WinSMART™ TY52 Series Temperature Transmitter Installation and Maintenance Manual

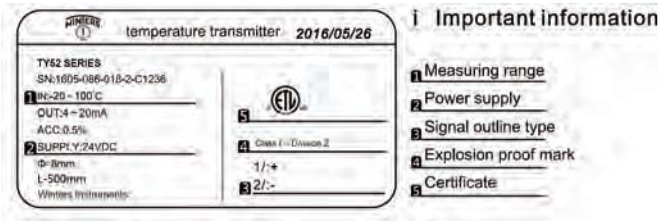
Safety Precautions:

⚠ Temperature sensor/transmitter shall be installed by professional engineers, technicians and other qualified personnel, please read carefully the content and important information provided by this installation guide before installation

⚠ Temperature sensor/ transmitter is powered by an external power supply, the power supply should be in accordance with local standards

⚠ Disassemble the instrument under the condition of normal atmospheric pressure only

Label



Product Usage

To ensure measurement accuracy, the influence of media flow direction, wall thickness and outer shape of protection tube, insertion depth, as well as pipe material, heat insulation material of container should be considered when installing the temperature sensor/ transmitter

Horizontal pipe installation

Protection tube should contact media. The insertion depth should be half of the pipe diameter (at least)

⚠ **Angle of inclination: 45- 90°**

Elbow pipe installation

The axis of the protection tube and virtical pipeline should be consistent. Contact media and the insertion length should be half of the pipe diameter (at least)

Install at top of container

The protection tube should be inserted with enough length to avoid error caused by temperature layer.

Install at side of container

The protection tube should be inserted with enough length to avoid error caused by contact with the wall of container

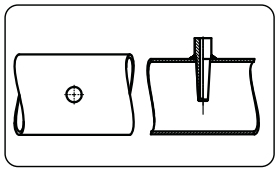
Direct installation

Light-weight transmitter can be mounted directly on the pressure leading tube. Bracket is not needed.

When using a wrench to screw hexagon bolt, the maximum torque force can not exceed 50Nm.

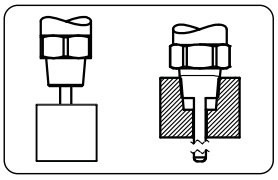
Process Connection

Welding



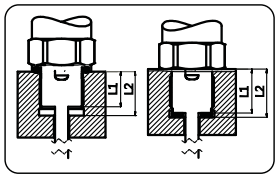
Hollow out the pipeline according to the protection tube outer diameter. Insert appropriate length when welding

Taper thread



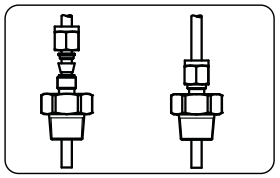
Sealing with teflon tape or sealant glue

Straight thread



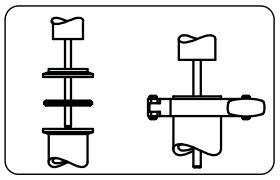
Adopting gaskets roots sealing, the thread length should be less than the base length(L1<L2); adopting gaskets end face sealing, the thread length should be more than the base length(L1<L2)

Movable thread



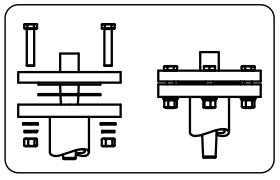
Matched movable thread can realize insertion length adjustment and low-intensity seal

Tri-clamp



Choose gaskets with material of PTFE, silicon rubber and FKM which conform to hygienic standards

Flange



Choose gaskets according to medium features and temperature range

⚠ Hygienic process connection Tri-clamp is approved by 3-A hygenic certificate

⚠ The gaskets of tri-clamp and all the wetted parts comform with FDA standards

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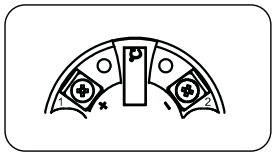
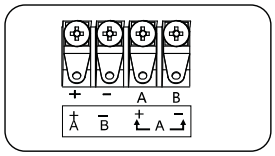
Electrical Connection

Terminal bed



Lable	Two wires
1	Power+
2	Power-

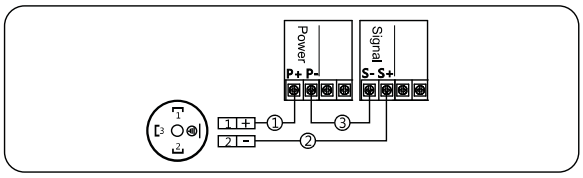
Module terminals-four terminals



Label	Two wires	Three wires	Four wires
+	Power+	Power+	Power+
-	Power-	Power-	Power-
A		Signal+	Signal+
B			Signal-

