Wide Range Vacuum Gauge OCTIE

This radically new vacuum gauge can measure 8 decades of vacuum, with high accuracy, all the way from atmospheric pressure to high vacuum. This gauge is well suited for thin-film deposition equipment and other types of vacuum systems, such as etching and sputtering systems.
The sensor head* and measurement circuit* use proprietary ULVAC's technology to achieve both high accuracy and high repeatability over the broad range of 8 pressure decades. (*Patent pending) As an added benefit, these units are fully compatible with conventional capacitance manometer gauges, making replacement of sensor heads easy.

SO1/O-14

BO1

ISO2

Features

- Broad measurement over an 8 decade range of pressures (10^{5}-10^{-3} Pa).
- Excellent corrosion resistance to reactive gases. (It is impossible to use it in a hydrogen atmosphere.)
- Multiple gauge configurations are available, depending on the application desired by the customer (see application examples).
- Analog output can be obtained, even without a pressure display, by simply adding the input power shown below to the sensor unit/box unit.
  · Input power: ±15 VDC
  · Analog output: 0-10 VDC
- By using one-touch operation or an external control signal, a zero adjustment is easy obtained.

Applications

- Highly accurate pressure monitoring of various types of semiconductor processing equipment, such as etching, CVD, sputtering or evaporation systems.
- Highly accurate pressure monitoring of various vacuum pumping systems
- Supports control systems such as interlocks and sequencers normally found in vacuum equipment

Specifications

Item \ Model	Sensor unit model S01	Box unit model B01	
		General use type	High temperature type
Pressure measurement range	10^{-3}-133 kPa (maximum applied pressure: 160 kPa)*1		
Measurement accuracy (repeatability)	133 Pa or less: ±3 %R 50 kPa-133 kPa: ±20 %R (Using N_2 gas with surrounding temperature of 25 °C)		
Analog output*2	Linear output: 0-10V (output resolution: 1m V) 133Pa f.s/13.3Pa f.s. (switched using dip switch) *3 Non-linear output: 0-10 V 0-133 kPa		
Power	±15 VDC		
Zero point correction	Automatic correction by external input or push-switch (manual adjustment by trimmer is also possible)		
Ambient temperature range	15-50 °C	15-50 °C	50-150 °C
Output set point	None	2 points (within linear output range)	
Gas contacting surfaces	SUS316L, Pt, alumina, Au		
Weight	Main unit: Approx. 110 g, measurement element: Approx. 100 g		Approx. 230 g
Input/output connector	D-sub 15 pin (N. 4-40 UNC screw)		
Detection unit	—	CO1-R	CO1-H
Accessories	D-sub 15 pin connector		
Options	—	Sensor head cable (box unit-detection unit)	

Item \ Model	Display unit model IS02
Pressure display range	10^{-3}-1.3 x 10^{5} Pa
Display units	Pa
Display format	Digital display Mantissa digits: 2 Exponential digits: 1
Ambient temperature range	10-40 °C
Analog output	Quasi-logarithmic: 0-8.13 V (1 V linear signal within each digit)
Output set point	4 points (total measurement range)
Zero point correction	Display panel zero reset operation Automatic correction by external input
Power	AC100 V
Weight	Approx. 1.5 kg
Accessories	D-sub 15 pin connector
Options	Detection units CO1-R or CO1-H, sensor head cable, heating unit

*1 *In the case of measurement at 10^{-2} Pa or below, the zero adjustment at 10^{-4} Pa or below is necessary.*

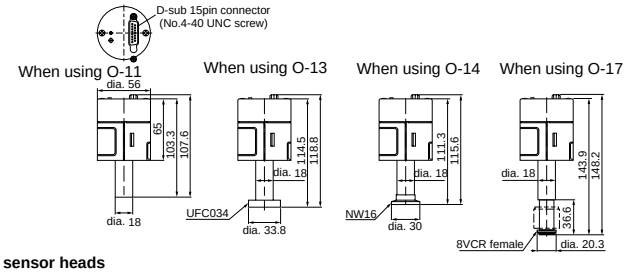
*2 *The accuracy except the pressure ranges mentioned is about scale factor 2.*

