

# Digital pressure gauges // Tantum series

-1...1000 bar



E2 / D2 / C2



E2 / D2 / C2  
with data logger



## Fast and versatile

- Suitable for short-term analysis and test purposes as well as for continuous measurement
- 12 pressure ranges, 3 accuracy classes
- 6 switchable pressure units  
→ bar / mbar, kPa / MPa, PSI, kg/cm<sup>2</sup>, mH<sub>2</sub>O, inH<sub>2</sub>O
- Measuring rate 10 ms  
→ Detection of smallest pressure peaks
- Use of 2 x 1,5 V AA batteries  
→ Battery operation 1500 h

## Operation under extremely harsh conditions

- Backlit digital display, digit height of actual value 15 mm, bar graph with maximum pointer function, display can be rotated 270° axially  
→ Easy reading from a large distance
- Oil- and dirt-resistant surface
- Degree of protection IP67
- Vibration resistance (5g up to 500 Hz)
- Shock resistance (25g for 11 ms)

## Overview pressure ranges

| Type                                | E2         |               | D2         |               | C2                       |               |
|-------------------------------------|------------|---------------|------------|---------------|--------------------------|---------------|
| Accuracy<br>(± of full scale value) | 0.5 %      |               | 0.1 %      |               | 0.05 % (0.1 % in vacuum) |               |
| Pressure range                      | Resolution | max. Overload | Resolution | max. Overload | Resolution               | max. Overload |
| -1...3 bar                          | 0.001 bar  | 12 bar        | 0.001 bar  | 12 bar        |                          |               |
| -1...5 bar                          | 0.001 bar  | 18 bar        | 0.001 bar  | 18 bar        |                          |               |
| -1...10 bar                         | 0.001 bar  | 30 bar        | 0.001 bar  | 30 bar        | 0.001 bar                | 30 bar        |
| -1...20 bar                         | 0.001 bar  | 50 bar        | 0.001 bar  | 48 bar        | 0.001 bar                | 48 bar        |
| -1...40 bar                         | 0.01 bar   | 80 bar        | 0.01 bar   | 80 bar        | 0.01 bar                 | 80 bar        |
| -1...60 bar                         | 0.01 bar   | 120 bar       | 0.01 bar   | 120 bar       | 0.01 bar                 | 120 bar       |
| 0...100 bar                         | 0.01 bar   | 200 bar       | 0.01 bar   | 200 bar       | 0.01 bar                 | 200 bar       |
| 0...160 bar                         | 0.01 bar   | 320 bar       | 0.01 bar   | 320 bar       | 0.01 bar                 | 320 bar       |
| 0...250 bar                         | 0.1 bar    | 500 bar       | 0.1 bar    | 500 bar       | 0.1 bar                  | 500 bar       |
| 0...400 bar                         | 0.1 bar    | 800 bar       | 0.1 bar    | 800 bar       | 0.1 bar                  | 800 bar       |
| 0...700 bar                         | 0.1 bar    | 1200 bar      | 0.1 bar    | 1200 bar      | 0.1 bar                  | 1200 bar      |
| 0...1000 bar                        | 0.1 bar    | 1500 bar      | 0.1 bar    | 1500 bar      | 0.1 bar                  | 1500 bar      |

## Data logger function

- 10 recording series possible
- 27000 data sets per recording series  
1 data record containing:  
time / date / actual pressure / MIN/MAX value
- **Intelligent automatic measuring interval**  
→ The time between data sets (storage rate) is selected automatically depending on the recording duration

| Recording duration (h) | Storage rate (s) | Max. data sets |
|------------------------|------------------|----------------|
| 0...0.5                | 0.1              | 18000          |
| 0.5...1                | 0.2              | 18000          |
| 1...2                  | 0.4              | 18000          |
| 2...4                  | 0.8              | 18000          |
| 4...8                  | 1.6              | 18000          |
| 8...16                 | 3.2              | 18000          |
| 16...48                | 6.4              | 27000          |

→ MIN/MAX value recording

A total of 640 measurements are recorded between two storages with a storage rate of e.g. 6.4 seconds at a measuring rate of 10 ms. Any irregularities occurring due to pressure drop or pressure peaks are detected as MIN/MAX valued and stored in the data set

→ Summary of all MIN/MAX values per record series

- Data evaluation via Plug & Play  
→ no additional drivers or software required
- Readout via Mini-USB to PC/laptop via USB cable  
→ no converters required
- Storage of the measured values in CSV format  
→ Processing in spreadsheets and database programs  
(e.g. Microsoft Excel, Apple Numbers, LibreOffice, etc.)

