

Hand-Held Pressure Measuring Instrument “Manoport”

with microprocessor

for external pressure sensor

accuracy 0,2% and 0,1%

LCD-display 2 x 4 ½-digit



Description

The hand-held pressure measuring instrument “Manoport” is a handy digital indicator for measurement of gauge pressure, absolute and optionally also differential pressure.

The external pressure sensors are available for ranges from 0...0.1 bar to 0...1000 bar, including manufacturer test certificate.

The wetted parts consist of stainless steel and are thus resistant to corrosive gases and fluids.

The connection of the sensor identifies automatically the pressure range. For the digital indicator the functions “actual value memory (HOLD)” and “peak value memory (MIN and MAX)” are also available via menu. The units are selectable at any time.

Depending on the requirements the pressure sensors are available with an accuracy of $\pm 0.2\%$ from the nominal value of the measuring range (optional 0.1%).

The built-in battery ensures independence from a stationary power supply and avoids any injury risk by mains voltage.

The hand-held pressure measuring instrument has a robust water protected case and can be used in nearly any environment.

The hand-held pressure measuring instrument complies with the electromagnetic compatibility acc. to EN 61326.

Features

- Ready for application with external sensor
- Independent of stationary power supply (battery)
- Low weight
- Automatic identification of the pressure ranges
- Selectable measuring units
- Integrated data logger function
- Adjustable zero value
- High resistance of sensors against aggressive media
- Peak value memory (MIN and MAX) and actual value memory (HOLD)
- Option serial interface
- Option evaluation software

Measuring ranges

Gauge pressure
 positive 0...0.1 to 0...1000 bar
 negative -1...0 to -0.1...0 bar

Applications

Service and repair,
 process- and gas pressure measurement,
 hydraulic, monitoring of measuring device

Model: E3905, P3394

Technical data of digital indicator

Model	E3905
Display	7-segment-LCD-display, two 4 ½-digit displays for actual value and additional information
- Range on display ¹⁾	-9999 ... 19999 digit
- Accuracy (measuring chain)	± 0.2% of F.S. ± 1 digit (including: linearity and hysteresis), optional 0.1%
- measuring rate	"slow" 4 measuring / sec; "fast" >100 measuring / sec
Functions	
- Data logger	Logger-adjustment: individual value or cyclic Individual Value: max. 99 recordings incl. time cyclic logger: max. 5400 recordings incl. time cyclic timer: selectable from 1 to max. 3600 sec
- Current value memory	Hold-Function, save the instantaneous value
- Pressure peak memory	Max/Min-function, save maximal- and minimal value "peak-detect" > 100 measuring / sec not filtered
- Power off function	Power-Off 1.. 120 min. selectable
Measuring range ¹⁾	
- Adjustment	Automatic adjustment of connected sensor
- Units	Depending on range, selectable is: bar, mbar, psi, mmHg, Pa, kPa
Zero value adjustment	Adjustable
Sensor connection	Optional connector with interlock
Interface	Serial interface connected to RS 232 via suitable electrically insulated interface adapter (USB-adapter on request)
Power supply	9 V battery, optionally 9V-accumulator or mains supply
Temperature range	
- Operating	0°C to 50 °C (0 ... 95% without moisture condensation)
- Storage	-20°C to 70°C
Temperature influence	0.2% / 10K; at zero and span
Case	ABS-plastic black
Weight	Indicator 160g

