KELLER
infrared temperature solutions ITS

Infrared Temperature Switch
CellaSwitch PKS

for quick, non-wearing, non-contact detection
of hot objects from 50 °C to 1350 °C

No 1 in terms of ACCURACY RELIABILITY INNOVATION

5 years warranty

QUALITY made in Germany

Infrared Temperature Switch	Infrared Temperature Switch with fibre optics and measuring head
	

Infrared Temperature Switch CellaSwitch PKS

Special features

- Temperature ranges 50 – 1350 °C / 122 – 2462 °F
- 2 independent switching outputs, individually configurable as N/O or N/C contacts or to monitor temperature spans
- Switching thresholds exactly adjustable at display panel
- Shows temperature readings as a percentage
- Excellent optical resolution due to high-precision lens
- Robust lens with a tempered antireflective coating
- All parameters adjustable via control keys
- Diagnostics feature activated by control keys or a control signal
- M30 connector for easy installation
- Available as a compact model or with fibre optics

Description

The CellaSwitch PKS 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 features 2 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.

Optics

The optics of the CellaSwitch PKS features a high-quality glass lens with a tempered antireflective 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.

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 (≥ 250 mA)
- Polarity protection for the supply voltage
- Short-circuit proof

Inputs

Test input 10 - 34 V DC

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.

General technical data

Switching point uncertainty
- 1 % of end of range (at ε = 1 and Ta = 23 °C)

Power requirement
- 10 - 34 V DC Ripple ≤ 200 mV

Current consumption
- ≤ 30 mA at 24 V DC without load current

Material
- Stainless steel housing

Storage temperature
- -20 - +80 °C

Ambient operating temperature
- 0 - 65 °C

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

Protection
- IP65 acc. to DIN 40050

Connectivity
- M12 plug connector 5-pin

Weight
- 0.235 kg

Technical data

Model	Application	Temperature range	Resolution	Spectral sensitivity	Focusing distance	Spot size	Response time
Infrared Temperature Switch							
PKS 10 AF 1	plastics, organic materials, rubber, paper, paints and lacquer, foodstuffs, coated metal, cement, asphalt	50 - 500 °C 122 - 932 °F	4.5 K	8 - 14 µm	0.3 m	Ø 12 mm	≤ 100 ms
PKS 20 AF 1	ceramic, graphite, metal	250 - 1250 °C 482 - 2282 °F	10 K	1.0 - 1.7 µm	1.5 m	Ø 16 mm	≤ 2 ms
Infrared Temperature Switch with fibre optics and measuring head							
PKS 21 AF 1	ceramic, graphite, metal	350 - 1350 °C 662 - 2462 °F	10 K	1.0 - 1.7 µm	1.5 m	Ø 12.5 mm	≤ 2 ms

Indicators

LED Display
- 2 x 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

Fibre optic cable for CellaSwitch PKS 21 AF 1

Model	Length	Weight
LWL-2HT	2 m	0.08 kg
LWL-5HT	5 m	0.19 kg
LWL-10HT	10 m	0.38 kg

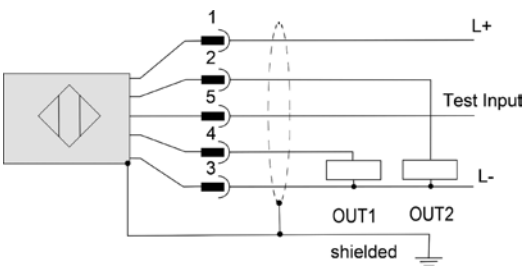
other lengths up to 50 m on request

- **Ambient temperature:** -40 to +250 °C
- **Material:** nickel-plated brass

Target diagrams

To calculate the measuring field diameter use the "Field of View Calculator" on our homepage!

Pin assignment



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

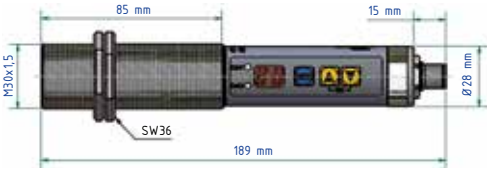
Operating controls

- 3 control keys

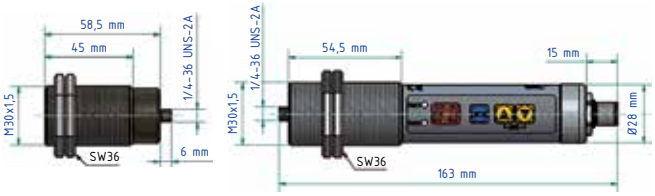
Dimensions

PKS 10 AF 1

PKS 20 AF 1



PKS 21 AF 1



For the CellaSwitch PKS 21 the electronics are housed separately from the fibre optic sensor head. A fibre optic cable conducts the infrared radiation to the electronics assembly.

The optical sensor head can withstand high electromagnetic fields and ambient temperatures up to 250 °C without cooling.

KELLER

Creating Solutions

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IO-Link

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