PRODUCT CATALOGUE
DIGITAL GAUGES

BD|SENSORS
pressure measurement

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 BDSENSORS has concentrated on electronic pressure measurement technology from the beginning.

With our unremitting product and 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.

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

BD|SENSORS
pressure measurement

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.

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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.

DM 01

Battery Powered Precision Digital Gauge

Stainless Steel Sensor

class 0.05

Nominal pressure

from 0 … 100 mbar up to 0 ... 400 bar

Special characteristics

- modular sensor concept
- data logger
- graphic display
- stainless steel housing Ø100 mm
- communication interface USB 2.0

Optional

- accredited calibration certificate according to DKD / DAkkS
- IS-version zone 0/1
- software incl. USB converter
- service case with accessories

Functions

- zero point calibration
- data logger
- turn off automatic
- free button assignment
- background illumination etc.

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: The DM 01 consists of two devices - the digital display and a pressure transmitter. The pressure transmitter can be selected on site for different measuring ranges and connected to the display - 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 which can be analysed with the software DAQ.

Preferred areas of use are

- Calibrating techniques
- Laboratory applications
- Plant and machine engineering

Input pressure												
Nominal pressure gauge	[bar]	-1…0	0.10	0.16	0.25	0.40	0.60	1	1.6	2.5	4	6
Nominal pressure abs.	[bar]	-	-	-	-	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 ≥	[bar]	7.5	1.5	1.5	1.5	3	7.5	7.5	15	15	25	50

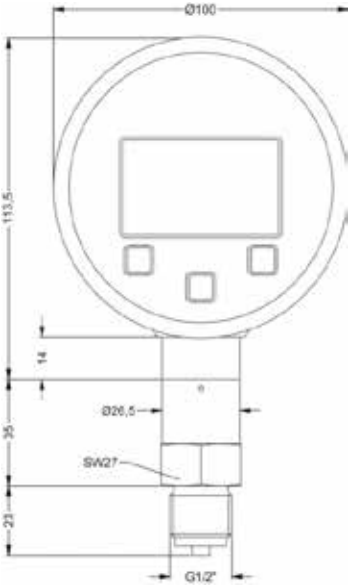
Nominal pressure gauge / abs.	[bar]	10	16	25	40	60	100	160	250	400
Overpressure	[bar]	35	80	80	105	210	600	600	1000	1000
Burst pressure ≥	[bar]	50	120	120	210	420	1000	1000	1250	1250
Vacuum resistance		P_N ≥ 1 bar: unlimited vacuum resistant; P_N < 1 bar: on request								

Performance	
Accuracy [1]	standard for P_N ≥ 0.4 bar: ≤ ± 0.05 % and for P_N < 0.4 bar: ≤ ± 0.125 %
Long term stability	≤ ± 0.1 % FSO / year at reference conditions
Measuring rate / Display	1, 2 or 50 measurements per second
[1] accuracy according to IEC 60770 – minimum value setting (non-linearity, hysteresis, repeatability) - at room temperature 20°C	
Thermal effects (Offset and Span)	
Temperature error	for nominal pressure ranges P_N ≤ 160 bar: tolerance band ≤ ± 0.2 % FSO for nominal pressure ranges P_N > 160 bar: tolerance band ≤ ± 0.75 % FSO
compensated range	0 ... 50 °C
Permissible temperatures	
Permissible temperatures	medium: -10 ... 55 °C storage: -20 ... 70 °C environment: display module: -10 ... 55 °C transmitter: -20 … 70 °C (at 1G to +60 °C)
Materials	
Pressure port / housing	stainless steel 1.4404 (316L)
Display housing	stainless steel 1.4301 (304)
Seals (media wetted)	FKM, without (welded version) and others on request
Diaphragm	stainless steel 1.4435 (316L)
Media wetted parts	pressure port, seal, diaphragm
Explosion protection	
AX16-DM01	IBExU12ATEX1108 X variant with standard front foil for zone 1: II 2G Ex ia IIB T4 Gb variant with conductive front foil for zone 0: II 1G Ex ia IIC T4 Ga (on request)
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, depending on pressure range temperature display, time, 100-segment-bargraph, potential input value background illumination: illumination period and intensity adjustable
Temperature display range	accuracy: ± 2 K resolution: 0.1 K display: -10 … 55 °C
adjustable units pressure and temperature	[mbar], [bar], [psi], [mmHg], [cmHg], [inHg], [kPa], [MPa], [hPa], [mmH_2O], [mH_2O], [inH_2O], [kg/cm^2], [°C], [°F], [K]
Data logger	modes: single, cyclic, linear, off recording pressure values and sensor temperature measuring value interval adjustable (hrs, min, sec, 20 ms, daily at a defined time) measurement rate adjustable (1/s, 2/s or 50/s only with 20 ms measured value interval) max. 600798 values
Current consumption	without background illumination: approx. 1.3 mA with background illumination: approx. 16 mA (depending on adjusted intensity) standby mode: approx. 1.2 µA
Supply	3x 1.5 V: Duracell Plus battery, DUR087033, AA (LR6)
Ingress protection	IP 67
Mounting position [2]	any
Weight	approx. 680 g
A / D-converter resolution	16 bit (module)
Battery life	standard use: > 2.000 h standby mode: at least 5 years (with measurement rate 1/s and 2/s)
Operational life	100 million load cycles
CE-conformity	EMC directive: 2014/30/EU pressure equipment directive: 2014/68/EU (Module A) [3] electromagnetic compatibility: according to EN 6132

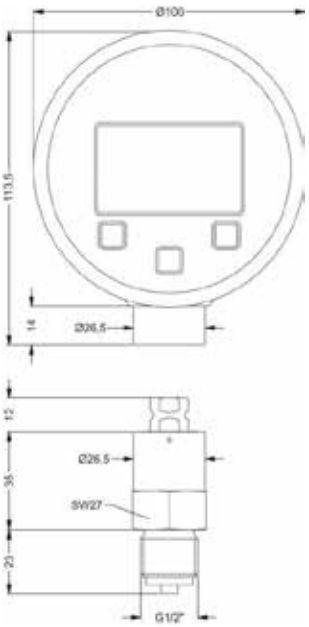
[2] Pressure transmitters are calibrated in a vertical position with the pressure connection down. If this position is changed on installation there can be slight deviations in the zero point for pressure ranges P_N ≤ 1 bar.
[3] This directive is only valid for devices with maximum permissible overpressure > 200 bar.

Dimensions (in mm)

standard

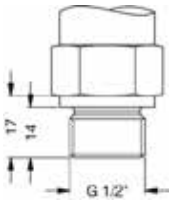


G1/2" EN 837

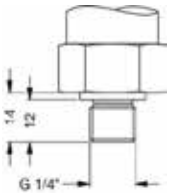


G1/2" EN 837
(pressure transmitter and display separated)

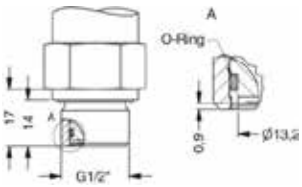
option



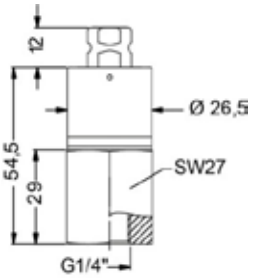
G1/2" DIN 3852



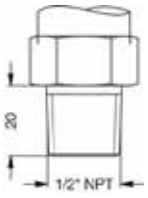
G1/4" DIN 3852



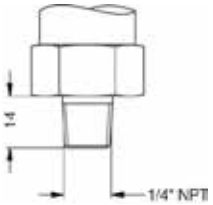
G1/2" DIN 3852
with flush sensor [4]



