



SMD-DM01

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 \varnothing 100 mm
- ▶ communication interface USB 2.0

Optional

- ▶ accredited calibration certificate
- ▶ IS-version zone 1
- ▶ software incl. USB converter
- ▶ service case with accessories

Functions

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

The digital pressure gauge DM01 is a precision device fulfilling highest demands. It was conceived especially for the process monitoring and calibration. The advantage: With the digital display DM01, 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 DM01. 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 software BD|LOG.

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		
Overpressure	[bar]	35	80	80	105	210	600	600	1000	1000		
Burst pressure \geq	[bar]	50	120	120	210	420	1000	1000	1250	1250		
Vacuum resistance		$P_N \geq 1$ bar: unlimited vacuum resistant $P_N < 1$ bar: on request										

Performance	
Accuracy ¹	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 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)

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)
Diaphragm	Stainless steel 1.4435 (316L)
Media wetted parts	pressure port, seal, diaphragm

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, 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
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 μ A
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
Battery life	standard use: > 2.000 h standby mode: at least 5 years
Load cycles	$> 100 \times 10^6$
CE-conformity	EMC directive: 2004/108/EC pressure equipment directive: 97/23/EC (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 $P_N \leq 1$ bar.

³ This directive is only valid for devices with maximum permissible overpressure > 200 bar.

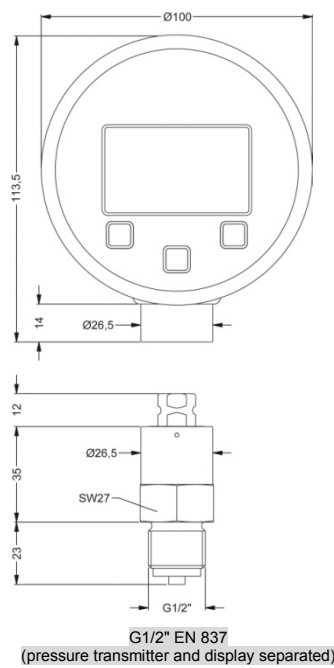
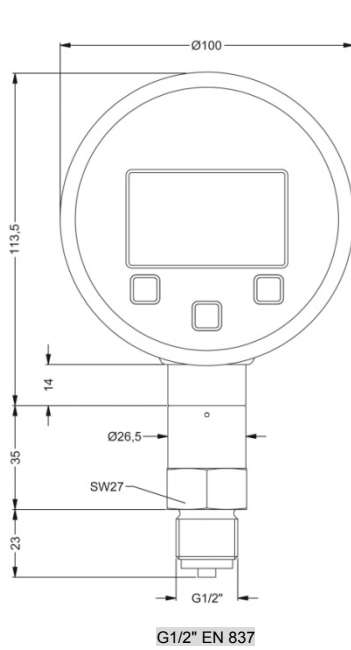
SMD-DM01

Precision Digital Gauge

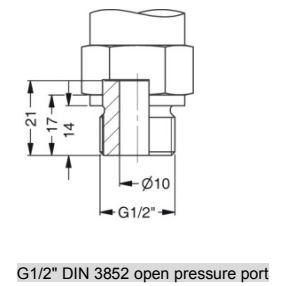
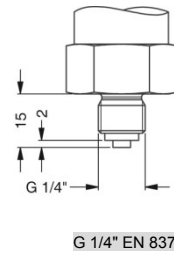
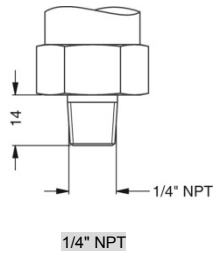
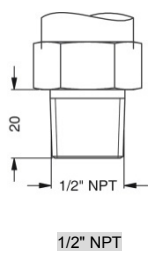
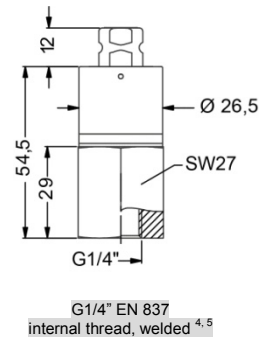
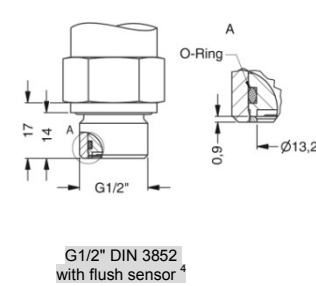
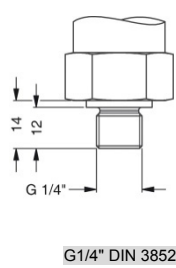
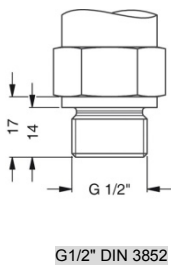
Technical Data

