

G-TRAN Series  
Pirani Vacuum gauge  
Measuring Unit                      SPU  
Specifications



## 1. Specifications

The SPU Pirani vacuum gauge measuring unit is a dedicated measuring unit for the SH2/ST2 multi-ionization gauge.

Please note that this unit cannot be used independently.

### 1.1. Basic specifications

Name	Pirani vacuum gauge measuring unit
Model	SPU
Measurement principle	Pirani vacuum gauge that uses thermal conduction by gas molecules
Number of gauge heads	1pc
Applicable gauge head	WP-16
Measurement pressure range	$4 \times 10^{-1}$ Pa to $3 \times 10^{+3}$ Pa
Output pressure range	$1 \times 10^{-1}$ Pa $1 \times 10^{+4}$ Pa
Accuracy (N <sub>2</sub> )	$1.0 \times 10^{-1}$ Pa to $4.0 \times 10^{-1}$ Pa: no accuracy guarantee $4.0 \times 10^{-1}$ Pa to $1.0 \times 10^{+0}$ Pa: $\pm 30\%$ $1.0 \times 10^{+0}$ Pa to $1.0 \times 10^{+3}$ Pa: $\pm 15\%$ $1.0 \times 10^{+3}$ Pa to $3.0 \times 10^{+3}$ Pa: $\pm 30\%$ $3.0 \times 10^{+3}$ Pa to $1.0 \times 10^{+4}$ Pa: no accuracy guarantee
Repeatability	$\pm 10\%$ (at a constant operating environment temperature)
Sampling time	50 ms, 5x moving average
Measurement value output	Output by serial communication
LED display	POWER/ERROR LED
Gauge head material	Filament: Pt Other: CuZn/Ni plating, Kovar glass, Ni, SnSb
Gauge head withstand pressure	$2 \times 10^{+5}$ Pa (abs) *Take the withstand pressure for flanges, clamps, and other components into account separately.
Operating temperature range	10 to 50°C
Operating humidity range	15% to 85% RH (no condensation)
Storage temperature	-20 to 65°C (no condensation)
IP code	IP30
Power supply voltage	5 VDC
I/O connector	RJ-45 jack connector
Gauge head internal volume	Pirani vacuum gauge head (WP-16): 22 cm <sup>3</sup>
Weight	Controller: Approx. 38g,
External dimensions	$\phi 40 \times 51$ (controller section only)

### 1.2. Accessory

SPU Pirani vacuum gauge measuring unit	1
Pirani vacuum gauge head (WP-16)	1
Quick manual	1

### 1.3. Separately ordered products

Unit cable SPU	0.5m, 1.0m, 2.0m
Multi-ionization gauge SH2-1/2 unit	
Multi-ionization gauge ST2-1/2 unit	
Inspection certificate	
Calibration certificate	
JCSS calibration certificate	
Traceability certificate	

#### 1.4. Connection with External Devices

Terminal number	This unit	Signal direction	Connection destination
1	Power supply +5 VDC	←	SH2/ST2 Multi-ionization gauge
2	GND	—	
3	Power supply +5 VDC	←	
4	Communication terminal	→	
5	Communication terminal	→	
6	GND	—	
7	Power supply +5 VDC	←	
8	GND	—	

## 2. Warranty

This product has been shipped after undergoing an extensive in-house inspection. However, in the event a failure occurs that ULVAC Inc. is responsible for, such as a manufacturing defect or accident during shipment, please inquire with the Components Division of ULVAC Inc. or the nearest sales office or dealer regarding repairs. The product will be repaired or replaced at no charge.

#### Subject to warranty

- 1) This measuring unit  
[Warranty period]Products within one year of the shipping date
- 2) Gauge head immediately after delivery

#### Warranty range

- 1) Products damaged by problems during delivery, shipping.
- 2) Products that do not meet key specifications even when used within the conditions in the key specifications including measurement pressure, operating temperature range, and power supply used.

#### Outside the scope of this warranty

- 1) Products that have exceeded the warranty period.
- 2) Failures or malfunctions caused by force majeure, such as fire, storm and flood damage, earthquake, lightning strike, war etc.
- 3) An in-use gauge head (lifespan accompanying use, measurement errors from contamination)
- 4) Malfunction or defects caused by inattention during handling or mistaken usage
- 5) Malfunction or defects from use in an abnormal environment (intense electromagnetic fields, radiation environments, high temperature, high humidity, others)
- 6) Noise conditions vary widely, therefore, malfunctions and problems caused by noise are outside the scope of this warranty.

### 3. Dimensions

#### 3.1. SPU dimensions

