



TEMPERATURE SENSOR

MODEL TR1

Features

The TR1 is an all-purpose temperature sensor that uses a platinum resistor. It is capable of making highly accurate temperature measurements for various fluids in the production process.

Specifications

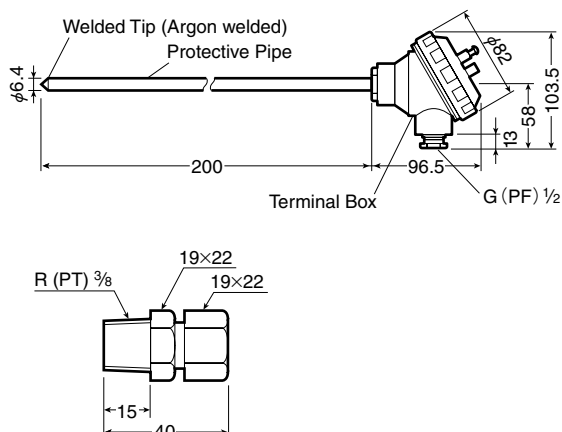
Model		Standard: TR1-35S-6.4-200-PD-NG-E
Temp. Sensing Element	Applicable standard	JIS C1604-1997 "Resistance Temperature Detector"
	Sensor type	Sheathed platinum RTD
	Element type	JIS/IEC Pt 100 (3-wire type)
	No. of elements	Single element (1)
	Class (Precision)	B Class
	Normal current	2mA DC
	Temperature measurement range	0-350°C
	Protecting pipe diameter	φ 6.4mm
	Protecting pipe length	200mm
	Protecting pipe material	SUS316
Terminal Box	Temperature measurement contact	Non-grounded
	Type of terminal box	Drip-proof (large)
	No. of terminals	3
	Cable connection port	G (PF) 1/2
	Material	Die-cast aluminum
Support Fittings	Terminal board material	Steatite
	Color	Silver
	Fittings	Compression fitting
	Compression fitting size	R (PT) 3/8 (male thread)
	Compression fitting material	SUS304



To avoid abnormal operation, accidents or serious injury, DO NOT use this product outside of the specification range. Local regulations may restrict the use of this product to below the conditions quoted.

Dimensions

Model: TR1-35S-6.4-200-PD-NG-E (Standard) (mm)



Measurement Accuracy

Measured Temperature (°C)	Accuracy (°C)	
	A Class	B Class
0	± 0.15	± 0.3
100	± 0.35	± 0.8
200	± 0.55	± 1.3
300	± 0.75	± 1.8
400	± 0.95	± 2.3

Class	Accuracy (°C)
A Class	± (0.15+0.002 t) °C
B Class	± (0.30+0.005 t) °C

* |t| = Measured temperature regardless of +/- sign

Range of Specifications

Specification		Description	
Temperature Sensing Unit	Sensor type	○ Sheathed platinum RTD ● Conventional platinum RTD	
	Element type	○ Pt100 (3-wire) JIS/IEC ● JPt100 (3-wire) JIS	
	No. of elements	○ Single element (1) ● Double element (2)*1	
	Class (accuracy)	● A class ○ B class	
	Recommended signal current	○ 2mA DC ● 5mA DC (for B class only)	
	Operating temperature range*2	● L (low temperature): -200 – 100 °C ○ M (medium temperature): 0 – 350 °C ● H (high temperature) 0 – 650 °C*3	
	Protective pipe diameter (mm)	Sheathed	● 4.8 ○ 6.4 ● 8.0
		Conventional	● 5.0 ● 8.0 ● 12.0 ● 6.0 ● 10.0 ● 15.0
	Protective pipe length*4 ℓ (mm)	● 100 ● 300 ● 500 ○ 200 ● 400 ● 600 or greater	
	Protective pipe material	○ Sheathed: SUS316 ● Conventional: SUS304	
Temp. measuring contact	○ Non-grounded		
Terminal Box	Type of terminal box	○ Drip proof (large) Cable connection port: G(PF)½ Protective pipe diameter: 4.8–15 mm ● Drip proof (small) Cable connection port: G(PF)½ Protective pipe diameter: 4.8–8 mm	
	No. of terminals	○ 3 (6 for double element type)	
	Material	○ Die-cast aluminum	
	Terminal box material	○ Steatite	
	Color	○ Drip prove: Silver	
Support Fittings	Type of support fitting	○ Compression fitting (male thread) ● Fixed nipple (male thread) ● Loose nipple (male thread) ● Fixed flange ● Loose flange*5 ● Without support fitting	
	Size of support fittings	○ Compression fitting ● Fixed nipple ● Loose nipple	
		Fixed flange	● R(PT) 1/8 ● G(PT) 1/4 ● NPT 3/8 ● R(PT) 1/4 ● G(PT) 1/8 ● NPT 1/2 ○ R(PT) 3/8 ● G(PT) 3/8 ● R(PT) 1/2 ● G(PT) 1/2 ● R(PT) 3/4 ● G(PT) 3/4 ● R(PT) 1 ● G(PT) 1
	Material of fittings	● ASME Class 150 RF: 15, 20, 25mm ● ASME Class 300 RF: 25 mm For other standards and sizes consult TLV ○ Threaded: SUS304 ● Fixed flange: SUS304 ● Loose flange: Cast iron, painted black	

