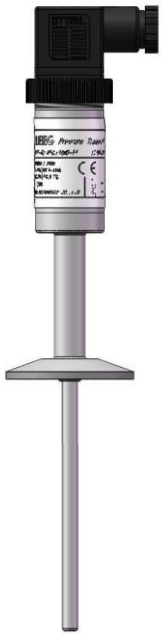
Product introduction

Description



LG200-DRD Flange installation

LG200-DRH Thread installation

LG200 integrated temperature transmitter adopts ASIC&SMT signal transmitting module, optional built-in backlight and button operation LCD display module. The integrated transient voltage terminal satisfy 4 grade standard (difference-mode voltage 2000V, common-mode voltage 4000V), suitable for bad surge voltage occasions. LG200 integrated temperature transmitter provides a flexible and reliable solution for any temperature measurement applications.

Main parameters

Measuring range	-50 - 400℃
Output signal	4-20mA, 1-5VDC, sensor signal output
Reference accuracy	±0.5% URL

Field of application

Temperature measurement

Measuring medium

The fluid which compatible with wetted parts

Technical Specifications

Measuring range and limit

-50-400℃, min measuring range 100℃
Above measurement range can be replaced by ℉ or K units. Provide other measuring range according to requirements. Adjust requirements: lower range value (LRV) and upper range value (URV) can be adjusted within the scope of the upper and lower range limit, smallest calibratable span≤ | URV-LRV | ≤ upper range limit

Standard specifications and reference conditions

Test standard: GB/T30121 / IEC60751; Zero based-calibration span, 4-20mA analog output

Performance specifications

The overall performance including but not limited to 【reference accuracy】, 【environment temperature effects】and other comprehensive error
Typical accuracy: ±0.5%URL
Stability: superior to ±0.05% URL or 0.1℃/year, whichever is greater@ under the checking condition

Reference accuracy

Including linearity, hysteresis and repeatability. calibration temperature: 20 ℃ ± 5 ℃			
Linear output accuracy	Typical	±0.5% URL	Full scale

Ambient temperature effects(reference accuracy: 22℃)

≤ ±0.005% URL/℃, temperature 22℃

Power supply effects

≤±0.01% URL/V, power supply 24V(refer to full scale output 20mA)

Loading effects

≤±0.02% URL/100Ω(refer to full scale output 20mA)

Vibration effects

According to IEC60068-2-6, 4g/2...100HZ

Output signal

Signal	Type	Output
4-20mA	Linearity	Two wire
1-5VDC	Linearity	Three wire
Sensor output	Linearity	Two wire, there wire, four wire

Insulation resistance

≥ 20MΩ@ reference, 100VDC

Power supply

Items	Operating conditions
Standard	10-30VDC
Power consumption	≤500mW@24VDC，20.8mA

Disclaimer: all the data used in the product description is not legally binding. Relevant technical details may be changed due to further improve

Technical Specifications

Damping time

Total damping time constant: equal to the sum of damping time of amplifer and sensor capsule
Reaction time: ≤10s@ water flow 0.4m/s, outer diameter: 6mm

Environment condition

Items	Operational condition
Working temperature	-40-85℃
Storage temperature	-40-100℃
Working humidity	0-95%RH
Protection class	IP65, IP67

Reaction time(Test standard: IEC60751, 10s@ water flow 0.4m/s)

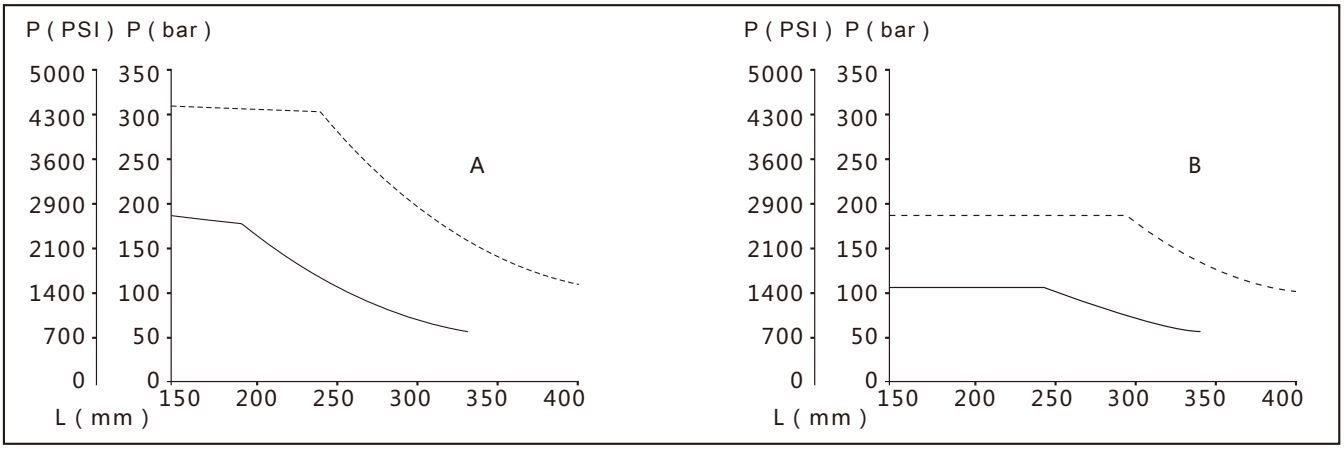
Thermal protection tube				
Outer diameter	Reaction time	Reducing pipe 5.3mm	Cone shaped tube 6.6mm or 9mm	Straight tube
10mm(wall thickness 1 mm)	t50 t90	7.5s 21s	11s 37s	18s 55s
12mm(wall thickness 1 mm)	t50 t90	7.5s 21s	- -	18s 55s
16mm(wall thickness 1 mm)	t50 t90	- -	11s 37s	38s 125s

