

Type: **DF51-340-2K2**

Article No.: **289125**

Sales text ""Frequency inverter DF51(2,2kW; 400V)""



### Ordering information

Rated voltage	$U_e$	V	3 AC 342...528 V $\pm$ 0 %
Max. rated operational current	$I_e$	A	5.5
Rated power for motors			
at 400 V 3-phase AC	$P$	kW	2.2
Rating range			0.37 – 7.5 kW at 400 V
Description			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

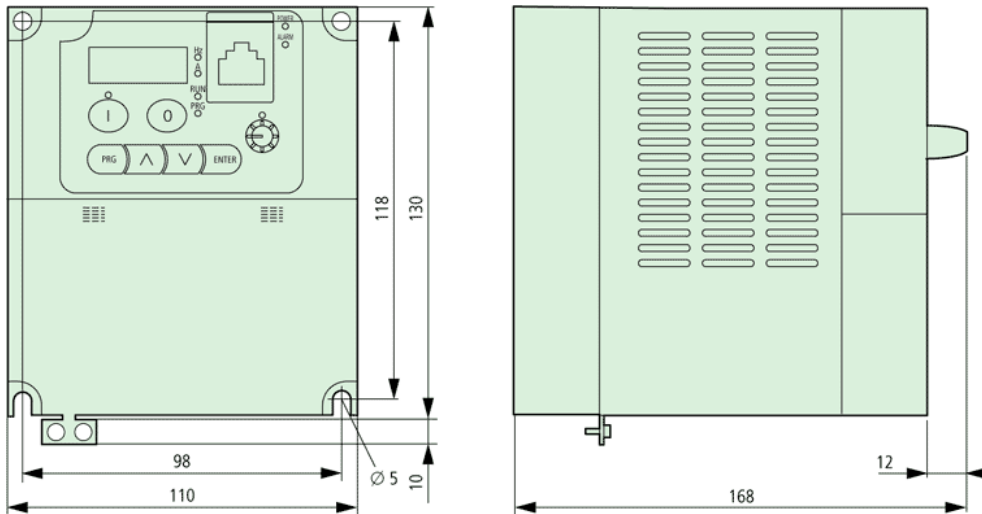
Standards			EN 50178, IEC 61800-3
Ambient temperature			
Operating temperature		°C	-10 to +40 with rated current $I_e$ at a clock frequency of 5 kHz; up to +50 °C at a reduced clock frequency of 2 kHz and reduced output current of 80 % $I_e$
Max. duty factor (c.d.f.) with lowest impedance $R_B$		°C	-25...+70

Shock resistance			Vibration and impact, max. 5.9 m/s <sup>2</sup> (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: $I^2t$ monitoring and PTC input (thermistor or thermostat)
Heat dissipation with rated operational current $I_e$		W	95
Dimensions (W × H × D)		mm	110 × 130 × 168
Weight		kg	1,9
<b>Power section</b>			
Rated operating voltage	$U_e$	V AC	400
Rated voltage	$U_e$	V	3 AC 342...528 V ± 0 %
Supply frequency		Hz	50/60 (47...63 ± 0 %)
Alternative DC supply	$U_{DC}$	V DC	480...740 ± 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	5,5
Permissible overcurrent			150 % for 60 s, every 600 s
Torque during start			From 6 Hz 100 % or higher with torque boost activated
Standard operation at 150 % overload Assigned motor rating (4-pole ASM)			
230 V		kW	2,2
<b>Control circuit</b>			
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 $\times$ +24 V DC, configurable
Analog		Number	2 $\times$ 0 to +10 V DC (input impedance 10 k $\Omega$ , 4 to 20 mA (load impedance 250 $\Omega$ ), resolution 10 bit
Outputs			
Digital			2 $\times$ 24 V DC transistor (open-collector, configurable)
analog (parameters can be defined)			

			1 × 0 to +10 V DC, 1 mA (configurable), resolution 10 bit
<b>Terminal capacities</b>			
Cable lengths			
		mm <sup>2</sup>	2.5
		AWG	14
Relay connection			
		mm <sup>2</sup>	1,5
		AWG	6
Control circuit			
		mm <sup>2</sup>	1.5
		AWG	6
<b>Notes</b>			

## 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.

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.

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