

UFM D 220

Digital pressure gauge for mobile applications

The UFM D 220 is a battery-operated, highly durable digital pressure gauge designed for mobile use. It offers pressure ranges up to -1 ... +1,000 bar [-14.5 ... +15,000 psi] (gauge pressure) with an accuracy of up to 0.25% FS.

Effortless Pressure Monitoring and Adjustment

With compatibility for common process connections, the UFM D 220 simplifies pressure checks and adjustments. Its integrated data logger stores up to 1 million data points and features min./max. functions, reducing the risk of production downtime due to critical pressure fluctuations. The intrinsically safe Ex version ensures reliable operation even in sensitive oil and gas industry environments.

Seamless Data Transmission via USB and Bluetooth®

A Micro-USB interface enables reliable, interference-free data transfer, while an optional Bluetooth module allows for wireless communication.

Ideal for Mobile and Stationary Use

For transport applications, the UFM D 220 continuously records pressure values and triggers alarms when necessary. Its battery-powered operation and data logging capability support temporary monitoring, while energy-saving features and adjustable measurement rates extend battery life up to 4,000 hours. A battery status indicator signals when replacement is needed. Additionally, USB power supply ensures reliable performance in stationary applications.



Digital pressure gauge, UFM D 220

Features

- Setting and checking operating pressures is easier than ever
- Simple data transmission – via USB and Bluetooth®
- For mobile use and stationary continuous operation

Applications

- Hydrostatic pressure test
- Burst tests
- Leakage measurement
- Setting of switch points on pressure switches
- Analysis of process pressures

Specifications

Basic information		
Accuracy ¹⁾	■ 0.5 % FS ²⁾ ■ 0.25 % FS ²⁾	
Non-repeatability (per IEC 61298-2)	≤ 0.1 % FS ²⁾	
Long-term stability (per IEC 61298-2)	≤ 0.2 % FS ²⁾	
Connection location	Lower mount (radial)	
Adjustment	Offset and span factor adjustable	
Functions		
Menu functions	■ Min./Max. alarm (visual) ■ Level indication ■ Power-off function ■ Tare offset ■ Sample rate ■ Indication damping	
Memory	■ Min./Max. memory ■ Integrated data logger	
Data logger	■ Automatic recording of up to 1,000,000 values ■ Interval ⇒ Selectable from 1 ... 3,600 s in 1-second steps or ⇒ Selectable with the sample rate in the following steps: 1/s, 2/s, 4/s, 10/s Data logger must be activated. For instrument that have already been delivered, the data logger can also be activated subsequently via an activation code.	
Battery status display	Symbol display with 4 bars indicates the battery status in 25 % steps.	
Case		
Material	Case	PBT with 30 % glass fibre
	Protective case cap	VMQ (silicone)
Dimensions	See dimensions in mm [in], page 7	
Ingress protection	IP65	
Weight ³⁾	Incl. batteries	■ Standard: 350 g
	With protective case cap	■ Standard: 440 g

1) Including non-linearity, hysteresis, zero offset and end value deviation (corresponds to measured error per IEC 61298-2).

2) FS = Full span = end of measuring range - start of measuring range

3) Weights determined with process connection G ½. When other process connections, protective case caps and batteries are used, the weight can differ from the values specified here.

Digital display		
Display		
Display range	-9999 ... 19999 digits 4 ½-digit 15-segment display (incl. a large matrix area for auxiliary information)	
Display resolution	4 ½-digit	
Backlighting	Activated via button	
Bar graph	0 ... 100 %, 20 individual segments, which show 5 % steps	
Menu languages	Adjustable via menu ■ English ■ Spanish ■ Italian ■ Polish ■ German ■ French ■ Russian	
Units (adjustable via menu)	■ bar ■ psi ■ kg/cm ² ■ mbar ■ MPa ■ 1 x user-defined unit	
	Additional units only in conjunction with increased accuracy, 0.25 % FS ¹⁾ ■ mmH ₂ O ■ mmHg ■ m ■ mH ₂ O ■ inHg ■ cm ■ inH ₂ O ■ Pa ■ mm ■ ftH ₂ O ■ kPa ■ feet ■ kN/m ² ■ inch ■ 1 x user-defined unit	

1) FS = Full span = end of measuring range - start of measuring range

Reference conditions per IEC 61298-1	
Ambient temperature	15 ... 25 °C [59 ... 77 °F]
Atmospheric pressure	860 ... 1,060 mbar [12.5 ... 15.4 psi]
Air humidity	45 ... 75 % r. h. (non-condensing)

