

MT1300 Hygienic Temperature Sensor/Transmitter (For food, medicine Application)

OVERVIEW

MT1300 series of temperature sensor is a special hygienic temperature sensor for food, medicine and environmental protection industries. Relevant hygienic design conforms to EHEDG, FDA and GMP standards. The sensitive element adopts imported high-precision platinum thermistor (thermocouple) to directly measure the liquid, gas and steam within the range of - 200-600c in various production processes, with stable performance and high measurement accuracy, which is often used with recorders and regulating instruments. The sensor can also be equipped with an integrated chip, using standard 4-20mA current signal or 1-10vdc voltage signal output.



MAIN FEATURES

- The hygienic design meets the standards of EHEDG, FDA and GMP;
- The sensor's material and structure design conform to 3A sanitary standard;
- Sensor material or liquid receiving material is all 316L stainless steel structure, without sanitary dead angle;
- High precision measurement: use PT100 temperature sensor conforming to IEC 60751 (Class A or higher);
- High flexibility: modular structure design, standard terminal block, user-defined probe and insertion depth; various installation interfaces: clamp, flange, thread, lock, etc;
- Supporting isolation module, strong anti-interference ability;
- Can be used alone or integrated amplifier output current or voltage signal;
- It can integrate many kinds of on-site display, display angle and freely adjust switch control;

FREQUENCY RESPONSE

Sensor tip diameter and reaction time: all sensors can have thin tips to ensure short reaction time. The reaction time mentioned below is measured according to the boiling water of Pt100 sensor.

<p>Sensor type end Φ 6mm Validity: $T50 \leq 3.0s$ 90%-time: $t50 \leq 8.0s$</p>	<p>Sensor type end Φ 4mm Validity: $T50 \leq 2.4s$ 90%-time: $t90 \leq 6.5s$</p>	<p>Sensor type end Φ 3mm Validity: $T50 \leq 0.5s$ 90%-time: $t90 \leq 1.5s$</p>

SPECIFICATION

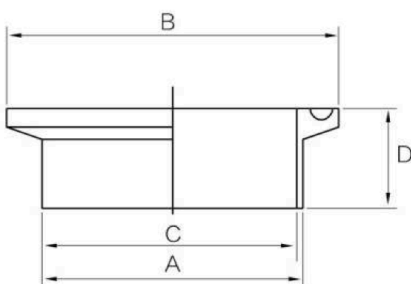
Measuring medium	Liquid gas vapor solid surface
Output signal	4-20mA 0-10V PT100
Power supply	12 - 36VDC (Default 24VDC)
Accuracy grade	± 0.1% F.S, ± 0.2% F.S, ± 0.5% F.S
Ambient temperature	-25 ~+ 85 ° C (standard type), -25 ~+ 120 ° C (high temperature type)
Electrical connection	Direct lead, M12 waterproof plug, Aviation plug, Hesman plug
Probe outer diameter	min.3mm max. 100mm
Response time	Φ10 t < 15s, Φ 8 t < 12 s, Φ6t < 10s, Φ3t < 3s
Load resistance	0-600Ω
Insulation resistance	≤500M Ω/100VAC
Insertion depth	10 mm - 2000 mm
Probe material	304,316L,1Cr1 8Ni9Ti
Process pressure	3Mpa (regular) customizable
Relative humidity	5% - 95% RH, non condensing
Impact of ambient temperature change	Class 0.1 0.01%. FS / ° C, Grade 0.2 0.02%. FS / ° C, Grade 0.5 / 0.05%. FS / ° C
Protection level	IP65 Standard), IP66 (Custom)
Explosion-proof	ExdIICT6

Remarks:

- The cold end temperature resistance of the sensor is up to 250 ° C;
- 1 x PT100, 2 x PT100, thermal resistance or thermocouple free choice;
- The integrated resistance signal output has higher measurement accuracy and better measurement stability;
- With integrated amplifier, current signal is 4-20mA, voltage signal is 1-5V;
- Digital communication meets Hart, RS485, FF Bus;
- The sensor can be connected with various processes, cables and electrical interfaces.

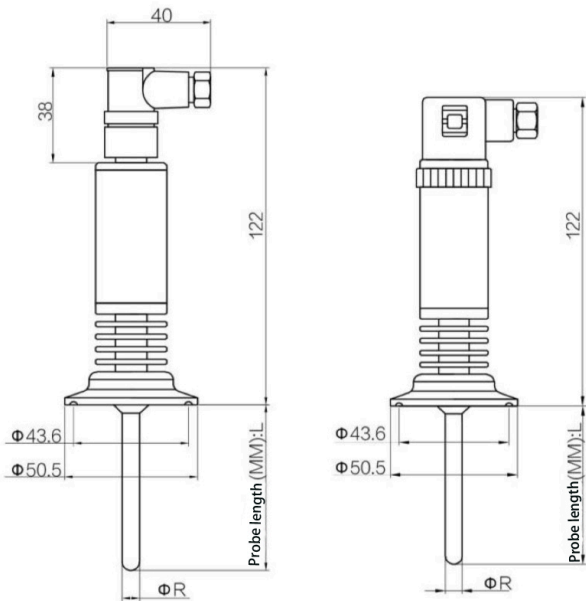
DIMENSIONS OF SANITARY CHUCK

Sensor tip diameter and reaction time: all sensors can have thin tips to ensure short reaction time. The reaction time mentioned below is measured according to the boiling water of Pt100 sensor.

