

# PRODUCT CATALOGUE

## DIGITAL GAUGES





# PRESSURE AT THE HIGHEST LEVEL

„Successful medium-sized companies are not successful because they are active in many areas, but rather because they concentrate on one area and do it better than anyone else“

This is our philosophy. That's why BDESENSORS has concentrated on electronic pressure measurement technology from the beginning.

With our unremitting product and quality strategy we have been successful in becoming a major player on the world market for electronic pressure sensing devices within a few years.

With 260 employees at 4 locations in Germany, the Czech Republic, Russia and China BD|SENSORS has solutions from 0.1 mbar to 6000 bar:

- pressure sensors, pressure transducers  
pressure transmitters
- electronic pressure switches
- pressure measuring devices with display and  
switching outputs
- hydrostatic level probes

Two pressure transmitters and a submersible probe, based on a stainless steel silicon sensor were the beginning. Today the range extends to more than 70 standard products, from economical OEM devices to high-end products with HART® communication or field bus interface.

In addition we have developed hundreds of customer-specific applications, underlining the competence and flexibility of BD|SENSORS. The excellent price/performance ratio of our products is proof of the fact that we are able to meet the toughest demand: Being a problem-solver for our customers.

For large production batches as well as for small production numbers, no matter for what medium or external factors, with almost any mechanical or electrical connection - we solve your problem

**flexibly, quickly and cost-efficiently.**

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# DM 01

## Battery Powered Precision Digital Gauge

Stainless Steel Sensor

class 0.05

### Nominal pressure

from 0 ... 100 mbar up to 0 ... 600 bar

### Special characteristics

- ▶ modular sensor concept
- ▶ data logger incl. software
- ▶ graphic display
- ▶ stainless steel housing Ø 100 mm
- ▶ communication interface USB 2.0

### Optional

- ▶ accredited calibration certificate
- ▶ IS-version zone 1
- ▶ service case with accessories

### Functions

- ▶ zero point calibration
- ▶ data logger
- ▶ turn off automatic
- ▶ configurable switch-off automatic
- ▶ background illumination

The digital pressure gauge DM 01 is a precision device fulfilling highest demands. It was conceived especially for the process monitoring and calibration. The advantage: With the digital display DM 01, different pressure transmitters can be used for various measurement ranges.

The pressure transmitter can be selected and easily exchanged for the required pressure range on site – without tools or parameter setting.

Outstanding measuring qualities, an intuitive operation, as well as an innovative, modular sensor concept characterise the DM 01. The battery-powered digital pressure gauge can be used e.g. for controlling pressure courses or calibrating pressure transmitters.

The integrated data logger is able to record pressure and temperature values linearly and cyclically. These measurements can be transferred to a PC via USB and analysed with software BDIALOG.

### Preferred areas of use are



Calibrating techniques



Laboratory applications



Plant and Machine Engineering

Input pressure												
Nominal pressure gauge / abs.	[bar]	-1...0	0.10	0.16	0.25	0.40	0.60	1	1.6	2.5	4	6
Overpressure	[bar]	5	1	1	1	2	5	5	10	10	17.5	35
Burst pressure $\geq$	[bar]	7.5	1.5	1.5	1.5	3	7.5	7.5	15	15	25	50
Nominal pressure gauge / abs.	[bar]	10	16	25	40	60	100	160	250	400	600	
Overpressure	[bar]	35	80	80	105	210	600	600	1000	1000	1000	
Burst pressure $\geq$	[bar]	50	120	120	210	420	1000	1000	1250	1250	1250	
Vacuum resistance		$P_N \geq 1$ bar: unlimited vacuum resistant $P_N < 1$ bar: on request										

Performance	
Accuracy <sup>1</sup>	standard for $P_N \geq 0.4$ bar: $\leq \pm 0.05$ % BFSL standard for $P_N < 0.4$ bar: $\leq \pm 0.125$ % BFSL
Long term stability	$\leq \pm 0.1$ % FSO / year
Measuring rate / Display	1 or 2 measurements per second
<sup>1</sup> accuracy according to IEC 60770 – limit point adjustment (non-linearity, hysteresis, repeatability)	

Thermal effects (Offset and Span)	
Temperature error	for nominal pressure ranges $P_N \leq 160$ bar: included in the accuracy information for nominal pressure ranges $P_N > 160$ bar: tolerance band $\leq \pm 0.75$ % FSO (is valid for compensated range 0 ... 50 °C)

Permissible temperatures	
Permissible temperatures	medium: -10 ... 55 °C      environment: -10 ... 55 °C      storage: -20 ... 70 °C

Materials	
Pressure port / housing	stainless steel 1.4404 (316L)
Display housing	stainless steel 1.4301 (304)
Seals (media wetted)	FKM, without (welded version) <sup>2</sup>
Diaphragm	Stainless steel 1.4435 (316L)
Media wetted parts	pressure port, seal, diaphragm
<sup>2</sup> welded version only with pressure ports according to EN 837; possible for nominal pressure ranges $P_N \leq 40$ bar	

