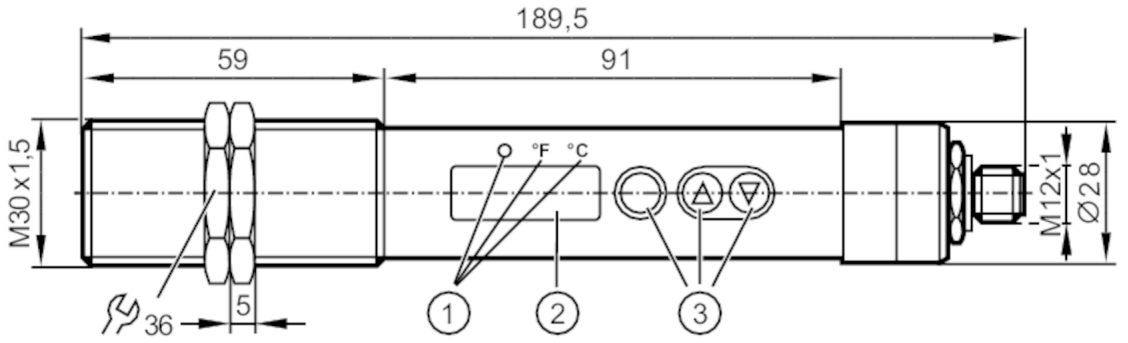
TW2003

Infrared temperature sensor

TW-030KLBM30-KFDKG/US



1 LEDs Display unit / switching status
2 7-segment LED display 4-digit
3 programming buttons

IO-Link

Product characteristics			
Number of inputs and outputs		Number of digital outputs: 1; Number of analogue outputs: 1	
Measuring range		-30...300 °C	-22...572 °F
Communication interface		IO-Link	
Application			
Application		asphalt; coated metal; liquids; glass; rubber; wood; ceramics; plastics; lacquers; food products; paper; fabric	
Electrical data			
Operating voltage	[V]	18...32 DC; (to SELV/PELV)	
Current consumption	[mA]	< 50	
Min. insulation resistance	[MΩ]	100; (50 V DC)	
Protection class		III	
Reverse polarity protection		yes	
Power-on delay time	[s]	< 1	
Inputs / outputs			
Number of inputs and outputs		Number of digital outputs: 1; Number of analogue outputs: 1	
Inputs			
Test input		type 3 (IEC 61131-2)	
Outputs			
Total number of outputs		2	
Output signal		switching signal; analogue signal; IO-Link; (configurable)	
Electrical design		PNP	
Number of digital outputs		1	
Output function		normally open / normally closed; (parameterisable)	
Max. voltage drop switching output DC	[V]	2.5	
Permanent current rating of switching output DC	[mA]	150	
Number of analogue outputs		1	
Analogue current output	[mA]	4...20	

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Max. load	[Ω]	500	
Short-circuit protection		yes	
Type of short-circuit protection		pulsed	
Short-circuit proof		yes	
Overload protection		yes	
Detection zone			
Wave length range	[µm]	8...14	
Measuring/setting range			
Measuring range		-30...300 °C	-22...572 °F
Set point SP		-29...300 °C	-20.2...572 °F
Reset point rP		-30...299 °C	-22...570.2 °F
Analogue start point		-30...250 °C	-22...482 °F
Analogue end point		20...300 °C	68...572 °F
In steps of		0.5 °C	1 °F
Resolution			
Resolution of switching output	[K]	0.5	
Resolution of analogue output	[K]	0.2; (+ 0.03% of the set measuring span)	
Resolution of display	[K]	0.5	
Accuracy / deviations			
Accuracy	[K]	< ± 1 %; (of measured value, min. 2 K (degree of emission = 1, T = 23 °C))	
Repeatability	[K]	1	
Response times			
Response time	[ms]	100	
Software / programming			
Adjustment of the switch point		programming buttons	
Parameter setting options		analogue range; normally open / normally closed; switch-on/ switch-off delay; Damping; Peakhold; emissivity; simulation function	
Interfaces			
Communication interface		IO-Link	
Transmission type		COM2 (38,4 kBaud)	
IO-Link revision		1.1	
SDCI standard		IEC 61131-9	
Profiles		Smart Sensor - SSP 0	Generic Profiled Sensor
		Function	Device identification
		Function	Process data variable
		Function	Device diagnosis
SIO mode		yes	
Required master port type		A	
Process data analogue		16	
Process data binary		1	
Min. process cycle time	[ms]	3.6	

