

# ZT67

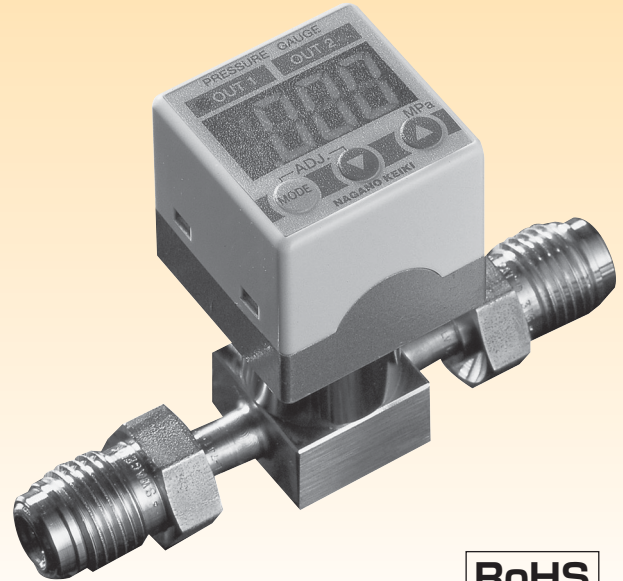
## Compact Digital Pressure Gauge for Semiconductor Industry

### Outline

The ZT67 is a Compact Digital Pressure Gauge, part of a lineup of products for the semiconductor industry divided by grade. It is equipped with a highly reliable pressure sensor that is much smaller and easier to read than conventional digital pressure gauges. From UC Grade to general-use options are available for measurement gases.

### Features

- The high corrosion resistant pressure sensor made of Co-Ni alloy or SUS316L is directly welded to the 316L st.st. coupling portion, demonstrating excellent corrosion resistance, air-tightness, stability and reliability.  
\*Please confirm that material in contact with gas is suitable for it.
- Compact  30 mm size
- Large LED, Character height: 10 mm
- Comparator with 2 independent outputs
- Wide variety of fittings



RoHS



### Applications

- Semiconductor equipment  
Vacuum chamber, dry pump
- Gas supply line  
Cylinder cabinet, integrated gas panel

### List of grade

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

Grade		UC (Ultra Clean)	BA (Bright Annealing)	EP (Electro Polishing)	GP (General Purpose)	General-use
Surface roughness of gas contact		0.18 $\mu$ m Ra Avg. 0.7 $\mu$ m Rz Max.	Approx. Rz 2.5 $\mu$ m	0.18 $\mu$ m Ra Avg.	0.5 $\mu$ m Ra Avg.	Rule anonymous
Wetted parts	Pressure sensor	Co-Ni alloy		SUS316L		SUS630 (17-4PH)
	Fitting *1	SUS316L		SUS316L		SUS316
Maximum allowable pressure *2		200% of rated pressure		150% of rated pressure		200% 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		1 x 10 <sup>-9</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)	Degreasing	Ultra clearance (Cleaning)	Degreasing	Use no oil & water
Operating media *3 (Recommended)		High-purity gas, semiconductor material gas, etc.	Purge gas, exhaust gas, etc.	High-purity gas, semiconductor material gas, etc.	Purge gas, exhaust gas, etc.	Corrosion-resistant gas that does not require the cleanliness rating.




\*1 For UC Grade, the pressure transmitter can be manufactured in DOUBLE MELT material by request. Please contact us.

\*2 Allowable maximum pressure is the upper limit of pressure value which may safely be applied to the product and remain in specification once pressure is returned to the rated pressure range with a couple of times overpressurization for about 10 minutes. Effects of continuous overpressure are not guaranteed.

\*3 Ensure that pressure media is compatible with wetted parts.