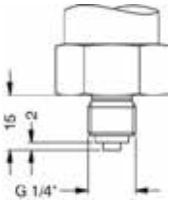
G1/4" EN 837
internal thread, welded [4, 5]



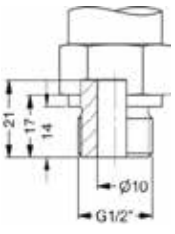
1/2" NPT



1/4" NPT



G 1/4" EN 837



G1/2" DIN 3852 open pressure port [4]

⇨ metrical threads and other variations on request

[4] only possible for nominal pressure ranges $P_N \leq 40$ bar
[5] different connection versions with optional adapters possible (see accessories)

Further pressure sensor modules can be combined to the advertisement unity DM01-A21 and DM01-A2E. an overview of available pressure sensor modules and characteristics you will find in the following matrix:						
Pressure sensor module						
Name	**Pressure range**	**Filling fluid**	**diaphragm**	**accuracy**	**Special feature**	**further information**
M0	0...0.1 bar up to 0...400 bar	silicone oil	stainless steel 1.4435	0.05% FSO	very high precision	see data sheet
M4	0...6 bar up to 0...600 bar	none; welded version	stainless steel 1.4542	0.25% FSO	i.a. for oxygen; oil and grease free	on request
M7	0...0.1 bar up to 0...10 bar	none	ceramic Al_2O_3 96%	0.15% FSO	high overpressure	on request

Accessories

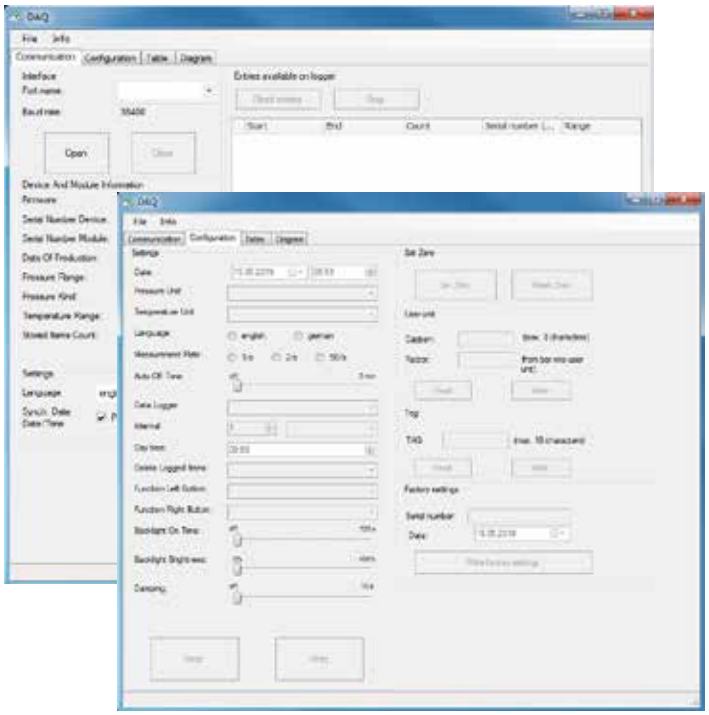
Accessories are not in scope of supply and have to be ordered separately!

Software DAQ (Communication, Configuration, Measurement display, Protocol creation)

Optionally software DAQ and an interface cable can be ordered. The software is also available for download on our homepage.

Software:

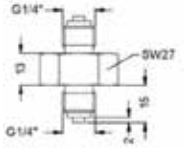
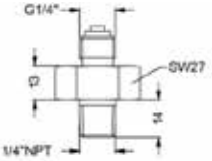
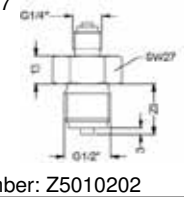
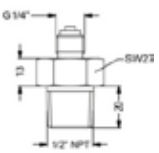
- display of device information
  (serial number, pressure and temperature range, …)
- configuration area for all parameters
- download area for recorded data:
  - date
  - pressure measurement
  - temperature measurement
- protected data acquisition
- measured value representation in tabular or graphic form
- free scaling of the diagram
- creation of measurement / test report as a PDF file
- data export



Interface cable USB (type A) to mini connector (3.5 mm)
with integrated converter
l: 1.7 m

Ordering number: ZUSBCD01

Pressure sensor module DM01, pressure port G 1/4" EN 837 internal thread, welded

G 1/4" EN 837  Ordering number: Z5010203	Adapter for pressure sensor module with pressure port G 1/4" EN 837 internal thread, welded external thread: G 1/4" EN 837 external thread: G 1/4" EN 837	1/4" NPT  Ordering number: Z5010204	Adapter for pressure sensor module with pressure port G 1/4" EN 837 internal thread, welded external thread: G 1/4" EN 837 external thread: 1/4" NPT
G 1/2" EN 837  Ordering number: Z5010202	Adapter for pressure sensor module with pressure port G 1/4" EN 837 internal thread, welded external thread: G 1/4" EN 837 external thread: G 1/2" EN 837	1/2" NPT  Ordering number: Z5010205	Adapter for pressure sensor module with pressure port G 1/4" EN 837 internal thread, welded external thread: G 1/4" EN 837 external thread: 1/2" NPT

** others on request*

Hard-shell service case without accessories Service_Case_DM01		Hard shell case. Dimension in mm (L x W x H): 432 X 363 X 138
Protective cap Ordering number: Z1002648		Rubber protection
Additional batteries (only in combination with service case)		for IS-version use only • 3 x 1.5 V / AA Duracell Power Plus
Seal set (only in combination with service case)		Flat seal copper for mechanical connections according to EN 837
PTFE seal tape Nr. 498.505 (only in combination with service case)		Seal tape for mechanical connections material: PTFE (Teflon) Temperature range: -200 ... 280 °C
Wrench (only in combination with service case)		Wrench SW 27
Calibration test pump KHP 35 Ordering number: 1002637		The KHP 35 calibration test pump is used to generate pressure and vacuum for checking, adjusting and calibrating mechanical and electronic pressure measuring instruments by comparative measurements. These pressure tests may be carried out in laboratories, workshop or on site at the measuring point. pressure: 0 ... 35 bar vacuum: 0 ... -0.95 bar weight: ca. 510 g dimension: ca. 220 x 105 x 63 mm
Adapter for calibration test pump		
Test unit connection: Adapter to connect the test unit to the calibration test pump.		Adapter to connect the test unit to the calibration test pump. external thread: G 1/4" EN 837 to: internal thread: G 1/4" DIN 3852 (No. 5008909) or G 1/2" EN o. DIN (No. 5007896) or 1/4" NPT (No. 5007897) or 1/2" NPT (No. 5007898) others on request
Reference unit connection: Adapter to connect the digital gauge to the calibration test pump		Adapter to connect the pressure sensor module DM01 to the calibration test pump. external thread: G 1/2" EN 837 to: internal thread: G 1/4" DIN 3852 (No. 5012498) or G 1/2" DIN 3852 (No. 5012519) or 1/4" NPT (No. 5012499) or 1/2" NPT (No. 5012500) others on request

Ordering code DM 01

1. Position: Digital Display for Precision Digital Pressure Gauge DM 01

DM 01- □□□

Digital Pressure Gauge DM 01	Code	
with communication interface	A 2 1	
IS (zone 1) with communication interface	A 2 E	
IS (zone 0) with communication interface	A 2 G	consult

