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ABB MEASUREMENT & ANALYTICS

# Non-invasive sensor

A new era of temperature measurement



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# Why use a non-invasive sensor?

A simpler and safer approach

- **SAFER**

and no risk of thermowell breaking off

- **REDUCED COST**

Quick to install for less costly installation

No thermowell testing, calculations or need for exotic materials

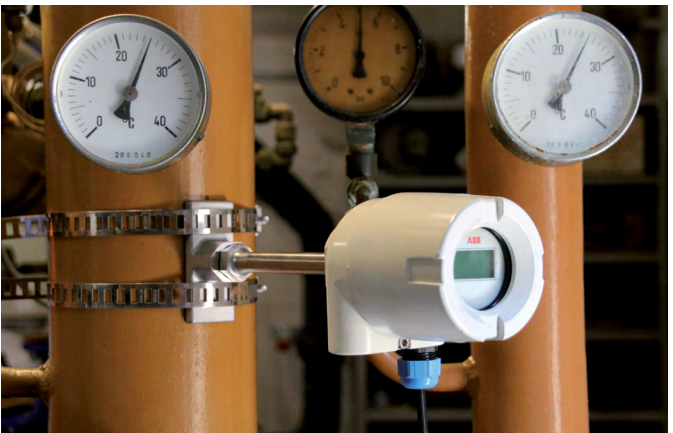
- **HIGH PERFORMANCE**

Keep your measurement quality

- **SIMPLER**

Straightforward from ordering to maintenance

No thermowell stocking



# TSP341-N

## At a glance

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.

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### Main data at a glance for TSP341-N

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Process connection	Surface mounting to vessels and piping (Clamp-on concept)
Sensor	Thin film resistor Pt100 in three-wire circuit; nickel tip
Material connection heads	Aluminum, epoxy-coated or stainless steel
Communication	4 to 20 mA, HART 7
Accuracy	Similar to invasive sensor under common conditions
Response time	Matches or exceeds invasive sensor performance
Measuring range (surface temperature)	-40 to 400 °C (-40 to 752 °F)
Transport/storage temperature	-20 to 70 °C (-4 bis 158 °F)
Ambient temperature range at connection head	without LCD indicator: -40 to 85 °C (-40 to 185 °F) with LCD indicator: -20 to 70 °C (-4 to 158 °F)
IP rating	IP 66 / IP 67
Vibration resistance	10 to 58 Hz: 0,075 mm (0,003 in.) > 58 to 2000 Hz: 10 m/s <sup>2</sup> (1 g)
Explosion protection	Global approvals; intrinsic safety and flameproof enclosure

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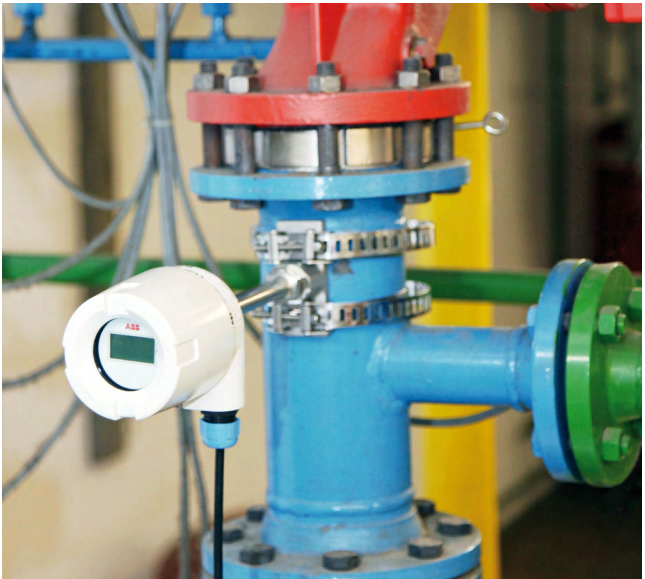
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# SAFER

## No process penetration

The non-invasive sensor measures at the surface, eliminating the need for a thermowell and avoiding process intrusion altogether: Its approach is inherently safer!