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

### Specification 1

Item		Description
Fluid		Process gasses for semiconductor industry
Pressure range		UC/BA/EP/GP Grade: 0 to 0.3, 0.5, 1, 2, 5, 10, 20MPa -0.1 to 0.3, 0.5, 1, 2MPa General-use: 0 to 1MPa -100 to 100kPa -0.1 to 1MPa
Fitting shape		Horizontal mounting, Type T  Horizontal mounting, Type S  Vertical mounting, Type S 
Connection		1/4, 3/8 UJR, VCR, CVC, etc.
Power source		12 to 24V DC $\pm 10\%$
Display accuracy*1		$\pm (1.0\%F.S.+1\text{digit})$ at 23°C
Output	Comparator output	NPN open collector x 2 independent outputs (Hysteresis mode, Window comparator mode) Maximum rating: 30V DC, 80 mA DC Response speed: 2.5 ms and under (When no filter) Protection circuit: Short-circuit (Over-current) protection Deadband: Hysteresis mode (Variable) Window mode (1% F.S. fixed) Comparator operation display LED: Red LED (OUT1, 2), Lights when turning on the power.
	Analog output (Option)	1 to 5V DC (Load current 10k $\Omega$ or greater) Output accuracy*1: $\pm 3.0\%F.S.$ at 23°C Response time: 1 ms and under
Consumption current		30 mA DC and under
Operating temperature and humidity		-10 to 50°C, 35 to 85%RH (No freezing or condensation)
Storage temperature		-20 to 60°C (No freezing or condensation)
Temperature coefficient		$\pm 0.1\%F.S./^{\circ}C$ (Zero, Span)
Pressure display		3 1/2 digit LED (Character height: 10 mm)
Cable length		2 m only
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.
Function	Display scaling	-1999 to 1999 digits with respect to the ratings range
	Filter	Selectable among No filter, 10ms, 50ms, 200ms, or 600ms
	Hold display	Both the maximum value and the minimum value can be indicated
	Zero adjustment	Zero adjustment on the display by using ADJ key (MODE + DOWN key)
	Key lock	Operation PB lock
Enclosure		Indoor use
Weight		Approx. 150 g (Varies depending on the fitting shape)

\*1 Display and analog output accuracies include the effects of Linearity, Hysteresis and Repeatability.

### Cable

	Environmental temperature	Conductor		Cable outer diameter (mm)	Minimum bending radius (mm)
		Cross-sectional area (mm <sup>2</sup> )	Twisted conductors (pcs./mm)		
PVC cable	-60 to 90°C	0.18	7/0.18	$\phi 4.0$	17

\* Cable length: 2 m only

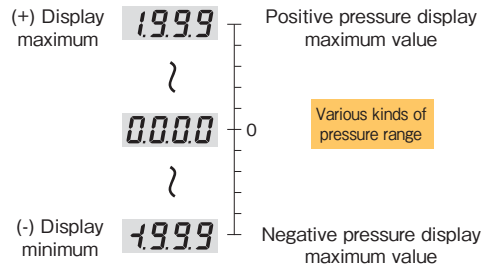


### Six points related to function

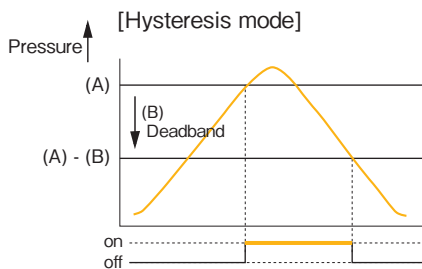
#### 1 Flexible range application by the high accuracy of display and output scaling.

##### • Display scaling function

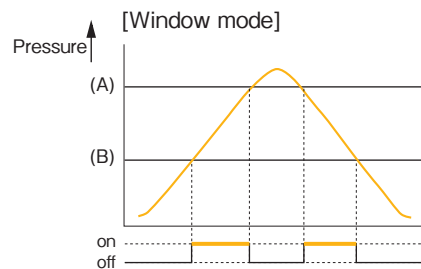
Digital display can be set at given values within the limit of a 3-1/2 figure display.



#### 2 The operation mode of comparator output can be selected. OUT1 and OUT2 can be set comparator operation mode independently.

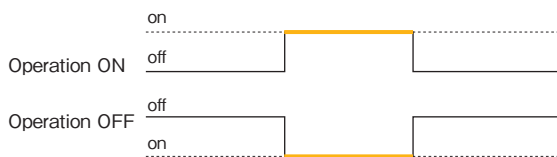


The comparator operation with A setting point's value as (A) and the Deadband as (B).  
(The comparator output selection is ON.)



The comparator operation where A setting point is (A) and B Setting point is (B).  
(The comparator output selection is ON.)

##### [Comparator output selection]



Set the comparator output logic. Hysteresis mode and window mode can also be selected.  
The diagram above shows the ON and OFF operation output.  
The comparator operation LEDs also change.

#### 3 The digital filter is built in. It is useful, when pressure change is hard and a display is hard to see. Nil, 10ms, 50ms, 200ms, 600ms

#### 4 Easy zero adjust by opening inlet port to atmospheric pressure and pushing MODE key and down key simultaneously.

#### 5 The peak and bottom value of measured are memorized. It displays, while pushing up and down keys.

#### 6 An error message is displayed when outside of the zero adjustment and excessive pressure is applied. Key lock function for avoiding incorrect operation is prepared.

