



Process sensors

Precise temperature sensors with internal drift monitoring



Temperature sensors



Integrated drift detection via PT and NTC element

Permanent drift monitoring increases process reliability between the calibrations

Calibration intervals can be adapted or be dispensed with

Free 5-point calibration certificate supplied with the sensor

High precision of ± 0.2 K in the range of $-10...130$ °C



EC 1935 /
2004



Increased process reliability via permanent drift monitoring

The sensors of the TAD series have two resistance elements with different characteristics (PT and NTC) that monitor each other permanently in the process. Occurring drift is immediately detected and signalled. This increases the process reliability. All three process values (mean value, PT element, NTC element) can be documented via IO-Link. This ensures permanent transparency for quality management. Calibration intervals can be adapted or be dispensed with.

Precise 5-point calibration from the factory

Due to a 5-point temperature adjustment during the production process, the TAD temperature sensor features an accuracy of ± 0.2 K in the range of $-10...130$ °C.



Electrical design	Process connection	Probe length [mm]	Response dynamics T05 / T09 [s]	Operating voltage [V DC]	Programming interface	Order no.
TAD transmitter 4...20 mA · 2-wire or 3-wire operation						
4...20 mA (scalable)	G 1/2 male	33	3 / 6	18...32	IO-Link 1.1	TAD991
4...20 mA (scalable)	G 1/2 male	50	3 / 6	18...32	IO-Link 1.1	TAD091
4...20 mA (scalable)	G 1/2 male	87.5	3 / 6	18...32	IO-Link 1.1	TAD191
4...20 mA (scalable)	Aseptoflex Vario	33	3 / 6	18...32	IO-Link 1.1	TAD981
4...20 mA (scalable)	Aseptoflex Vario	50	3 / 6	18...32	IO-Link 1.1	TAD081
4...20 mA (scalable)	Aseptoflex Vario	87.5	3 / 6	18...32	IO-Link 1.1	TAD181

Programming options: threshold for drift warning / alarm; fail-safe; scaling analogue output; redundancy switching; performance diagnostic output; output logic; NO/NC

Accessories

Type	Description	Order no.
Installation		
	Aseptoflex Vario welding adapter* Ø 50 mm	E30122
	Sealing by O-ring	
	Aseptoflex Vario adapter* Clamp 2", ISO 2852	E33702
	Metal-to-metal seal	
	Aseptoflex Vario adapter* Varivent type N, DN40 (1.5"), Ø 68 mm	E33722
	Metal-to-metal seal	
	Aseptoflex Vario adapter* pipe fitting, DN40 (1.5"), DIN 11851	E33712
	Metal-to-metal seal	
	Adapter G 1/2 female – Clamp 1"–1.5"	E33401
	Adapter G 1/2 female – Clamp 2"	E33402
	Welding adapter ball, G 1/2	E30055
	Welding adapter collar, G 1/2	E30056

IO-Link

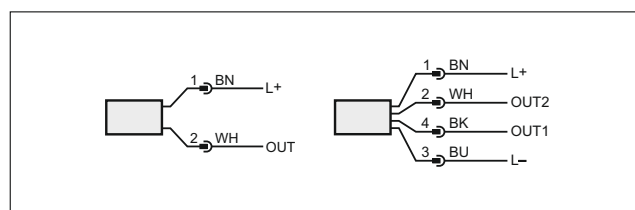
	USB IO-Link master for parameter setting and analysis of units Supported communication protocols: IO-Link (4.8, 38.4 and 230 kBit/s)	E30390
	Memory plug, parameter memory for IO-Link sensors	E30398
	LR DEVICE (supplied on USB flash drive) Software for online and offline parameter setting of IO-Link sensors and actuators	QA0011

* further Aseptoflex Vario adapters available

Further technical data

Self-monitoring temperature sensor Liquids and gases		
Measuring range	[°C]	-25...150 / 160 max. 1h
Perm. overload pressure	[bar]	50
Accuracy / deviations		± 0.2 (-10...130 °C); ± 0.3 (130...140 °C); ± 0.3 ± 0.1% MS (-25...-10/140...160 °C)
Resolution	[°C]	< 0.05
Protection		IP 68 / IP 69K
Measuring element		Pt1000 / NTC, thermally coupled
Materials in contact with the medium		high-grade stainless steel (1.4404 / 316L)
Surface characteristics		Ra: < 0.6
Connection		M12 connector, gold-plated contacts

Wiring diagram



Connection technology

Type	Description	Order no.
	Socket, M12, 4-pole 5 m, grey, MPPE cable	EVF001
	Socket, M12, 4-pole 10 m, grey, MPPE cable	EVF002
	Socket, M12, 4-pole 5 m, grey, MPPE cable	EVF004
	Socket, M12, 4-pole 10 m, grey, MPPE cable	EVF005