Digital Manometer with LCD Display

Description

The intelligent digital manometers are used for the display, monitoring and remote transmission of pressure-dependent operating sequences in machines and installations. The pressure to be measured is sensed by a piezo-resistive sensor and displayed by the electronics. As an option, an analogue output signal for remote transmission of the measured values and a relay output are available. The values are shown on a four-digit LCD display. The front cover along with the display can be rotated.

In the pressure switch design with integrated relay, the switching point and hysteresis can be set on the membrane keypad. The starting and end points of the optional analogue output, relative to the display, are freely scalable. A wide range of process connections is available as an option. The process connection can be rotated in axial direction as desired, after loosening the counter nut**.**

Fields of application

- Plant construction
- Mechanical engineering
- Environmental technology
- Hydraulics

Technical Data

Display:	4-digit LCD, digit height 12.7 mm
Measuring ranges:	-1...0...+1600 bar (special ranges on request)
Accuracy class:	0.5
Temperature coefficient:	
• Zero point:	≤ ± 0.2 % relative to measured value/10 K
• Range:	≤ ± 0.1 % relative to measured value/10 K
Zero point correction:	≤ ± 25 %
Overload range:	3 x P_N (to 40 bar) 2 x P_N (60 to 160 bar) 1.5 x P_N (250/400/1000/1600 bar) 1.3 x P_N (600 bar)
Conversion rate:	5 per second (standard) (1 to 10 per second can be set ex works)
Housing:	Ø 74 mm, PA6 GK30, Polyester film

Technical Data (continued)

Wetted parts

Sensor:	ceramic (Al_2O_3) (range ≤ 600 bar) stainless steel (range > 600 bar)
Seal:	NBR (range ≤ 600 bar)
Process connection:	G ¼, G ½, ¼ NPT, ½ NPT outer thread (range ≥ 1000 bar only G ½ or ½ NPT) stainless steel 1.4571 (other connections on request)
Temperature of the medium:	-30...+85 °C
Ambient temperature:	0...+60 °C
Storage temperature:	-30...+80 °C
Allowed relative humidity:	< 90 %, non-condensing
Protection class:	IP 65
Electric connection:	M12 x 1 round connector or PVC cable
Cable length:	0.5 m (standard), max. 3 m
Weight:	approx. 350 g

MAN-SD

Power supply: 9 V_{DC} (block battery, IEC 6 LR 01)

Service life (based on a conversion rate of 5/s):

Operation	Alkaline battery (Duracell® MN1601, Varta® 4922)	Lithium battery (Ultralife® U9VL-J)
continuous operation	2000 h	5200 h
switched-off	7300 h	17300 h

Automatic switch-off times : 4…64 min (auto-off)
can only be set ex works;
0 = inactive (recommended for analogue or switching output)

Peak value memory: MIN or MAX values, reset via keypad

MAN-LD

Power supply: 24 V_{DC} ± 20 %

Options

Limit value relay:	NO contact, bistable, any setting possible, settable hysteresis
Max. switching power:	30 $V_{AC / DC}$, 2 A (for relay output)
Analogue output:	MAN-SD: 0 - 2 V_{DC} (working resistance: ≥ 100 kΩ) MAN-LD: 4-20 mA (working resistance: < 500 Ω, galvanically not separated)

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Order Details (Example: **MAN-SD1S 5 AD 0**)

Version	Power supply	Model	Mechanic connection*	Measuring range*	Electric connection
Standard	9 V battery	**MAN-SD1S...**			**0** = none
Relay output	9 V battery	**MAN-SD2S...**			
Output 0-2 V	9 V battery	**MAN-SD3S...**	**5** = G ¼ AG **6** = G ½ AG		
Standard	24 V_{DC}	**MAN-LD1S...**	**R** = ¼ NPT AG **S** = ½ NPT AG		
Relay output	24 V_{DC}	**MAN-LD2S...**			**S** = connector M12x1
Output 4-20 mA	24 V_{DC}	**MAN-LD3S...**			

* Please specify other connections (7/8 UNF for refrigeration technology, M16, etc.) and special measuring ranges in plain text.

Measuring ranges starting at 1000 bar are primarily to be connected to the process with G ½, ½ NPT or M16 female.

