Safety Guidelines: Warning notices must be observed to ensure personal safety as well as that of others, and to protect the product and the connected equipment. These warning notices are accompanied by a clarification of the level of caution to be observed.

Qualified Personnel: This device/system may only be set up and operated in conjunction with this manual. Qualified personnel are only authorized to install and operate this equipment in accordance with established safety practices and standards.

Unit Repair and Excluded Liability:
- The user is responsible for all changes and repairs made to the device by the user or the user’s agent.
- All new components are to be provided by Siemens Milltronics Process Instruments Inc.
- Restrict repair to faulty components only.
- Do not reuse faulty components.

Warning: This product can only function properly and safely if it is correctly transported, stored, installed, set up, operated, and maintained.

This product is intended for use in industrial areas. Operation of this equipment in a residential area may cause interference to several frequency based communications.

Note: Always use product in accordance with specifications.

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While we have verified the contents of this manual for agreement with the instrumentation described, variations remain possible. Thus we cannot guarantee full agreement. The contents of this manual are regularly reviewed and corrections are included in subsequent editions. We welcome all suggestions for improvement.

Technical data subject to change.

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**Operation**

This product is intended for use in industrial areas. Operation of this equipment in a residential area may cause interference to several frequency based communications.

The TS-2 Temperature sensor is used in conjunction with specified Siemens ultrasonic level measuring devices to monitor the temperature of the air between the transducer and the target surface.

The TS-2 consists of a passive circuit which varies its resistance linearly with temperature. Thus it is used as the temperature input to the compensation circuitry of the associated Siemens transceiver.

The resistance can be calculated by the following:

\[ R_T = -127.096 \times T + 12175 \text{ ohms} \]

where:

- \( R \) = resistance in ohms
- \( T \) = temperature in °C
Specifications

Temperature Sensor

Model:
  o TS-2

Range:
  o – 40 to 70 °C ( – 40 to 158 °F )

Construction:
  o PVC body
  o totally encapsulated

Resistance
  o 9.53 K. ( nominal ) at 20 °C ( 68 °F )

Separation
  o equal to associated transducer separation

Approvals
  o CSA, FM and CE

Shipping Weight
  o 0.5 Kg ( 1 lb )

Accuracy
  o +/- 1°C
Outline and Wiring

Notes:

1. The temperature sensor should be mounted in a location which represents the temperature fluctuations likely to occur between the transducer and the target.

2. To avoid false readings, mount the temperature sensor out of direct sunlight. Radiant heating can cause a significant difference between air and sensor temperature.

3. Temperature sensor cable can be run with the transducer cable in a grounded metal conduit. Ground shield only at transceiver. Insulate shield at junctions to prevent inadvertent grounding. Extension cable: Belden 8760, 1 pair shielded / twisted, 18 AWG or equivalent.

4. Temperature sensor wiring must be done in conjunction with approved conduit, boxes and fittings and to procedures in accordance with all governing regulations.

5. For BASEEFA Zone 0, cable must be terminated externally to Zone 0 in an appropriate manner. The cable must be protected against mechanical damage, and arrangements sealed to prevent migration of atmosphere from Zone 0.

6. To reduce risk of electrostatic discharge, housing (except face) must be covered with copper mesh and grounded.
Typical TS-2 Installation

1. Temperature sensor should not cross sound beam of transducer.
2. Temperature sensor should not extend past maximum material level.
Typical Stilling Well Application

- blind flange
- air vent
- temperature sensor
- transducer
- standpipe
- primary measuring device
- stilling well
- standpipe inlet