

# SU8 Pressure Gauge with Transmitter

## Outline

This device is a pressure gauge with transmitter, which incorporates a pressure sensor into the same small size as a sanitary gauge. The pressure receiver is a diaphragm-seal type configuration, and uses an SUS316L diaphragm. The device is suitable for use in manufacturing sites that require sanitary conditions.

## Features

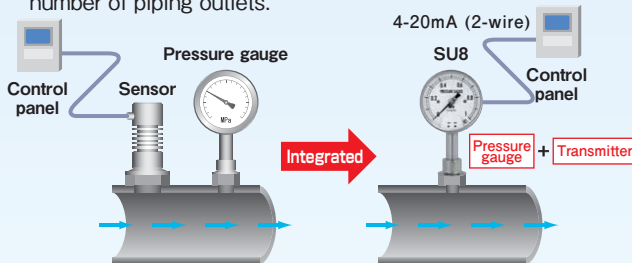
- Internal pressure sensor included, with same body size as a pressure gauge. (2-wire, 4-20mA DC output)
- Reduces total costs by decreasing the number of piping outlets.
- Available with radiation tube shape and diaphragm for ISO (IDF) 1S pipes.
- Now also available as terminal box type.



## One device achieves both “Pressure Measurement” and “Pressure Control” for sanitary processes!

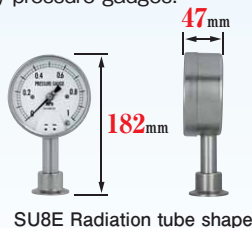
### Significant decreases in total costs

A pressure gauge and a pressure sensor are integrated into one device, reducing total costs by decreasing the number of piping outlets.



### Small, lightweight form - Same size as a pressure gauge

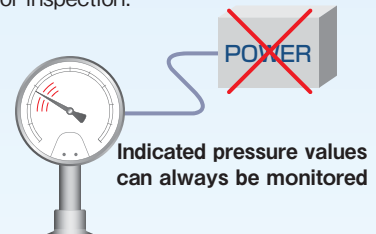
Achieves small, lightweight form with the same size as a sanitary pressure gauge (φ 100), enabling replacement of existing sanitary pressure gauges.



SU8E Radiation tube shape

### Reliable even during power failure

The pressure gauge is independent of the transmitter, so that in-process pressure can be confirmed even during an accidental power failure, or when the system is powered down for testing or inspection.



### NEW Introducing our New Terminal Box Type

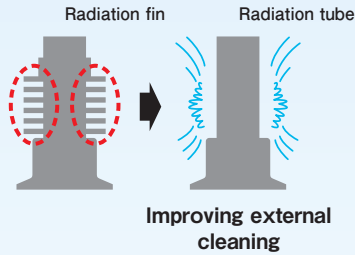
We have introduced a new terminal box type, to support long distance wiring.



Terminal box type

### High temperature can be measured

Designed without radiation fins to improve external cleaning. Also supports CIP cleaning and high temperature fluid measurement.



### φ23 Diaphragm for 1S pipe

Developed the diaphragm is optimized for the inside diameter of ISO (IDF) 1S pipes, keeping contamination to a bare minimum through optimal fitting.



Diaphragm diameter: φ23 (When 1S connection is selected)

### Uncompromising durability

The radiation tube and case are welded, and high-rigidity Bourdon tubes are utilized to increase durability against vibration and pulsation.