¹⁾ depending of the selected pressure unit

of F.S. = of full scale value

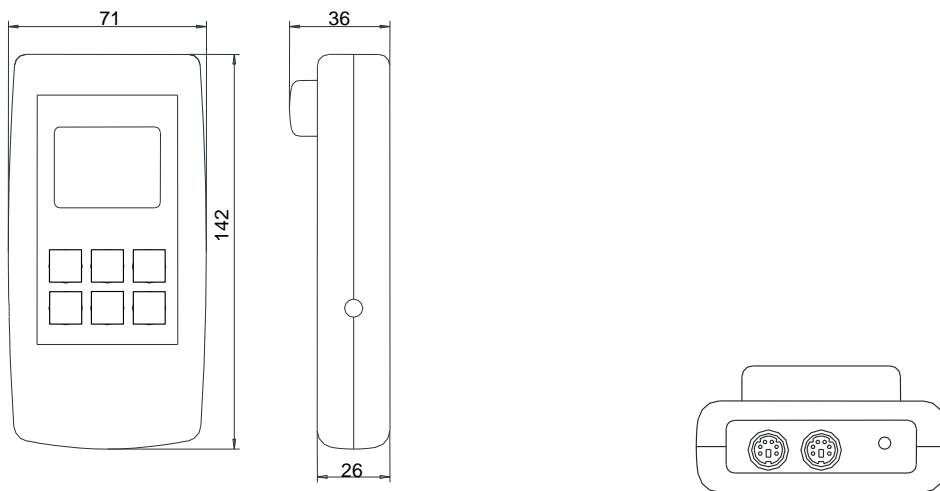
Accessories

Description	Article-No.
Adapter cable for sensor, 1m	EZE53X001005
Adapter cable for sensor, 3m	EZE53X001006
Measurement of differential pressure	
Robust case for 1 digital indicator, 3 pressure sensors, spare part battery and various seals (items not included)	340 x 275 x 85 mm (BxHxT) - EZE49X090021
Robust case for 1 digital indicator, 3 pressure sensors, 1 hand pump and accessory (items not included)	450 x 320 x 165 mm (BxHxT) - EZE49X090022
Robust case for 1 digital indicator, 3 pressure sensors, 1 hand spindle pump and accessory (items not included)	520 x 380 x 145 mm (BxHxT) - EZEXXXXXXX
Robust case for 2 digital indicators (pressure or temperature), 5 pressure sensors, 2 temperature probes, power supply unit, accumulator, accu charger and accessory (items not included)	520 x 380 x 145 mm (BxHxT) - EZE49X090020
9V battery	EZE50X012003
Accumulator 9V	EZE50X012002
Accu charger for accumulator 9V (European standards)	EZE50X001005
Plug-power supply unit (European standards)	EZE50X001001
Hand pump, pneumatic, -800 mbar to 35 bar	C1351X085005
Hand spindle pump, hydraulic to 250 bar	C1360X230001
Hand spindle pump, hydraulic to 1000 bar	C1360X230001
Connection tube 1m with 2 adapter G ½ (max. 400 bar)	AZM25X002001
Hydraulic oil-reservoir 0,3 l incl. check valve to max. 400 bar	
Hydraulic oil-reservoir 0,3 l incl. check valve to max. 1000 bar	
Minimess-adapter for pressure taping point PN400, steel	A1302X010044
Minimess-adapter for sensor PN400, steel	A1302X010045
Minimess-adapter for pressure taping point PN630, steel	A1302X010046
Evaluation-Software incl. interface converter	EZE53X001006

Example accessory:
robust case with assembled instrument measuring set

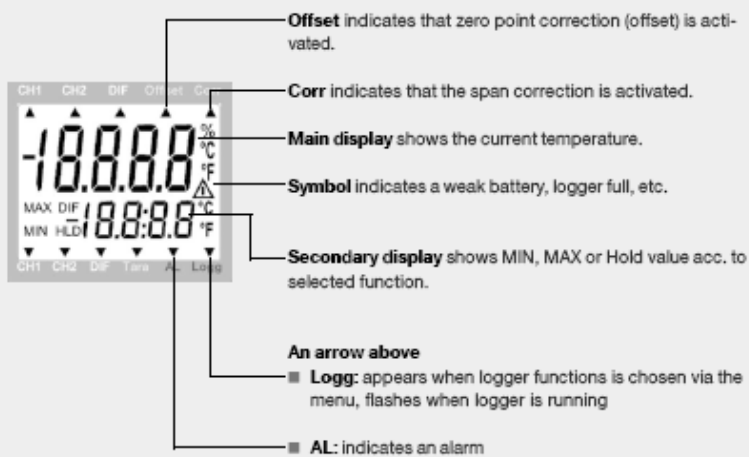


Dimensions of digital indicator (mm)