Explosion protection	
AX16-DM01	IBExU12ATEX1108 X zone 1: II 2G Ex ia IIC T4 Gb

Miscellaneous	
Display	graphic LC display:      visible area 55 x 46 mm; (resolution 128x64) figure height 5.5 mm (displaying of pressure value) measured value display: max. 7 digits temperature display, time, 100-segment-bargraph, potential input value background illumination:      illumination period and intensity adjustable
Temperature display range	accuracy: $\pm 2$ K resolution:      0,1 K display:      -10 ... 55 °C
Data logger	recording pressure values and sensor temperature (min, hrs, daily at a defined time) max. 8500 values modes: cyclic, linear measuring value interval adjustable
Current consumption	without background illumination:      approx. 1,3 mA with background illumination:      approx. 16 mA (depending on adjusted intensity) standby mode:      approx. 1,2 $\mu$ A
Supply	3x 1,5 V: Duracell Plus battery, DUR087033, AA (LR6)
Ingress protection	IP 67
Mounting position <sup>3</sup>	any
Weight	approx. 680 g
A / D-converter resolution	16 bit
Battery life	standard use: > 2.000 h      standby mode: at least 5 years
Load cycles	> 100 x 10 <sup>6</sup>
CE-conformity	EMC directive:      2004/108/EC pressure equipment directive:      97/23/EC (Module A) <sup>4</sup> electromagnetic compatibility:      according to EN 61326

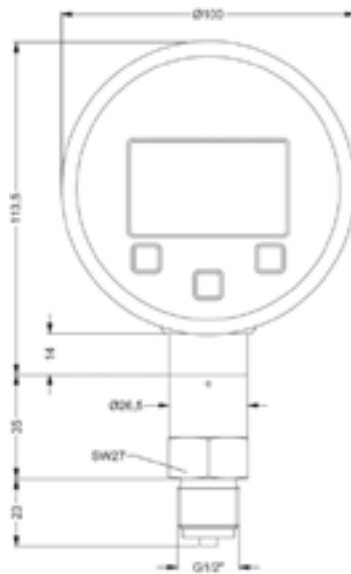
<sup>3</sup> Pressure transmitters are calibrated in a vertical position with the pressure connection down. If this position is changed on installation there can be slight deviations in the zero point for pressure ranges  $P_N \leq 1$  bar.

<sup>4</sup> This directive is only valid for devices with maximum permissible overpressure > 200 bar.

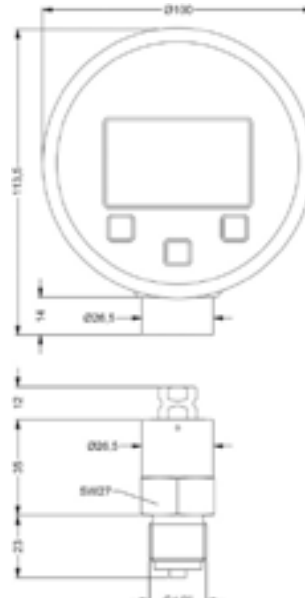


### Dimensions (in mm)

#### standard



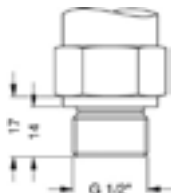
G1/2" EN 837



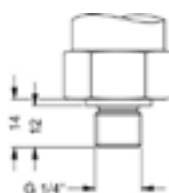
G1/2" EN 837

(pressure transmitter and display separated)

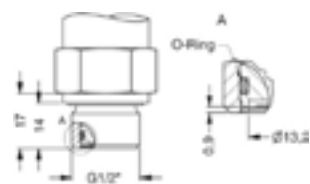
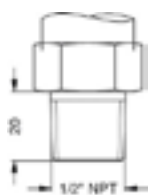
#### option



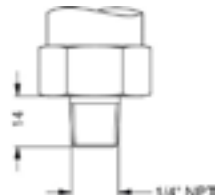
G1/2" DIN 3852



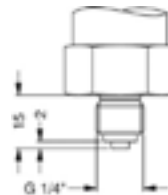
G1/4" DIN 3852

G1/2" DIN 3852  
with flush sensor<sup>5</sup>

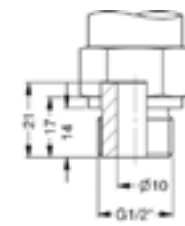
1/2" NPT



1/4" NPT



G 1/4" EN 837



G1/2" DIN 3852 open pressure port

⇒ metrical threads and other variations on request

<sup>5</sup> only possible for nominal pressure ranges  $P_N \leq 40$  bar

**Accessories****Service case**

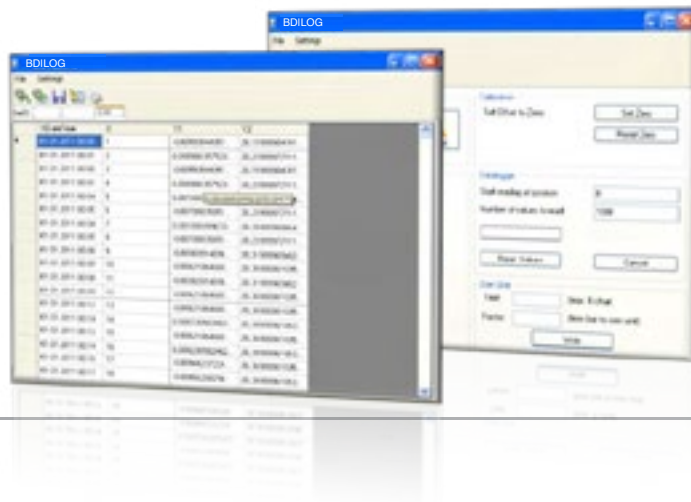
e

**contents:**

- DM01
- pressure sensor module, customized
- rubber protection for DM01; additional batteries
- USB-cable and software: BD|LOG (standard)
- hand pump with seal set and connecting hose
  - pressure range: 0 ... 35 bar
  - vacuum: 0 ... - 950 mbar
- adapter G1/2", 1/4" NPT, 1/2" NPT
- operating manual

