ABB MEASUREMENT & ANALYTICS

Non-invasive sensor NINVA™

A new era of temperature measurement

Why use a non-invasive sensor?

A simpler and safer approach

SAFER
- No risk of defective welds and leakages

SIMPLER
- Accurate clamp-on measurement in minutes
- No thermowell stocking
- Single device for wide range of piping

HIGH PERFORMANCE
- Keep your measurement quality

LOWER LIFE CYCLE COST
- Quick to install for less costly installation
- No thermowell testing, calculations or need for exotic materials

NINVA™ – TSP341-N

Introducing TSP341-N – A simpler and safer way of measuring your process temperature without the need to shut down, drill a hole or install a thermowell.

With its innovative double sensor architecture and specially developed calculation algorithm, it greatly enhances your safety and reduces your installation costs without sacrificing the quality of your measurement.

NINVA™ is the first clamp-on non-invasive temperature sensor that has been fully assessed to the IEC61508 standard and meets the requirements for SIL2.

Relevant Data at a glance	
Process connection	Surface mounting to piping (Clamp-on concept)[3]
Sensor	RTD – 2 × Thin film resistor Pt100, three-wire circuit; nickel tip
Accuracy	2 × Class A, IEC60751 Insets[1]
Response time	T90 < 45s on liquid media, turbulent flow (Re > 10000), Metal Piping
Material connection heads	Aluminum, epoxy-coated; Stainless steel
Communication	4…20 mA, HART 7
Response time	T90 < 45s on liquid media in turbulent flow regime
Measuring range (surface temperature)	-40 to 400 °C (-40 to 752 °F)[1]
Hazardous area Certifications	ATEX/IECEx/cFMus
Vibration resistance	Integral (1g and 50g Shock resistance), Remote Sensor (2g and 50g Shock resistance) IEC 60068-2-6 resistance),
Piping diameters	DN40 – DN2500 (1,5″– 88″)[2]
Use in Safety Systems	SIL2 Capable

1. Options available up to 550°C – Contact ABB
2. Options available down to DN15 – Contact ABB
3. Options for clamp free design with recommendations for welding stud – Contact ABB

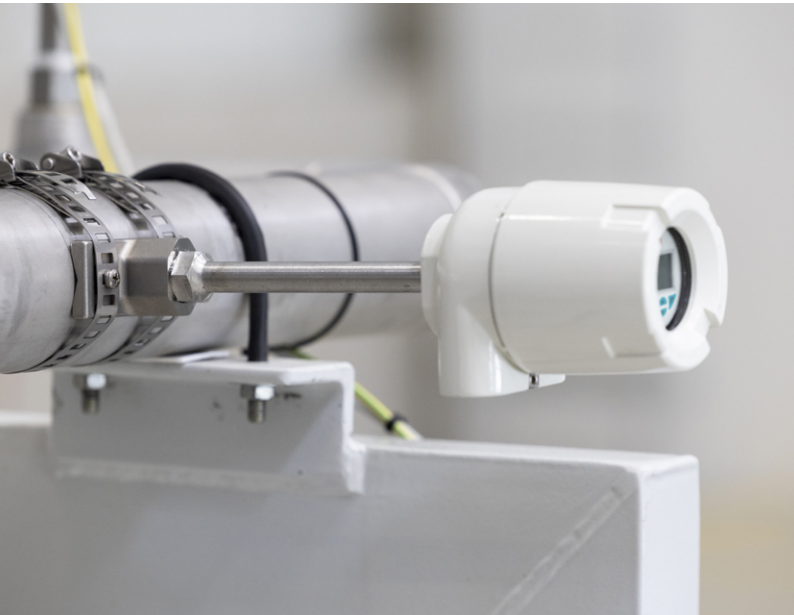
SAFER

SIL2 certification and no process penetration, no threat of undetected welding defects

By using the pipe as the “thermowell”, NINVA™ eliminates the risk and adminstrative costs of welding temperature measurement points. SIL2 certification makes NINVA™ the safest non-invasive temperature sensor in the world.