2. Position: Transmitter for Precision Digital Pressure Gauge DM 01

DM 01 □□□ - □□□□ - □ - □□ - □□□ - □ - □□□

Pressure		Code	
	gauge	M 0 K	
	absolute [1]	M 0 L	
Input	**[bar]**		
	0.10 [1]	1 0 0 0	
	0.16 [1]	1 6 0 0	
	0.25 [1]	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	
	-1 … 0	X 1 0 2	
	customer	9 9 9 9	consult
Version			
	standard version (without explosion protection)	0	
	IS-version	E	
Accuracy	**[BFSL]**		
standard for $P_N \geq 0.4$ bar	0.05 % FSO	B 1	
standard for $P_N < 0.4$ bar	0.125 % FSO	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 with flush sensor [2]	F 0 0	consult
	G1/2" DIN 3852 open pressure port [2]	H 0 0	
	1/2" NPT	N 0 0	
	1/4" NPT	N 4 0	
	G1/4" EN837 internal thread, welded [2, 3]	J 0 3	
	customer	9 9 9	consult
Seals			
	FKM	1	
	customer	9	consult
Special version			
	standard	0 0 0	
	customer	9 9 9	consult

[1] absolute pressure possible from 0.4 bar
[2] only possible for $P_N \leq 40$ bar
[3] different connection versions with optional adapters possible (see accessories)

ordering example:
device DM 01:
position 1: DM01-A21
position 2: M0K-1001-B1-200-1-000
only display: position 1: DM01-A21
only transmitter: position 2: M0K-1001-B1-200-1-000

Accessories DM 01

Accessories	
USB converter (incl. software DAQ on USB stick)	ZUSBCD01
service case (without accessories)	Service_Case_DM01
Protective cap	Z1002648
additional batteries (3 x 1.5 V / AA Duracell Power Plus) [4]	1002798
Seal set [4]	5008886
PTFE seal tape [4]	1002724
wrench [4]	1002722
calibration test pump (KHP)	1002637
Adapter for DM 01	
G1/4“ EN 837 male - G1/4" EN 837 male	Z5010203
G1/4“ EN 837 male - G1/2" EN 837 male	Z5010202
G1/4“ EN 837 male - 1/4" NPT male	Z5010204
G1/4“ EN 837 male - 1/2" NPT male	Z5010205
Adapter for KHP - test unit connection	
G1/4" EN 837 m - G1/4" DIN3852 fm	5008909
G1/4" EN 837 m - G1/2" EN 837/DIN3852 fm	5007896
G1/4" EN 837 m - 1/4" NPT fm	5007897
G1/4" EN 837 m - 1/2" NPT fm	5007898
Adapter for KHP - reference unit connection	
G1/2" EN 837 m - G1/4" DIN3852 fm	5012498
G1/2" EN 837 m - G1/2" DIN3852 fm	5012519
G1/2" EN 837 m - 1/4" NPT fm	5012499
G1/2" EN 837 m - 1/2" NPT fm	5012500

[4] only in combination with service case

DL 01

Battery Powered Precision Digital Gauge for Leak Testing

Stainless Steel Sensor

class 0.05

Nominal pressure

from 0 … 100 mbar up to 0 ... 400 bar

Special characteristics

- modular sensor concept
- data logger
- graphic display
- stainless steel housing Ø100 mm
- communication interface USB 2.0

Optional

- accredited calibration certificate acc. to DKD / DAkkS
- IS-version zone 0/1
- software incl. USB converter
- service case with various accessories

Functions

- data logger interval
  1 s … 99 days or fixed time
- default values for time / test duration
- zero point calibration
- backlight and much more

The digital pressure gauge DL 01 is a precision device fulfilling highest demands. It was conceived especially for leak testing or pipeline monitoring.

In the leakage mode the device shows the pressure decrease during an adjustable time. After finishing of measurement, the result is shown in the display.

Outstanding measuring qualities, an intuitive operation, as well as an integrated data logger characterize the DL 01. In addition, the graphic display provides the handling and the clear presentation of the measuring procedure.

The gathered data and the relevant information (TAG or serial number, etc.) are recorded and can be read out and processed over the integrated interface via USB and PC software.

Preferred areas of use are

Plant and machine engineering

- Pipeline monitoring
- Leak testing

Input pressure												
Nominal pressure gauge	[bar]	-1…0	0.10	0.16	0.25	0.40	0.60	1	1.6	2.5	4	6
Nominal pressure abs.	[bar]	-	-	-	-	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 ≥	[bar]	7.5	1.5	1.5	1.5	3	7.5	7.5	15	15	25	50

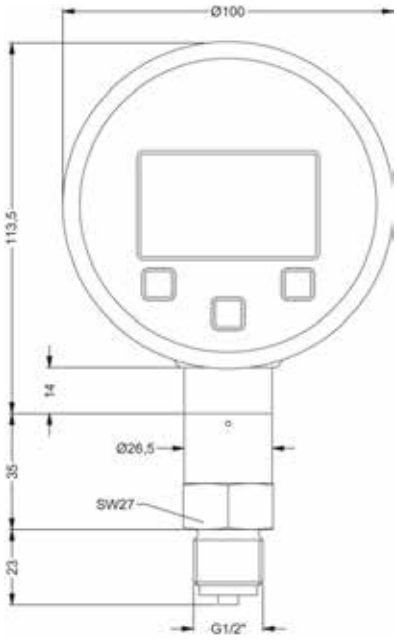
Nominal pressure gauge / abs.	[bar]	10	16	25	40	60	100	160	250	400
Overpressure	[bar]	35	80	80	105	210	600	600	1000	1000
Burst pressure ≥	[bar]	50	120	120	210	420	1000	1000	1250	1250
Vacuum resistance		P_N ≥ 1 bar: unlimited vacuum resistance; P_N < 1 bar: on request								

Performance	
Accuracy [1]	standard for P_N ≥ 0.4 bar: ≤ ± 0.05 % and for P_N < 0.4 bar: ≤ ± 0.125 %
Long term stability	≤ ± 0.1 % FSO / year at reference conditions
Measuring rate / Display	1 or 2 measurements per second
[1] accuracy according to IEC 60770 – minimum value setting (non-linearity, hysteresis, repeatability) – at room temperature 20°C	
Thermal effects (Offset and Span)	
Temperature error	for nominal pressure ranges P_N ≤ 160 bar: tolerance band ≤ ± 0.2 % FSO for nominal pressure ranges P_N > 160 bar: tolerance band ≤ ± 0.75 % FSO
compensated range	0 ... 50 °C
Permissible temperatures	
Permissible temperatures	medium: -10 ... 55 °C / storage: -20 ... 70 °C environment: display module: -10 ... 55 °C / transmitter: -20 … 70 °C (at 1G to +60 °C)
Materials	
Pressure port / housing	stainless steel 1.4404 (316L)
Display housing	stainless steel 1.4301 (304)
Seals (media wetted)	FKM, without (welded version)
Diaphragm	Stainless steel 1.4435 (316L)
Media wetted parts	pressure port, seal, diaphragm
Explosion protection	
AX16-DL01	IBExU12ATEX1108 X variant with standard front foil for zone 1: II 2G Ex ia IIB T4 Gb variant with conductive front foil for zone 0: II 1G Ex ia IIC T4 Ga
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, depending on pressure range temperature display, time, 100-segment-bargraph, potential input value background illumination: illumination period and intensity adjustable
Temperature display range	accuracy: ± 2 K resolution: 0,1 K display: -10 … 55 °C
adjustable units pressure and temperature	[mbar], [bar], [psi], [mmHg], [cmHg], [inHg], [kPa], [MPa], [hPa], [mmH_2O], [mH_2O], [inH_2O], [kg/cm^2], [°C], [°F], [K]
Data logger	modes: single, cyclic, linear, off recording pressure values and sensor temperature measuring value interval adjustable (hrs, min, sec, 20 ms, daily at a defined time) measurement rate adjustable (1/s, 2/s or 50/s only with 20 ms measured value interval) max. 600798 values
Current consumption	without background illumination: approx. 1.3 mA with background illumination: approx. 16 mA (depending on adjusted intensity) standby mode: approx. 1.2 µA
Supply	3x 1.5 V: Duracell Plus battery, DUR087033, AA (LR6)
Ingress protection	IP 67
Mounting position [2]	any
Weight	approx. 680 g
A / D-converter resolution	16 bit (module)
Battery life	standard use: > 2.000 h standby mode: at least 5 years (with measurement rate 1/s and 2/s)
Operational life	100 million load cycles
CE-conformity	EMC directive: 2014/30/EU pressure equipment directive: 2014/68/EU (Module A) [3] electromagnetic compatibility: according to EN 61326

