OM 502DC



DC V-A METER

5-DIGIT PROGRAMMABLE PROJECTION

RANGE: ±99,999 mV...±300,00 V ±999,99 µA... ±5,0000 A

MATHEMATIC FUNCTIONS, DIGITAL FILTERS, TARE

ACCURACY: 0,02 %, RATE: 100 MEAS./S

SIZE OF DIN 96 x 48 MM

POWER SUPPLY 10...30 V AC/DC; 80...250 V AC/DC

Comparators • Data output • Analog output Data record



OM 502DC



Type OM 502DC is a precision 5-digit programmable panel V-A meter.

The instrument is based on a single-chip microcontroller with a fast 24-bit sigma-delta converter, which secures high accuracy, stability and easy operation of the instrument.

OM 502DC

DC VOLTMETER AND AMMETER

OPERATION

The instrument is set and controlled by five buttons located on the front panel. All programmable settings of the instrument may be performed in three adjusting

LIGHT MENU is protected by optional number code and contains solely items necessary for instrument setting.

PROFI MENU is protected by optional number code and contains complete

USER MENU may contain arbitrary items from the programming menu (LIGHT/ PROFI), which determine the right (see, change). Access w/o password.

Standard equipment is the OM Link interface, which together with operation program enables modification and filing of all instrument settings as well as performing firmware updates (with OML cable). The program is also designed for visualization and filing of measured values from more instruments.

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

OPTION

COMPARATORS are assigned to monitor one, two, three or four limit values with relay output. As a user you can select the mode limit: LIMIT/BATCH/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.

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 ASCII/PROFIBUS protocols

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. Its type and range are selectable in menu.

MEASURED DATA RECORD is an internal time control of data collection. It is suitable where it is necessary to register measured values. Two modes may be used. FAST is designed for fast storage (40 records/s) of all measured values up to 8 000 records. Second mode is RTC, where Data record is governed by Real Time with data storage in a selected time segment and cycle. Up to 266 000 values may be stored in the instrument memory. Data transmission into PC via serial interface RS232/485 and OM Link.

STANDARD FUNCTIONS

PROGRAMMABLE PROJECTION

Setting: manual, optional projection on the display may be set in menu for both limit values of the input signal, e.g. input 0...300,0 V > 0...450,0

Projection: -99999...99999

EXCITATION

Range: 5...24 VDC/1,2 W, for feeding sensors and transmitters

Linearization: linear interpolation in 50 points (only via OM Link)

Min./max. value: registration of min./max. value reached during measurement

Tare: designed to reset display upon non-zero input signal Peak value: the display shows only max. or min. value

Mathemat. operations: polynom, 1/x, logarithm, exponential, power, root, sin x

DIGITAL FILTERS

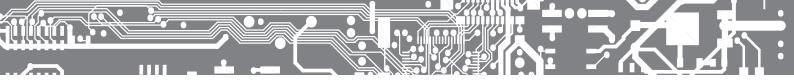
Floating average: from 2...30 measurements Exponential average: from 2...100 measurements Arithmetic average: from 2...100 measurements Rounding: setting the projection step for display

EXTERNAL CONTROL

Lock: control keys blocking Hold: display/instrument blocking

Tare: tare activation

Resetting MM: resetting min./max. value



TECHNICAL DATA

INPU	•			
DC	Range	fixed - by order		
		±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	< 10 mV	Input I
		±99,999 mV	1,8 MΩ	Input U
		±999,99 mV	1,8 MΩ	Input U
		±9,9999 V	1,8 ΜΩ	Input U
		±99,999 V	1,8 MΩ	Input U
		±300.00 V	1.8 ΜΩ	Input U

Ext. inputs 3 inputs, on contact

CHAN. A.

FIL. A. MAT. FN.

CONNECTION

The following functions can be assigned: OFF input off

display stop control keys blocking menu access blocking HOLD LOCK PASS. TARE tare activation CL. TA. CL. M.M. tare resetting resetting min/max value data recording start (FAST/RTC) data recording reset (FAST/RTC) SAVE CL. ME.

value display "Channel A" value display "Channel A" + filter

value display "Math. functions"

PROJECTION

Display: -99999...999999, single color 14-segment LED;

Digit height: 14 mm Display color: red or green

Description: the last two characters on the display can be used to describe the measured quantities

Decimal point: adjustable - in menu Brightness: adjustable - in menu

INSTRUMENT ACCURACY

TK: 50 ppm/

Accuracy: ±0,02% of range + 1 digit (for projection 99999 and 10 m/s) ±0,1% of range + 1 digit DC (1 A)

±0,05% of range + 1 digit Rate: 1...100 measur./s

Overload capacity: 2x; 10x (t < 30 ms) - not for 300 V and 5 A Linearization: linear interpolation in 50 points (only via 0M Link)

Digital filters: Exp./Floating/Arithm. average, Rounding Functions: Ofset, Min/max value, Tare, Peak value, Mat. operations Data record: measured data record into instrument memory RTC - 15 ppm/°C, time-date-display value < 266k data

FAST - display value < 8k data Watch-dog: reset after 400 ms OM Link: Company communication interface for operation, setting and update of instruments

Calibration: at 25°C and 40 % r.h.

