

ABB TEMPERATURE ASSEMBLIES



TSP100 - Advanced Sensors for the Process Industry

Features

- Modular design equals flexibility
- Exchangeable measuring inset
- Optional with local digital display
- SIL2
- ATEX EExi
- Dust-EX

Precise temperature measurement is fundamental for successful process operations in a variety of industries. The main application for this RTD or thermocouple temperature sensor with welded protection tube is pipe and tank engineering in chemical, energy and general process engineering. Suitable for low and medium process requirements. It communicates via FOUNDATION Fieldbus, PROFIBUS PA, HART, 4...20mA or direct sensor output.

SensyTemp TSP100 series sensors allow for measuring inset replacement during operation. With their short response time and high vibration resistance these devices meet the most demanding process requirements.

Ranges

- TSP111 without thermowell - Insertion in an existing thermowell
- TSP121 welded tubular thermowell - Screw-in thread, flange, compression fitting
- TSP131 drilled thermowell - Screw-in thread, flange, weld-in socket



TSP300 - Heavy Duty Temperature Assemblies

Features

- Exchangeable measuring inset
- Optional with local digital display
- Extremely robust connection head
- Solid drilled bar thermowells
- SIL2, IECEX, ATEX EExi, EExd, EACEX

This heavy duty RTD or thermocouple temperature sensor is used in pipe and tank engineering for high process requirements such as oil, gas and heavy duty chemical. With their short response time and high vibration resistance these devices meet the most demanding of process requirements.

SensyTemp TSP300 series sensors allow for measuring inset replacement during operation. With their short response time and high vibration resistance these devices meet the most demanding process requirements.

- TSP311 without thermowell - Insertion in an existing thermowell
- TSP321 welded tubular thermowell - Screw-in thread, flange, compression fitting
- TSP331 drilled thermowell - Screw-in thread, flange, weld-in socket



TSH200 - High Temperature Measurement

These high temperature thermocouple sensors are used in waste incineration, cement and brick production, glass manufacturing and blast furnaces.

For higher temperature applications precious metal thermocouples and ceramic protection tubes offer reliable measurement and erosion resistance. Our range of high temperature and precious metal thermocouples and ceramic tubes resist temperatures up to 1800°C with reasonable life expectancy.

High temperature combustion, annealing and melting processes are usually executed without pressure at temperature up to 1800°C. In conjunction with the appropriate thermocouple, the thermowell has a considerable effect on the temperature sensor's measuring accuracy and service life. It communicates via FOUNDATION Fieldbus, PROFIBUS PA, HART, 4...20mA or direct sensor output.

Ranges

- TSH210 with metal thermowell - for temperatures up to 1300°C
- TSH220 with ceramic thermowell - for temperatures up to 1800°C
- TSH250 with platinum sleeve - for temperatures up to 1650°C



Energy Harvesting / WirelessHART Temperature

This WirelessHART temperature sensor enables the easy addition of temperature measuring points throughout operations. Shorten installation times by eliminating complex wired infrastructure and lower overall implementation costs of process measurement with ABB's wireless devices featuring WirelessHART comms.

- Faster implementation time: up to 75% faster
- Complete remote access to device diagnostics
- Scalability: easy installation of additional instruments
- Reduced install costs by 30% compared to wired HART
- Smaller installation footprint: no junction boxes or cabling
- The first autonomous WirelessHART temperature sensor

ABB Energy Harvesting converts the electrical energy from thermal energy into usable electrical energy. This harvest electrical energy can then be used to power wireless transmitters creating a total wire free solution for field temperature. The TEG (Thermal Energy Generator) allows you to install a wireless device with fast update rates down to one time per second. This enables you to improve uptimes while reducing maintenance expenses.

Ranges

- TSP300-W WirelessHART temperature sensor
- TTF300-W WirelessHART field-mount temperature transmitter



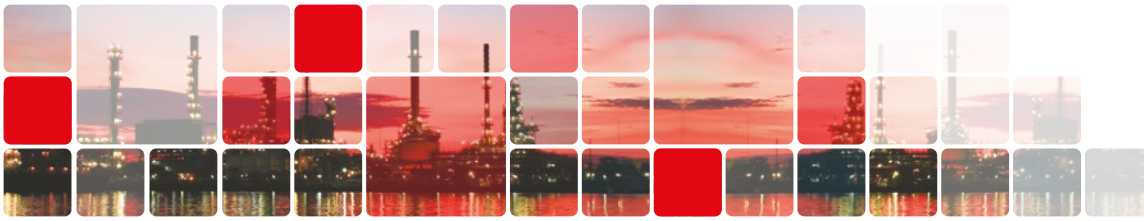


ABB TEMPERATURE ASSEMBLIES



TSP411 - Temperature Sensors tailored for the Oil & Gas Industry

Features

- Extremely robust connection head
- Display with configuration function
- Global approval certifications
- Optional LCD indicator
- Transmitters available to SIL2
- Temperature sensors for heavy duty application

ABB manufacture the full range of temperature sensors required by the oil and gas industry, including multipoints, surface-mounted temperature solutions and boiler tube assemblies.

The TSP411 offers a temperature sensor solution aimed at the needs of this most demanding industry, high quality components built for a high accuracy, robust and safe solution. It communicates with FOUNDATION Fieldbus, PROFIBUS PA, HART, 4...20mA or direct sensor output.

SensyTemp TSP411 series sensors allow for measuring inset replacement during operation. With their short response time and high vibration resistance these devices meet the most demanding process requirements. This product can be combined with the TSW400 solid drilled thermowell (*below*) to provide a complete solution, fully compliant, giving you total customer confidence.



TSW400 - Safe, tough and reliable thermowells for the Oil & Gas Industry

Features

- Sized to the millimetre
- Material & welding certification
- Traceability to producing mill
- Wake frequency calculations
- X-Ray PMI available
- 3.1 certification

The TSW400 has been designed around the AMSE PTC19.3 TW-2016 standard for thermowell stress calculation. Fully compliant with the requirements of this most demanding industry and ASME standards.

Flanged thermowells are available in three manufacturing options:

- **Welded with a fillet and groove weld** - fillet and groove welding is perfectly adequate in most circumstances; the weld is designed to be stronger than the required duty pressure.
- **Welded with a full penetration weld** - full penetration welding provides a stronger weld joint and is specified when absolute assurance of pipe-work integrity is required.
- **Manufactured from a single piece** - fully forged thermowells are manufactured from a shaped forging formed to closely resemble the final shape of the finished thermowell. This ensures correct granular alignment of all the thermowell components - vital in ensuring resistance to corrosion cracking.



TTH200 / TTR200 - Transmitter Series 200

ABB's mid-range transmitter is available with 4 to 20mA and HART process protocol and offers industry-beating performance for a single-channel HART communication transmitter.

The **TTH200** is an in-head design transmitter that features sophisticated fault detection to warn plant operators that the sensing element has either failed or is about to fail.



The **TTR200** is a universal rail-mount HART temperature transmitter in a compact 17.5mm housing. The transmitter provides increased device safety in compliance with NE89 and NE107 and hardware write protection.



TTH300 / TTF300 - Transmitter Series 300

ABB's flagship transmitter offers unparalleled performance and a dual-channel input. Sensor inputs for a wide range of resistance thermometers and thermocouples are enhanced by inputs that accept simple voltage inputs. Two sensors can be connected to the TTH300 providing some unique diagnostic opportunities:



- Drift detection - both sensors are continuously monitored and any drift between them detected gives early warning of sensor failure.
- Automatic redundancy - both sensors are monitored and failure of the primary sensor results in the automatic switching to the secondary sensor.

