

## OM 501DC



2003-3-en

- **5 digit programmable projection**
- **±99,999 mV ... ±300,00 V**
- **±999,99 µA ... ±5,0000 A**
- **Mathematic functions, Digital filters**
- **Size of DIN 96 x 48 mm**
- **Power supply 80...250 V AC/DC**

### Options

Comparators • Excitation • Data output • Universal analog output • Real time

### Description

The OM 501DC model is a 5 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 ±99999

#### Digital filters

Floating average from 2...30 measurements  
Exponen. average from 2...100 measurements  
n-th value from 2...100 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 polynome, 1/x, logarithm, exponential, power, root, sin x

#### 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.

**Analog outputs** will find their place in applications where further evaluating or processing of measured data is required in external devices. We offer universal analog output with the option of selection of the type of output - voltage/current. The value of analog 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:	±99,999 mV	>1,8 MOhm	Input U
	±999,99 mV	1,8 MOhm	Input U
	±9,9999 V	1,8 MOhm	Input U
	±99,999 V	1,8 MOhm	Input U
	±300,00 V	1,8 MOhm	Input U
Current:	±999,99 µA	< 300 mV	Input I
	±9,9999 mA	< 300 mV	Input I
	±99,999 mA	< 300 mV	Input I
	±999,99 mA	< 50 mV	Input I
	±5,0000 A	< 50 mV	Input I

### PROJECTION

Display:	±99999, intensive red or green LED, digit height 14 mm
Decimal point:	adjustable - in Configuration menu
Brightness:	adjustable - in Configuration/User menu

### INSTRUMENT ACCURACY

Tempco:	60 ppm/°C
Accuracy:	±0,02 % of range + 1 digit
Rate:	1...100 measurements/s
Overload capacity:	10x (t < 30 ms) - does not apply for 300 V, 2x (long-term)
Watch-dog:	reset after 1,2 s
Input filters:	floating and exp. average, radius of insensitiveness, n-th value
Function:	offset, min./max. value, Tare, top value, Hold, Lock, Math. operations
Real time:	15 ppm/°C
Calibration:	time-date-display value (max. 65000 data), transmission of stored data RS 232 at 25°C and 40 % r.h.

### COMPARATOR

Type:	digital, adjustable in programming mode, contact switch-on < 30 ms
Limit 1... 4	±99999
Hysteresis:	0...9999
Delay:	0...99,9 s
Outputs:	2 relays with switching & 2 relays with switch-on contact (250 VAC/50 VDC, 3 A)

### 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)

### ANALOG OUTPUTS

Type:	isolated, programmable with resolution max. 10 000 points, analog 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
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### POWER SUPPLY

80 ... 250 V (AC/DC), 13,5 VA
9 ... 50 V (AC/DC), 13,5 VA
- power supply is protected by a fuse inside the instrument

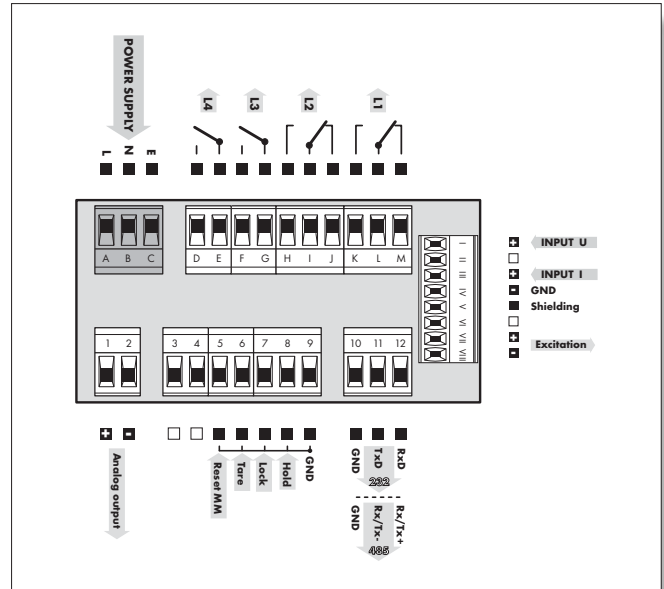
### MECHANIC PROPERTIES

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

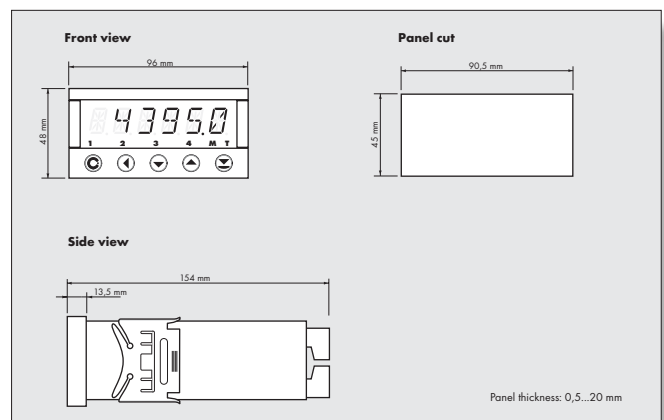
### OPERATING CONDITIONS

Connection:	connector terminal board, conductor section up to 1,5/2,5 mm <sup>2</sup>
Stabilization period:	within 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

