

# 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	
<b>Accuracy</b> (± of full scale value)	0.5 %		0.1 %		0.05 % (0.1 % in vacuum)	
	<b>Resolution</b>	<b>max. Overload</b>	<b>Resolution</b>	<b>max. Overload</b>	<b>Resolution</b>	<b>max. Overload</b>
<b>Pressure range</b>	-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
	-1...20 bar	0.001 bar	50 bar	0.001 bar	48 bar	0.001 bar
	-1...40 bar	0.01 bar	80 bar	0.01 bar	80 bar	0.01 bar
	-1...60 bar	0.01 bar	120 bar	0.01 bar	120 bar	0.01 bar
	0...100 bar	0.01 bar	200 bar	0.01 bar	200 bar	0.01 bar
	0...160 bar	0.01 bar	320 bar	0.01 bar	320 bar	0.01 bar
	0...250 bar	0.1 bar	500 bar	0.1 bar	500 bar	0.1 bar
	0...400 bar	0.1 bar	800 bar	0.1 bar	800 bar	0.1 bar
	0...700 bar	0.1 bar	1200 bar	0.1 bar	1200 bar	0.1 bar
	0...1000 bar	0.1 bar	1500 bar	0.1 bar	1500 bar	0.1 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

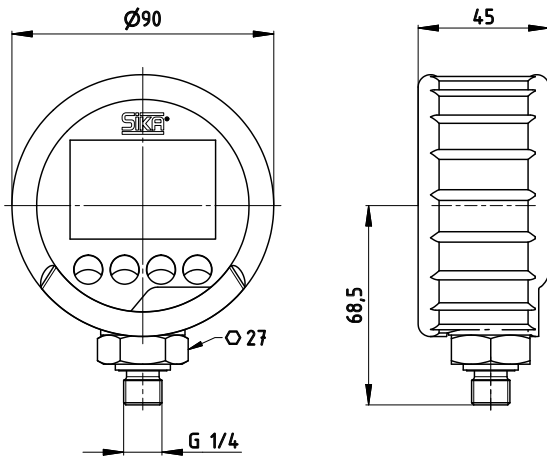
# Control buttons // Technical drawings



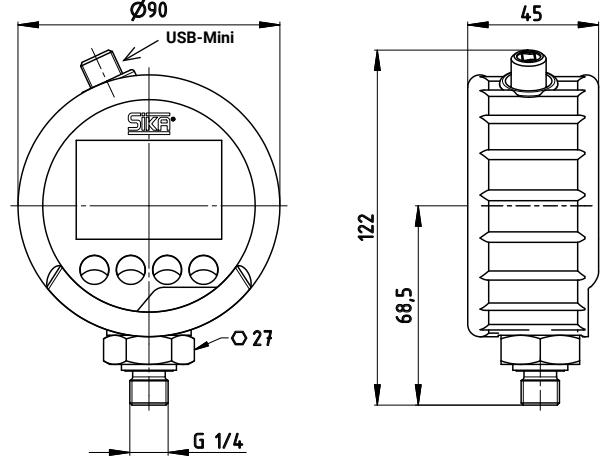
- 1 Bar graph display with maximum pointer function, 33 segments
- 2 Actual pressure display, digit height 15 mm
- 3 Unit display / recording series display
- 4 Data logger display, flashes during recording
- 5 Battery status display, 5 segments
- 6 Additional display MIN/MAX value, full scale pressure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

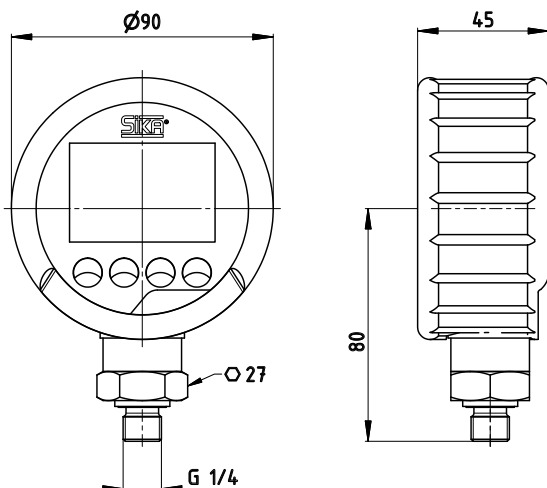
Without data logger, measuring cell strain gauge



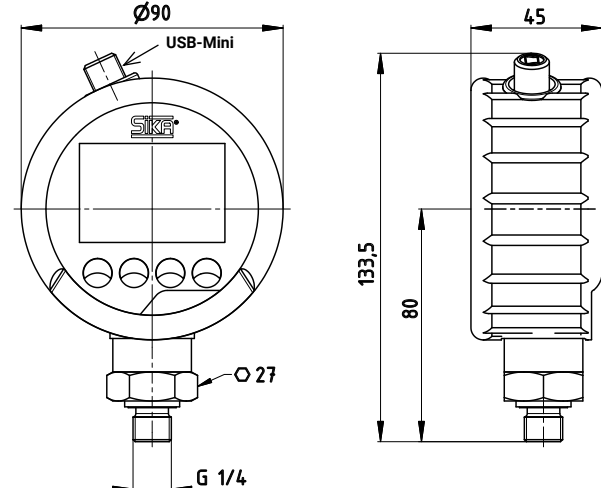
With data logger, measuring cell strain gauge




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> , mH2O, inH2O		
<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 ≥ 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 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>

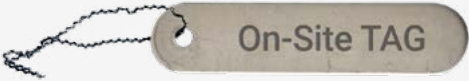
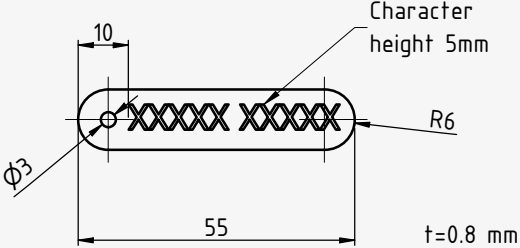
\* only available for E2 and D2

# 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
<p><b>Measuring point designation</b> Laser-inscribed stainless steel plate with fixing wire for easy attachment to measuring points</p> <ul style="list-style-type: none"><li>→ <b>Scope of delivery:</b> Designation plate inscribed according to specification and enclosed fixing wire (sealing wire)</li><li>→ <b>Fastening:</b> Wire (included in delivery), alternatively sealing, cable ties or similar (not included in delivery)</li><li>→ <b>Materials:</b> Plate stainless steel 1.4571, wire stainless steel</li><li>→ <b>Dimensions:</b> Plate 55 x 10 x 0.8 mm, wire length 180 mm</li><li>→ <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</li><li>→ <b>Transmission of designations:</b> digital list, file formats Excel, Word or CSV</li></ul>  	<p><b>ONSITETAG</b></p>