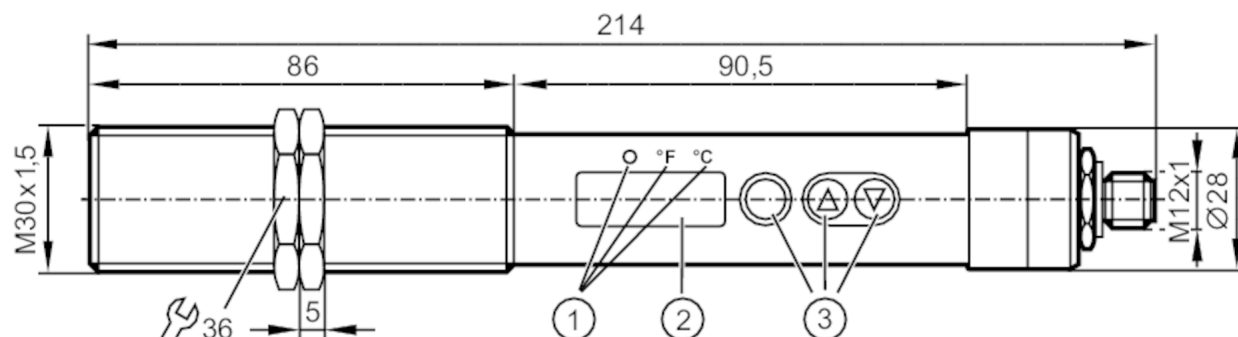


## Infrared temperature sensor

TW-150KLBM30-KFDKG/US



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



## 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 |
| Communication interface      | IO-Link                                                     |               |

## Application

|             |                                                                                                                |
|-------------|----------------------------------------------------------------------------------------------------------------|
| Application | tempering temperatures; glass melting; graphite; ceramics; metals; forging; sintering; heat treatment; rolling |
|-------------|----------------------------------------------------------------------------------------------------------------|

## 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                                                     |



## 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] | 1...1.7 |
|-------------------|------|---------|

## 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) |
|---------------|------|-----------------|

## 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 |

# TW2001



## Infrared temperature sensor

TW-150KLBM30-KFDKG/US

|                            |     |                      |
|----------------------------|-----|----------------------|
| 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                 | [ANN]             | 74                 |

### Mechanical data

|                    |      |                                                            |
|--------------------|------|------------------------------------------------------------|
| 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                                     |

### 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                    |

### Аксессуары

|                |              |
|----------------|--------------|
| Items supplied | lock nuts: 2 |
|----------------|--------------|

### Remarks

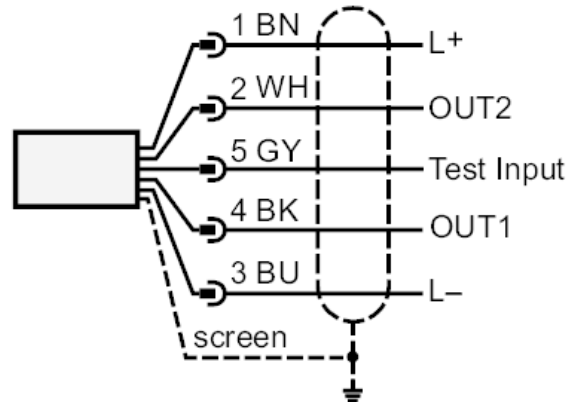
|               |                                                                                                                                                                 |
|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Remarks       | Use a screened cable to protect infrared temperature sensors from interference.<br>The screen must be connected to the housing of the sensor via the connector. |
| Pack quantity | 1 pcs.                                                                                                                                                          |

## Infrared temperature sensor

TW-150KLBM30-KFDKG/US

### Electrical connection

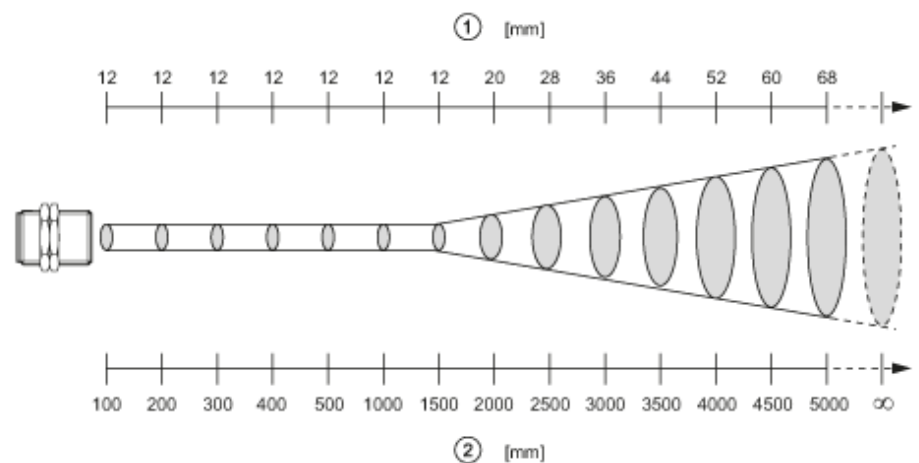
#### Connection



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