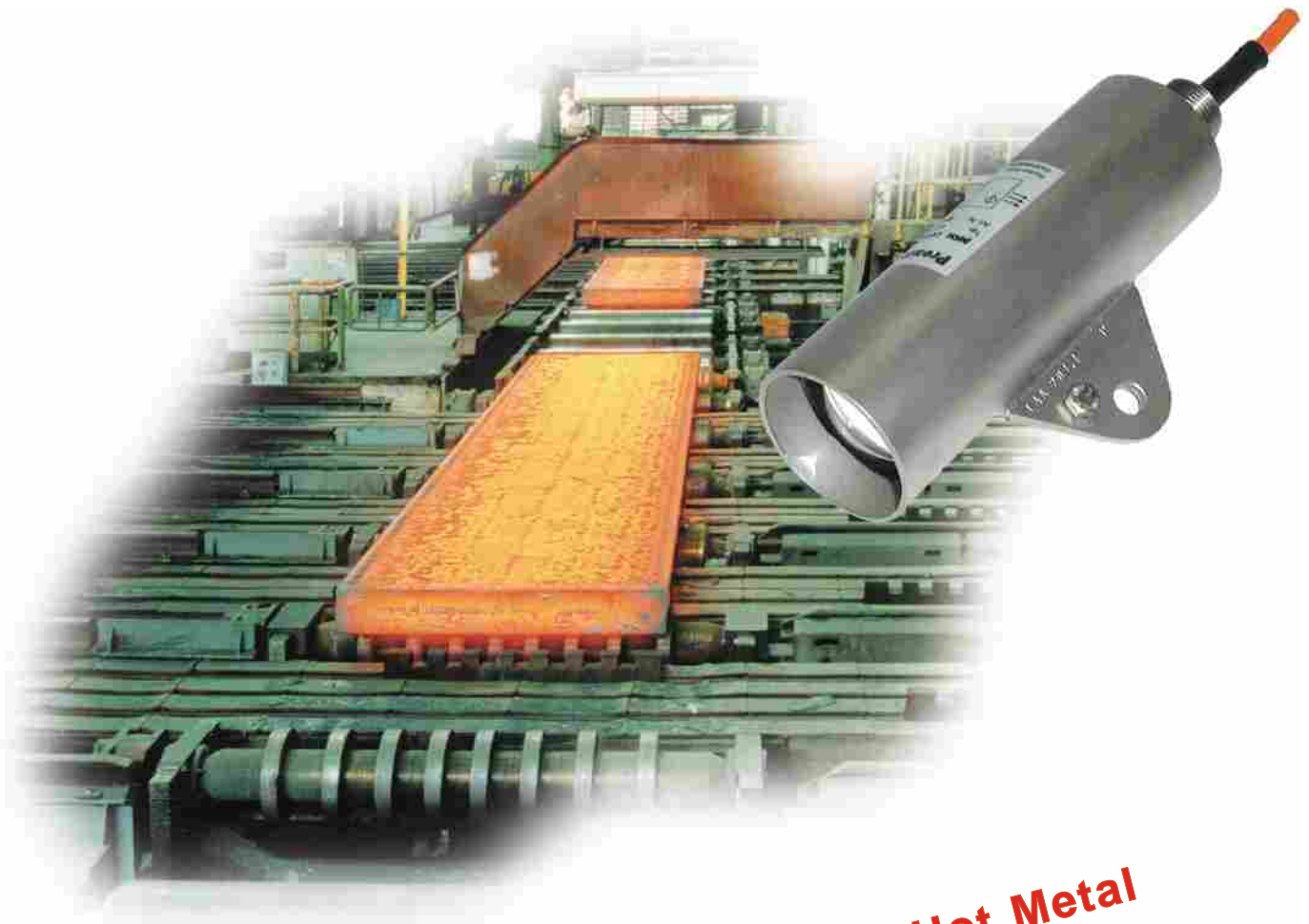


PIROS[®] Infrared Sensors



**Hot Metal
Detection**

**Material tracking in steel and rolling mills
Press control and glass industry**

Infrared-sensors detect the infrared radiation emitted by hot materials and transform it into an electrical signal.

