



With digital setting display for semiconductor industry

ZT30 Electronic pressure switch

OUTLINE

The ZT30 is an ultra clean (UC) specifications pressure switch with digital setting and pressure display functions. Setting is easily performed while watching the LCD display even when pressure is not applied. High-speed digital comparator also allows use in control of devices with rapid pressure changes.



FEATURES

- Adoption of a Co-Ni alloy pressure sensor at the pressure sensing part improves corrosion resistance, durability, and stability.
- Gas contact surface has a micron class surface roughness that suppresses particle generation.
- Setting is performed by switch while watching the LCD display without pressurization, so that even delicate setting is performed. The comparator operation state can be checked by means of LED operation indicator lamp.
- The upper and lower limits and dead band of each output point can be set within the range by Set 1 or Set 2. EEPROM can memorize the set values for more than 10 years without battery backup.

*Confirm that the gas contact part material is suitable for the gas to be measured.

SPECIFICATIONS 1

Fluid :
Various process gasses

Fitting shape :
T type  S type 

Connection :
1/4, 3/8 UJR, VCR, CVC etc.

Wetted gas part material :
Socket SUS316L
Pressure sensor Co-Ni alloy
*For fitting material, CRP processing and double vacuum melted material are also available. Please contact NKS for more information.

Pressure range :
0~300kPa→0~20MPa
-100~300kPa→-0.1~2MPa

Max. allowable pressure :
Twice the pressure range

Operating temperature range :
-10~60°C

Storage temperature range :
-20~70°C

Display accuracy :
±(1.0%F.S.+1 digit)

Pressure display :
3 digit LCD (character height 6mm)

Display period :
Approx. 0.2 s

Power source :
24V DC ±20%, 30mA DC max.

Output :
Open collector output 30V DC 80mA DC max.

Setting :
Setting 1 or Setting 2

Response time :
Within 10ms

Setting range :
Free within range

Dead band :
Free within operation range

Operation lamp :
LED display (Lit when ON)

Repeatability :
Within ±0.2%F.S. (Hysteresis, Value including short-term creep)

Temperature coefficient :
±0.1%F.S./°C (Zero point)
±0.1%F.S./°C (Span)
*±0.05F.S./°C is also available. Please contact NKS for more information.

Wetted gas part treatment :
Ultra clean (UC) treatment
"Total clean system" based on thorough quality control from manufacture to shipment. Especially, this is characterized in our surface treatment, welding, and ultrasonic cleaning know-how.

Air tightness (He vacuum method) :
 $5 \times 10^{-12} \text{Pa} \cdot \text{m}^3 / \text{s}$ or less

Particles :
Particles larger than $0.1 \mu\text{m}$ are not counted.
(Under NKS inspection standards)

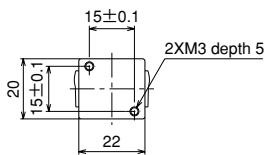
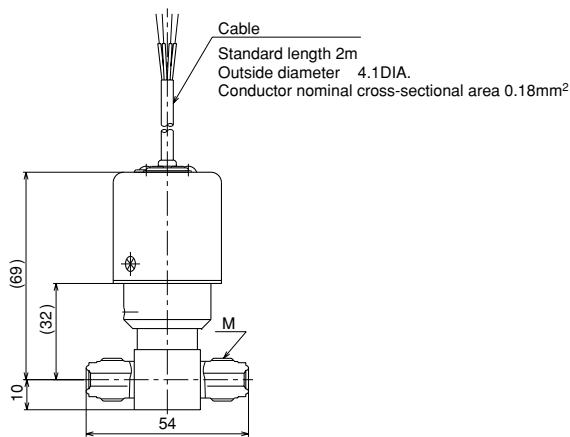
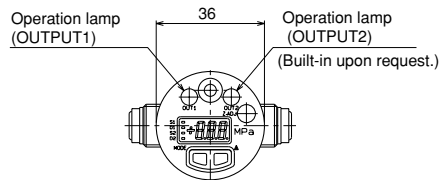
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SPECIFICATIONS 2

