



**Frequency Inverters, 3-/3-phase 600 V, 43 A, 30 kW, Vector control, Brake-Chopper**

**Part no.** DA1-35043NB-B55C  
**Article no.** 176968  
**Catalog No.** DA1-35043NB-B55C

**Delivery program**

Product range			Variable frequency drives
Part group reference (e.g. DIL)			DA1
Rated operational voltage	U <sub>e</sub>		500 V AC, 3-phase 600 V AC, 3-phase
Output voltage with V <sub>e</sub>	U <sub>2</sub>		500 V AC, 3-phase 600 V AC, 3-phase
Mains voltage (50/60Hz)	U <sub>LN</sub>	V	500 (-10%) - 600 (+10%)
<b>Rated operational current</b>			
At 150% overload	I <sub>e</sub>	A	43
Note			Rated operational current at a switching frequency of 8 kHz and an ambient air temperature of +40 °C
Note			Overload cycle for 60 s every 600 s
<b>Assigned motor rating</b>			
Note			for normal internally and externally ventilated 4 pole, three-phase asynchronous motors with 1500 rpm <sup>-1</sup> at 50 Hz or 1800 min <sup>-1</sup> at 60 Hz
Note			Overload cycle for 60 s every 600 s
Note			at 500 V, 50 Hz
150 % Overload	P	kW	30
150 % Overload	I <sub>M</sub>	A	43
Note			at 525 V, 50 Hz
150 % Overload	P	kW	30
150 % Overload	I <sub>M</sub>	A	42
Note			at 550 - 600 V, 60 Hz
150 % Overload	P	HP	40
150 % Overload	I <sub>M</sub>	A	41
Degree of Protection			IP55/NEMA 12
Interface/field bus (built-in)			OP-Bus (RS485)/Modbus RTU, CANopen®
Fieldbus connection (optional)			Ethernet IP DeviceNet PROFIBUS PROFINET Modbus-TCP EtherCAT SmartWire-DT
Fitted with			Brake chopper OLED display Additional PCB protection DC link choke
Frame size			FS5
Connection to SmartWire-DT			with SmartWire-DT module DX-NET-SWD1

**Technical data**

<b>General</b>			
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, UkrSepro, EAC
Approvals			DNV
Production quality			RoHS, ISO 9001
Climatic proofing	ρ <sub>w</sub>	%	< 95%, average relative humidity (RH), non-condensing, non-corrosive

Ambient temperature			
operation (150 % overload)	$\theta$	°C	-10 - +40
Storage	$\theta$	°C	-10 - +60
Mounting position			
			Vertical
Altitude			
			0 - 1000 m above sea level Above 1000 m: 1% derating for every 100 m max. 4000 m
Degree of Protection			
			IP55/NEMA 12
Protection against direct contact			
			BGV A3 (VBG4, finger- and back-of-hand proof)

### Main circuit

Supply			
Rated operational voltage	$U_e$		500 V AC, 3-phase 600 V AC, 3-phase
Mains voltage (50/60Hz)	$U_{LN}$	V	500 (-10%) - 600 (+10%)
Input current (150% overload)	$I_{LN}$	A	48.9
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			
			Variable frequency drive with internal DC link, DC link choke and IGBT inverter
Overload current (150% overload)	$I_L$	A	64.5
max. starting current (High Overload)	$I_H$	%	200
Note about max. starting current			
			for 4 seconds every 40 seconds
Output voltage with $V_e$	$U_2$		500 V AC, 3-phase 600 V AC, 3-phase
Output Frequency	$f_2$	Hz	0 - 50/60 (max. 500)
Switching frequency	$f_{PWM}$	kHz	8 adjustable 4 - 24 (audible)
Operation Mode			
			U/f control Speed control with slip compensation sensorless vector control (SLV) optional: Vector control with feedback (CLV)
Frequency resolution (setpoint value)	$\Delta f$	Hz	0.1
Rated operational current			
At 150% overload	$I_e$	A	43
Note			
			Rated operational current at a switching frequency of 8 kHz and an ambient air temperature of +40 °C
Power loss			
Heat dissipation at rated operational current $I_e = 150\%$	$P_V$	W	660
Efficiency	$\eta$	%	97
Maximum leakage current to ground (PE) without motor			
			$I_{PE}$ mA 43
Fitted with			
			Brake chopper OLED display Additional PCB protection DC link choke
Safety function			
			STO (Safe Torque Off, SIL1, PLc Cat 1)
Frame size			
			FS5
Motor feeder			
Note			
			for normal internally and externally ventilated 4 pole, three-phase asynchronous motors with $1500 \text{ rpm}^{-1}$ at 50 Hz or $1800 \text{ min}^{-1}$ at 60 Hz
Note			
			Overload cycle for 60 s every 600 s
Note			
			at 500 V, 50 Hz
150 % Overload	P	kW	30
Note			
			at 525 V, 50 Hz
150 % Overload	P	kW	30
Note			
			at 550 - 600 V, 60 Hz
150 % Overload	P	HP	40
maximum permissible cable length			
			screened: 100 screened, with motor choke: 200 unscreened: 150

