

## **LINEARIZER**

- 5-digit programmable projection
- Range: 0...5 mA; 0...20 mA; 4...20 mA

±2 V; ±5 V; ± 10V

- Linearization in 256 points/16 tables
- Mathematic functions, Digital filters, Tare
- Size of DIN 96 x 48 mm
- Power supply 10...30 V AC/DC; 80...250 V AC/DC
- Option

Comparators • Data output • Analog output • Data record

# **OM** 502LX



Type OM 502LX is a precision 5-digit panel programmable display for nonlinear input signals. With the OM Link program, linear interpolation can be performed in up to 256 points and 16 tables.

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** 502LX

LINEARIZER

### **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 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 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...5 V > 0...250,0

Linearization: tnon-linear signals can be linearized by the means of a linearization table (up to 256 points and up to 16 tables)

Projection: -99999...99999

# **EXCITATION**

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

### MATHEMATIC FUNCTIONS

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

Number of inputs		1		
LX	Range	optional in configuration menu		
		05 mA	< 300 mV	Input I
		020 mA	< 300 mV	Input I
		420 mA	< 300 mV	Input I
		±2 V	1,8 MΩ	Input U
		±5 V	1,8 MΩ	Input U
		±10 V	1,8 MΩ	Input U
	Linearizat.	by linear approximation in 256 points and up to 16 tables (only via OM Link)		
Ext. inputs		3 inputs, on co	entact	

The following functions can be assigned: input off display stop control keys blocking OFF HOLD LOCK PASS. TARE menu access blocking tare activation CL TA. tare resetting
CL M.M. resetting min/max value
SAVE data recording start (FAST/RTC)
CL ME. data recording reset (FAST/RTC) CHAN. A. value display Channel A"
FIL. A. value display Channel A" + filter
MAT. FN. value display "Math. functions"

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

## INSTRUMENT ACCURACY

TC: 50 ppm/°C

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

Rate: 1...100 measurement/s Overload capacity: 2x; 10x (t < 30 ms)

Digital filters: Exp./Floating/Arithm. average, Rounding Functions: Offset, 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

sis mode: switching limit, hysteresis band (Lim and ±1/2 Hys.) and time (±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: 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/1A);

2x bistable relays (250 VAC/250 VDC, 3 A/0,3 A)

### DATA OUTPUTS

Protocol: ASCII

Data format: 8 bit + no parity + 1 stop bit

Rate: 600...230 400 Baud

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

### ANALOG OUTPUTS

Type: isolated, programmable with a 16-bit D/A converter, output type and

ORDER CODE

Specification

range are optional in the menu Non-linearity: 0,1% of range

Rate: response to change of value < 1 ms Ranges: 0...2/5/10 V,  $\pm$ 10 V, 0...5 mA, 0/4...20 mA (comp. < 600  $\Omega$ /12 V or 1 000  $\Omega$ /24 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,  $I_{STP}$ < 40 A/1 ms, isolated

Consumption: < 8,0 W/7,8 VA

ed by a fuse inside the instrument

Material: Noryl GFN2 SE1, incombustible UL 94 V-I

Dimensions: 96 x 48 x 120 mm (w x h x d)

Panel cutout: 90,5 x 45 mm (w x h)

### OPERATING CONDITIONS

Connection: connector terminal blocks, section < 1,5/2,5 mm<sup>2</sup>
Stabilization period: within 5 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

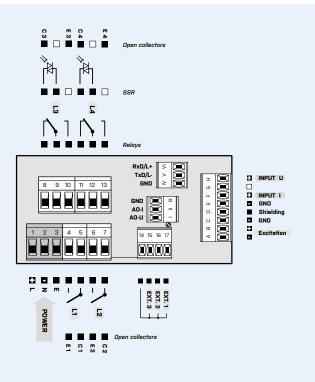
4 kVAC per 1 min test between input and relay output

2,5 kVAC 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

# CONNECTION



### **OM 502LX** 10...30 V AC/DC Power supply 80...250 V AC/DC Comparators 1x relay (Form A) 2x relay (Form A) 3x relays (2x Form A + 1x Form C) 4x relays (2x Form A + 2x Form C) 2x open collector 5 6 7 4x open collector 2x open collector + 2x relays (Form C) 2x relays (Form C) 8 9 2x SSR 2x bistable relays 1x relay (Form C) В Data output 2 RS 485 Analog output yes (compensation < 600 Ω/12 V) yes (compensation < 1000 Ω/24 V) Excitation yes Data record no 0 FAST 2 Display color red

customized version, do not fill in

Basic configuration of the instrument is indicated in bold.