

Temperature sensors and transmitters

Recycling instructions and environmental information



Measurement made easy

—
Industry sensors with
connection head and
thermowell

Cable sensors and compact
sensors

Temperature transmitter with
plastic and metal housing

Introduction

The document contains information for treatment facilities in accordance with the EU directive on waste electrical and electronic equipment (WEEE).

Additional Information

Additional documentation on Temperature sensors and transmitters is available for download free of charge at www.abb.de/temperature. Alternatively simply scan this code:



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1 List of related manuals

Hardware manuals and guides are available at:

www.new.abb.com/products/measurement-products/temperature



Recycling instructions and environmental information:

3KXT000004R2001

ABB Measurement & Analytical instruction notes for disposal:

3KDE010107R2083

You can find manuals and other product documents in PDF format on the Internet. See section document library on the internet on the inside of the back cover. For manuals not available in the document library, contact your local ABB representative.

Notice

- This document contains information about one or more ABB products and may include a description of or a reference to one or more standards that may be generally relevant to the ABB products. The presence of any such description of a standard or reference to a standard is not a representation that all of the ABB products referenced in this document support all of the features of the described or referenced standard. In order to determine the specific features supported by a particular ABB product, the reader should consult the product specifications for the particular ABB product.
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- The software or hardware described in this document is furnished under a license and may be used, copied, or disclosed only in accordance with the terms of such license.
- This product meets the requirements specified in WEEE Directive 2012/19/EU.

2 Safety

General information and instructions

These instructions are an important part of the product and must be retained for future reference.

Installation, commissioning, and maintenance of the product may only be performed by trained specialist personnel who have been authorized by the plant operator accordingly. The specialist personnel must have read and understood the manual and must comply with its instructions.

For additional information or if specific problems occur that are not discussed in these instructions, contact the manufacturer.

The content of these instructions is neither part of nor an amendment to any previous or existing agreement, promise or legal relationship.

Modifications and repairs to the product may only be performed if expressly permitted by these instructions.

Information and symbols on the product must be observed. These may not be removed and must be fully legible at all times. The operating company must strictly observe the applicable national regulations relating to the installation, function testing, repair and maintenance of electrical products.

Warnings

The warnings in these instructions are structured as follows:

 **DANGER**

The signal word '**DANGER**' indicates an imminent danger. Failure to observe this information will result in death or severe injury.

 **WARNING**

The signal word '**WARNING**' indicates an imminent danger. Failure to observe this information may result in death or severe injury.

 **CAUTION**

The signal word '**CAUTION**' indicates an imminent danger. Failure to observe this information may result in minor or moderate injury.

NOTICE

The signal word '**NOTICE**' indicates possible material damage.

Note

'**Note**' indicates useful or important information about the product.

3 Introduction

This chapter describes the contents of the manual. It also contains information on the compatibility and intended audience.

Contents of the manual

The document contains information for treatment facilities in accordance with the EU directive on waste electrical and electronic equipment (WEEE).

This manual contains the following chapters:

- Product materials
- Manufacturing and use
- Product disposal

The WEEE directive is implemented through national regulations and therefore requirements vary in each EU member state.

The products are always parts of other machines or equipment and they are covered by the WEEE directive when the end product is covered. Inclusion or exclusion depends on the application of the products.

The WEEE directive does not apply to temperature sensors or transmitters which are used in large-scale fixed installations, large-scale stationary industrial tools, means of transport for persons and goods, or non-road mobile machinery made available exclusively for professional use. We recommend to contact local environmental authorities for up-to-date information about national recycling requirements.

Applicability

This document covers the environmental information of the following product families with their wired and wireless options:

- Temperature sensors and transmitters

Target audience

This document is intended for professional recyclers. Customers have to follow the ABB Measurement & Analytical instruction notes for disposal No. 3KDE010107R2083.