# ZT67

## Compact Digital Pressure Gauge for Semiconductor Industry

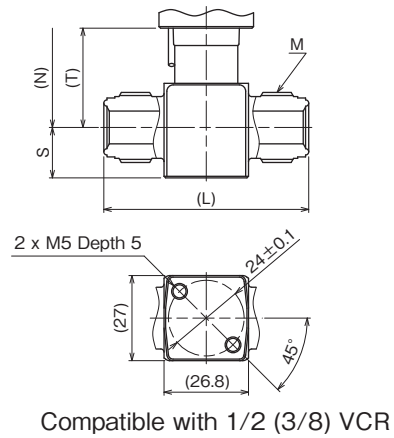
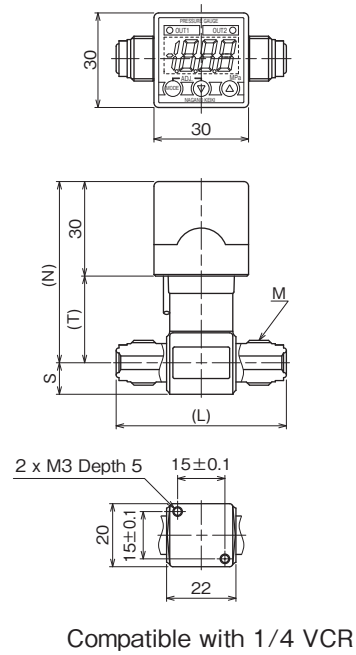
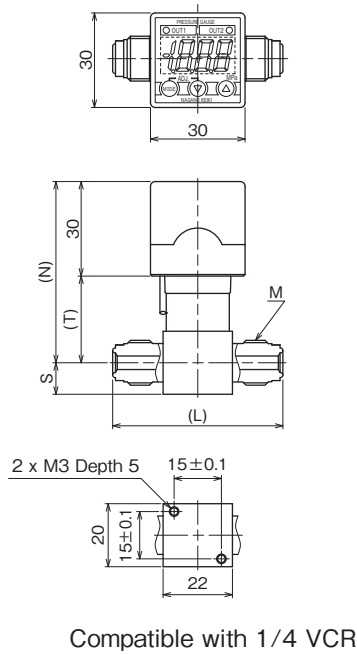
### Dimensions 1

Unit: mm

Horizontal mounting  
Type T  
Male Integrated

UC/BA Grade

EP/GP Grade



Grade	Connection	Piping DIA.	Screw size M	Dimensions				Model number
				N	T	S	L	
UC	Compatible with VCR Male integrated	1/4	9/16-18UNF	57.5	27.5	10	54	ZT67-136

Grade	Connection	Piping DIA.	Screw size M	Dimensions				Model number
				N	T	S	L	
BA	Compatible with VCR Male integrated	1/4	9/16-18UNF	57.5	27.5	10	54	ZT67-13N

Grade	Connection	Piping DIA.	Screw size M	Dimensions				Model number
				N	T	S	L	
EP	Compatible with VCR Male integrated	1/4	9/16-18UNF	57.5	27.5	10	54	ZT67-13E
		1/2 (3/8)	7/8-14UNF	61.5	31.5	16	65	ZT67-14E

Grade	Connection	Piping DIA.	Screw size M	Dimensions				Model number
				N	T	S	L	
GP	Compatible with VCR Male integrated	1/4	9/16-18UNF	57.5	27.5	10	54	ZT67-13G

