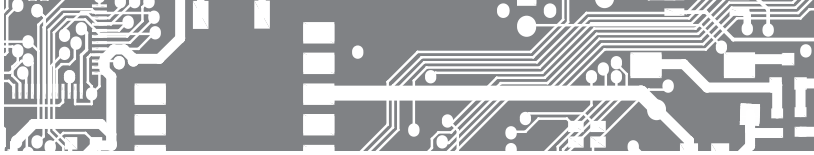


OM 502

OMLINK

The OM 502 model series are 5-digit panel programmable instruments.

The instrument is based on an 8-bit microcontroller with a multichannel 24-bit sigma-delta converter, which secures high accuracy, stability and easy operation of the instrument.

- 5-DIGIT PROGRAMMABLE PROJECTION
- MATHEMATIC FUNCTIONS, DIGITAL FILTERS, TARE
- ACCURACY 0,02 % WITH RATE 100 MEAS./S
- SIZE OF DIN 96 X 48 MM
- POWER SUPPLY 80...250 V AC/DC
- Option
  Excitation • Comparators • Data output • Analog output
  Data record • Power supply 10...30 V AC/DC

OM 502DC
DC VOLTMETER AND AMMETER

OM 502PM
PROCESS MONITOR

OM 502I
INTEGRATOR

OM 502LX
LINEARIZER

OM 502DU
DISPLAY UNIT FOR LINEAR POTENTIOMETERS

OM 502T
WEIGHING INDICATOR

OPERATION

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

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 instrument setting

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 perform 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 (they hold even after the instrument is switched off). The measured units may be projected on the display.

OPTIONS

EXCITATION is suitable for feeding of sensors and transmitters. It is isolated, with continuously adjustable value in the range of 2...24 VDC.

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.

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/MESSBUS/MODBUS/PROFIBUS 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 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 (80 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 transmis sion into PC via serial interface RS232/485 and OM Link.

STANDARD FUNCTIONS

PROGRAMMABLE PROJECTION

Setting: manual, in menu optional projection on the display may be set for both limit values of the input signal, e.g. input 0...300,0 V ⇨ 0...450,0
Projection: -99999...999999
Weighing function (T): manual or automatic calibration, signalization of stabilized equilibrium, zero stabilization, automatic zero monitoring, defined number of segments on the scale
Projection (T): ±99999 (Mode - Standard)
Selection of segment size (T): 0,001/.../0,1/0,2/0,5/1/2/5/10/20/50/100 (Mode - WEIGHT)

LINEARIZATION

Linearization: by linear interpolation in 50 points (solely via OM Link)
Linearization (LX): by linear interpolation in 256 points and 16 tables

DIGITAL FILTERS

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

MATHEMATIC FUNCTIONS

Min/max. value: registration of min/max. value reached during measurement
Tare: designed to reset display upon non-zero input signal
Fixed tare (T): firmly preset tare
Peak value: the display shows only max. or min. value
Mat. operations: polynome, 1/x, logarithm, exponential, power, root, sin x

EXTERNAL CONTROL

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

TECHNICAL DATA

PROJECTION
Display: -99999...999999, red or green 14-segment LED, digit height 14 mm
Description: last two characters on the display may be used to describe measured quantities (adjustable in menu)
Decimal point: setting - in menu
Brightness: setting - in menu

INSTRUMENT ACCURACY
TK: 50 ppm/°C
Accuracy: ±0,02 % of range + 1 digit (for projection 99999 and 10 meas./s)
±0,1 % of range + 1 digit **DC (5 A)**
±0,05 % of range + 1 digit **DC (1 A), DU, T**
Rate: 0,1...100 meas./s; 0,1...8 meas./s (I),
Overload capacity: 10x (t < 30 ms) - not for > 300 V,5 A; 2x
Time base (I): 1 s (for integration)
Linearization: by linear interpolation in 50 points
Linearization (LX): by linear interpolation in 256 points/16 tab.
Digital filters: Exp./Floating/Arithmetic average, Rounding
Functions: Offset, Min/max value, Tare, Peak value, Mat. operat.
Ext. control: HOLD, LOCK, Reset Min/Max, Tare
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 0,4 s
OM Link: Company communication interface for operation, setting and update of instruments
Calibration: at 25°C and 40 % r.h.

COMPARATOR
Type: digital, setting in menu, contact switch < 30 ms
Limits: -99999...999999
Hysteresis: 0...999999
Delay: 0...99,9 s
Output: 2x relayss Form A (250 VAC/30 VDC, 3 A)
and 2x Form C relays (250 VAC/50 VDC, 3 A), 2x/4x open collectors, 2x SSR, 2x bistable relays

DATA OUTPUT
Protocol: ASCII, MESSBUS, MODBUS - RTU, PROFIBUS
Data format: 8 bit + no parity + 1 stop bit
7 bit + even parity + 1 stop bit (Messbus)
Rate: 600...115 200 Baud
9 600 Baud...12 Mbaud (PROFIBUS)
RS 232: isolated
RS 485: isolated, addressing (max. 31 instruments)
Ethernet: 10/100BaseT, Security Protocols, POP3, FTP

ANALOG OUTPUT
Type: isolated, programmable with 12-bit D/A converter, type and range are selectable in programming mode
Non-linearity: 0,1 % of range
TC: 15 ppm/°C
Rate: response to change of value < 1 ms
Ranges: 0...2/5/10 V, ±10 V, 0...5 mA, 0/4...20 mA
(comp. < 500 Ω/12 V or 1 000 Ω/24 V)

