

# ZT15

## Pressure Transmitters

### for Semiconductor Industry

1.5 surface  
mounting  
interface

#### Outline

These are pressure transmitters designed for semiconductor industry, in which pressures are converted into electric signals and transmitted by the sensing element equipped with an evaporation type semiconductor strain gauge and a built-in electronic circuit. The ZT15 is a pressure transmitter built to accommodate a 1.5 surface mounting interface for semiconductor manufacturing gas distribution and can be applied to the gas panel and the valve manifold boxes, etc. We provide two types of pressure transducers with UC/EP Grade for high-purity gas and GP Grade achieved the cost down of gas piping without impairing the airtightness.

#### Features

- It is possible to install the transmitter on a 1.5 surface mounting interface.
- Highly corrosion-resistant pressure sensors made of Co-Ni alloy or SUS316L are welded directly to the SUS316L joints, giving them excellent corrosion resistance, air-tightness, long-term stability and reliability.  
\*Please confirm that material in contact with gas is suitable for it.
- Few dead spaces exist that may cause gas contamination.



RoHS



#### List of grade

**Cleanliness** These pressure transmitters have been assembled, adjusted, inspected and packaged in a clean room, paying special attention for maintaining cleanliness.

Grade		UC (Ultra Clean)	EP (Electro Polishing)	GP (General Purpose)
Surface roughness of gas contact		0.18 $\mu$ m Ra Avg., 0.7 $\mu$ m Rz Max.	0.18 $\mu$ m Ra Avg.	0.5 $\mu$ m Ra Avg.
Wetted parts	Pressure sensor	Co-Ni alloy	SUS316L	
	Fitting	SUS316L DOUBLE MELT material	SUS316L	
Maximum allowable pressure *1		200% of rated pressure	150% of rated pressure	
Leakage (Helium leak rate)		5 x 10 <sup>-12</sup> Pa·m <sup>3</sup> /s and under	5 x 10 <sup>-12</sup> Pa·m <sup>3</sup> /s and under	
Particle		Zero count for size 0.1 $\mu$ m or greater (In our inspection standard)	Zero count for size 0.1 $\mu$ m or greater (In our inspection standard)	—————
Cleaning		Ultra clearance (Cleaning)	Ultra clearance (Cleaning)	Degreasing
Operating media *2 (Recommended)		High-purity gas, semiconductor material gas, etc.	High-purity gas, semiconductor material gas, etc.	Purge gas, exhaust gas, etc.

\*1 Allowable maximum pressure is the upper limit to which pressure may be temporarily increased while still allowing normal pressure to be resumed, when pressure levels return to the normal (Rated) range. It is not guaranteed to have no impact on functionality in the case of repeated pressure or static pressure increases lasting 10 minutes or more.

\*2 Please confirm that the gas contact part material is suitable for the gas to be measured.

\*UC/EP Grade rises with triple packing (Filled with N<sub>2</sub>).

### Specification

Item	Description												
Fluid	Process gasses for semiconductor industry												
Pressure range	0 to 0.3, 0.5, 1MPa -0.1 to 0.3, 0.5, 1MPa												
Fitting shape	1.5 surface mounting interface												
Connection	1.5 W-Seal												
Pressure sensor seal method	Welding type												
Operating temperature	-20 to 70°C (No freezing or condensation)												
Storage temperature range	-30 to 80°C (No freezing or condensation)												
Accuracy *1	±1.0%F.S. at 23°C (Standard) or ±0.5%F.S. at 23°C (Option). However, 0.5MPa range or greater can be specified.												
Temperature coefficient	± 0.1%F.S./°C [Accuracy ±1.0%F.S.] (Zero, Span) or ±0.05%F.S./°C [Accuracy ±0.5%F.S.] (Zero, Span)												
Electrical characteristics	<table border="1"> <thead> <tr> <th>Transmission method</th> <th>2-wire system</th> <th>3-wire system</th> </tr> </thead> <tbody> <tr> <td>Power source</td> <td>24V DC±10%</td> <td>24V DC±10% or 12V DC±10%</td> </tr> <tr> <td>Output</td> <td>4 to 20mA DC</td> <td>1 to 5V DC</td> </tr> <tr> <td>Load resistance</td> <td>500Ω max.</td> <td>10kΩ min.</td> </tr> </tbody> </table>	Transmission method	2-wire system	3-wire system	Power source	24V DC±10%	24V DC±10% or 12V DC±10%	Output	4 to 20mA DC	1 to 5V DC	Load resistance	500Ω max.	10kΩ min.
Transmission method	2-wire system	3-wire system											
Power source	24V DC±10%	24V DC±10% or 12V DC±10%											
Output	4 to 20mA DC	1 to 5V DC											
Load resistance	500Ω max.	10kΩ min.											
CE compliance	Applicable Standards: EN61326-1: 2013; EN61326-2-3: 2013 * Please use it to connect to the indoor power distribution network which is not affected by the lightning surge voltage and power supply system switching transients.												
Enclosure	Indoor use												
Weight	Approx. 180 g (Excluding cable)												

\* 1 Total error band precision includes linearity, hysteresis and reproducibility.

### Connector and cable

Connector (Plug):

R03-P6M (Manufactured by Tajimi Electronics Co., Ltd.)