Disclaimer

The information presented in this publication does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice. No liability will be accepted by the publisher for any consequences of its use. Publication thereof does not convey nor imply any license under patent - or other industrial or intellectual - property rights.

4 Product overview

The ABB temperature sensor and signal transmitter families are shown in the figures below.

Industrial sensors with connection head and thermowell

Optional with radio transmission (wireless data transmission)

ABB temperature sensor families:

With or without integrated temperature transmitter or display.

- TSP100 (TSP111, TSP121, TSP131)
- TSP300 (TSP311, TSP321, TSP331, TSP341-N)
- TSH200 (TSH210, TSH220), thermowell from metallic or ceramic material
- TSP300-W (TSP311-W, TSP321-W, TSP331-W, TSP341-W), devices with radio transmission, optional Energy Harvester for internal power generation

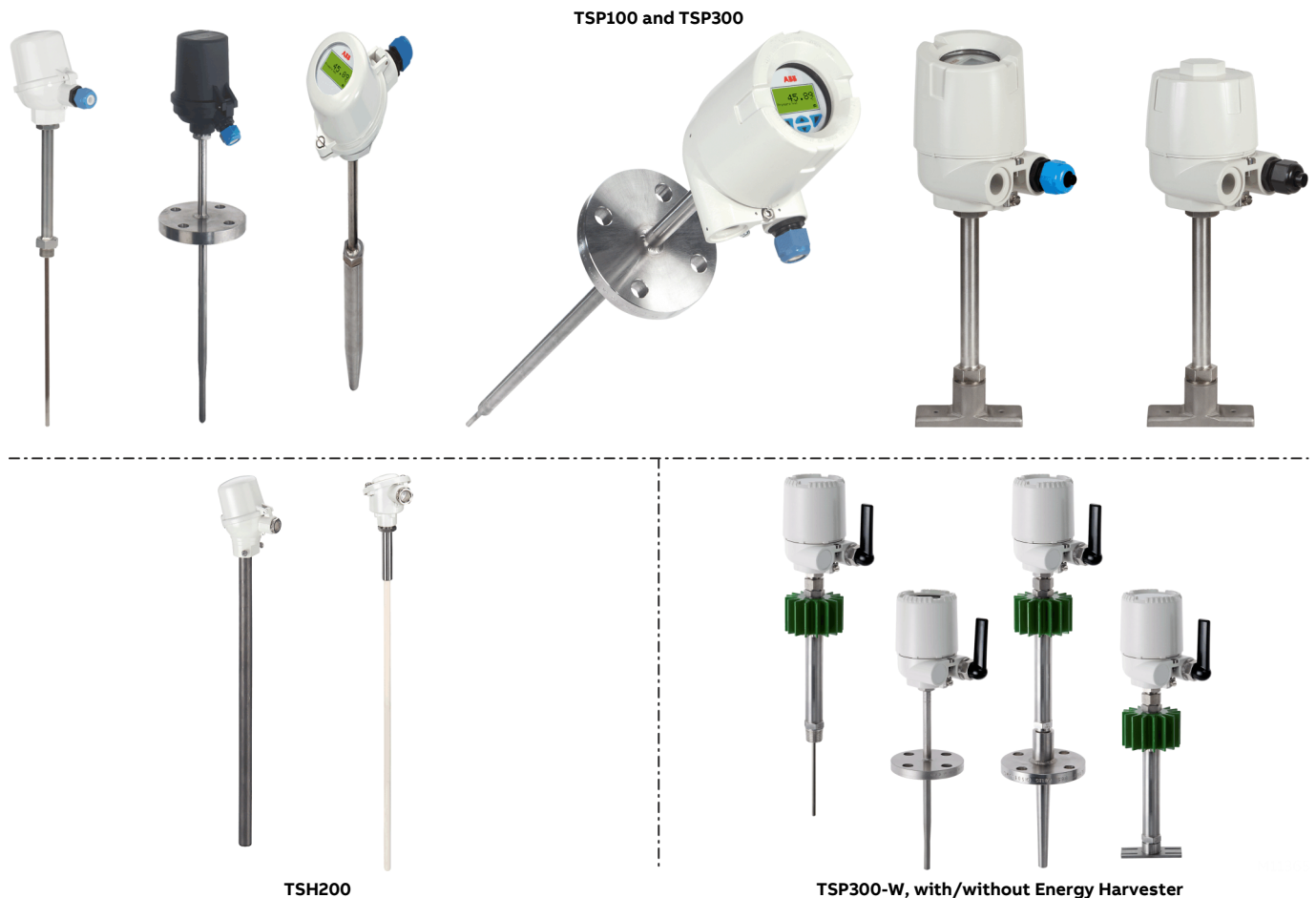


Figure 1: Product overview industry temperature sensors

Note

The temperature transmitter and LCD display must be separately disposed.

