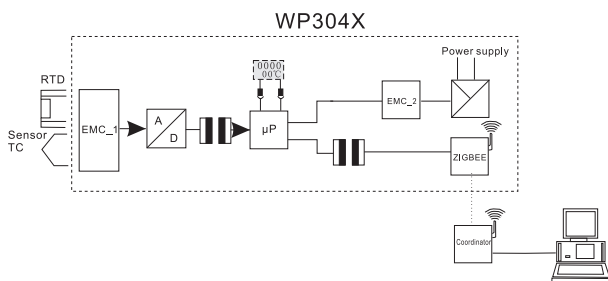


WP-304 series wireless intelligent temperature transmitter

- WP-304 A/C N1, WP-304A/C P1
- WP-304 A/C N2, WP-304A/C P2
- WP-304 A/C N3, WP-304A/C P3

Working principle

The temperature of the industrial field can be inputted into WP-304X by thermal resistance or thermocouple transducer and then converted into the corresponding digital quantity by microprocessor after “analog-digital conversion”. Then the digital temperature value will be transmitted to the highlighted LCD real-time display, and, at the same time, be sent to the PC or other control centers via zigbee network so as to provide the process control with accurate and timely temperature parameters. The wireless data transmission part can configure every transmitter to be the route mode, which greatly enhances the flexibility of networking and instantaneity of data.



Characteristics

- Support zigbee standard (IEEE802.15.4) and wireless data transmission with higher security level.
- While connecting to the thermal resistance transducer, it has short-circuit and open-circuit monitoring function;; while connecting to the thermocouple transducer, it has open-circuit monitoring function.
- The parameter configuration of transmitter: by using the 3 built-in operating buttons together with the highlighted LCD display, the parameters of the transmitter can be set locally conveniently. In addition, the remote parameter configuration of the transmitter can be realized easily by protocol converter.
- The rotatable LCD display enhances the flexibility of transmitter installation and displays the percentage of current measured value in the full scale, current measured value and its unit and the sensor type and the diagnostic messages of transmitter etc.
- The protection level of shell is IP65, which can be applied to the outdoor usage.
- Support all the transducers conforming to IEC751 and IEC584.

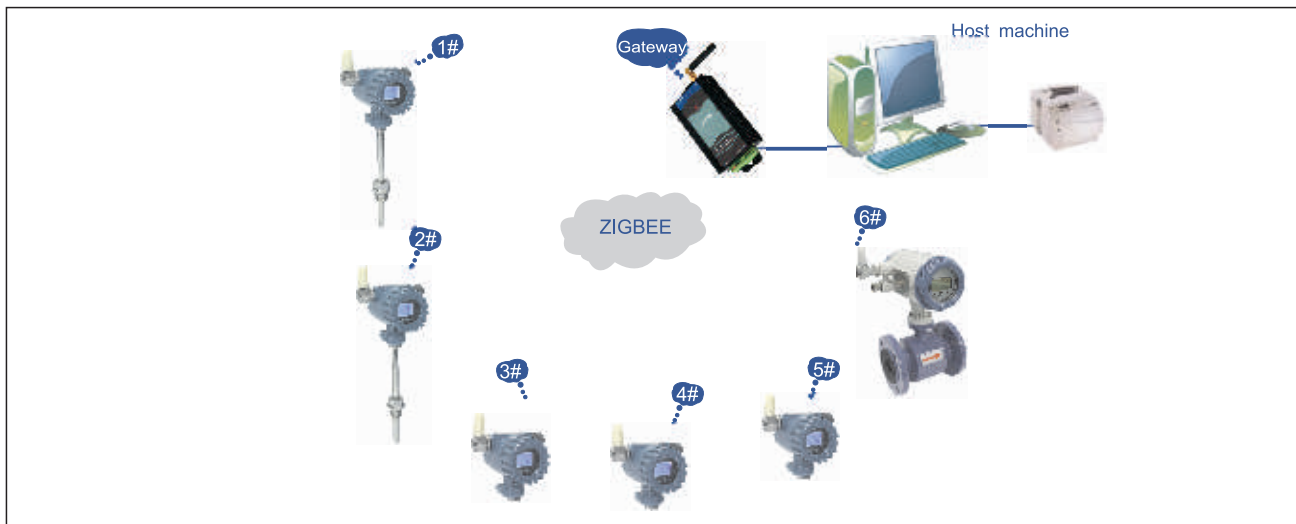
Application

- Metallurgical and steel industry
- Petrochemical industry
- Machine manufacturing industry
- Food and beverage industry
- Municipal water and sewage treatment industry
- Little textile/sugaring/papermaking/glass and other industries



