"ESA Control" Ltd

DIGITAL CONTROLLERS

FOR FREQUENCY MEASUREMENT

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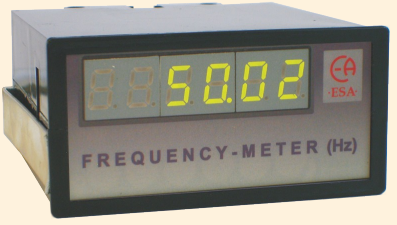
Digital Frequency-meter FMD6-1

Features

The FMD6-1 digital frequency meter is a compact microprocessor device that is used to measure the frequency of rotation of axes and other rotating objects in hertz (Hz). The frequency meter input is designed to work with PNP sensors. It can also work with NPN sensors with the addition of a resistor. The device can be used to measure the frequency of generators of positive electrical pulses.



Type parameters		
Type	Supply voltage	Consumption
FMD6-1 / 220V	220VAC ±10%	16mA (4W)
FMD6-1 / 12-24V	11 ÷ 31 VDC 11 ÷ 27 VAC	85mA (2W)

Technical parameters

LED indicator (green/red), 6 digits	h=10mm (height)
Range of measurement, f	0,05...9999,99 Hz
Amplitude of input impulses, U_{in}	3÷30 V ac/dc
Input impedance, R_{in}	16 kΩ
Supply voltage, Us	220Vac / 12÷24V ac/dc
Power consumption, P	4W (16mA) / 2W (85mA)
Measurement error	±0,05%
Operating temperature range, Tamb	-20º...+50º C
Degree of protection	IP40
Joining	Terminal block
Sizes	95x49x113mm

It is provided constant voltage 11÷23Vdc (40mA) for sensor's supply.

Schemes of connection

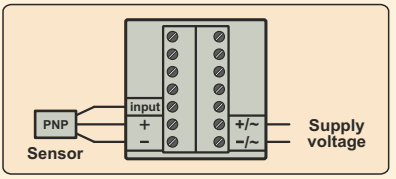


fig.1

Connecting a PNP sensor
to the frequency meter

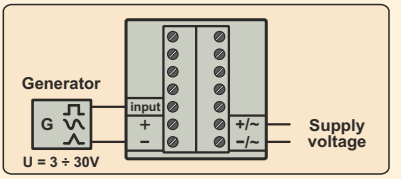


fig.2

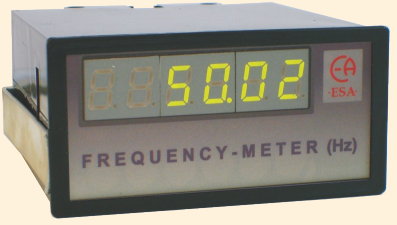
Connecting a "G" pulse generator
to the frequency meter

Digital Frequency-meter

FMD6-1N

Features

The FMD6-1N digital frequency meter is a microprocessor device used to measure the mains frequency of 40÷60Hz at a supply voltage of 220Vac (110Vac option). There is no input for connecting on a sensor or for receiving pulses from a generator. The frequency meter uses the frequency of the electrical network in which it is connected. The device is designed for installation in a dashboard (panel montage).



Type parameters		
Type	Supply voltage	Consumption
FMD6-1N / 220V	220VAC ±10%	16mA (4W)

Technical parameters

LED indicator (green/red), 6 digits	h=10mm (height)
Range of measurement, f	30,00...80,00 Hz
Supply voltage, Us	220 VAC
Power consumption, P	4 W (16 mA)
Measurement error	±0,05%
Operating temperature range, Tamb	-20º...+50º C
Degree of protection	IP40
Joining	Terminal block
Sizes	95x49x113mm

Scheme of connection

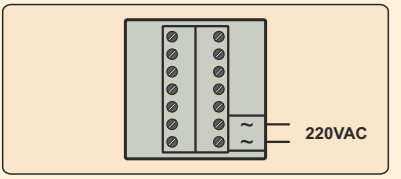


fig.1
Connecting the FMD6-1N frequency-meter

Digital Frequency-meter FMD6-2

Features

The FMD6-2 digital frequency meter is a compact microprocessor device that is used to measure and controlling the frequency of rotation of axes and other rotating objects in hertz (Hz). The frequency meter input is designed to work with PNP sensors. It can also work with NPN sensors with the addition of a resistor. The device can be used to measure the frequency of generators of positive electrical pulses. The frequency meter has two output relays and can be set two limit frequencies "F1" and "F2" in reaching of which the relevant output relay switches on.

Type parameters		
Type	Supply voltage	Consumption
FMD6-2 / 220V	220VAC ±10%	16mA (4W)
FMD6-2 / 12-24V	11 ÷ 31 VDC 11 ÷ 27 VAC	125mA (3W)

Technical parameters

LED indicator (green/red), 6 digits	h=10mm (height)
Range of measurement, f	0,05...9999,99 Hz
Amplitude of input impulses, U_{in}	3÷30 V ac/dc
Input impedance, R_{in}	16 kΩ
Supply voltage, Us	220Vac / 12÷24V ac/dc
Power consumption, P	4W (16mA) / 3W (125mA)
Output (Relay-1, Relay-2)	4A/220VAC, 2x(NO+NC)
Measurement error	±0,05%
Operating temperature range, Tamb	-20º...+50º C
Degree of protection	IP40
Joining	Terminal block
Sizes	95x49x113mm

Energy-independent memory for the programmable parameters.
It is provided constant voltage 11÷23Vdc (40mA) for sensor's supply.

