TURCK TS720… Compact Processing and Display Unit User Guide

Contents

TS720… Compact Processing and Display Unit

Other documents
Besides this document, the following material can be found on the Internet at **www.turck.com**

- Data sheet
- Instructions for use
- IO-Link parameters
- EU Declaration of Conformity (current version)
- Approvals

For your safety

Intended use
The device is designed only for use in industrial areas.
The compact processing and display units of the TS720… series are designed for measuring temperatures in machines and plants. This requires the connection of a temperature probe to the devices. The compact processing and display units support the connection of resistance thermometers (RTD) and thermocouples (TC).
The device must only be used as described in these instructions. Any other use is not in accor-dance with the intended use. Turck accepts no liability for any resulting damage.

General safety instructions

1. The device only meets the EMC requirements for industrial areas and is not suitable for use in residential areas.
2. Do not use the device for the protection of persons or machines.
3. The device must only be mounted, installed, operated, parameterized and maintained by trained and qualified personnel.
4. Only operate the device within the limits stated in the technical specifications.

Product description

Device overview
See fig. 1: Front view, fig. 2: Dimensions
Functions and operating modes

Type	Output
TS…LI2UPN…	2 switching outputs (PNP/NPN/Auto) or 1 switching output (PNP/NPN/Auto) and 1 analog output (I/U/Auto)
TS…2UPN…	2 switching outputs (PNP/NPN/Auto)

A window function and a hysteresis function can be set for the switching outputs. The measur-ing range of the analog output can be defined as required. The measured temperature can be displayed in °C, °F, K or the resistance in Ω.
The device parameters can be set via IO-Link and with the touchpads.
The following temperature probes can be connected to the device:

- Resistance thermometers (RTD)
  Pt100 (2-, 3-, 4-wire, 2 × 2-wire)
  Pt1000 (2-, 3-, 4-wire, 2 × 2-wire)
- Thermocouples (TC) and dual thermocouples

Type T, S, R, K, J, E and B

Installing

The compact processing and display unit is provided with a G1/2″ thread for mounting with a mounting bracket for the specific application. The device can alternatively be mounted with the mounting bracket FAM-30-PA66 (Ident-no. 100018384). The display of the unit can be rotated by 180° (see fig. 3 and parameter DiSr).

- Mount the compact processing and display unit on any part of the plant. Observe the tech-nical specifications for the mounting (e.g. ambient temperature)
- Optional: Rotate the sensor head within the 340° range to align the connection to the I/O level as well as to ensure optimum operability and readability.

Connection

Standard 2-, 3-, 4- and 2 × 2-wire Pt100 and Pt1000 resistance thermometers (RTD) as well as type T, S, R, K, J, E and B dual thermocouples (TC) can be connected.

- Connect the temperature probe to the compact processing and display unit in accordance with the relevant specifications (see fig. 2, “Electrical connection for temperature probe (RTD, TC)”). Observe here the technical specifications and the installation instructions of the temperature probe.
- Connect the device according to the “Wiring diagrams” to the controller or an I/O module (see fig. 2, “Electrical connection for PLC”).

Commissioning
The device is operational automatically once the power supply is switched on. The auto sensing feature of the device automatically detects the connected temperature probe as well as the set switching output behavior (PNP/NPN) or analog output characteristics when connected to an I/O module. The auto sensing functions are activated by default.

Operation

LED status indication – Operation

LED	Display	Meaning
PWR	Green	Device is operational
Green flashing		IO-Link communication
FLT	Red	Error
°C	Green	Temperature in °C
°F	Green	Temperature in °F
K	Green	Temperature in K
Ω	Green	Resistance in Ω
(Switch-ing point LEDs)		– NO: Switching point exceeded/within the window (active output) – NC: Switching point undershot/outside the window (active output)

Setting and parameterization
To set the parameters via the touchpads refer to the enclosed parameter setting instructions. Parameter setting via IO-Link is explained in the IO-Link parameter setting manual.
Repair
The device must not be repaired by the user. The device must be decommissioned if it is faulty. Observe our return acceptance conditions when returning the device to Turck.
Disposal
The devices must be disposed of correctly and must not be included in general house-hold garbage.

Technical Data

- Temperature display range

  -210…+1820 °C
- Outputs
  - **TS…LI2UPN…**
  - 2switching outputs (PNP/NPN/Auto) or 1 switching output (PNP/NPN/Auto) and 1 analog output (I/U/Auto)
  - **TS…2UPN…**
  - 2 switching outputs (PNP/NPN/Auto)
- Ambient temperature

  -40…+80 °C
- Operating voltage

  10…33 VDC (TS…2UPN…) 17…33 VDC (TS…LI2UPN…)
- Power consumption

  < 3 W
- Output 1

  Switching output or IO-Link
- Output 2

  Switching output or analog output
- Rated operational current

  0.2 A
- Protection class

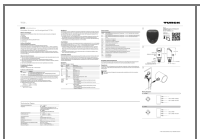
  IP6K6K/IP6K7/IP6K9K acc. to ISO 20653
- EMC

  EN 61326-2-3:2013
- Shock resistance

  50 g (11 ms), EN 60068-2-27
- Vibration resistance

  20 g (10…3000 Hz), EN 60068-2-6

Documents / Resources

	TURCK TS720… Compact Processing and Display Unit [pdf] User Guide TS720, Compact Processing and Display Unit, TS720 Compact Processing and Display Unit