Note: The reaction time above does not include the reaction time of temperature transmitter

Mounting requirements

Mounting direction	None
Mounting position	Pipe, tube or others
Insertion length*	The smallest insertion length should 8 times outer diameter of thermal protection tube, and the end of the probe should reach or surpass the pivot of the tube.
Please consider technique datas and process connection parameters(such as medium flow rate, process pressure and so on) before confirm the insertion length of the transmitter.	

Process pressure(The process pressure dured by thermal protection tube changes along with medium temperature, see chart below)



———— Tube diameter 10mm Tube wall thickness 1mm	A:water, T=50℃	L: Immersion depth
- - - - - - - - - - Tube diameter 12mm Tube wall thickness 2mm	B:superheated steam, T=400℃	P: process pressure

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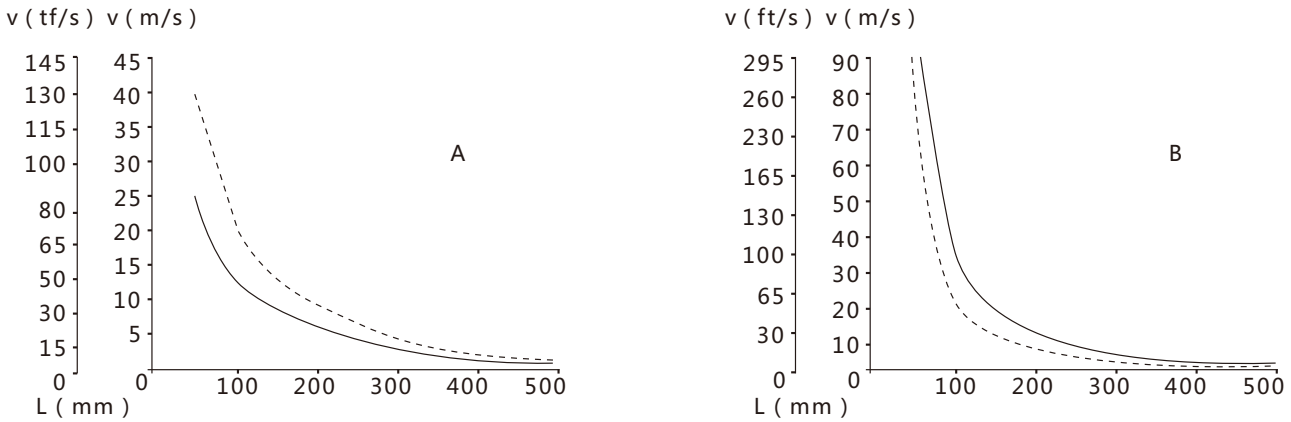
Technical Specifications

Maximum medium flow rate(The maximum medium flow rate dured by thermal protection tube reduces with increases of insertion length, see chart below)



Tube diameter 10mm Tube wall thickness 1mm	A:water, T=50℃	L: immersion depth
Tube diameter 12mm Tube wall thickness 2mm	B:superheated steam, T=400℃	V: flow rate

EMC environment

NO.	Test items	Basic standards	Test conditions	Performance level
1	Radiated interference	GB/T 9254/CISPR22	30MHz-1000MHz	OK
2	Conducted interference (DC power port)	GB/T 9254/CISPR22	0.15MHz-30MHz	OK
3	Electrostatic discharge immunity test (ESD)	GB/T 17626.2/IEC61000-4-2	4kV(Contact),8kV(Air)	B(Note2)
4	Immunity to radio frequency EM-fields	GB/T 17626.3/IEC61000-4-3	10V/m(80MHz-1GHz)	A(Note1)
5	Power frequency magnetic field Immunity test	GB/T 17626.8/IEC61000-4-8	30A/m	A(Note1)
6	Electrical fast transient / Burst Immunity Test	GB/T 17626.4/IEC61000-4-4	2kV(5/50ns,100kHz)	B(Note2)
7	Surge immunity requirements	GB/T 17626.5/IEC61000-4-5	1kV(Line to line) 2kV(Line to ground) (1.2us/50us)	B(Note2)
8	Immunity to conducted disturbances induced by radio frequency fields	GB/T 17626.6/IEC61000-4-6	3V(150kHz-80MHz)	A(Note1)

(Note 1)Performance level A: The preformance within the limits of normal technical specifications.
(Note 2)Performance level B: Temporary reduction or loss of functionality or preformance, it can restore itself. The actual operating conditions, storage and data will not be changed.