Cable:

	Environmental temperature	Conductor		Cable outer diameter (mm)	Minimum bending radius (mm)
		Cross-section area (mm <sup>2</sup> )	Twisted conductors (pcs./mm)		
Heat resistant cable	-20 to 105°C	0.3	12/0.18	φ 6.0	25

# ZT15

## Pressure Transmitter (1.5 surface mounting interface)

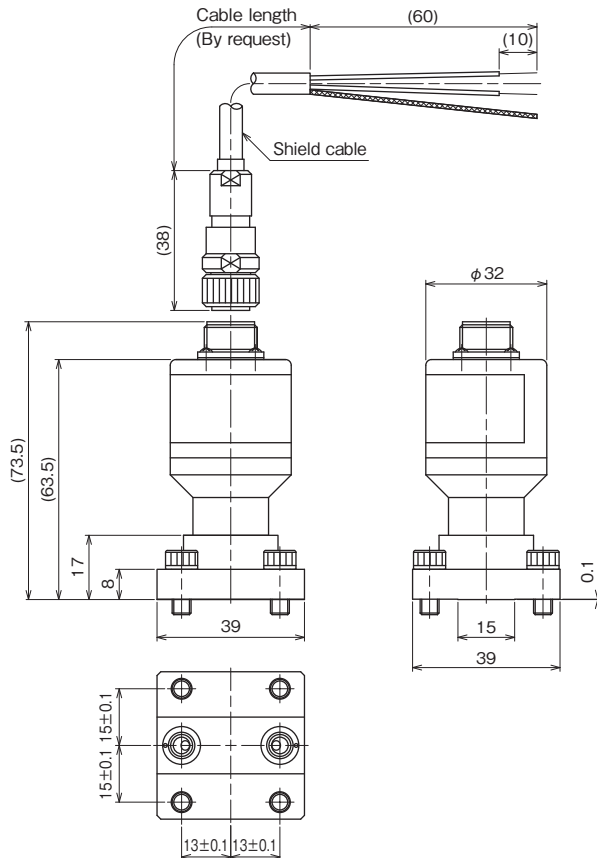
### Dimensions

Surface mount  
Internal adjustment

UC/EP/GP Grade

Unit: mm

<1.5 W-Seal>



Grade	Connection	Model number
UC	1.5 W-Seal (With bolt)	ZT15-Z20

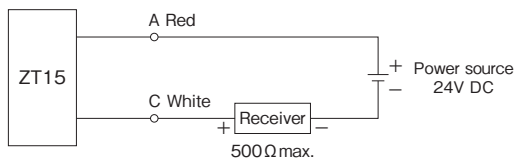
Grade	Connection	Model number
EP	1.5 W-Seal (Without bolt)	ZT15-Z80

Grade	Connection	Model number
GP	1.5 W-Seal (Without bolt)	ZT15-Z81

\* The bolts are not included with the EP and GP Grade product.

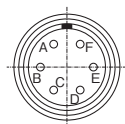
### Wiring

#### 2-wire system

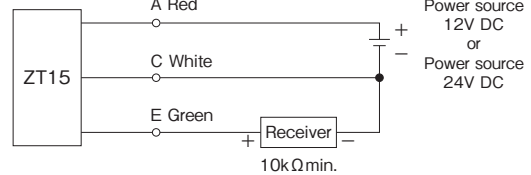


#### 2-wire system Terminal distribution

A-Red: Power source (+)  
C-White: Power source (-)



#### 3-wire system



#### 3-wire system Terminal distribution

A-Red: Power source (+)  
C-White: Common  
E-Green: Output (+)

### Caution

Avoid installing in location where apparatus or atmosphere (excluding process media) could be cause of initiation of ignition or explosion under normal operating condition.





# ZT15

## Pressure Transmitter (1.5 surface mounting interface)

### GP Grade

#### Model number configuration

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

Model

**Z T 1 5** — **Z 8 1** — [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮

Pressure Transmitter  
(1.5 surface mounting interface)  
GP Grade

Model number		Selective spec.	Additional spec. (Option)
① Mounting	Z	Surface mounting interface, Internal adjustment connector type, CE compliant	
② Connection	8	1.5 W-Seal (Without bolt)	
③ Wetted parts by grade	1	GP Grade ·Pressure sensor: SUS316L (All welding) ·Fitting: SUS316L	
④ Pressure range	C	-0.1 to 0.3MPa	
	D	-0.1 to 0.5MPa	
	E	-0.1 to 1MPa	
	1	0 to 0.3MPa	
	2	0 to 0.5MPa	
⑤ Accuracy	5	±0.5%F.S. (0.5MPa range or greater can be specified)	
	7	±1.0%F.S.	
⑥ Power source	1	24V DC±10%	
	6	12V DC±10% (3-wire system only)	
⑦ Output	1	4 to 20 mA DC (2-wire system)	
	8	1 to 5V DC (3-wire system)	
⑧ Adjustment cable specification (A heat resistant shield cable)	0	Nil	
	1	Cable length: 1 m	
	2	Cable length: 2 m	
	3	Cable length: 3 m (Standard)	
	5	Cable length: 5 m	
9	Others length specification		
⑮ Document	0	Nil	
	1	Required (Please specify the desired documents separately.) Submission drawings, instruction manual, inspection procedure, mill test report, test report (1 pc 1 copy), inspection / traceability certificate, strength calculation, attended inspection	

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

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