The most reliable **quality experience**
Advanced manufacturing technique

Network topology



Technical parameters

Input

Sensor type:

WP-304XX1: Pt100, Pt1000, Cu50, Cu100

WP-304XX2: S, R, B, K, N, E, J, T, WRe3-25

WP-304XX3: Pt100, Pt1000, Cu50, Cu100
S, R, B, K, N, E, J, T, WRe3-25

Accept the user's designation

Connection modes

WP-304XX1: A two/three/four-wire system thermal resistance transducer

WP-304XX2: A thermocouple transducer and a built-in thermal resistance transducer of a transmitter can work as the cold junction compensation or set the fixed cold-junction temperature to compensate without connecting to the thermal resistance transducer (The compensation precision will effect the final measurement accuracy.)

WP-304XX3: adopt the connection mode of WP-304XX1 or WP-304XX2 according to the needs.

Measurement range

Appendix 1: List for the inputted sensor types and accuracies

Response time

≤ Sampling period

The length of cable connecting to the sensor

≤ 3M, impedance of wire < 1Ω

Measurement accuracy

Accuracy (Digital measurement accuracy)

See appendix 1: List for the inputted sensor types and accuracies

Long term drift

The first year < 0.035% full scale

Effect of ambient temperature

See appendix 2: Effects of ambient temperature

Rated operating conditions

Ambient temperature

-40~85℃

Storage temperature

-40~85℃

Relative humidity

< 95%

Climate level

4K4H accords with EN 60721-3-4 (Used stationarily in the occasions without climate protection)

Protection grade

IP65/NEMA 4

Design

Shell

Aluminium die casting

Shock resistance

Accord with DIN EN 60068-2-29/03.95

Shakeproof

Accord with DIN EN 60068-2-6/12.07

$20 \leq f \leq 2000 \text{ Hz}, 0.01 \text{ g}^2/\text{Hz}$

Weight

1.3kg (not including temperature sensor)

Size

See Appendix 4: Dimensional drawing for wireless intelligent temperature transmitter

Cable sealed tube/sensor connecting thread

M20 × 1.5 other threads need to use adapters

Connection of sensor

Integrated type

Display and control

Size of display
33×23mm

Display precision
5 digits

Unit (Switchable)
°C or °F

Settings

Use the 3 buttons of the panel in the field

Power supply

+24V DC ±5%

Battery powered (The service life of battery can reach to 5 years.)*

Hardware and software requirements

Hardware

PC with RS232/USB interface

Zigbee gateway

Software

Testing software for WP intelligent temperature transmitter

Communication

Wireless standard

Zigbee (IEEE802.15.4)

* Note: Due to the transmitting power and the transmit-receive frequency of data, the service lives of the batteries will be different.

Transmission band

ISM 2.4GHz

Transmission distance under rated conditions

WP-304XN series: indoors 30m outdoors 100m

WP-304XP series: indoors 100m outdoors 1500m

Communication interface

Zigbee

Certification and licence

Wireless communication certification

FCC

Grading according to the directives (97/23/EC PED) of the pressure facilities

The equipment will not have faults under the directives of the pressure facilities.

