G-TRAN Series Multi Ionization Gauge [ST2-1/ST2-2]

Don't you have a problem with the precision of the vacuum gauge (Variation of sensitivity, error, etc.) and short life (gauge head becomes dirty and it is hard to discharge, etc)in measurement at high vacuum ?
To respond to such requests, ULVAC has developed an ionization vacuum gauge with a spec of long-life at severe environment and a measurable type with high precision.
This world's first metal type triode ionization vacuum gauge is greatly reduce the running cost and help further improving the yield of various processes.

ST2

ISG1

Features

- **World's first metal type triode ionization vacuum gauge (Patent 5827532)**
  Even in harsh environment, this world's first metal type triode ionization vacuum gauge will achieve long-life and shows the best advantage of the triode type.
- **Strong Metal Vacuum Tube**
  Probe is made of small metal which makes no worry of such damage as glass type.
- **Improvement in the measurement accuracy**
  Improvement in the measurement accuracy of ±10% and excellent sensitivity stability has realized.
- **Wide-range measurement**
  Wide pressure measuring range from atmospheric pressure to high vacuum range (10^{+5} to 10^{-5}Pa, 760 to 7.75×10^{-8} Torr, 10^{13} to 10^{-7} mbar).(When SPU and SAU are used together)
- **Possible to connect gauge heads with different measurement ranges**
  With Multi Ionization Gauge, a gauge head is selected depending on the usage
- **Precise measurement of atmospheric pressure**
  Confirming atmospheric pressure easily and accurately (when SAU is used together)
- **Indication signal of filament life time by the electron**
  Monitoring the electron volume can observe the life time of filament.
- **Low environmental burden**
  Capable of reducing costs as only failed gauge heads are replaced
- **Improvement in visibility**
  With high visible LED for error verification
- **Maintenance**
  Easy sensor head replacement
- **Applicable standard**
  Conforms with CE

Applications

- Process control in high vacuum process such as for OLED and Touch panel manufacturing system.
- Measurement of ultimate pressure at various industrial vacuum equipment such as vacuum furnaces.
- Measurement under atmosphere which include hydrocarbon (oil-based).
- When processing of vacuum parts, measurement under atmosphere where oil and lavage remain potentially.
- Measurement of vacuum equipments that wants to aim at exchange frequency reduction of sensor head.

※ Please contact in case of using Corrosive gas (Halogen gas).

ULVAC SOLUTIONS

G-TRAN Series Multi Ionization Gauge [ST2-1/ST2-2]

