

[The selection is detailed on page 4](#)



# DS06

## Flange Type Thermocouple Thermometer

### Working principle

Thermocouple is the use of thermoelectric effect for temperature measurement, thermoelectric effect refers to two different components of the conductor at both ends of the synthetic circuit, when the temperature of the two joint points is not the same, it will produce electromotive force in the circuit phenomenon, the generated electromotive force is called thermoelectric potential. The end that is directly used to measure the temperature of the medium is called the working end or the measuring end, and the end that is not directly used to measure the temperature of the medium is called the cold end or the compensation end. The cold end is connected with the display instrument or other supporting instruments, and the thermoelectric potential generated by the thermocouple will be displayed on the instrument.

### Product description

This series of thermocouple thermometers is suitable for use in containers and pipes. Available with DIN EN or ASME standard flanges. The temperature sensor is suitable for gas and liquid media under moderate mechanical loads. The sheath is fully welded and threaded with the junction box. The stainless steel sheath can be applied to normal chemical conditions. Coated casing is recommended for chemical corrosion and wear-resistant coated jacket is recommended for abrasive media.

The replacement of the probe rod does not need to remove the jacket from the device, and the probe rod can be inspected, tested or necessary maintenance during the operation of the equipment. The selection of standard length products can help shorten the lead time and reduce the number of spare parts.

Insert depth, flange size, sheath design, junction box, sensor can be selected according to the respective application. A transmitter can also be selected for installation inside the junction box.

### Product application

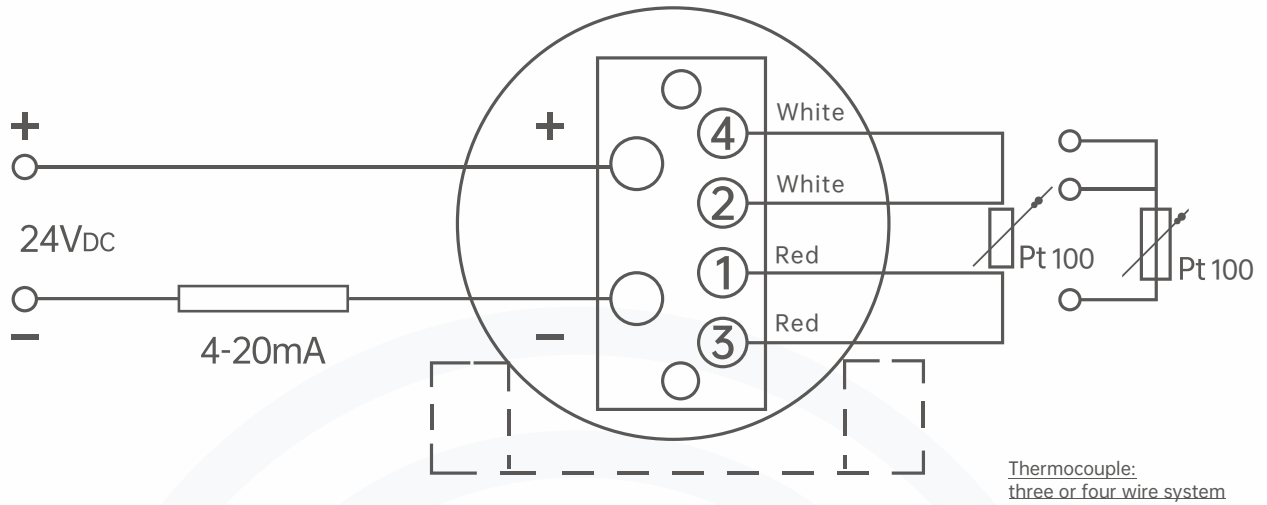
machine  
Equipment and tank manufacturing energy technology  
Power plants, chemical and petrochemical industries  
Food and beverage hygiene industry  
Heating and cooling technology

### Functional characteristics

Sensor range: -40... +1260 °C  
With integrated protective bushing  
Probe rod with spring (replaceable)  
Explosion proof type