## Good reasons for a correct and reliable measurement

- Maintaining high and continuous product quality
- Compliance with industrial requirements
- Quality assurance regulations
- Process optimization
- Increase in productivity
- Avoiding unexpected production stops
- Safety for employees and customers
- Environmental requirements / ecological aspects
- Profit optimization / economic aspects

## An extra bit of security

- Accidental switch-off is not possible with activated data logger function
- Non-volatile storage  
→ Recordings are retained without battery
- Future-proof by transferring updates via Mini-USB connection via PC/laptop into the digital pressure gauge
- Overwriting of recording series is not possible  
→ The recorded values are secured

## Application example



## Mini-USB connection



## Possible areas of application

Whether on site, in the workshop, in the measuring and testing room or laboratory, digital pressure gauges are used everywhere. A wide range of industries with the most diverse areas of application is covered.

- Assembly, commissioning
- Manufacturing, production
- Maintenance, service
- Quality assurance, test equipment monitoring
- Repair

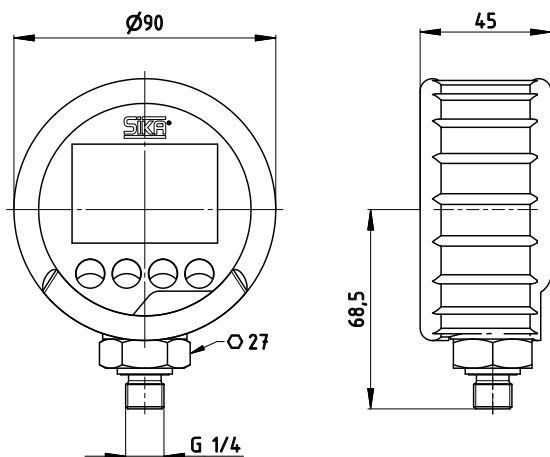
# Control buttons // Technical drawings



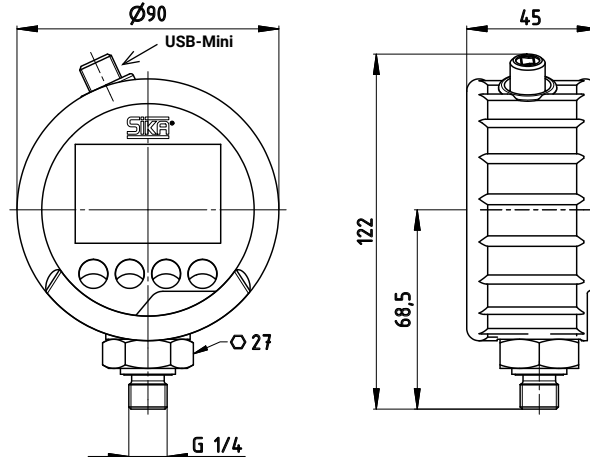
- 1 Bar graph display with maximum pointer function, 33 segments
- 2 Actual pressure display, digit height 15 mm
- 3 Unit display / recording series display
- 4 Data logger display, flashes during recording
- 5 Battery status display, 5 segments
- 6 Additional display MIN/MAX value, full scale pressure value, digit height 8 mm
- 7 Control buttons

| Control buttons |  |
|-----------------|--|
| ON/OFF          | Switch device on or off                                      |
| LIGHT           | Backlighting (20 s)  |
| MIN/MAX         | Show MIN /MAX value or full scale pressure value             |
| CLOCK           | Set date and time  |
| ZERO            | Zero point correction up to 5 % of full scale pressure value |
| MENU            | Open device settings   |
| SET             | Delete MIN/MAX value or confirm input                        |
| REC             | Start or stop data logger                                    |