Product selection instruction

Pressure sensor types

Code	Nominal value	Description
R1	Sensor types	PT100 RTD

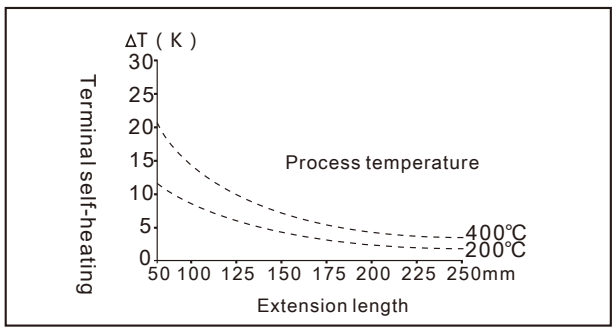
Transmission module

Code	Items	Description
F	Output signal	4-20mA, power supply: 10-30VDC
1		1-5VDC, power supply: 12-30VDC
X		Sensor signal output, two wire
Y		Sensor signal output, there wire
Z		Sensor signal output, four wire

Extension tube selection

Code	Items	Description
Q1	Specifications	None
Q2		Material: SUS316, length: 50mm, outer diameterΦ12
Q3		Material: SUS316, length: 100mm, outer diameterΦ12
Q4		Material: SUS316, length: 150mm, outer diameterΦ12
Q5		Material: SUS316, length: 200mm, outer diameterΦ12

Extension tube length



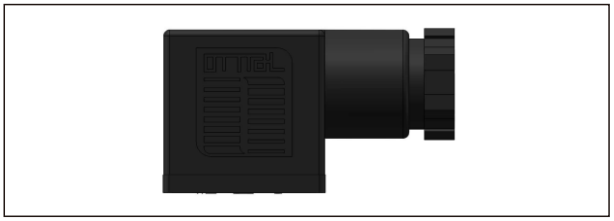
The relation chart of thermal resistance terminal self-heating and process temperature

Terminal temperature= environment temperature+ terminal self-healting

Electrical connection select instruction

Code	Description
D1	DIN43650, IP65
H1	Aviation plug, 4 pin, M12*1, IP67

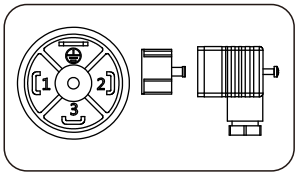
DIN43650(D1)



M12*1, 4 pins, aviation plug(H1)

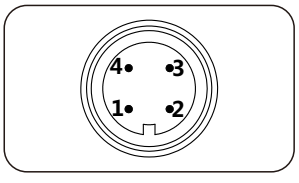
Electrical connection(voltage and current signal output)

DIN43650(D 1)



Label	Two wires	Three wires	Four wires
1	Power+	Power+	Power+
2	Power -	Power-	Power -
3		Signal+	Signal+
⏚			Signal-

M12*1, 4 pins, aviation plug(H1)

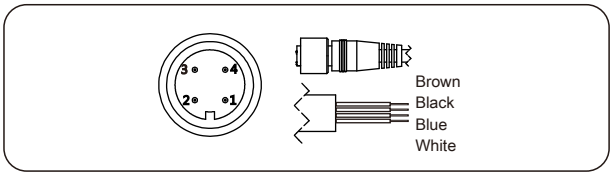


Label	Two wires	Three wires	Four wires
1	Power+	Power+	Power+
2			Power -
3		Signal+	Signal+
4	Power -	Power-	Signal-

Product selection instruction

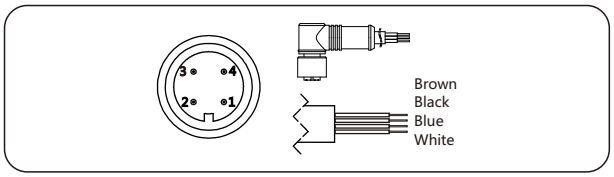
Electrical connection accessory (voltage and current signal output)

Aviation plug straighter(J1)



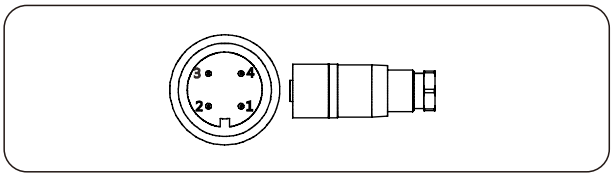
label	Two wires	Three wires	Four wires
1/Brown	Power+	Power+	Power+
2/White			Signal-
3/Blue		Signal+	Signal+
4/Black	Power-	Power-	Power-