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Supported DeviceIDs		**Type of operation**	**DeviceID**
		default	1502
Operating conditions			
Ambient temperature	[°C]	0...65	
Storage temperature	[°C]	-20...80	
Max. relative air humidity	[%]	95; (non condensing)	
Protection		IP 65	
Tests / approvals			
EMC		DIN EN 61000-6-2	
		DIN EN 61000-6-4	
Shock resistance		DIN EN 60068-2-27	30 g (11 ms)
Vibration resistance		DIN EN 60068-2-6	5 g (10...2000 Hz)
MTTF	[years]	88	
Mechanical data			
Weight	[g]	410.2	
Housing		threaded type	
Dimensions	[mm]	M30 x 1.5 / L = 189.5	
Thread designation		M30 x 1.5	
Materials		threaded sleeve: stainless steel (303/1.4305); operator interface: polyester	
Lens material		front pane:Infrared transparent crystal lens with anti-reflex coating	
Displays / operating elements			
Display		Display unit	2 x LED, yellow
		switching status	1 x LED, yellow
		function display	7-segment LED display, 4-digit
		measured values	7-segment LED display, 4-digit
Operating elements		3	pushbuttons
Accessories			
Items supplied		lock nuts: 2	
Remarks			
Remarks		Use a screened cable to protect infrared temperature sensors from interference.	
		The screen must be connected to the housing of the sensor via the connector.	
Pack quantity		1 pcs.	

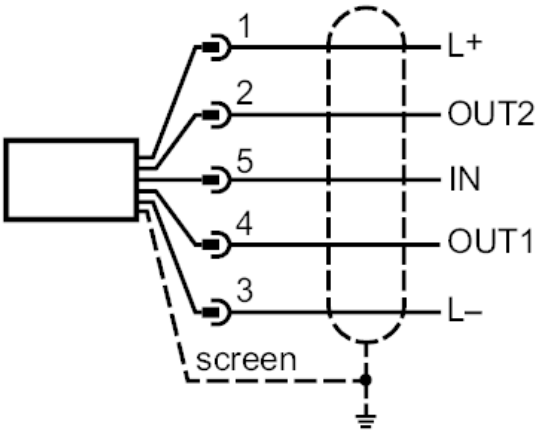
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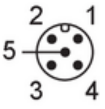
Electrical connection

Connection

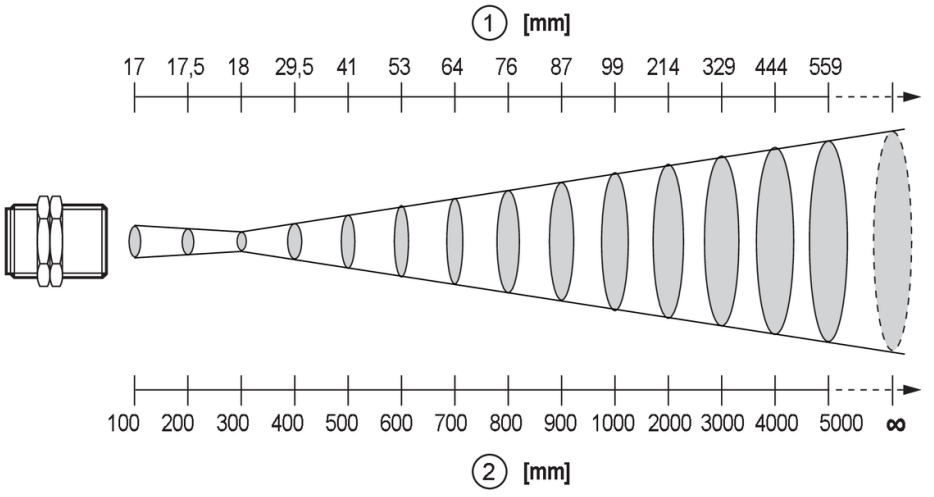


OUT1: switching output / IO-Link
OUT2: analogue output
IN: Test input

Connector: 1 x M12; coding: A; Contacts: 5



Diagrams and graphs



1 diameter of the measured spot

2 measuring distance