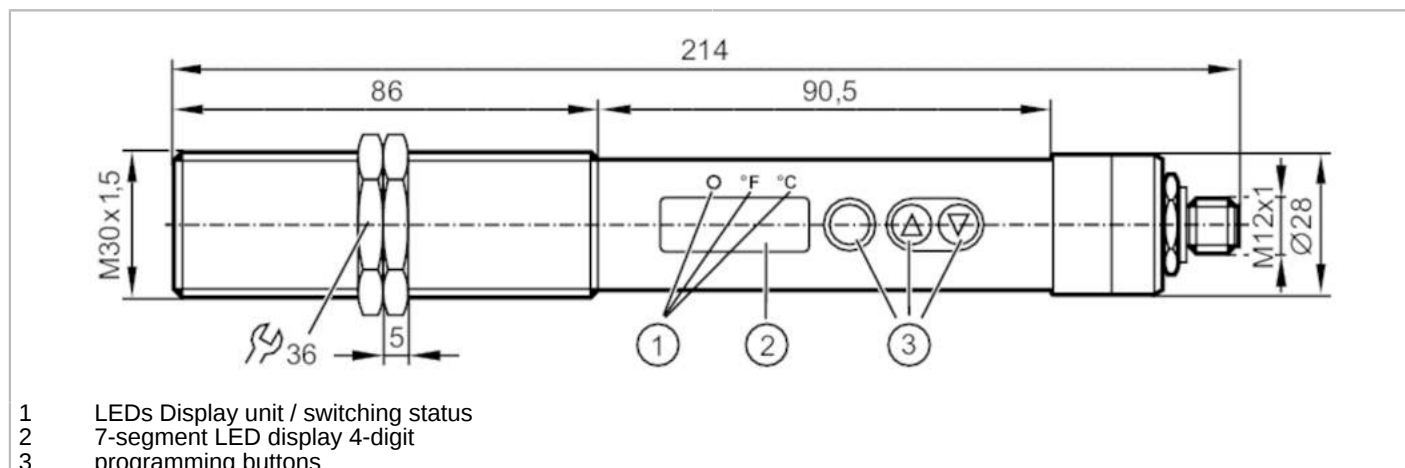


# TW2001



## Infrared temperature sensor

TW-150KLBM30-KFDKG/US



### Product characteristics

Number of inputs and outputs	Number of digital outputs: 1; Number of analogue outputs: 1
Measuring range	250...1600 °C 482...2912 °F

### Application

Application	tempering temperatures; glass melting; graphite; ceramics; metals; forging; sintering; heat treatment; rolling
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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
Max. load [Ω]	500



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Short-circuit protection	yes
Type of short-circuit protection	pulsed
Short-circuit proof	yes
Overload protection	yes

### Detection zone

Wave length range	[μm]	1...1.7
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### Measuring/setting range

Measuring range	250...1600 °C	482...2912 °F
Set point SP	251...1600 °C	484...2912 °F
Reset point rP	250...1599 °C	482...2910 °F
Analogue start point	250...1400 °C	482...2552 °F
Analogue end point	450...1600 °C	842...2912 °F
In steps of	1 °C	1 °F

### Resolution

Resolution of switching output	[K]	1
Resolution of analogue output	[K]	0.2; (+ 0.03% of the set measuring span)
Resolution of display	[K]	1

### Accuracy / deviations

Accuracy	[K]	< ± 0,5 %; (of measured value, min. 4 K (degree of emission = 1, T = 23 °C))
Repeatability	[K]	1

### Response times

Response time	[ms]	2; (T > 600 °C)
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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	717

### Operating conditions

Ambient temperature	[°C]	0...65
Storage temperature	[°C]	-20...80
Max. relative air humidity	[%]	95; (non condensing)

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Protection	IP 65	
<b>Tests / approvals</b>		
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]	74	
<b>Mechanical data</b>		
Weight [g]	465	
Housing	threaded type	
Dimensions [mm]	M30 x 1.5	
Thread designation	M30 x 1.5	
Materials	threaded sleeve: stainless steel (1.4305 / 303); polyester	
Lens material	tempered optical glass	
<b>Displays / operating elements</b>		
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
<b>Accessories</b>		
Items supplied	lock nuts: 2	
<b>Remarks</b>		
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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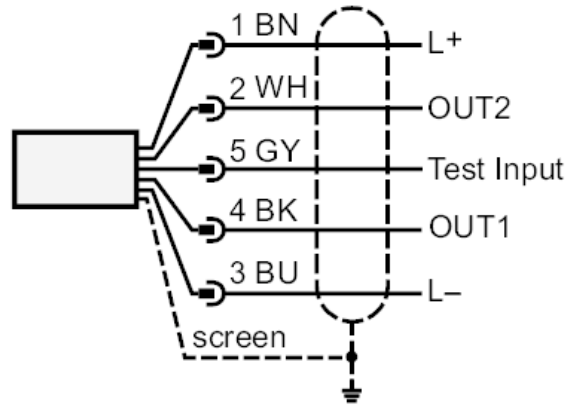


## Infrared temperature sensor

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### Electrical connection

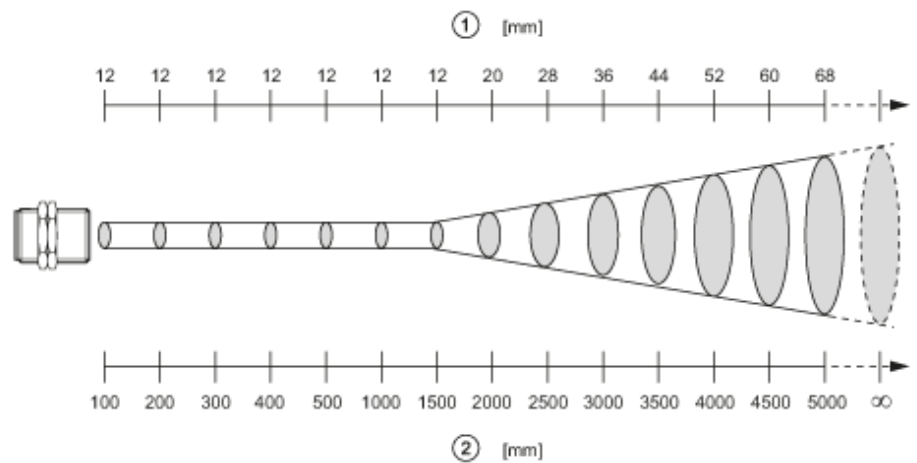
#### Connection



OUT1: switching output / IO-Link  
OUT2: analogue output  
Core colours :  
BK = black  
BN = brown  
BU = blue  
GY = grey  
WH = white

Connector: 1 x M12

### Diagrams and graphs



- 1 diameter of the measured spot
- 2 measuring distance