Aviation plug elbow (J2)



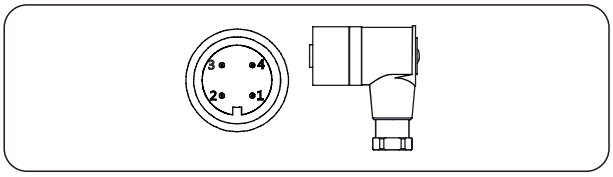
label	Two wires	Three wires	Four wires
1/Brown	Power+	Power+	Power+
2/White			Signal-
3/Blue		Signal+	Signal+
4/Black	Power-	Power-	Power-

Aviation plug straighter(J4)



label	Two wires	Three wires	Four wires
1	Power+	Power+	Power+
2			Signal-
3		Signal+	Signal+
4	Power-	Power-	Power-

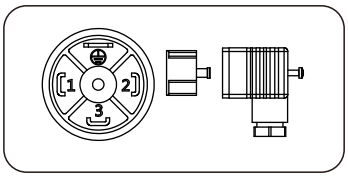
Aviation plug elbow(J5)

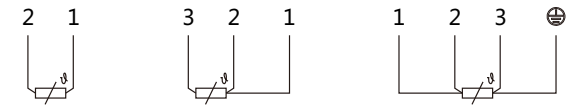


label	Two wires	Three wires	Four wires
1	Power+	Power+	Power+
2			Signal-
3		Signal+	Signal+
4	Power-	Power-	Power-

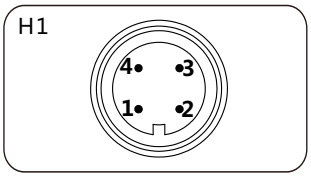
Electrical connetion(sensor signal output)

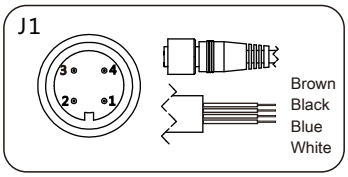
DIN43650(D 1)

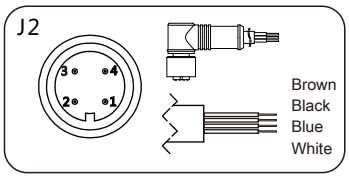


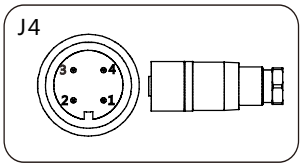


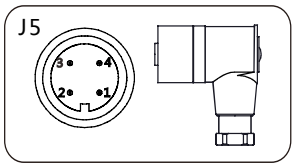
M12*1, 4-pins, aviation plug(H1), aviation plug straighter(J1, J4), aviation plug elbow (J2, J5)

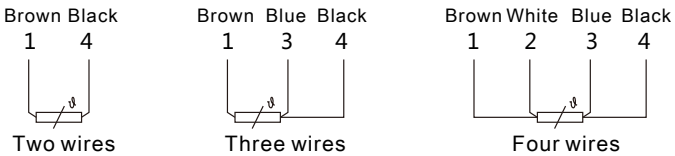












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Product selection instruction

Process connection select instruction

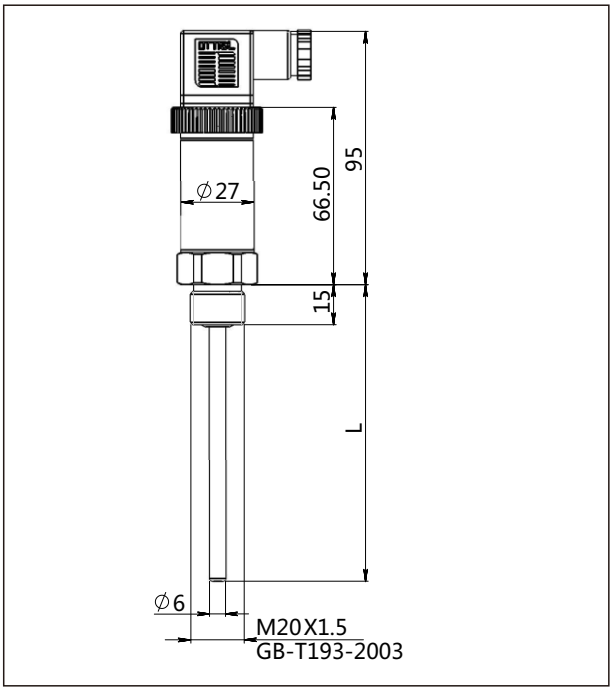
Code	Items	Description
G	Mounting type	Fixed process connection mounting
H		Movable process connection mounting
4	Material	SUS304
6		SUS316
M01	Process connection specifications	M20*1.5(M), GB/T192-2003
G01		G1/2(M), EN837
R01		1/2-14NPT(M), ANSI/ASME B1.20.1
K01		Tri-Clamp 1-1/2"
K02		Tri-Clamp 2"
H01		Flange HG/T20592-2009 DN50PN10
H02		Flange HG/T20592-2009 DN25PN10

