

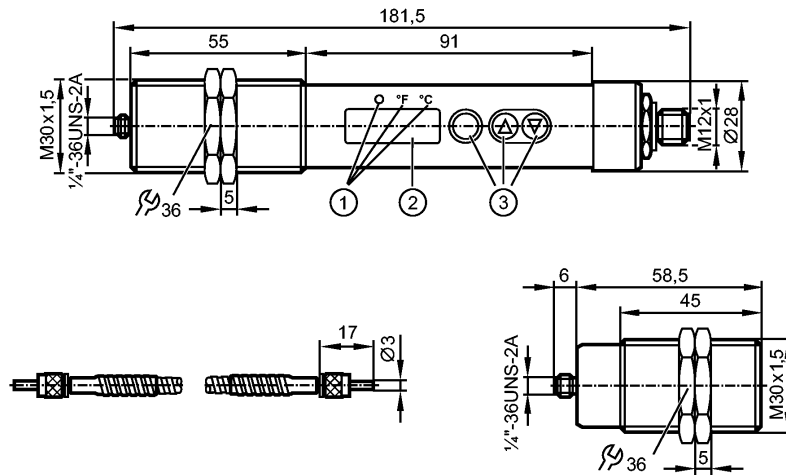


# TW2011

TW-150KLBM30-KFDKG/US



Temperature sensors



- 1: LEDs (display unit / switching status)
- 2: 7-segment LED display (4 digits)
- 3: Programming buttons



## Product characteristics

Infrared temperature sensor

Threaded type M30 x 1.5

M12 connector

wave length range 1.0...1.7  $\mu\text{m}$

Switching output, Analog output

7-segment LED display (4 digits)

Measuring range: 300...1600  $^{\circ}\text{C}$  / 572...2912  $^{\circ}\text{F}$

## Application

Application	tempering temperatures, glass melting, graphite, ceramics, metals, forging, sintering, heat treatment, rolling
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## Electrical data

Electrical design	DC PNP
Operating voltage [V]	18...32 DC; to SELV/PELV
Current consumption [mA]	< 50
Insulation resistance [M $\Omega$ ]	> 100 (50 V DC)
Protection class	III
Reverse polarity protection	yes

## Inputs

Test input	
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## Outputs

Output	Switching output, Analog output
Output function	normally open / closed programmable
Current rating [mA]	150
Voltage drop [V]	< 2.5
Short-circuit protection	yes (non-latching)
Short-circuit proof	yes
Overload protection	yes
Analog output	4...20 mA



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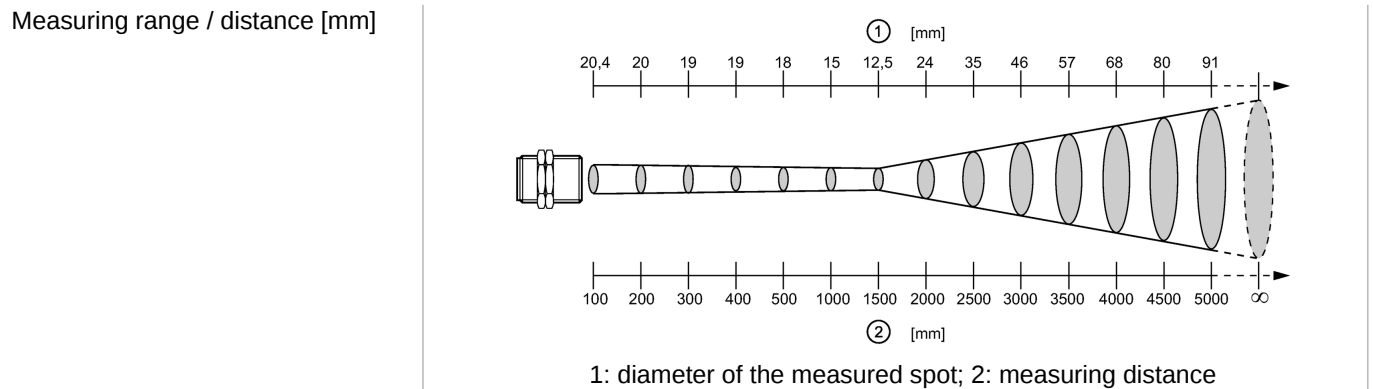
Temperature sensors

Max. load [Ω] 500

### Measuring / setting range

Measuring range 300...1600 °C 572...2912 °F

wave length range [μm] 1.0...1.7



Setting range

Set point, SP 301...1600 °C 574...2912 °F

Reset point, rP 300...1599 °C 572...2910 °F

Analog start point, ASP 300...1400 °C 572...2552 °F

Analog end point, AEP 500...1600 °C 932...2912 °F

in steps of 1 °C 1 °F

Resolution

Switching output [K] 1

Analog output [K] 0.2; + 0.03 % of the set measuring span

Display [K] 1

### Accuracy / deviations

Accuracy < ± 0.5 %; of the measured value, at least 4 K (degree of emission = 1, T = 23°C)

Repeatability [K] 1

### Reaction times

Power-on delay time [s] < 1

Response time Switching output[ms] < 2 (T > 600 °C)

### Software / programming

Adjustment of the switch point Programming buttons

Programming options Analogue range; NO / NC; switch-on / switch-off delay; damping, peak hold

### Environment

Ambient temperature [°C] 0...65, (-20...250 °C for fibre optic and measuring head)

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] 74

### Mechanical data

Housing materials threaded sleeve: stainless steel (303S22); polyester



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Temperature sensors

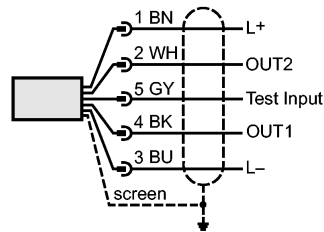
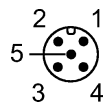
Lens material	tempered optical glass
Connection	1/4"-36UNS-2A
Weight [kg]	0.851

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

Electrical connection	
Connection	M12 connector

### Wiring

- Core colors
- BK black
  - BN brown
  - BU blue
  - GY grey
  - WH white



OUT1: Switching output  
 OUT2: Analog output

Accessories	
Accessories (included)	2 lock nuts; 2 m fibre optic; Measuring head

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 [piece]	1
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