

Product information

Cwdz91 compact temperature transmitter



Cwdz91 exquisite temperature transmitter is carefully designed, with compact structure and excellent quality. It is very suitable for industrial equipment with limited installation space, and has high cost performance.

Range: - 50 ~ 150 °C

Output: 4 ~ 20mA

Power supply: 9 ~ 36VDC

Accuracy: 0.5% FS

In addition, we can provide customized products to meet the application needs of customers in a short time according to their applications.

Typical application

- ▲ Construction machinery.
- ▲ Mobile devices.
- ▲ Hydraulic system.
- ▲ Can body manufacturing.
- ▲ Industrial equipment with limited installation space, etc.

Instructions

Temperature transmitter cwdz91 is suitable for temperature measurement in liquid or gas and process industries. The operator is responsible for checking whether the equipment is suitable for the working conditions of the application. If you have any questions, please contact our sales department to ensure the correct application of the transmitter. The company does not assume any responsibility for the impact caused by improper model selection.

The user must ensure that the measured medium is compatible with the contact material of the transmitter.

⚠ Warning!
Improper use can lead to danger!

Icon description

⚠ Danger! - A dangerous situation that could result in death or serious injury.

⚠ Warning! - A potentially hazardous situation that could result in death or serious injury.

! Be careful! - A potentially hazardous situation that may result in minor injury.

👉 Reminder! - A potentially hazardous situation that may cause personal injury.

⚠ Tips! - Tips and information to ensure trouble free operation of the equipment.

User

⚠ Warning! This information is applicable to technicians.

Product features

- a) Wide voltage supply, nonlinear correction
- b) Small size and convenient installation
- c) Intercept jamming design, strong anti-jamming ability
- d) Wiring reverse and overvoltage protection, current limiting protection

Product overview

Cwdz91 series temperature transmitters use PT100 (grade 1 / 3b) as the signal measuring element. After computer automatic test, the zero point and sensitivity temperature compensation in a wide temperature range are carried out by laser resistance adjustment process. The amplification circuit is located in the stainless steel shell, which converts the sensor signal into standard output signal, gives full play to the technical advantages of the sensor, and makes cwdz91 series temperature transmitter have excellent performance. It has anti-interference, overload, small temperature drift, high stability and high measurement accuracy. It is an ideal temperature measurement instrument in the field of industrial automation.

Working principle

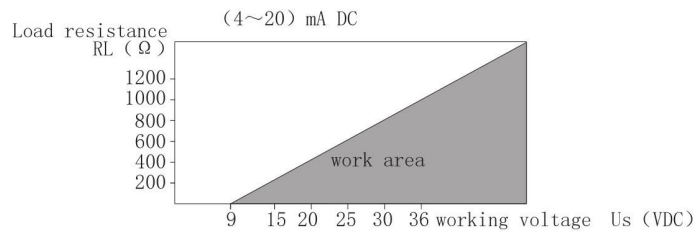
The temperature transmitter is a PT100 sensor that produces resistance effect under the influence of temperature. It is converted by a special processing unit to generate a differential voltage signal. This signal is converted into a standard analog or digital signal through a special amplifier.

Technical parameter

Measuring medium: liquid and gas
 Measuring range: - 50 ~ 150 °C
 Measuring element: 1 * PT100 (Level 1 / 3b)
 Output signal: 4 ~ 20mA
 Power supply range: 9 ~ 36VDC
 Response time: ≈ 18S (in accordance with iec60751, 0.4m/s water flow, 10 °C step)
 Stability: ± 0.1% FS / year
 On time: 400ms
 Protection grade: IP67 note: the above protection grade refers to that achieved after the electrical connection is complete, and also depends on the electrical connection plug.
 Overall weight: L30 ≈ 60g L50 ≈ 62g L100 ≈ 67g L150 ≈ 72g L200 ≈ 77g
 Accuracy grade: 0.5% FS
 Maximum power: ≤ 0.02us (W) Note: US = supply voltage.