Cable sensors and compact sensors

ABB temperature sensor families:

With or without integrated temperature transmitter.

- TSC400 (TSC420, TSC430)
- TSA101 (spare part of TSP sensor)
- Other families (selection): BA..., ET..., HY..., IS..., TW..., UT..., WT...



Figure 2: Product overview cable sensors and compact sensors

Note

The temperature transmitter and LCD display must be separately disposed.

Temperature transmitters with plastic and metal housing

Optional with radio transmission (wireless data transmission)

ABB temperature transmitter families:

Stand-alone or integrated into sensor

- TTH (TTH200, TTH300), transmitter with plastic housing
- TTR (TTR200), transmitter with plastic housing
- TTF (TTF200, TTF300), transmitter with metal housing
- TTF300-W, devices with metal housing and radio transmission

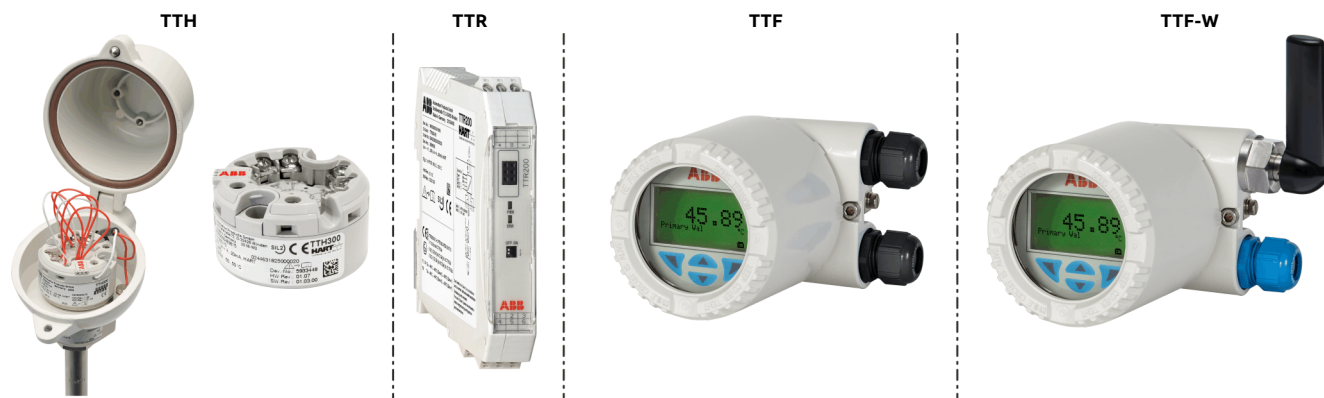


Figure 3: Product overview temperature transmitters

5 Product materials

Industrial sensor, compact sensor and TTF temperature transmitter

The main components of temperature sensor and temperature transmitter families are shown in the figures below.