**BD|LOG software (standard)****Software for readout of recorded data**

- date
- pressure
- temperature

**Scope of delivery**

- software
- interface cable and USB adapter

DM01		<div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> </div>											
Pressure													
	gauge	M	0	K									
	absolute	M	0	L									
Input													
	[bar]												
	0.10				1	0	0	0					
	0.16				1	6	0	0					
	0.25				2	5	0	0					
	0.40				4	0	0	0					
	0.60				6	0	0	0					
	1.0				1	0	0	1					
	1.6				1	6	0	1					
	2.5				2	5	0	1					
	4.0				4	0	0	1					
	6.0				6	0	0	1					
	10				1	0	0	2					
	16				1	6	0	2					
	25				2	5	0	2					
	40				4	0	0	2					
	60				6	0	0	2					
	100				1	0	0	3					
	160				1	6	0	3					
	250				2	5	0	3					
	400				4	0	0	3					
	600				6	0	0	3					
	-1 ... 0			X	1	0	2						
	customer				9	9	9	9					consult
version													
	non IS							0					
	IS							E					
Accuracy													
standard for $P_N \geq 0.4$ bar	0.05%							B	1				
standard for $P_N < 0.4$ bar	0.125%							B	2				
	customer							9	9				consult
Mechanical connection													
	G1/2" DIN 3852							1	0	0			
	G1/2" EN 837							2	0	0			
	G1/4" DIN 3852							3	0	0			
	G1/4" EN 837							4	0	0			
	G1/2" DIN 3852							F	0	0			
	with flush sensor <sup>2</sup>												consult
	G1/2" DIN 3852 open pressure port							H	0	0			
	1/2" NPT							N	0	0			
	1/4" NPT							N	4	0			
	customer							9	9	9			consult
Seals													
	FKM									1			
	without (welded version) <sup>3</sup>									2			
	customer									9			consult
Special version													
	standard									0	0	0	
	customer									9	9	9	consult

<sup>1</sup> with 3,5 mm jack and data logger software, the visualisation software (code VSW-DM01) can be ordered separately for 189,00 euro

<sup>2</sup> only possible for  $P_N \leq 40$  bar

<sup>3</sup> welded version only with pressure ports according to EN 837; possible for nominal pressure ranges  $P_N \leq 40$  bar

#### ordering example:

device DM 01:

position 1: DM 01-A21

position 2: M0K-1001-B1-200-1-000

only display: position 1: DM 01-A21

only transmitter: position 2: M0K-1001-B1-200-1-000





# BAROLI 02

## Battery Powered Digital Pressure Gauge

Stainless Steel Sensor

class 0.1

### Nominal pressure

from 0 ... 100 mbar up to 0 ... 600 bar

### Special characteristics

- ▶ rotatable housing
- ▶ 2-line LC display  
4.5-digit 7-segment display  
6-digit 14-segment additional display

### Functions

- ▶ min / max function with reset function
- ▶ offset and end point calibration
- ▶ setting the pressure unit  
(bar, mbar, psi, InHg, cmHg, mmHg, hPa, kPa, MPa, mH<sub>2</sub>O)
- ▶ switch-off automatic

The battery-powered digital pressure gauge BAROLI 02 enables a local displaying of values, satisfying the highest demands for accuracy and long-term stability. The pressure gauge may be applied in all media compatible with the stainless steel used; it shows an excellent robustness and a high overpressure protection.

The BAROLI 02 display housing is rotatable, thus ensuring an easy reading even under unfavorable mounting conditions.

Additional functions:

changing the unit, displaying min / max values, calibrating of offset and the span, configuring the automatic switching-off

### Preferred areas of use are



Plant and Machine Engineering  
Pneumatics / Hydraulics  
Measurement Technology  
Calibration and Test Purposes



Laboratory Techniques



Environmental Engineering  
(water – sewage – recycling)



Input pressure ranges											
Nominal pressure gauge / abs.	[bar]	0.10	0.16	0.25	0.40	0.60	1	1.6	2.5	4	6
Overpressure	[bar]	0.5	1	1	2	5	5	10	10	20	40
Burst pressure	[bar]	1.5	1.5	1.5	3	7.5	7.5	15	15	25	50

Nominal pressure gauge / abs.	[bar]	10	16	25	40	60	100	160	250	400	600
Overpressure	[bar]	40	80	80	105	210	210	600	1050	1050	1250
Burst pressure	[bar]	50	120	120	210	420	420	1000	1250	1250	1250
Vacuum pressure	-1 ... 0 bar, overpressure: 5 bar, burst pressure: 7.5 bar other vacuum ranges on request										
Vacuum resistance	P <sub>N</sub> ≥ 1 bar: unlimited vacuum resistance P <sub>N</sub> < 1 bar: on request										