Default setting of transmitter

Sensor

Pt100 or B type thermocouple or designated by the customer

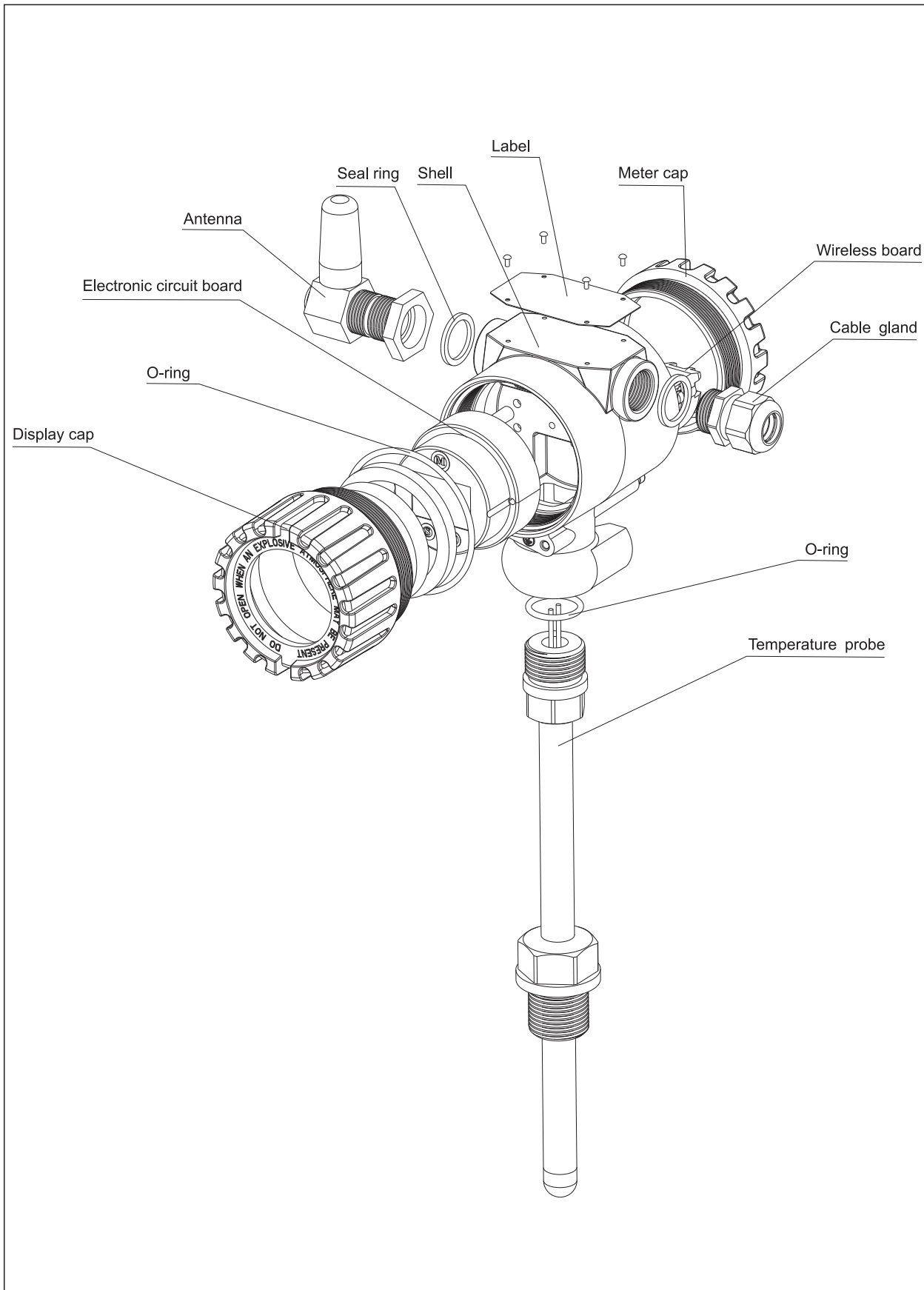
Sensor migration

0°C

Damp

0.0S

Structure diagram for WP-304 series wireless intelligent temperature transmitter



Type spectrum table for WP-304 series wireless intelligent temperature transmitter

Model	Product description
WP-304	Wireless intelligent temperature transmitter
Code	Display header
A	Integrated type (with temperature sensor, see the type spectrum table for temperature sensor in Page 28 and 29.)
C	Integrated type (with temperature sensor, see the type spectrum table for temperature sensor in Page 28 and 29.) Battery powered
Code	Transmitting power
N	General type
P	Power enhanced type
Code	Sensor type
1	Thermal resistance (The corresponding codes of sensor model are 01~04, 14.)
2	Thermocouple (The corresponding codes of sensor model are 05~13, 14.)
Code	Sensor model ^①
01	Pt100
02	Pt1000
03	Cu50
04	Cu100
05	B
06	E
07	J
08	K
09	N
10	R
11	S
12	T
13	WRe3-25
14	Designated by user
Code	Anti-explosion grade
S	Standard type
Code	Range ^①
1	The default range: thermal resistance and full input model are Pt100:0~100℃; for thermocouple model, see (Appendix 1: List for the inputted sensor types and accuracies)
2	User-defined
Code	Electrical interface
1	M20×1.5
2	1/2NPT
Code	Range ability ^①
	Filled by the users (For example: -200℃~850℃), when the sensor model is designated by users, The writing form is: "Sensor model: range" For instance: Pt100: -200℃~850℃.
*See the sensor type spectrum table for the model of sensor	
Example	
WP-304AP1-01S2(-200℃~850℃) It means the enhanced type (indoors 100m, outdoors 1500m) integrated wireless intelligent temperature transmitter, with user-defined range -200℃~850℃. The matched sensor is Pt100 thermal resistance.	

*Note:

① WP-304 series has covered the sensors (model: 01~13). While the users designating the sensor type and range ability, it only directs at the default configuration when leaving the factory.