

# Infrared Temperature Switch

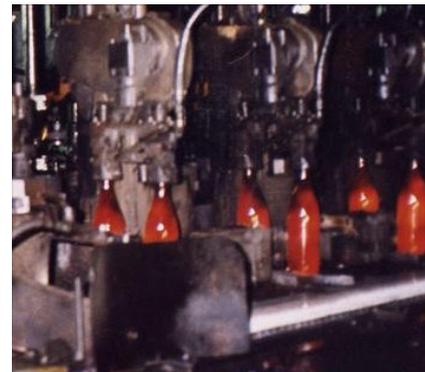
## CellaSwitch PKS 10



For quick, non-wearing, non-contact detection of hot objects

### Features

- Temperature range 50 – 500 °C / 122 – 932 °F
- 2 independent switching outputs, individually configurable as normally open or closed contacts or to monitor temperature spans
- Switching thresholds precisely adjustable via display panel
- Shows temperature readings as a percentage
- High optical resolution due to a crystal lens with antireflective coating
- All parameters are adjustable via control keys
- Diagnostics feature activated by control keys or a control signal
- M30 connector for easy installation



## Model

PKS 10 AF 1

## Description

The CellaSwitch PKS 10 Infrared Temperature Switch detects infrared energy radiated by objects and converts this to an electric signal.

A switch command will be triggered when a hot object, present within the sensor's field of view, exceeds a configured threshold. LEDs indicate the switching status.

CellaSwitch PKS 10 features two independent relay switching outputs. These relays can be operated either as normally open (NC) or normally closed (NO) contacts, enabling various monitoring options such as limit temperatures or temperature spans.

The switch points and the desired function of the outputs can be configured directly using the control keys.

The display panel indicates the set threshold values. This makes precise configuration easy, without requiring a hot object. If numerous infrared temperature switches are installed at a plant, they can all be precisely configured with the exact same threshold values.

While in use, the display panel will show the measurement value as a percentage. This gives the operator an indication of how close the object's temperature is to the configured threshold.

The display is based on the latest LED technology and is easy to read from a distance of several meters. It is brightly lit but nevertheless energy efficient.

## Field of application

CellaSwitch PKS 10 is used to recognize the presence, position or number of hot objects in the sensor's sight path from a safe distance.

Typical industrial applications include nonmetal materials such as asphalt, glass, rubber, plastic, paper and textiles as well as coated metal.

## Outputs

### 2 independent switching outputs

- PNP open collectors active by positive supply voltage
- Switch function: NO/NC
- Current carrying capacity 150 mA per output
- Safety shutdown to protect against overcurrent ( $\geq 250$  mA)
- Polarity protection for the supply voltage
- Short-circuit proof

## Inputs

Test input 10 — 34 V DC

## Indicators

### LED Display

- 7-segment, red
- Digit height 8 mm
- Shows measurement as a percentage during running operations

### 2 yellow LEDs

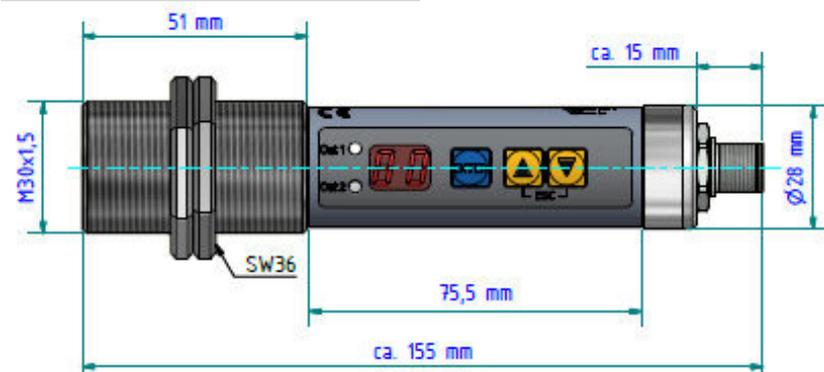
- Indicate switching status
- Flash to indicate overcurrent
- Both flash to indicate faulty connection of supply voltage

## Optics

The optics of the CellaSwitch PKS 10 features a crystal lens with an anti-reflective coating. The lens is robust, easy to clean and suitable for harsh industrial environments.