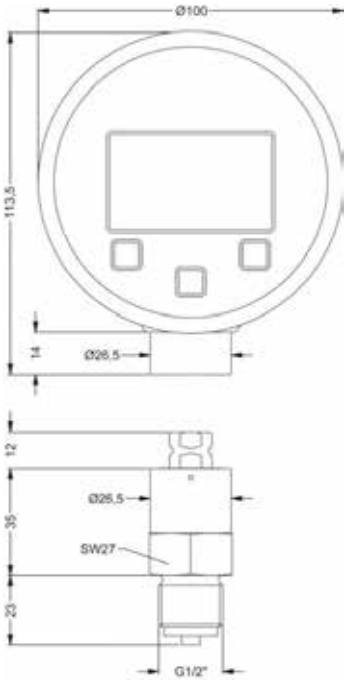
[2] Pressure transmitters are calibrated in a vertical position with the pressure connection down. If this position is changed on installation there can be slight deviations in the zero point for pressure ranges P_N ≤ 1 bar.
[3] This directive is only valid for devices with maximum permissible overpressure > 200 bar.

Dimensions (in mm)

standard

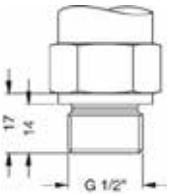


G1/2" EN 837

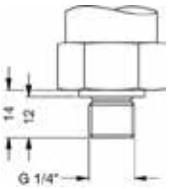


G1/2" EN 837
(pressure transmitter and display separated)

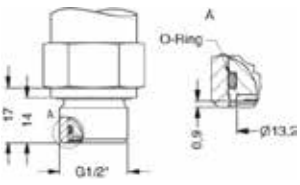
option



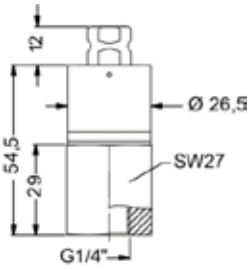
G1/2" DIN 3852



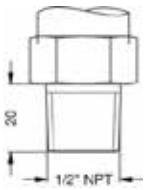
G1/4" DIN 3852



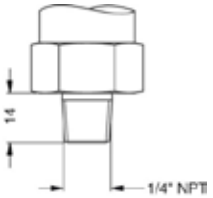
G1/2" DIN 3852
with flush sensor [4]



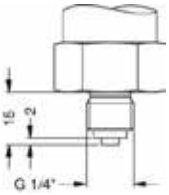
G1/4" EN 837
internal thread, welded [4, 5]



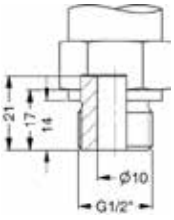
1/2" NPT



1/4" NPT



G 1/4" EN 837



G1/2" DIN 3852 open pressure port [4]

⇨ metrical threads and other variations on request

[4] only possible for nominal pressure ranges $P_N \leq 40$ bar
[5] different connection versions with optional adapters possible (see accessories)

Accessories are not in scope of supply and have to be ordered separately!

Software BD|LOG lite version (Communication, Configuration)

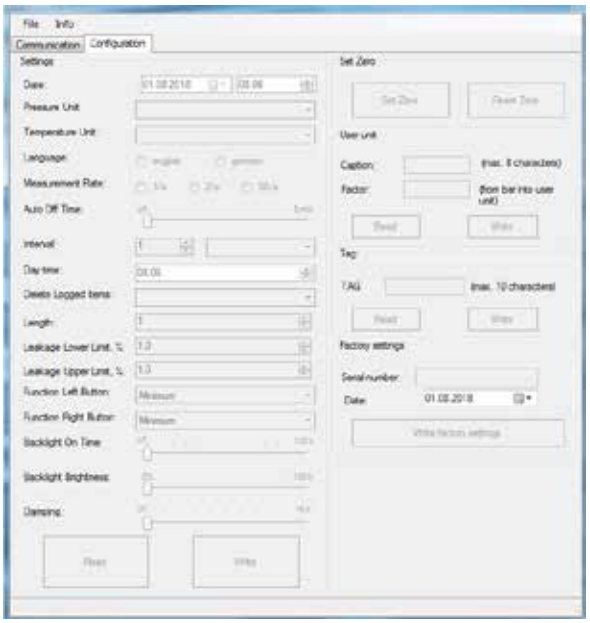
Optionally the software BD|LOG and an interface cable can be ordered. The software is also available for download on our homepage.

Software (Communication, Configuration):

- display of device information
  (serial number, pressure and temperature range,…)
- configuration area for all parameters
- download area for recorded data:
  - date
  - pressure value
  - temperature value
- actual value

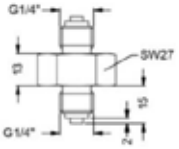
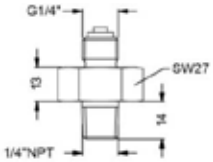
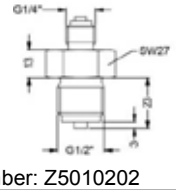
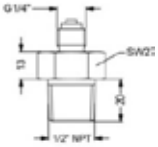
Interface cable with
integrated USB converter
l: 1.7 m

Ordering number: ZUSBCD02



⇨ **Software BD|LOG full version** (Communication, Configuration, Table, Diagram) **on request**

Adapter for pressure port G ¼" EN 837 internal thread, welded

G ¼“ EN 837  Ordering number: Z5010203	Adapter for pressure sensor module with pressure port G ¼" EN 837 internal thread, welded external thread: G ¼“ EN 837 external thread: G ¼“ EN 837	¼“ NPT  Ordering number: Z5010204	Adapter for pressure sensor module with pressure port G ¼" EN 837 internal thread, welded external thread: G ¼“ EN 837 external thread: ¼“ NPT
G ½“ EN 837  Ordering number: Z5010202	Adapter for pressure sensor module with pressure port G ¼" EN 837 internal thread, welded external thread: G ¼“ EN 837 external thread: G ½“ EN 837	½“ NPT  Ordering number: Z5010205	Adapter for pressure sensor module with pressure port G ¼" EN 837 internal thread, welded external thread: G ¼“ EN 837 external thread: ½“ NPT