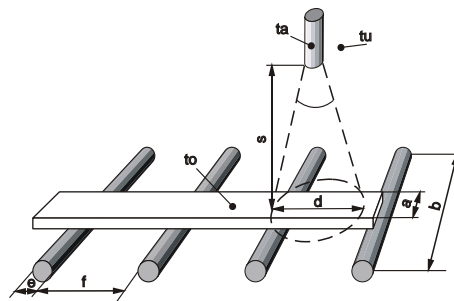
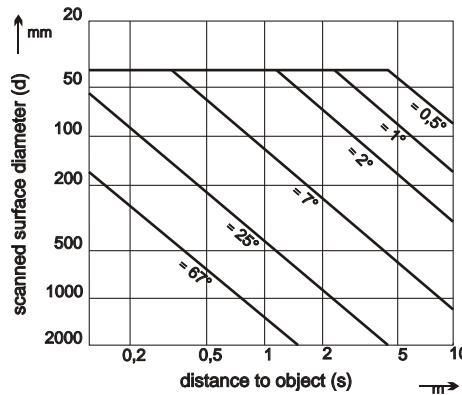
Built-in optics to narrow the field of view, combined with a predetermined switching temperature, provide for a wide range of applications. These include precise location and positioning of hot objects in, for example, steel and rolling mills, forges and foundries, and glass and ceramic installations. Hot parts can be tracked over distances of several metres, flames monitored, or mould part removal of hot objects checked.

The line includes compact versions with integrated processing electronics as well as models for ambient temperature of up to +290 °C, with fibre optic cable between the optics and the electronics. All components are housed in rugged stainless steel and fully potted for protection against moisture, steam, shock and vibration. Optical filters protect against spurious radiation.

The electrical versions are available as 3-wire types for 10 - 55 V DC and 2-wire types for 20 - 260 V AC/DC. Both versions are completely protected against short circuit, overload and polarity reversal. The pulsing short-circuit protection with high interference immunity provides automatic reset after the fault is removed. A built-in LED indicates the operating condition. Connection is via 2 m POKT-Therm cable or rugged connector with IP68 rating.

Angle of View, Distance Ratio

The scanned surface diameter (d) increases with increasing distance (s). This distance relationship is dependent on the angle of view (α).



Incomplete Coverage

Sometimes the field of view of the PIROS is not entirely filled by the object. In such cases the sensor must have a lower response temperature. For example, if the object coverage is only 40% (10%) use a version that is 50 K (160 K) more sensitive.

Surface Finish, Emissivity

Most of the applications described in this brochure refer to materials having a rough, black or oxidized surface. In these cases the emissivity is nearly 1 and can thus be ignored. However, a bright, specular surface with emissivity of <0.1 renders any noncontact measurement more difficult.

Changing Conditions of Operation

Increasing flexibility in production lines requires highly adaptable sensors. An ideal application for PIROS with adjustable and self-learning response temperature. The sensors can react to changing object shapes or different temperatures.

Options + Accessories

Function Check:

An automatic or manual self-check is effected by remote control.

Cooling Jacket:

Double-wall stainless steel casing for water cooling.

Air connection:

For blowing compressed air to keep the optics clean of dust, water vapour and heat radiation.

Tube:

Accessories for limiting the field of view, as protection from other influencing factors.

Swivel Stand:

Accessory for simple mounting and adjustment.

Electronic Aiming Device:

An LED chain for exact aiming at the measuring surface. Recognizes safety reserve in case of background radiation.

Analogue Output:

0 - 10 V or 0 - 20 mA corresponding to the object temperature between 400 - 950 °C.

