

Type: **DF51-322-1K5**

Article No.: **289107**

Sales text ""Frequency inverter DF51(1,5 kW; 230V)



Ordering information

Rated voltage	U_e	V	1 AC 180...264 V $\pm$ 0 % 3 AC 180...264 V $\pm$ 0 %
Max. rated operational current	I_e	A	7.1
Rated power for motors			
at 230 V 3-phase AC	P	kW	1.5
Rating range			0.25 – 2.2 kW at 230 V
Description			Single and three-phase connection

Notes concerning the table header

All rating data of the power section is based on a switching frequency of 5 kHz (default setting) and an ambient temperature of +40 °C, for operation of a four-pole three-phase asynchronous motor.

General

Standards			EN 50178, IEC 61800-3
Ambient temperature			
Operating temperature		°C	–10 to +40 with rated current I_e at a clock frequency of 5 kHz; up to +50 °C at a reduced clock frequency of 2 kHz and reduced output current of 80 % I_e

Max. duty factor (c.d.f.) with lowest impedance R_B		°C	–25...+70
Shock resistance			Vibration and impact, max. 5.9 m/s ² (0.6 g) at 10 to 55 Hz
Pollution degree			VDE 0110 Part 2, pollution degree 2
Climatic proofing			Class 3K3 according to EN 50178 (non-condensing, average relative humidity 20 to 90 %)
Altitude		m	0 to 1000 a.s.l.
Mounting position			Vertically suspended
Free surrounding areas			100 mm above and below device
Emitted interference			IEC/EN 61800–3 (EN 55011 group 1 class B)
Interference immunity			IEC/EN 61800–3, industrial environment
Insulation resistance			Overvoltage category III according to VDE 0110
Discharge current to PE		mA	< 3.5 (to EN 50178)
Protection type			IP 20
Protection against direct contact			Finger and back-of-hand proof
Protective isolation against switching circuitry			Safe isolation from the mains. Double basic isolation (to EN 50178)
Protective measures			Overcurrent, earth fault, overvoltage, undervoltage, overload, overtemperature, electronic overload protection: $\bar{I}t$ monitoring and PTC input (thermistor or thermostat)
Heat dissipation with rated operational current I_e		W	55
Dimensions (W × H × D)		mm	110 × 130 × 127
Weight		kg	1,9

Power section

Rated operating voltage	U_e	V AC	230
Rated voltage	U_e	V	1 AC 180...264 V ± 0 % 3 AC 180...264 V ± 0 %
Supply frequency		Hz	50/60 (47...63 ± 0 %)
Mains current			
U_i = 1-phase 230 V AC	I	A	17,5

$U_i = 3\text{-phase } 230 \text{ V AC}$	I	A	9,3
Alternative DC supply	U_{DC}	V DC	260...370 $\pm$ 0 %
Modulation method			sinusoidal pulse-width modulation (PWM), U/f characteristic control
Switching frequency			5 kHz, can be selected between 2 and 14 kHz
Output voltage		V	3 AC U_e
Output frequency		Hz	0 to 50, max. 400
Frequency resolution		Hz	0.1, with digital setpoint values/maximum frequency/1000 with analog setpoint values
Frequency resolution		kHz	0.1 with digital setpoint values, maximum frequency/1000 with analog setpoint values
Frequency error limit at 20 C $\pm$ 10 K			$\pm$ 0.01 % of maximum frequency for digital reference values, $\pm$ 0.2 % of maximum frequency for analog reference values
Max. rated operational current	I_e	A	7,1
Permissible overcurrent			150 % for 60 s, every 600 s
Torque during start			From 6 Hz 100 % or higher with torque boost activated
Apparent power at 240 V		kVA	2,9
Standard operation at 150 % overload Assigned motor rating (4-pole ASM)			
230 V		kW	1,5
240 V		HP	2
Control circuit			
Relay			1 changeover contact, 230 V AC, 0.2 A inductive load, 2.5 A resistive load; or 24 V DC, 0.7 A inductive load, 3 A resistive load
Serial interface			RS485
Control voltage			
Output setpoint voltage		V	+10 DC, 10 mA
Output control voltage		V	+24 DC, 30 mA
Parameterization			1 parameter set (online/offline parameterization), parameter protection (programmable)
Inputs			

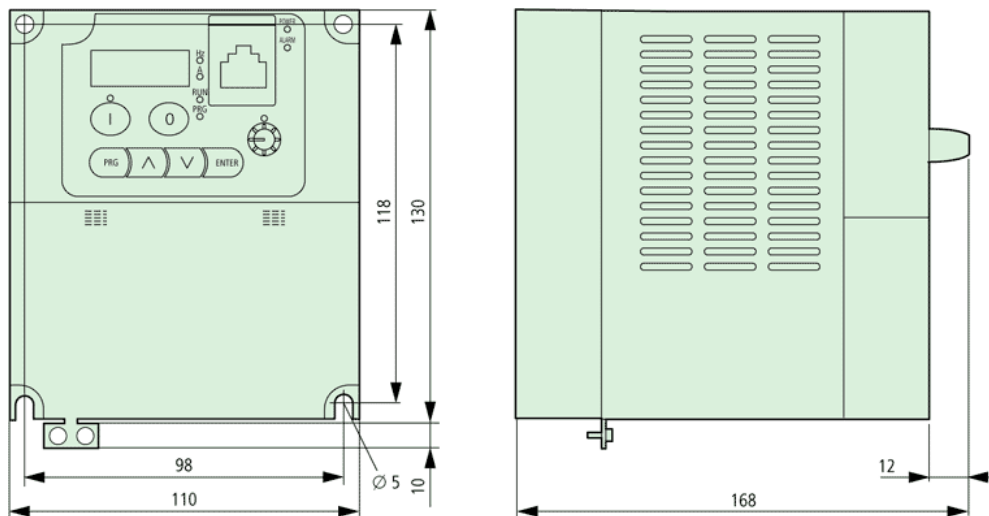
digital (parameters can be defined)			5 × +24 V DC, configurable
Analog		Number	2 × 0 to +10 V DC (input impedance 10 kΩ, 4 to 20 mA (load impedance 250 Ω), resolution 10 bit
Outputs			
Digital			2 × 24 V DC transistor (open-collector, configurable)
analog (parameters can be defined)			1 × 0 to +10 V DC, 1 mA (configurable), resolution 10 bit

Terminal capacities

Cable lengths			
		mm ²	4
		AWG	12
Relay connection			
		mm ²	1,5
		AWG	6
Control circuit			
		mm ²	1.5
		AWG	6

Notes

Dimensions



Notes

If the frequency inverter is to be installed in an enclosure, control panel or similar housing, the ambient temperature T_a is taken to be the temperature inside this enclosure or control panel.

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