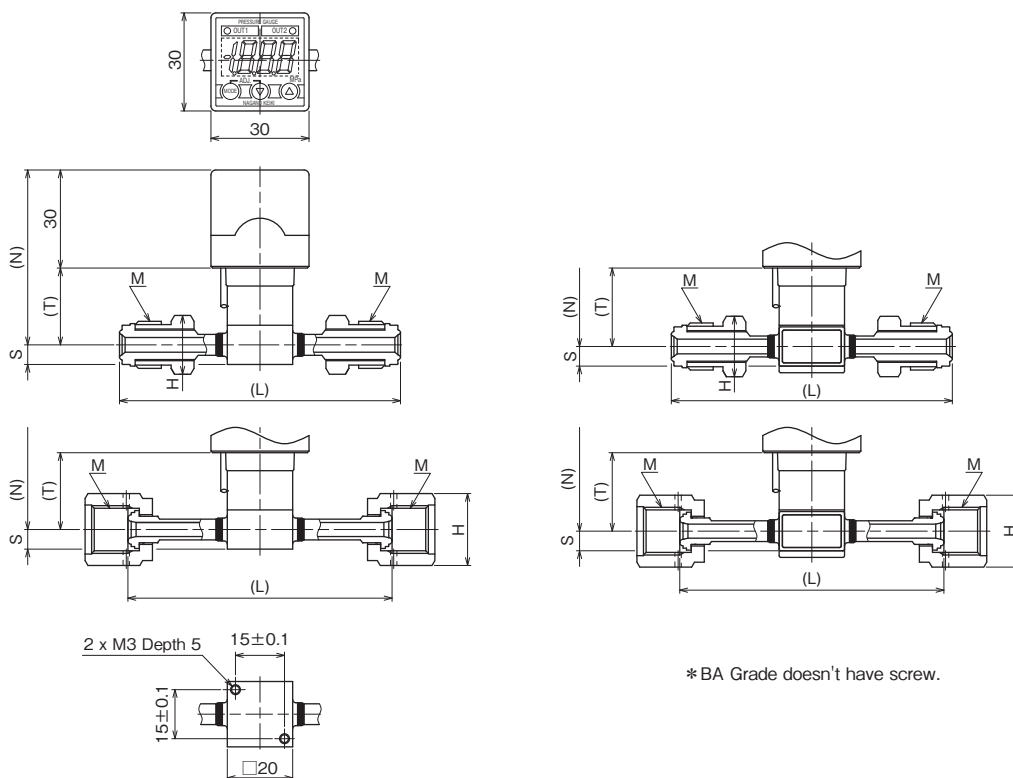
### Dimensions 2

UC Grade

BA Grade

Unit: mm

Horizontal mounting  
Type T  
Male nut/Female nut



\*BA Grade doesn't have screw.

Grade	Connection	Piping DIA.	Screw size M	Dimensions					Model number
				N	T	S	H	L	
UC	VCR Male nut	1/4	9/16-18UNF	53.5	23.5	6	16 x 18.5 Hex.	86	ZT67-1J6
		3/8	7/8-14UNF	59	29	7	24 x 27.7 Hex.	90.5	ZT67-1K6
	VCR Female nut (Bearings are not included)	1/4	9/16-18UNF	53.5	23.5	6	19 x 21.9 Hex.	80.8	ZT67-1L6
		3/8	7/8-14UNF	59	29	7	27 x 31.2 Hex.	81.8	ZT67-1M6
	UJR Male nut	1/4	9/16-18UNF	53.5	23.5	6	17 x 19.6 Hex.	87	ZT67-1N6
		3/8	7/8-14UNF	59	29	7	23 x 26.6 Hex.	100	ZT67-1P6
	UJR Female nut (With pure ring)	1/4	9/16-18UNF	53.5	23.5	6	19 x 21.9 Hex.	87	ZT67-1Q6
		3/8	7/8-14UNF	59	29	7	26 x 30 Hex.	100	ZT67-1R6
	CVC Male nut	1/4	9/16-18UNF	53.5	23.5	6	15.8 x 18.2 Hex.	86	ZT67-1W6
		3/8	7/8-14UNF	59	29	7	23.8 x 27.5 Hex.	90.6	ZT67-1X6
	CVC Female nut (Bearings are not included)	1/4	9/16-18UNF	53.5	23.5	6	19 x 21.9 Hex.	80.8	ZT67-1Y6
		3/8	7/8-14UNF	59	29	7	27 x 31.2 Hex.	82	ZT67-1Z6

Grade	Connection	Piping DIA.	Screw size M	Dimensions					Model number
				N	T	S	H	L	
BA	VCR Male nut	1/4	9/16-18UNF	54	24	6	16 x 18.5 Hex.	86	ZT67-1JN
	VCR Female nut (Bearings are not included)						19 x 21.9 Hex.	80.8	ZT67-1LN
	UJR Male nut						17 x 19.6 Hex.	92	ZT67-1NN
	UJR Female nut (Without pure ring)						19 x 21.9 Hex.	81	ZT67-1QN
	CVC Male nut						15.8 x 18.2 Hex.	86	ZT67-1WN
	CVC Female nut (Bearings are not included)						19 x 21.9 Hex.	80.8	ZT67-1YN

