

Digital pressure gauges

Digital pressure gauges are particularly suitable for both stationary and mobile measurement and display of pressure. They can be used as reference pressure gauges to simplify the checking, adjustment and calibration of other pressure measurement devices directly on site.

High accuracy in signal acquisition is achieved by using high-performance measuring cells with electronic linearisation of the characteristic curve. Suitable instruments are available for a wide variety of measurement tasks.

Ease of use is assured by innovative design and advanced technology. All essential functions for everyday use can be selected conveniently at the press of a button. Excellent protection against dust and moisture is provided by a membrane keypad or rubber buttons. Integrated supplementary functions make our digital pressure gauges true all-rounders.



Advantages at a glance

- Exact and reliable measurement
- High operational readiness
- Easy and clear readout
- Well suited to difficult on-site tasks
- Easy to assemble and use
- Supplementary functions for extra value
- EX-version available on request

Negative / Positive / and Differential Pressure

Measuring ranges from -1 bar negative pressure to 2500 bar positive pressure with high overpressure protection are available. Very small differential pressures in the millibar range can also be measured. Differential pressure measuring cells or two independent measuring inputs are used for this purpose.

Resolution / Accuracy

It is often necessary to use several mechanical pressure gauges when measurements must be made over a wide pressure range with sufficient accuracy. Digital pressure gauges with high resolution and precision can handle this task with just one instrument.

An indicating accuracy of 0.5% to 0.01% covers the entire spectrum of requirements. This precision is often found only in sensitive laboratory instruments, whereas Sika digital pressure gauges are designed for use in harsh industrial environments.

Tare / Zero

User-defined zero point setting at the push of a button makes offset adjustment easy and eliminates the need for tedious mechanical adjustment. Single-point adjustment allows the linear characteristic curve to be shifted in positive or negative direction over the entire measuring range.

Linearisation

Multi-point adjustment can be performed if it is necessary to adjust the indicated values at different test points. Two-point adjustment is available for setting the zero point and slope of the measuring cell curve. Some digital pressure gauges allow up to six offset values to be programmed in order to shift the characteristic curve to meet the most stringent customer expectations.

Battery operation / Auto-Off

Power is supplied by long-life batteries (ordinary or rechargeable). An external AC adapter can also be used. To increase battery operating time, a programmable Auto-Off function switches off the power to the instrument after prolonged inactivity. The electronics are designed for extremely low power consumption, which enables a battery life of significantly more than 1000 hours.

Display

The large illuminated digital local display shows the measured pressure and indicates the current status of the digital pressure gauge, even under poor lighting conditions. This eliminates the difficult task of reading a dial gauge and avoiding parallax errors. Needle jitter due to vibration or pressure fluctuations is eliminated. Display damping or averaging can be configured directly using display filters. This ensures easy, tireless readout.

Selectable pressure units

Another feature is the large selection of pressure units. Up to 13 different units are possible – far more than any complicated dual-scale or multi-scale gauge can offer.

The required display unit is selected directly on the digital pressure gauge and is clearly indicated on the display. No conversion necessary; the desired value can be read directly.



Area of application

The right measuring system is available for every measuring task. For simple applications with air or non-corrosive and non-ionising substances, low-cost unenclosed pressure sensors are used. In difficult applications with water or other aggressive media, high-quality stainless steel versions are used.

Once the intended use has been determined and the pressure range has been specified, a digital pressure gauge with an internal measuring cell is preferably used. For frequently changing application conditions, plug-in pressure sensors for various pressure ranges and applications can be fitted using adapters. Automatic sensor recognition using standard DIN connectors offers a simple Plug-&-Play solution.

Electronics / Pressure measuring cell

The measuring cells and electronics used in the gauges are temperature compensated, so that the effect of temperature on the readings is negligible. Liquid entry into the measuring system is not necessary, which eliminates the risk of damage from media residues. Another unbeatable feature of the electronic measuring cells is their immunity to pressure surges.

Min / Max Displays and Peak function

Experience shows that excess pressure and pressure peaks significantly higher than normal operating pressure occur at some measuring points. Min / max displays and fast peak value measurement cycles in digital pressure gauges assist in system analysis and allow peak values to be determined. This allows incorrect readings and violations of range limits to be detected and helps avoid damage to pressure systems. Preventive service is often less expensive than repairing or replacing defective instruments.

Protection class

High IP protection classes are available to minimise dust and water sensitivity. Rugged, impact-resistant digital pressure gauges are fitted with rubber caps for protection during transport and field use.



Direct mounting, built-in version and hand-held instrument

The compact, handy design proves its worth in everyday use. It puts an end to large-diameter gauges with sizes up to 250 mm, as is common with precision pressure gauges. The small size simplifies direct mounting. If necessary, built-in versions are available for switchgear cabinet or control panel mounting. Hand-held digital pressure gauges are especially suitable for applications where short-term pressure measurements are desired instead of continuous measurement.