Performance				
Accuracy	nominal pressure $\geq 0.4$ bar: $\leq \pm 0.125$ % FSO BFSL nominal pressure: $< 0.4$ bar: $\leq \pm 0.25$ % FSO BFSL			
Measuring rate	5/sec			
Long term stability	$\leq \pm 0.1$ % FSO / year			
Thermal effects (Offset and Span)				
Nominal pressure P <sub>N</sub>	[bar]	-1 ... 0	$\leq 0.40$	$> 0.40$
Tolerance band	[% FS]	$\leq \pm 0.75$	$\leq \pm 1$	$\leq \pm 0.75$
in compensated range	[°C]	-20 ... 85 °C	0 ... 70 °C	-20 ... 85 °C
Permissible temperatures				
Permissible temperatures	medium: -20 ... 85 °C		environment: -20 ... 70 °C	storage: -30 ... 80 °C
Mechanical stability				
Vibration	5 g RMS (25 ... 2000 Hz)		according to DIN EN 60068-2-6	
Shock	100 g / 1 msec		according to DIN EN 60068-2-27	
Materials				
Pressure port / Housing	stainless steel 1.4404 (316 L)			
Display housing	PA 6.6, polycarbonate			
Seals (media wetted)	FKM			
Diaphragm	stainless steel 1.4435 (316 L)			
Media wetted parts	pressure port, seals, diaphragm			
Miscellaneous				
Display	LC display, visible range 40 x 30 mm; 4.5-digit 7-segment-display, digit height 11 mm, range of indication $\pm 19999$ ; 6-digit 14-segment additional display, digit height 7.5 mm			
Electromagnetic compatibility	emission and immunity according to EN 61326			
Supply	3.6 V Lithium battery; 2 piece (type 1/2 AA)			
Data storage	EEPROM (non-volatile)			
Ingress protection	IP 65			
Installation position	any <sup>1</sup>			
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			
CE-conformity	EMC Directive: 2004/108/EG		Pressure Equipment Directive: 97/23/EG (Modul A) <sup>2</sup>	

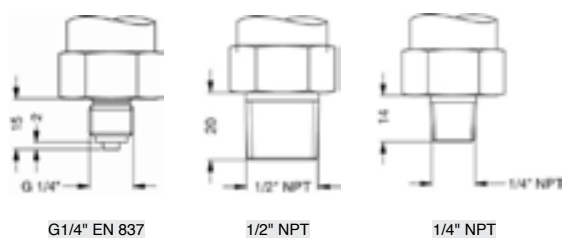
<sup>1</sup> The digital pressure gauge is calibrated in a vertical position with the pressure connection down. If this position is changed on installation there can be slight deviations in the zero point for devices with stainless steel sensor and pressure range P<sub>N</sub> ≤ 1 bar.

<sup>2</sup> This directive is only valid for devices with maximum permissible overpressure > 200 bar.

#### Dimensions (in mm)



G1/2" EN 837



G1/4" EN 837

1/2" NPT

1/4" NPT

This price list contains product specifications; properties are not guaranteed. Subject to change without notice.

BAROLI 02						
<div><div></div><div></div><div></div>-<div></div><div></div><div></div>-<div>0</div><div></div><div></div>-<div>0</div>K<div>0</div>-<div></div><div></div><div></div>-<div></div><div></div>-<div></div><div></div>-<div></div><div></div><div></div><div></div></div>						
Pressure						
gauge		M	0	E		
absolute		M	0	F		
Input						
[bar]						
0.10		1		0	0	0
0.16		1		6	0	0
0.25		2		5	0	0
0.40		4		0	0	0
0.60		6		0	0	0
1.0		1		0	0	1
1.6		1		6	0	1
2.5		2		5	0	1
4.0		4		0	0	1
6.0		6		0	0	1
10		1		0	0	2
16		1		6	0	2
25		2		5	0	2
40		4		0	0	2
60		6		0	0	2
100		1		0	0	3
160		1		6	0	3
250		2		5	0	3
400		4		0	0	3
600		6		0	0	3
-1 ... 0		X	1	0	2	
customer		9	9	9	9	consult
Accuracy [BFSL]						
standard for P <sub>N</sub> ≥ 0,4 bar	0.125 %	B	2			
standard for P <sub>N</sub> < 0,4 bar	0.25 %	B	5			
customer		9	9			
Mechanical connection						
G1/2" EN 837			2	0	0	
G1/4" EN 837			4	0	0	
1/2" NPT			N	0	0	
1/4" NPT			N	4	0	
customer			9	9	9	consult
Seals						
FKM			1			
customer			9			
Pressure port						
Stainless steel 1.4404 (316L)			1			
customer			9			
Diaphragm						
Stainless steel 1.4435 (316L)			1			
customer			9			
Front foil						
standard			1			
neutral			N			
customer			9			
Special version						
standard			0	0	0	
customer			9	9	9	consult

*This price list contains product specifications; properties are not guaranteed. Detailed information about options are defined in the datasheet. Subject to change without notice.*



# BAROLI 02P

## Battery Powered Digital Pressure Gauge

Stainless Steel Diaphragm Flush Welded

class 0.1

### Nominal pressure

from 0 ... 100 mbar up to 0 ... 40 bar

### Special characteristics

- ▶ rotatable housing
- ▶ 2-line LC display  
4.5-digit 7-segment display  
6-digit 14-segment additional display
- ▶ hygienic process connections

### Functions

- ▶ min / max function with reset function
- ▶ offset and end point calibration
- ▶ setting the pressure unit
- ▶ configuration of switch-off automatic

The battery-powered digital pressure gauge BAROLI 02P with flush welded stainless steel sensor enables a local displaying of values in applications, where high requirements on hygienic process connections and easy cleaning or sterilisability are requested. The filling medium is food compatible oil with FDA approval.

The BAROLI 02P display housing is rotatable, thus ensuring an easy reading even under unfavorable mounting conditions.

