

Products

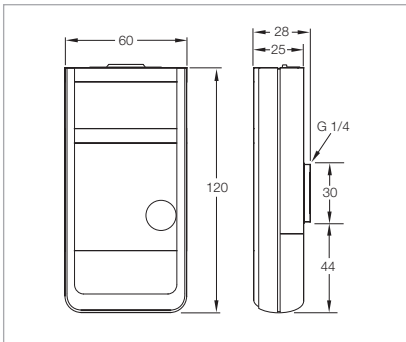
Handheld Measuring Instruments

Digital PIEZOVAC Sensor PV 101

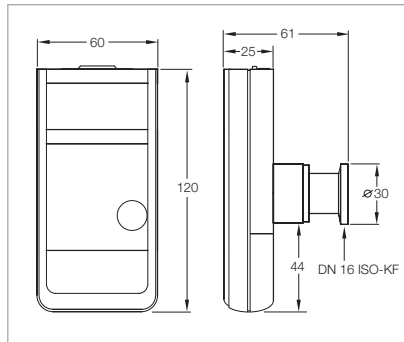
Digital THERMOVAC Sensor TM 101



PIEZOVAC Sensor PV 101 (left) and THERMOVAC Sensor TM 101 (right)



Dimensional drawings PIEZOVAC PV 101 (mm)



Dimensional drawings THERMOVAC TM 101 (mm)

The **PIEZOVAC PV 101** has been specially developed for food sector deployments. The device can be operated directly under vacuum conditions. Thanks to its detachable flange connection the size of the sensor was significantly reduced. In the medium vacuum range pressures of up to 0.1 mbar will be traced and read out. The exclusive use of its piezo sensor significantly increases the battery's service life so that the device is continuously ready for operation. With a measuring rate of minimum 50 ms, you are informed in short process times on the current pressure.

The **THERMOVAC TM 101** is the essential device for on-site service calls. Thanks to the easy use and integrated measurement data memory, pressures can be directly measured at different locations for monitoring the application. Owing to the advanced

measuring range of the high-precision Pirani sensor, pressures of up to 5×10^{-4} mbar can be displayed.

Advantages to the User

- Direct display of measuring values; other monitoring devices are not necessary
- Developed for deployments in demanding environments
- Versatile deployment due to mains-independent power supply
- High-precision measurements of all common gas types
- Export and analysis of stored measurement values via USB interface
- Online analysis of measurement values via USB interface

The digital compact PIEZOVAC PV 101 and THERMOVAC TM 101 combine high-quality sensor technology with modern processor technology in a handy design.

Owing to their battery mode, the devices can be attached and operated at any pressure measuring point, and directly display or store up to 2,000 values for later evaluations and visualizations. All data values stored can be exported and displayed on a computer via USB link and by means of the optional VacuGraph software. The software is especially useful for setting up the devices or calculating rises in pressure for detecting rough leaks.

A carrying case providing space for all required accessories and for storing and transport protection is enclosed with the device and the software.

Typical Applications

- Versatile deployment with vacuum pump and vacuum plant servicing
- Comparative measurements of fixed pressure gauges
- Direct measuring inside vacuum vessels or vacuum packs
- Measuring of rough leaks after maintenance services

Technical Data

PIEZO-VAC Sensor

PV 101

THERMOVAC Sensor

TM 101

Measurement principle		Piezo-resistive	Piezo-resistive (gas type independent) and thermal conductance Pirani
Indicated units of measurement		mbar, Torr, microns, hPa	mbar, Torr, microns, hPa
Measurement range	mbar (Torr)	1200 to 0,1 (900 to 0,075)	1200 to 5×10^{-4} (900 to 3.75×10^{-4})
Maximum overload	bar abs.	2	2
Maximum overload			
1200 – 10 mbar (900 to 75 Torr)		±0,3 % of full-scale	±0,3 % of full-scale
10 – 2×10^{-3} mbar		-	10 % of measured value
(7.5 to 1.5×10^{-3} Torr)		-	< factor 2 of measured value
$< 2 \times 10^{-3}$ mbar			
($< 1.5 \times 10^{-3}$ Torr)			
Gas type correction factor		Ar, CO ₂ , He, CO, H ₂ , N ₂ , Kr	Ar, CO ₂ , He, CO, H ₂ , N ₂ , Kr
Materials in contact with the vacuum		Stainless steel 1.4305, Viton®, silicon gel	Stainless steel, gold, tungsten, nickel, glass, Viton
Measurement cycle	s	0,1 (50 ms, from 2018 series)	1.0
Data storing rate	s	0.1 to 6000	1 to 6000
Operating temperature			
Sensor	°C	+5 to +50	+5 to +50
Battery	°C	-20 to +45	-20 to +45
Storage temperature			
Sensor	°C	-20 to +60	-20 to +60
Battery	°C	+10 to +25	+10 to +25
Supply voltage		Rechargeable 9 V battery (recommendation: type Panasonic 6LR61PM, 9 V / 500 mAh) or 12 – 15 V DC external adaptor (miniature jack, + terminal at the tip)	Rechargeable 9 V battery (recommendation: type Panasonic 6LR61PM, 9 V / 500 mAh) or 12 – 15 V DC external adaptor (miniature jack, + terminal at the tip)
Power consumption			
< 200 mbar (< 150 Torr)	mW	2	60
> 200 mbar (> 150 Torr)	mW	2	2
Operating duration			
6LR61 alkaline (vacuum operation)	h	< 2500	up to 75
Display		LCD 12 mm	LCD 12 mm
Connection (stainless steel)		G 1/4 internal thread (DN 16 ISO-KF with adaptor, removable)	DN 16 ISO-KF
PC interface		Mini USB-B connector	Mini USB-B connector
Dimensions	mm	60 x 120 x 50 (DN 10 ISO-KF)	60 x 120 x 61
	mm	60 x 120 x 28 (G 1/4)	
Protection class	IP	40	40
Weight (including battery)	kg (lbs)	0.2 (0.44)	0.23 (0.51)

Ordering Information

PIEZO-VAC Sensor

PV 101

THERMOVAC Sensor

TM 101

	Part No.	Part No.
Sensor	230 080 V01	230 081 V01
Including AIMn battery, 9 V block 6LR 61		
Accessory kit for VacuGraph Windows software including	230 082 V01	230 082 V01
USB interface cable (2 m)		
protection case with foam insert and		
15 V wall power supply for 100 – 260 V,		
50/60 Hz mains and AIMn battery,		
9 V block 6LR 61		