** others on request*

Hard-shell service case without accessories Service_Case_DM01		Hard shell case. Dimension in mm (L x W x H): 432 X 363 X 138
Protective cap Ordering number: Z1002648		Rubber protection
Additional batteries (only in combination with service case)		for IS-version use only • 3 x 1.5 V / AA Duracell Power Plus
Seal set (only in combination with service case)		Flat seal copper for mechanical connections according to EN 837
PTFE seal tape Nr. 498.505 (only in combination with service case)		Seal tape for mechanical connections material: PTFE (Teflon) Temperature range: -200 ... 280 °C
Wrench (only in combination with service case)		Wrench SW 27
Calibration test pump KHP 35 Ordering number: 1002637		The KHP 35 calibration test pump is used to generate pressure and vacuum for checking, adjusting and calibrating mechanical and electronic pressure measuring instruments by comparative measurements. These pressure tests may be carried out in laboratories, workshop or on site at the measuring point. pressure: 0 ... 35 bar vacuum: 0 ... -0,95 bar weight: ca. 510 g dimension: ca. 220 x 105 x 63 mm
Adapter for calibration test pump		
Test unit connection: Adapter to connect the test unit to the calibration test pump.		Adapter to connect the test unit to the calibration test pump. external thread: G ¼“ EN 837 to: internal thread: G ¼“ DIN 3852 (No. 5008909) or G ½“ EN o. DIN (No. 5007896) or ¼“ NPT (No. 5007897) or ½“ NPT (No. 5007898) others on request
Reference unit connection: Adapter to connect the digital gauge to the calibration test pump		Adapter to connect the pressure sensor module DM01 to the calibration test pump. external thread: G ½“ EN 837 to: internal thread: G ¼“ DIN 3852 (No. 5012498) or G ½“ DIN 3852 (No. 5012519) or ¼“ NPT (No. 5012499) or ½“ NPT (No. 5012500) others on request

Ordering code DL01

1. position: digital display for Precision Digital Pressure Gauge DL01

DL01- ☐☐☐

Digital pressure gauge DL01					
with communication interface	A	2	1		
IS (zone 1) with communication interface	A	2	E		
IS (zone 0) with communication interface	A	2	G		consult

2. position: transmitter for Precision Digital Pressure Gauge DL01

DL01 ☐☐☐-☐☐☐☐-☐-☐☐-☐☐☐-☐-☐☐☐

Pressure																			
gauge		M	0	P															
absolute	[1]	M	0	Q															
Input	**[bar]**																		
0.10	[1]				1	0	0	0											
0.16	[1]				1	6	0	0											
0.25	[1]				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											
-1 … 0					X	1	0	2											
customer					9	9	9	9											consult
Version																			
non IS									0										
IS									E										
Accuracy	**[BFSL]**																		
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 with flush sensor	[2]												F	0	0				consult
G1/2" DIN 3852 open pressure port	[2]												H	0	0				
1/2" NPT													N	0	0				
1/4" NPT													N	4	0				
G 1/4" EN837 internal thread, welded	[2, 3]												J	0	3				
customer													9	9	9				consult
Seals																			
FKM																1			
customer																9			consult
Special version																			
standard																	0	0	0
customer																	9	9	9 consult

[1] *absolute pressure possible from 0.4 bar*
[2] *only possible for $P_N \leq 40$ bar*
[3] *different connection versions with optional adapters possible (see accessories)*

ordering example:
device DL01:
position 1: DL 01-A21
position 2: M0P-1001-B1-200-1-000
only display: position 1: DL01-A21
only transmitter: position 2: M0P-1001-B1-200-1-000

Accessories DL01

Accessories	
USB converter (incl. software BD|LOG)	ZUSBCD02
service case (without accessories)	Service_Case_DM01
Protective cap	Z1002648
Additional batteries (3 x 1,5 V / AA Duracell Power Plus) [4]	1002798
Seal set [4]	5008886
PTFE seal tape [4]	1002724
wrench [4]	1002722
Calibration test pump (KHP)	1002637
Adapter for DM01	
G1/4“ EN 837 male - G1/4" EN 837 male	Z5010203
G1/4“ EN 837 male - G1/2" EN 837 male	Z5010202
G1/4“ EN 837 male - 1/4" NPT male	Z5010204
G1/4“ EN 837 male - 1/2" NPT male	Z5010205
Adapter for KHP - test unit connection	
G1/4" EN 837 m - G1/4" DIN3852 fm	5008909
G1/4" EN 837 m - G1/2" EN 837/DIN3852 fm	5007896
G1/4" EN 837 m - 1/4" NPT fm	5007897
G1/4" EN 837 m - 1/2" NPT fm	5007898
Adapter for KHP - reference unit connection	
G1/2" EN 837 m - G1/4" DIN3852 fm	5012498
G1/2" EN 837 m - G1/2" DIN3852 fm	5012519
G1/2" EN 837 m - 1/4" NPT fm	5012499
G1/2" EN 837 m - 1/2" NPT fm	5012500

[4] *only in combination with service case*

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_2O, InH_2O)
- 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 unfavourable 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)

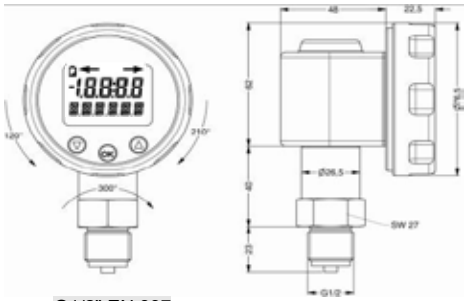
Input pressure ranges											
Nominal pressure gauge	[bar]	0.10	0.16	0.25	0.40	0.60	1	1.6	2.5	4	6
Nominal pressure abs.	[bar]	-	-	-	0.40	0.60	1	1.6	2.5	4	6
Overpressure	[bar]	0.5	1	1	2	5	5	10	10	20	40
Burst pressure	[bar]	1.5	1.5	1.5	3	7.5	7.5	15	15	25	50

Nominal pressure gauge / abs.	[bar]	10	16	25	40	60	100	160	250	400	600
Overpressure	[bar]	40	80	80	105	105	210	600	1050	1050	1250
Burst pressure	[bar]	50	120	120	210	210	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		$P_N \geq 1$ bar: unlimited vacuum resistance; $P_N < 1$ bar: on request									

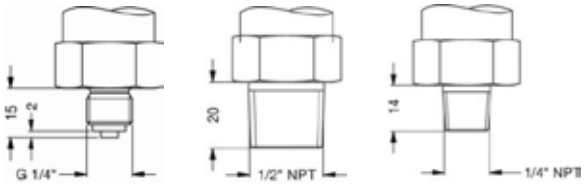
Performance			
Accuracy [1]	nominal pressure ≥ 0.4 bar: ≤ ± 0.125 % FSO BFSL nominal pressure < 0.4 bar: ≤ ± 0.25 % FSO BFSL		
Measuring rate	5/sec		
Long term stability	≤ ± 0.1 % FSO / year at reference conditions		
[1] *accuracy according to IEC 60770 – minimum value setting (non-linearity, hysteresis, repeatability)*			
Thermal effects (Offset and Span)			
Nominal pressure P_N [bar]	-1 … 0	≤ 0.40	> 0.40
Tolerance band [% FS]	≤ ± 0.75	≤ ± 1	≤ ± 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 ±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 [2]		
Weight	approx. 300 g		
AD-converter solution	14 Bit		
Operational life of battery	standby mode: approx. 5 years		
Mech. operational life	100 million load cycles		
CE-conformity	EMC Directive: 2014/30/EU	Pressure Equipment Directive: 2014/68/EU (Modul A) [3]	

[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.
[3] 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

⇨ for nominal pressure P_N > 60 bar increases the length of devices by 9 mm!