Additional functions:

switching the unit, displaying min / max values, calibrating the offset and the end point, configuring the automatic switching-off

### Preferred areas of use are



Food Industry



Pharmacy



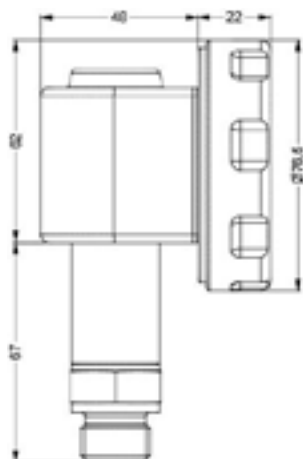
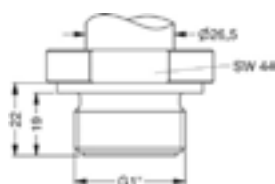
Input pressure ranges <sup>1</sup>									
Nominal pressure gauge / abs.	[bar]	-1 ... 0	0.10	0.16	0.25	0.40	0.60	1	1.6
Overpressure	[bar]	5	0.5	1	1	2	5	5	10
Burst pressure ≥	[bar]	7.5	1.5	1.5	1.5	3	7.5	7.5	15

Nominal pressure gauge / abs.	[bar]	2,5	4	6	10	16	25	40
Overpressure	[bar]	10	20	40	40	80	80	105
Burst pressure ≥	[bar]	15	25	50	50	120	120	210
Vacuum resistance	P <sub>N</sub> ≥ 1 bar: unlimited vacuum resistance P <sub>N</sub> < 1 bar: on request							
<sup>1</sup> consider the pressure resistance of fitting and clamps								

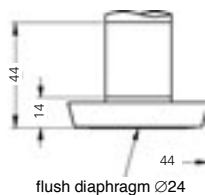
Performance			
Accuracy <sup>1</sup>	standard:    nominal pressure ≥ 0.4 bar :    ≤ ± 0.125 % BFSL nominal pressure < 0.4 bar:    ≤ ± 0.25 % BFSL		
Measuring rate	5/sec		
<sup>1</sup> accuracy according to IEC 60770 – limit point adjustment (non-linearity, hysteresis, repeatability)			
Thermal effects (Offset and Span)			
Nominal pressure P <sub>N</sub> [bar]	-1 ... 0	< 0.40	≥ 0.40
Tolerance band            [% FSO]	≤ ± 0.75	≤ ± 1.5	≤ ± 0.75
in compensated range    [°C]	0 ... 70 °C	0 ... 50 °C	0 ... 70 °C
Permissible temperatures			
Permissible temperatures <sup>2</sup>	medium:	-40 ... 125 °C for filling fluid of silicon oil	
	environment:	-10 ... 125 °C for filling fluid of food compatible oil	
	storage:	-20 ... 70 °C -30 ... 80 °C	
<sup>2</sup> max. temperature of the medium for nominal pressure gauge > 0 bar: 150 °C for 60 minutes with a max. environmental temperature of 50 °C			
Mechanical stability			
Vibration	5 g RMS (25 ... 2000 Hz)		according to IEC 60068-2-6
Shock	100 g / 1 msec		according to IEC 60068-2-27
Materials / Filling fluids			
Housing	stainless steel 1.4404		
Pressure port	stainless steel 1.4404		other on request
Display housing	PA 6.6, polycarbonate		
Seals (media wetted)	standard:	FKM	
	clamp and dairy pipe:	none	
Diaphragm	stainless steel 1.4435		
Media wetted parts	pressure port, seals, diaphragm		
Filling fluids	standard:	silicon oil	
	option:	food compatible oil with FDA-certificate (mobile DTE FM 32; class code: H1; NFS registration Nr.: 130662) other on request	
Miscellaneous			
Display	LC display, visible range 40 x 30 mm; 4.5-digit 7-segment-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		
Supply	3.6 V Lithium battery; 2 pieces (type 1/2 AA)		
Data storage	EEPROM (non-volatile)		
Ingress protection	IP 65		
Installation position	any (standard: the device is calibrated in a vertical position with the pressure connection down; other than the given position for P <sub>N</sub> ≤ 2 bar have to be declared at ordering)		
Weight	min. 350 g (pendent on the pressure connection)		
AD-converter solution	14 Bit		
Operational life of battery	standby mode: approx. 5 years		
mech. operational life	> 100 x 10 <sup>6</sup> pressure cycles		
CE-conformity	EMV Directive: 2004/108/EG		

**Dimensions (in mm)****standard**

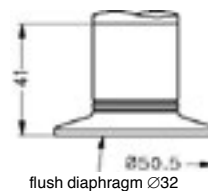
G1/2" flush DIN 3852  
1 bar ≤ PN ≤ 600 bar

**option**

G1" flush DIN 3852  
(PN ≤ 400 bar)



dairy pipe DN25 DIN 11851  
(PN ≤ 400 bar)



clamp 1 1/2" ISO 2852  
(PN ≤ 400 bar)



BAROLI 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<sup>1</sup> possible only for  $P_N \geq 1$  bar<sup>2</sup> cup nut for dairy pipe included and pre-assembled



# BAROLI 05

## Battery Powered Digital Pressure Gauge

Ceramic Sensor

class 0.2

### Nominal pressure

from 0 ... 400 mbar up to 0 ... 600 bar

### Special characteristics

- ▶ rotatable housing
- ▶ 2-line LC display  
4.5-digit 7-segment display  
6-digit 14-segment additional display
- ▶ different mechanical connections:  
inch, NPT threads

### Functions

- ▶ min / max function with reset function
- ▶ offset and end point calibration
- ▶ setting the pressure unit  
(bar, mbar, psi, InHg, cmHg, mmHg,  
hPa, kPa, MPa, mH<sub>2</sub>O)
- ▶ switch-off automatic configuration

The battery-powered digital pressure gauge BAROLI 05 has been designed for measuring the pressure (absolute or gauge) of fluids, oils and gases.

