

ITR 90 IONIVAC Transmitter



The ITR 90 is a new type of combination transmitter. The combination of a hot cathode ionisation sensor after Bayard-Alpert and a Pirani sensor permits vacuum pressure measurements on non-ignitable gases and gas mixtures in the pressure range from $5 \cdot 10^{-10}$ to 1000 mbar.

If needed, the pressure can be displayed via the integrated display.

Advantages to the User

- ◆ Continuous pressure measurements from 10^{-10} mbar to atmospheric pressure
- ◆ High degree of reproducibility within the typical range for process pressures of 10^{-2} to 10^{-8} mbar
- ◆ Controlled switching on and off sequencing through the integrated double Pirani optimises the service life of the yttrium coated iridium cathodes
- ◆ Compact design
- ◆ Enclosed, rugged electrode geometry in a rugged metal housing
- ◆ Efficient degassing by electron bombardment
- ◆ Simple fitting of the sensor
- ◆ Extension for higher degassing temperatures during the measurements
- ◆ Insertable baffle for potentially contaminating applications and for protection against charged particles.
- ◆ One signal covering 13 decades
- ◆ One flange joint for 13 decade
- ◆ ITR 90 model with built-in display for stand-alone operation without additional display components
- ◆ RS 232 C interface

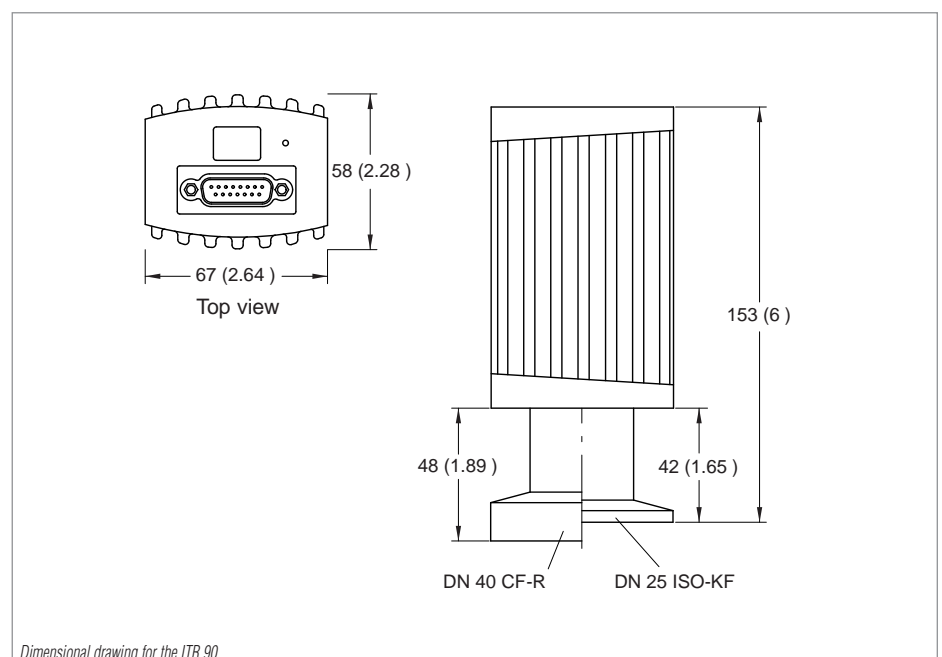
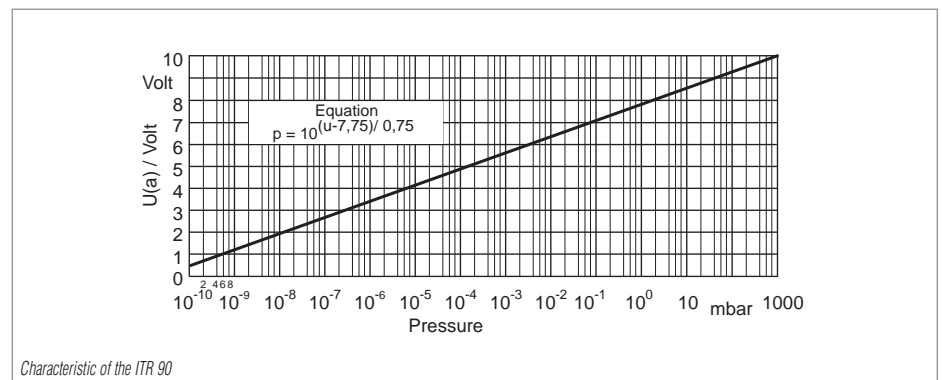
Typical Applications

- ◆ Analytical
- ◆ Evaporation and coating
- ◆ Vacuum furnaces
- ◆ General purpose pressure measurements in the medium and high-vacuum ranges

Sensor

The sensor of the ITR 90 contains a dual filament Pirani system as well as a Bayard-Alpert measurement system.

When using the degassing extension, measurements will be possible also at flange temperatures up to 150 °C.



Technical Data		ITR-Transmitter
Measurement range	mbar (Torr)	5×10^{-10} to 1000 (3.75×10^{-10} to 750)
Measurement uncertainty, 10^{-8} - 10^{-2} mbar		15 % of the meas. value
Reproducibility, 10^{-8} - 10^{-2} mbar		5 % of the meas. value
Principles of measurement		Thermal conductivity after Pirani Hot cathode ionization vacuum gauge after Bayard-Alpert
Degas		Electron bombardment 3 minutes, max.
Supply voltage		20 to 28 V DC, typ. 24 V DC
Power consumption, max.	W	16
Storage / nominal temperature range	°C	-20 to +70 / 0 to +50
Protection class		IP 30
Weight, approx.		
	ITR 90, DN 25 KF	kg (lbs)
	ITR 90, DN 40 CF	kg (lbs)
Sensor		Fully sealed, exchangeable
Degassing temperature, max.	°C	150 *)
Dead volume, max.	cm ³	24 at DN 25 KF 34 at DN 40 CF
Materials in contact with the medium		Cu, W, Glas, NiFe, Mo, Stainl. steel, Al, Iridium, Yttrium, NiCr,
Over-pressure rating (abs.)	bar	2
Signal output ($R_a \geq 10 \text{ k}\Omega$)		
Measurement range		0 - 10 V, 0.774 - 10 V, 0.75 V pro decade
Error signal		< 0,5 V
Interface		RS 232 C
Electrical connection		15 way sub-D male connector
Cable length, max.	m	100 / 30 bei RS 232 C

*) Flange temperature when using the degassing extension

Ordering Information	ITR-Transmitter	
	Without display	With display
ITR 90, DN 25 ISO KF	Part No. 120 90	Part No. 120 91
ITR 90, DN 40 CF-R	Part No. 120 92	Part No. 120 94
Optionen		
24 VDC power supply / RS 232 C cable	Part No. 121 06	
Degassing extension (100 mm)	Part No. 127 06	
Baffle	Part No. 121 07	
Sensor cables	Sub-D/bare wire ends	ITR - IT 23 Center 1/Combivac 2T
5 m	Part No. 124 63	Part No. 124 55
10 m	Part No. 163 69	Part No. 163 83
15 m	Part No. 124 64	Part No. 124 56
20 m	Part No. 124 65	Part No. 124 57
30 m	Part No. 124 66	Part No. 124 58
other cable lengths upon request		
Spare parts		
SSensor ITR 90, DN 25 ISO KF **)	Part No. 121 02	
Sensor ITR 90, DN 40 CF-R **)	Part No. 121 03	
Electronics unit ITR 90, without display	Part No. 125 81	
Electronics unit ITR 90, with display	Part No. 125 82	

**) including hex. socket screw key

