Application Description AD/TEMP/005-EN DRAFT 1

TTF300
Field mount temperature transmitter

Best-in-class field temperature transmitter

Introduction

The TTF300 field mount temperature transmitter is the solution of choice where head mounting of the temperature transmitter is not possible or undesirable.

The TTF300 is designed with the user in mind. From the human-machine interface (HMI) down to the connection screws; the TTF300 makes all operations simple and fast.

Customer value

In temperature measurement during normal plant operations, two vital components add value to the solution offered:

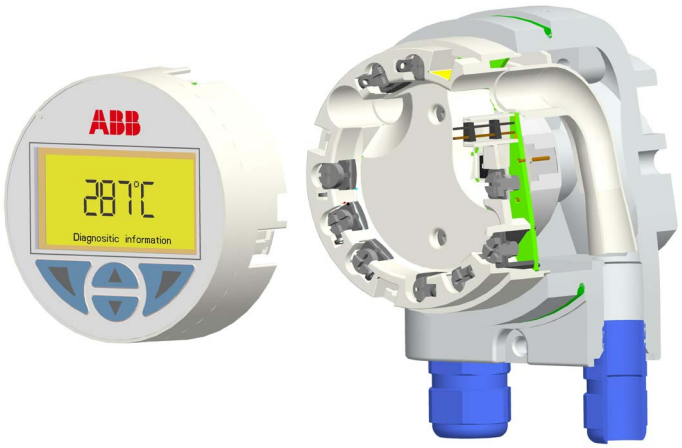
- The measurement must be available
  - failure of a measurement can, in the worst case, result in plant shutdown and loss of income.
- The measurement must be suitably accurate
  - the accuracy required varies from process to process

The TTF300 satisfies both of these requirements via its advanced diagnostics and accurate sensor signal conversion.

During installation and maintenance, customer value is in speed. No plant operator wants to have to spend more time than is necessary to repair and install equipment. The advanced design of the TTF300 is user-focused and is fast to install and commission.

Ease of installation

The TTF300 is simple and fast to install and configure. Access to the connection terminals is via cable guides that present the terminations exactly where they are needed. The HMI enables programming of process variables and communications setting in the field, speeding the connection to plant control systems. The large liquid crystal display is easy to read. Two sensors can be connected to the TTF300, either RTD or thermocouple or a combination of the two. Each sensor can be accessed via the communications protocol.



Main features

Available with a wide range of plant communications protocols from 4 to 20 mA with HART to Profibus and Foundation Fieldbus the TTF300 covers all your customer's needs.

The advanced diagnostics built into the TTF300 are designed to minimise plant down-time.

Sensor inputs for RTD and thermocouples cover every need for temperature measurement. Voltage and current inputs allow the TTF300 to be used as a communications transmitter for any number of measurement parameters.

The TTF300 is also available with a wide range of international hazardous area approvals including intrinsic safety, explosion protection and non-sparking standards. Stainless steel housings or coated aluminium both offer the same degree of ingress and safety protection.

Advanced diagnostics

Two sensors connected to a single transmitter offer some uniquely advanced diagnostic functions. The sensors can be used in a redundant mode where if the TTF300 detects a problem with the primary sensing element it automatically switches to the secondary sensing element. The communications protocol alerts the process control system that this has happened to enable the plant to continue in operation while the problem is fixed. Drift detection can also be enabled to continuously monitor the two sensors and detect any drift between them. The plant control system is alerted if the measured temperature by both sensors deviates by more than a set threshold.

See the ABB data sheet for the additional diagnostic features that make the TTF300 the field transmitter of choice for process industries throughout the world.

Sensor matching calibration

Where absolute confidence in the measured temperature is required the TTF300 can be programmed with the exact curve of a particular RTD element. This Callendar–Van Dusen coefficient setting is of particular interest to industries such as the pharmaceutical industry where a biological reaction doubles in speed with every ten degrees of temperature rise and beyond a particular temperature will decline at an equally high rate. Optimizing the production of biologically sourced components relies on very accurate process temperature control; at the heart of which is very accurate temperature measurement.

Process industries

The TFF300 is available in either an epoxy-coated aluminium housing or a 316L stainless steel housing making it suitable for all internal and external environments and process industries. The TTF300 has been successfully used in the following industries.

- Oil & Gas
- Petrochemicals
- General chemicals
- Paper & Pulp
- Power
- Pharmaceuticals
- And many more

Speak to your ABB representative about the TTF300 and learn about the surprising number of ways that ABB temperature can add value to your process.

Notes

Contact us

ABB Limited
Process Automation
Salterbeck Trading Estate
Workington, Cumbria
CA14 5DS
UK
Tel: +44 (0)1946 830 611
Fax: +44 (0)1946 832 661

ABB Inc.
Process Automation
125 E. County Line Road
Warminster
PA 18974
USA
Tel: +1 215 674 6000
Fax: +1 215 674 7183

ABB Automation Products GmbH
Process Automation
Schillerstr. 72
32425 Minden
Deutschland
Tel: +49 551 905 534
Fax: +49 551 905 555

www.abb.com

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