



IBAR

Battery Powered Digital Pressure Gauge

- ▶ standard version: piezoresistive stainless steel sensor
- ▶ low cost version: ceramic sensor
- ▶ nominal pressure ranges from 0 ... 100 mbar up to 0 ... 600 bar

Description

The battery powered digital pressure gauge IBAR has been specially designed for applications in hydraulics and pneumatics. It could be installed easily and quickly in situ. The display module is continuously rotatable so that a clear readability is guaranteed even in unusual installation positions.

Operation

The device can be operated menu-driven via three pushbuttons in the touchpad. Besides showing information about the nominal pressure range as well as minimal and maximal pressure of the process, several pressure units (bar, mbar, PSI, mW, inHg, cmHg, mmHg, kPa, MPa) and the position of decimal point can be set. Upper and lower range of the measured range can be recalibrated by the customer. Defaults can be loaded again via menu.

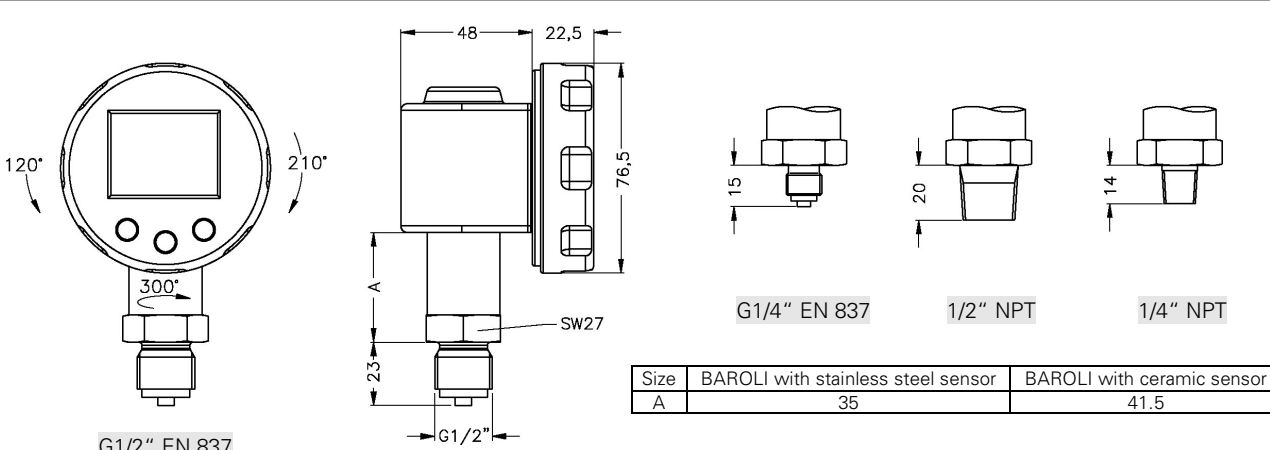


Applications

- ▶ hydraulics
- ▶ pneumatics
- ▶ mechanical engineering

Characteristics

- ▶ rugged, rotatable plastic housing
- ▶ 4.5 digit LC display for showing the measured value (digit height 11 mm)
- ▶ 6-digit additional display for the unit (digit height 7.5 mm)
- ▶ easy configuration via three push buttons
- ▶ accuracy:
0.125 / 0.250 % FS BFSL
(0.25 / 0.50 % FS IEC 60770)
- ▶ ingress protection IP 65
- ▶ mechanical connection
 - G1/2" EN 837
 - G1/4" EN 837
 - 1/2" NPT
 - 1/4" NPT

