OM 472DC

- **4 ¾ digit programmable projection**
- **±60 mV...±300 V**
- **±10 mA...±5 A**
- **1...4 Inputs**
- **Mathematic functions, Digital filters**
- **Size of DIN 96 x 48 mm**
- **Power supply 230 VAC**

Options

Comparators • Excitation • Data output • Universal analogue output • Real time
Power supply 24 VAC, 110 VAC, 10...30 VDC

Description

The OM 472DC model is a 4 ¾ digit panel programmable DC voltmeter/ammeter.
The instrument is based on an 8-bit controller with very precise A/D converter, that secures high accuracy, stability and easy operation of the instrument.

Standard functions

Programmable display projection

Setting	manual or automatic
Projection	±49999

Inputs

No. of inputs:	1...4 inputs (common GND)

Digital filters

Floating average	from 2...30 measurements
Exponen. average	from 2...30 measurements
n-th value	from 2...255 measurements
Radius of insensitiv.	band of suppressed change of measured value

Mathematic functions

Min/max. value	registration of min./max. value reached during measurement
Tare	designed to reset display upon non-zero input signal
Top value	the display shows only max. (min.) value for a selected time period
Round up/down	setting the projection step for display
Math. operations	for inputs A/B/C/D - polynome, 1/x, logarithm, exponential, power, root, sin x between inputs A, B, C, D - sum, product, quotient

External control

Hold	display/instrument blocking
Lock	control keys blocking
Tare	tare activation
Resetting MM	resetting min/max value to zero

Operation

The instrument is set and controlled by five control keys located on the front panel. All programmable settings of the instrument are realised in two adjusting modes.

Configuration menu	(hereinafter referred to as CM) is protected by an optional number code and contains complete instrument setting
User menu	may contain arbitrary programming settings defined in „CM“ with another selective restriction (see, change)

All programmable parameters are stored in the EEPROM memory (they hold even after the instrument is switched off). The measured units may be projected on the display.

Options

Comparators are assigned to monitor one, two, three or four limit values with relay output. The user may select limits regime: LIMIT/DOSING/FROM-TO. The limits have adjustable hysteresis within the full range of the display as well as selectable delay of the switch-on in the range of 0...99,9 s. Reaching the preset limits is signalled by LED and simultaneously by the switch-on of the relevant relay.
Excitation is suitable for feeding of sensors and transmitters. It is isolated, with continuously adjustable value in the range of 2...24 VDC.
Data outputs are for their rate and accuracy suitable for transmission of the measured data for further projection or directly into the control systems. We offer an isolated RS232 and RS485 with the DIN MessBus/ASCII protocol.
Analogue outputs will find their place in applications where further evaluating or processing of measured data is required in external devices. We offer universal analogue output with the option of selection of the type of output - voltage/current. The value of analogue output corresponds with the displayed data and its type and range are selectable in CM.
Real time is an internal time control of data collection. It is suitable everywhere where it is necessary to register measured data in a given time segment. Up to 65 000 values may be stored in the instrument's memory. Data transmission into PC via serial interface RS232/485.

Technical data

MEASURING RANGE		Impedance/Max. drop	
Voltage:	±60 mV	>1,8 MOhm	Input I
	±150 mV	>1,8 MOhm	Input I
	±300 mV	>1,8 MOhm	Input I
	±4,9999 V	1,8 MOhm	Input U
	±49,999 V	1,8 MOhm	Input U
	±300,00 V	1,8 MOhm	Input U
Current:	±4,9999 mA	< 300 mV	Input U
	±49,999 mA	< 300 mV	Input U
	±1,0000 A	< 50 mV	Input I
	±5,0000 A	< 50 mV	Input I
No. of inputs:	1...4 input		

PROJECTION

Display:	±49999, red or green 14-segment LED, digit height 14 mm
Decimal point:	adjustable - in Configuration menu
Brightness:	adjustable - in Configuration/User menu

INSTRUMENT ACCURACY

Tempco:	60 ppm/°C
Accuracy:	±0,04 % of range
Rate:	0,05 - 0,1 - 0,2 - 0,4 - 0,7 - 1,4 - 2,8 - 5,6 - 8,3 - 16,6 measurements/s
Overload capacity:	10x (t < 30 ms) - does not apply for 300 V and 5 A, 2x (long-term)
Watch-dog:	reset after 1,2 s
Input filters:	floating (2-30) and exp. average, radius of insensitiveness, n-th value (2-255)
Function:	offset, min./max. value, tare, top value, Hold, Lock, Math. operations
Real time:	15 ppm/°C time-date-display value (max. 65000 data), transmission of stored data RS 232
Calibration:	at 25°C and 40 % r.h.