Due to the superior imaging properties of the high-precision lens, the instrument is insusceptible to the effects of stray light. Even when the size of the hot object fluctuates or the measuring distance varies, the switch point remains highly accurate.

## Dimensions



## Technical data

### Temperature range

50 — 500 °C / 122—932 °F  
(ref. to emissivity = 1)

### Increments of switching threshold

1 % of temperature range  
(4.5 °C / 1.8 °F)

### Resolution

Switching output 4.5 K (1%)  
Display 4.5 K (1%)

### Switching point uncertainty

1 % of end of range  
(at  $\epsilon = 1$  and  $T_a = 23$  °C)

### Spectral sensitivity

8 — 14  $\mu$ m

### Focusing distance

300 mm

### Spot size

Ø 12 mm at focusing distance

### Response time

$\leq 100$  ms

### Power supply voltage

10 — 34 V DC  
Ripple  $\leq 200$  mV

### Current consumption

$\leq 30$  mA at 24 V DC  
without load current

### Ambient operating temperature

0 — 65 °C

### Storage temperature

-20 — +80 °C

### Permissible Humidity

95 % r.H. max.  
(non-condensing)

### Protection

IP65 according to DIN 40050

### Weight

0.235 kg

### Material

Stainless steel housing  
Antireflection coated crystal lens

### Connectivity

M12 plug connector 5-pin

## Operating controls

3 control keys

## Adjustable parameters

- Switch point in increments of 1% of temperature range
- Switch function: NO/NC
- Switching delay 0 – 9.9 sec. in increments of 0.1 sec

## Diagnostics feature

Diagnostics can be performed during installation or running operations.

A functional check can be activated using the keys on the operator control panel or an external control signal.

The test simulates a hot object in the field of view and triggers a switch command. This feature serves to check the infrared temperature switch as well as downstream signal processing.

## Vibration / Shock resistance

- DIN EN 60068-2-6  
5 g (10 — 2000 Hz)
- DIN EN 60068-2-27  
30 g (11 ms)

## EMC standard

- DIN EN 61000-4-2/ -3 / -4 / -6
- EN 55011

## Error diagnostics

- Capacity overload at the outputs
- Excess internal temperature
- Violation of upper or lower limit of measuring range
- Faulty connection of supply voltage

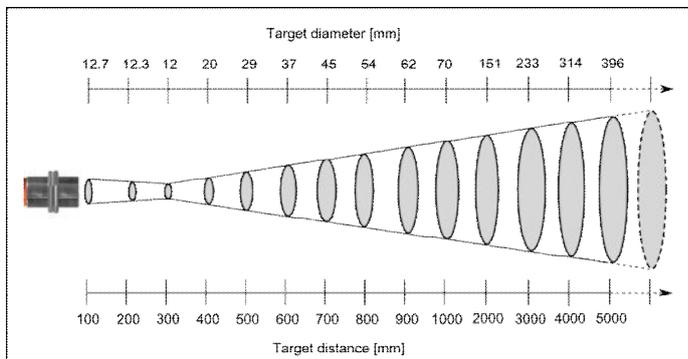
## Shipment includes

- CellaSwitch PKS 10
- Instruction manual
- 2 mounting nuts

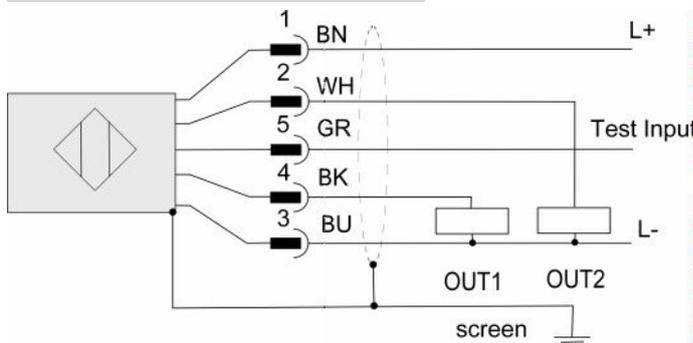


The VK 02/L connection cable must be ordered separately in the desired length.