OKD/OSD:

PIROS in painted aluminium rectangular housing with clamp connection for applications outside of the harsh steel and rolling mill area.

LSA/LRA:

Light barriers in stainless steel housings for steel and rolling mills, e.g. for material tracking in an annealing furnace.

Teach-In:

A process-optimised algorithm allows variable conditions.

Piros compact (integrated evaluating electronics)

Field of view:
0.5°, 1°, 2°, 7°, 2°x25°



OKA
Compact sensor with stainless steel housing with 57 mm Ø, for ambient temperatures up to +75 C

Fixed response temperature:
350, 430, 650, 800 °C

Variable response temperature:
300 to 900 °C
adjustable or Teach-In



OKB
Compact sensor with stainless steel housing with 78 mm Ø and cooling water connection for ambient temperatures over +75 C

An object is signalled if the surface scanned completely fills the field of view and the temperature is higher than the response temperature. For sensors with a fibre optic cable the response temperature depends on the length of the fibre optic cable and the lens used.

Piros with fibre optic cable



OSA
Evaluating electronics with stainless steel housing with 57 mm Ø, for ambient temperatures up to +75 C

Connections:
10 - 55 V DC,
3-wire PNP normally open or
4-wire PNP normally open and
closed,

20 - 260 V AC/DC,
2-wire normally open or closed



OSB
Evaluating electronics with stainless steel housing with 78 mm Ø and cooling water connection for ambient temperatures over +75 C

Angle of view, response temperature and mode of operation can be combined as required.

The model identification code indicates the characteristics of the sensor.

For example: OKA 204.05 G:

OKA Compact sensor OKA
2 2° lens
04 450 °C
response temperature
.05 G 20 - 260 V AC/DC,
2-wire closer



LLK

The evaluating electronics described above require a fibre optic cable and a lens. Rugged fibre optic cables with stainless steel sheathes are available in different lengths.

Lenses with stainless steel housings for various fields of view and shapes are available for different applications.



OAA

OAF

OAC

PIROS® Infrared - Sensors

For over 20 years PIROS infrared sensors have been used successfully even under extreme conditions in steel works, rolling mills, hot pressing installations and glass manufacturing industries. Rugged mechanical, optical and electrical construction is a major precondition for reliable signals in material tracking for automation purposes. Piros sensors are used in applications ranging from continuous casting to hot rolling of strips, sheets, wires and pipes to the finishing work on the final products.

**Use sensors to solve automation problems:
Contact us!**

Besides standard solutions we have many answers to suit your special requirements.

We will be pleased to advise you!

Product range

Inductive proximity switches

- WG 210 Sensing distance < 20 mm
- WG 220 Sensing distance 20-60 mm
- WG 230 Sensing distance 60-120 mm
- WG 240 Sensor strips
- WG 241 Flat sensors
- WG 250 Ring sensors
- WG 260 Inductive analogue sensors and evaluating electronics

Other sensors

- WG 100 Capacitive sensors
- WG 510 Piros light barriers
- WG 610 Piros infrared sensors
- WG 620 Piros for fibre optic cables
- WG 800 Flow sensors for air
- WG 830 Flow sensors

Applications

- Mould level monitoring
- Welding blowpipe control in slab strand cut-off machines
- Roller table control
- Slab edge detection
- Measurement of rolling stock in the roll gap
- Loop and reeling plant control
- Length measurement
- Wire rupture control
- Mould part removal monitoring in presses or in the glass and ceramics industries
- Inductive hardening
- Monitoring of excess burner and welding flame
- Descaling plants
- Slab marking

