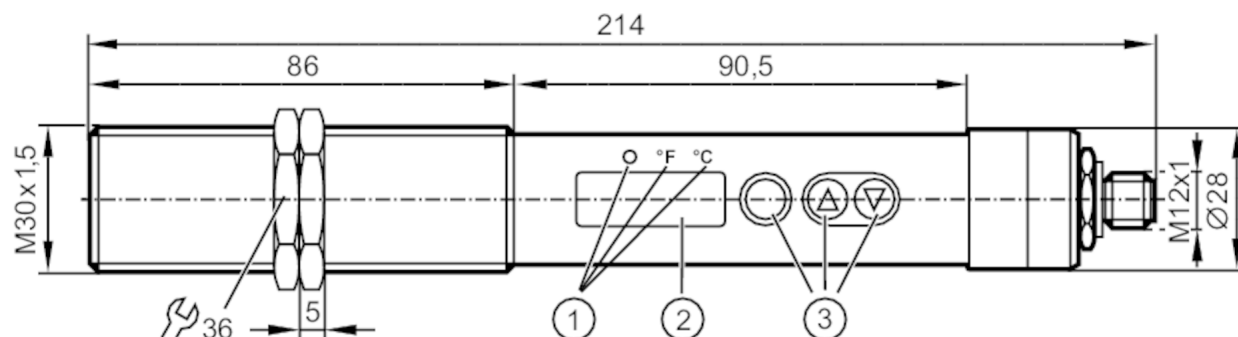


## Infrared temperature sensor

TW-150KLB30-KFDKG/US



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

CE ENEC 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

Test input

Typ\_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                                                     |
| Max. load [Ω]                                        | 500                                                        |
| Short-circuit protection                             | yes                                                        |
| Type of short-circuit protection                     | pulsed                                                     |
| Short-circuit proof                                  | yes                                                        |
| Overload protection                                  | yes                                                        |



## Infrared temperature sensor

TW-150KLBM30-KFDKG/US

| Detection zone                 |      |                                                                                                                                  |
|--------------------------------|------|----------------------------------------------------------------------------------------------------------------------------------|
| Wave length range              | [µm] | 0.78...1.06                                                                                                                      |
| Measuring/setting range        |      |                                                                                                                                  |
| Measuring range                |      | 500...2500 °C<br>932...4532 °F                                                                                                   |
| Set point SP                   |      | 502...2500 °C<br>936...4532 °F                                                                                                   |
| Reset point rP                 |      | 500...2498 °C<br>932...4528 °F                                                                                                   |
| Analogue start point           |      | 500...2100 °C<br>932...3812 °F                                                                                                   |
| Analogue end point             |      | 900...2500 °C<br>1652...4532 °F                                                                                                  |
| In steps of                    |      | 1 °C<br>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]  | < ± 0,3 %; (of measured value, min. 4 K (degree of emission = 1, T = 23 °C))                                                     |
| Repeatability                  | [K]  | 1                                                                                                                                |
| Response times                 |      |                                                                                                                                  |
| Response time                  | [ms] | 2; (T > 900 °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                                                                                                                      |
| IO-Link device ID              |      | 718 d / 00 02 CC h                                                                                                               |
| SIO mode                       |      | yes                                                                                                                              |
| Required master port type      |      | A                                                                                                                                |
| Process data analogue          |      | 16                                                                                                                               |
| Process data binary            |      | 1                                                                                                                                |
| Min. process cycle time        | [ms] | 3.6                                                                                                                              |
| Operating conditions           |      |                                                                                                                                  |
| Ambient temperature            | [°C] | 0...65                                                                                                                           |
| Storage temperature            | [°C] | -20...80                                                                                                                         |
| Max. relative air humidity     | [%]  | 95; (non condensing)                                                                                                             |
| Protection                     |      | IP 65                                                                                                                            |



## Infrared temperature sensor

TW-150KLBM30-KFDKG/US

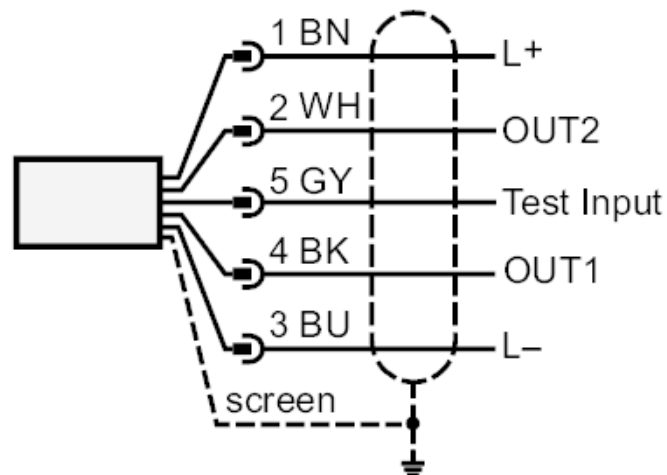
| Tests / approvals             |                   |                                                                                                                                                                 |
|-------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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               |                   |                                                                                                                                                                 |
| Weight                        | [g]               | 427.2                                                                                                                                                           |
| 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                                                                                                                                                     |
| Accessories                   |                   |                                                                                                                                                                 |
| Accessories (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

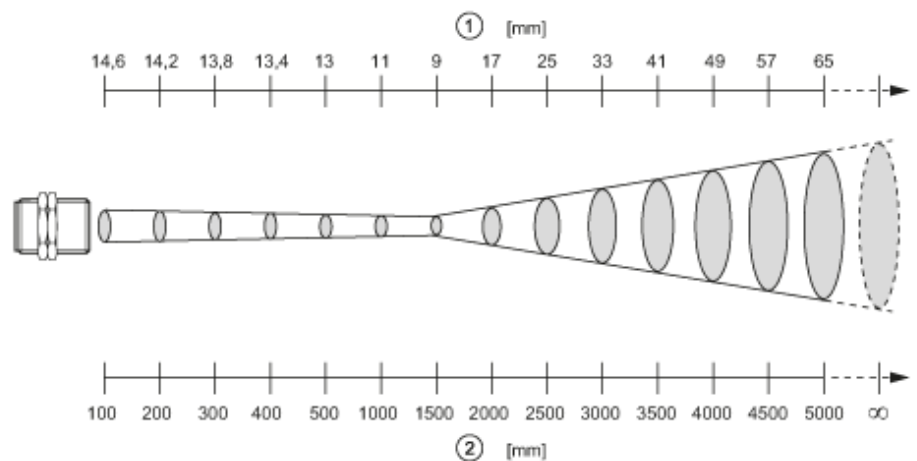
BU = blue

GY = grey

WH = white

Connector: 1 x M12

### Diagrams and graphs



1 diameter of the measured spot

2 measuring distance