

DIGITAL METERS AND INDICATORS

NEF30MC

DATA SHEET

no: KK-W_NEF30MC



NEF30MC digital meters and indicators constitute development of NEF30 series that has already included control buttons, signal lamps, indicators and buzzers. All NEF30MC meters and indicators feature the same characteristics, which is the possibility of installing in a standardized $\varnothing 30.5$ mm hole. Their design has been coordinated with other devices of NEF30 series. They have been adapted to be used together with NEF30 devices, as panel-mounted meters for industrial applications. The meters and indicators have been fitted with two programming buttons (their functions depend on the version), which are accessible after removing the front cover.

The meters are comprised of the following elements:

- The part located over the desk, also referred to as the display
- The part located under the desk that includes the connections.

TECHNICAL DATA:


Parameter	Value
Supply voltage - voltmeter, ammeter, temperature meter, frequency meter - level bar graph - indicator of current loop	24-230 V AC/DC ¹⁾ 24 V AC/DC 24V DC (powered directly from the loop)
Cross-sections of terminals	1,5 mm ²
Interference immunity	acc. to PN-EN 61000-6-2
Interference emission	acc. to PN-EN 61000-6-4
Installation category (voltmeter, ammeter, frequency meter)	III
Operating voltage in relation to ground (voltmeter, ammeter, frequency meter)	300 V AC
Basic accuracy - voltmeter - ammeter - temperature meter - level bar graph - indicator of current loop	0.5% of the range + 1 digit (3-digit display) 0.5% of the range + 10 digits (4-digit display) 1% of the range $\pm 1^{\circ}\text{C}$ in the range $-10\div 85^{\circ}\text{C}$ $\pm 2^{\circ}\text{C}$ in the useful range of measurement 5% of the range 5% of the range
Display - voltmeter, ammeter, indicator of current loop, temperature meter, frequency meter - level bar graph	4 LED digits, height 10mm 2 LED digits and 10 segment bar graph arrays
Safety (voltmeter, ammeter, temperature meter, frequency meter)	acc. to PN-EN 61010-1
Protection class	IP64 over the desk IP20 cover and connections

Ambient temperature for a particular design - voltmeter, ammeter, frequency meter - temperature meter - level bar graph, indicator of current loop	(-30...+50°C) (-30...+50°C), (-55...+125°C for a probe) (-20...+50°C)
Power consumption - voltmeter, ammeter, temperature meter, frequency meter - level bar graph - meter of current loop	max 2 W max 0,3 W max 0,7 W
Useful range of measurement - voltmeter - ammeter 1A AC - ammeter 5A AC - temperature meter - level bar graph - indicator of current loop	10÷300 V AC 0,02÷1A AC 0,1-5A AC -55÷125°C 0-10 V, 0-24mA 3,6mA-20,4mA
Voltage drop (meter of current loop)	2,7V with 3,6mA; 3,5V with 20,4mA
Min. inrush current (meter of current loop)	3,5mA
Input resistance - voltmeter, frequency meter - ammeter 1A AC - ammeter 5A AC	1,2MΩ 20mΩ 4mΩ

¹⁾ Any voltage supply within the indicated range, no switching or changing of settings.


VOLTMETER

The NEF30MC-V AC meter is a voltmeter, intended primarily to monitor voltage in a 230V AC power network. Measuring range: 10-300V AC. It is possible to provide a three- or four-digit display. Switching – by the user or the installer, using one of the programming buttons (the other one is not used). Settings are stored in a non-volatile memory. The basic working mode is a three-digit display. In the case of a fourdigit display, the fourth digit (after the decimal point) is interpolated, i.e. it comes from the average value of 64 measurements, calculated to a higher accuracy than the accuracy of a single measurement.

	Designation	Colour	Weight [g]
	NEF30MC-V AC 300 V AC	czarny	72


AMMETER 1A AC, 5A AC

The NEF30MC-A AC meter is used to measure alternating current, within the range of 1A or 5A, either directly or from a measuring transformer. If a measuring transformer is used, it is possible to program any conversion factor for indications, by entering the maximum value of indication that corresponds to 1A or 5A current, at the inlet to the meter, using programming buttons.

	Designation	Colour	Weight [g]
	NEF30MC-A AC 1A AC	czarny	72
	NEF30MC-A 5A AC 5A AC	czarny	72

TEMPERATURE METER


NEF30MC-T meter is a digital temperature meter for monitoring of temperature in switching cabinets, temperaturę of industrial devices etc. The meter shows range of temperatures - 55÷125°C. It is equipped with programmable emergency level, upon which the display is flashing with frequency ca. 1Hz. Temperature sensor is inside 3-meter long measuring probe (standard length 3m). It is a specialized analog-digital integrated circuit adjusted to operating with microprocessor systems. The output signal is digital.

	Designation	Colour	Weight [g]
	NEF30MC-T	czarny	72 ¹⁾

¹⁾ podano masę miernika bez sondy


BAR GRAPH

NEF30MC-BAR is an indicator of level filling in containers. It enables local reading of measured values thanks to converters assembled anywhere in measuring system. The indicator is equipped with two digits along with 10 segment bar graph arrays which allow for indication of value within 0 ÷ 99 percentage units as well as visual graphic information.

	Designation	Colour	Weight [g]
	NEF30MC-BAR	czarny	72

METER OF CURRENT LOOP

NEF30MC-LPI is a digital indicator of current loop, which enables for local reading of measured values thanks to converters assembled anywhere in measuring system. Due to low power consumption, it can be powered directly from the loop and does not require additional voltage source. This device is equipped with 4 full digits which allow for indication of value within 1999 ÷ 9999 units. Any calibration of indicated value as well as adjusting decimal point are the advantages. Any setting is programmable by the mean of two buttons under front cover of the indicator.

	Designation	Colour	Weight [g]
	NEF30MC-LPI	czarny	72

FREQUENCY METER


NEF30MC-F is a frequency meter destined mainly for monitoring of voltage frequency produced by electric power generators, UPSs etc. It has four frequency measurement types due to the range of measurement:

Mode 1 is for exact frequency measurement 50Hz or 60Hz (measurement range 30.00÷80.00Hz). Duration of 30 cycles of measurement course is counted (60 zero crossings)

Mode 2 likewise mode 1, with exception that duration of 300 cycles of measurement course is counted (600 zero crossings) (measurement range 300.0÷800.0Hz)

Mode 3 measurement is done by using method of counting zero crossings during 0.5 s course (measurement range 10÷5000Hz)

Mode 4 measurement is done by using method of counting zero crossings during 5 s course. The frequency indicated is an average value during 5 s time (measurement range 10.0÷999.9Hz).

	Designation	Colour	Weight [g]
	NEF30MC-F	czarny	72

DIMENSIONS