Ordering code BAROLI 02

BAROLI 02 ☐☐☐ - ☐☐☐☐ - 0 - ☐☐ - 0K0 - ☐☐☐ - ☐ - ☐ - ☐ - ☐ - ☐☐☐

Option		Code	
Pressure			
gauge		M 0 E	
absolute [1]		M 0 F	
Input	**[bar]**		
	0.10 [1]	1 0 0 0	
	0.16 [1]	1 6 0 0	
	0.25 [1]	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 $P_N \geq 0.4$ bar	0.125 %	B 2	
standard for $P_N < 0.4$ 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	consult
Pressure port			
	stainless steel 1.4404 (316L)	1	
	customer	9	consult
Diaphragm			
	stainless steel 1.4435 (316L)	1	
	customer	9	consult
Front foil			
	standard	1	
	neutral	N	
	customer	9	consult
Special version			
	standard	0 0 0	
	customer	9 9 9	consult

[1] absolute pressure possible from 0.4 bar

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 sterilization 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 unfavourable 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 [1]								
Nominal pressure, gauge [bar]	-1 ... 0	0.10	0.16	0.25	0.40	0.60	1	1.6
Nominal pressure, abs. [bar]	-	-	-	-	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

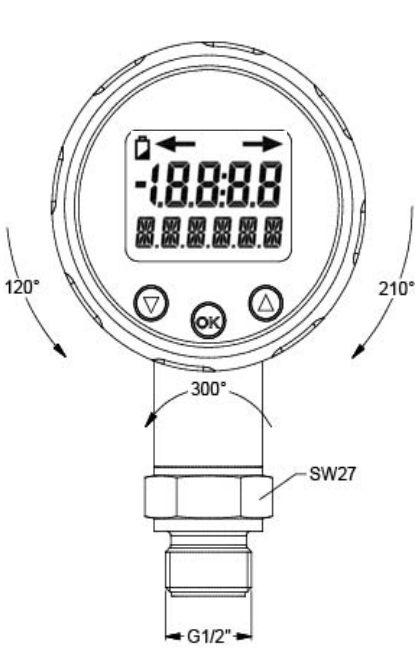
Nominal pressure gauge / abs. [bar]	2.5	4	6	10	16	25	40
Overpressure [bar]	10	20	40	40	80	80	105
Burst pressure ≥ [bar]	15	25	50	50	120	120	210
Vacuum resistance	P_N ≥ 1 bar: unlimited vacuum resistance P_N < 1 bar: on request						

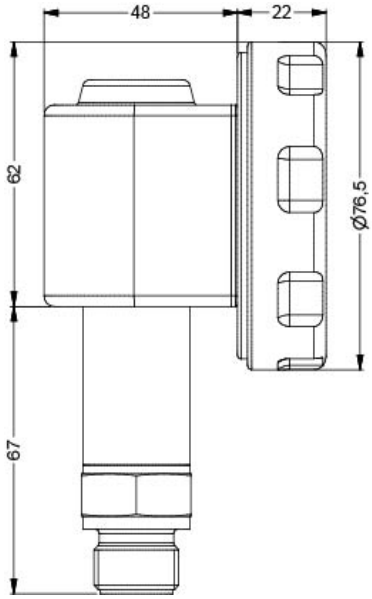
[1] consider the pressure resistance of fitting and clamps

Performance			
Accuracy [2]	nominal pressure ≥ 0.4 bar : ≤ ± 0.125 % BFSL nominal pressure < 0.4 bar: ≤ ± 0.25 % BFSL		
Measuring rate	5/sec		
[2] accuracy according to IEC 60770 – minimum value setting (non-linearity, hysteresis, repeatability)			
Thermal effects (Offset and Span)			
Nominal pressure P_N [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 [3]	medium: -40 ... 125 °C for filling fluid of silicone oil -10 ... 125 °C for filling fluid of food compatible oil environment: -20 ... 70 °C storage: -30 ... 80 °C		
[3] 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 (316 L)		
Pressure port	stainless steel 1.4435 (316 L)	other on request	
Display housing	PA 6.6, polycarbonate		
Seals (media wetted)	standard: FKM clamp and dairy pipe: none		
Diaphragm	stainless steel 1.4435 (316 L)		
Media wetted parts	pressure port, seals, diaphragm		
Filling fluids	standard: silicone oil option: food compatible oil with FDA-certificate (mobile SHC Cibus 32; class code: H1; NFS registration no.: 141500) 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_N ≤ 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 million load cycles		
CE-conformity	EMV Directive: 2014/30/EU		

Dimensions (in mm)

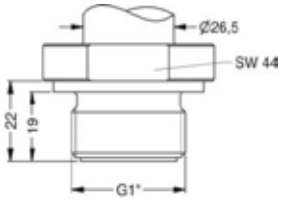
standard



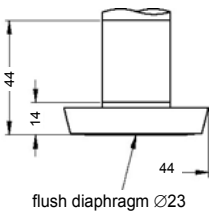


G1/2" flush DIN 3852
P_N ≥ 1 bar

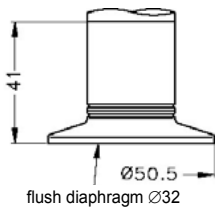
option



G1" flush DIN 3852



dairy pipe DN25 DIN 11851
(P_N ≥ 0.25 bar)



clamp 1 1/2" ISO 2852
(P_N ≤ 16 bar)

Ordering code BAROLI 02P

BAROLI 02P [ ][ ][ ] - [ ][ ][ ][ ] - [0] - [ ][ ] - [0][K][0] - [ ][ ][ ] - [ ] - [ ] - [ ] - [ ] - [ ][ ][ ]

Pressure																									
	gauge	M	0	G																					
	absolute [1]	M	0	H																					
Input	**[bar]**																								
	0.10 [1]				1	0	0	0																	
	0.16 [1]				1	6	0	0																	
	0.25 [1]				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																	
	-1 … 0				X	1	0	2																	
	customer				9	9	9	9																	consult
Accuracy	**[BFSL]**																								
standard for $P_N \geq 0.4$ bar	0.125 %								B	2															
standard for $P_N < 0.4$ bar	0.25 %								B	5															
	customer								9	9															consult
Mechanical connection																									
	G1/2" DIN 3852 with flush diaphragm [2]										Z	0	0												
	G1" DIN 3852 with flush diaphragm										Z	3	1												
	Clamp 1 1/2" [3]										C	6	2												
	Dairy pipe DN 25 (DIN 11851) [4]										M	7	3												
	customer										9	9	9												consult
Seals																									
for clamp or dairy pipe:	without													0											
	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																									
	Silicone oil																		1						
	food compatible oil																		2						
	customer																		9						consult
Special version																									
	standard																					0	0	0	
	customer																					9	9	9	consult

[1] absolute pressure possible from 0.4 bar
[2] possible only for $P_N \geq 1$ bar
[3] possible only for $P_N \leq 16$ bar
[4] possible only for $P_N \geq 0.25$ bar; 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_2O, InH_2O)
- 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 unfavourable 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.