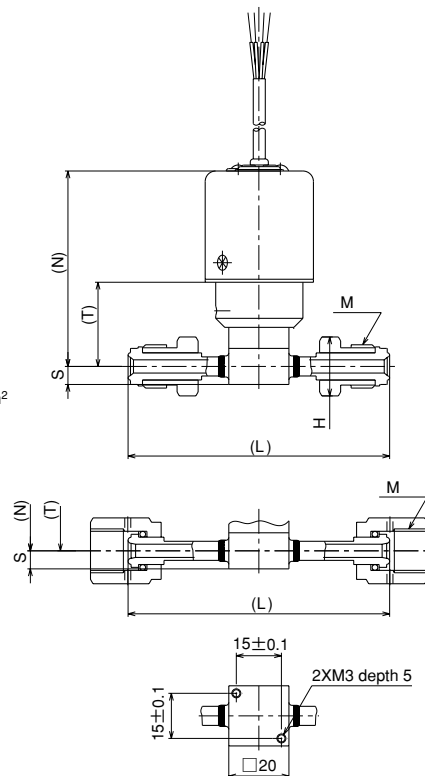
Pressure range	Max. display	Pressure range	Max. display
0 ~ 300 kPa	300	-100 ~ 300 kPa	300
0 ~ 500 kPa	500	-100 ~ 500 kPa	500
0 ~ 1 MPa	1.00	-0.1 ~ 1 MPa	1.00
0 ~ 2 MPa	2.00	-0.1 ~ 2 MPa	2.00
0 ~ 3.5 MPa	3.50		
0 ~ 5 MPa	5.00		
0 ~ 10 MPa	10.0		
0 ~ 20 MPa	20.0		

DIMENSIONS 1

[T type]



Number	Connection fitting	Pipe dia.	Thread size M
ZT30-136	VCR compatible male	1/4	9/16-18UNF

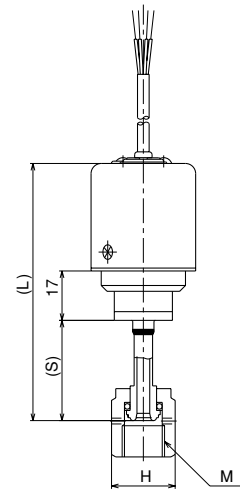
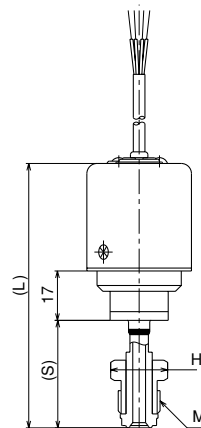
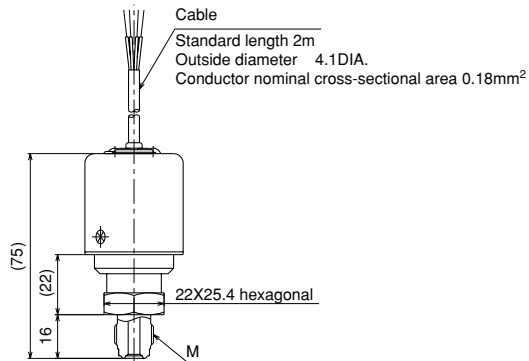
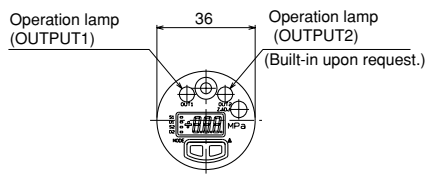


