Series 10LXiic-GM

Highly accurate piezoresistive pressure transmitter capsules for gas volume correctors

Features

- Optimum accuracy
- I2C interface
- Excellent long-term stability
- Flush, crevice-free welded diaphragm
- Robust stainless-steel housing

Technology

- Insulated piezoresistive pressure sensor chip encapsulated in an oil-filled metal housing
- High-quality pressure transmitter capsules and tried-and-tested mathematical compensation
- Ideal for mounting with O-ring

Typical applications

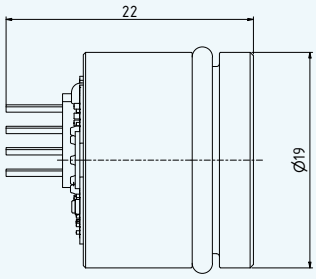
- Gas detectors
- Gas volume correctors
- Energy and supply industry (gas supply)

Total error band
± 0,04 %FS @ -25…60 °C

Measurement accuracy
± 0,2 %rdg @ -25…60 °C (20…100 %FS)

Pressure ranges
0…2 bar to 0…50 bar

Series 10LXiic-GM



Edition 09/2025
Subject to alterations
info@keller-pressure.com

Series 10LXiic-GM – Specifications

Standard pressure ranges

Absolute pressure PAA	Proof pressure
0…2	6
0…5	15
0…10	30
0…20	60
0…30	90
0…50	150
bar abs.	bar
Reference pressure at 0 bar abs. (vacuum)	Based on reference pressure

Performance

Pressure

Digital non-linearity	≤ ±0,02 %FS	Best fit straight line (BFSL)
Accuracy @ RT (20…25 °C)	≤ ± 0,04 %FS	Non-linearity (best fit straight line, BFSL), pressure hysteresis, non-repeatability, zero point deviation and amplification deviation
Total error band (-25…60 °C)	≤ ± 0,04 %FS	Non-linearity (best fit straight line, BFSL), pressure hysteresis, non-repeatability, zero point deviation and amplification deviation, incl. temperature deviation. Max. deviation within the compensated pressure and temperature range.
Total error band (-25…60 °C and 20…100 %FS)	≤ ± 0,2 %rdg	Max. deviation within the compensated pressure and temperature range.
Compensated temperature range	-25…60 °C	
Long-term stability	Typ. ≤ ± 0,05 %FS	Per year under reference conditions.
	Max. ≤ ± 0,10 %FS	
Position dependency	≤ ± 2 mbar	Calibrated in vertical installation position with diaphragm facing downwards.
Resolution	0,0005 %FS	Digital
Signal stability	0,0025 %FS	Digital, noise-free
Internal measurement rate	≥ 1800 Hz	
Pressure range reserve	± 10 %	Outside the pressure range reserve, +Inf / -Inf is displayed. If there is an error in the device, NaN is displayed.
Note	The specifications listed can only be guaranteed if the installation recommendations have been abided by.	

Temperature

Accuracy	≤ ± 2 °C	The temperature is measured on the pressure sensor (silicon chip) that sits behind the metallic diaphragm. The data applies within the compensated temperature range.
Resolution	≤ 0,01 °C	
Internal measurement rate	≥ 10 Hz	

Series 10LXiic-GM – Specifications

Electrical data

Connectivity	Digital
Digital interface	I2C
Voltage supply	3,2…5.5 VDC
Power consumption	< 9 uA (< 3 µA @ 25 °C (sleep mode))
	< 7 mA (active mode)
I2C voltage insulation	+ 5,5 VDC against GND

Start-up time (power supply ON)	< 50 ms
Overvoltage protection and reverse polarity protection	± 5,5 VDC
GND case isolation	> 10 MΩ @ 500 VDC

Digital interface

Type	I2C	
Identification	Class.Group: 5.24	Standard settings: I2C address: 0x40 Can be reconfigured via software by the customer later.
Pressure unit	Bar	
Unit of temperature	°C	
Data type	Float32 and Int32	
I2C clock frequency	400 kHz (fast mode)	

Electrical connection

Standard	Male connector	4 pin, 0,5 mm x 0,5 mm, 2 mm contact spacing, L=5 mm

Mechanical data

Materials in contact with media

Housing and diaphragm	Stainless steel AISI 316L
O-ring	FVMQ (90 Shore, -60…200 °C) ø 15,6 mm x 1,78 mm

Other materials

Pressure transducer oil filling	Silicone oil

Further details

Diameter × height	ø 19 x 15 mm	See Dimensions and variants
Weight	approx. 20 g	

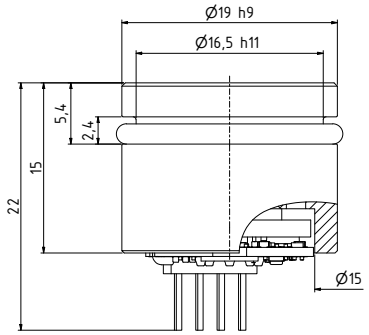
Environmental conditions

Medium temperature range	-25…125 °C		Operating temperature, consider seals. Icing not permitted.
Ambient temperature range	-25…85 °C		
Storage temperature range	-25…85 °C		
Load cycles @ RT (20…25 °C)	> 10 million pressure cycles	0…100 %FS	

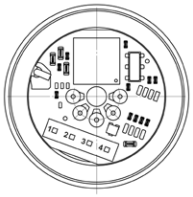
Series 10LXiic-GM – Dimensions and variants

Dimensions

Dimensions



Electrical connection

Male connector	I2C	
	1	GND
	2	+Vs
	3	SCL
	4	SDA

Customer-specific versions, on request

- Other compensated pressure ranges
- O-rings made of other materials

Examples of similar products

- Series 10L: Low-pressure version for pressure ranges < 200 bar
- Series 10LX / 10LHPX: with digital compensation electronics
- Series 23Xiic-GM: Pressure transmitters with I2C interface for the gas market

Series 10LXiic-GM – Software, scope of delivery and accessories

I2C interface

The pressure transmitter is equipped with an I2C interface (inter-integrated circuit), enabling reliable, efficient digital communication. I2C is a two-wire serial protocol with an SDA (data) and SCL (clock) line enabling connection to microcontrollers and embedded systems.

Features of the I2C interface:

- Addressing: 7 bit
- Data transmission rate: Standard mode (up to 100 kHz), fast mode (up to 400 kHz)
- Voltage level: Compatible with 3,3 V and 5 V systems
- Communication protocol: Master/device principle; the transmitter functions as a device
- Operation: Read and write access via standardised I2C commands
- Data integrity: Integrated CRC checksum (cyclic redundancy check) to identify transmission errors

The I2C interface enables easy access to measured values and device configurations. Thanks to the low power consumption, the interface is particularly suitable for battery-operated applications and networked sensor systems. Details of the communication protocols can be found at www.keller-pressure.com.

Scope of delivery

KELLER Pressure calibration certificate