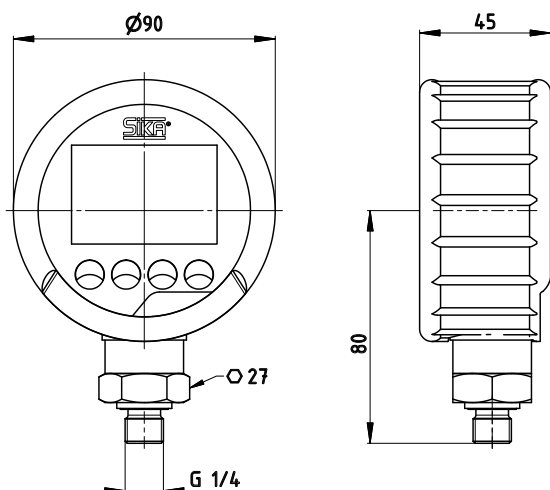
Without data logger, measuring cell strain gauge



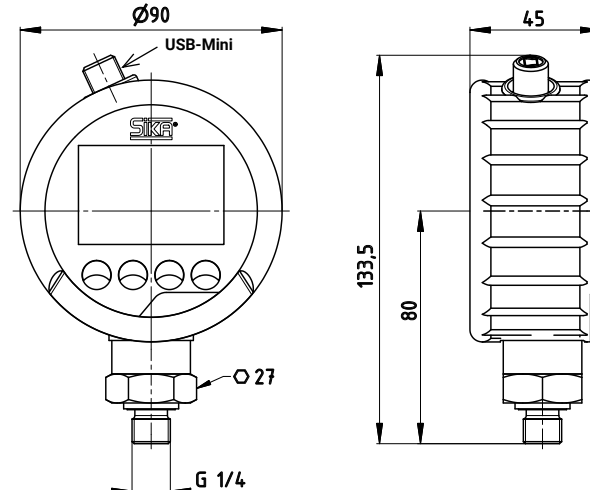
With data logger, measuring cell strain gauge




Without data logger, measuring cell PIEZO



With data logger, measuring cell PIEZO



# Technical data

| Technical data  |   |       |                          |
|---|---|-------|--------------------------|
| Type  | E2  | D2    | C2                       |
| <b>Pressure ranges</b>  | Between -1...1000 bar   |       |                          |
| <b>Accuracy (<math>\pm</math> of full scale value)</b>                              | 0.5 %   | 0.1 % | 0.05 % (0.1 % in vacuum) |
| <b>Units</b>  |   |       |                          |
| <b>Pressure</b>   | bar / mbar, kPa / MPa, PSI, kg/cm <sup>2</sup> , mH <sub>2</sub> O, inH <sub>2</sub> O                                  |       |                          |
| <b>Display</b>  |   |       |                          |
| <b>Type</b>   | Multifunctional LCD, 4 ½ digit, with background lighting  |       |                          |
| <b>Functions</b>  | Bar graph, pressure unit, display filter, MIN/MAX value, Overpressure indicaton 110 % of full scale pressure value (FS) |       |                          |
| <b>Measuring system</b>   |   |       |                          |
| <b>Pressure measuring cell</b>  | ≤ 10 bar piezo resistive<br>≥ 20 bar thin film strain gauge   |       |                          |
| <b>Temperature compensation</b>   | 0...50 °C   |       |                          |
| <b>Temperature error</b>  | 0.005 % of full scale pressure value (FS) / K   |       |                          |
| <b>Measuring rate actual value</b>  | 10 ms   |       |                          |
| <b>Measuring rate bar graph</b>   | 50 ms   |       |                          |
| <b>Process connection</b>   |   |       |                          |
| <b>Thread ISO 1179-2</b>  | G¼ with NBR gasket, AF27  |       |                          |
| <b>Material</b>   | Stainless steel 1.4404  |       |                          |
| <b>Medium temperature</b>   | -20...80 °C   |       |                          |
| <b>Housing connection</b>   | 270° axially rotatable  |       |                          |
| <b>Housing</b>  |   |       |                          |
| <b>Degree of protection DIN EN 60529</b>  | IP67  |       |                          |
| <b>Dimensions</b>   | Ø 90 mm, D=45 mm H=120 mm with protection cap   |       |                          |
| <b>Materials</b>  | Cast zinc with protection cap made of TPE   |       |                          |
| <b>Ambient conditions</b>   | 0...50 °C with air humidity ≤85 % r.h.  |       |                          |
| <b>Weight</b>   | 540 g   |       |                          |
| <b>Vibration resistance IEC 60068-2-6</b>   | 5g up to 500 Hz   |       |                          |
| <b>Shock resistance IEC 60068-2-29</b>  | 25g for 11 ms   |       |                          |
| <b>Power supply</b>   |   |       |                          |
| <b>Auto-off function</b>  | Selectable switch-off time 5 minutes  |       |                          |
| <b>Battery type</b>   | 2x 1.5 V AA   |       |                          |
| <b>Battery operation</b>  | 1500 h  |       |                          |
| <b>Data logger (optional)</b>   |   |       |                          |
| <b>Max. data sets</b>   | 27000 per recording series  |       |                          |
| <b>Record series</b>  | 1...10  |       |                          |
| <b>Storage rate</b>   | 0.1...6.4 s - automatically per recording duration  |       |                          |
| <b>Max. recording duration</b>  | 48 h  |       |                          |
| <b>Data set information</b>   | time / actual pressure / MIN/MAX value  |       |                          |
| <b>Digital data transmission</b>  | serial USB 2.0  |       |                          |
| <b>Interface</b>  | Mini USB port   |       |                          |
| <b>PC software</b>  | Detection as USB data storage device, spreadsheet program   |       |                          |
| <b>File format</b>  | .csv  |       |                          |
| <b>Approvals</b>  |   |       |                          |
|  | DNV type approval<br>Certificate Nr. TAA00001CJ   |       |                          |
| <b>Certificate (optional)</b>   |   |       |                          |
| DAkKS certificate, works test certificate   |   |       |                          |