Data memory

The logger function for local data storage can be used to record pressure curves automatically and perform leak tests. The integrated data memory in digital pressure gauges allows a variety of data sets to be recorded directly. The time interval between samples is programmable and the maximum recording interval is configurable. The stored values can be displayed on a PC. Data import at the press of a button is also possible. In this case the data is shown directly on the display. In this process the values are automatically annotated with the date and time of day using an integrated real-time clock.

→ *Reference type R, J, MH 3181, MH 3151 and MH 3156*



Analogue output

An electrical output signal enables remote display on a control console or in a control room as well as the connection of external recorders and indicating instruments.

→ *Reference type Q*

Relay output / Alarm signalling

Digital pressure gauges allow limit contacts to be closed even at low pressures. There is no need for high actuation forces for magnetic spring or inductive contacts, which makes it easier to signal critical equipment conditions and perform supplementary control tasks. A built-in buzzer generates an alarm when the pressure exceeds the range of the programmed minimum and maximum pressure levels.

→ *Reference type Q, MH 3181, MH 3151 and MH 3156*

Temperature display

Temperature measurement is often required in addition to pressure measurement. For this purpose, a temperature sensor is integrated in the measuring cell to detect the temperature of the medium. The process temperature can be displayed at the press of a button. This allows two quantities to be measured at a single measuring point, which saves costs.

→ *Reference type R, J, P*

Explosion protection

Explosion-proof versions are also available for use in potentially explosive locations, e.g. oil refineries, chemical plants and drilling platforms.

→ *Reference types E-Ex, D-Ex, L*

Example applications

- Continuous or temporary checking of a wide variety of system pressures
- Air density measurement in building shells for the detection and elimination of problem areas and avoiding structural damage
- Monitoring the degree of soiling of filter units in ventilation or air conditioning systems
- Recording pressure drops for the determination of leakage rates in leak tests
- Measurement of barometric air pressure for the determination of weather conditions
- Reference pressure gauge for calibration tasks

Type J



Type J

Accuracy (full scale)		0.2 %	
Pressure range*		Resolution	
0...100 mbar	0...1.450 psi	0.1 mbar	0.001 psi
0...250 mbar	0...3.626 psi	0.1 mbar	0.001 psi
0...500 mbar	0...7.252 psi	0.1 mbar	0.001 psi
-1...1 bar	-14.5...14.50 psi	1 mbar	0.01 psi
-1...2.5 bar	-14.5...36.26 psi	1 mbar	0.01 psi
-1...5 bar	-14.5...72.52 psi	1 mbar	0.01 psi
-1...10 bar	-14.5...145.0 psi	10 mbar	0.1 psi
-1...20 bar	-14.5...290.1 psi	10 mbar	0.1 psi
-1...40 bar	-14.5...580.2 psi	10 mbar	0.1 psi
-1...60 bar	-14.5...870.2 psi	10 mbar	0.1 psi
0...100 bar	0...1450psi	100 mbar	1 psi
0...250 bar	0...3626 psi	100 mbar	1 psi
0...350 bar	0...5076psi	100 mbar	1 psi
0...500 bar	0...7252 psi	100 mbar	1 psi
0...700 bar	0...10 153 psi	100 mbar	1 psi
0...1000 bar	0...14 504 psi	1 bar	10 psi
0...1500 bar	0...21 756 psi	1 bar	10 psi
0...2000 bar	0...29 008 psi	1 bar	10 psi

* Other measuring ranges on request.

Functions		
Type	J	
Adjustment options		
Linearisation	6 points	
Tare / Zero	✓	
Selectable units		
Pressure	bar, mbar, hPa, kPa, MPa, PSI, mmHg, inHg, cmH ₂ O, mH ₂ O, inH ₂ O, kg,cm ²	
Temperature	°C, °F	
Features		
Measuring inputs	1 x direct	
PC connection (optional)	USB (B)	
Analogue output		
Built-in version (optional)		
Explosion protection (optional)		
Data memory		
Number of memory	60 000 values (auto)	
Recording interval	1 s...10 h	
Recording duration	1 min...1000 h	
Data sets	Pressure / Temperature	
Display / Representation		
Multi-functional LCD	5 digit	
Bargraph	✓	
Illumination	✓	
Display filter	✓	
Min/max value	✓	
Measuring rate		
Standard	100 ms	
Peak / Fast		
Process connection		
Connection options	G½	14...158 °F
Material	1.4542	
Medium temperature	-10...70 °C	
For aggressive media	✓	
Housing		
Degree of protection	IP65 (front) / IP40	14...158 °F
Dimension	86 x 86 mm T=40 mm H=135 mm	
Material	Aluminium	
Operating temperature	-10...70 °C	
Weight	900 g	
Power		
Auto-off function	✓	
Battery type	internal accu	
Ext. power (optional)	USB	
Battery operation	2000 h	
Certificates (optional)		
DAkkS certificate		
SIKA works certificate		