COMPARATOR

Type: digital, menu adjustable, contact switch-on < 30 ms Hysteresis mode: switching limit, hysteresis band "Lim $\pm 1/2$ Hys." and time (0...99,9 s) determining the switching delay

Mode From-To: switching on and switching off interval Mode Batch: period, its multiples and time (0 ... 99.9 s), within which

the output is active

Output: 1...2x relays Form A (250 VAC/30 VDC, 3 A) and 1...2x relays Form C (250 VAC/50 VDC, 3 A); 2x/4x open collector (30 VDC/100 mA); 2x SSR (250 VAC/ 1 A); 2x bistabile relays [250 VAC/250 VDC, 3 A/0,3 A]

DATA OUTPUTS

Protocol: ASCII, MESSBUS, MODBUS RTU, PROFIBUS DP
Data format: 8 bit + no parity + 1 stop bit (ASCII)
7 bit + even parity + 1 stop bit (Messbus)
Rate: 600...230 400 Baud

9 600 Baud...12 Mbaud (PROFIBUS)

RS 485: isolated, addressing (max. 31 instruments)

ANALOG OUTPUTS

Type: isolated, programmable with a 16-bit D/A converter, output type and range are optional in the menu
Non-linearity: 0,1% of range

TK: 15 ppm/°C

Rate: response to change of value < 1 ms Ranges: 0...2/5/10 V, $\pm 10 \text{ V}$, 0...5 mA, 0/4...20 mA (comp. < $600 \Omega/12 \text{ V}$ or $1 000 \Omega/24 \text{ V}$)

EXCITATION

Adjustable: 5...24 VDC/max. 1,2 W, separated

POWER SUPPLY

Range: 10...30 V AC/DC, ±10 %, PF≥0,4, I_{STP}< 40 A/1 ms, isolated 80...250 V AC/DC, ± 10 %, PF ≥ 0.4 , $I_{\rm STP} < 40$ A/1 ms, isolated Consumption: < 8,0 W/7,8 VA

Power supply is protected by a fuse inside the instrument.

MECHANIC PROPERTIES

Material: Noryl GFN2 SE1, incombustible UL 94 V-l Dimensions: 96 x 48 x 120 mm [w \times h \times d] Panel cutout: 90.5 x 45 mm (w x h)

OPERATING CONDITIONS

Connection: connector terminal blocks, section < 1,5/2,5 mm² Stabilization period: within 15 minutes after switch-on Working temperature: -20°...60°C

Storage temperature: -20°...85°C Protection: IP64 (front panel only)

El. safety: EN 61010-1, A2

Dielectric strength: 4 kVAC per 1 min test between supply and input 4 kVAC per 1 min test between supply and data/analog output 4 kVAC per 1 min test between input and relay output

4 kV4C per 1 min test between input and telay dulput 2,5 kV4C per 1 min test between input and data/analog output Insulation resistance: for pollution degree II, measuring cat. III power supply > 670 V (PI), 300 V (DI) input, output, PN > 300 V (PI), 150 V (DI)

EMC: EN 61326-1

PI - Primary insulation, DI - Double insulation

E C E 4 L3 7 RxD/L+ INPUT U 9 10 11 12 13 ABCDEFGH INPUT I GND AD-U GND Shielding GND Excitation 14 15 16 17 **□ □ □** رآتم EXT. 2 EXT. 2 POWER 5 **L**2 Open collectors E2 E1

ORDER CODE										
OM 502D0							1			-
Power supply	1030 V AC/DC 80250 V AC/DC	0								
Measuring range	±99,999 mV ±99,999 mV		A B							
	±9,9999 V ±99,999 V		C							
	±300,00 V		E							
	Au ee,eee± Am eeee,e± Am eee,ee± Am ee,eee±		K L M							
	AII 85,000 A		P							
Comparators	none 1x relay [Form A] 2x relay [Form C] 3x relays [2x Form A + 1x Form C] 4x relays [2x Form A + 2x Form C] 2x open collector 4x open collector 2x open collector 2x relays [Form C] 2x relays [Form C] 2x SSR 2x bistabile relays 1x relay [Form C] none RS 232 RS 485 MODBUS* PROFIBUS			0 1 2 3 4 5 6 7 8 9 A B	0 1 2 3 4					
Analog output	yes (compensation < 600 $\Omega/12$ V) yes (compensation < 1 000 $\Omega/24$ V)					1 2				
Excitation	yes						1			
Data record	no RTC FAST							0 1 2		
Display color	red green							_	1 2	
Specification	customized version, do not fill in								_	

Basic configuration of the instrument is indicated in bold.

* Unavailable in combination with RTC/FAST