



OM 502LX

OMLINK

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.

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
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 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 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: through linear interpolation in 256 points and up to 16 tables (only via OM Link)

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

INPUT

LX	Range			
	optional in configuration menu			
	0...5 mA	< 300 mV	Input I	
	0...20 mA	< 300 mV	Input I	
	4...20 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	

Linearization by linear approximation in 256 points and up to 16 tables (only via OM Link)

Ext. inputs	
3 inputs, on contact	
The following functions can be assigned:	
OFF	input off
HOLD	display stop
LOCK	control keys blocking
PASS.	menu access blocking
TARE	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“

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/°C
Accuracy: ±0,02% of range + 1 digit (for projection 99999 and 10 m/s)
Rate: 1...100 measur./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
Hysteresis mode: switching limit, hysteresis band „Lim ±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 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 232: isolated
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, ±10 V, 0...5 mA, 0/4...20 mA (comp. < 600 Q/12 V or 1 000 Q/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
Power supply is protected by a fuse inside the instrument.

MECHANIC PROPERTIES

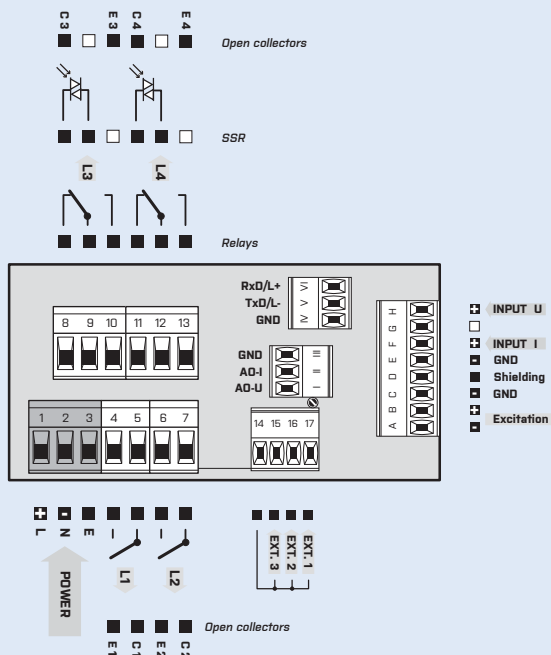
Material: Noryl GFN2 SE1, incombustible UL 94 V-1
Dimensions: 96 x 48 x 120 mm (w x h x d)
Panel cutout: 90,5 x 45 mm (w x h)

OPERATING CONDITIONS

Connection: connector terminal blocks, section < 1,5/2,5 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
 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



ORDER CODE

OM 502LX

		0	1	2	3	4	5	6	7	8	9	A	B
Power supply	10...30 V AC/DC	0											
	80...250 V AC/DC	1											
Comparators	none	0											
	1x relay (Form A)	1											
	2x relay (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	RS 232		1										
	RS 485		2										
Analog output	no			0									
	yes (compensation < 600 Q/12 V)			1									
	yes (compensation < 1 000 Q/24 V)			2									
Excitation	yes				1								
Data record	no					0							
	RTC					1							
	FAST					2							
Display color	red									1			
	green									2			
Specification	customized version, do not fill in												00

Basic configuration of the instrument is indicated in bold.