Number	Connection fitting	Pipe dia.	Thread size M	Length (mm)				
				N	T	S	H	L
ZT30-1E6	VCR compatible male nut (TOM JOINT)	1/4	9/16-18UNF	65	28	6	16×18.5 hexagonal	90
ZT30-1F6		3/8	7/8-14UNF	70.5	33.5	7	24×27.7 hexagonal	95
ZT30-1G6	VCR compatible female nut (SUPER TOMJON)	1/4	9/16-18UNF	65	28	6	19×21.9 hexagonal	79
ZT30-1H6		3/8	7/8-14UNF	70.5	33.5	7	27×31.2 hexagonal	83
ZT30-1J6	VCR male nut	1/4	9/16-18UNF	65	28	6	16×18.5 hexagonal	86
ZT30-1K6		3/8	7/8-14UNF	70.5	33.5	7	24×27.7 hexagonal	90.5
ZT30-1L6	VCR female nut *	1/4	9/16-18UNF	65	28	6	19×21.9 hexagonal	80.8
ZT30-1M6		3/8	7/8-14UNF	70.5	33.5	7	27×31.2 hexagonal	81.8
ZT30-1N6	UJR male nut	1/4	9/16-18UNF	65	28	6	17×19.6 hexagonal	87
ZT30-1P6		3/8	7/8-14UNF	70.5	33.5	7	23×26.6 hexagonal	100
ZT30-1Q6	UJR female nut (w/pure ring)	1/4	9/16-18UNF	65	28	6	19×21.9 hexagonal	87
ZT30-1R6		3/8	7/8-14UNF	70.5	33.5	7	26×30 hexagonal	100
ZT30-1W6	CVC male nut	1/4	9/16-18UNF	65	28	6	15.8×18.2 hexagonal	86
ZT30-1X6		3/8	7/8-14UNF	70.5	33.5	7	23.8×27.5 hexagonal	90.6
ZT30-1Y6	CVC female nut *	1/4	9/16-18UNF	65	28	6	19×21.9 hexagonal	80.8
ZT30-1Z6		3/8	7/8-14UNF	70.5	33.5	7	27×31.2 hexagonal	82

*No bearing

DIMENSIONS 2

[S type]



Number	Connection fitting	Pipe dia.	Thread size M
ZT30-236	VCR compatible male	1 / 4	9/16-18UNF

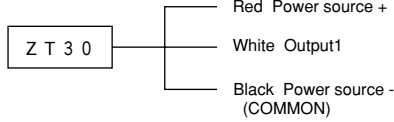
Number	Connection fitting	Pipe dia.	Thread size M	Length (mm)		
				L	H	S
ZT30-2E6	VCR compatible male nut (TOM JOINT)	1 / 4	9/16-18UNF	84.5	16×18.5 hexagonal	30.5
ZT30-2G6	VCR compatible female nut (SUPER TOMJON)	1 / 4	9/16-18UNF	84.5	19×21.9 hexagonal	30.5
ZT30-2J6	VCR male nut	1 / 4	9/16-18UNF	88	16×18.5 hexagonal	34
ZT30-2L6	VCR female nut *	1 / 4	9/16-18UNF	85.4	19×21.9 hexagonal	31.4
ZT30-2N6	UJR male nut	1 / 4	9/16-18UNF	91	17×19.6 hexagonal	37
ZT30-2Q6	UJR female nut (w/pure ring)	1 / 4	9/16-18UNF	88.5	19×21.9 hexagonal	34.5
ZT30-2W6	CVC male nut	1 / 4	9/16-18UNF	90	15.8×18.2 hexagonal	36
ZT30-2Y6	CVC female nut *	1 / 4	9/16-18UNF	85.4	19×21.9 hexagonal	31.4

*No bearing

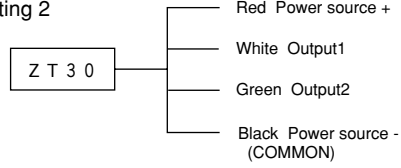
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WIRING DIAGRAM