Load characteristics

Current type: Load ≤ ((us-9) ÷ 0.02 (US = supply voltage)) Ω



Environment condition

Ambient temperature: - 40 ~ 85 °C

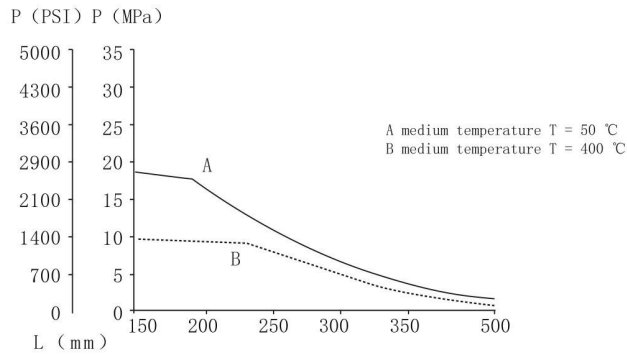
Electromagnetic compatibility(EMC)

Serial number	Test items	Basic standards	Test conditions	Performance level
1	Radiated interference (enclosure)	GB/T 9254/CISPR22	30MHz-1000MHz	qualified
2	Conducted interference (DC power port)	GB/T 9254/CISPR22	0.15MHz-30MHz	qualified
3	Electrostatic discharge (ESD)	GB/T 17626.2/IEC61000-4-2	4kV(触点), 8kV(空气)	B(Note 2)
4	Radio frequency electromagnetic field immunity	GB/T 17626.3/IEC61000-4-3	10V/m(80MHz-1GHz)	A(Note 1)
5	Power frequency magnetic field immunity	GB/T 17626.8/IEC61000-4-8	30A/m	A(Note 1)
6	Electrical fast transient burst immunity	GB/T 17626.4/IEC61000-4-4	2kV(5/50ns, 100kHz)	B(Note 2)
7	Surge immunity	GB/T 17626.5/IEC61000-4-5	500V(Between lines) 1kV(Between ground wires)(1.2us/50us)	B(Note 2)
8	Immunity to conducted interference induced by RF field	GB/T 17626.6/IEC61000-4-6	3V(150kHz-80MHz)	A(Note 1)

Note 1: when the performance grade is a, the performance is normal within the limits of the technical specifications.
 Note 2: when the performance level is level B, the function or performance is temporarily reduced or lost, but can be recovered by itself, and the actual operation status, storage and data will not change.

Withstand voltage performance

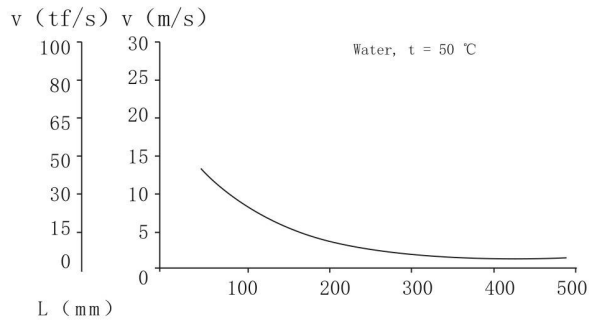
The pressure on the protective tube varies with the length (see the figure below)



— The diameter of the protective pipe is 6mm and the wall thickness of the pipe is 1mm	L: Immersion length	P: Process pressure
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Medium velocity

The maximum medium velocity borne by the protective tube decreases with the increase of insertion depth (see the figure below)



— The diameter of the protective pipe is 6mm and the wall thickness of the pipe is 1mm	L: Immersion depth
	V: Velocity

Electrical protection

- Short circuit protection: permanent
- Reverse pole protection: no damage, but does not work
- Insulation resistance: $\geq 100\text{m } \Omega$, 500VDC
- Insulation strength: 500VAC