The display housing is rotatable, thus ensuring an easy reading even under unfavorable mounting conditions. Additional functions as changing unit, displaying min / max values, calibrating the offset and of span, as well as configuring the automatic switching-off complete the profile.

### Preferred areas of use are



Plant and Machine Engineering  
Pneumatics / Hydraulics



Laboratory Techniques



Environmental Engineering  
(water - sewage - recycling)



Input pressure range																		
Nominal pressure gauge	[bar]	0.4	0.6	1	1.6	2.5	4	6	10	16	25	40	60	100	160	250	400	600
Nominal pressure abs.	[bar]	-	0.6	1	1.6	2.5	4	6	10	16	25	40	60	100	160	250	400	600
Overpressure	[bar]	1	2	2	4	4	10	10	20	40	40	100	100	200	400	400	600	800
Burst pressure	[bar]	2	4	4	5	5	12	12	25	50	50	120	120	250	500	500	650	880
Vacuum pressure	-1 ... 0 bar, overpressure: 4 bar, burst pressure: 7 bar																	
Vacuum resistance	P <sub>N</sub> ≥ 1 bar: unlimited vacuum resistance P <sub>N</sub> < 1 bar: on request																	

Performance	
Accuracy <sup>1</sup>	≤ ± 0.25 % FSO BFSL
Measuring rate	5/sec
<sup>1</sup> accuracy according to IEC 60770 – limit point adjustment (non-linearity, hysteresis, repeatability)	
Thermal effects (Offset and Span)	
Thermal effects	≤ ± 0.2 % FSO / 10 K in compensated range -25 ... 85 °C
Permissible temperatures	
Permissible temperatures	medium: -20 ... 85 °C environment: -20 ... 70 °C storage: -30 ... 80 °C
Mechanical stability	
Vibration	5 g RMS (25 ... 2000 Hz) according to DIN EN 60068-2-6
Shock	100 g / 1 msec according to DIN EN 60068-2-27
Materials	
Pressure port / housing	stainless steel 1.4404 (316L)
Display housing	PA 6.6, Polycarbonate
Seals (media wetted)	FKM
Diaphragm	ceramics Al <sub>2</sub> O <sub>3</sub> 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
Supply	3.6 V lithium battery; 2 piece (1/2 AA)
Data storage	EEPROM (non-volatile)
Ingress protection	IP 65
Installation position	any
Weight	approx. 300 g
AD-converter solution	14 Bit
Operational life of battery	Standby-Modus: approx. 5 years
Mechanical operational life	> 100 x 10 <sup>6</sup> pressure cycles
CE-conformity	EMC directive: 2004/108/EC pressure equipment directive: 97/23/EC (Modul A) <sup>2</sup>

<sup>2</sup> This directive is only valid for devices with maximum permissible overpressure > 200 bar.

Dimensions (in mm)															
<div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;"> <p>G1/2" EN 837</p> </div> <div style="text-align: center;"> <p>1/4" NPT</p> </div> <div style="text-align: center;"> <p>1/2" NPT</p> </div> </div>															
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This price list contains product specifications; properties are not guaranteed. Subject to change without notice.

BAROLI 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# BAROLI 05P

## Battery Powered Digital Pressure Gauge

Stainless Steel Diaphragm Flush Welded

class 0.2

### Nominal pressure

from 0 ... 60 bar up to 0 ... 400 bar

### Product characteristics

- ▶ rotatable housing
- ▶ 2-line LC display  
4.5-digit 7-segment display  
6-digit 14-segment additional display
- ▶ for viscous and pasty media

### Functions

- ▶ min / max function with reset function
- ▶ offset and end point calibration
- ▶ setting the pressure unit
- ▶ switch-off automatic configuration

The battery-powered digital pressure gauge BAROLI 05P with flush welded stainless steel diaphragm enables a local displaying of values in applications, where high requirements on hygienic process connections and easy cleaning or sterilisability are requested. The filling medium is food compatible oil with FDA approval.

The BAROLI 05P display housing is rotatable, thus ensuring an easy reading even under unfavorable mounting conditions. Additional functions as changing unit, displaying min / max values, calibrating of offset and span, as well as configuring the automatic switching-off complete the profile.

