

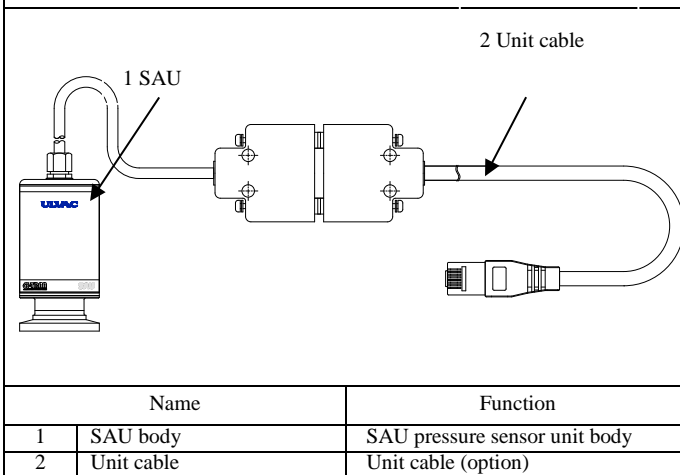
G-TRAN SERIES Pressure Sensor Unit SAU Quick Manual

Introduction

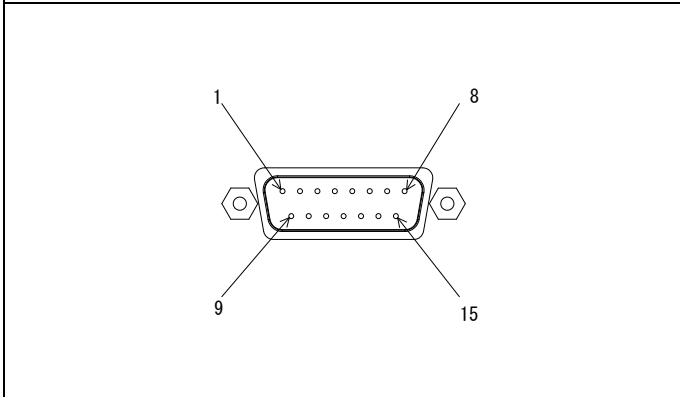
This quick manual is for quick check of operation and display of the product. Please refer to instruction manual in advance for detailed information about operation, precautions and safety for proper use. Available for download from ULVAC website. <https://showcase.ulvac.co.jp/en>
This manual is for the following gauges. Serial Nos. 00001 and higher.

1. Part Names and Functions

1.1. SAU part names



1.2. SAU I/O connector



2. Handling Precautions

2.1. Precautions related to usage

- Secure cables as much as possible so that force is not applied to cable connectors.
- Firmly insert the RJ-45 connector.
- To perform accurate pressure measurements, allow the pressure sensor to age for 20 minutes or longer before measuring.

2.2. Attaching this unit

- The pressure measurement measures the static pressure of the connected location. When installed in environments with a flow in the measurement system or environments with an emitted gas source, use caution in selecting the measurement position and attach this unit in a relatively unaffected position.
- Attach this unit so that this unit attachment opening surface is parallel to the gas flow. In particular, ensure that gases do not enter this unit interior like a beam.
- Use an O-ring to attach this unit that releases little gas. There is a risk of measurement errors if materials that release a large quantity of gas, such as rubber tubes or grease, are used in this unit connection.

3. Checking the Atmospheric Pressure Value

You can take even more accurate measurements by adjusting the atmospheric pressure for the SAU.

When using a new SAU, or when you see a deviation in the atmospheric pressure-side reading, adjust this unit following the instructions in the SH2 multi-ionization gauge instruction manual.

4. Analog Output

This unit outputs the measured pressure as a 1 to 5 VDC signal.

4.1. Pressure conversion equation

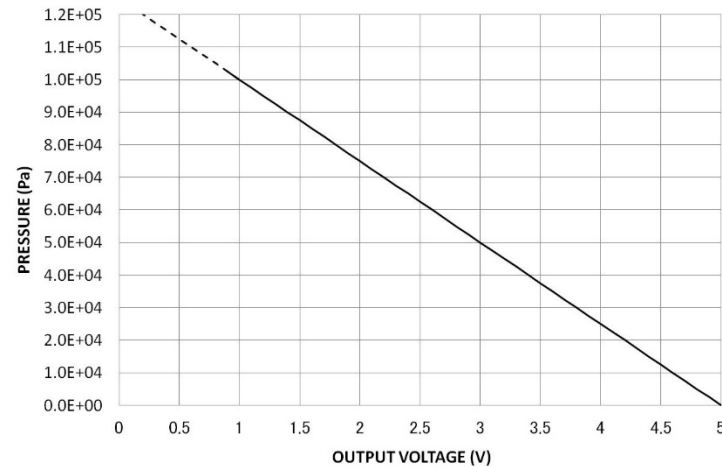
Convert the analog output to pressure based on the following equation. When you require even more accurate pressure, take the output voltage and precision into account.

$$P = -2.5E+4 \times V + 1.25E+5 \quad \Leftrightarrow \quad V = (1.25E+5 - P) / 2.5E+4$$