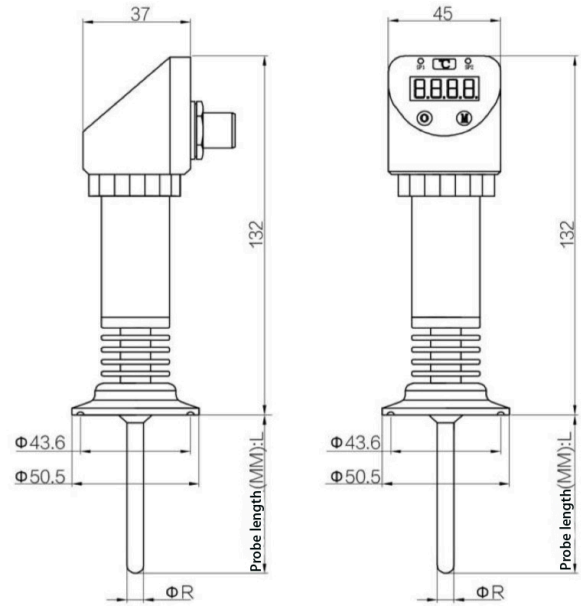


DN	Size	A (Outer diameter of tube)	B (Butt diameter)	C (Inner diameter of pipe)	D (Width)
20	3/4	20	50.5	17.6	21.5
25	1	25	50.5	22.6	21.5
32	1-1/4	32	50.5	29.6	21.5
40	1-1/2	38	50.5	35	21.5
50	2	51	64	48	21.5
60	2-1/2	63.5	77.5	60.5	21.5
80	3	76.1	91	72.1	21.5
90	3-1/2	88.9	106	84.9	21.5
100	4	101.6	119	97.6	28

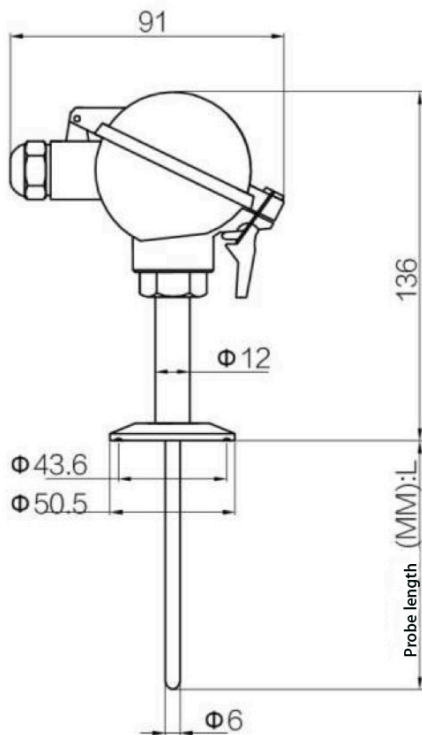
DIMENSION



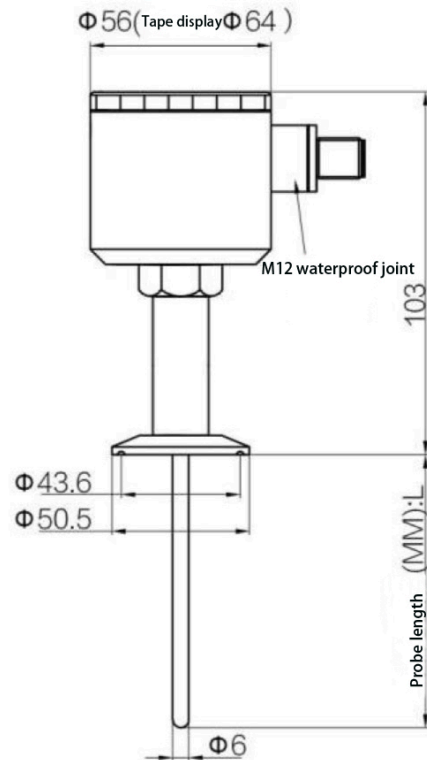
MT1301



MT1302



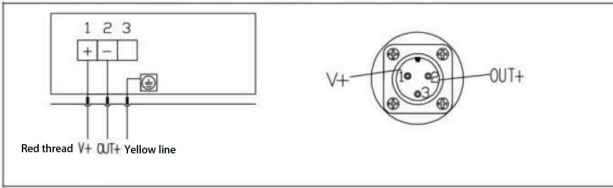
MT1303



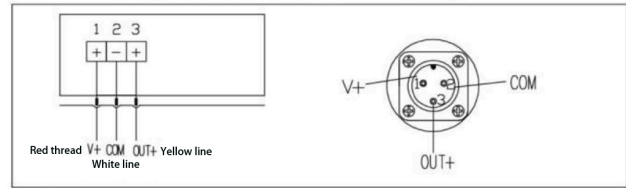
MT1304

ELECTRIC CONNECTION

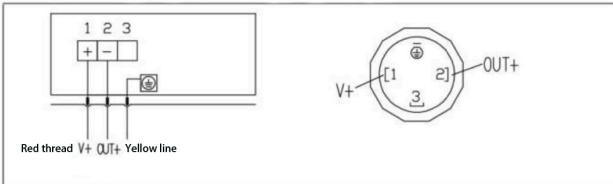
M12 waterproof connector two wire system current signal wiring diagram