Eliminates the need for:

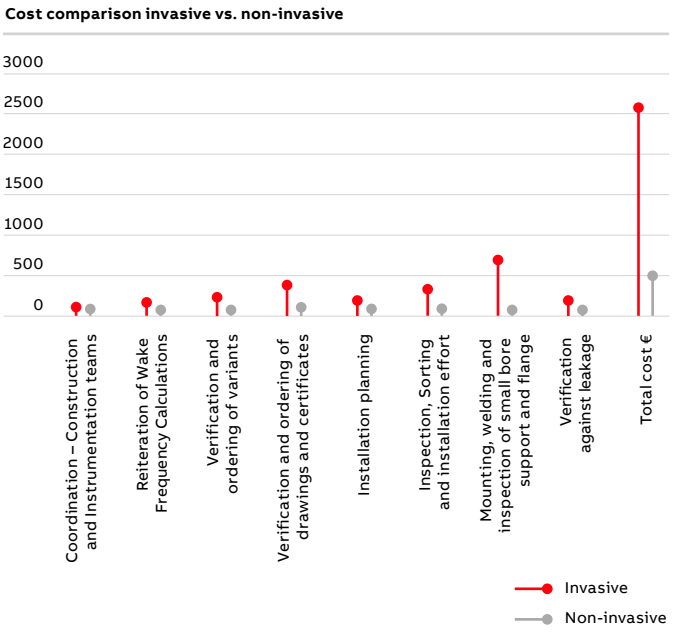
- Wake frequency calculations
- Checking and qualifying welds
- Obtaining and checking material certificates
- Die pentration, and radioactive (X or gamma ray) testing



LOWER COST OF OWNERSHIP

Faster and more cost-efficient

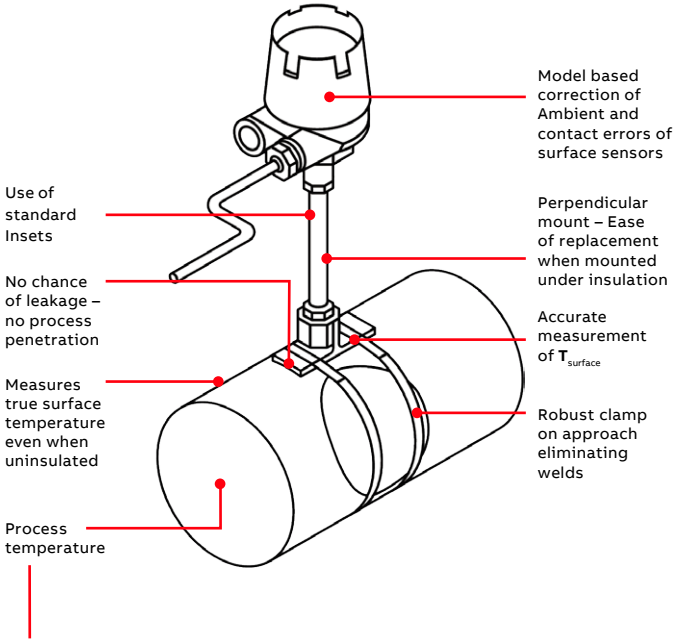
- No need to shut down for installation and service
- Eliminate hundreds of thermowell inspections at turnarounds
- Single variant for all piping locations in the plant
- Reduces both workload and Capex cost for temperature measurements



HIGH PERFORMANCE

Keep your measurement quality

- Accurate and repeatable measurements with trusted TTH300 Transmitter and class A PT100 sensors
- Extractable insets for simpler calibration
- Proven in 1000s of installations globally in the chemical and oil and gas industries



Model based inference of Process temperature – Independent offline performance check

SIMPLER
Straightforward from ordering to maintenance

Easy ordering and delivery process
- Single variant can be used for piping from DN40 – DN2500 (1,5”– 88”) – with options for smaller diameters.

Less installation effort
- Install in minutes with proven and robust clamp on approach (scan the QR code below to see the installation instruction).
- Robust interlinking straps to cover the full range of piping.

Intuitive commissioning and handling
- Full configuration of the sensor through the display using the ABB Standard Easy setup menu .

Minimal maintenance effort
- Simple approach to check and ensure robust mounting of the sensor.

Installation instruction

Contact

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