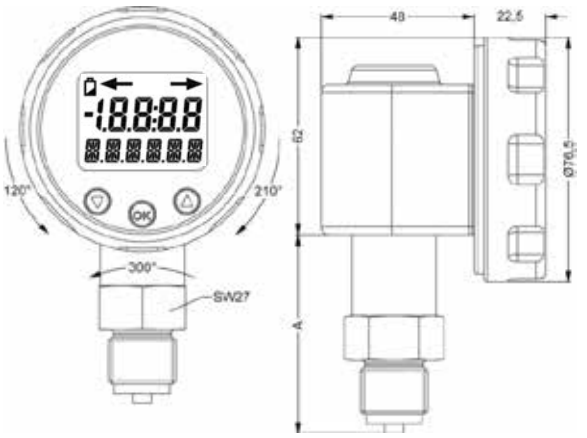
Preferred areas of use are

- Plant and machine engineering
  Pneumatics / hydraulics
- Laboratory techniques
- Environmental engineering
  (water - sewage - recycling)

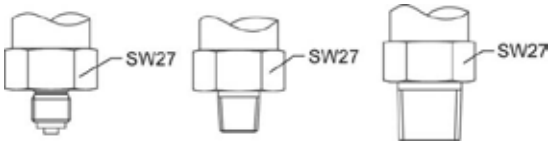
Input pressure range																		
Nominal pressure gauge [bar]	0.4	0.6	1	1.6	2.5	4	6	10	16	25	40	60	100	160	250	400	600	
Nominal pressure abs. [bar]	-	0.6	1	1.6	2.5	4	6	10	16	25	40	60	100	160	250	400	600	
Overpressure [bar]	1	2	2	4	4	10	10	20	40	40	100	100	200	400	400	600	800	
Burst pressure [bar]	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	$P_N \geq 1$ bar: unlimited vacuum resistance $P_N < 1$ bar: on request																	

Performance		
Accuracy [1]	≤ ± 0.25 % FSO BFSL	
Measuring rate	5/sec	
[1] accuracy according to IEC 60770 – minimum value setting (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_2O_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	
Supply	3.6 V lithium battery; 2 pieces (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 mode: approx. 5 years	
Mechanical operational life	100 million load cycles	
CE-conformity	EMC directive: 2014/30/EU	pressure equipment directive: 2014/68/EU (module A) [2]
[2] This directive is only valid for devices with maximum permissible overpressure > 200 bar.		

Dimensions (in mm)



G1/2" EN 837



G1/4" EN 837 1/4" NPT 1/2" NPT

dimensioning value A:	
pressure port	mm:
G1/2" EN 837	62.5
G1/4" EN 837	54.5
1/4" NPT	54.5
1/2" NPT	60.5

Ordering code BAROLI 05

BAROLI 05 □□□ - □□□□ - 0 - □□ - 0K0 - □□□ - □ - □ - □ - □ - □□□

Pressure		
gauge	M00	
absolute	M01	
Input [bar]		
0,4	4000	
0,6	6000	
1.0	1001	
1.6	1601	
2.5	2501	
4.0	4001	
6.0	6001	
10	1002	
16	1602	
25	2502	
40	4002	
60	6002	
100	1003	
160	1603	
250	2503	
400	4003	
600	6003	
-1 … 0	X102	
customer	9999	consult
Accuracy [BFSL]		
0.25 %	B5	
customer	99	consult
Mechanical connection		
G1/2" EN 837	200	
G1/4" EN 837	400	
1/2" NPT	N00	
1/4" NPT	N40	
customer	999	consult
Seals		
FKM	1	
customer	9	consult
Pressure port		
stainless steel 1.4404 (316L)	1	
customer	9	consult
Diaphragm		
ceramics Al_2O_3 96%	2	
customer	9	consult
Front foil		
standard	1	
neutral	N	
customer	9	consult
Special version		
standard	000	
customer	999	consult

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 unfavourable 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.

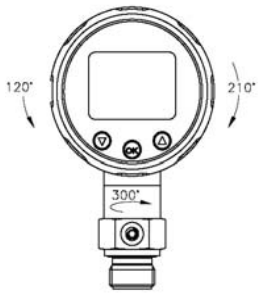
Preferred areas of use are

- Plant and machine engineering
- Food industry

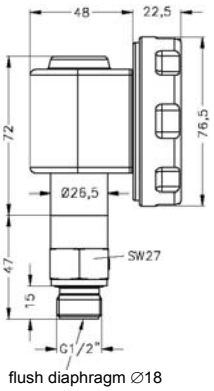
Input pressure range						
Nominal pressure gauge / abs.	[bar]	60	100	160	250	400
Overpressure	[bar]	100	200	400	400	600
Burst pressure ≥	[bar]	120	250	500	500	650
Performance						
Accuracy [1]		≤ ± 0.25 % FSO BFSL				
Measuring rate		5/sec				
[1] accuracy according to IEC 60770 – minimum value setting (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 [2]		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				
[2] 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 (316L)				
Pressure port		stainless steel 1.4435 (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: silicone oil option: food compatible oil with FDA approval (Mobil SCH Cibus 32; Category Code: H1; NSF Registration No.: 141500) 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 ±1999; 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 (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 mode: approx. 5 years				
Mechanical operational life		100 million load cycles				
CE-conformity		EMC directive: 2014/30/EU pressure equipment directive: 2014/68/EU (module A) [3]				
[3] This directive is only valid for devices with maximum permissible overpressure > 200 bar.						

Dimensions (in mm)

standard

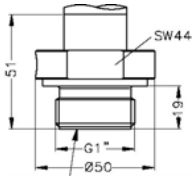


G1/2" flush
(DIN 3852)



flush diaphragm ∅18

option



flush diaphragm ∅28

G1" flush
(DIN 3852)

Ordering code BAROLI 05P

BAROLI 05P ☐☐☐ - ☐☐☐☐ - 0 - ☐☐ - 0K0 - ☐☐☐ - ☐ - ☐ - ☐ - ☐ - ☐☐☐

	Code	
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 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		
Silicone oil	1	
food compatible oil	2	
customer	9	
Special version		
standard	0 0 0	
customer	9 9 9	consult

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

- rotatable housing and display
- LC display
  4.5-digit 7-segment display
- standard battery CR 2450
  operation period > 1 500 h

Functions

- min / max function with reset function
- auto-zero
- setting of pressure unit
  (bar, mbar, psi, MPa, mH_2O)
- configuration of switch-off automatic

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

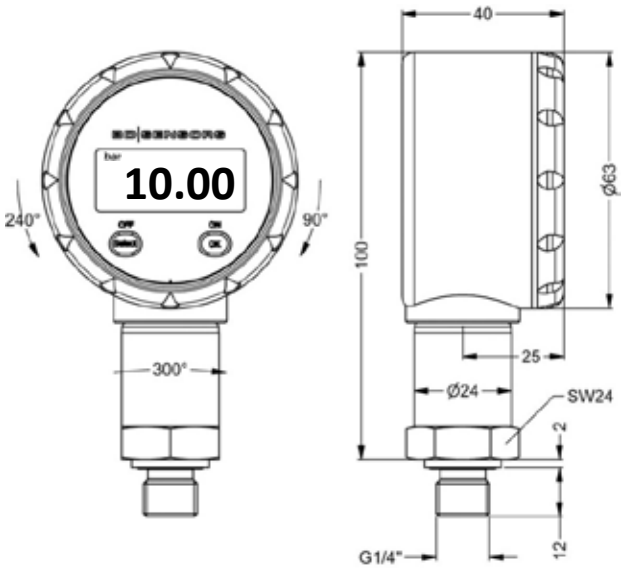
Mobile pressure monitoring
Plant and machine engineering
Pneumatics / hydraulics

Environmental engineering
(water – sewage – recycling)

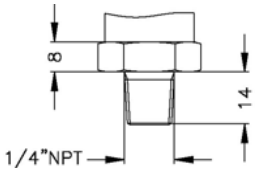
Input Pressure													
Nominal pressure gauge	[bar]	1.6	2.5	4	6	10	16	25	40	60	100	160	250
Overpressure	[bar]	4	4	10	10	20	40	40	100	100	200	400	400
Burst pressure	[bar]	7	7	15	15	35	70	70	150	150	250	450	450
Vacuum resistance		unlimited											

Performance		
Accuracy [1]	≤ ± 0.5 % FSO BFSL	
Measuring rate	1/sec	
Long term stability	≤ ± 0.3 % FSO / year	
[1] accuracy according to IEC 60770 – minimum value setting (non-linearity, hysteresis, repeatability)		
Thermal effects (Offset and Span)		
Tolerance band	≤ ± 0.5 % 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 Al_2O_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 ±1999	
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	approx. 150 g	
Operational life of battery	min. 1 500 h with permanent operation	
Mech. operational life	100 million load cycles	
CE-conformity	EMC directive 2014/30/EU	pressure equipment directive: 2014/68/EU (Modul A) [2]
[2] This directive is only valid for devices with maximum permissible overpressure > 200 bar.		