Input pressure with stainless steel sensor																				
Nominal pressure gauge / abs. [bar]	0.10	0.16	0.25	0.4	0.6	1.0	1.6	2.5	4.0	6.0	10	16	25	40						
Permissible overpressure [bar]	0.5	0.5	1	1	3	3	6	6	20	20	20	60	60	100						
Nominal pressure gauge / abs. [bar]	60		100			160		250		400		600								
Permissible overpressure [bar]	140		340			340		600		600		1000								
Input pressure with ceramic sensor																				
Nominal pressure gauge / abs. [bar]	1.6	2.5	4	6	10	16	25	40	60	100	160	250	400	600						
Permissible overpressure [bar]	4	4	10	10	20	40	40	100	100	200	400	400	600	600						
Performance																				
Accuracy	stainless steel sensor with $P_N > 0.4$ bar: stainless steel sensor with $P_N \leq 0.4$ bar: ceramic sensor:							IEC 60770 ²			BFSL									
								$\leq \pm 0.250$ % FS			$\leq \pm 0.125$ % FS									
								$\leq \pm 0.500$ % FS			$\leq \pm 0.250$ % FS									
								$\leq \pm 0.500$ % FS			$\leq \pm 0.250$ % FS									
Measuring rate	5/sec.																			
¹ accuracy according to IEC 60770 – limit point adjustment (non-linearity, hysteresis, repeatability)																				
Thermal errors / Permissible temperatures																				
Thermal errors for stainless steel sensor (Offset and Span)	nominal pressure P_N [bar]			≤ 0.1	≤ 0.25	≤ 0.4	≤ 1	> 1												
	tolerance band [% FS]			$\leq \pm 2$	$\leq \pm 1.5$	$\leq \pm 1$	$\leq \pm 1$	$\leq \pm 0.75$												
	TC, average [% FS / 10 K]			± 0.3	± 0.2	± 0.14	± 0.1	± 0.07												
	in compensated range [°C]			0 ... 50				0 ... 70												
Thermal errors for ceramic sensor (Offset and Span)	$\leq \pm 0.2$ % FS / 10 K in compensated range -25 ... 85 °C																			
Permissible temperatures	medium: -20 ... 85 °C				environment: -20 ... 70 °C				storage: -30 ... 80 °C											
Materials																				
Display housing	PA 6.6, polycarbonate																			
Seals (media wetted)	stainless steel sensor: $P_N \leq 40$ bar: FKM, EPDM $P_N > 40$ bar: NBR others on request ceramic sensor: $P_N < 100$ bar: FKM $P_N \geq 100$ bar: NBR others on request																			
Pressure port / diaphragm	stainless steel 1.4571 (316Ti) / stainless steel 1.4435 (316L) or ceramics Al ₂ O ₃ 96 %																			
Media wetted parts	pressure port, seals, diaphragm																			
Miscellaneous																				
Display	LC display, visible range 40 x 30 mm; 4.5-digit 7-segment main display, digit height 11 mm, range of indication ± 19999 ; 6-digit 14-segment additional display, digit height 7.5 mm																			
Electromagnetic compatibility	emission and immunity according to EN 61326																			
Mechanical stability	vibration: 5 g RMS (20 ... 2000 Hz) shock: 100 g / 11 msec.																			
Supply	3.6 V lithium batteries; 2 pieces (type 1/2 AA)																			
Data memory:	EEPROM (non-volatile)																			
Ingress protection	IP 65																			
Installation position	any ²																			
Weight	approx. 300 g																			
AD-converter solution	14 bit																			
Operational life of battery	standby mode: approx. 5 years																			
Mech. operational life	$> 100 \times 10^6$ pressure cycles																			
² The digital pressure gauge is calibrated in a vertical position with the pressure connection down. If this position is changed on installation there can be slight deviations in the zero point for devices with stainless steel sensor and pressure range $P_N \leq 1$ bar.																				
Dimensions (in mm)																				
 <p>The drawing shows a pressure gauge with a circular display and a pressure port. Dimensions include a diameter of 48 mm, a depth of 22.5 mm, and a total height of 76.5 mm. The pressure port is G1/2" EN 837. Three detail views show different connection types: G1/4" EN 837 (height 15 mm), 1/2" NPT (height 20 mm), and 1/4" NPT (height 14 mm). A table below the drawing provides the height A for different sensor types.</p> <table border="1"> <thead> <tr> <th>Size</th> <th>BAROLI with stainless steel sensor</th> <th>BAROLI with ceramic sensor</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>35</td> <td>41.5</td> </tr> </tbody> </table>															Size	BAROLI with stainless steel sensor	BAROLI with ceramic sensor	A	35	41.5
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