- Reduces risks for humans, the environment, the medium as well as other system components
- Eliminates risk of failure of a thermowell
- Simplifies the compliance of safety and environmental aspects



# LOWER COST OF OWNERSHIP

Faster and more cost-efficient

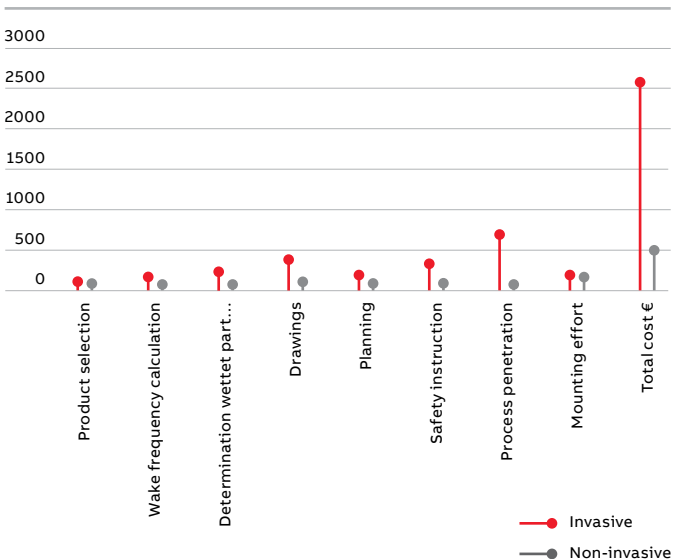
No need to shut down for installation and service

Suitable for various applications and industries

Increases plant availability, lowers system costs significantly

More than 75% CAPEX cost reduction

Cost comparison invasive vs. non-invasive



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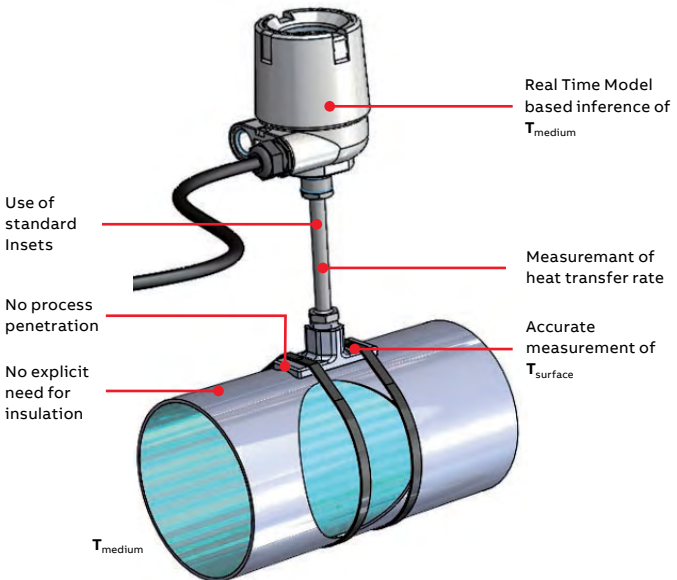
# HIGH PERFORMANCE

Keep your measurement quality

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Accuracy and response time close to or better than invasive measurement

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Repeatability proven under long-term industrial testing during development

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Standard insets widely used in industry



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# SIMPLER

Straightforward from ordering to maintenance



## **Easy ordering and delivery process**

Ordering a TSP341-N is completely simple. A thermowell is not necessary, therefore process compatibility does not have to be considered.



## **Less installation effort**

Low installation time and effort due to the clamp-on concept. The installation can be done while the process is running. The sensor can be easily integrated into an existing system structure.



## **Intuitive commissioning and handling**

Product parameterization happens via the HART interface. Handling during operation is possible. The TSP341-N has the ABB common look and feel with text display.



## **Minimal maintenance effort**

The product is independent of the process and easy to maintain. An incorrect installation can be removed quickly. Maintenance may be carried out without shutting down the process.

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# Contact

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