# ZT67

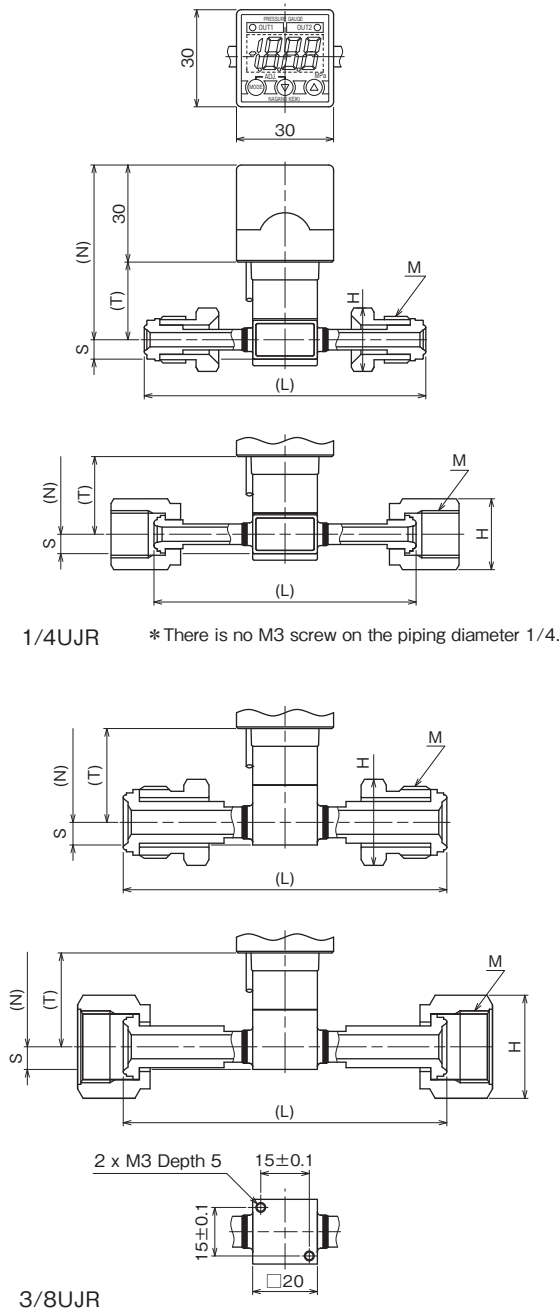
## Compact Digital Pressure Gauge for Semiconductor Industry

### Dimensions 3

EP/GP Grade

Unit: mm

Horizontal mounting  
Type T  
Male nut/Female nut



Grade	Connection	Piping DIA.	Screw size M	Dimensions					Model number
				N	T	S	H	L	
EP	UJR Male nut	1/4	9/16-18UNF	54	24	6	17 x 19.6 Hex.	87	ZT67-1NE
		3/8	7/8-14UNF	59	29	7	23 x 26.6 Hex.	100	ZT67-1PE
	UJR Female nut (Without pure ring)	1/4	9/16-18UNF	54	24	6	19 x 21.9 Hex.	81	ZT67-1QE
		3/8	7/8-14UNF	59	29	7	26 x 30 Hex.	100	ZT67-1RE

Grade	Connection	Piping DIA.	Screw size M	Dimensions					Model number
				N	T	S	H	L	
GP	UJR Male nut	1/4	9/16-18UNF	54	24	6	17 x 19.6 Hex.	87	ZT67-1NG
	UJR Female nut (Without pure ring)						19 x 21.9 Hex.		

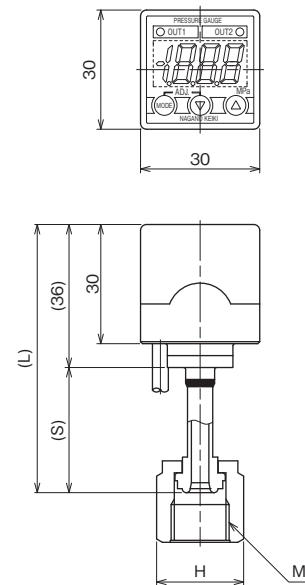
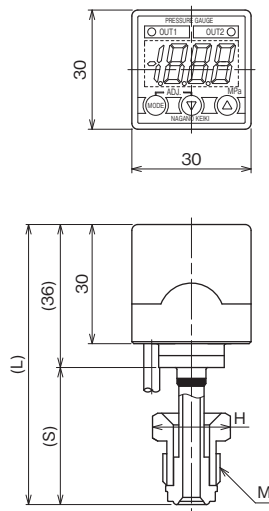
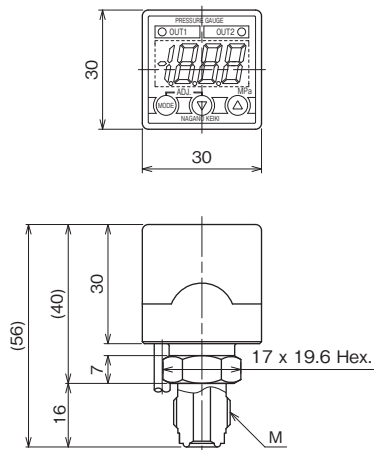
### Dimensions 4

UC/BA/EP/GP Grade

Unit: mm

Vertical mounting  
Type S  
Male Integrated

Vertical mounting  
Type S  
Male nut/Female nut



Compatible with 1/4 VCR

Grade	Connection	Piping DIA.	Screw size M	Model number
UC	Compatible with VCR Male integrated	1/4	9/16-18UNF	ZT67-236