# Article numbers

| Order code                  |                   |          |             |
|-----------------------------|-------------------|----------|-------------|
| <b>Accuracy</b>             |                   |          |             |
| 0.5 %                       | EME8REF-E2        |          |             |
| 0.1 %                       | EME8REF-D2        |          |             |
| 0.05 % (0.1 % in vacuum)    | EME8REF-C2        |          |             |
| <b>Data logger</b>          |                   |          |             |
| without                     |                   | -        |             |
| with                        |                   | L        |             |
| <b>Pressure range [bar]</b> |                   |          |             |
| -1...3*                     |                   |          | 0003        |
| -1...5*                     |                   |          | 0005        |
| -1...10                     |                   |          | 0010        |
| -1...20                     |                   |          | 0020        |
| -1...40                     |                   |          | 0040        |
| -1...60                     |                   |          | 0060        |
| 0...100                     |                   |          | 0100        |
| 0...160                     |                   |          | 0160        |
| 0...250                     |                   |          | 0250        |
| 0...400                     |                   |          | 0400        |
| 0...700                     |                   |          | 0700        |
| 0...1000                    |                   |          | 1000        |
| <b>Example order number</b> | <b>EME8REF-E2</b> | <b>-</b> | <b>0003</b> |

\* only available for E2 and D2

# Scope of delivery

| Scope of delivery          |   |
|----------------------------|---|
| <b>without data logger</b> | Digital pressure gauge                  |
|                            | Protection cap                          |
|                            | 2x Batteries                            |
|                            | Test certificate                        |
|                            | Operating manual                        |
| <b>with data logger</b>    | Digital pressure gauge with data logger |
|                            | Cable (1 m) / Mini-USB <-> USB A        |
|                            | Protection cap                          |
|                            | 2x Batteries                            |
|                            | Test certificate                        |
| Operating manual           |   |



# Accessories

| Accessories  | Order number            |
|--|-------------------------|
| SIKA-Works calibration certificate, 10 calibration points (no vacuum)  | EKDRUCK000000D          |
| DAkKS calibration certificate, 10 calibration points (no vacuum)   | EKDRUCK000000W          |
| Rubber protection cap  | XP0229                  |
| Measuring point designation  |                         |
| <p>Laser-inscribed stainless steel plate with fixing wire for easy attachment to measuring points</p> <p>→ <b>Scope of delivery:</b> Designation plate inscribed according to specification and enclosed fixing wire (sealing wire)</p> <p>→ <b>Fastening:</b> Wire (included in delivery), alternatively sealing, cable ties or similar (not included in delivery)</p> <p>→ <b>Materials:</b> Plate stainless steel 1.4571, wire stainless steel</p> <p>→ <b>Dimensions:</b> Plate 55 x 10 x 0.8 mm, wire length 180 mm</p> <p>→ <b>Inscription:</b> one-sided, single-line, max. 11 characters, character height 5 mm, designation width max. 40 mm, letters, numbers, symbols, barcodes, QR codes</p> <p>→ <b>Transmission of designations:</b> digital list, file formats Excel, Word or CSV</p> | <p><b>ONSITETAG</b></p> |