Specifications

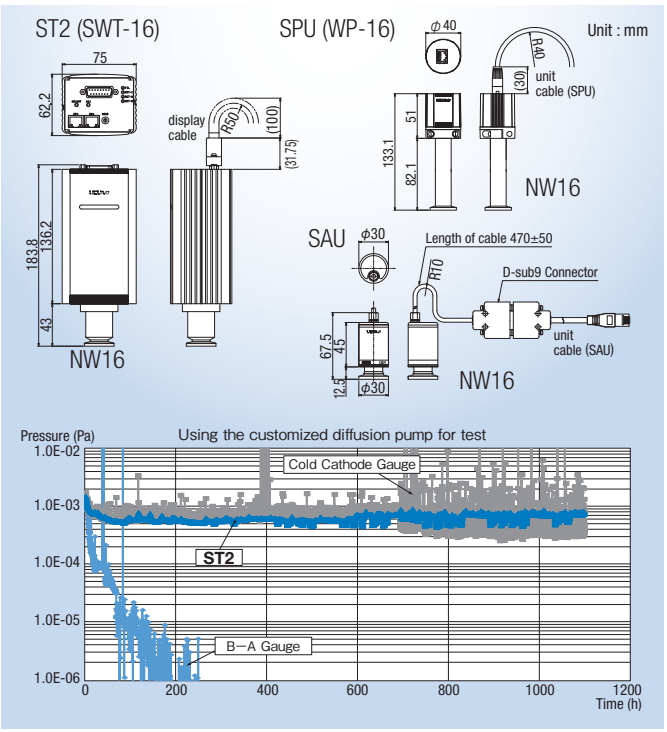
Model	ST2-1	ST2-2
Type name	Standard type	Serial communication type
Connectable sensors	ST2 gauge head SWT-16 (NW16): 1 SPU Pirani vacuum gauge measuring unit: 1 (option) SAU pressure sensor unit: 1 (option)	
Measurable pressure range	1×10^{-5} to $1\times10^{+1}$ Pa	
Accuracy	1×10^{-4} to 3 Pa: ±10% 7.5×10^{-7} to 2.2×10^{-2} Torr: ±10% 1×10^{-6} to 3×10^{-2} mbar: ±10%	
Repeatability	1×10^{-4} to 3 Pa : ±2%	
Sampling time	50 ms, 5x moving average	
Value output	Output voltage: 0 to 10 VDC, LOG output: 0.75 V/1 decade Pressure conversion equation: V=7.25+0.75* (LogP-2) P=10^{ (V-7.25) / 0.75+2} *Also combined with the output voltage for setpoint adjustment (SH2-1 only)	
Update time	50ms	
Control input signals	FIL ON/OFF, DEGAS ON/OFF Operates with open collector input, negative logic	
Control output signals	Sensor error, setpoint 1/2/3, emission valid, filament current abnormality Rating: 24 V_{MAX}, 50 mA_{MAX}, saturation voltage 1V	
Serial communications		RS-232C, RS-485
LED display	POWER/ERROR: Power, error LED FIL: B-A gauge filament status indicator	
	SET1 to 3 Setpoint 1 to 3 LED	
Emission current	2mA (1×10^{-2} Pa or lower), 10 μA	
Degas Method	Electron bombardment - Emission current 2mA, grid voltage approx. 330V	
Maximum pressure of sensor	B-A: $2\times10^{+5}$ Pa (absolute pressure) *Take the withstand pressure for flanges, clamps, and other components into account separately.	
Internal volume of sensor	SWT-16: 17cm³, SWT-25: 19cm³	
Operating temperature range	10 to 50°C	
Operating humidity range	15 to 80% RH (no condensation)	
Storage temperature	−20 to 65°C (when unpowered, no condensation)	
IP rating	IP30	
Power supply voltage	20 to 28 VDC (ripple, noise 1% or lower) Steady state 8W, Degas 19W or lower, 6A or lower when power supply turned on (4ms)	
Input/output connector	D-sub15-pin 2.6mm screws	
Weight	Controller: Approx. 530g, Gauge head (SWT-16, SWT-25) 80g	
Dimension	183.8×75×62.2mm	
Applicable standard	CE standards	
options: Multi Ionization Sensor head	SWT-16 (NW16)/SWT-25 (NW25) material of gas contacting sections: Filament: Ir/Y_2O_3-coated PtC-Mo, SUS304, Kovar glass, Kovar/Ni plating	
options: Baffle	SWT-16 Type, SWT-25 Type	
options: Pirani Vacuum Gauge	SPU	
options: Pirani Vacuum Sensor head	WP-16 (NW16) Material of gas contacting sections: Filament-Pt, BS/Ni plating, Ni, solder	
options: Pressure sensor	SAU (NW16) Material of gas contacting sections: SUS316L	
options: Unit cable	0.5m for SPU/0.5m for SAU	
options: Display unit	1CH ISG1 (DC24V)	
	4CH IM1R1 (DC24V)/IM2R1 (AC100V)	
options: Display cable	Cable between ST2 and display unit 2m, 5m, 10m, 15m, 20m	
options: Input/output conector (D-sub 15-socket (M2.6mm screw))		
options: Inspection result data sheet, General calibration test report, JCSS caribration certificate		