Grade	Connection	Piping DIA.	Screw size M	Dimensions			Model number
				L	S	H	
UC	VCR Male nut	1/4	9/16-18UNF	70	34	16 x 18.5 Hex.	ZT67-2J6
	VCR Female nut (Bearings are not included)			67.4	31.4	19 x 21.9 Hex.	ZT67-2L6
	UJR Male nut			73	37	17 x 19.6 Hex.	ZT67-2N6
	UJR Female nut (With pure ring)			70.5	34.5	19 x 21.9 Hex.	ZT67-2Q6
	CVC Male nut			72	36	15.8 x 18.2 Hex.	ZT67-2W6
	CVC Female nut (Bearings are not included)			67.4	31.4	19 x 21.9 Hex.	ZT67-2Y6

Grade	Connection	Piping DIA.	Screw size M	Model number
BA	Compatible with VCR Male integrated	1/4	9/16-18UNF	ZT67-23N

Grade	Connection	Piping DIA.	Screw size M	Dimensions			Model number
				L	S	H	
BA	VCR Male nut	1/4	9/16-18UNF	70	34	16 x 18.5 Hex.	ZT67-2JN
	VCR Female nut (Bearings are not included)			57.8	21.8	19 x 21.9 Hex.	ZT67-2LN
	UJR Male nut			73	37	17 x 19.6 Hex.	ZT67-2NN
	UJR Female nut (Without pure ring)			57.7	21.7	19 x 21.9 Hex.	ZT67-2QN
	CVC Male nut			72	36	15.8 x 18.2 Hex.	ZT67-2WN
	CVC Female nut (Bearings are not included)			67.4	31.4	19 x 21.9 Hex.	ZT67-2YN

Grade	Connection	Piping DIA.	Screw size M	Model number
EP	Compatible with VCR Male integrated	1/4	9/16-18UNF	ZT67-23E

Grade	Connection	Piping DIA.	Screw size M	Dimensions			Model number
				L	S	H	
EP	UJR Male nut	1/4	9/16-18UNF	70.5	34.5	17 x 19.6 Hex.	ZT67-2NE
	UJR Female nut (Without pure ring)			67.5	31.5	19 x 21.9 Hex.	ZT67-2QE

Grade	Connection	Piping DIA.	Screw size M	Model number
GP	Compatible with VCR Male integrated	1/4	9/16-18UNF	ZT67-23G

Grade	Connection	Piping DIA.	Screw size M	Dimensions			Model number
				L	S	H	
GP	UJR Male nut	1/4	9/16-18UNF	70.5	34.5	17 x 19.6 Hex.	ZT67-2NG
	UJR Female nut (Without pure ring)			67.5	31.5	19 x 21.9 Hex.	ZT67-2QG