Dimensions (in mm)



G1/4" DIN 3852



1/4" NPT

Ordering code DM 10

DM 10 ☐☐☐ - ☐☐☐☐ - 0 - ☐☐ - 0K0 - ☐☐☐ - ☐ - ☐ - ☐ - ☐ - ☐☐☐

Pressure										
gauge	M04									
Input [bar]										
1.6		1601								
2.5		2501								
4.0		4001								
6.0		6001								
10		1002								
16		1602								
25		2502								
40		4002								
60		6002								
100		1003								
160		1603								
250		2503								
customer		9999								consult
Accuracy [BFSL]										
0.5 %			B8							
customer			99							consult
Mechanical connection										
G1/4" DIN 3852				300						
1/4" NPT				N40						
customer				999						consult
Seals										
FKM					1					
customer					9					consult
Pressure port										
Stainless steel 1.4301 (304)						2				
customer						9				consult
Diaphragm										
Ceramics Al_2O_3 96%							2			
customer							9			consult
Front foil										
standard								1		
neutral								N		
customer								9		consult
Special version										
standard									000	
customer									999	consult

DM 17

Battery Powered Digital Pressure Gauge

stainless steel sensor, welded

class 0.5

Nominal pressure

from 0 … 6 bar up to 0 … 600 bar

Special characteristics

- rotatable housing and display
- LC display
  4.5-digit 7-segment display
- standard battery CR 2450
  operation period > 1 500 h

Functions

- min / max function with reset function
- auto-zero
- setting of pressure unit
  (bar, mbar, psi, MPa, mH_2O)
- configuration of automatic switch-off

Option

- oil and grease free version
  for oxygen application

The compact digital pressure gauge DM 17 is characterized by its long-lasting battery supply as well as its adjustable housing. Thus, the DM 17 is ideal for mobile pressure monitoring. An unusual feature of the DM 17 is the welded pressure sensor. An absolute use in oxygen applications is given and strictest requirements on the particle liberty are fulfilled.

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.

Additional functions like setting of pressure unit, auto-zero, min / max values and an automatic switching-off function.

Preferred areas of use are

Mobile pressure monitoring
Plant and machine engineering
Pneumatics / hydraulics

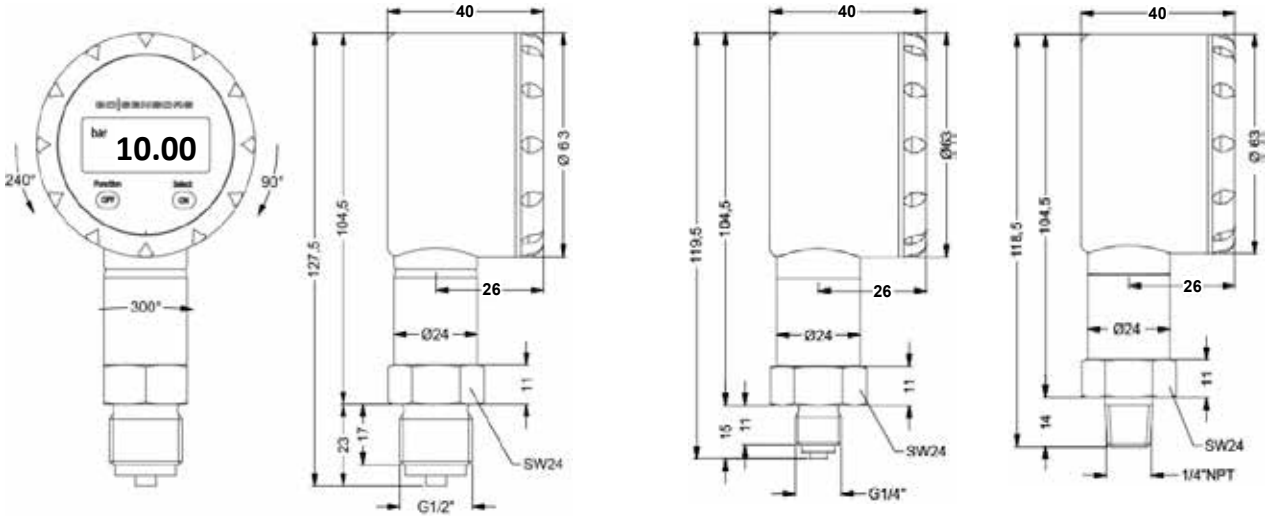
Oxygen application

Input Pressure												
Nominal pressure gauge	[bar]	6	10	16	25	40	60	100	160	250	400	600
Overpressure	[bar]	12	20	32	50	80	120	200	320	500	800	1 200
Burst pressure	[bar]	30	50	80	125	200	300	500	800	1 400	2 000	3 000
Vacuum resistance		unlimited										

Performance			
Accuracy	≤ ± 0.5 % FSO BFSL		
Measuring rate	1/sec		
Long term stability	≤ ± 0.3 % FSO / year at reference conditions		
Thermal effects (Offset and Span)			
Tolerance band	≤ ± 0.5 % 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 1.4571 (316Ti) / 1.4301 (304)		
Display housing	PA 6.6, Polycarbonate		
Seal of sensor	none (welded)		
Diaphragm	stainless steel 1.4542 (630)		
Media wetted parts	pressure port, 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 ±1999		
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. 1 500 h with permanent operation		
Mech. operational life	100 million load cycles		
CE-conformity	EMC directive 2014/30/EU	pressure equipment directive: 2014/68/EU (Modul A) [1]	

[1] This directive is only valid for devices with maximum permissible overpressure > 200 bar.

Dimensions (in mm)



G 1/2" EN 837 G1/4" EN 837 1/4" NPT

Ordering code DM17

DM17 ☐☐☐ - ☐☐☐☐ - 0 - ☐☐ - 0K0 - ☐☐☐ - ☐ - ☐ - ☐ - ☐ - ☐☐☐

Option	Code	
Pressure		
gauge	M 0 3	
Input [bar]		
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	
customer	9 9 9 9	consult
Accuracy [BFSL]		
0.5 %	B 8	
customer	9 9	consult
Mechanical connection / Seals		
G1/2" EN837 / without	2 0 0 - 2	
1/4" NPT / without	N 4 0 - 2	
G1/4" EN 837 / without	4 0 0 - 2	
customer	9 9 9 - 9	consult
Pressure port		
Stainless steel 1.4571 (316Ti)	1	
customer	9	consult
Diaphragm		
Stainless steel 1.4542 (630)	Z	
customer	9	consult
Front foil		
standard	1	
neutral	N	
customer	9	consult
Special version		
standard	0 0 0	
oxygen application	0 0 7	
customer	9 9 9	consult

NOTES

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.

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- refrigeration
- calibration techniques
- laboratory techniques
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- vehicles and mobile hydraulics
- oil and gas industry
- pharmaceutical industry
- marine / shipbuilding / offshore
- heavy industry
- environmental industry
- packaging and paper industry

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BD|SENSORS
pressure measurement

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