Output limit

	Output minimum	Maximum output
4-20mA	4mA	20mA

Overall material

Protective tube material: 304 stainless steel (contact with the measured medium)

Process connection: 304 stainless steel (contact with the measured medium)

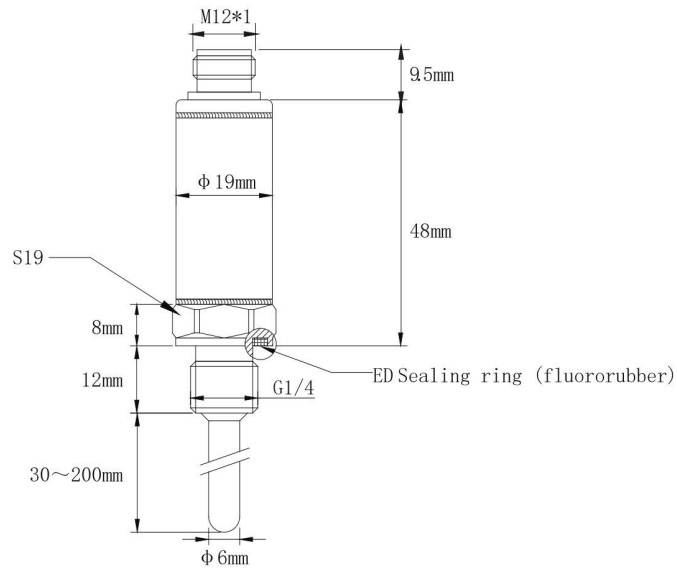
Shell: 304 stainless steel

Seal: fluorine glue (contact with measured medium)

Mechanical stability

Seismic performance: 20g (20... 2000Hz) in accordance with IEC60068-2-6 standard

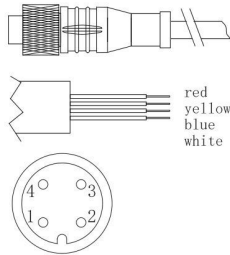
Outline and dimensions



Wiring diagram

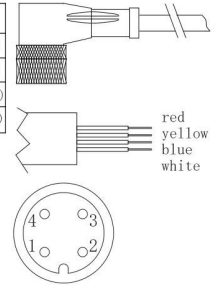
Aerial straight head belt line

ID	Two wire system	PT3	PT4
1/red	Power supply+	B(red)	B(red)
2/yellow		B(red)	B(red)
3/blue	Power supply-	A(white)	A(white)
4/white			A(white)



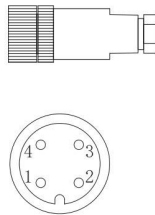
Aerial inserting elbow strip line

ID	Two wire system	PT3	PT4
1/red	Power supply+	B(red)	B(red)
2/yellow		B(red)	B(red)
3/blue	Power supply-	A(white)	A(white)
4/white			A(white)



Aerial straight head

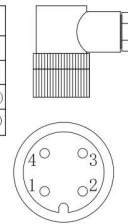
ID	Two wire system	PT3	PT4
1/red	Power supply+	B(red)	B(red)
2/yellow		B(red)	B(red)
3/blue	Power supply-	A(white)	A(white)
4/white			A(white)



Note: the diameter of lock wire is 4 ~ 5mm

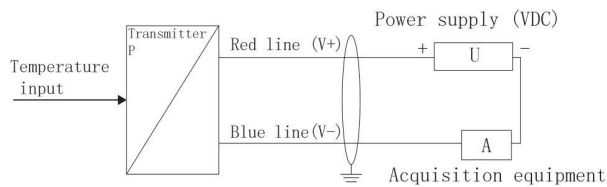
Aviation plug elbow

ID	Two wire system	PT3	PT4
1/red	Power supply+	B(red)	B(red)
2/yellow		B(red)	B(red)
3/blue	Power supply-	A(white)	A(white)
4/white			A(white)

