

LEO2

Compact digital manometer with high accuracy

Features

- High accuracy
- Compact design
- Piezoresistive pressure sensor chip, insulated encapsulated
- Energy-efficient: battery life of up to 1000 operating hours
- Optional: Intrinsically safe version LEO2-Ei available for use in potentially explosive atmospheres

Functions

- Wide range of units of pressure to choose from
- Zero point calibration via buttons
- Automatic shutdown
- Min / max display

Typical applications

- Industrial applications
- Servicing
- Calibration / testing

Accuracy

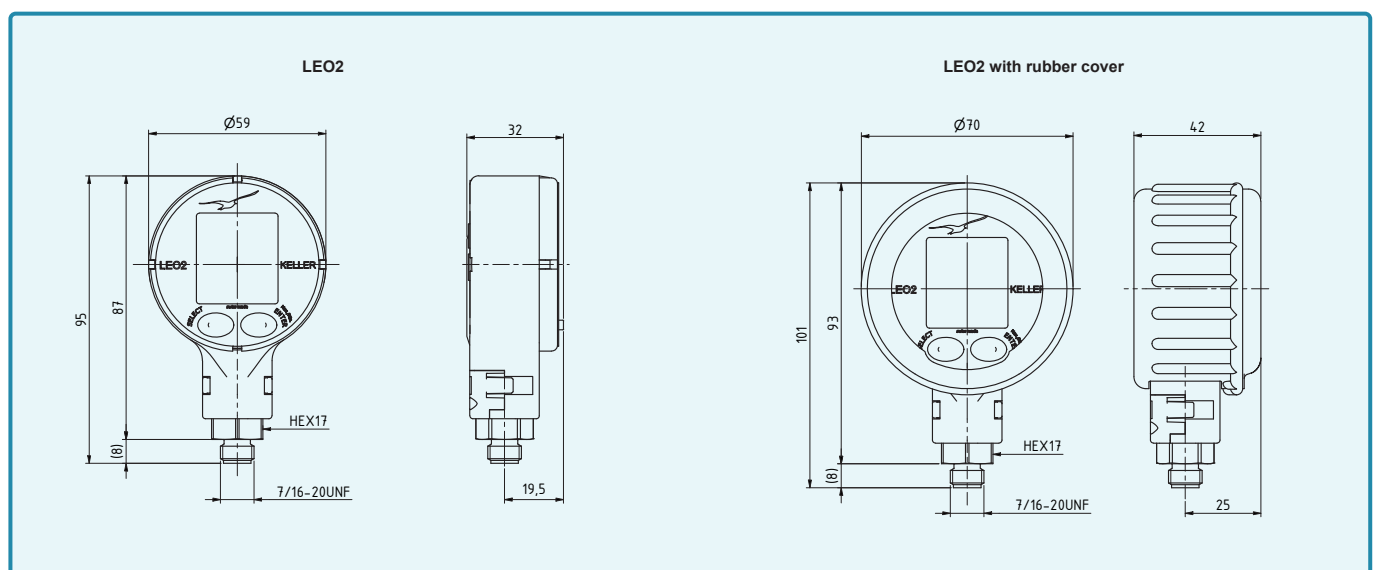
$\pm 0,1\%$ FS

Total Error Band

$\pm 0,2\%$ FS

Pressure Ranges

0...4 bar to 0...700 bar



LEO2 – Specifications

Standard pressure ranges

Absolute pressure PAA	Absolute pressure PA	Overload resistance	Display resolution
0...4		10	0,001
0...11		20	0,002
0...31		60	0,01
0...101		200	0,02
	0...300	400	0,1
	0...700	700	0,2
bar abs.	bar abs.	bar	bar
Reference pressure at 0 bar abs. (vacuum)	Reference pressure at 1 bar abs.	Based on reference pressure	

Performance

Accuracy @ RT (20...25 °C)	$\leq \pm 0,1 \text{ \%FS}$	Nonlinearity (BFSL), pressure hysteresis, non-repeatability, zero point deviation and amplification deviation
Total error band (0...50 °C)	$\leq \pm 0,2 \text{ \%FS}$	Max. deviation within the specified pressure and temperature range.
Compensated temperature range	0...50 °C	
Long-term stability	$\leq \pm 0,2 \text{ \%FS}$	Per year under reference conditions, yearly recalibration recommended.
Degree of dependency on location	$\leq \pm 1,5 \text{ mbar}$	Calibrated in vertical installation position with pressure connection facing downwards.
Pressure range reserve	$\geq \pm 10 \text{ \%}$	Valid measured values outside the pressure range, no overflow/underflow.

Electrical data

Battery	3 V, type CR2430	Only CR2430 from Renata permitted for hazardous applications (LEO2-Ei).
Battery life	Up to 1000 hours	When used continuously.