Dimensions (in mm)

standard



option



⇒ 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)

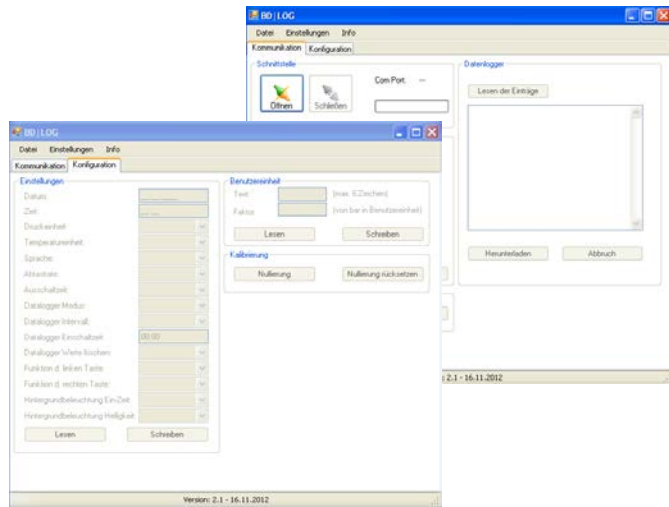
Accessories are not in scope of supply and have to be ordered separately!

BD|LOG software

Optionally software BD|LOG 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
- actual value









Interface cable with integrated USB converter
l: 1.7 m

Ordering number: ZUSBCD01

Adapter for pressure port G 1/4" EN 837 internal thread, welded

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

* others on request

<p>Hard-shell service case without accessories</p> <p>Service_Case_DM01</p>		<p>Hard shell case.</p> <p>Dimension in mm (L x W x H): 432 X 363 X 138</p>
<p>Protective cap</p> <p>Ordering number: Z1002648</p>		<p>Rubber protection</p>
<p>Additional batteries (only in combination with service case)</p>		<p>for IS-version use only</p> <ul style="list-style-type: none"> 3 x 1.5 V / AA Duracell Power Plus
<p>Seal set (only in combination with service case)</p>		<p>Flat seal copper for mechanical connections according to EN 837</p>
<p>PTFE seal tape Nr. 498.505 (only in combination with service case)</p>		<p>Seal tape for mechanical connections material: PTFE (Teflon) Temperature range: -200 ... 280 °C</p>
<p>Wrench (only in combination with service case)</p>		<p>Wrench SW 27</p>
<p>Calibration test pump KHP 35</p> <p>Ordering number: 1002637</p>		<p>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.</p> <p>pressure: 0 ... 35 bar vacuum: 0 ... -0,95 bar weight: ca. 510 g dimension: ca. 220 x 105 x 63 mm</p>
<p>Adapter for calibration test pump</p>		
<p>Test unit connection:</p> <p>Adapter to connect the test unit to the calibration test pump.</p>		<p>Adapter to connect the test unit to the calibration test pump.</p> <p>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)</p> <p>others on request</p>
<p>Reference unit connection:</p> <p>Adapter to connect the digital gauge to the calibration test pump</p>		<p>Adapter to connect the pressure sensor module DM01 to the calibration test pump.</p> <p>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)</p> <p>others on request</p>

This data sheet contains product specification, properties are not guaranteed. Subject to change without notice.

Ordering code DM01

DM01-

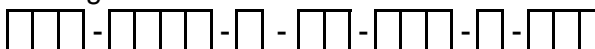


Digital pressure gauge DM01
with communication interface
IS with communication interface



2. position: transmitter for Precision Digital Pressure Gauge DM01

DM01



Pressure		M	0	K				
	gauge 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			
	-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 with flush sensor ¹	F	0	0				consult
	G1/2" DIN 3852 open pressure port	H	0	0				
	1/2" NPT	N	0	0				
	1/4" NPT	N	4	0				
	G 1/4" EN837 internal thread, welded ^{1,2}	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 only possible for $P_N \leq 40$ bar

² different connection versions with optional adapters possible (see accessories)

ordering example:

device DM01:

position 1: DM 01-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 SMD-DM01

Accessories		
USB converter (incl. software BD LOG)		ZUSBCD01
service case (without accessories)		Service_Case_DM01
Protective cap		Z1002648
Additional batteries (3 x 1,5 V / AA Duracell Power Plus) ³		1002798
Seal set ³		5008886
PTFE seal tape ³		1002724
wrench ³		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

³ only in combination with service case