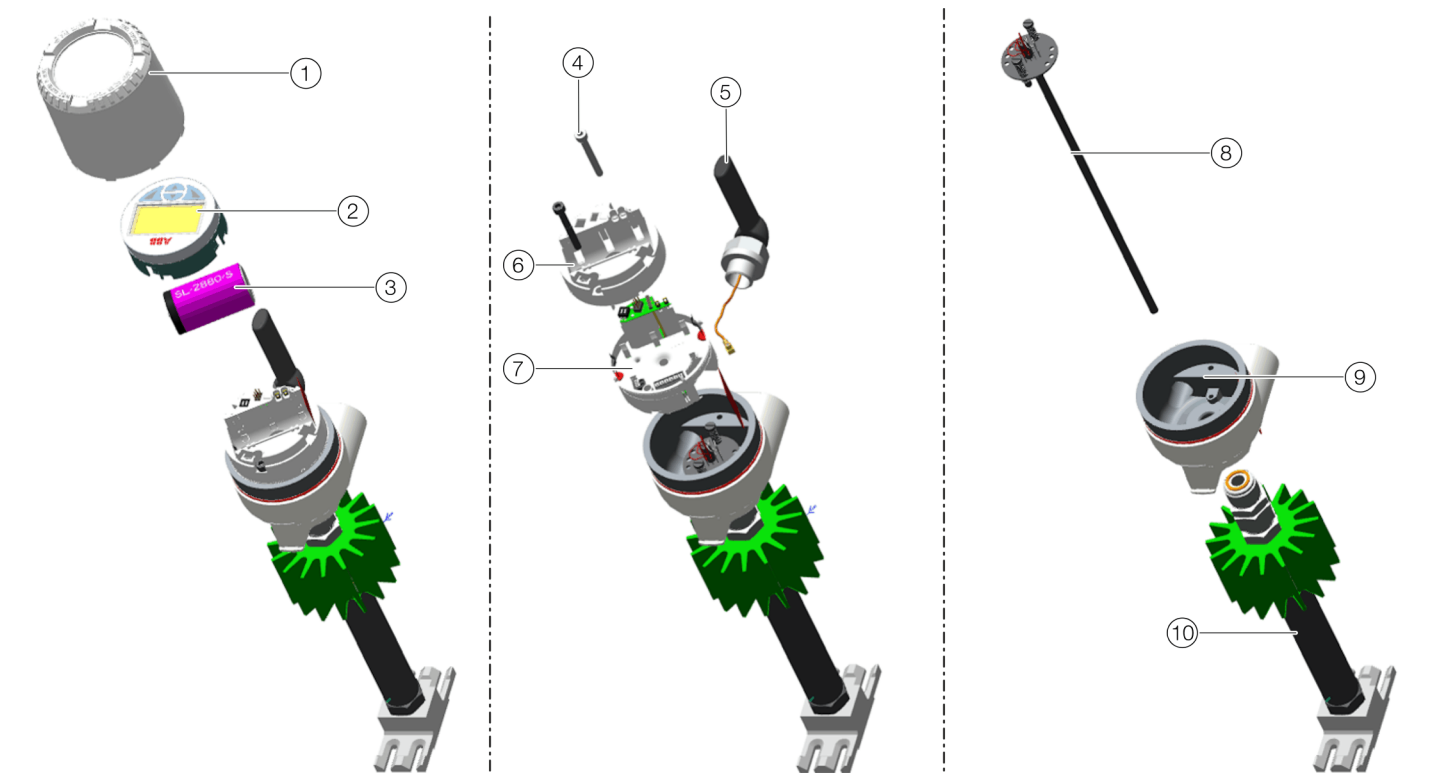


Figure 4: Industry temperature sensors with thermowell

Materials				
① Cover	② Display	③ Battery	④ Screws	⑤ Antenna
a Aluminum	a LCD Display	Only devices with radio	a Stainless steel	a Plastics parts
b Stainless steel	b Plastic parts	transmission / antenna		b Electronics
c Plastic	c Electronics	a Chemicals (LTC)		c Metal parts
d Glas				
e Sealings				
⑥ Plastic cover	⑦ Transmitter	⑧ Measuring inset	⑨ Housing	⑩ Thermowell
a Plastics parts	a Plastics parts	a Metal parts	a Aluminum or stainless steel	With or without Thermo Electric
	b Electronics	b Ceramic parts	b Plastics parts	Generator (TEG) - unit
		c Copper parts		a Metal parts
		d Precious metal parts		b Aluminum parts
				c Stainless steel parts
				d Copper parts
				e Ceramic parts
				f TEG chip

