



**Variable frequency drive, 115 V AC, single-phase, 10.5 A, 0.55 kW, IP66/ NEMA 4X, Brake chopper, 7-digital display assembly, Additional PCB protection, UV resistant, FS2**



**Part no. DC1-S1011NB-A660E1**  
**Catalog No. 199385**

## Delivery program

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%)
<b>Rated operational current</b>			
At 150% overload	$I_e$	A	10.5
Note			Rated operational current at an operating frequency of 6 kHz and an ambient air temperature of +40 °C
<b>Assigned motor rating</b>			
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	0.55
150 % Overload	$I_M$	A	10.5
Note			at 110 - 120 V, 60 Hz
150 % Overload	P	HP	0.75
150 % Overload	$I_M$	A	9.8
Degree of Protection			IP66/NEMA 4X
Interface/field bus (built-in)			OP-Bus (RS485)/Modbus RTU, CANopen®
Fieldbus connection (optional)			SmartWire-DT
Fitted with			Brake chopper 7-digital display assembly Additional PCB protection UV resistant
Parameterization			Keypad Fieldbus drivesConnect drivesConnect mobile (App)
Frame size			FS2
Connection to SmartWire-DT			no

## Technical data

### General

Standards			General requirements: IEC/EN 61800-2 EMV requirements: IEC/EN 61800-3 Safety requirements: IEC/EN 61800-5-1
Certifications			CE, UL, cUL, RCM, Ukr SEPRO, EAC
Production quality			RoHS, ISO 9001
Climatic proofing	$\rho_w$	%	< 95%, average relative humidity (RH), non-condensing, non-corrosive
Air quality			3C3, 3S3
Ambient temperature			
Operating ambient temperature min.		°C	-20
Operating ambient temperature max.		°C	+ 40
			operation (with 150 % overload)
Storage	$\theta$	°C	-40 - +60
Mounting position			Vertical
Altitude		m	0–2000 m above sea level

			Above 1000 m: 1% derating for every 100 m max. 4000 m without UL
Degree of Protection			IP66/NEMA 4X
Protection against direct contact			BGV A3 (VBG4, finger- and back-of-hand proof)
<b>Main circuit</b>			
<b>Supply</b>			
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	12.5
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
<b>Power section</b>			
Function			Variable frequency drive with internal DC link and IGBT inverter
Overload current (150% overload)	$I_L$	A	15.75
max. starting current (High Overload)	$I_H$	%	175
Output voltage with $V_e$	$U_2$		115 V AC, single-phase
Output Frequency	$f_2$	Hz	0 - 50/60 (max. 500)
Switching frequency	$f_{PWM}$	kHz	8 adjustable 4 - 32 (audible)
Operation Mode			U/f control Speed control with slip compensation sensorless vector control (SLV) PM motors Synchronous reluctance motors BLDC motors
Frequency resolution (setpoint value)	$\Delta f$	Hz	0.1
Rated operational current			
At 150% overload	$I_e$	A	10.5
Note			Rated operational current at an operating frequency of 6 kHz and an ambient air temperature of +40 °C
Power loss			
Heat dissipation at rated operational current $I_e = 150\%$	$P_V$	W	16.5
Efficiency	$\eta$	%	97
Maximum leakage current to ground (PE) without motor	$I_{PE}$	mA	2.49
Fitted with			Brake chopper 7-digital display assembly Additional PCB protection UV resistant
Frame size			FS2
<b>Motor feeder</b>			
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	0.55
Note			at 110 - 120 V, 60 Hz
150 % Overload	P	HP	0.75
maximum permissible cable length	l	m	screened: 100 screened, with motor choke: 200 unscreened: 150 unscreened, with motor choke: 300
Braking function			
DC braking torque			Max. 100% of rated operational current $I_e$ , variable
Braking torque with external braking resistance			Max. 100% of rated operational current $I_e$ with external braking resistor
minimum external braking resistance	$R_{min}$	$\Omega$	100
Switch-on threshold for the braking transistor	$U_{DC}$	V	187 V DC
<b>Control section</b>			
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			
Safety device (fuse or miniature circuit-breaker)			
IEC (Type B, gG), 150 %			FAZ-B25/1N
UL (Class CC or J)		A	25
Mains contactor			
150 % overload (CT/I <sub>H</sub> , at 50 °C)			DILEM-... + P1DILEM
Main choke			
150 % overload (CT/I <sub>H</sub> , at 50 °C)			DX-LN1-024
Radio interference suppression filter (external, 150 %)			DX-EMC12-014-FS2
Note regarding radio interference suppression filter			Optional external radio interference suppression filter for longer motor cable lengths and for use in different EMC environments
DC link connection			
Braking resistance			
10 % duty factor (DF)			DX-BR100-0K2
20 % duty factor (DF)			DX-BR100-0K2
40 % duty factor (DF)			DX-BR100-0K2
Notes concerning braking resistances:			The brake resistors are assigned based on the maximum rated power of the variable frequency drive. Additional brake resistors and designs (e.g. different duty cycles) are available upon request.

### Design verification as per IEC/EN 61439

Technical data for design verification			
Operating ambient temperature min.		°C	-20
Operating ambient temperature max.		°C	40

### Technical data ETIM 7.0

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 (ec@ss10.0.1-27-02-31-01 [AKE177014])			
Mains voltage		V	99 - 126
Mains frequency			50/60 Hz
Number of phases input			1
Number of phases output			1
Max. output frequency		Hz	500
Max. output voltage		V	125
Nominal output current I <sub>2N</sub>		A	11
Max. output at quadratic load at rated output voltage		kW	0.55
Max. output at linear load at rated output voltage		kW	0.55
Relative symmetric net frequency tolerance		%	10
Relative symmetric net voltage tolerance		%	10
Number of analogue outputs			1
Number of analogue inputs			2
Number of digital outputs			1
Number of digital inputs			4
With control unit			Yes
Application in industrial area permitted			Yes
Application in domestic- and commercial area permitted			No
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		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 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 parallel		0
Number of HW-interfaces other		0
With optical interface		No
With PC connection		Yes
Integrated breaking resistance		Yes
4-quadrant operation possible		Yes
Type of converter		U converter
Degree of protection (IP)		IP66
Degree of protection (NEMA)		4X
Height	mm	257
Width	mm	188
Depth	mm	171.5

## 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

