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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

- **Increased safety**

No process penetration

- **Greater flexibility**

Surface mounting for faster and more cost-effective measurements

- **Keep your measurement quality**

Innovative technology with proven components

- **Simpler to handle**

Straightforward from ordering to maintenance



# 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:<br>-40 to 85 °C (-40 to 185 °F)<br>with LCD indicator:<br>-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.)<br>> 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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# Increased safety

## 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



# Greater flexibility

Faster and more cost-efficient

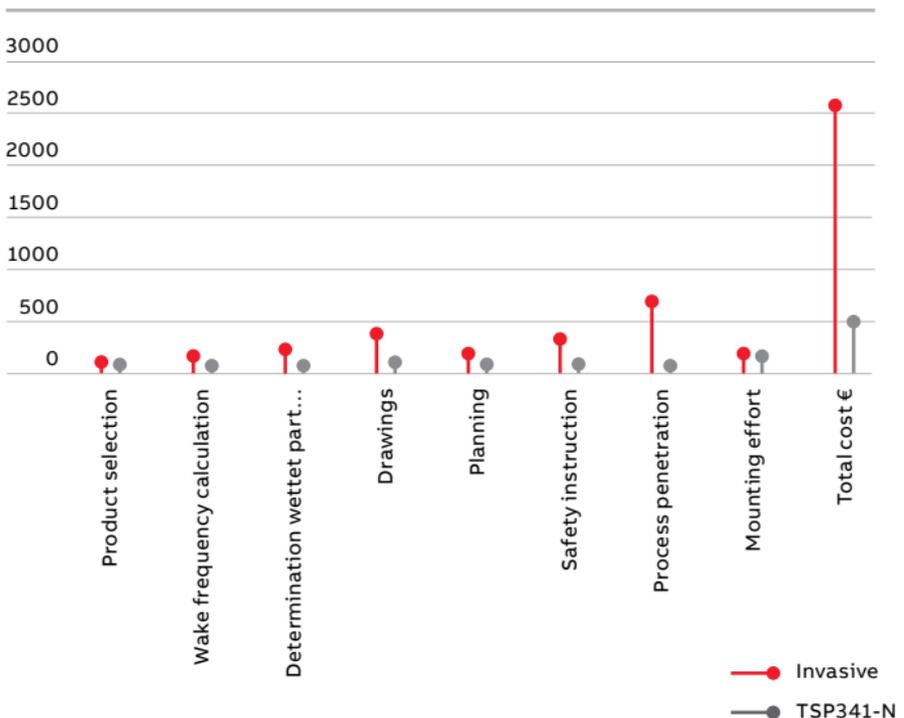
No need to shut down for installation and service

Suitable for various applications and industries

Increases plant availability, lowers system costs significantly

More than 75% CAPEX cost reduction

Cost comparison invasive vs. n on-invasive



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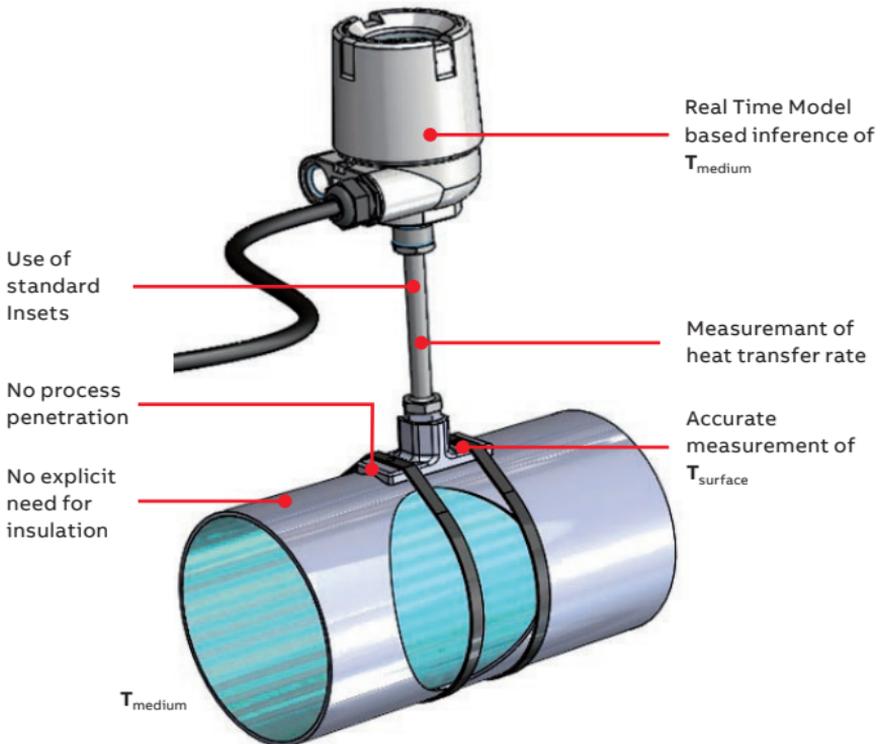
# Keep your measurement quality

## Innovative technology

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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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# Easy handling

Straightforward from ordering to maintenance



## Easy ordering and delivery process

Ordering a TSP341-N is completely simple. A thermometer 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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