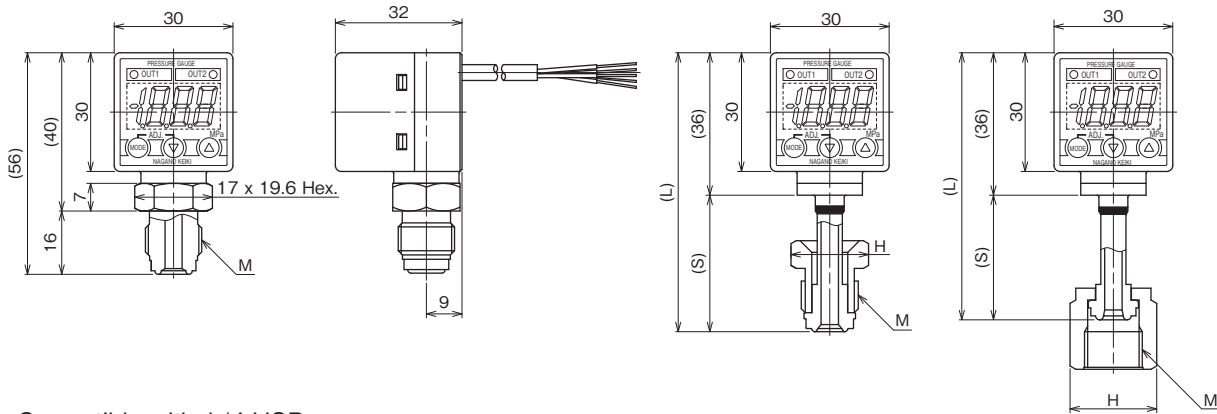
### Dimensions 5

UC/BA/EP/GP Grade

Unit: mm

Vertical mounting  
Type S  
Male Integrated

Vertical mounting  
Type S  
Male nut/Female nut



Compatible with 1/4 VCR

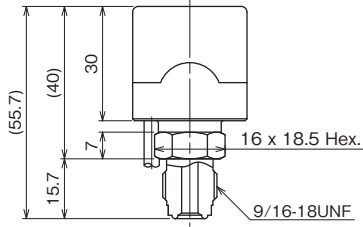
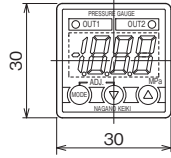
Grade	Connection	Piping DIA.	Screw size M	Model number	Grade	Connection	Piping DIA.	Screw size M	Dimensions			Model number
									L	S	H	
UC	Compatible with VCR Male integrated	1/4	9/16-18UNF	ZT67-A36	UC	VCR Male nut	1/4	9/16-18UNF	70	34	16 x 18.5 Hex.	ZT67-AJ6
									67.4	31.4	19 x 21.9 Hex.	ZT67-AL6
									73	37	17 x 19.6 Hex.	ZT67-AN6
									70.5	34.5	19 x 21.9 Hex.	ZT67-AQ6
									72	36	15.8 x 18.2 Hex.	ZT67-AW6
									67.4	31.4	19 x 21.9 Hex.	ZT67-AY6
BA	Compatible with VCR Male integrated	1/4	9/16-18UNF	ZT67-A3N	BA	VCR Male nut	1/4	9/16-18UNF	70	34	16 x 18.5 Hex.	ZT67-AJN
									57.8	21.8	19 x 21.9 Hex.	ZT67-ALN
									73	37	17 x 19.6 Hex.	ZT67-ANN
									57.7	21.7	19 x 21.9 Hex.	ZT67-AQN
									72	36	15.8 x 18.2 Hex.	ZT67-AWN
									67.4	31.4	19 x 21.9 Hex.	ZT67-AYN
EP	Compatible with VCR Male integrated	1/4	9/16-18UNF	ZT67-A3E	EP	UJR Male nut	1/4	9/16-18UNF	70.5	34.5	17 x 19.6 Hex.	ZT67-ANE
									67.5	31.5	19 x 21.9 Hex.	ZT67-AQE
GP	Compatible with VCR Male integrated	1/4	9/16-18UNF	ZT67-A3G	GP	UJR Male nut	1/4	9/16-18UNF	70.5	34.5	17 x 19.6 Hex.	ZT67-ANG
									67.5	31.5	19 x 21.9 Hex.	ZT67-AQG

## Dimensions 6

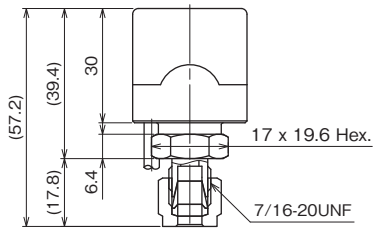
General-use

Unit: mm

### Horizontal mounting Type S

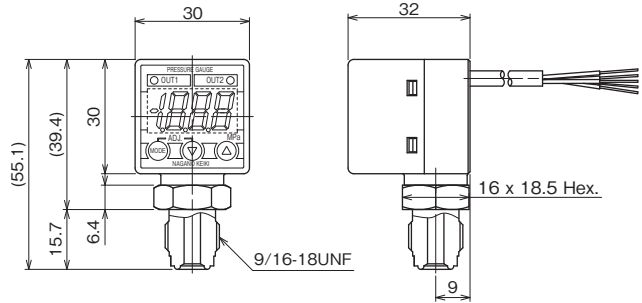


1/4 VCR  
Male

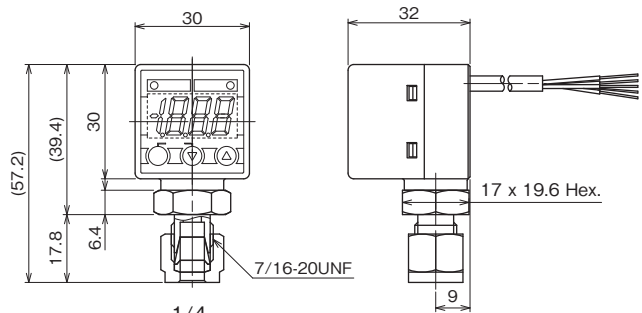


1/4  
SWAGELOK

### Vertical mounting Type S



1/4 VCR  
Male



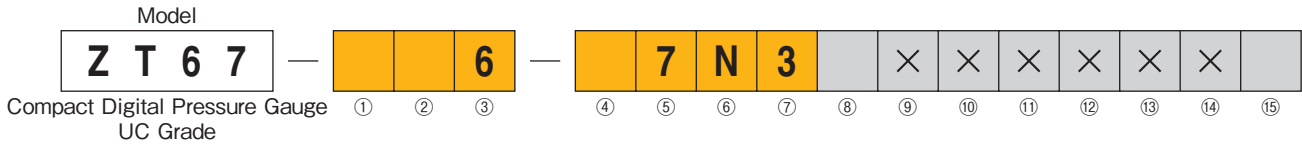
1/4  
SWAGELOK

Fitting shape	Connection	Piping DIA.	Screw size M	Model number
Horizontal mounting, Type S	VCR Male	1/4	9/16-18UNF	ZT67-V01
Vertical mounting, Type S				ZT67-V02
Horizontal mounting, Type S	SWAGELOK		7/16-20UNF	ZT67-V03
Vertical mounting, Type S				ZT67-V04