### Preferred areas of use are



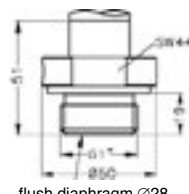


Plant and Machine Engineering



Food Industry



Input pressure range						
Nominal pressure gauge / abs.	[bar]	60	100	160	250	400
Overpressure	[bar]	100	200	400	400	600
Burst pressure ≥	[bar]	120	250	500	500	650
Performance						
Accuracy <sup>1</sup>		≤ ± 0.25 % FSO BFSL				
Measuring rate		5/sec				
<sup>1</sup> accuracy according to IEC 60770 – limit point adjustment (non-linearity, hysteresis, repeatability)						
Thermal effects (Offset and Span)						
Tolerance band [% FS]		≤ ± 0.2 % FSO / 10 K				
In compensated range [°C]		0 ... 70				
Permissible temperatures <sup>2</sup>	medium:	-40 ... 125 °C for filling fluid silicon oil				
		-10 ... 125 °C for filling fluid food compatible oil				
	environment:	-20 ... 70 °C				
	storage:	-30 ... 80 °C				
<sup>2</sup> max temperature of the medium for nominal pressure gauge > 0 bar: 150 °C for 60 minutes with a max. environmental temperature of 50 °C						
Mechanical stability						
Vibration		5 g RMS (25 ... 2000 Hz)		according to IEC 60068-2-6		
Shock		100 g / 1 msec		according to IEC 60068-2-27		
Materials / Filling fluids						
Housing / Pressure port		stainless steel 1.4404 (316L)				
Display housing		PA 6.6, Polycarbonate				
Seals (media wetted)		FKM				
Diaphragm		stainless steel 1.4435 (316L)				
Media wetted parts		pressure port, seals, diaphragm				
Filling fluids	standard:	silicon oil				
	option:	food compatible oil with FDA approval				
		(Mobil DTE FM 32; Category Code: H1; NSF Registration No.: 130662)				
	others on request					
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				
Supply		3.6 V lithium battery; 2 piece (1/2 AA)				
Data storage		EEPROM (non-volatile)				
Ingress protection		IP 65				
Installation position		any (standard calibrating in a vertical position with the pressure connection down)				
Weight		min. 350 g (depending on pressure port)				
AD-converter solution		14 Bit				
Operational life of battery		Standby-Modus: approx. 5 years				
Mechanical operational life		> 100 x 10 <sup>6</sup> pressure cycles				
CE-conformity		EMC directive: 2004/108/EC		pressure equipment directive: 97/23/EC (Modul A) <sup>3</sup>		
<sup>3</sup> This directive is only valid for devices with maximum permissible overpressure > 200 bar.						
Dimensions (in mm)						
standard			option			
						
G1/2" flush (DIN 3852)			flush diaphragm Ø18			
						
			flush diaphragm Ø28			
			G1" flush (DIN 3852)			

This price list contains product specifications; properties are not guaranteed. Subject to change without notice.



BAROLI 05P						
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Pressure						
		gauge	M	0	5	
		absolute	M	0	6	
consult						
Input						
		[bar]				
		60		6	0	0 2
		100		1	0	0 3
		160		1	6	0 3
		250		2	5	0 3
		400		4	0	0 3
		customer		9	9	9
consult						
Accuracy						
		[BFSL]				
		0.25 %		B	5	
		customer		9	9	
consult						
Mechanical connection						
		G1/2" with flush welded diaphragm (DIN 3852)		Z	0	0
		G1" with flush welded diaphragm (DIN 3852)		Z	3	1
		customer		9	9	9
consult						
Seals						
		FKM			1	
		customer			9	
consult						
Diaphragm						
		Stainless steel 1.4435 (316L)			1	
		customer			9	
consult						
Front foil						
		standard			1	
		neutral			N	
		customer			9	
consult						
Filling fluids						
		Silicon oil			1	
		food compatible oil			2	
		customer			9	
consult						
Special version						
		standard			0	0 0
		customer			9	9 9
consult						

*This price list contains product specifications; properties are not guaranteed. Detailed information about options are defined in the datasheet. Subject to change without notice.*



# DM 10

## Battery Powered Digital Pressure Gauge

Ceramic Sensor

class 0.5

### Nominal pressure

from 0 ... 1.6 bar up to 0 ... 250 bar

### Special characteristics

- ▶ adjustable housing
- ▶ LC display  
4.5-digit 7-segment display
- ▶ standard battery CR 2450  
operation period > 1.800 h

### Functions

- ▶ min / max function with reset function
- ▶ auto-zero
- ▶ setting of pressure unit  
(bar, mbar, psi, MPa, mH<sub>2</sub>O)
- ▶ automatic switch-off configuration

The compact low-cost digital pressure gauge DM 10 is battery-powered and has an adjustable housing; it is thus extremely suitable for mobile pressure monitoring. The 4.5-digit LC-display indicates the battery status, the measurement value as well as the unit, this enables a fast and precise reading.

It is possible to switch between the most common units (bar, psi, Pa, MPa). Additional functions as auto-zero, min / max values and an automatic switching-off complete the DM 10 profile.

### Preferred areas of use are



Mobile Pressure Monitoring  
Plant and Machine Engineering  
Pneumatics / Hydraulics



Environmental Engineering  
(water – sewage – recycling)



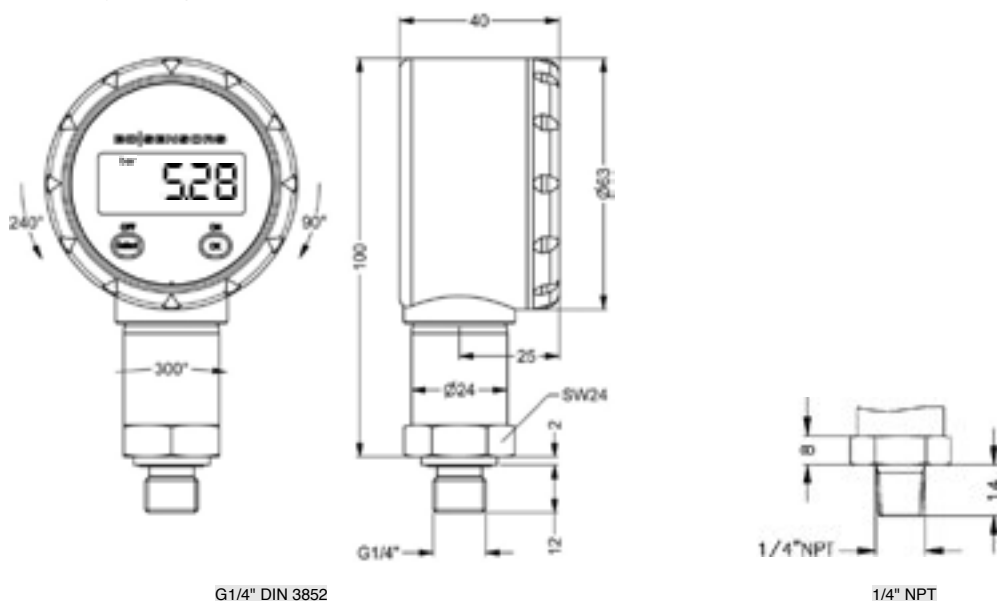
Input Pressure													
Nominal pressure gauge	[bar]	1.6	2.5	4	6	10	16	25	40	60	100	160	250
Overpressure	[bar]	4	4	10	10	20	40	40	100	100	200	400	400
Burst pressure	[bar]	7	7	15	15	35	70	70	150	150	250	450	450
Vacuum resistance		unlimited											

