



## PDM Battery Powered Precision Digital Gauge

Stainless Steel Sensor

class 0.05

### Nominal pressure

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from 0 ... 100 mbar up to 0 ... 400 bar

### Special characteristics

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

### Optional

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

### Functions

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

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

### Preferred areas of use are

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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 $\geq$	[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 <sub>N</sub> $\geq$ 1 bar: unlimited vacuum resistant; P <sub>N</sub> < 1 bar: on request								

Performance	
Accuracy <sup>1</sup>	standard for P <sub>N</sub> $\geq$ 0.4 bar: $\leq \pm 0.05\%$ standard for P <sub>N</sub> < 0.4 bar: $\leq \pm 0.125\%$
Long term stability	$\leq \pm 0.1\%$ FSO / year at reference conditions
Measuring rate / Display	1 or 2 measurements per second

<sup>1</sup> 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 <sub>N</sub> $\leq$ 160 bar: tolerance band $\leq \pm 0.2\%$ FSO for nominal pressure ranges P <sub>N</sub> > 160 bar: tolerance band $\leq \pm 0.75\%$ FSO
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-PDM	IBExU12ATEX1108 X zone 1: II 2G Ex ia IIC T4 Gb

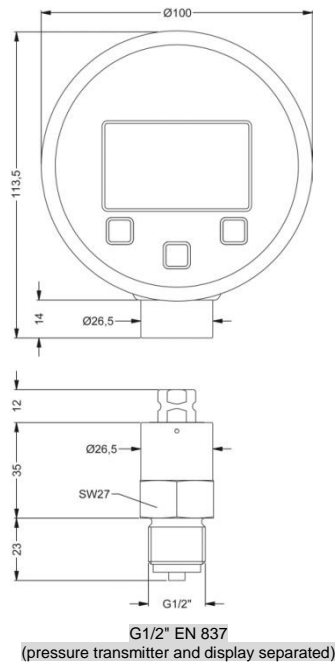
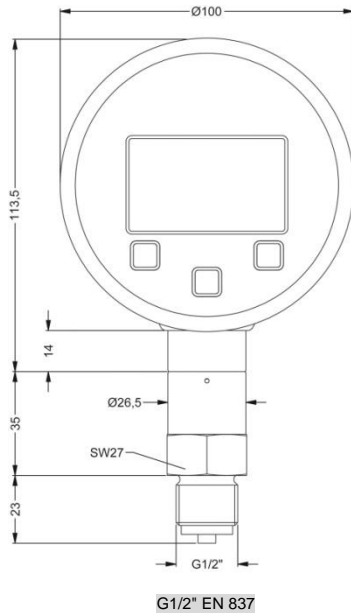
Miscellaneous	
Display	graphic LC display: visible area 55 x 46 mm; (resolution 128x64) figure height 5.5 mm (displaying of pressure value) measured value display: max. 7 digits, depending on pressure range temperature display, time, 100-segment-bargraph, potential input value background illumination: illumination period and intensity adjustable
Temperature display range	accuracy: $\pm 2$ K resolution: 0,1 K display: -10 ... 55 °C
adjustable units	[bar], [mbar], [psi], [inHg], [cmHg], [mmHg], [hPa], [kPa], [Mpa], [mH <sub>2</sub> O], [mmH <sub>2</sub> O], [inH <sub>2</sub> O], [kg/cm <sup>2</sup> ]
Data logger	recording pressure values and sensor temperature (min, hrs, daily at a defined time) max. 600.000 values, 50 measurements / second 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>2</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: 2014/30/EU pressure equipment directive: 2014/68/EU (Module A) <sup>3</sup> electromagnetic compatibility: according to EN 61326

<sup>2</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<sub>N</sub>  $\leq$  1 bar.

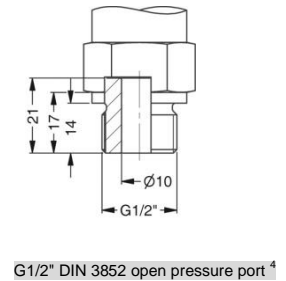
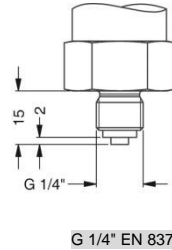
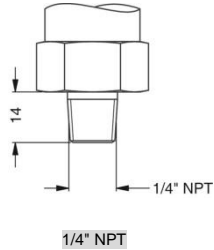
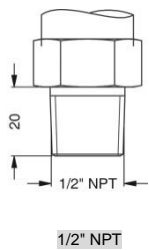
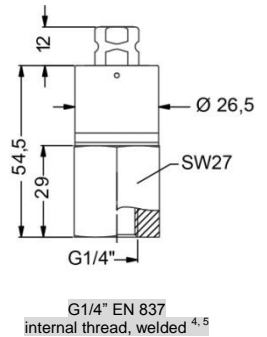
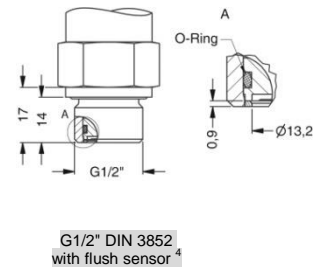
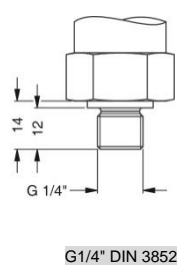
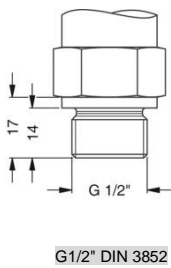
<sup>3</sup> This directive is only valid for devices with maximum permissible overpressure > 200 bar.

## Dimensions (in mm)

### standard



### option






⇒ metrical threads and other variations on request

<sup>4</sup> only possible for nominal pressure ranges  $P_N \leq 40$  bar

<sup>5</sup> different connection versions with optional adapters possible (see accessories)

## Accessories

<p>Hard-shell service case without accessories Ordering number: DART164</p>		<p>Hard shell case. Case for 1 or 2 instruments Case for maximum 5 instruments Aluminium case for max. 5 instruments</p>
<p>Protective cap Ordering number: DART163</p>		<p>Rubber protection</p>
<p>Additional batteries (only in combination with service case)</p>		<p>for IS-version use only 3 x 1.5 V / AA Duracell Power Plus</p>
<p>Software incl. USB converter with 1.7 m cable Ordering number: DART162</p>	<p><u>Software:</u></p> <ul style="list-style-type: none"> <li>display of device information (serial number, pressure and temperature range,...)</li> <li>configuration area for all parameters</li> <li>download area for recorded data:             <ul style="list-style-type: none"> <li>- date</li> <li>- pressure measurement</li> <li>- temperature measurement</li> </ul> </li> <li>actual value</li> </ul>	