**Working principle**  
**Analytic table**



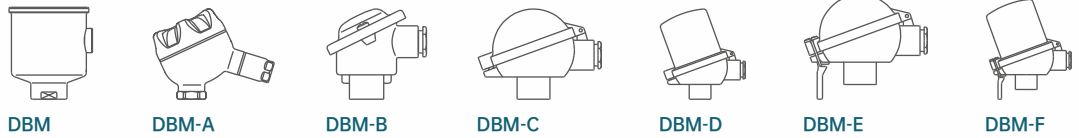
**Specification parameter**

Sensor	
Sensor specification	2-wire, 3-wire or 4-wire connection versions with 1 x Pt100.
EN 60751 Tolerance values for measuring elements/application range <sup>1)</sup>	Class A (not applicable to 2-wire connections)
	Grade B
	It is not allowed to use 2-wire connections in combination with Class A because lead resistance overlays the higher sensor accuracy.  The sensor is permanently attached to the connection flange and therefore cannot be replaced. For calibration, the entire measuring instrument must be removed from the BioControl® box, which can then be calibrated in the calibration tank.
Record and correct measurement deviations	With these electronic thermometers, measurement deviations can be determined under actual installation conditions and confirmed by a test certificate.
	The standard test temperature is 70°C;
	Others are available upon request.
	If the digital transmitter is installed in the thermometer, any determined measurement deviation can be corrected using the adaptive function of the transmitter.
Cervical canal	
▪ Material	Stainless steel
▪ Diameter	12mm
▪ Neck length	70mm (Standard)
	50mm
Options	The transition from the connector to the thermocouple sleeve is made possible by an optional sealing combination (polyurethane). This combination permanently prevents moisture and impurities from penetrating and depositing in the area (IP68). In addition, the seal combination significantly simplifies the cleaning process.

1) Specifications are valid only for measuring components. Depending on the process connection, the deviation may be greater.

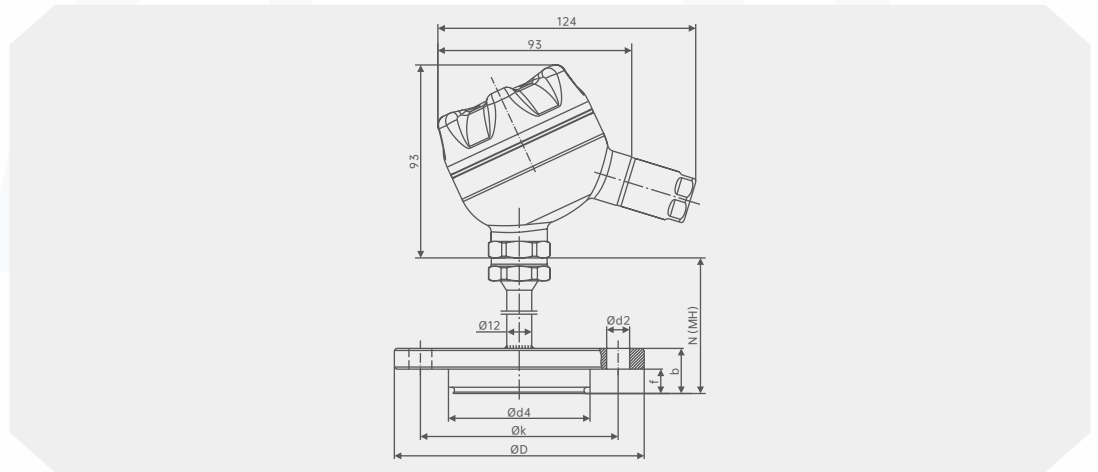
### Junction box

#### Connector material and specification



Material	Cable inlet specification	Class of protection	Protective cap	Surface
Stainless steel (1.4571)	M16×1.5	IP68	Flat screw cap	Natural finish
Stainless steel (1.4308)	M20×1.5	IP65	Screw in lid, hygienic design	Precision casting, electrolytic polishing
aluminum	M20×1.5	IP65 (IP68)	Cover with 2 screws	Blue finish
aluminum	M20×1.5	IP65 (IP68)	Hinged cover with cylindrical head screws	Blue finish
aluminum	M20×1.5	IP65 (IP68)	Hinged cover with cylindrical head screws	Blue finish
aluminum	M20×1.5	IP65	Hinged cover with clamping rod	Blue finish
aluminum	M20×1.5	IP65	Hinged cover with clamping rod	Blue finish

### Size mm

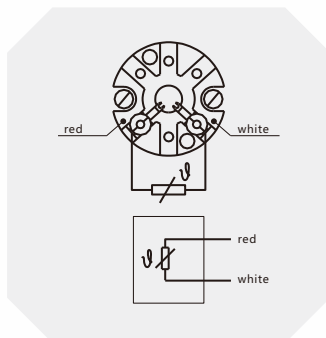


BioControl® join	Size mm						weight kg
Size	Ø d <sub>2</sub>	Ø d <sub>4</sub>	Ø D	f	b	Ø k	
25	4 x Ø 7	30.5	64	11	20	50	1.0
50	4 x Ø 9	50	90	17	27	79	1.4
65	4 x Ø 11	68	120	17	27	95	2.0

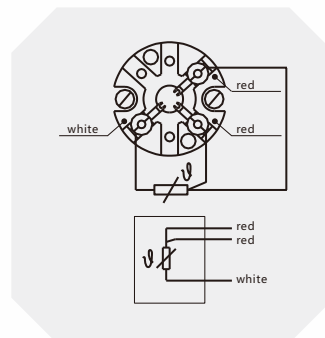
### Electrical connection

For electrical connections of built-in temperature transmitters, see the corresponding data sheet or operating instructions.