Insertion probe select instruction

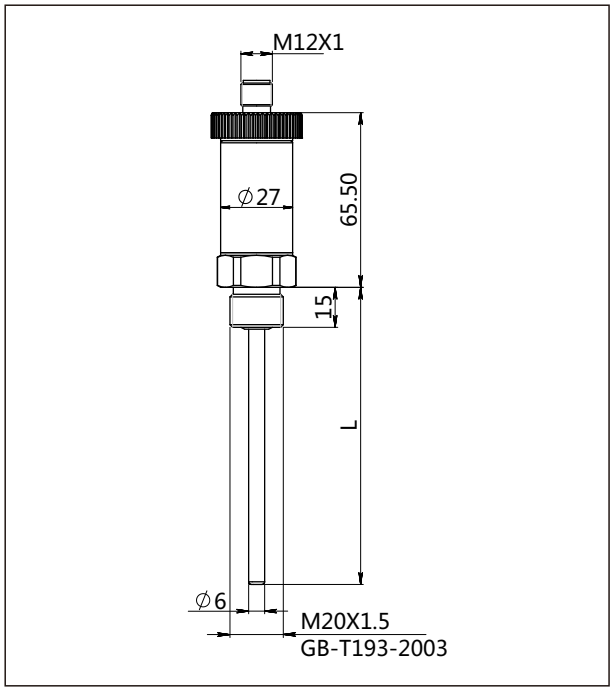
Code	Items	Description
D1	Outer diameter	Diameter: 6mm, probe material is same as process connection material
D2		Diameter: 8mm, probe material is same as process connection material
D3		Diameter: 10mm, probe material is same as process connection material
D4		Diameter: 12mm, probe material is same as process connection material
D5		Diameter: 16mm, probe material is same as process connection material
LXXXX	Insertion length	Customized insertion length: 0 < LXXXX< 3000mm, samples: 80mm=L0080, the minimum gap is 50mm of customized insertion length. Default insertion length includes thread specifications

Product drawing and dimension

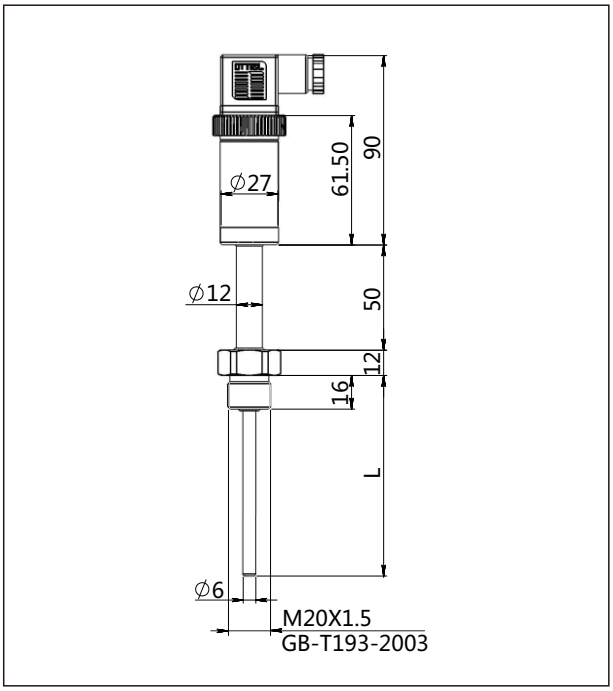
Drawing and dimension (thread) with DIN43650 (D1) and without extension tube(unit: mm)



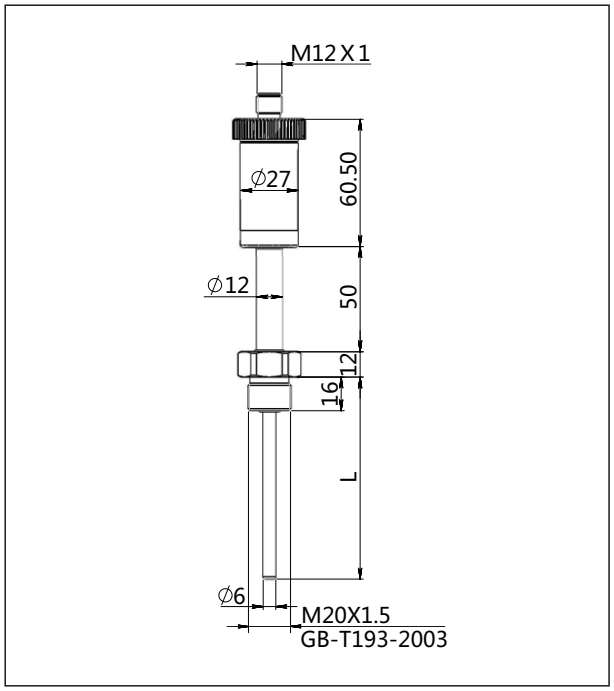
Drawing and dimension (thread) with aviation plug (H1) and without extension tube(unit: mm)