Setting 1

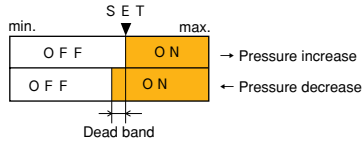


Setting 2

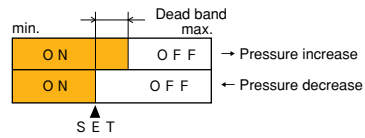


OPERATION SYSTEM

Upper limit setting : Transistor turned ON at set point when pressure increases

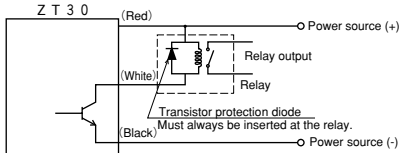


Lower limit setting : Transistor turned ON at set point when pressure decreases

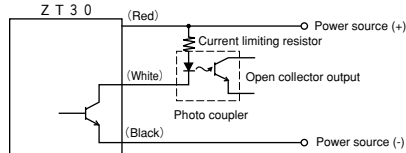


EXAMPLE OF OPEN COLLECTOR OUTPUT USE

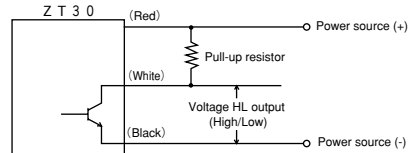
① Relay connection



② Photo coupler connection



③ Voltage output



Note) The rated current and voltage of the operation coil shall be within the transistor rating.

NOTE

Do not use with facilities which may cause ignition or explosion when the instrument atmosphere (except fluid under test) is in the normal state.

ZT30 Electronic pressure switch

Model number configuration

For ordering, please specify the model number, each specs and the pressure range.

(Note: "X" for each type is not specified. When ordering, please specify "X".)

Model name

Z T 3 0

① ② **6**

④ ⑤ **1**

⑧ × ⑨ × ⑩ × ⑪ × ⑫ × ⑬ × ⑭ × ⑮

Electronic pressure switch

Model number

Selective spec.

Additional spec.

① Shape	1	T type	
	2	S type	
② Connection	3	1/4 VCR compatible male	
	E	1/4 VCR compatible male nut (TOM JOINT)	
	F	3/8 VCR compatible male nut (TOM JOINT)	Only T type is available.
	G	1/4 VCR compatible female nut (SUPER TOMJON)	
	H	3/8 VCR compatible female nut (SUPER TOMJON)	Only T type is available.
	J	1/4 VCR male nut	
	K	3/8 VCR male nut	Only T type is available.
	L	1/4 VCR female nut (No bearing)	
	M	3/8 VCR female nut (No bearing)	Only T type is available.
	N	1/4 UJR male nut	
	P	3/8 UJR male nut	Only T type is available.
	Q	1/4 UJR female nut (w/pure ring)	
	R	3/8 UJR female nut (w/pure ring)	Only T type is available.
③ Wetted gas part material	6	Pressure sensor: Co-Ni alloy Socket: SUS316L	
④ Pressure range (MPa)	1	- 100 ~ 300 , 500 kPa, - 0.1 ~ 1, 2 MPa	
	2	0 ~ 300 , 500 kPa, 0 ~ 1.2 , 3.5 , 5, 10, 20 MPa	
⑤ Temperature coefficient	3	± 0.05 % F. S. / °C (0.5MPa range or greater can be specified)	
	5	± 0.1 % F. S. / °C	
⑥ Power source	1	2 4 V DC ±20%	
⑦ Contacts & setting	A	H : Upper limit with 1 setting	
	B	L : Lower limit with 1 setting	
	C	HL : Upper and lower limit setting	
	D	2H : Upper limit with 2 setting	
	E	2L : Lower limit with 2 setting	
⑮ Documents	0	Nil	
	1	Required (Please specify the desired documents separately.) Submission drawings, instruction manual, inspection procedure, mill sheet, test report (1 pc 1 copy), traceability certificate, calibration certificate, standard inspection certification, strength calculation, attended inspection	

(When ordering, please specify the range and units separately.)



