

TCC541



Temperature transmitter

TCC150K1ER12-A-DKG/US



- 1 LED
- 2 Gasket FKM (for sealing on the back - not pressure resistant) / removable
- 3 pre-mounted PEEK sealing ring (removable) / metallic sealing area



Product characteristics

Number of inputs and outputs	Number of digital outputs: 1; Number of analogue outputs: 1	
Measuring range	-25...160 °C	-13...320 °F
Communication interface	IO-Link	
Process connection	threaded connection G 1/2 sealing cone	
Installation length EL [mm]	150	

Application

Special feature	Gold-plated contacts
Measuring element	1 x Pt 1000
Reference element	1 x NTC
Media	liquids and gases
Pressure rating [bar]	160

Electrical data

Operating voltage [V]	18...32 DC; ("supply class 2" to cULus)
Current consumption [mA]	10; (24 V)
Protection class	III



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Reverse polarity protection	yes
Power-on delay time [s]	6
Integrated watchdog	yes

Inputs / outputs

Number of inputs and outputs	Number of digital outputs: 1; Number of analogue outputs: 1
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Outputs

Total number of outputs	2
Output signal	analogue signal; IO-Link; calibration check status
Electrical design	PNP/NPN
Number of digital outputs	1
Output function	normally closed; (diagnostic signal)
Max. voltage drop switching output DC [V]	2
Permanent current rating of switching output DC [mA]	100
Diagnostic output	calibration check status and error diagnostics
Number of analogue outputs	1
Analogue current output [mA]	4...20
Max. load [Ω]	(U _b - 15 V) x 50
Short-circuit protection	yes
Type of short-circuit protection	pulsed
Overload protection	yes

Measuring/setting range

Measuring range	-25...160 °C	-13...320 °F
Note on measuring range	scalable	
Factory setting	-10...150 °C / 14...302 °F	
Calibration check limit [K]	0.5...3	
In steps of [K]	0.05	

Resolution

Resolution of analogue output [K]	0.05
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Accuracy / deviations

Precision analogue output [K]	± 0,2
Precision IO-Link [K]	± 0,2
Temperature coefficient analogue output [X22]	< ± 0,02; (in case of deviation from the reference condition 25 ± 5 °C)
Temperature coefficient IO-Link [X22]	< ± 0,01; (in case of deviation from the reference condition 25 ± 5 °C)

Response times

Dynamic response T05 / T09 [s]	1,5 / 4
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Software / programming

Parameter setting options	Display unit; scaling of the analogue output; calibration check limit; switching logic diagnostic output; simulation mode
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Interfaces

Communication interface	IO-Link
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Transmission type	COM2 (38,4 kBaud)	
IO-Link revision	1.1	
SDCI standard	IEC 61131-9 CDV	
Profiles	Digital Measuring Sensor, Common Profile, Blob Transfer	
SIO mode	yes	
Required master port type	A	
Process data analogue	1	
Process data binary	1	
Min. process cycle time [ms]	4.4	
IO-Link resolution temperature [K]	0.01	
Supported DeviceIDs	Type of operation	DeviceID
	default	1129

Operating conditions

Ambient temperature [°C]	-25...70
Note on ambient temperature	max. internal device temperature: 125 °C
Storage temperature [°C]	-40...100
Protection	IP 68; IP 69K

Tests / approvals

EMC	DIN EN 61000-6-2	
	DIN EN 61000-6-3	
Shock resistance	DIN EN 68000-2-27	50 g (11 ms)
Vibration resistance	DIN EN 60068-2-6	35 g (10...2000 Hz)
MTTF [ANN]	329	
Note on approval	factory certificate available as download at www.factory-certificate.ifm	
UL approval	UL Approval no.	K021
	File number UL	E217884

Mechanical data

Weight [g]	463
Dimensions [mm]	Ø 50 / L = 244
Materials	stainless steel (1.4404 / 316L); PEI; FKM; PFA
Materials (wetted parts)	stainless steel (1.4404 / 316L); PEEK
Tightening torque [Nm]	30...50
Process connection	threaded connection G 1/2 sealing cone
Surface characteristics Ra/Rz of the wetted parts	Ra: < 0.8
Probe diameter [mm]	6
Installation length EL [mm]	150

Remarks

Remarks	MS = set measuring span
	operating voltage "supply class 2" according to cULus
Pack quantity	1 pcs.

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Electrical connection

Connector: 1 x M12; coding: A; Contacts: gold-plated



Connection



OUT2: analogue output
OUT1: Diagnostic output / IO-Link