Order Details (continued)

Automatic switch-off times	**Other options** (please specify in plain text)
without = continuous operation (standard except MAN-SD1) **B** = 4 minutes **C** = 8 minutes (standard MAN-SD1) **D** = 16 minutes **E** = 32 minutes **F** = 64 minutes	Display in mbar, PSI, hPa etc. Conversion rate 1-10 per sec.

Accessories for round connector M12x1

Electrical connection	**Other options** (please specify in plain text)
M12-box, Screw terminals, 5-pole	**ZUB-KAB-12D500**
M12-box, 2 m cable, 4-pole	**ZUB-KAB-12K002**
M12-box, 5 m cable, 4-pole	**ZUB-KAB-12K005**
M12-box, Quick-on, 4-pole	**ZUB-KAB-12Q000**

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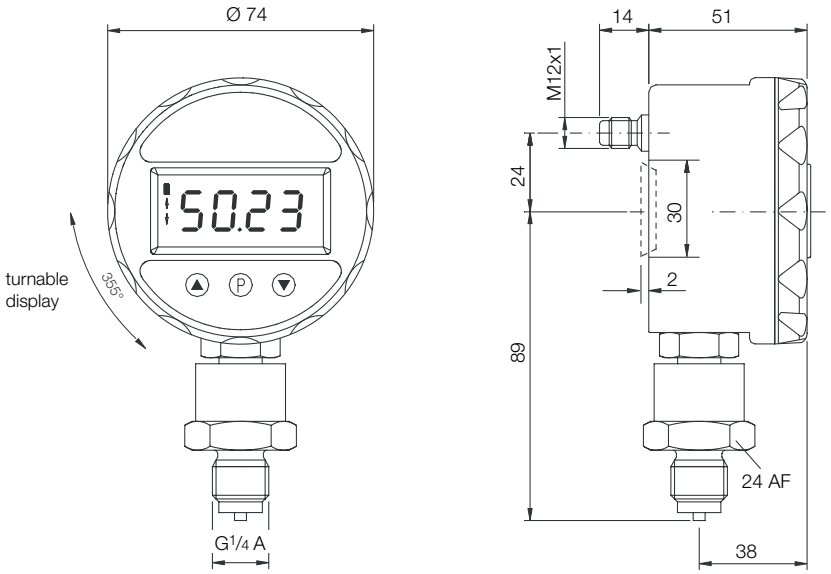
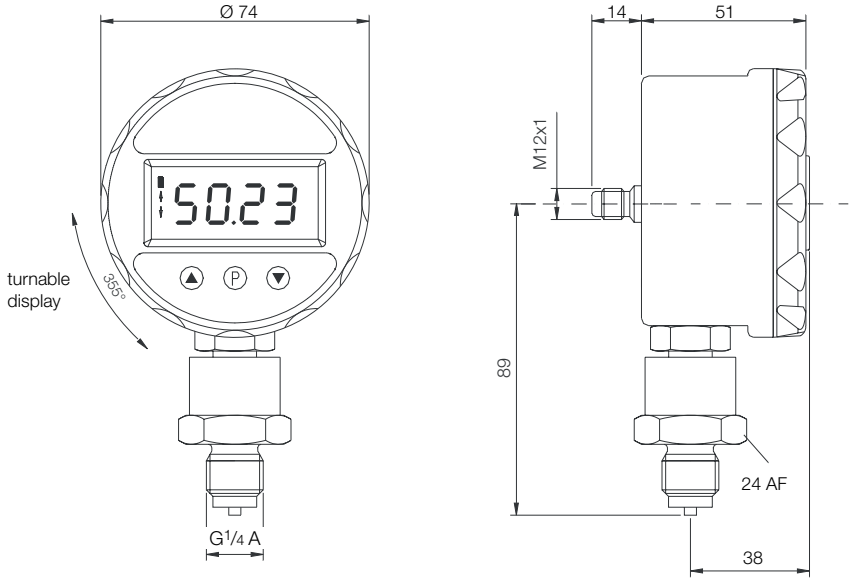


MAN-LD



Contact No.	MAN-SD2...	MAN-SD3...		MAN-LD2...	MAN-LD3...
1	-	-		$+V_S$ / 24 V_{DC}	$+V_S$ / 24 V_{DC}
2	NO contact	-		NO contact	-
3	-	GND		GND	GND
4	-	Analogue output 0-2 V_{DC}		-	Analogue output 4-20 mA
5	NO contact	-		NO contact	-