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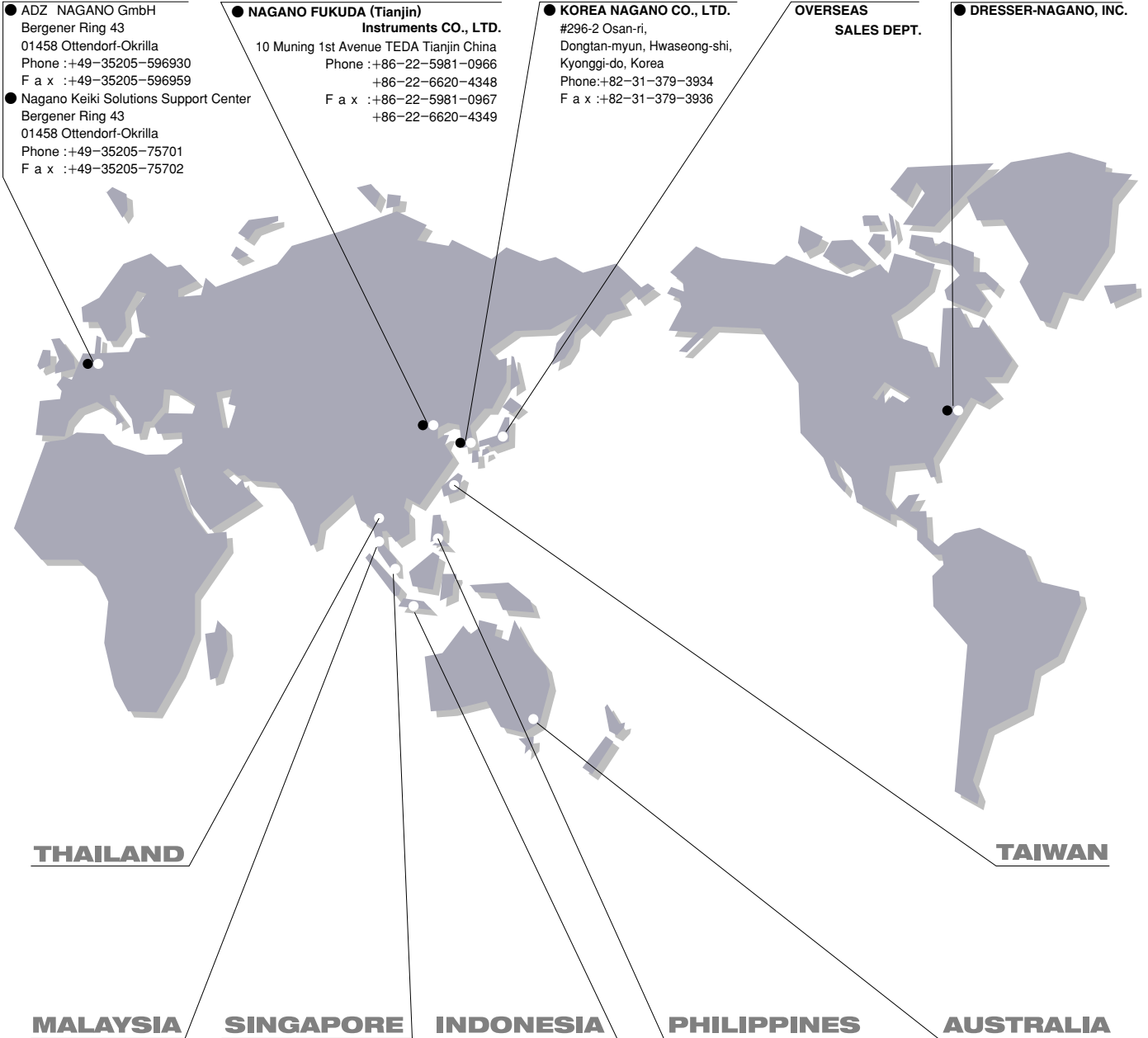
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