### UC Grade

#### Model number configuration

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



Model number		Selective spec.	Additional spec. (Option)	
① Mounting	1	Horizontal mounting, Type T		
	2	Horizontal mounting, Type S		
	A	Vertical mounting, Type S		
② Connection	3	1/4	Compatible with VCR Male integrated	Type S <input type="radio"/> Type T <input type="radio"/>
	J	1/4	VCR Male nut	<input type="radio"/> <input type="radio"/>
	K	3/8		<input checked="" type="checkbox"/> <input type="checkbox"/>
	L	1/4	VCR Female nut (Bearings are not included)	<input type="radio"/> <input type="radio"/>
	M	3/8		<input checked="" type="checkbox"/> <input type="checkbox"/>
	N	1/4	UJR Male nut	<input type="radio"/> <input type="radio"/>
	P	3/8		<input checked="" type="checkbox"/> <input type="checkbox"/>
	Q	1/4	UJR Female nut (With pure ring)	<input type="radio"/> <input type="radio"/>
	R	3/8		<input checked="" type="checkbox"/> <input type="checkbox"/>
	W	1/4	CVC Male nut	<input type="radio"/> <input type="radio"/>
	X	3/8		<input checked="" type="checkbox"/> <input type="checkbox"/>
	Y	1/4	CVC Female nut (Bearings are not included)	<input type="radio"/> <input type="radio"/>
	Z	3/8		<input checked="" type="checkbox"/> <input type="radio"/>
③ Wetted parts by grade *1	6	UC Grade ·Pressure sensor: Co-Ni alloy (All welding) ·Fitting: SUS316L		
④ Pressure range	C	-0.1 to 0.3MPa (Number of digit indication: .300)		
	D	-0.1 to 0.5MPa (Number of digit indication: .500)		
	E	-0.1 to 1MPa (Number of digit indication: 1.000)		
	F	-0.1 to 2MPa (Number of digit indication: 2.00)		
	1	0 to 0.3MPa (Number of digit indication: .300)		
	2	0 to 0.5MPa (Number of digit indication: .500)		
	3	0 to 1MPa (Number of digit indication: 1.000)		
	4	0 to 2MPa (Number of digit indication: 2.00)		
	6	0 to 5MPa (Number of digit indication: 5.00)		
7	0 to 10MPa (Number of digit indication: 10.00)			
8	0 to 20MPa (Number of digit indication: 20.0)			
⑤ Display accuracy	7	± (1.0%F.S.+1digit)		
⑥ Power source	N	12 to 24V DC±10%		
⑦ Output signal	3	NPN Open collector x 2 outputs		
⑧ Analog output	0	Nil		
	8	1 to 5V DC (Accuracy: ±3% F.S.)		
⑮ Documents	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.

\* 1 For UC Grade, the pressure gauge can be manufactured in DOUBLE MELT material by request. Please contact us.

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





### GP Grade

#### Model number configuration

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



Model number		Selective spec.		Additional spec. (Option)	
① Mounting	1	Horizontal mounting, Type T			
	2	Horizontal mounting, Type S			
	A	Vertical mounting, Type S			
② Connection	3	1/4	Compatible with VCR Male integrated		
	N	1/4	UJR Male nut		
	Q	1/4	UJR Female nut (Without pure ring)		
③ Wetted parts by grade	G	GP Grade			
		·Pressure sensor: SUS316L (All welding) ·Fitting: SUS316L			
④ Pressure range	C	-0.1 to 0.3MPa (Number of digit indication: .300)			
	D	-0.1 to 0.5MPa (Number of digit indication: .500)			
	E	-0.1 to 1MPa (Number of digit indication: 1.000)			
	F	-0.1 to 2MPa (Number of digit indication: 2.00)			
	1	0 to 0.3MPa (Number of digit indication: .300)			
	2	0 to 0.5MPa (Number of digit indication: .500)			
	3	0 to 1MPa (Number of digit indication: 1.000)			
	4	0 to 2MPa (Number of digit indication: 2.00)			
	6	0 to 5MPa (Number of digit indication: 5.00)			
7	0 to 10MPa (Number of digit indication: 10.00)				
8	0 to 20MPa (Number of digit indication: 20.0)				
⑤ Display accuracy	7	± (1.0%F.S.+1digit)			
⑥ Power source	N	12 to 24V DC±10%			
⑦ Output signal	3	NPN Open collector x 2 output			
⑧ Analog output	0	Nil			
	8	1 to 5V DC (Accuracy: ±3% F.S.)			
⑮ Documents	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 applicable specification.