Programmable parameters

Limit of frequency, F1 (Hz)	0.05 ÷ 9999.99
Limit of frequency, F2 (Hz)	0.05 ÷ 9999.99

Schemes of connection

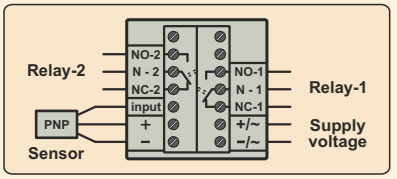


fig.1

Connecting a PNP sensor to the frequency meter

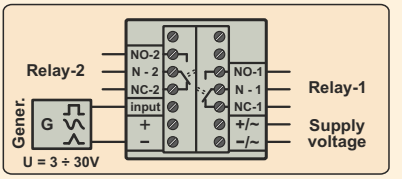


fig.2

Connecting a "G" pulse generator to the frequency meter

Digital Frequency-meter

FMD6-2N

Features

The FMD6-2N digital frequency meter is a microprocessor device used to measure the mains frequency of 40÷60Hz at a supply voltage of 220Vac (110Vac option). There is no input for connecting on a sensor or for receiving pulses from a generator. The frequency meter uses the frequency of the electrical network in which it is connected. The frequency meter has two output relays and can be set two limit frequencies "F1" and "F2" in reaching of which the relevant output relay switches on. The device is designed for installation in a dashboard (panel montage).

Type parameters		
Type	Supply voltage	Consumption
FMD6-2N / 220V	220VAC ±10%	16mA (4W)

Technical parameters

LED indicator (green/red), 6 digits	h=10mm (height)
Range of measurement, f	30,00...80,00 Hz
Supply voltage, Us	220 VAC
Power consumption, P	4 W (16 mA)
Output (Relay-1, Relay-2)	4A/220VAC, 2x(NO+NC)
Measurement error	±0,05%
Operating temperature range, Tamb	-20º...+50º C
Degree of protection	IP40
Joining	Terminal block
Sizes	95x49x113mm

Energy-independent memory for the programmable parameters.

Programmable parameters

Limit of frequency, F1 (Hz)	0.05 ÷ 9999.99
Limit of frequency, F2 (Hz)	0.05 ÷ 9999.99

Scheme of connection

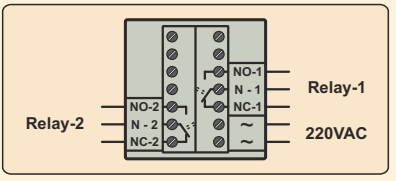


fig.1

Connecting the FMD6-2N frequency-meter

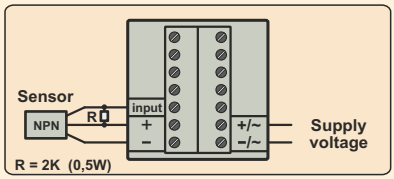


fig.3

Connecting a NPN sensor
to FMD6-1

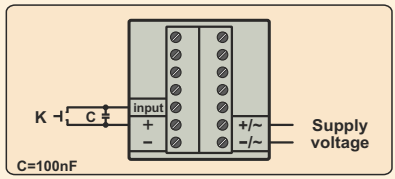


fig.4

Connecting button “K”
to FMD6-1

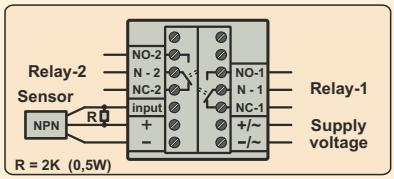


fig.3

Connecting a NPN sensor
to FMD6-2

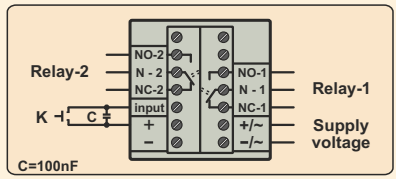
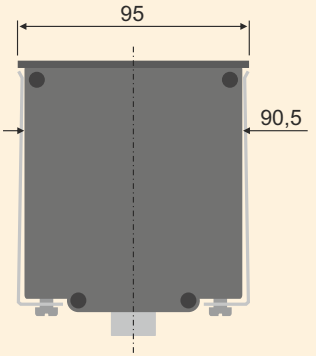
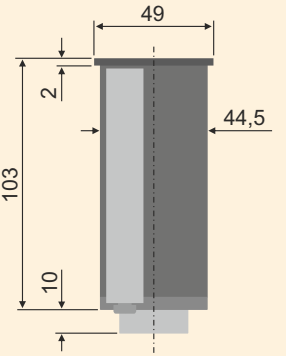
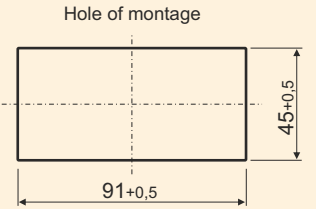


fig.4

Connection of "K" button
to FMD6-2


95
90,5


49
2
44,5
103
10


Hole of montage
45+0,5
91+0,5