## Field of view diagram



## Pin assignment



**!** You must use a shielded cable.

## Accessories



Shielded cable  
VK 02/L AF 1: 5 m  
VK 02/L AF 2: 10 m



Air purge  
PA 01A



Cooling jacket  
PS 01/B



ZnS window  
adapter PS 11/D AF 2



90 ° Deflection mirror  
PS 11/W



Adjustable mounting  
bracket PS 11/U



Mounting bracket  
PS 11/P



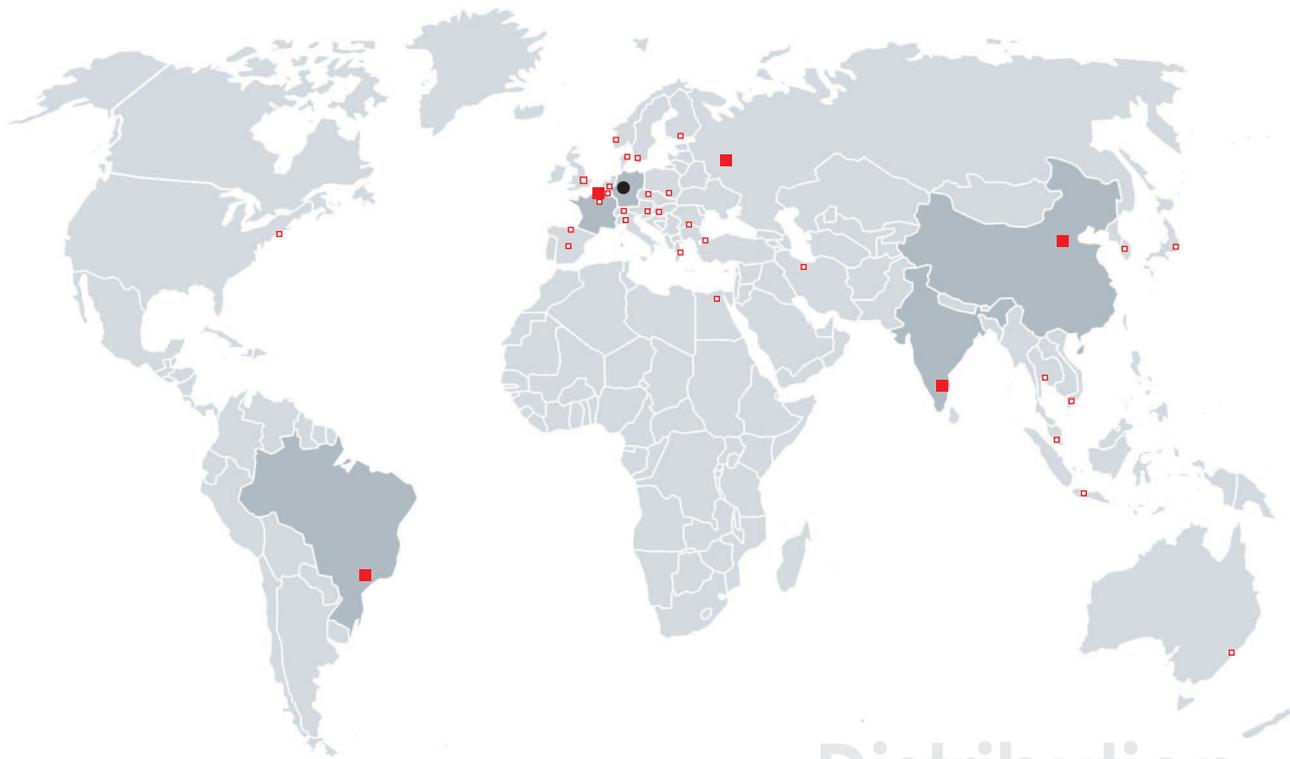
Supplementary tube  
ZA 01/Q-35



Thermal insulating  
tube PS 01/K



Laser pointer  
PS 01/M AF 3



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