dissipation at rated operational current I _e =150 % P _V W 63.75 Efficiency	Note			
Efficiency η % 91.5 Maximum leakage current to ground (PE) without motor P_{PE} mA 4.65 Fitted with 7-digital display assembly Frame size FS1	Power loss			
Maximum leakage current to ground (PE) without motor IPE mA 4.65 Fitted with 7-digital display assembly Frame size FS1	Heat dissipation at rated operational current $\rm I_{\rm e}$ =150 $\%$	P_V	W	63.75
Fitted with 7-digital display assembly Frame size FS1	Efficiency	η	%	91.5
Frame size FS1	Maximum leakage current to ground (PE) without motor	I _{PE}	mA	4.65
	Fitted with			7-digital display assembly
Motor feeder	Frame size			FS1
	Motor feeder			

Note			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	0.75
Note			at 440 - 480 V, 60 Hz
150 % Overload	P	HP	1
maximum permissible cable length	I	m	screened: 50 screened, with motor choke: 100 unscreened: 75 unscreened, with motor choke: 150
Apparent power			
Apparent power at rated operation 400 V	S	kVA	1.52
Apparent power at rated operation 480 V	S	kVA	1.83
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. 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-B6/3
UL (Class CC or J)		Α	6

DX-LN3-004

DX-LM3-005

DX-SIN3-004

for normal internally and externally ventilated 4 pole, three-phase asynchronous

Design verification as per IEC/EN 61439

150 % overload (CT/I_H, at 50 °C)

150 % overload (CT/I_H, at 50 °C)

150 % overload (CT/I_H, at 50 °C)

Motor feeder

Note

echnical data for design verification			
Rated operational current for specified heat dissipation	In	Α	2.2
Heat dissipation per pole, current-dependent	P _{vid}	W	0
Equipment heat dissipation, current-dependent	P _{vid}	W	63.75
Static heat dissipation, non-current-dependent	P_{vs}	W	0
Heat dissipation capacity	P _{diss}	W	0
Operating ambient temperature min.		°C	-10
Operating ambient temperature max.		°C	40
C/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 6.0

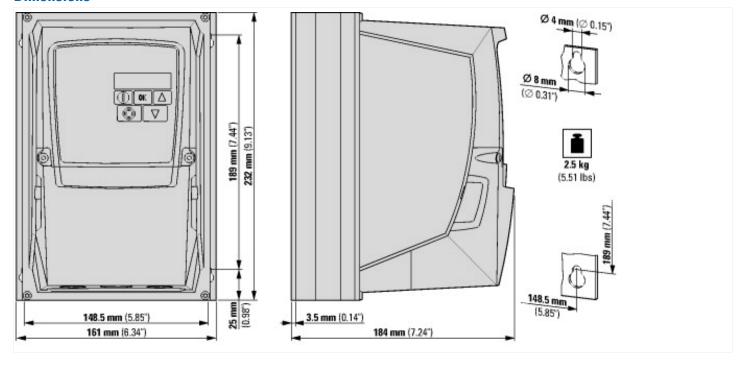
_ow-voltage industrial components (EG000017) / Frequency converter =< 1 kV (EC001857)		
Electric engineering, automation, process control engineering / Electrical drive / Static frequency	/ converter	/ Static frequency converter = < 1 kv (ecl@ss8.1-27-02-31-01 [AKE177011])
Mains voltage	V	380 - 480
Mains frequency		50/60 Hz
Number of phases input		3
Number of phases output		3
Max. output frequency	Hz	500
Max. output voltage	V	400
Rated output current I2N	Α	2.2
Max. output at quadratic load at rated output voltage	kW	0.75
Max. output at linear load at rated output voltage	kW	0.75
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 breaking resistance		No
4-quadrant operation possible		No
Type of converter		U converter
Degree of protection (IP)		IP66
Height	mm	232
Width	mm	161
Depth	mm	184
Relative symmetric net frequency tolerance	%	10
Relative symmetric net current tolerance	%	10

Approvals

- Physical Control of the Control of	
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: IP66

Dimensions



Additional product information (links)

IL04020013Z DC1 variable frequency drives (FS1 - FS3, IP66)

IL04020013Z DC1 variable frequency drives (FS1 ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL04020013Z2016_07.pdf - FS3, IP66)

MN04020003Z DC1 variable frequency drives, Installation manual

MN04020003Z Frequenzumrichter DC1, Handbuch - Deutsch ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN04020003Z_DE.pdf

MN04020003Z DC1 variable frequency drive, manual - English	ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN04020003Z_EN.pdf			
MN04020003Z Frekvenční měnič DC1, manuál - čeština	ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN04020003Z_CZ.pdf			
MN04020003Z Convertitori di frequenza DC1, manuale - italiano	ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN04020003Z_IT.pdf			
MN04020004Z DC1 variable frequency drives, Parameters manual				
MN04020004Z DC1 variable frequency drives, Parameters manual - 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-DE Sortimentskatalog: Antriebstechnik effizient gestalten, Motoren starten und steuern	http://www.eaton.eu/DE/ecm/groups/public/@pub/@europe/@electrical/documents/content/pct_1095238_de.pdf			