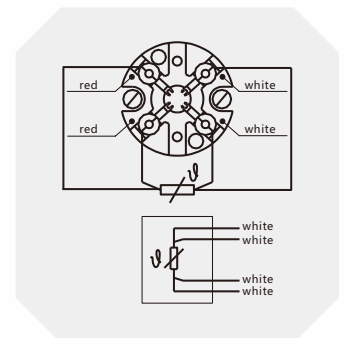
#### 1 x Pt100, 3-wire system



#### 1 x Pt100, 4-wire system



#### 2 x Pt100, 3-wire system



## DS06-Selection composition

Selection example Flange connection type **DS06** **B** **S** **N** **K** **T** **V** **F** **A** **N** **R** **A** **Q** **0-400** **N**

1 2 3 4 5 6 7 8 9 10 11 12 13 14

1.Selection description	<b>A</b>	All-in-one transmitter
	<b>B</b>	Flange casing
	<b>C</b>	Intrinsically safe explosion-proof type EEx-i
	<b>D</b>	Flameproof Ex-d
	<b>T( )</b>	Other types
2.Flange connection	<b>S</b>	20592 Standard flange
	<b>F</b>	ANSI Standard flange
3.Insert probe design	<b>N</b>	Fixed installation
	<b>O</b>	Spring-fixed terminal block (replaceable ferrule)
4.Junction box	<b>J</b>	Aluminum
	<b>K</b>	Stainless steel
	<b>L</b>	With digital temperature display
	<b>T( )</b>	Other types of junction boxes
5.Electrical interface	<b>S</b>	1/2NPT
	<b>T</b>	M20×1.5
6.Wiring block/sensor	<b>U</b>	Crastin Terminal block
	<b>V</b>	Ceramic connection block
	<b>W</b>	S10 (4-20mA transmitter)
	<b>X</b>	S20 (HART transmitter)
	<b>Y</b>	S30 (Fieldbus transmitter)
7.Wire system	<b>F</b>	Single 3-wire system
	<b>V</b>	Double branch 6-wire system
	<b>T( )</b>	Other wire system
8.Flange connection size	<b>A</b>	DN25
	<b>B</b>	DN50
	<b>C</b>	DN80
	<b>D</b>	DN100
	<b>E</b>	ANSI 1"
	<b>F</b>	ANSI 2"
	<b>G</b>	ANSI 3"
	<b>H</b>	ANSI 4"
	<b>T( )</b>	Other flange types
9.Thermocouple element	<b>M</b>	K (NiCr-Ni)
	<b>N</b>	E (NiCr-CuNi)
	<b>O</b>	N (NiCrSi-NiSi)
	<b>P</b>	J (Fe-CuNi)
	<b>Q</b>	J (T-CuNi)
	<b>T( )</b>	Other measuring elements
10.Probe rod material	<b>R</b>	304SS
	<b>S</b>	316/316L (1.4401/1.4435)
	<b>T</b>	Other materials



## DS06-Selection composition

Selection example  
Flange connection type **DS06** 1 B 2 S 3 N 4 K 5 T 6 V 7 F 8 A 9 N 10 R 11 A 12 Q 13 0-400 14 N

11.Rod length (mm)	A	50
	B	100
	C	150
	D	200
	E	250
	F	300
	G	350
	H	400
	I	450
	J	500
T( )	Other lengths	
12.Rod diameter	N	3mm
	O	4mm
	P	5mm
	Q	6mm
	R	8mm
	S	10mm
13.Temperature range (°C)	T	-200...+1260
	T( )	Other measured temperatures
14.Safety certification	U	Intrinsic safety
	S	Flameproof
	N	There is no
15.Additional order information	Z	Additional information
	N	There is no

## Instructions:

The DS06 flanged thermocouple is a thermometer with flanged sleeve, the connection mode is 20592 standard flange, the probe rod is designed to be fixed installation, the connection box is stainless steel, the electrical interface is M20\*1.5, the sensor is ceramic connection block, the single three-wire system, the flange specification is DN25, the thermocouple element is E (NiCr-CuNi), and the coupling is made of DN25. The probe rod material is 304SS, the length of the probe rod is 50mm, the diameter of the probe rod is 6mm, and the temperature range is 0... 400°C, no explosion-proof, 15 parts are not required.

## Product certification

Compliance and approval; Rodwig thermometers meet key standards and certifications for process measurement technology; Thus guaranteeing the highest reliability in such Settings;