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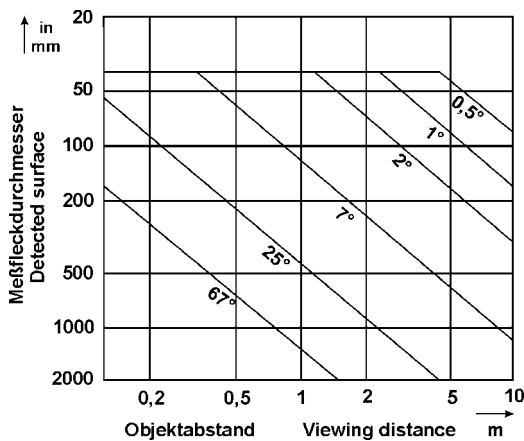
Proxitron
SENSOREN FÜR AUTOMATION

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This questionnaire starts on the assumption of a typical application, i. e. the roller-conveyor of a rolling mill. Usually the degree of emission of the object can be neglected. For blank surfaces such as aluminium or glass additional reflections are required.

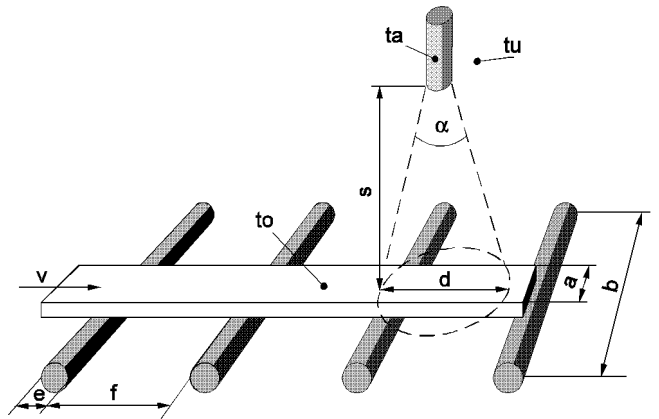
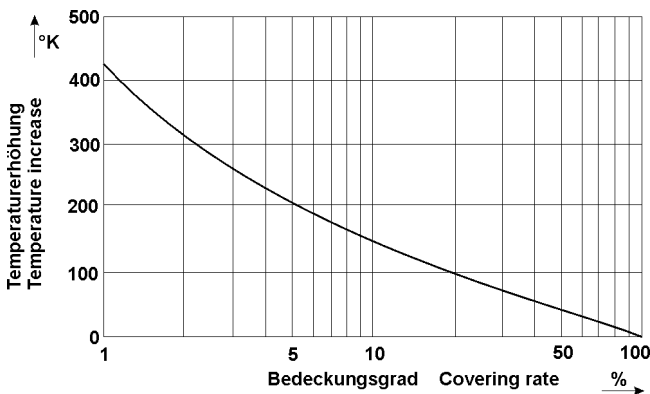
The response temperature should be approx. 50 to 100 K below the lowest object temperature. However, it should be so high that background radiation of frame parts or of foreign objects is not detected.

The relation between distance s , detected surface d and view angle α is $d = 2s \times \tan \alpha/2$ and can also be described by the distance ratio ($s:d$).



If the detected surface is only partially covered by the object, as shown in the scetch, compared with total coverage a reduced response temperature of the sensor or an increased object temperature is required. This temperature difference depends on the covering rate which corresponds to the relation of object surface to the detected surface.

(Covering rate = object surface/detected surface
 $\Rightarrow \sim a \times d/\pi \times d^2/e$)



Please determine the data of the table.
We shall be glad to submit our proposal for solution.

Width of object	min. max.	a [mm]	*
Width of roller-conveyor		b [mm]	*
Detected surface		d [mm]	
Roller diameter		e [mm]	
Roller distance (inside diameter)		f [mm]	
Measuring distance (requested)		s [mm]	
Object temperature	min. max.	to [°C]	*
Ambient temperature		tu [°C]	max.*
Response temperature		ta [°C]	**
Object velocity		v [m/s]	
View angle		α [grd]	**
Supply voltage DC		Ub[V]	<input type="checkbox"/> 24 / <input type="checkbox"/> ...
Supply voltage AC		Ub[V]	<input type="checkbox"/> 115 / <input type="checkbox"/> 230
		others	
Function			<input type="checkbox"/> normally open
only DC: <input type="checkbox"/> PNP / <input type="checkbox"/> NPN			<input type="checkbox"/> normally closed

* = indication absolutely required

** = sensor parameter

As soon as the amount of infrared radiation coming in corresponds to the response temperature of the Piros, the binary output signal changes. If even more infrared radiation is coming in, the signal does not change again. Only if the object leaves the measuring spot or if the object temperature falls below the response temperature, the signal output returns to its original state.