Drawing and dimension (thread) with DIN43650 (D1) and extension tube(unit: mm)



Drawing and dimension (thread) with aviation plug (H1) and extension tube(unit: mm)



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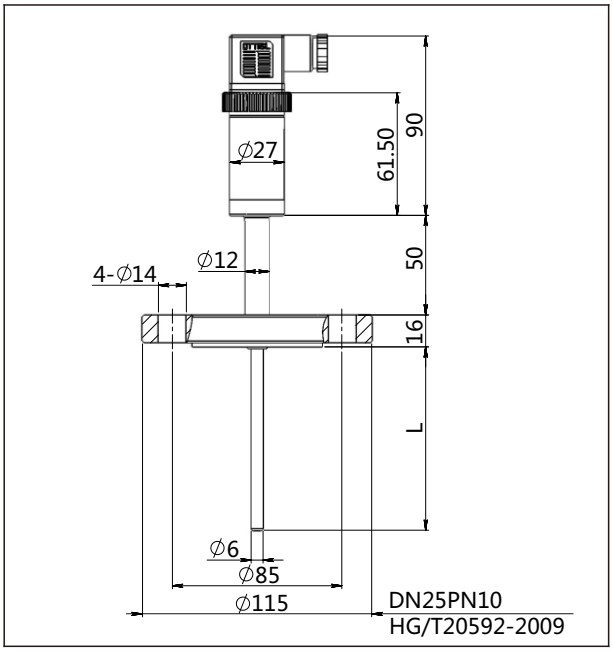
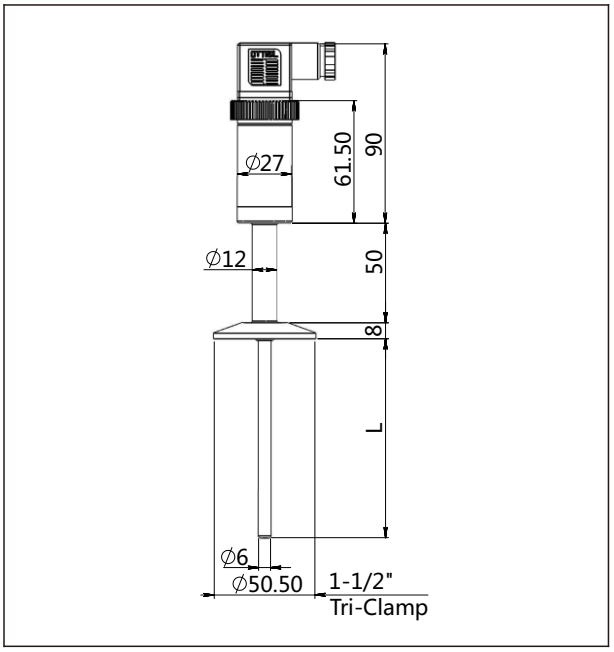
Product drawing and dimension

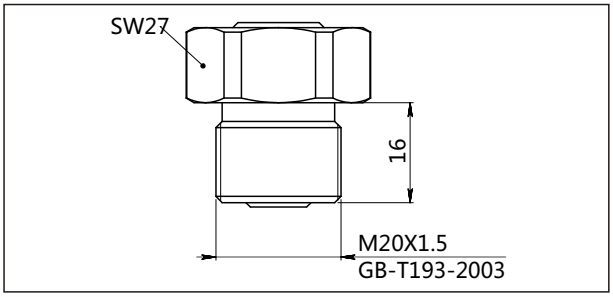
Drawing and dimension (flange) with DIN43650 (D1) and extension tube (unit:mm)



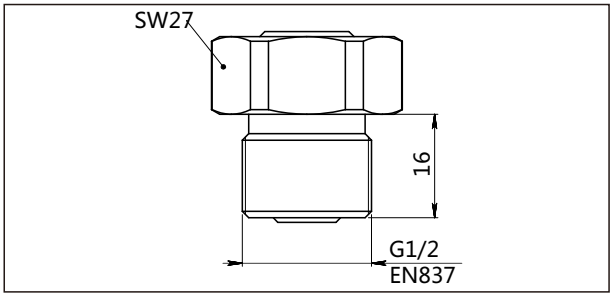
Drawing and dimension (tri-Clamp) with DIN43650 (D1) and extension tube (unit:mm)