Cable sensor

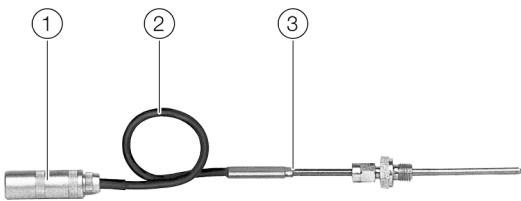


Figure 5: Cable sensor

Materials		
① Plug	② Cable	③ Measuring inset
a Metal parts (Aluminum, Brass or Stainless Steel)	a Metal parts	a Metal parts
b Plastic parts	b Copper parts	b Ceramic parts
	c Synthetic materials such as PVC, PFA	c Copper parts
	d Glas filament	d Precious metal parts
	e Silicone rubber	

TTH and TTR temperature transmitter



Figure 6: Temperature transmitters TTH and TTR

Materials	
TTH	TTR
Plastics and potted electronics, screws and small parts from steel	Plastics, electronics and potted electronics, small part from metal

6 Potential Hazards

Handling of lithium ion batteries

CAUTION

Corrosion, fire and explosion hazard if lithium batteries are not properly handled.

Lithium batteries contain acids and may explode if they are exposed to extreme heat, become mechanically damaged or are electrically overloaded.

- Never charge or short-circuit lithium batteries
- Never expose lithium batteries to temperatures > 100 °C (> 212 °F) or to fire
- Never use damaged lithium batteries

Lithium batteries do not pose a danger if handled properly. Please note the following points for the proper handling of lithium batteries:

- Protect the contacts or connection leads of lithium batteries that are not used in the device against short-circuits, e.g. by masking them
- Do not charge lithium batteries

7 Manufacturing and use

Manufacturing

ABB Automation Products GmbH (Germany) has a company-wide integrated quality, environmental and occupational health & safety management system. The system is certified in accordance with requirements of the international standards ISO 9001:2015 and ISO 14001:2015. The Integrated Management System applies to all units of the company.

Use

The products and systems are for industrial application in the process and process industries. The systems have a modular design and can be configured customer - and application - specific.

The products and systems are part of an industrial plant that enables environmentally friendly and energy-saving to control and monitoring of complex industrial processes.

8 Recycling and disposal

Note



Products that are marked with the adjacent symbol may **not** be disposed of as unsorted municipal waste (domestic waste).

They should be disposed of through separate collection of electric and electronic devices.

This product and its packaging are manufactured from materials that can be recycled by specialist recycling companies.

Bear the following points in mind when disposing of them:

- As of 8/15/2018, this product will be under the open scope of the WEEE Directive 2012/19/EU and relevant national laws (for example, ElektroG - Electrical Equipment Act - in Germany).
- The product must be supplied to a specialist recycling company. Do not use municipal waste collection points. These may be used for privately used products only in accordance with WEEE Directive 2012/19/EU.
- If there is no possibility to dispose of the old equipment properly, our Service can take care of its pick-up and disposal for a fee.

9 Additional documents

Note

All documentation, declarations of conformity and certificates are available in ABB's download area.

www.abb.com/temperature

ABB environment policy

You can find ABB's environmental policy on the Internet at

www.new.abb.com/sustainability/abb-policy-on-health-safety-environment-security-and-sustainability



ABB group sustainability objectives

For information on ABB group sustainability objectives, navigate to

www.new.abb.com/sustainability/creating-value/objectives



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