Mode Specifications

➤ST2 have three options; simple mode with a multi ionization gauge, combination mode with a multi ionization gauge and a pirani gauge (SPU), and triple combination mode with a multi ionization gauge, a pirani gauge (SPU) and a pressure switch

Mode	ST2 Simple mode	ST2+SPU Combination mode	ST2+SPU+SAU Triple combination mode
Measurable pressure range	1×10^{-5} to $1\times10^{+1}$ Pa	1×10^{-5} to $1\times10^{+4}$ Pa	1×10^{-5} to $1\times10^{+5}$ Pa
Accuracy	1×10^{-4} to 3 Pa: ±10%	1×10^{-4} to 3 Pa: ±10% 3 to $1\times10^{+3}$ Pa: ±15% $1.0\times10^{+3}$ to $3.0\times10^{+3}$ Pa: ±30%	1×10^{-4} to 3 Pa: ±10% 3 to $1\times10^{+3}$ Pa: ±15% $1.0\times10^{+3}$ to $3.0\times10^{+3}$ Pa: ±30% $1.0\times10^{+4}$ to $1.0\times10^{+5}$ Pa: ±3% F.S.
	7.5×10^{-7} to 2.2×10^{-2} Torr: ±10%	7.5×10^{-7} to $2.2\ 10^{-2}$ Torr: ±10% 2.2×10^{-2} to 7.5 Torr: ±15% 7.5 to 22.5 Torr: ±30%	7.5×10^{-7} to $2.2\ 10^{-2}$ Torr: ±10% 2.2×10^{-2} to 7.5 Torr: ±15% 7.5 to 22.5 Torr: ±30% 75 to 760 Torr: ±3% F.S.
	1×10^{-6} to 3×10^{-2} mbar: ±10%	1×10^{-6} to 3×10^{-2} mbar: ±10% 3×10^{-2} to 10 mbar: ±15% 10 to 30 mbar: ±30%	1×10^{-6} to 3×10^{-2} mbar: ±10% 3×10^{-2} to 10 mbar: ±15% 10 to 30 mbar: ±30% 100 to 1013 mbar: ±3% F.S.
Repeatability	1×10^{-4} to 3 Pa : ±2%		
Connection diagram (for Example)	 Multi Ion Gauge	 Multi Ion Gauge Pirani Gauge	 Multi Ion Gauge Pressure Sensor Pirani Gauge

Dimensions



ULVAC, Inc. Components Division

www.ulvac.co.jp/en

Overseas Sales in Japan TEL +81-467-89-2261

USA : ULVAC Technologies, Inc.	TEL +1-978-686-7550	**PHILIPPINES** : ULVAC SINGAPORE PTE LTD Philippines Branch	TEL +63-46-437-7700
GERMANY : ULVAC GmbH	TEL +49-89-960909-0	**VIETNAM** : ULVAC SINGAPORE PTE LTD Vietnam Representative Office	TEL +84-8-6255-6762
CHINA : ULVAC (SHANGHAI) Trading Co.,Ltd.	TEL (86)21-6127-6610	**INDONESIA** : ULVAC SINGAPORE PTE LTD Indonesia Representative Office	TEL +62-21-8990-5070
TAIWAN : ULVAC TAIWAN, Inc.	TEL +886-3-579-5688	**THAILAND** : ULVAC (THAILAND) LTD	TEL +66-2-7388883
KOREA : ULVAC KOREA, Ltd.	TEL +82-31-683-2922	**MALAYSIA** : ULVAC MALAYSIA SDN. BHD.	TEL +60-3-5121-4700
SINGAPORE : ULVAC SINGAPORE PTE LTD	TEL +65-6542-2700	**INDIA** : ULVAC, Inc., India Branch	TEL +91-40-27007006

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➤This catalog is published in order to sell this product in overseas. Please see Japanese catalog when purchasing in Japan.

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