EXCITATION
Adjustable: 5...24 VDC/max. 1,2 W, isolated
Fixed: 10 VDC, max. load 80 Ω **T**

POWER SUPPLY
10...30 V AC/DC, ±10 %, max. 13,5 VA, PF ≥ 0,4, I_{STP} < 40 A/1 ms
80...250 V AC/DC, ±10 %, max. 13,5 VA, PF ≥ 0,4, I_{STP} < 40 A/1 ms
Power supply is protected by a fuse inside the instrument

MECHANIC PROPERTIES
Material: Noryl GFN2 SE1, incombustible UL 94 V-I
Dimensions: 96 x 48 x 120 mm
Panel cutout: 90,5 x 45 mm

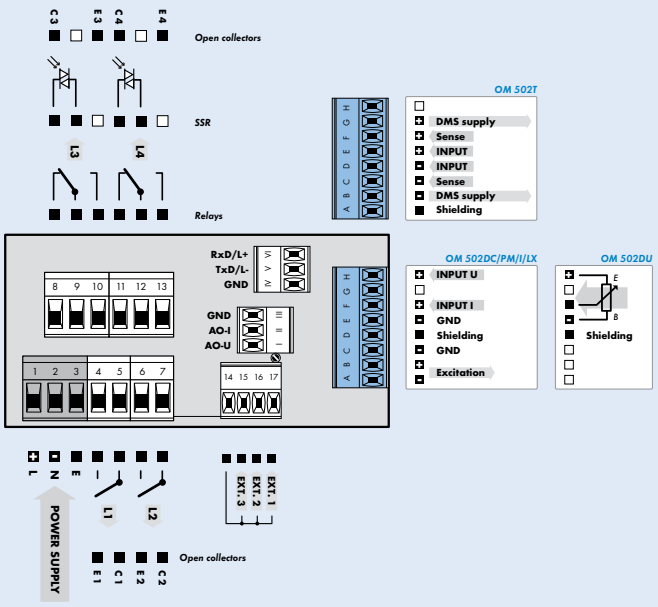
OPERATING CONDITIONS
Connection: connector terminal board, section < 1,5/2,5 mm²
Stabilization period: within 15 minutes after switch-on
Working temperature: -20°...60°C
Storage temperature: -20°...85°C
Cover: IP64 (front panel only)
El. safety: EN 61010-1, A2
Dielectric strength: 4 kVAC after 1 min between supply and input
4 kVAC after 1 min between supply and data/analog output
4 kVAC after 1 min between supply and relay output
2,5 kVAC after 1 min 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, Exc. > 300 V (PI), 150 V (DI)
EMC: EN 61326-1

PI - Primary insulation, DI - Double insulation

MEASURING RANGES

	DC	PM	I	LX	DU	T
bez					potentiometer > 500 Ω	
A	±99,999 mV	0...5 mA	0...5 mA	0...5 mA		1..4 mV/V
B	±999,99 mV	0...20 mA	0...20 mA	0...20 mA		2...8 mV/V
C	±9,9999 V	4...20 mA	4...20 mA	4...20 mA		4...16 mV/V
D	±99,999 V	±2 V	±2 V	±2 V		
E	±300,00 V	±5 V	±5 V	±5 V		
F		±10 V	±10 V	±10 V		
K	±999,99 µA					
L	±9,9999 mA					
M	±99,999 mA					
N	±999,99 mA					
P	±5,0000 A					
Z	on request	on request	on request	on request		

CONNECTION



ORDER CODE

OM 502 - -

Type	**D**	**C**	•	•	•	•	•	•	•	•
	P	**M**	•	•	•	•	•	•	•	•
		I	•	•	•	•	•	•	•	•
	L	**X**	•	•	•		•	•	•	•
	D	**U**	•		•	•	•		•	•
Order code shall not include blank spaces!		**T**	•	•	•	•	•		•	•
Power supply	10...30 V AC/DC		**0**							
	80...250 V AC/DC		**1**							
Measuring range, see table „Measuring ranges"				**?**						
Comparators	**none**				**0**					
	1x relay (Form A)				**1**					
	2x relays (Form A)				**2**					
	3x relays (2x Form A + 1x Form C)				**3**					
	4x relays (2x Form A + 2x Form C)				**4**					
	2x open collector				**5**					
	4x open collector				**6**					
	2x open collector + 2x relays (Form C)				**7**					
	2x relays (Form C)				**8**					
	2x SSR				**9**					
	2x bistable relays				**A**					
	1x relay (Form C)				**B**					
Data output	**none**					**0**				
	(for Type „LX" always in standard) RS 232					**1**				
	RS 485					**2**				
	MODBUS					**3**				
	PROFIBUS					**4**				
	10/100BaseT Ethernet (not possible with analog output)*					**7**				
Analog output	**no**						**0**			
	yes (Compensation < 500 Ω/12 V)						**1**			
	yes (Compensation < 1 000 Ω/24 V)						**2**			
Excitation	**no**							**0**		
	yes							**1**		
Data record	**no**								**0**	
	RTC								**1**	
	FAST								**2**	
Display color	**red**									**1**
	green									**2**
Other	**customer version, do not fill in**									**00**

Default execution is shown in bold

* Launch for sale has not been set