P: Pressure (Pa) V: Output voltage (V)

4.2. Analog output

Operating state	Analog output voltage
At atmospheric pressure	1 V
During normal measurements	1 to 5 V voltage corresponding to the measured pressure
During vacuum pumping	5 V
When it exceeds atmospheric pressure to a large degree. Abnormal power supply voltage, sensor malfunction, etc.	0.1 V or less



5. Specification

Name		Pressure sensor unit
Model		SAU
Measurement principle		Pressure gauge for gauge pressure based on the ambient atmospheric pressure
Joint		NW16
Measurement pressure range		-100 kPa to 0 kPa (gauge pressure) * SH2 reduced pressure: Approximately 8.0x10+3 Pa to approximately 1.0x10+5 Pa (reduced as absolute pressure)
Accuracy (gauge pressure)		±3% F.S. (±3x10+3 Pa) 0 to 50°C (reference temperature 25°C) * As absolute pressure, affected by altitude and atmosphere
Temperature characteristics	ZERO	±0.2% F.S./°C
	SPAN	±0.1% F.S./°C
Repeatability		±2% F.S.
Analog output		0 to 5 V
Response speed		Approx. 5 ms or lower
Linearity		±0.5% F.S.

ZERO voltage	1±0.04 V
SPAN voltage	4±0.04 V
Output impedance	Approx. 0Ω (at DC)
Response time	Approx. 5 ms
Materials	SUS316L, case: aluminum
Withstand pressure	2x10 ⁺⁵ (absolute pressure) * Take the withstand pressure for flanges, clamps, and other components into account separately.
Compensation temperature	0 to 50°C
Operating temperature range	-20 to 70°C
Operating humidity range	35 to 85% RH
Storage temperature	-20 to 70°C
IP code	IP40
Power supply voltage	12 to 24 VDC ± 10% consumption current 15 mA or lower (at 24 VDC) Ripple 0.1 V (p-p) or lower
I/O connector	RJ-45 jack connector
Weight	Approx. 140 g
Internal volume	Approx. 787mm ³
External dimensions	φ30x67.5

5.1. Standard Accessories

Quick manual(this manual)	1 copy
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6. Warranty

This product was shipped after rigid company inspection. However, in case any failure occurs under ULVAC's responsibility, such as defect in manufacturing and damage during transportation, Buyer shall inform ULVAC, Inc. or the local ULVAC representatives. ULVAC will repair or exchange it at free of charge.

Warrantable Items: This unit

Duration of guarantee: One (1) year after shipping date from ULVAC

Warranty scope

- Domestic business in Japan: Product, which has damage, caused by a failure on delivery.
- Direct export transaction: Product, which has damage, caused by a failure on delivery. The warranty scope shall confirm to the new INCOTERMS.
- Products not satisfying meet the standard specifications although the product is used under the normal service conditions such as temperature range and power etc.

Response procedure

- Domestic business in Japan: ULVAC send a replacement or Buyer return the defective items to ULVAC, Inc. or to the local ULVAC representatives for repair. If field service is required, Buyer shall ask ULVAC, Inc. or the local ULVAC representatives.
- Direct export transaction: ULVAC send a replacement or Buyer return the defective items to ULVAC, Inc. or to the local ULVAC representatives for repair. Return charge shall be paid by Buyer.

Disclaimer

- Failure occurred after expiration of warranty period
- Failure caused by force majeure, such as fire, storm and flood damage, earthquake, lightning strike, war etc
- Failure occurred due to carelessness handling or faulty usage
- Products remodeled, disassembled or repaired without ULVAC's acceptance
- Failure occurred under abnormal environment, such as intense electromagnetic field, radiation, high-temperature, high-humidity, flammable gases, corrosive gases, dust etc.
- Failure occurred by noise
- Product deficiency or secondary damage occurred to Buyer, from law suit to ULVAC by third party for patent infringement.
- Sensor head being used (expiration of life, measurement error, etc.)
- Sensor head cable in use (cable burnout due to improper installation, poor contact, etc.)

Others

- In case, special agreement or memorandum for specifications is made individually, the descriptions are prior to this article "13 Product Warranty".
- Buyer shall inform ULVAC when this product is exported out of Japan. In the meantime, Buyer shall take necessary procedures according to Foreign Exchange and Foreign Trade Law.
- As for the question and consultation, Buyer shall check the model and serial number and ask the local representative or ULVAC, Inc.
- The content of this document is subject to change without notice in future.

7. Certificate of Decontamination

All material must be certified as decontaminated and this certificate must be submitted to your closest local ULVAC service center or sales office prior to shipment. The form is available for download from ULVAC website.

8. Network

ULVAC, Inc: <http://www.ulvac.co.jp/eng/index.html>

Service Centers: <http://www.ulvac.co.jp/eng/support/service/index.html>
Sales Offices: http://www.ulvac.co.jp/eng/support/sales_office/index.html

9. Drawing

Please refer to an ULVAC website.
(<https://showcase.ulvac.co.jp/en/>)