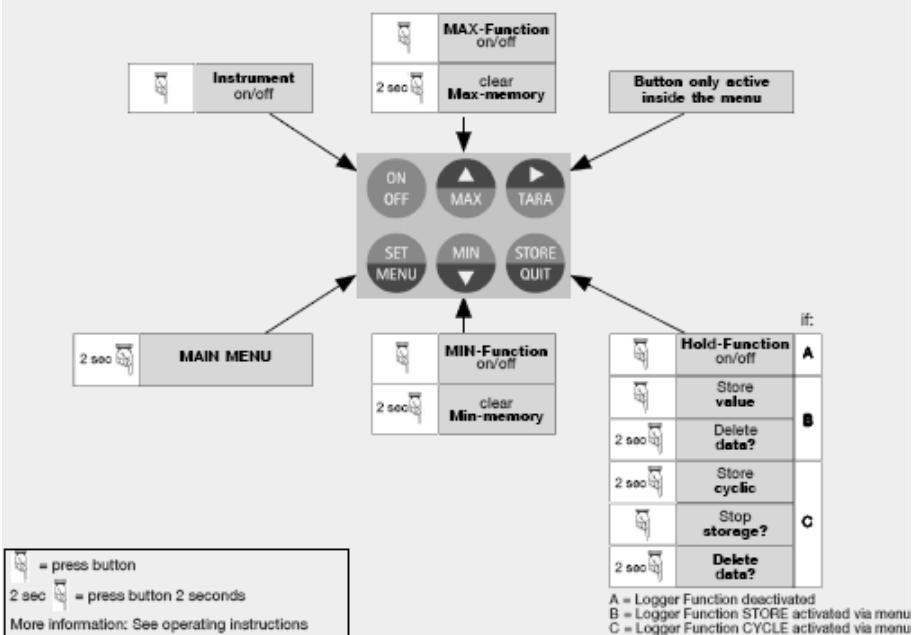


Operating functions

Display



Keypad



Technical data of external pressure sensor

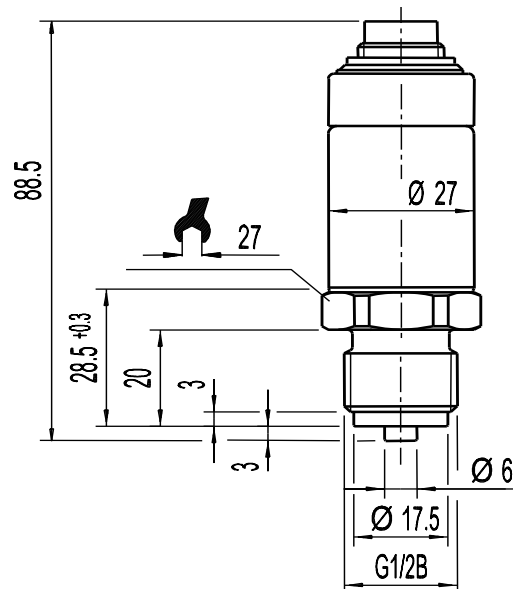
Model	P3394	
Sensor type	internal diaphragm	front flush diaphragm on request
Pressure type	neg. or pos. gauge pressure	relative gauge pressure; absolute pressure on request
Accuracy ¹⁾	0,2 % of F.S.	0,1 % of F.S.
Measuring range acc to EN	0 ... 0,1 bar to 0 ... 1000 bar	
Sensor element	piezoresistive; > 16 bar thin film	
Stability (annual)	≤ 0,2 % of F.S. in rated conditions	
Case	stainless steel	
Pressure connection	G ½ B	other pressure connection on request
Overload limit	≤ 16 bar 3,5x; ≤ 600 bar 2x; > 600 bar 1,5x	
Electrical connection	optional plug connector with screw connector	
Temperature influence ²⁾	± 0,2 % /10 K, at zero range and span	
Protection type	IP 65 EN 60 529, IEC 529	
Temperature range		
Storage	-40 80°C	
Medium	-25 70°C	
Ambient	0 70°C	
Weight	approx. 0,22 kg	

¹⁾ Terminal point adjustment according to DIN 16 086, incl. linearity and hysteresis of F.S. = of full scale value

²⁾ > 0,4% for measuring ranges > 0,25 bar

Dimensions (mm)

Housing



Order details

- Model digital instrument
- Model external sensor
- Measuring range external sensor
- Options

Subject to technical changes