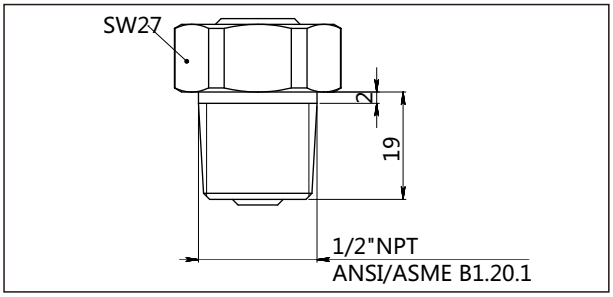
Process connection(M01) (unit: mm)



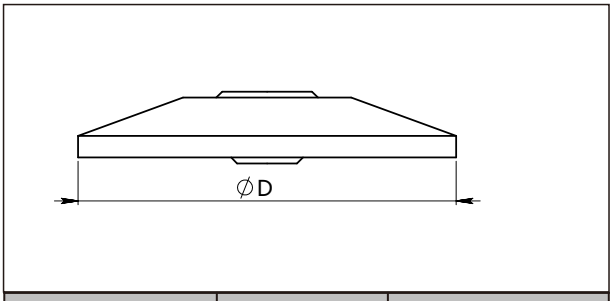
Process connection(G01) (unit: mm)



Process connection(R01) (unit: mm



Process connection(K01-K02) (unit: mm)



Standard	Specification	Size(ΦD)
Tri-Clamp	1-1/2"	50.5
Tri-Clamp	2"	64

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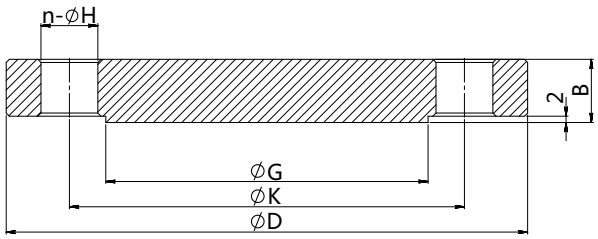
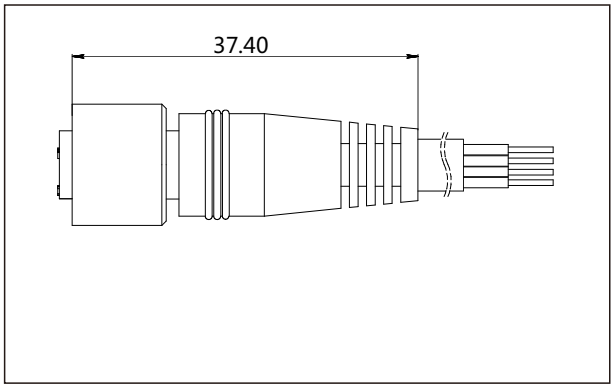
Product drawing and dimension

Process connection(H01-H02) (unit: mm)

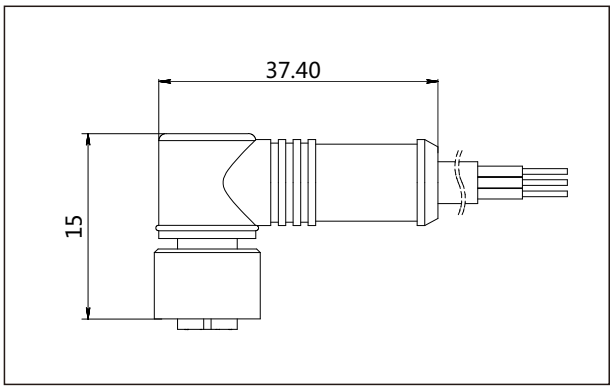


Standard	Specification	Outer diameter(ΦD)	Thickness(B)
HG/T20592-2009	DN50PN10-PN40	165	20
HG/T20592-2009	DN25PN10-PN40	115	16
Hole circle(ΦK)	Raised-face diameter(ΦG)	Hole diameter(ΦH)	Number(n)
125	102	18	4
85	68	14	4

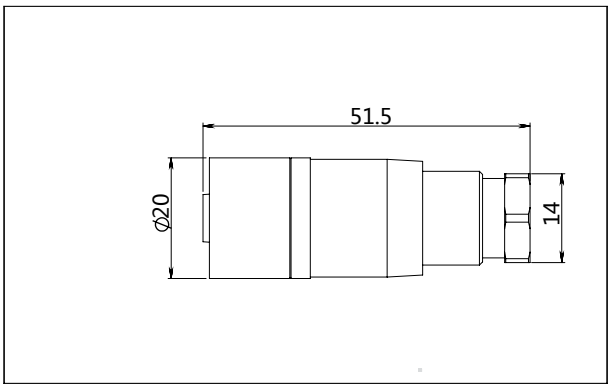
Aviation female plug straighter(J1)(unit: mm)