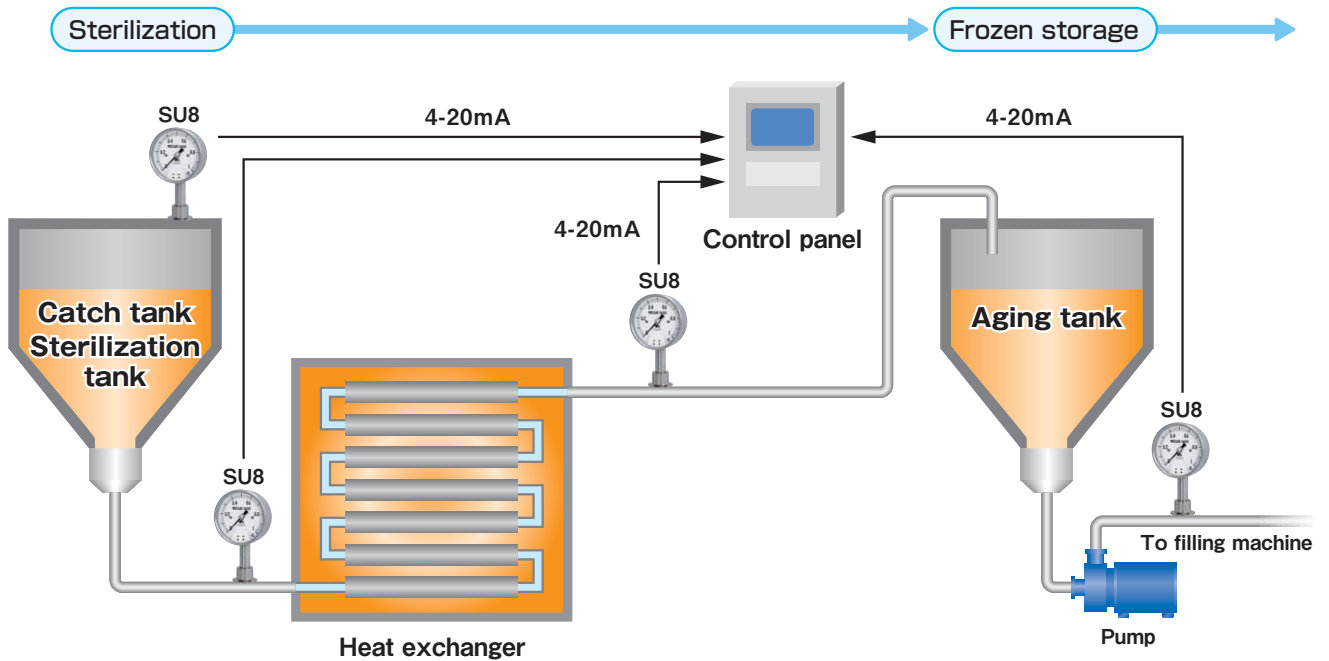


### Supports zero and span adjustment from the front

To improve maintainability, zero and span adjusting trimmers are placed on the front of the pressure indicator.



## Application example in manufacturing process



### Specification

Item		Description		
Fluid		Air or liquid		
Operating condition		Normal conditions (No flammable liquids or explosive gaseous atmospheres)		
Mounting		Stem mounting (A-frame), Standard shape or Radiation tube shape		
Size		φ100		
Connection type		Ferrule, Nut, Male and Union thread type		
Connection size		1S, 1½S, 2S, 2½S, 3S, G1½B (1S: Ferrule type only, G1½B: Union thread type only)		
Wetted parts material	Diaphragm	SUS316L		
	Joint	SUS316 or SUS316L		
Pressure range		0 to 1, 2, 3.5, 5MPa -0.1 to 1, 2MPa	0 to 0.3, 0.4, 0.5, 0.6, 1.5, 2.5MPa -0.1 to 0.3, 0.4, 0.5, 0.6, 1.5MPa	0 to 0.2MPa -0.1 to 0.1, 0.2MPa
Accuracy	Indication gauge Accuracy	±1.5%F.S. at 23°C		
	Temperature Ambient coefficient	0.2%F.S./°C or less		
	Wetted parts	0.1%F.S./°C or less		
	Transmitter Accuracy	±1.0%F.S. at 23°C	±1.5%F.S. at 23°C	±2.0%F.S. at 23°C
Temperature coefficient (Zero, Span)		±0.1%F.S./°C	±0.15%F.S./°C	±0.2%F.S./°C
Operating temperature range	Ambient	-5 to 40°C		
	Wetted parts	-5 to 135°C (Standard shape: -5 to 100°C)		
Allowable temperature range	Ambient	-5 to 60°C		
	Wetted parts	-5 to 150°C		
Power source		24V DC±10%		
Output		4 - 20mA DC (2-wire)		
Load resistance		500Ω max.		
Transmission system		2-wire		
Wiring		Connection by M12 connector cable or through terminal board. Wire outlet: JIS20b (Standard)		
Filled liquid		Propylene glycol (Compound gauge: Silicone oil)		
Case	Material	SUS304 (Electrolytic polishing)		
	Construction	IP65 (When the range is 0.3MPa or less, it will be ensured with lowered vent plug.)		
Weight		Approx. 1.1kg (Radiation tube shape with nut connection)		
Glass material		Inorganic glass or Organic glass		

