

-1...1000 bar – Digital pressure gauges // Tantum series



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/cm², mH₂O, inH₂O
- 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	0.5%		0.1%		0.05%	
± [% full scale pressure value (FS) + 1 digit] @ 25 °C	Resolution	max. Overload	Resolution	max. Overload	Resolution	max. Overload
Pressure range	-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

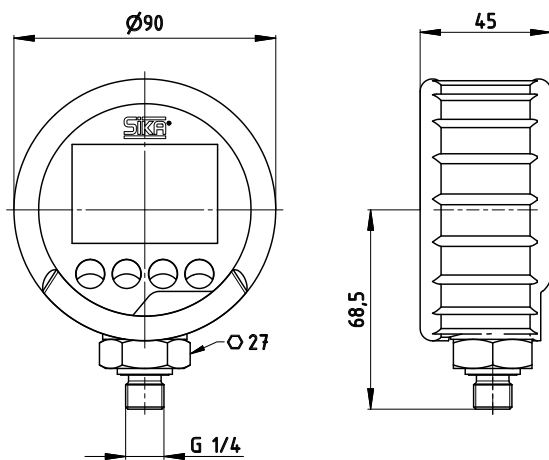


- 1 Bar graph display with maximum pointer function, 33 segments
- 2 Actual pressure display, digit height 15 mm
- 3 Unit display / recording series display
- 4 Data logger display, flashes during recording
- 5 Battery status display, 5 segments
- 6 Additional display MIN/MAX value, full scale pressure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

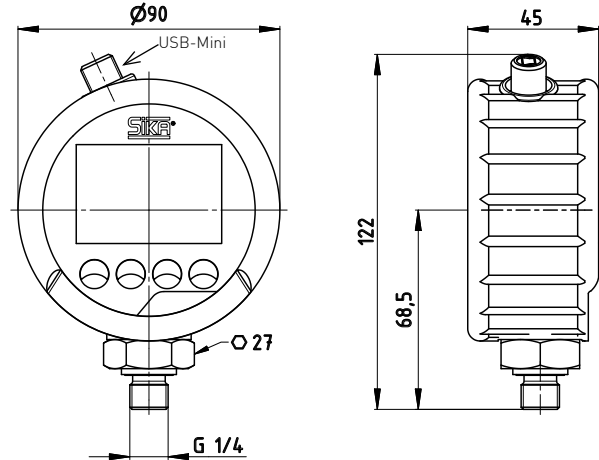
Control buttons

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

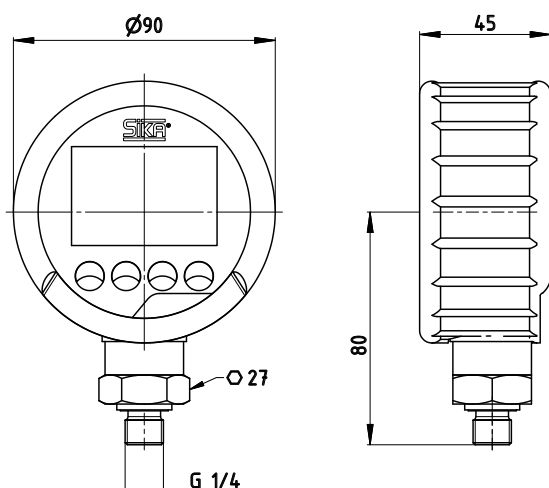
Without data logger, measuring cell DMS



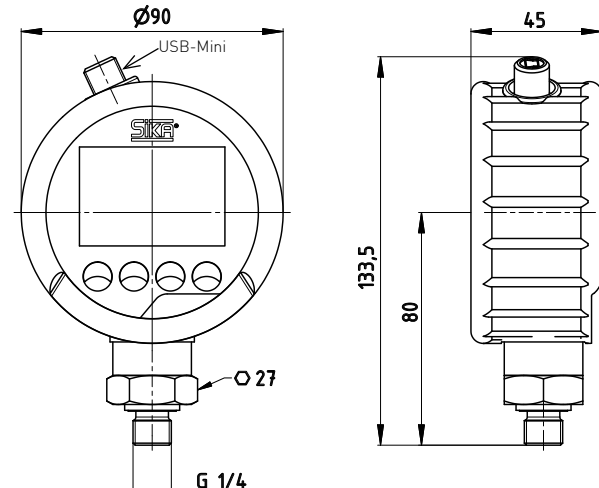
With data logger, measuring cell DMS




Without data logger, measuring cell PIEZO



With data logger, measuring cell PIEZO



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

Order code			
Accuracy			
0.5 %	EME8REF-E2		
0.1 %	EME8REF-D2		
0.05 %	EME8REF-C2		
Data logger			
without		-	
with		L	
Pressure range [bar]			
-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
Example order number		EME8REF-E2	-
			0003

* only available for E2 and D2

Scope of delivery

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