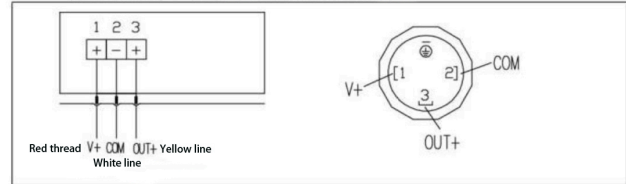
M12 waterproof connector San wire system voltage signal wiring diagram



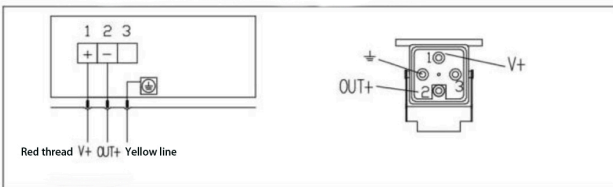
Wiring diagram of two wire system current signal of air terminal



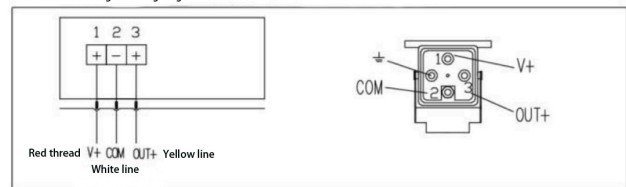
Wiring diagram of three wire system current signal of aviation plug



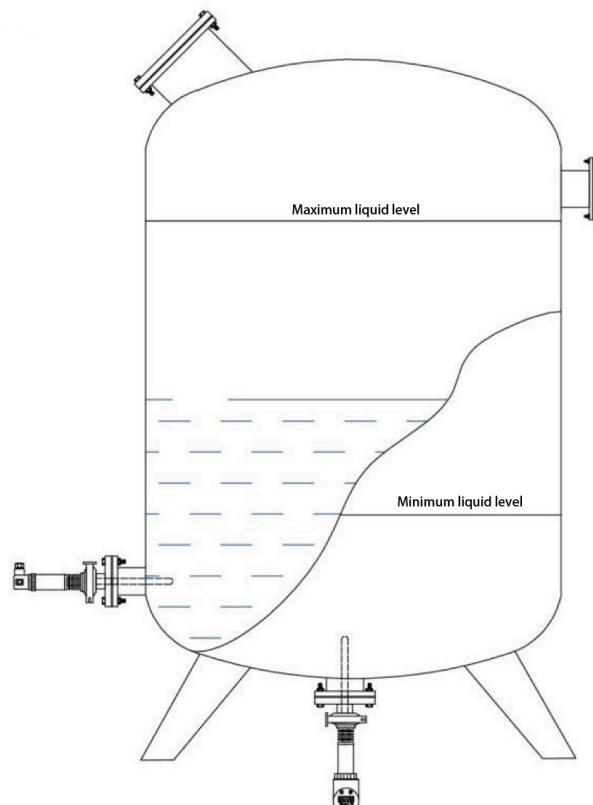
Two wire current signal wiring diagram of hesman connector



Three wire current signal wiring diagram of hesman connector



APPLICATION



ORDER CODE

MT1300	Series temperature transmitter							
	CODE	Electrical form model type						
	A	Direct lead						
	B	M12 waterproof joint						
	C	Aerial connector						
	D	Hesman connector						
	E	Cast aluminum junction box						
	F	All stainless steel explosion-proof junction box						
	G	Intelligent integrated (explosion-proof) junction box						
	CODE	Resistance form						
	S	Single 1 * PT100						
	D	Double 2 * PT100						
	CODE	Range						
	R1	-50~200° C						
	R2	0~150° C						
	R3	0~200° C						
	C	More customized on request						
	CODE	Signal output						
	1	4~20mA						
	2	1~5VDC, 0~10VDC, 1~10VDC						
	PT	PT100						
	PN	2 way relay switch 4~20mA						
	TH	4~20mA with HART						
	TM	Modbus485, 4~20mA						
	CODE	Process connection						
	A	Threaded connection						
	B	50.5mm chuck						
	C	64mm chuck						
	D	Attachment 60 ° tapered seal						
	E	Accessory spherical seal						
	F	Sleeve thread						
	G	No fixture						
	CODE	Accuracy						
	1	±0.1% F.S						
	2	±0.25% F.S						
	3	±0.5% F.S						
	CODE	Probe diameter & length						
	C	Customized according to request						
MT1303	A	S	R2	1	B	2	C	Length:100mm, Diameter: 8mm