* ○ Indicates standard specifications.
*1 Double element types can only be manufactured with sheathed type sensors and drip proof terminal boxes (large).
*2 These specifications show the operating temperature range for the element itself. The normal operating temperature for the sensor is 350 °C.
*3 Temperature is 500 °C max. for JPt100H (high temperature) and sheathed platinum RTD.
*4 Can be manufactured if length is at least 100 mm. Please specify in 100 mm increments, if possible.
*5 One size only; nominal diameter and flange standard need not be specified.

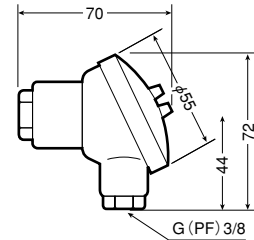
Dimensions

Terminal Box

- Drip-proof Type Terminal Box (large)

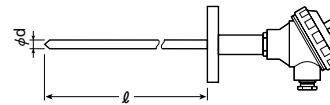
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- Drip-proof Type Terminal Box (small)



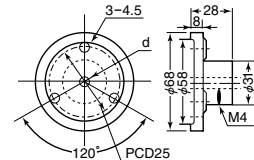
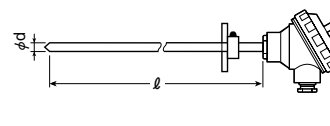
Support Fittings

- Fixed Flange (SUS304)

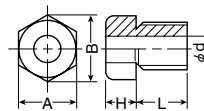
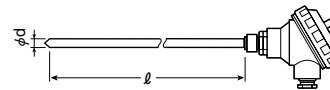


Protective Pipe Diameter d (mm)
5 – 15

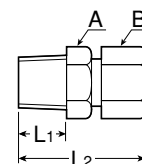
- Loose Flange (Cast Iron)



- Fixed/Loose Nipple (SUS304)



- Compression Fitting



Size	Prot. Pipe Max. Dia d	Nipple Dim.			
		A	B	H	L
R(PT) · G(PF) 1/8	6	14	16.2	6	10
R(PT) · G(PF) 1/4	8	17	19.6		12
R(PT) · G(PF) · NPT 3/8	10	21	24.2	7	15
R(PT) · G(PF) · NPT 1/2	12	26	30	10	18
R(PT) · G(PF) 3/4	15	32	37	16	22
R(PT) · G(PF) 1		41	47.3		

Size	Prot. Pipe Max. Dia d	Fitting Dimensions			
		L1	L2	A	B
R(PT) G(PF) 1/8	4.8	10	31	14×16	14×16
R(PT) G(PF) 1/4	4.8 6.4 8.0	12	37	17×19	17×19
R(PT) G(PF) 3/8 NPT		15	40	19×22	19×22
R(PT) G(PF) 1/2 NPT	20	50	26×30	21×24	
R(PT) G(PF) 3/4	22	53	32×37		
R(PT) G(PF) 1	30	68	14×17		



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Manufacturer

ISO 9001/ISO 14001

TLV CO., LTD.
Kakogawa, Japan

is approved by LRQA Ltd. to ISO 9001/14001