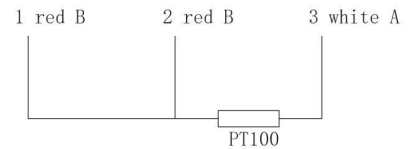


Note: the diameter of lock wire is 4 ~ 5mm

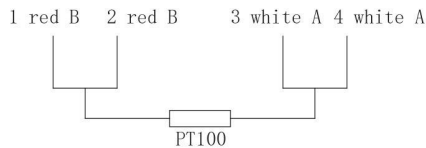
Current output wiring diagram (two-wire system)



PT100 resistance signal output wiring diagram (three wire system)



PT100 resistance signal output wiring diagram (four wire system)



- ☞ Represents shielded wire, and all marked grounding points must be effectively grounded. It is recommended to select shielded twisted pair signal cable for the best effect. In order to avoid grounding loop, the shielding layer adopts single end grounding, insulated floating grounding at the transmitter end and grounding at the control cabinet end.
- ☞ The transmitter shell is grounded by default, so the field equipment shall be effectively grounded. If the field equipment cannot be grounded, the marked grounding point shall be effectively grounded.

Parameter selection

CWDZ	Temperature transmitter							
Code	Transmitter type							
91	Compact (no connector by default)							
Code	Electrical connection							
M	Aviation connector note: without butt plug, accessories shall be purchased separately							
Code	Range							
01	0-100°C							
04	-50-50°C							
05	-50-100°C							
08	-50-150°C							
DZ	customized							
Code	signal output							
A1	4-20mA Two wire system							
DZ	customized							
Code	Connection mode							
17	G1/4							
44	customized							
Code	Insertion depth							
L30	30mm							
L50	50mm							
L100	100mm							
L150	150mm							
L200	200mm							
LX	customized (x is the insertion depth)							
Code	Supply voltage							
G5	9-36VDC							
No	PT100 signal output does not need power supply							
DZ	customized							
Code	customized							
D	Other customization requirements							
No	routine							
CWDZ	91	M	01	A1	17	L30	G5	Selection example
For example: cwdz91-m-01-a1-17-l30-g5 (compact temperature transmitter, range 0-100 °C, output 4-20mA, connection G1 / 4, insertion depth 30mm, power supply 9-36vdc)								

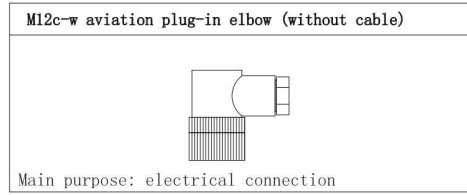
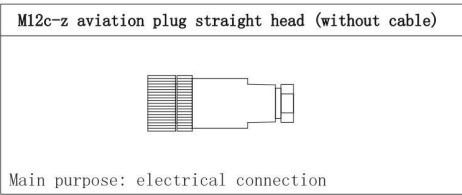
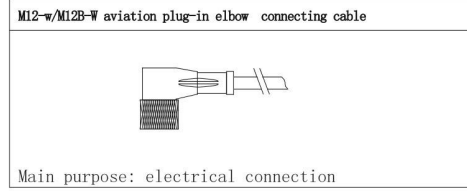
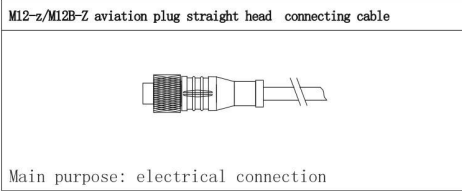
Ordering instructions

⚠Warning!

When ordering the transmitter, users should pay attention to selecting appropriate specifications according to the pressure, temperature, flow rate and environmental conditions of the medium.

Ordering information

Model / electrical connector / measuring range / output signal / connection mode / insertion depth / power supply voltage / Customization

Enclosure (to be purchased separately)**Electrical connection plug**

For details, please
visit our website