Performance	
Accuracy	$\leq \pm 0.5 \% \text{ FSO BFSL}$
Measuring rate	1/sec
Long term stability	$\leq \pm 0.3 \% \text{ FSO / year}$
Thermal effects (Offset and Span)	
Tolerance band	$\leq \pm 0.5 \% \text{ FSO / 10 K (typ.)}$ in compensated range 0 ... 50 °C
Permissible temperatures	
Permissible temperatures	medium: -25 ... 85 °C      environment: 0 ... 70 °C      storage: 0 ... 70 °C
Materials	
Pressure port / housing	stainless steel 1.4301 (304)
Display housing	PA 6.6, Polycarbonate
Seals (media wetted)	FKM      others on request
Diaphragm	ceramics $\text{Al}_2\text{O}_3$ 96 %
Media wetted parts	pressure port, seals, diaphragm
Miscellaneous	
Display	LC-Display, visible range 36 x 15 mm; 4.5-digit 7-segment-display, digit size 8.5 mm, range of indication $\pm 19999$
Electromagnetic compatibility	emission and immunity according to EN 61326
Supply	3 V lithium battery (CR 2450)
Data storage	EEPROM (non-volatile)
Ingress protection	IP 65
Installation position	any
Weight	plastic: approx. 150 g
Operational life of battery	min. 1500 h with permanent operation
Mech. operational life	$> 100 \times 10^6$ pressure cycles
CE-conformity	CE-conformity      pressure equipment directive: 97/23/EC (Modul A) <sup>1</sup>

<sup>1</sup>This directive is only valid for devices with maximum permissible overpressure  $> 200 \text{ bar}$ .

#### Dimensions (in mm)

display housing plastic



This price list contains product specifications; properties are not guaranteed. Subject to change without notice.

			-				-0-			-0K0-			-		-		-					
Pressure			M	0	4																	
Input	gauge [bar]																					
	1.6				1	6	0	1														
	2.5				2	5	0	1														
	4.0				4	0	0	1														
	6.0				6	0	0	1														
	10				1	0	0	2														
	16				1	6	0	2														
	25				2	5	0	2														
	40				4	0	0	2														
	60				6	0	0	2														
	100				1	0	0	3														
	160				1	6	0	3														
	250				2	5	0	3														
	customer				9	9	9	9														consult
Accuracy		[BFSL]																				
	0.5 %							B	8													
	customer							9	9													consult
Mechanical connection																						
	G1/4" DIN 3852									3	0	0										
	1/4" NPT							N	4	0												
	customer							9	9	9												consult
Seals																						
	FKM										1											
	customer										9											consult
Pressure port																						
	Stainless steel 1.4301 (304)											2										
	customer											9										consult
Diaphragm																						
	Ceramics Al <sub>2</sub> O <sub>3</sub> 96%												2									
	customer												9									consult
Front foil																						
	standard																	1				
	neutral																	N				
	customer																	9				consult
Special version																						
	standard																		0	0	0	
	customer																		9	9	9	consult

*This price list contains product specifications; properties are not guaranteed. Detailed information about options are defined in the datasheet. Subject to change without notice.*



## COMPETENCE

Industrial pressure measurement technology from 0.1 mbar up to 6000 bar

→ pressure transmitters, electronic pressure switches or hydrostatic level probes

→ OEM or high-end products

→ standard products or customized solutions

BD|SENSORS has the right pressure measuring device at the right price.

## PRICE / PERFORMANCE

pressure measurement at the highest level

The concentration on electronic pressure transmitter has led to extraordinary efficiency and economical pricing.

BD|SENSORS is certain to be one of the most economical suppliers on the world market, given equal technical and commercial conditions.

## RELIABILITY

projectable delivery times and strict observance of deadlines

Short delivery times and firm deadlines, even for special designs, make BD|SENSORS a reliable partner for our customers.

BD|SENSORS reduces the level of your stock-keeping and increases your profitability.

## FLEXIBILITY




















We have special solutions for your individual requirement.

We solve your problem in industrial pressure measurement quickly and economically, not only with large-scale production lines, but also for smaller requirements.









BD|SENSORS is especially flexible when technical support and quick assistance are required in service case as well as for rush orders.



## INDUSTRIES

	plant and machine engineering
	chemical and biochemical industry
	energy industry
	renewable energy
	semiconductor industry / cleanroom technology
	HVAC
	hydraulics
	refrigeration
	calibration techniques
	laboratory techniques
	medical technology
	food and beverage
	vehicles and mobile hydraulics
	oil and gas industry
	pharmaceutical industry
	marine / shipbuilding / offshore
	heavy industry
	environmental industry
	packaging and paper industry

## MEDIA

	sewage
	aggressive media
	colours
	gases
	fuels and oils
	pasty and viscous media
	oxygen
	water



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