### Pressure sensor with SU8



#### Semiconductor Evaporated Type (SS) sensor

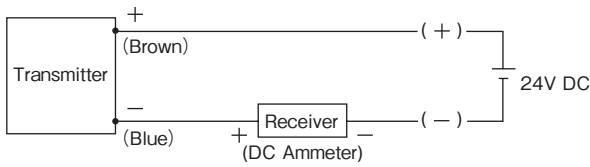
The semiconductor evaporated type (SS) sensor, which has a record of achievements in the various industrial fields, has the integral structure at the semiconductor evaporated type strain gauge, sensing and the connection parts. Since no adhesives and corrosive materials are used, it has superior durability and stability.



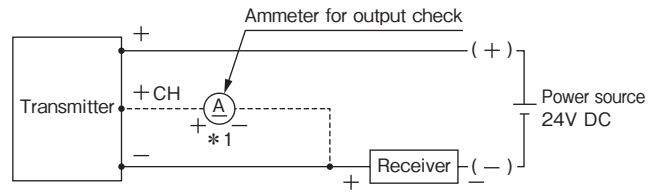
\* The photograph is an image.

### Wiring

Cable with M12 connector type



Terminal box type



\*1: The output check can be performed without opening the circuit.  
Load resistance 10kΩ or less

### Electrical connections

Cable with M12 connector type

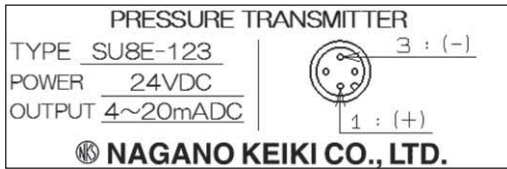
Connector terminal array for I/O	Terminal number	2-wire	Cable color
	1	Power source +	Brown
	2	—	White
	3	Power source -	Blue
	4	—	Black

Terminal box type

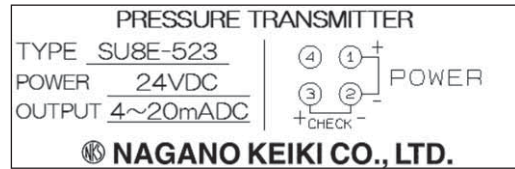
Connector terminal array for I/O	Terminal number	2-wire
	1	Power source +
	2	Power source -
	3	+CH
	4	—

### Product nameplate

Cable with M12 connector type



Terminal box type



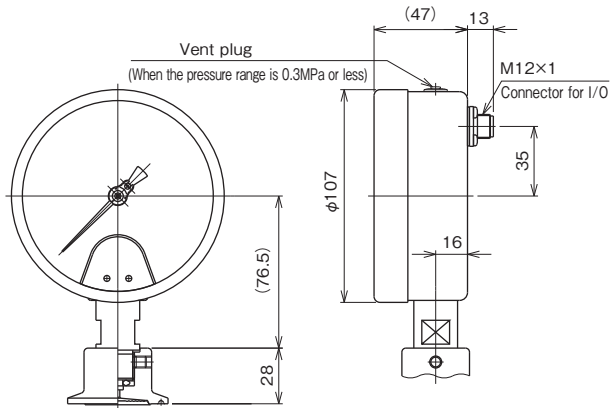
### Cable with M12 connector (Option)

	Straight	L type
PVC cable (Stainless nut)		
Material	① Stainless steel ② TPU (Black) ③ PVC	
Cable length (L)	2m (standard), 5m	
Conductor cross section	0.34mm <sup>2</sup> (22AWG)	
Core diameter including insulation	1.52mm	
External cable diameter	5.2mm	