Measuring range, gauge pressure

bar	
0 ... 0.4	0 ... 50
0 ... 1	0 ... 60
0 ... 1.6	0 ... 80
0 ... 2.5	0 ... 100
0 ... 4	0 ... 160
0 ... 5	0 ... 250
0 ... 6	0 ... 350
0 ... 8	0 ... 400
0 ... 10	0 ... 500
0 ... 16	0 ... 600
0 ... 20	0 ... 700
0 ... 25	0 ... 800
0 ... 35	0 ... 1,000
0 ... 40	-

psi	
0 ... 5	0 ... 600
0 ... 10	0 ... 750
0 ... 15	0 ... 1,000
0 ... 30	0 ... 1,450
0 ... 70	0 ... 1,500
0 ... 100	0 ... 2,000
0 ... 120	0 ... 3,000
0 ... 145	0 ... 4,000
0 ... 150	0 ... 5,000
0 ... 160	0 ... 6,000
0 ... 200	0 ... 7,500
0 ... 250	0 ... 10,000
0 ... 300	0 ... 12,000
0 ... 400	0 ... 15,000
0 ... 500	-

Measuring range, absolute pressure

bar abs.	
0 ... 0.4	0 ... 6
0 ... 1	0 ... 8
0 ... 1.6	0 ... 10
0 ... 2	0 ... 16
0 ... 2.5	0 ... 25
0 ... 4	0 ... 35

psi abs.	
0 ... 5	0 ... 120
0 ... 15	0 ... 150
0 ... 30	0 ... 300
0 ... 70	0 ... 500

Measuring range, vacuum and +/- measuring range

bar	
-0.2 ... +0.2	-1 ... +15
-1 ... 0	-1 ... +16
-1 ... +1	-1 ... +20
-1 ... +5	-1 ... +24
-1 ... +9	-1 ... +30
-1 ... +10	-1 ... +40

psi	
-14.5 ... 0	-14.5 ... +200
-14.5 ... +15	-14.5 ... +300
-14.5 ... +160	-14.5 ... +450
-14.5 ... +200	-14.5 ... +600

Further details on: Measuring range

Overpressure limit		
3 times	≤ 6 bar	≤ 70 psi
2 times	≥ 10 ... 600 bar	≥ 100 ... 7,500 psi
1.43 times	> 600	> 7,500 psi
Vacuum resistance		
Yes		

Process connection

Standard	Thread sizes	Possible measuring ranges
EN 837	■ G ¼ B	≤ 1,000 bar [≤ 15,000 psi]
	■ G ½ B	
	■ G ⅝ B	≤ 400 bar [≤ 6,000 psi]
ANSI/ASME B1.20.1	■ ¼ NPT	≤ 1,000 bar [≤ 15,000 psi]

Further details on: Process connection

Pressure port diameter / restrictor	3.5 mm [0.138 in]
Other versions	<ul style="list-style-type: none"> ■ Oil- and grease-free ¹⁾ ■ For oxygen, oil- and grease-free ²⁾
Material	
Wetted parts ¹⁾	Stainless steel 316L
Internal pressure transmission medium	<ul style="list-style-type: none"> ■ Without ■ Synthetic oil (for measuring ranges ≤ 6 bar [≤ 70 psi])

1) Specifications in accordance with technical information IN 00.41

2) 3.1 inspection certificate per DIN EN 10204 (listing of the individual measured values)

→ For drawings of process connections, see page 8

Input signal USB

Micro-USB type B	
Max. input voltage	DC 5 V
Max. input current	100 mA
Max. power	500 mW

Radio standard

Bluetooth®	
Version	5.2 Low Energy
Frequency range	2,400 ... 2,500 MHz
Range in free field	5 m [16.4 ft]
Max. transmission power	5.2 dBm / 3.31 mW

Voltage supply and performance data	
Battery	3 x 1.5 V AA alkaline batteries ¹⁾
Battery voltage	DC 4.95 V
Battery life	Typically > 4,000 h (without backlighting and with Bluetooth® not active)

1) For hazardous areas, only approved models are permitted. These are listed separately in the operating instructions and in the additional information.