The path of radiation from the object to the Piros must be free. If the type was correctly chosen, formation of dust and water vapour due to operation can be neglected in most cases. However, high intensity of radiation can result in reflections in the water vapour and thus in mis-switchings. These interference's can be avoided by applying a **tube** with shield inserts.

Fibre optics of lengths of 0,7 m (LLK0,7) to 12 m (LLK12) and separate optics (OA-) can be applied upto ambient temperatures of upto 290 °C resp. 400 °C. They operate in combination with an evaluation electronic of series OSA 67- or OSD 67-.

Air connection serves for blowing free the optic and protects against dirt entering (consumption approx. 10 l/min).

For ambient temperatures higher than 70 °C Piros units with **cooling water connection** are available (required flow approx. 1 l/min.)

If service conditions change considerably or if they are unknown, it can be reasonable to apply a variation with **adjustable response temperature**. Available adjustment ranges are 400 to 700 °C or 600 to 900 °C e. g. These are not available in 2-wire design.

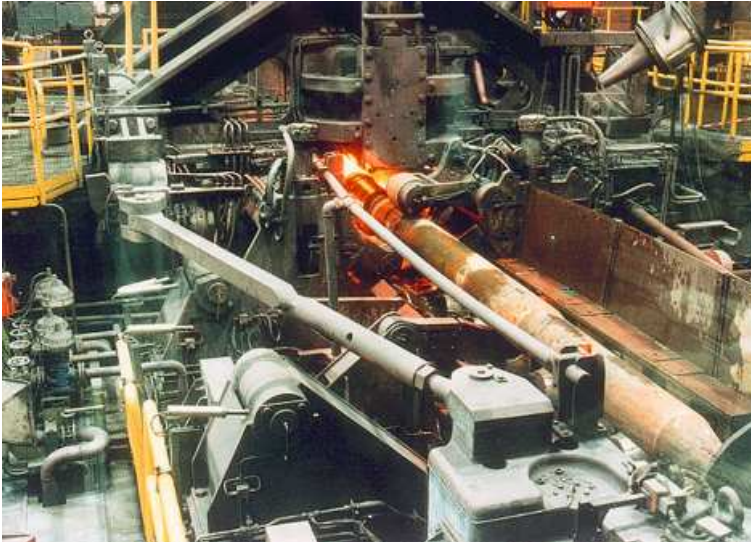
For mains of 115 - 230 VAC 2-wire designs are commonly used. 24 VDC versions are available in 3-wire design (normally open or normally closed) as well as in 4-wire design (normally opened and normally closed). A number of variations of connection and cable as well as relay outputs render possible optimum adaption.

Options	Type
Cooling water connection	OKB---
Air connection	OK- ---L
Cable: Silicone armoured cable	SPK
Silicone cable	SIK
Thermic cable	HBFL
Relay output	OKA---R
Plug (RSF IP 68)	---S5
Adjustable response temperature (400 - 700 °C)	e.g. OKA 2047---
Functional check	OK- ---K
Option with one remark (i. e. Pulse extension)	OK- ---Z
Accessories	
Tube for OKA	OL 19
Tube for OKB	OL 21
Piros swivel stand	HM 1
Air connection front element for O-A	OL 24
Protection glass for OKA, OKB	SG 1
Cable for S5 plug, 5 m	STS5-AC5 STS5-DC5

For material detection in reheating and soaking furnaces we can supply a wide range of light barriers. On request we shall be glad to send you our delivery programme.