*3 *It is the accuracy after zero adjustment.*

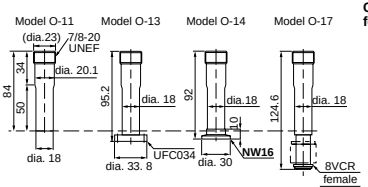
- *It takes a few minutes to have a stable indication when it is exposed to air from vacuum.*
- *Sensor head cable lengths of 2, 5, 10, 20, or 50m are available.*
- *When using an applied pressure of 100kPa or more, select sensor heads O-13, O-14, or O-17.*
- *Upon replacement of sensor head, calibration at atmospheric pressure is required.*

External Dimension Diagram (unit: mm)

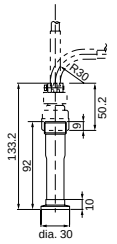
Sensor unit SO1 (with sensor head)



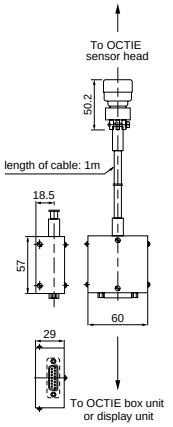
sensor heads



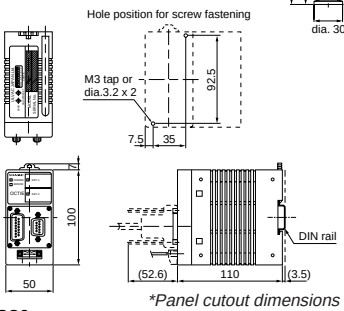
Connection example for detection unit



Detection unit CO1 (-R, -H)

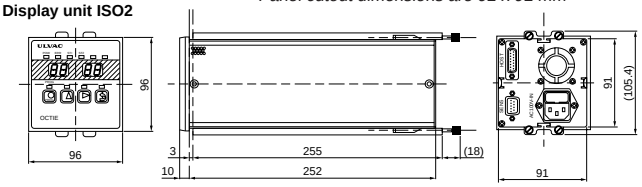


Box unit BO1



*Panel cutout dimensions are 92 x 92 mm

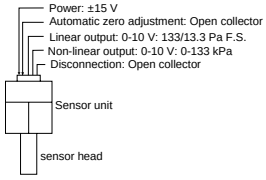
Display unit ISO2



Application Examples

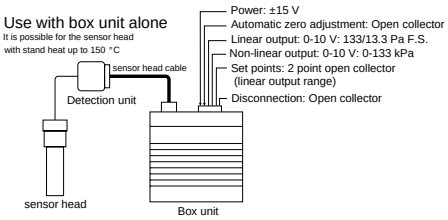
1. Use with sensor unit alone

Replacement with capacitance manometer is easy



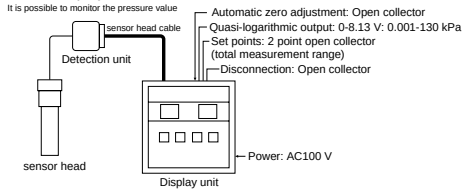
2. Use with box unit alone

It is possible for the sensor head with stand heat up to 150 °C



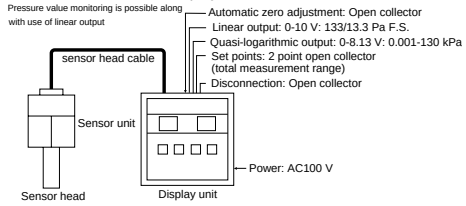
3. Use with display unit alone

It is possible to monitor the pressure value



4. Use with sensor unit and display unit

Pressure value monitoring is possible along with use of linear output



5. Use with box unit and display unit

Pressure value monitoring is possible along with use of linear output
It is possible for the sensor head to with stand heat up to 150°C