OM 402LC



DISPLAY FOR STRAIN GAUGES

- 4-digit programmable projection
- Range: 1...4/2...8/4...16 mV/V
- Digital filters, Tare, Linearization
- 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

Measured Data record • Three-color display - 20 mm

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).

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.

OM 402LC

The OM 402 model series are 4-digit panel programmable instruments designed for maximum efficiency and user comfort while maintaining their favourable price.

اساليب

Type OM 402LC is an instrument for connection of strain gauge bridges. The instrument is based on a single-chip microcontroller and a multichannel 24-bit sigma-delta converter, which secures high accuracy, stability and easy operation of the instrument.

OM 402LC DISPLAY FOR STRAIN GAUGES

STANDARD FUNCTIONS

PROGRAMMABLE PROJECTION

Measuring range: adjustable in menu Calibration: manual - setting sensitivity and maximum measuring range of the sensor, automatic - setting measuring range's limits and use of the reference load Projection: -999...9999

EXCITATION

Fixed: 10 VDC, load \ge 80 Ω

FUNCTIONS

Linearization: non-linear signals can be linearized by the means of a linearization table (up to 50 points)

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/Exp./Arithm. average: from 2...30/100/100 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	r						
Numb	er of inputs	1					
LC	Range	optional in configuration menu 14 mV/V 28 mV/V 416 mV/V					
	Connection	6-wire					
	Power supply	10 VDC, load \ge 80 Ω					
Ext. in	puts	3 inputs, o	n contact				
		The follow OFF HOLD LOCK PASS. TARE CL TA. CL M.M. SAVE CL. ME. CHAN. A. FIL. A. MAT. FN.	ving functions can be assigned: input off display stop control keys blocking menu access blocking tare activation tare resetting resetting min/max value data recording start (FAST/RTC) data recording reset (FAST/RTC) value display "Channel A" value display "Channel A" value display "Math. functions"				

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Display: -99999...999999, single color 14-segment LED; -999...9999, 3-color 7-segment LED Digit height: 14 or 20 mm Display color: red or green (height 14 mm) red/green/orange (height 20 mm) Description: last two characters on the display may be used for description of measured quantities (menu adjustable – only 14 mm display) Decimal point: adjustable – in menu Brightness: adjustable – in menu Brightness: adjustable – in menu INSTRUMENT ACCURACY TC: 50 ppm/°C Accuracy: ±0.1% of range + 1 digit (for projection 9999 and 5 measur./s) Rate: 0.1..40 measurement/s Overload capacity: 2x; 10x (t < 30 ms) Linearization: linear interpolation in 50 points (only via OM Link) 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 0.4 s

Unit company communication interface for operation, setting and update of instruments Calibration: at 25°C and 40 % r.h.

COMPARATOR

PROJECTION

Type: digital, menu adjustable, contact switch-on < 30 ms Hystereais mode: switching limit, hysteresis band (Lim and ±1/2 Hys.) and time (±97.9 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, 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, 0,0096...12 Mbaud (PROFIBUS) 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 TC: 15 ppm/°C Rate: response to change of value < 1 ms Ranges: 0...25/10 V, ±10 V, 0...5 mA, 0/4...20 mA (comp. < 600 Ω/12 V or 1 000 Ω/24 V)

POWER SUPPLY

Range: 10..30 V AC/DC, $\pm 10 \%$, PF ≥ 0.4 , $I_{stp} < 40$ A/1 ms, isolated 80...250 V AC/DC, $\pm 10 \%$, PF ≥ 0.4 , $I_{stp} < 40$ A/1 ms, isolated Consumption: < 9.4 W/9.2 VA 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 (w x h x d) Panel cutout: 90,5 x 45mm (w x h)

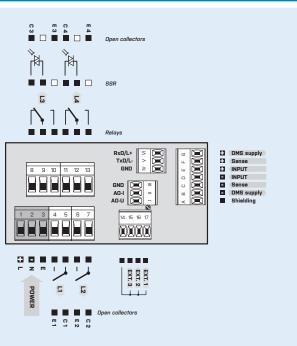
OPERATING CONDITIONS

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

EMC: EN 61326-1 Seismic capacity: IEC 980: 1993, par. 6

PI - Primary insulation, DI - Double insulation

CONNECTION



OM 402L	.c -							- L
Power supply	1030 V AC/DC	0						
	80250 V AC/DC	1						
Comparators	no		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 relays, bistable		Α					
	1x relay (Form C)		в					
Analog output	no			0				
	yes (compensation < 600 Ω/12 V)			1				
	yes (compensation < 1000 $\Omega/24$ V)			2				
Data output	no				0			
	RS 232				1			
	RS 485				2			
	MODBUS*				3			
	PROFIBUS				4			
Data record	no					0		
	RTC					1		
	FAST					2		
Display color	red (14 mm)						1	
	green (14 mm)						2	
	red/green (20 mm)						3	