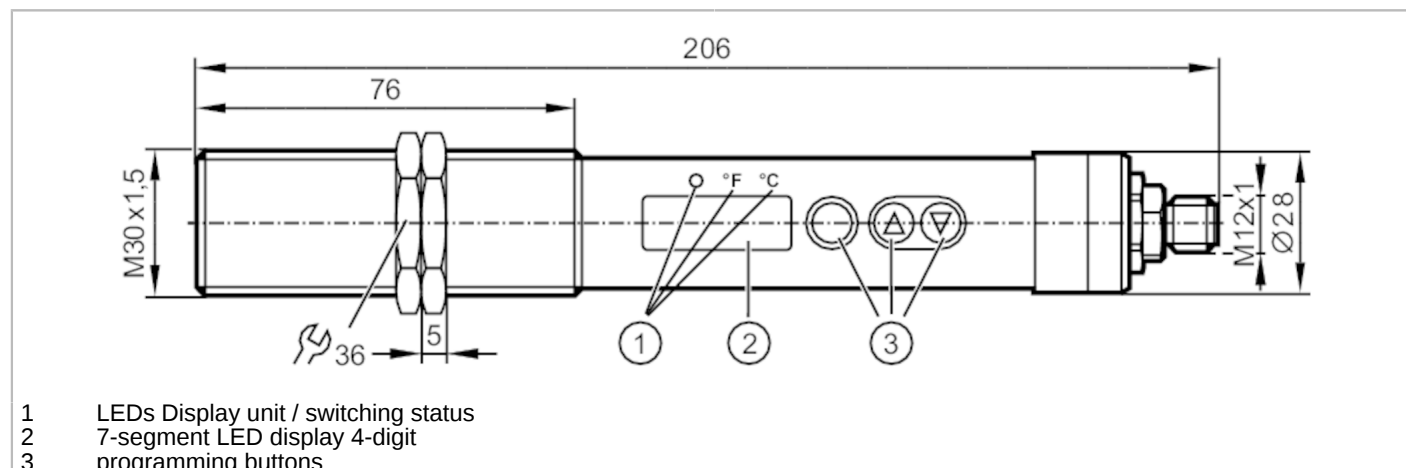


Infrared temperature sensor

TW-029KLB30-KFDKG/US



Product characteristics

Number of inputs and outputs	Number of digital outputs: 1; Number of analogue outputs: 1	
Measuring range	0...999.5 °C	32...1831 °F
Communication interface	IO-Link	

Application

Application	asphalt; coated metal; liquids; glass; rubber; wood; ceramics; plastics; lacquers; food products; paper; fabric
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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
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Inputs

Test input	type 3 (IEC 61131-2)
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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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Infrared temperature sensor

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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
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Measuring/setting range

Measuring range	0...999.5 °C	32...1831 °F
Set point SP	1...999.5 °C	34...1831 °F
Reset point rP	0...998.5 °C	32...1829 °F
Analogue start point	0...949.5 °C	32...1741.1 °F
Analogue end point	50...999.5 °C	122...1831 °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
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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	
SIO mode	yes	
Required master port type	A	
Process data analogue	16	
Process data binary	1	
Min. process cycle time [ms]	3.6	
Supported DeviceIDs	Type of operation	DeviceID
	default	716

Operating conditions

Ambient temperature	[°C]	0...65
Storage temperature	[°C]	-20...80

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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]	84

Mechanical data

Weight	[g]	445
Housing		threaded type
Dimensions	[mm]	M30 x 1.5 / L = 206
Thread designation		M30 x 1.5
Materials		threaded sleeve: stainless steel (303/1.4305); polyester
Lens material		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
	setting aid	LED pilot light, green
Operating elements	3	pushbuttons

Accessories

Items supplied	lock nuts: 2
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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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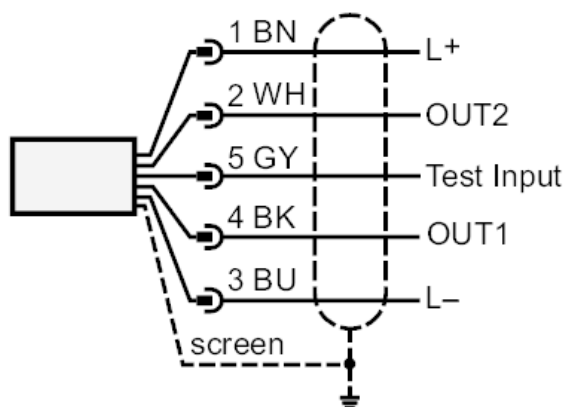


Infrared temperature sensor

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Electrical connection

Connection



OUT1: switching output / IO-Link

OUT2: analogue output

Core colours :

BK = black

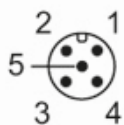
BN = brown

BU = blue

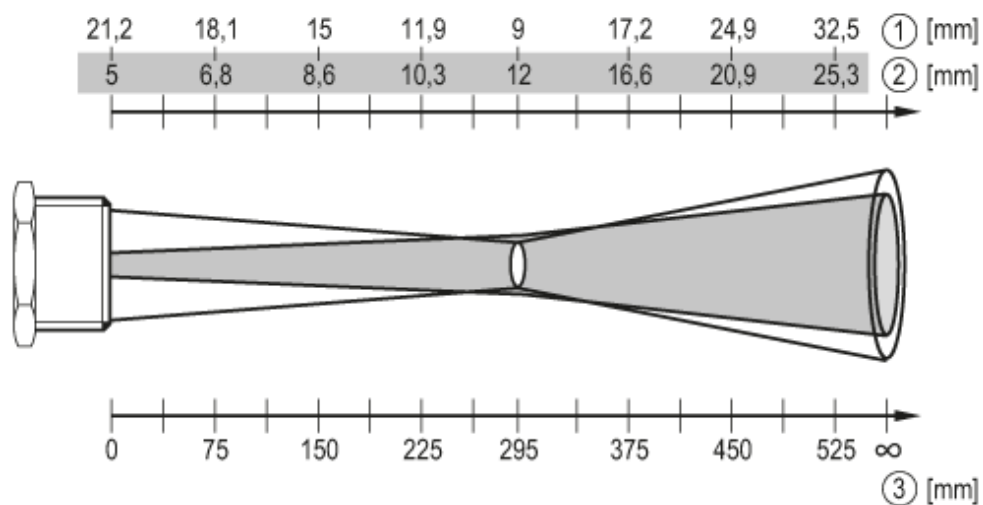
GY = grey

WH = white

Connector: 1 x M12; coding: A



Diagrams and graphs



- 1 diameter of the measured spot
- 2 diameter LED pilot light
- 3 measuring distance