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ISO 9001 :

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# **BN**<sup>®</sup> nstrumentos | ingeniería | control

pressure

### intelligent digital manometers models: mano gauge | mano record mano cali

- Data internal recording o
  - Calibration accuracy •
- Ranges up to 1000 bar o
  - CE compliance •

/ mano record / mano cali

Intrinsically Safe versions **o** CE



This is a highly accurate microprocessor-controlled pressure measuring instrument. SensoBrainTM, a KELLER-designed low power signal processor, transmits the signals of the pressureand temperature sensor to the microprocessor, which digitally compensates the sensor data.

This mathematical modelling of the pressure sensor virtually eliminates all errors over a wide temperature range.

All KELLER and KAVLICO sensors are compatible with the electronics of the Intelligent Manometers.

#### MANO GAUGE (Basic Version)

Display of: Pressure, Pressure Unit, Temperature, Elapsed Time

Alternative: Pressure, Pressure Unit, Max. and Min. Value

All functions are executed with the front key of the instrument. It allows the display to be set to zero and to change the measuring cycle for prolonged battery life.

Two pressure sensors can be connected to the MANO GAUGE (optional)

Analog outputs can be provided 4...20 mA or 0...10 V (optional).

### MANO RECORD (MANO GAUGE plus data recording)

Based on the MANO GAUGE, the MANO RECORD records and stores the measured values. The front key is used to select which data shall be displayed and stored, and to set the recording interval and the number of readings (memory for 960 or optionally 8100 readings). The read-out of the stored data is via RS 232 serial interface (Logger Software and K101 cable available as option).

#### MANO CALI (CALIBRATOR VERSION plus data recording)

In the basic mode, the MANO CALI displays: Pressure, Pressure Unit, Max. and Min. Values.

Units are selected via the front key (bar, PSI, kPa, MPa,...). MANO CALI also incorporates the functions TARA (sets a new temporary zero reference), LEAK (measures a pressure change over a programmable time) and RES (reduces the standard resolution by factor 10).

A seperate HOLD-key on the instrument freezes the reading. This instrument has the same data recording features as the MANO RECORD

					general specifications
Mano Gauge / Mano Record				Mano Gauge	/ Mano Record
Vented Gauge or Absolute		Sealed Gauge or Absolute		Sealed Gaug	e or Absolute
Range	Resolution	Range	Resolution	Range	Resolution
30 mbar 300 mbar 1000 mbar -12 bar 10 bar 30 bar	0,01 mbar 0,1 mbar 0,3 mbar 1 mbar 3 mbar 10 mbar	100 bar 300 bar 600 bar 1000 bar	0,03 bar 0,1 bar 0,2 bar 0,3 bar	-12 bar -110 bar -125 bar 200 bar 350 bar 700 bar	0,5 mbar 1,8 mbar 4,3 mbar 0,03 bar 0,05 bar 0,1 bar

In MANO GAUGE and MANO RECORD the measuring ranges are divided by 12 bit or 3000 points. In MANO CALI over 13 bit or 6000 points

The resolution is determined by the measuring range and the number of measuring points.

Subject to alterations, Product manufactured by KELLER AG für Druckmesstechnik,

## general specifications

#### Specific Characteristics

Total Accuracy (1)	MANO GAUGE / RECORD	MANO CALI
Range 050°C	± 0,1% typ.	0,05 % typ.
	± 0,2% max.	0,1% max.
Measuring Interval (2) sec	1	2

(1) Includes linearity, repeatability, hysteresis, temperature and resolution of the display (2) x 2 for two transducers (not for MANO CALI)

#### • Electrical Characteristics

Supply

- Battery-Life Output Signal (optional)
- Numerical (MANO RECORD / CALI)
- Lithium-Battery 3,6 V (included) > 200 days at continuous operation (4) - Analog (3) (MANO RECORD / GAUGE) 4..20 mA or 0..10 V
  - RS 232

(3) The use of an analog signal requires an external supply between 10...28 VDC (4)  $\,>\,$  100 days for MANO CALI

#### • Environmental Characteristics Operati

Operating Temperature °C	- 1060
Compensated Range (5) °C	050
Storage Temperature °C	- 3080
Display (5) °C	050

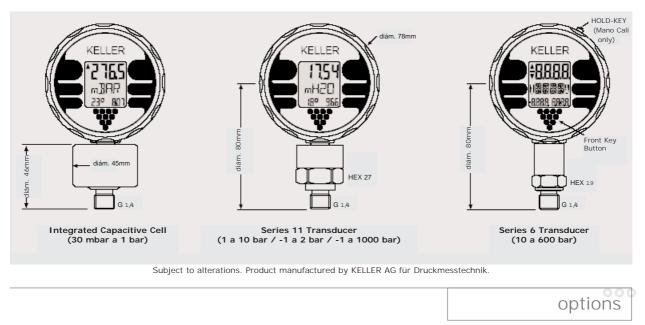
(5) others upon request

### Mechanical Characteristics

Manometer Housing Transducer Total Weight Pressure Connection Protection

Polyamid 12 See data sheet of transducer approx. 250 g See data sheet of transducer IP 65

# dimensions and design



• Menometer Housing in Metal\*. • 1 or 2 external Transducers (remote)\* • Transmitter Output Connector.

- Special Programs.
- Logger Software and K101 Cable.
- Intrinsically Safe Version (EEx-ia)\*.

\* only MANO RECORD and MANO GAUGE

software

#### Logger

The Logger-Software allows the read-out of the stored data from the intelligent Manometer. The data transfer takes place via the serial interface on the PC.

The Mano Record / Mano Cali is connected through a cable K101 (supplied with Logger software). The Logger-Software offers many further processing possibilities of the read-out data, and meets all the requirements of modern Windows-Software:

- Graphical display
- tabulated Display
- Export into other Windows-Programs
- Storage into files