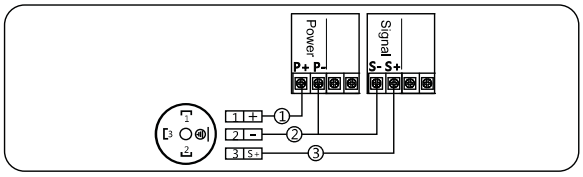
Signal Connection

4-20mA two wires



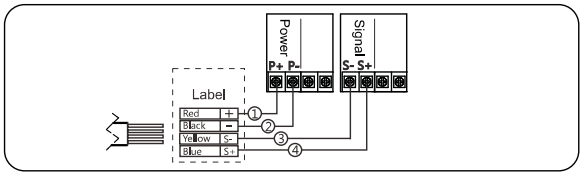
① Connect the positive power supply (P+) to the positive power supply (P+) of temperature transmitter (terminal 1);
② Connect the negative power supply (P-) of temperature transmitter (terminal 2) to the positive signal module (S+);
③ Connect the negative signal module (S-) to the negative power supply (P-)

Three wires current/voltage signal



① Connect the positive power supply (P+) to the positive power supply (P+) of temperature transmitter (terminals 1);
② Connect the negative power supply (P-) of temperature transmitter (terminals 2) to the negative power supply (P-), and connect the negative signal module (S-) to negative power supply (P-);
③ Connect the positive signal module (S+) of temperature transmitter (terminals 3) to the positive signal module (S+);

Four wires, current/voltage signal (cable)



① Connect the positive power supply (P+) to the positive power supply (P+) of temperature transmitter (red wire);
② Connect the negative power supply (P-) of temperature transmitter (black wire) to the negative power supply (P-)
③ Connect the negative signal module (S-) of temperature transmitter (Yellow wire) to the negative signal module (S-);
④ Connect the positive signal module(S+) of temperature transmitter (blue wire) to the positive signal module (S+).

Power Supply

Independent linear current power supply is suggested to be utilized as the power supply of the temperature transmitter

- Standard current signal output: 12-30VDC,
- 1~5VDC voltage output: 12-30VDC.

Grounding

- Use shielded cable with twisted-pair wiring for the best effect
- Transient resistance built-in module is effective only in the case of good ground Metal housing and ground screw terminals are used for grounding directly

Cable Protection System

Standard protection system

In order to avoid liquid flowing along the cable and into the junction box or transmitter housing, a U-shaped installation needs to be configured between the box and temperature transmitter (as picture shows), ensure the U-shaped bottom is under the temperature transmitter. Enough cable length needs to be considered for manufacturing or replacement

Explosion-proof tube protection system

Using flame proof temperature transmitter in dangerous situations, use metal explosion-proof tubing to connect the signal cable into junction box and beyond to the safe zone

Maintenance

Requires no maintenance

External Cleaning

- Use washing agent which will not damage the instrument surface and gaskets.

Transportation / Storage

- Do not store outside
- Keep dry and dust-free
- Do not expose to corrosive medium
- Avoid solar radiation
- Avoid mechanical shock and vibration
- Storage temperature: -40~100℃ (-40~212°F)
- Maximum relative humidity: 95%

EMC Statement

- EMC equipment instructions 2014/30/EU
- CE mark suggests the instruments are in line with EU standards
- Users need to ensure the whole equipment conforms to all the applicable local standards

Retransport

- Keep the temperature transmitter away from any dangerious media
- Ensure proper packaging to avoid damage during transportation

Trouble Shooting

When device malfunction is suspected despite the absence of any diagnostic messages, inspect the following:

- If measurement signal appears irregular, check whether the process temperature is within the working range, or the abnormality lies in the measuring system, installation environment or temperature transmitter. Once diagnosed take corresponding measures
- If no signal output or unchanged output signal on corresponding process temperature changes is observed, then check the power supply polarity, open or short circuit. Check the parameters like voltage, power and load resistance meet the normal working requirements. Also, ensure there is no leakage or line blockage
- If the output signal is large or outside the normal range, check whether the supply voltage, power consumption, and load resistance meet the normal working requirements of the temperature transmitter. Verify measuring range settings and adjust the device calibration. Also, ensure there is no leakage, or line blockage

Repair

- Complete the following steps before sending the unit for repair. Remove all residues which would be harmful to human health, such as flammable, poisonous, cancerigenic and radioactive substances

⚠ Do not return the instrument if you cannot ensure the dangerous residues are removed, eg: the dangerous residues permeate into cracks or spread into the plastic

Discard / Disposal

- The instrument does not comply with WEEE 2002/96/EG
- Please pass the instrument to specialized recycling companies