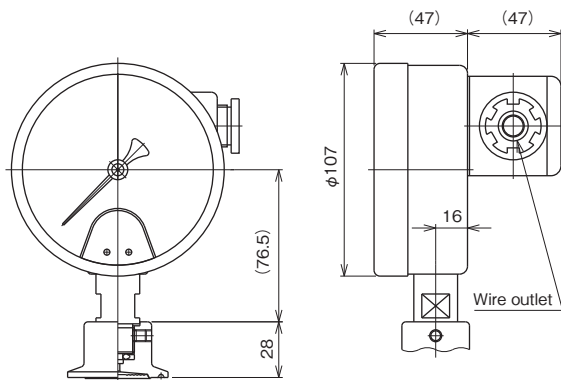
### Dimensions 1

#### Standard shape

SU81-1 Cable with M12 connector type

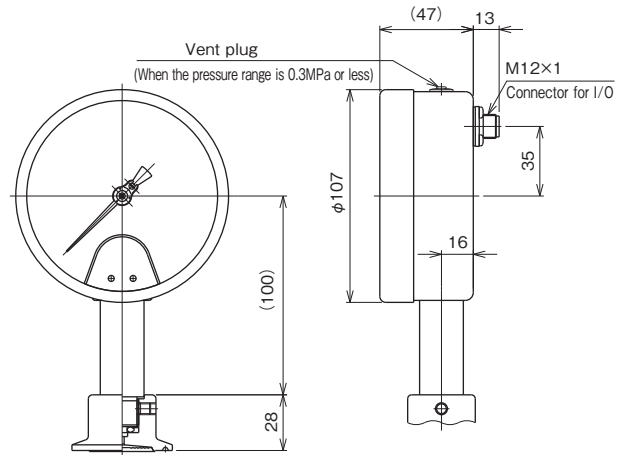


SU81-5 Terminal box type

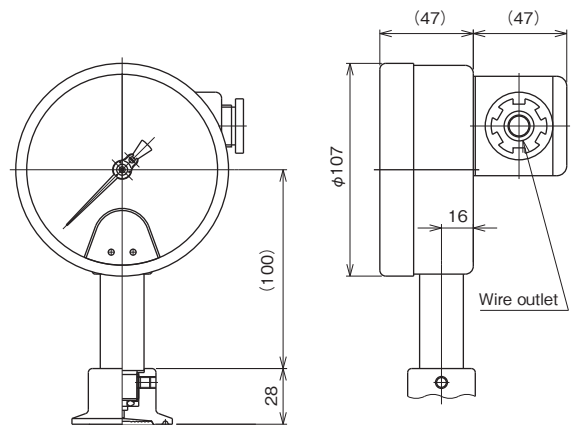


#### Radiation tube shape

SU8E-1 Cable with M12 connector type



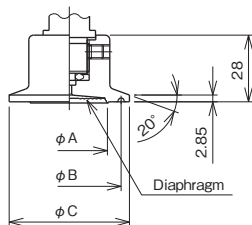
SU8E-5 Terminal box type



### Dimensions 2

#### [Connection type]

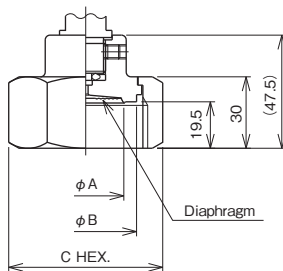
Ferrule type



Ferrule size	A	B	C
1S	23		
1½S	32	43.5	50.5
2S	47	56.5	64

ISO (IDF) Standard

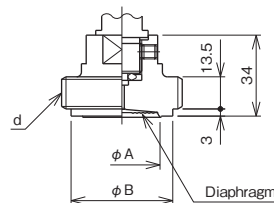
Nut type



Nut size	A	B	C
1½S	32	42.7	56x64.7
2S	47	56.2	71x82

ISO (IDF) Standard

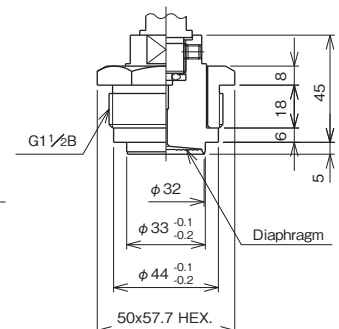
Male type



Thread size d	A	B
1½S	32	42.7
2S	47	56.2

ISO (IDF) Standard

Union thread type



\* Please contact us for 2½S and 3S size.