COMPARATOR

Type:	digital, adjustable in programming mode, contact switch-on < 30 ms
Limit 1... 4	±49999
Hysteresis:	0...9999
Delay:	0...99,9 s
Outputs:	4 relays with switching contact (250 VAC/50 VDC, 3 A) *upon request SSR (250 VAC, 1 A) or open collector may be fitted*

DATA OUTPUTS

Data format:	rate 600...38 400 Baud, 7 bit + even parity + 1 stop bit (DIN MessBus), 8 bit + no parity + 1 stop bit (ASCII)
RS 232	isolated
RS 485	isolated, addressing (up to 31 instruments)

ANALOGUE OUTPUTS

Type:	isolated, programmable with resolution max. 10 000 points, analogue output corresponds with the displayed data, output type and range are selectable in CM
Non-linearity:	0,2 % of range
Tempco:	100 ppm/°C
Rate:	response to change of value < 40 ms
Voltage:	0...2 V/5 V/10 V
Current:	0...5 mA/20 mA/4...20 mA (compensation of conduct up to 600 Ohm)

EXCITATION

Adjustable:	2....24 VDC/50 mA, isolated

POWER SUPPLY

24/110/230 VAC, 50/60 Hz, ±10 %, 7,5 VA
10...30 VDC/max. 1,2 A, (24 VDC/350 mA), isolated
- power supply is protected by a fuse inside the instruments

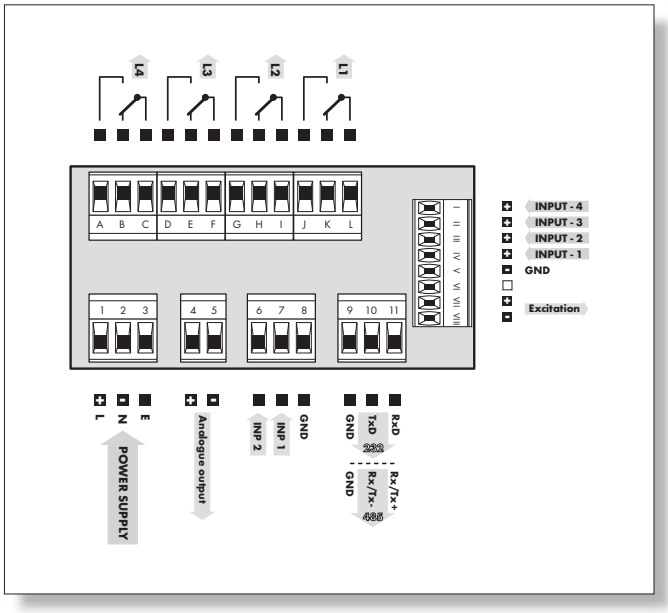
MECHANIC PROPERTIES

Material:	Noryl GFN2 SE1, incombustible UL 94 V-I
Dimensions:	96 x 48 x 154 mm
Panel cut:	90,5 x 45 mm

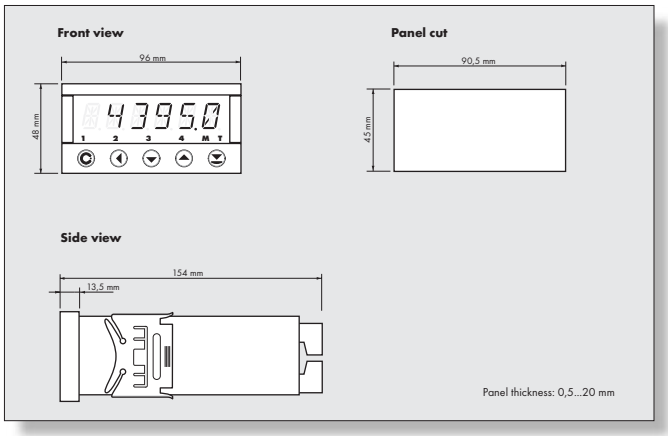
OPERATING CONDITIONS

Connection:	connector terminal board, conductor section up to 1,5/2,5 mm^2
Stabilization period:	up to 15 minutes after switch-on
Working temperature:	0°...60°C (storage temperature: -10°...85°C)
Covering:	IP65 (front panel only)
Construction:	safety class II
Electrical safety:	EN 61010-1, A2
Overvoltage category:	for pollution degree II III. - instrument power supply, relay outputs (300 V) II. - input, output, excitation (300 V)
EMC:	EN 61000-3-2+A12; EN 61000-4-2, 3, 4, 5, 8, 11; EN 550222, A1, A2

Connection



Dimensions



Order code

OM 472DC - xxxxxxxxx

Power supply
0: 24 VAC/50 Hz
1: 230 VAC/50 Hz
3: 110 VAC/50 Hz
4: 10...30 VDC, isolated

Input
A: ±49,999 mV
B: ±499,99 mV
C: ±4,9999 V
D: ±49,999 V
E: ±300,00 V
K: ±499,99 µA
L: ±4,9999 mA
M: ±49,999 mA
N: ±499,99 mA
P: ±5,0000 A

No. of input
1: 1 input
2: 2 inputs
3: 3 inputs
4: 4 inputs

Comparators
0: no
1: 1 relay
2: 2 relays
3: 3 relays
4: 4 relays

Display color
1: red
2: green

Real time
0: no
1: yes

Excitation
0: no
1: yes

Analogue output
0: no
1: yes

Data output
0: no
1: RS 232
2: RS 485

ORBIT MERRET, s.r.o., Vodňanská 675/35, 198 00 Prague 9, Czech Republic

tel: +420 - 281 04 02 00, fax: +420 - 281 04 02 99, e-mail: orbit@merret.cz