

### Highly Precise Digital Manometer Precision (0,01 % FS\*) RS485 BUS Interface

LEX1 is a micro-processor controlled, accurate and versatile digital pressure measuring instrument for calibration and testing purposes with 0,05 %FS standard accuracy. Option for precision 0,01% available as extra feature. Via the RS485 Bus Interface, communication with up to 128 connected instrument can take place. The pressure is measured twice per second and displayed. The top display indicates the actual pressure, the bottom display shows the Max. or Min. pressure.

**ATEX / IECEx:** LEX1 devices which are marked with "LEX1 Ei" are intrinsically safe for use in hazardous areas (by approval for both ATEX and IECEx standards).

#### Function

LEX1 has two operating keys. The left key is to turn the instrument on, to select the functions and the pressure units. The right key executes the selected function resp. unit or serves to display the Max. and Min. value.

#### The instrument has the following functions

**RESET** With the RESET-function, the Max. and Min. value is set to the actual pressure value.

**ZERO** Using the Zero-function will set any prevailing pressure to be the new zero point reference.

**CONT** The instrument turns off 15 min. after the last key function.

Activating CONT (Continuous) deactivates this automatic turn-off.

**UNITS** All standard instruments are calibrated in bar.

The pressure can be indicated in 13 different units.

**Scope of Delivery:** Carrying case and 5-point calibration certificate.



LEX1 with piezo-resistive pressure sensor



#### Optional accessories

- Carrying bag, protective rubber covering
- Interface converter K-114A

SPECIFICATIONS	
Number of Digits of the LCD Display	5 digit
Measuring Rate (Display LCD)	2 x per second
Measuring Rate via Serial Interface	Pressure up to 15 x per second
Storage / Operating Temperature	-10...60°C / 0...50°C
Medium Temperature Pressure Sensor	-20...80°C, others on request LEX1 Ei max. 60°C
Compensated Temperature Range	0...50°C
Battery	3 V battery, Typ CR 2430
Battery Life	approx. 2'000 hours continuous operation
Pressure Connection	G1/4" (other threads on request)
Bus Interface (****)	RS485 (RIELS bus protocol)
Electrical Connection (****)	External supply and RS485 communication via Fischer D103A054, flange socket fits with PC-converter cable K-114A (USB to RS485)
External Supply (****)	8...28 VDC
Temperature Measurement	Accuracy typ. 0,5°C
Material in Contact with Media	Stainless Steel (AISI 316L), Viton® O-ring. In addition with LEX1 capacitive: gold plated ceramic diaphragm, Nitril O-ring
Protection	IP65
Diameter x Height x Depth (approx.)	LEX1 piezoresistive: 76x118x55 mm LEX1 capacitive: 76x148x55 mm
Weight (approx.)	LEX1 piezoresistive: 300 g. LEX1 capacitive 335 g.

(\*\*\*\*) In the Ex-Zone, the LEX1 Ei gauges are not allowed to be supplied externally, nor can they be connected via the RS485 interface.



LEX1 with capacitive pressure sensor

#### \* Accuracy and Precision

"Accuracy" is an absolute term, "Precision" a relative term. Dead weight testers are primary standards for pressure, where the pressure is defined by the primary values of mass, length and time.

Highest class primary standards in national laboratories indicate the uncertainty of their pressure references with 70 to 90 ppM or close to 0,01%.

Commercial dead weight testers as used in our facilities to calibrate the transmitters and manometers indicate an uncertainty or accuracy of 0,025%.

Below these levels, RIELS use the expression "Precision" as the ability of a pressure transmitter or manometer to be at each pressure point within 0,01 %FS relative to these commercial standards.

The manometer's full-scale output can be set up to match any standard of your choice by correcting the gain with a calibration software.