Apparent power			unscreened, with motor choke: 300
Apparent power at rated operation 600 V	S	kVA	44.69
Braking function			
Standard braking torque			max. 30 % $M_N$
DC braking torque			adjustable to 100 %
Braking torque with external braking resistance			Max. 100% of rated operational current $I_g$ with external braking resistor
minimum external braking resistance	$R_{min}$	$\Omega$	22
Switch-on threshold for the braking transistor	$U_{DC}$	V	975 V DC

### Control section

External control voltage	$U_c$	V	24 V DC (max. 100 mA)
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			2, parameterizable, 0 - 10 V, 0/4 - 20 mA
Digital inputs			3, parameterizable, max. 30 VDC, max. 5 for non-parameterized analog inputs
Digital outputs			2, parameterizable, 24 V DC
Relay outputs			2, parameterizable, 1 N/O and 1 changeover contact, 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			
Safety device (fuse or miniature circuit-breaker)			
IEC (Type B, gG), 150 %			63NHG000B
Notes			NH fuse used together with TB00-D fuse base
UL (Class CC or J)		A	63
Notes			LPJ fuse used together with JM60100-3 fuse base
UL (Class CC or J)		A	LPJ-70SP
Mains contactor			
150 % overload (CT/ $I_H$ , at 50 °C)			DILM40
Main choke			
150 % overload (CT/ $I_H$ , at 50 °C)			DX-LN3-050
DC link connection			
Braking resistance			
10 % duty factor (DF)			DX-BR022-3K1
20 % duty factor (DF)			DX-BR022-5K1
Motor feeder			
motor choke			
150 % overload (CT/ $I_H$ , at 50 °C)			DX-LM3-050
Sine filter			
150 % overload (CT/ $I_H$ , at 50 °C)			SIN-0052-6-0-P

### Design verification as per IEC/EN 61439

Technical data for design verification			
Operating ambient temperature min.		°C	-10
Operating ambient temperature max.		°C	40

### 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	500 - 600
Mains frequency			50/60 Hz
Number of phases input			3
Number of phases output			3
Max. output frequency		Hz	500
Max. output voltage		V	500