Pilger rolling train in tube rolling mill

Applied: Piros infrared-sensor
OKA 2036.33 G with tube OL 19



In the inclined roll of a pilger rolling mill the piercing of the cog is extended to the mandrel diameter.



The signal of the infrared sensors controls the motions of centering device and abutment.

The tube mounted narrows down the view angle and prevents troubles due to water vapour in the cooling phase.

Because of the adjustable response temperature optimum adaption to service conditions

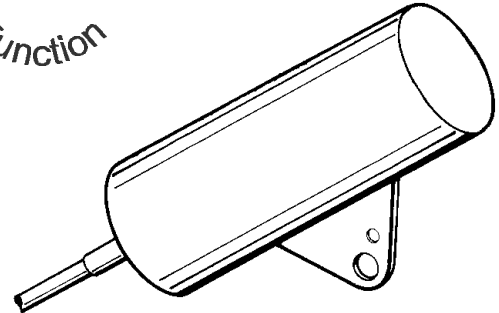


Factory photos: Mannesmannröhren-Werke

Infrared Sensors recognise the natural radiation of warm objects over a great distance. They are applied when other proximity switches cannot operate properly because of high radiation or ambient temperatures.

A special feature of OKA/OKB 20TA is a learning behaviour (teach-in) witch reaches max. accuracy and reproducibility of the switching point. The changes of temperature of object and background radiation occurring during operation are added electronically in such a way that safe signals are reached also in case of different operation conditions.

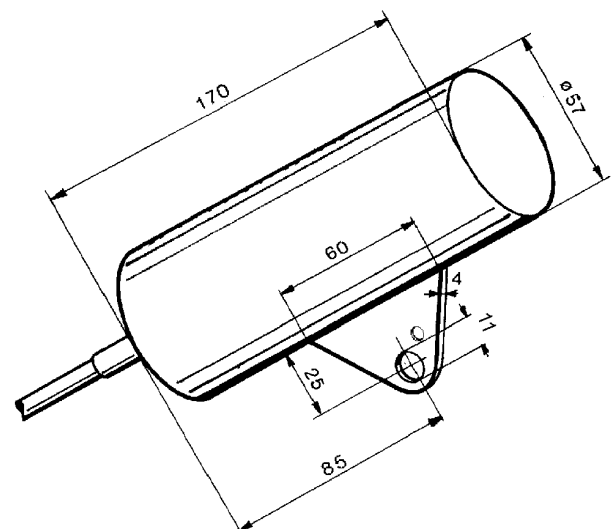
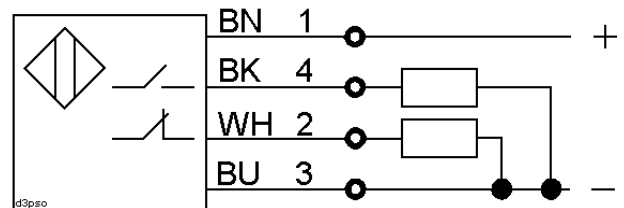
autom.
Teach - In
Function



Technical Data

Type	OKA 20TA.38 G
Art.-Nr.	6140(A-Z)
Response temperature adjustable	350 - 800 °C
View angle	2 °
Distance ratio	29:1
Detected surface at 2m	Ø 70 mm
Output	PNP n. o. PNP n. c.
Supply voltage	10 - 55 V DC
Ripple voltage	< 15 %
Load current max.	0 - 400 mA
Short-time load current	0,8 A / 100 ms 2 A / 10 ms
Short circuit protection	yes, pulsing
Current absorbed	13 mA
Voltage drop	2 V
Operating frequency	2000 Hz
Switching hysteresis	3 - 10 %
Ambient temperature	-20 to +75 °C
Protection class	IP 67
Connection	2 m POKT-Therm cable
Service plug (factory settings)	S4 (M12x1) 5 pol.
Function display	Duo LED
Housing material	stainless steel
Accessories	Art.-Nr.
(not included in the scope of supply)	
Swivel Stand HM 2	9816B
Tube OL 19	9828A

Diagram of Connections



Infrared Sensors recognize the natural radiation of warm objects over a great distance. They are applied when other proximity switches cannot operate properly because of high radiation or ambient temperatures.

