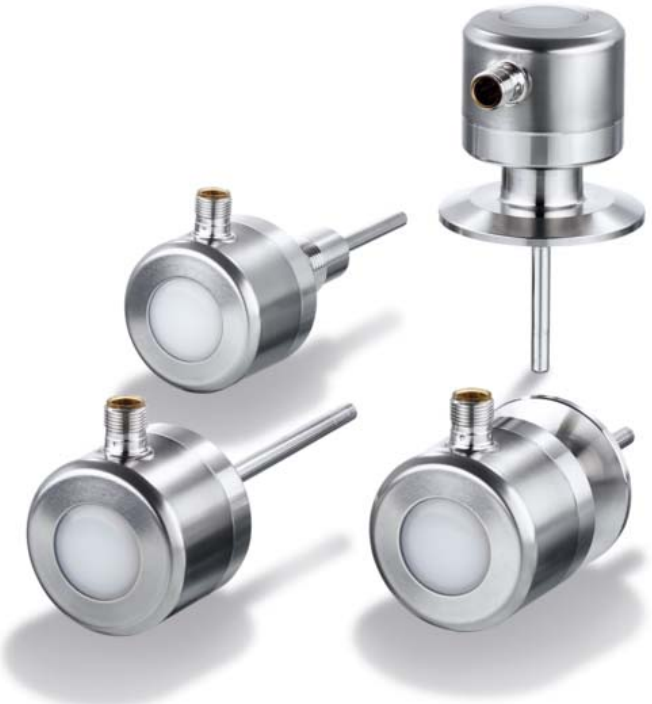
Process sensors

RusAutomation

TOP PRODUCT

Calibration check technology: the temperature sensor that checks itself

Temperature sensors



- **Immediate notification of deviations in accuracy**
- **Improved quality assurance in between calibration intervals**
- **Robust design for permanently precise measurements even in demanding environments**
- **Transparent sensor monitoring thanks to logging of the diagnostic values**
- **Simulation function simplifies installation**

IO-Link

EC 1935/ 2004

IP 68 IP 69 K

FDA

3A

Maximum reliability for temperature-sensitive processes

Thanks to the improved inline calibration process, the TCC achieves an accuracy of ± 0.2 K across the entire measuring range. This makes it perfectly suited for use in temperature-sensitive processes such as food, rubber or carbon processing. Besides, the TCC ensures a smooth process and a high product quality by permanently monitoring its own reliability. If the sensor deviates from the individually defined tolerance values or in the event of a sensor malfunction, it provides a corresponding signal via the clearly visible LED and the diagnostic output.

Robust design for long-time use

Thanks to its fully welded and sealed housing and a new measuring probe design, the TCC is permanently resistant to external influences such as moisture, thermal and mechanical shocks and vibrations.

Process connection	Order no.							
Installation depth [mm]	**30**	**50**	**100**	**150**	**250**	**350**	**450**	**550**
G 1/2 sealing cone	**TCC501**	**TCC511**	**TCC531**	**TCC541**	–	–	–	–
1 – 1.5" clamp	–	**TCC811**	**TCC831**	–	–	–	–	–
2" clamp	–	**TCC911**	**TCC931**	–	–	–	–	–
Ø 6 mm	–	–	**TCC231**	**TCC241**	**TCC261**	**TCC291**	**TCC281**	**TCC201**

Permanent status checking

Thanks to the calibration check technology, the TCC permanently checks its own drift behaviour. The sensor compares the temperature value to the simultaneously measured reference value. If the deviation is outside the tolerance range, which can be set between 0.5 and 3 K, the TCC provides an optical signal and sends a message to the central controller via IO-Link and the diagnostic output. The same applies to cases of serious malfunctions.

Quality assurance thanks to event-related measures

Particularly in production processes where exact temperature values are decisive for the product quality, it is important that the measured values are absolutely precise. The TCC allows plant operators to take event-related measures in case of drifts – instead of waiting for the next planned calibration interval. This reduces the risk of losing entire production batches due to faulty production temperatures.

Transparent sensor communication

Visual and digital indication: The TCC provides the current status in a simple and clear way. If the LED on the sensor is green, the unit operates reliably. Blue indicates a temperature deviation outside the tolerance range. Red indicates a serious malfunction, such as a failure of the main measuring element.

Besides, the TCC automatically stores all the data required for consistent documentation via IO-Link: installation date, operating hours, temperature histogram as well as logbooks on event messages (operating hours and event number) and on the calibration check status (operating hours, temperature value, drift value, limit and status).

Simulation mode: guaranteed reliability even before installation

The value from which the TCC provides a message can be defined via software. In the simulation mode, the process temperature and the reference temperature, among others, can be freely selected to verify whether the sensor has been correctly integrated into the controller. This process simulation completes the high level of reliability offered by the TCC.

Common technical data		
Operating voltage	[V DC]	18...32
Reverse polarity / overload protection		• / •
Output function Diagnostic output	[mA]	4...20
Protection rating, protection class		IP 68, IP 69K, III
Response time T05 / T09	[s]	1,5 / 4
Measuring range	[°C]	-25...160
Accuracy	[K]	± 0.2
Ambient temperature	[°C]	-40...70
IO-Link revision		1.1
Materials in contact with the medium		high-grade stainless steel (1.4404 / 316L)

Accessories

Type	Description	Order no.
Installation		
	Welding adapter for temperature sensors Ø 6 mm, stainless steel 1.4404 / 316L	**E30407**
IO-Link		
	LR DEVICE (supplied on USB flash drive) Software for online and offline parameter setting of IO-Link sensors and actuators	**QA0011**
	USB IO-Link master for parameter setting and analysis of units Supported communication protocols: IO-Link (4.8, 38.4 and 230 Kbits/s)	**E30390**
Connection technology		
	Socket, M12, 4 poles 5 m, grey, MPPE cable	**EVF001**
	Socket, M12, 4 poles 10 m, grey, MPPE cable	**EVF002**
	Socket, M12, 4 poles 5 m, grey, MPPE cable	**EVF004**
	Socket, M12, 4 poles 10 m, grey, MPPE cable	**EVF005**