Operating conditions	
Place of use	For indoor and outdoor use
Altitude	2.000 m [6.562 ft] above sea level
Medium temperature range	-20 ... +50 °C [-4 ... +122 °F]
Operating temperature	-10 ... +50 °C [14 ... 122 °F]
Storage temperature range	-18 ... +55 °C [-0,4 ... 131 °F]
Relative humidity, condensation	< 84 % r. h. (non-condensing)
Permissible media	All liquids and gases of fluid group 2 which are compatible with 316 stainless steel
Permissible pollution degree	2 per EN 61010-1

Approvals

	Description	Region
	EU declaration of conformity	European Union
	EMC directive EN 61326 emission (group 1, class B) and immunity (industrial environment)	
	Pressure equipment directive PS > 200 bar, module A, pressure accessory	
	RED - Radio Equipment Directive EN 300 328 harmonised frequency range 2,400 ... 2,500 MHz is used; Bluetooth® 5.2 Low Energy (BLE), max. transmission power 10 mW. The instrument may be used without restrictions in the EU and in the countries of the EFTA	
	RoHS directive	
	Radio Law Japan Radio approval	Japan
	Federal Communications Commission (FCC) for US Radio approval	USA
	Innovation, Science and Economic Development (ISED) for Canada Radio approval	Canada
	Radiocommunications Equipment Rules Radio approval Australia - ABN 49 004 465 936 New Zealand - Company number 400909	Australia and New Zealand

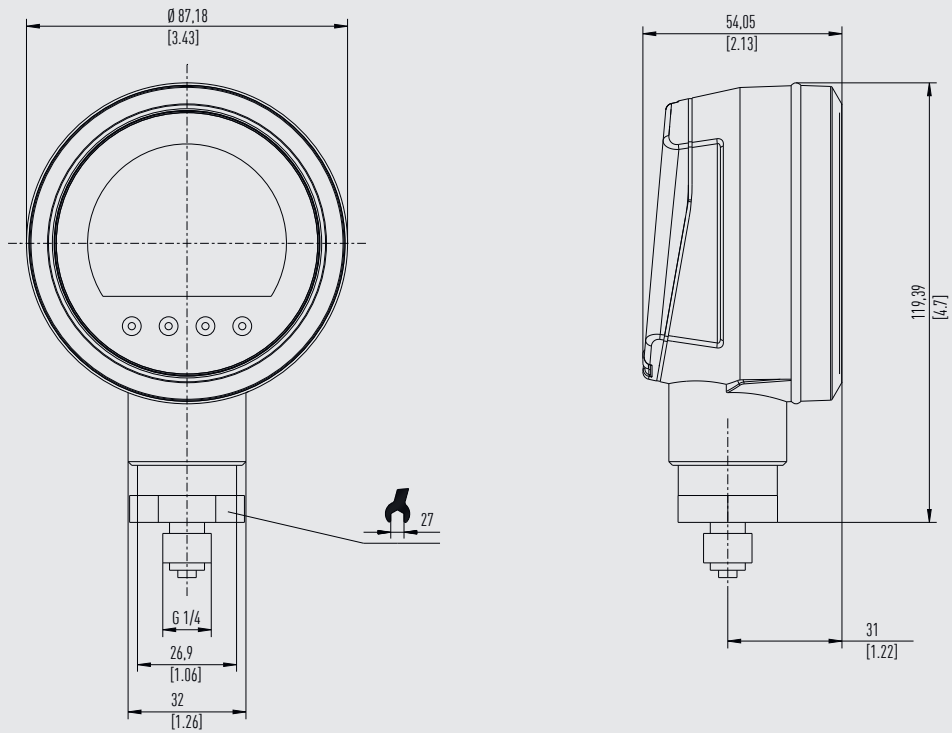
Certificates

Certificates	
Certificates	<ul style="list-style-type: none"> ■ Without ■ 2.2 test report with material proof for wetted metal parts ■ 3.1 inspection certificate with wetted parts approval and melting analysis ■ 2.2 test report with wetted metal parts approval together with 3.1 inspection certificate with wetted parts approval and melting analysis
Calibration ¹⁾	<ul style="list-style-type: none"> ■ Without ■ 3.1 inspection certificate per DIN EN 10204 ■ DAkkS calibration certificate (traceable and accredited in accordance with ISO/IEC 17025)
Recommended calibration interval	1 year (dependent on conditions of use)