Electromagnetic compatibility

CE-conformity as per 2014/30/EU (EMV)	EN 61326-1 / EN 61326-2-3 / EN 61000-6-1 / EN 61000-6-2 / EN 61000-6-3 / EN 61000-6-4
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LC-Display

Dimensions / appearance	Width × height: 27.8 mm × 30.0 mm (see dimensions and variants)
Number of digits on LC display	2 rows with 4 1/2 digits each
Display mode	Pressure + min. / max.
Display interval	2/s
Configurable units of pressure	bar, mbar, hPa, kPa, MPa, PSI, kp/cm ²

LEO2 – Specifications

Mechanical data

Materials in contact with media

Pressure connection	Stainless steel AISI 316L
Pressure transducer separating diaphragm	Stainless steel AISI 316L
Pressure transducer seal (internal)	None
Swivel insert	Nickel-plated brass
Swivel O-ring	NBR
Adapter	Galvanised steel
Adapter seal (external)	NBR

Other materials

Display housing	Polyamide
Front glass	LEXAN® 163R
Pressure transducer oil filling	Silicone oil

Further details

Pressure connection	7/16 - 20 UNF with G1/4 adapter	See dimensions and variants for other optional adapters.
Diameter × height × depth	59 mm × 95 mm × 32 mm	Without rubber cover
	70 mm × 101 mm × 42 mm	With rubber cover
Weight	approx. 125 g	Without rubber cover and adapter

Environmental conditions

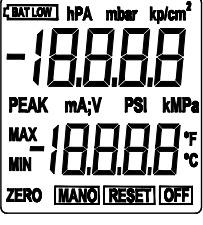
Medium temperature range	-40...85 °C	Icing not permitted
Ambient temperature range	-10...60 °C	
Storage temperature range	-20...70 °C	
Protection	IP65	
Note	Readability of the LC display is guaranteed between 0 °C and 50 °C. Outside of this temperature range, the readability of the display may be limited.	

Explosion protection LEO2-Ei

Intrinsically safe version LEO2-Ei in accordance with 2014/34/EU (ATEX) and IECEx	LCIE 01 ATEX 6001 X IECEx LCIE 18.0035 X Zone 0: Ex II 1G Ex ia IIC T5 Ga	The intrinsically safe version may only be operated using the CR2430 battery from RENATA. Max. permitted ambient temperature range -10...80 °C.
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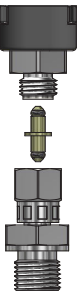
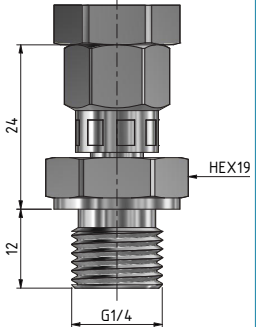
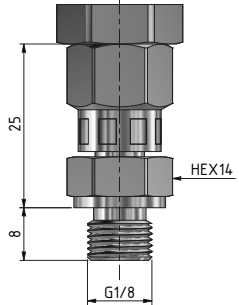
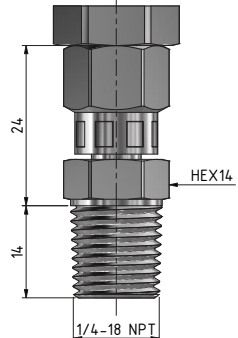
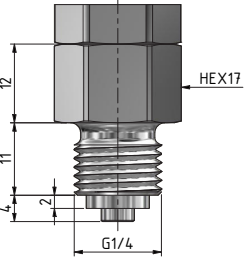
LEO2 – Dimensions and variants

LC display

Front cover	Content	Dimensions
		Width × height: 27,8 mm × 30,0 mm Digit height: top: 8 mm × 3 mm bottom: 7 mm × 3 mm

Available pressure connections

A swivel adapter with a G1/4 connection on the process side is supplied as standard with every LEO2. The swivel adapter is a cylinder with O-rings on each side. This allows the device to be optimally positioned. The following adapters are also available:

Principle Swivel adapter	G1/4 swivel adapter (standard)	G1/8 swivel adapter	1/4-18NPT swivel adapter	G1/4 EN 83 adapter, without swivel, alignment not possible
				

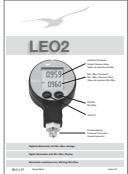
The process of fitting the adapter with the swivel seal insert is described in the operating instructions.

Customised configurations on request

- Customer-specific front covers
- Customer-specific firmware with e.g. application-specific calculations
- Parts that come into contact with media made from other materials
- Other oil filling types for pressure transducers
- Other units of pressures can be configured ex works

LEO2 – Scope of delivery and accessories

Scope of delivery

Plastic case	Renata CR2430 battery	G1/4 swivel adapter	Operating instructions D/E/F
			

Accessories

Rubber cover	Calibration certificate with 5 measuring points	Calibration certificate with 11 measuring points	Carry case
			
For additional protection in harsh environments.	Measurement deviation at room temperature. Issued by KELLER Pressure.	Measurement deviation at room temperature with hysteresis. Issued by KELLER Pressure.	With belt loop

Order information

Standard versions		Intrinsically safe versions	
Technical description	Product number	Technical description	Product number
LEO2 / 4 bar	303010.0002	LEO2-Ei / 4 bar	303010.0006
LEO2 / 11 bar	303010.0015	LEO2-Ei / 11 bar	303010.1906
LEO2 / 31 bar	303010.0005	LEO2-Ei / 31 bar	303010.0007
LEO2 / 101 bar	303010.0072	LEO2-Ei / 101 bar	303010.1910
LEO2 / 300 bar	303010.0004	LEO2-Ei / 300 bar	303010.0003
LEO2 / 700 bar	303010.0001	LEO2-Ei / 700 bar	303010.0008