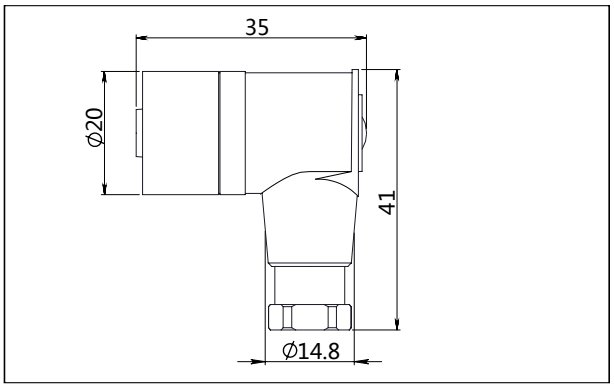
Aviation female plug elbow(J2)(unit:mm)



Aviation female plug straighter(J4) (unit: mm)



Aviation female plug elbow(J5) (unit: mm)



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Ordering information chapter

Item	Parameters	Code	Instruction	(*) fast delivery available
	Model	LG200-DRD	Integrated thermal resistance temperature transmitter	*
		LG200-DRH	Integrated thermal resistance temperature transmitter	*
Sensor	Separator	-	Detailed specifications as following	
	Pressure range code	R1	PT100 RTD	*
Electrical connection	Separator	-	Detailed specifications as following	
	Electrical connection	D1	DIN43650, IP65	*
		H1	Aviation plug, M12*1, 4-pins, IP67	*
	Cable entry protector	R0	None	
Output	Separator	-	Detailed specifications as following	
	Output signal	F	4-20mA, power supply: 10-30VDC	*
		1	1-5VDC, power supply: 12-30VDC	
		X	Sensor signal output, two wire	
		Y	Sensor signal output, three wire	*
		Z	Sensor signal output, four wire	
Tube	Separator	-	Detailed specifications as following	
	Tube	53	The length of stainless steel tube:53mm	
		30	The length of stainless steel tube:30mm (only available for sensor signal output)	
Extension tube	Separator	-	Detailed specifications as following	
	Extension tube length	Q1	None(suitable temperature: -40℃-85℃)	
		Q2	Material: SUS316, length: 50mm, outer diameter:Φ12	*
		Q3	Material: SUS316, length: 100mm, outer diameterΦ12	
		Q4	Material: SUS316, length: 150mm, outer diameterΦ12	
		Q5	Material: SUS316, length: 200mm, outer diameterΦ12	
Process connection	Separator	-	Detailed specifications as following	
	Mounting type	G	Fixed process connection mounting	*
		H	Movable process connection mounting	
	Material	4	SUS304	*
		6	SUS316	
	Specification	M01	M20*1.5(M),GB/T192-2003	*
		G01	G1/2(M), EN837	*
		R01	1/2-14NPT(M), ANSI/ASME B1.20.1	*
		K01	Tri-Clamp 1-1/2"	*
		K02	Tri-Clamp 2"	*
		H01	Flange HG/T20592-2009 DN50PN10	
		H02	Flange HG/T20592-2009 DN25PN10	

Disclaimer: all the data used in the product description is not legally binding. Relevant technical details may be changed due to further improve

Ordering information chapter

Insertion probe	Separator	-	Detailed specifications as following	
	Outer diameter	D1	Diameter: 6mm, probe material is same as process connection material	*
		D2	Diameter: 8mm, probe material is same as process connection material	*
		D3	Diameter: 10mm, probe material is same as process connection material	*
		D4	Diameter: 12mm, probe material is same as process connection material	
		D5	Diameter: 16mm, material: SUS304	
	Insertion length	LXXXX	Customized insertion length: 0 < LXXXX< 3000mm, samples: 80mm=L0080, 150mm=L0150	
Additional options	Separator	-	Detailed specifications as following	
	Electrical connection accessory	/J1	Aviation female plug (straighter) with 2m cable, 4 pin, M12*1, IP67	
		/J2	Aviation female plug (elbow) with 2m cable, 4 pin, M12*1, IP67	
		/J4	Aviation female plug (straighter) without able, 4 pin, M12*1, IP67	*
		/J5	Aviation female plug (elbow) without cable, 4 pin, M12*1, IP67	
	Process connection accessory	/G1	1.5" tri-clamp	*
		/G2	2" tri-clamp	
		/M1	1.5" sealing gasket, silicone rubber, process temperature: -60-200℃	*
		/M2	2" sealing gasket, silicone rubber, process temperature: -60-200℃	
		/Z1	Welding adapter, Tri-Clamp1-1/2"	*
		/Z2	Welding adapter, Tri-Clamp2"	
	Calibration report	/Q1	Calibration report provided by our company	
	Wetted parts treatment	/G1	Ungrease treatment	
		/G2	Electropolishing treatment	