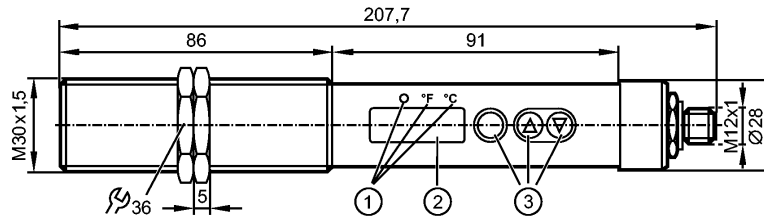


TW2002

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 0.78...1.06 µm
Switching output, Analog output
7-segment LED display (4 digits)
Measuring range: 500...2500 °C / 932...4532 °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 [MΩ]	> 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
Max. load [Ω]	500

Measuring / setting range

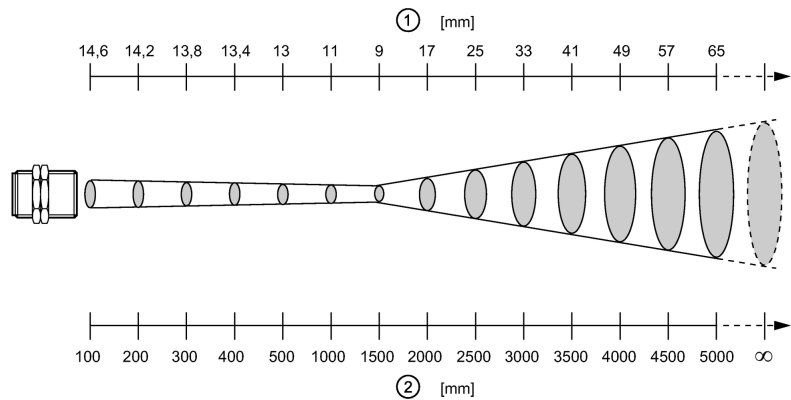
Measuring range	500...2500 °C	932...4532 °F
wave length range [µm]	0.78...1.06	

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Temperature sensors

Measuring range / distance [mm]



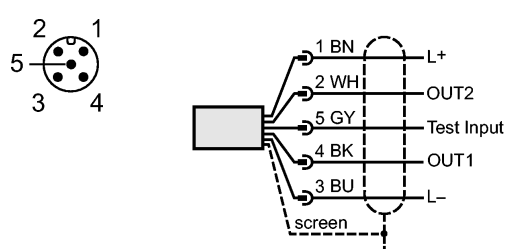
1: diameter of the measured spot; 2: measuring distance

Setting range		
Set point, SP	502...2500 °C	936...4532 °F
Reset point, rP	500...2498 °C	932...4528 °F
Analog start point, ASP	500...2100 °C	932...3812 °F
Analog end point, AEP	900..2500 °C	1652...4532 °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	< ± 0.3 %; 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 > 900 °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
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	
Lens material	tempered optical glass	
Weight [kg]		0.427

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Temperature sensors

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										
<p>Wiring</p> <p>Core colors</p> <table style="width: 100%;"> <tr><td>BK</td><td>black</td></tr> <tr><td>BN</td><td>brown</td></tr> <tr><td>BU</td><td>blue</td></tr> <tr><td>GY</td><td>grey</td></tr> <tr><td>WH</td><td>white</td></tr> </table> <div style="display: flex; align-items: center; justify-content: center; margin-top: 10px;">  </div> <p style="text-align: center; margin-top: 10px;"> OUT1: Switching output OUT2: Analog output </p>		BK	black	BN	brown	BU	blue	GY	grey	WH	white
BK	black										
BN	brown										
BU	blue										
GY	grey										
WH	white										
Accessories											
Accessories (included)	2 lock nuts										
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										