

TER8

Front-flush and low-invasive resistance thermometers

Overview

- Optimum placement even in stirrers and pigging systems
- Integrated 4 ... 20 mA transmitter or Pt100 output
- Very fast response time
- 3-A-compliant without elastomers



Technical data

Performance characteristics

Pt100 accuracy class (EN 60751)	B ($\pm 0.3\text{ °C}$ at 0 °C) $\pm (0.3 + 0.005 \times t)\text{ °C}$ A ($\pm 0.15\text{ °C}$ at 0 °C) $\pm (0.15 + 0.002 \times t)\text{ °C}$ 1/3 B ($\pm 0.1\text{ °C}$ at 0 °C) $\pm 1/3 \times (0.3 + 0.005 \times t)\text{ °C}$ 1/6 B ($\pm 0.05\text{ °C}$ at 0 °C) $\pm 1/6 \times (0.3 + 0.005 \times t)\text{ °C}$
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Max. conversion error	$\pm 0.25\text{ °C}$
Max. output error	$\pm 0.1\text{ % FSR}$ $\pm 0.016\text{ mA}$
Min. output span	25 °C
Process temperature	$115 \dots 135\text{ °C}$, $< 1\text{ h}$ $-40 \dots 115\text{ °C}$, permanent

Thermal response time, T50	$\leq 2.5\text{ s}$, 20 mm . $\leq 2.7\text{ s}$, 50 mm $\leq 9.0\text{ s}$, front-flush
Sampling interval	0.5 s
Temperature drift (by ambient)	$< 0.003\text{ % FSR/°C}$, typ. $< 0.01\text{ % FSR/°C}$, max.
Thermal response time, T90	$\leq 6.5\text{ s}$, 20 mm $\leq 6.7\text{ s}$, 50 mm $\leq 66.0\text{ s}$, front-flush
Damping	$0 \dots 30\text{ s}$, programmable

Process connection

Connection variants	G 1/2 A hygienic
Sensor tube material	AISI 316L (1.4404)
Wetted parts material	PEEK Natura
Surface roughness wetted parts	$Ra \leq 0.8\text{ }\mu\text{m}$
Immersion length	0 mm , front-flush 20 mm 50 mm

Ambient conditions

Vibration (sinusoidal) (EN 60068-2-6)	1.6 mm p-p ($2 \dots 25\text{ Hz}$), 4 g ($25 \dots 100\text{ Hz}$), 1 octave / min.
Degree of protection (EN 60529)	IP67 IP69K, with appropriate cable
Humidity	$< 98\text{ % RH}$, condensing
Operating temperature range	$-40 \dots 85\text{ °C}$
Storage temperature range	$-50 \dots 85\text{ °C}$

Output signal

Shunt resistance	$R_s \leq (V_s - 8\text{ V})/0.023\text{ A}$ $R_s \leq 680\text{ }\Omega$, $V_s = 24\text{ V DC}$
Without transmitter	1 x Pt100, 4-wire
With transmitter	4 ... 20 mA, 2-wire

Housing

Overall size	Refer to section "Dimensional drawings"
Style	Compact transmitter
Material	Stainless steel

Electrical connection

Connector	M12-A, 4-pin
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Power supply

Voltage supply range	$8 \dots 35\text{ V DC}$
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Compliance and approvals

EMC	EN 61000-6-2 EN 61000-6-3 EN 61326-1
Hygiene	FDA (21 CFR 177.2415) 3-A (74-07)