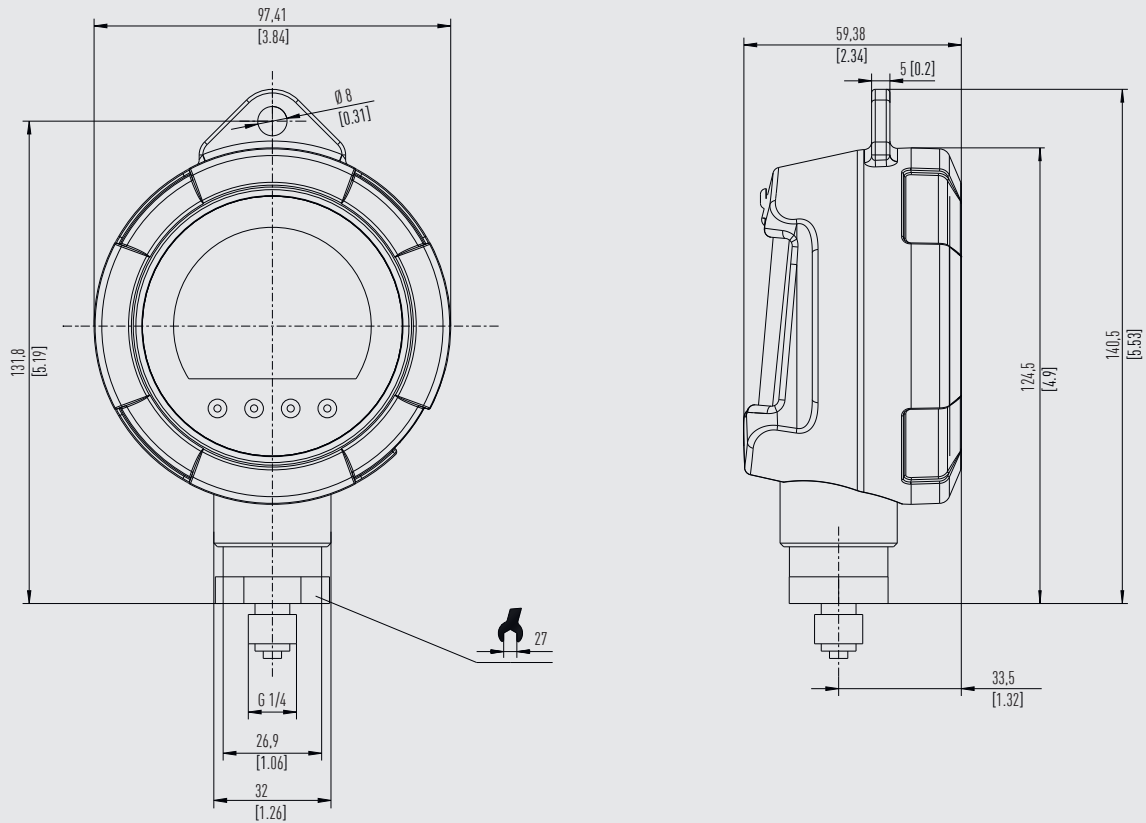
1) Calibrated in vertical mounting position with process connection facing downwards

Dimensions in mm [in]

