

Extreme High Vacuum Gauge **AxTRAN**

AxTRAN is a hot cathode type ionization vacuum gauge with a Bessel Box type energy filter installed between the ion source and the ion collector.

This design provides a measurement resolution of 5×10^{-11} Pa (3.75×10^{-13} Torr, 5×10^{-13} mbar) by reducing the residual current due to soft X-rays and electron stimulated desorption (ESD) ions.



X-11



ISX2

Features

- **Measures Ultra High Vacuum to Extreme High Vacuum**
Measures pressure of 5×10^{-11} Pa (3.75×10^{-13} Torr, 5×10^{-13} mbar)
- **Bessel Box Type Energy Filter**
Reduce soft x-ray and residual current such as ESD ion
- **Measures a Wide Pressure Range**
Measure a wide pressure range from 1×10^{-2} to 5×10^{-11} Pa (7.5×10^{-5} to 3.75×10^{-13} torr, 1×10^{-4} to 5×10^{-13} mbar)
- **Measured Value Output Signal**
Pressure is 0 to 10V Log output (pseudo-log output) / 1V linear output within each digit
- **Control Output Signal**
2 set points output
- **Digital Output and Serial Communication**
BCD/RS232C (option)

Applications

- For total pressure measurement of vacuum equipment such as a high-energy accelerators.
- For pressure measurement of ultra high or extreme high vacuum equipment used in UHV or XHV research work.

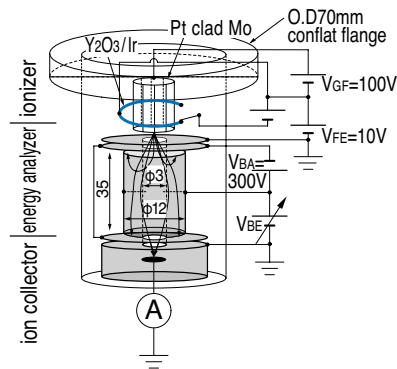
Principle

- The lower limit of the pressure measurement of an ionization gauge is mainly determined by following factors.
Soft x-ray effect.
Electron stimulated desorption (ESD) ions.
Out gassing from the gauge.
- The new gauge, axial-symmetric transmission gauge, which a Bessel-Box shape energy filter was included into is specially designed to eliminate these factors. And the lower limit of the pressure measurement of 10^{-11} Pa (10^{-13} Torr, 10^{-13} mbar) is obtained.

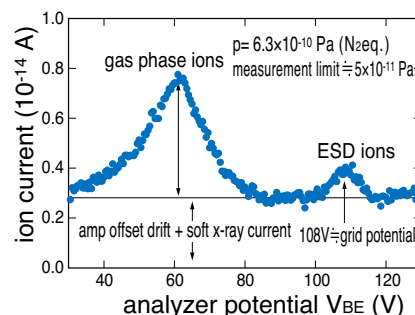
Specifications

Model	ISX2
Measurable pressure range	5×10^{-11} to 1×10^{-2} Pa (3.75×10^{-13} to 7.5×10^{-5} Torr, 5×10^{-13} to 1×10^{-4} mbar)
Measurement resolution	0.5×10^{-10} Pa (0.375×10^{-12} Torr, 0.5×10^{-12} mbar)
Display	Digital indication, 3 digit mantissa, 2 digit exponent
DEGAS	Electron stimulated desorption
Measurement value output	Linear output 0 to 10 VDC
	Pseudo-logarithmic output 0 to 10V (1V linear signal in each digit)
Set points	2 points
Operating temperature range	10 to 40°C (50 to 104°F)
Operating humidity range	15 to 80% (not condensing)
Power supply voltage	AC85 to 240V
External dimensions WxDxH	240mmx350mmx99mm
Weight	5.3kg
Standard accessories	AC100V (3P plug with ground) power cable, Manual
Option	Sensor: X-11
	Sensor cable: 5, 10, 20m
	BCD output, RS232C/485
Compatible sensor head	X-11
Energy filter	Bessel-Box type
Filament	Ir / Y ₂ O ₃ x2
Mount flange	UFC-070
Max. baking temperature	300°C (572°F) without sensor cable

Outline Drawing Sensor Head



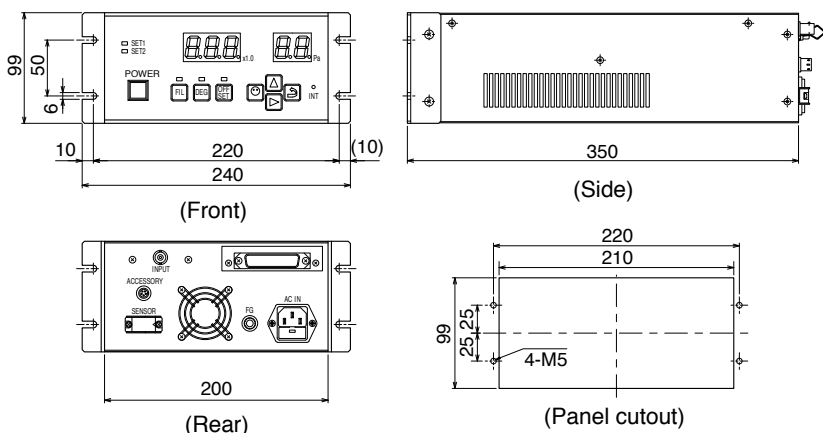
Energy Spectra



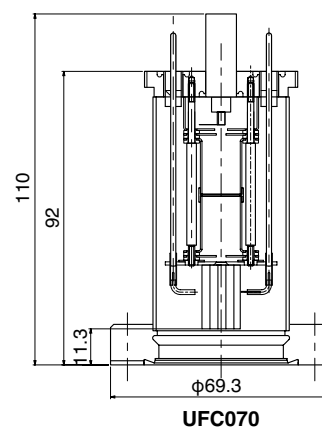
Dimensions

(unit: mm)

Controller ISX2



Sensor head X-11



Vacuum Gauge