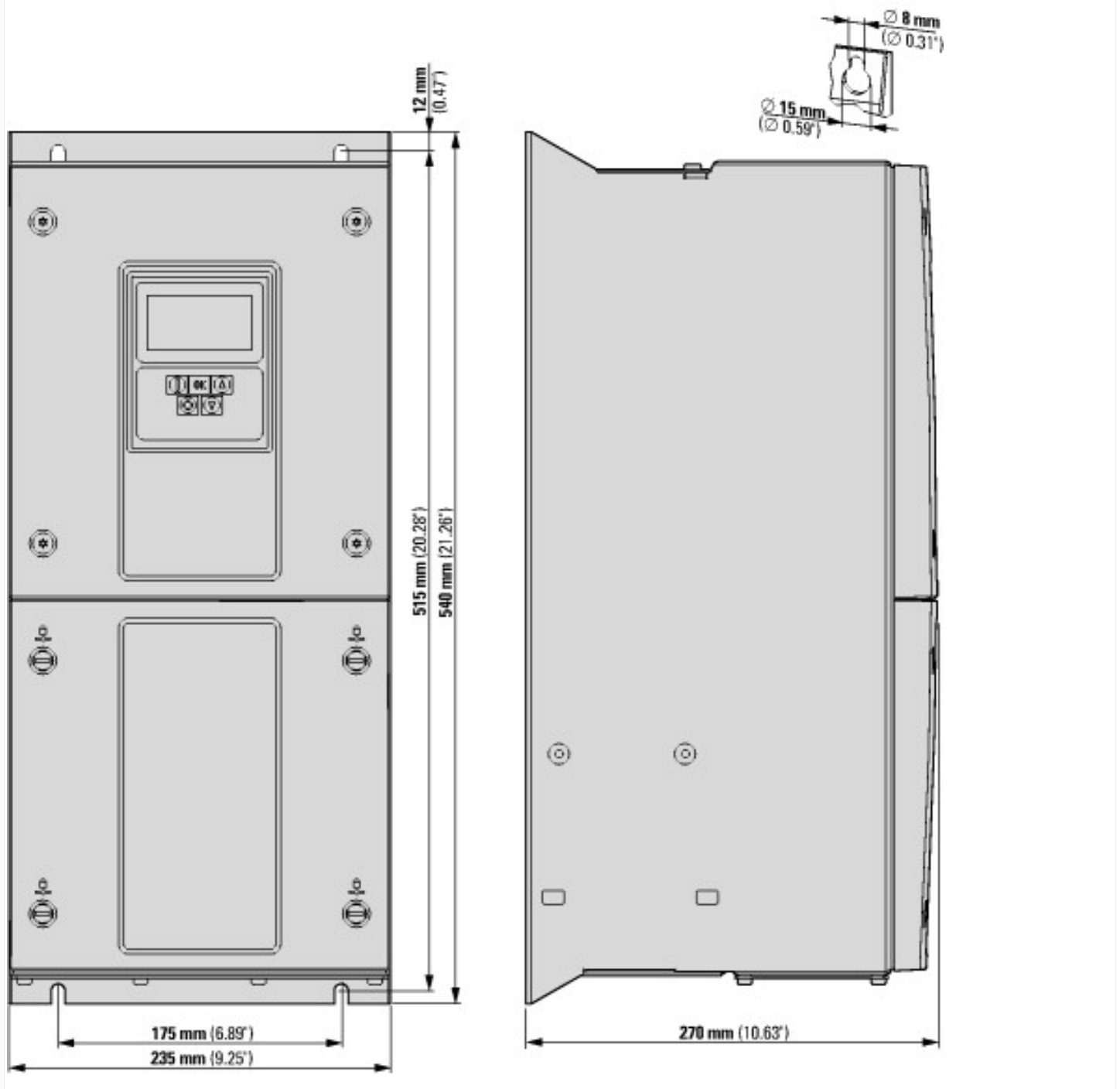
Rated output current I2N	A	43
Max. output at quadratic load at rated output voltage	kW	30
Max. output at linear load at rated output voltage	kW	30
With control unit		Yes
Application in industrial area permitted		Yes
Application in domestic- and commercial area permitted		Yes
Supporting protocol for TCP/IP		No
Supporting protocol for PROFIBUS		Yes
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		Yes
Supporting protocol for PROFINET CBA		No
Supporting protocol for SERCOS		No
Supporting protocol for Foundation Fieldbus		No
Supporting protocol for EtherNet/IP		Yes
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		0
Number of HW-interfaces parallel		0
Number of HW-interfaces other		0
With optical interface		No
With PC connection		Yes
Integrated breaking resistance		Yes
4-quadrant operation possible		No
Type of converter		U converter
Degree of protection (IP)		IP55
Height	mm	540
Width	mm	235
Depth	mm	270
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~ 600 V AC (+10 %) IEC: TN-S UL/CSA: "Y" (Solidly Grounded Wey)
Degree of Protection	IEC: IP55

## Dimensions



## Additional product information (links)

### IL04020011Z Variable frequency drives DA1 (FS4 - 7)

IL04020011Z Variable frequency drives DA1 (FS4 - 7) [ftp://ftp.moeller.net/DOCUMENTATION/AWA\\_INSTRUCTIONS/IL04020011Z2013\\_10.pdf](ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL04020011Z2013_10.pdf)

### MN04020005Z DA1 variable frequency drives, Installation manual

MN04020005Z Frequenzumrichter DA1, Handbuch - Deutsch [ftp://ftp.moeller.net/DOCUMENTATION/AWB\\_MANUALS/MN04020005Z\\_DE.pdf](ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN04020005Z_DE.pdf)

MN04020005Z DA1 variable frequency drive, manual - English [ftp://ftp.moeller.net/DOCUMENTATION/AWB\\_MANUALS/MN04020005Z\\_EN.pdf](ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN04020005Z_EN.pdf)

### MN04020006Z DA1 variable frequency drives, Parameters manual

MN04020006Z DA1 variable frequency drives, Parameters manual - Deutsch [ftp://ftp.moeller.net/DOCUMENTATION/AWB\\_MANUALS/MN04020006Z\\_DE.pdf](ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN04020006Z_DE.pdf)

MN04020006Z DA1 variable frequency drives,  
Parameters manual - English

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