

Type: **DF51-322-037**

Article No.: **289103**

Sales text "Frequency inverter DF51(0,37 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	2.6
Rated power for motors			
at 230 V 3-phase AC	$P$	kW	0.37
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 % $I_e$
		°C	-25...+70

Max. duty factor (c.d.f.) with lowest impedance $R_B$			
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	21	
Dimensions (W × H × D)	mm	80 × 120 × 119	
Weight	kg	0,95	
<b>Power section</b>			
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			
$U_i = 1\text{-phase } 230 \text{ V AC}$	$I$	A	5,8

$U_i$ = 3-phase 230 V AC	$I$	A	3,4
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	2,6
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	1
Standard operation at 150 % overload Assigned motor rating (4-pole ASM)			
230 V		kW	0,37
240 V		HP	1/2
<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			

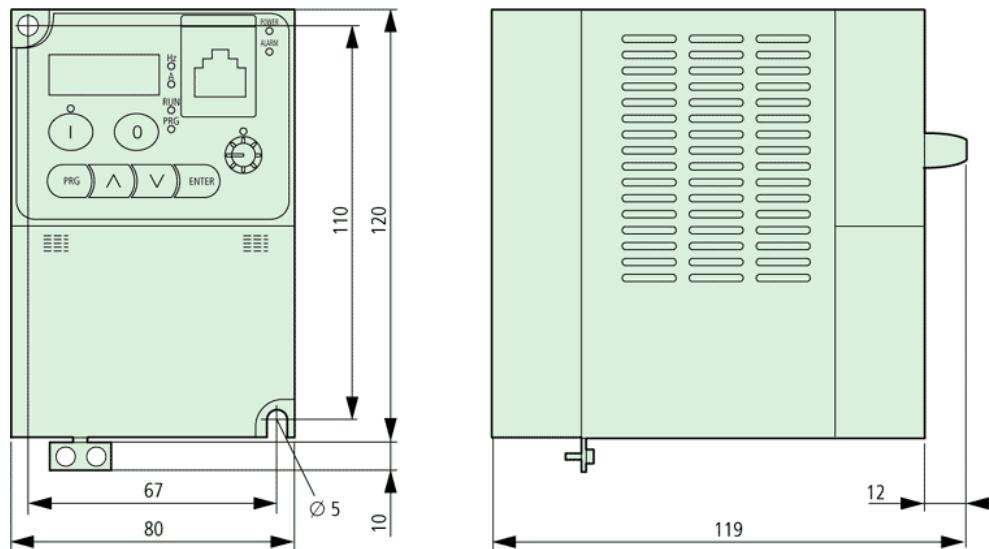
digital (parameters can be defined)			5 × +24 V DC, configurable
Analog	Number		2 × 0 to +10 V DC (input impedance 10 kΩ, 4 to 20 mA (load impedance 250 Ω), resolution 10 bit)
Outputs			
Digital			2 × 24 V DC transistor (open-collector, configurable)
analog (parameters can be defined)			1 × 0 to +10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

### Terminal capacities

Cable lengths			
		mm <sup>2</sup>	1.5
		AWG	16
Relay connection			
		mm <sup>2</sup>	1,5
		AWG	6
Control circuit			
		mm <sup>2</sup>	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.

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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