### Model number configuration

Please specify the model number, each specs and the range for ordering.

Model

S U 8 — — — — — 4 1 1 — — — — — × × × × ×

Pressure Gauge with Transmitter (1) (2) (3) (4) (5) (6) (7) (8) (9) (10) (11) (12) (13) (14) (15)

Model number			Selective spec.		Additional spec. (Option)	
Model	1	Size	Frame	Shape of radiator		
	E	φ 100	A-frame	Standard		
① Connection type *1	2	Cable type	M12 connector type	Ferrule type (Please use within proof pressure of the clamp and gasket)		
	3			Nut type		
② Connection size	4	Terminal box type	8	Male type		
	5			Union thread type ②3 G1½B only		
③ Wetted parts material *2	6			Ferrule type (Please use within proof pressure of the clamp and gasket)		
	7			Nut type		
④ Pressure range (MPa)	8			Male type		
	2	1S (Only Ferrule type can be manufactured)		Union thread type ②3 G1½B only		
⑤ Accuracy	3	1½S or G1½B (Only union thread type can be manufactured with G1½B)				
	4	2S				
⑥ Power source	5	2½S				
	6	3S				
⑦ Output	3	SUS316				
	4	SUS316L				
⑧ Wire outlet (Terminal box type)	5	SUS316		Buff finish (Union thread type cannot be manufactured)		
	6	SUS316L		Buff finish (Union thread type cannot be manufactured)		
⑨ M12 Connector cable (See "Electrical connections.")	1	-0.1 to 0.6, 1, 1.5, 2		Compound gauge		For ② size 2
	2	-0.1 to 0.2, 0.3, 0.4, 0.5, 0.6, 1, 1.5, 2		Compound gauge		For ② size 3
⑩ Documents	0	-0.1 to 0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 1, 1.5, 2		Compound gauge		For ② size 4 - 6
	1	0 to 0.6, 1, 1.5, 2, 2.5, 3.5				For ② size 2
⑪ M12 Connector cable (See "Electrical connections.")	0	0 to 0.2, 0.3, 0.4, 0.5, 0.6, 1, 1.5, 2, 2.5, 3.5, 5		(5MPa Ferrule cannot be manufactured)		For ② size 3
	3	0 to 0.2, 0.3, 0.4, 0.5, 0.6, 1, 1.5, 2, 2.5, 3.5				For ② size 4
⑫ Documents	4	0 to 0.2, 0.3, 0.4, 0.5, 0.6, 1, 1.5, 2				For ② size 5 and 6
	7	±1.5%F.S. at 23°C (Transmitter accuracy depends on the pressure range.)				
⑬ Documents	1	24V DC±10%				
	0	4-20mA DC, 2-wire				
⑭ Documents	0	Nil				
	7	Ground JIS20b (Standard)		Others		
⑮ Documents	0	Nil				
	3	PVC cable 2m, Straight				
⑯ Documents	4	PVC cable 2m, L type				
	7	PVC cable 5m, Straight				
⑰ Documents	8	PVC cable 5m, L type				
	0	Nil				
⑱ Documents	1	Required (Please specify the desired documents separately.)		Submission drawings, instruction manual, inspection procedure, mill sheet, test report (1 pc 1 copy), inspection / traceability certificate, attended inspection		

Please specify the pressure range and units separately besides selection of range code.

**Caution**

\*1 Please use it within the range of proof pressure of connected parts (clamp, nut, and gasket, etc.). When using Ferrule types, many commercial clamps have a pressure resistance of 1MPa or less. Please keep the pressure at 1MPa or less as long as you are not using special-purpose items.

\*2 Please contact us for electrolytic polishing wetted parts and passivation treatment specifications.

\* Parts required for installation, such as clamps, nuts, gaskets, etc., are to be prepared by the user.

\* Specify "X" if there is no specification item.