UFM D 220 without protective case cap

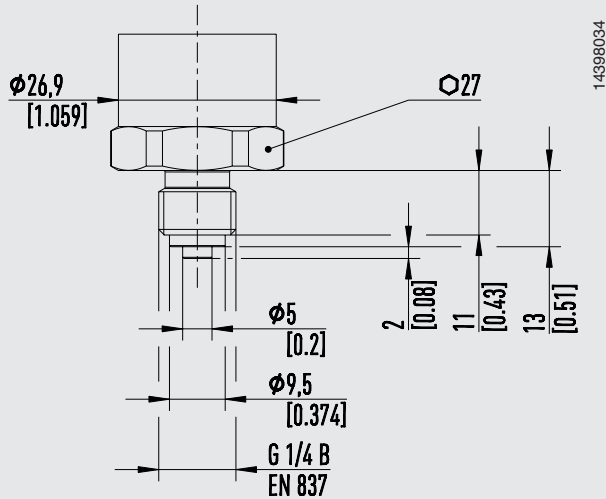


UFM D 220 with protective case cap

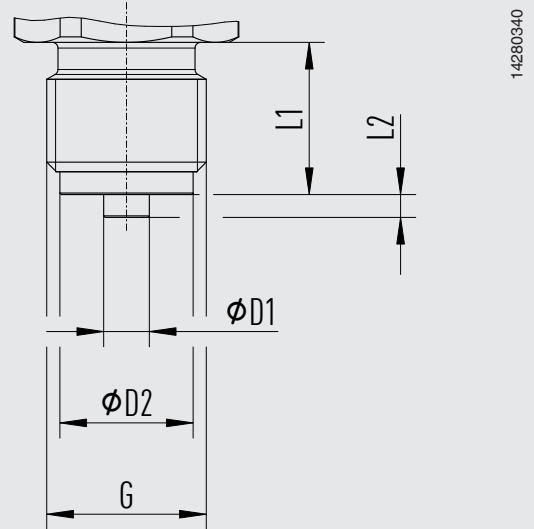


Process connections in mm [in]

Spanner width 27 mm, G 1/4 B per EN 837

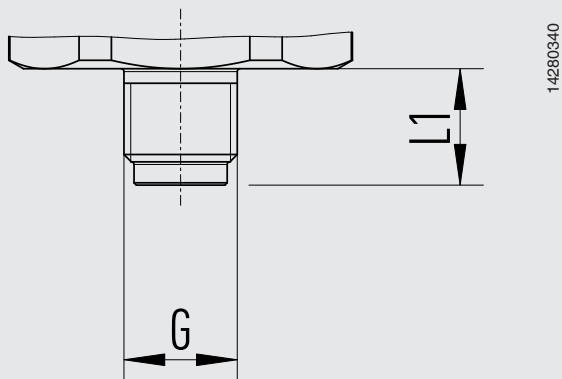


EN 837 with spigot



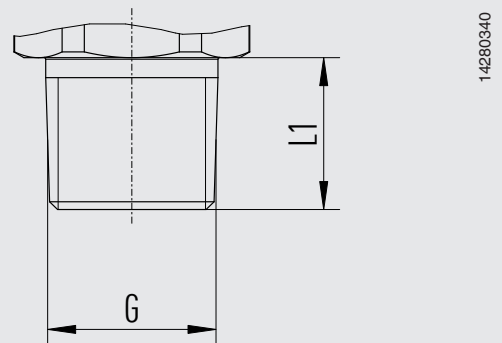
G	L1	L2	D1	D2
G 1/4 B	13 [0.51]	2 [0.08]	5 [0.19]	9.5 [0.374]
G 1/2 B	20 [0.79]	3 [0.12]	6 [0.24]	17.5 [0.689]

EN 837 without spigot



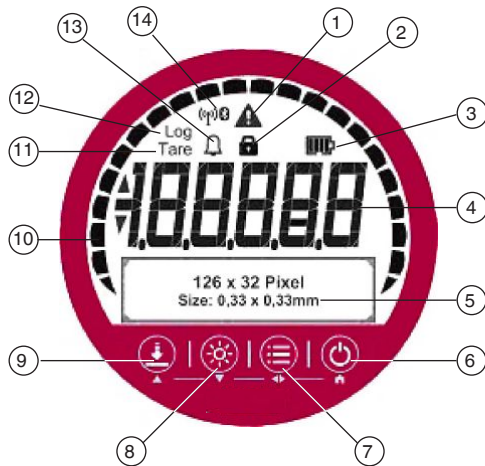
G	L1
G 1/8 B	10 [0.39]

ANSI/ASME B1.20.1



G	L1
1/4 NPT	13 [0.51]

Display



- ① **Warning notice for:**
 - Exceeding or dropping below the pressure range
 - Exceeding or dropping below the temperature range
 - Logger memory is more than 90 % full
 - Instrument error or battery status < 10 %
- ② **Lock symbol**
Menu button or ZERO button locked/unlocked
- ③ **Battery status**
- ④ **Pressure indication**
- ⑤ **Matrix field**
Serves as menu and secondary display
- ⑥ **On/Off button**
- ⑦ **MENU button**
Calling up the menu
- ⑧ **LIGHT button**
Turning the back lighting on and off
- ⑨ **ZERO button**
The current pressure value will be set to "0" (gauge) or reference pressure (abs.)
- ⑩ **Bar graph**
Indicates the current pressure graphically
- ⑪ **Tare**
Tare active/inactive
- ⑫ **Log**
Logger function active/inactive
- ⑬ **Alarm**
Measured value has exceeded or dropped below the alarm limit
- ⑭ **Bluetooth® symbol**
Bluetooth® active/inactive