Technical Data

Type	OKA 703.05 G
Art.-No.	6421A
Response temperature	350 °C
View angle	7°
Distance ratio	8:1
Detected surface at 2m	Ø 250 mm
Output	normally open
Supply voltage	20 - 260 V AC/DC
Power frequency	40 - 440 Hz
Ripple voltage	max. 15 % (DC)
Load current max.	5 - 400 mA
Short-time load current	2 A / 10 ms 0,8 A / 100 ms
Short circuit protection	yes, pulsing
Residual current	1,7 mA / 260 V AC 1,0 mA / 24 V DC
Voltage drop	9 V
Operating frequency	1500 Hz (DC)
Ambient temperature	-20 ... +75 °C
Protection class	IP 67
Connection	2 m POKT-Therm cable with G 3/4" flexible tube connection
Function display	LED
Housing material	stainless steel 1.4301
Weight	1,4 kg
further available designs	
view angle	0,5°, 1°, 2°, 25° and 2° x 25°
Response temperatures from	+80 °C upto +1000 °C
DC 3-wire technology	

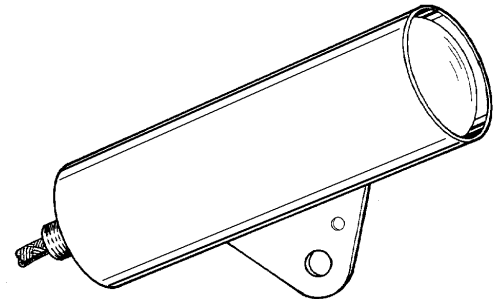
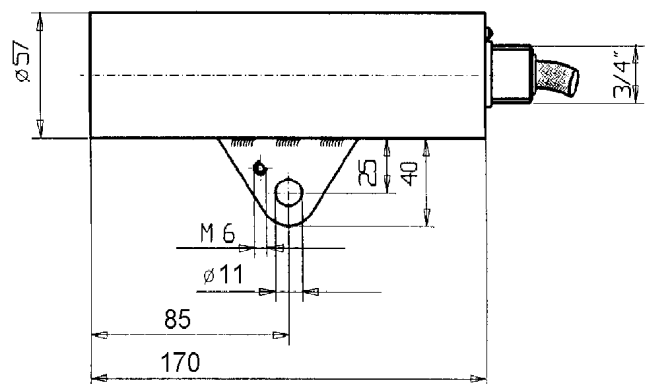
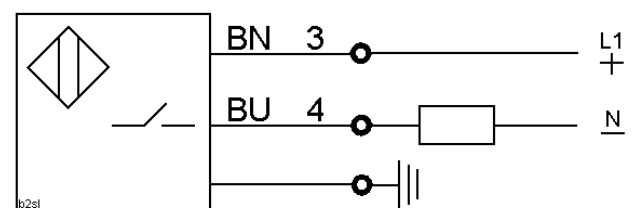
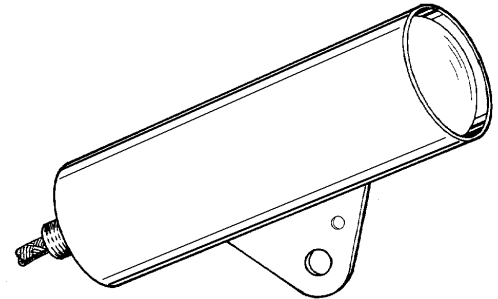


Diagram of Connections



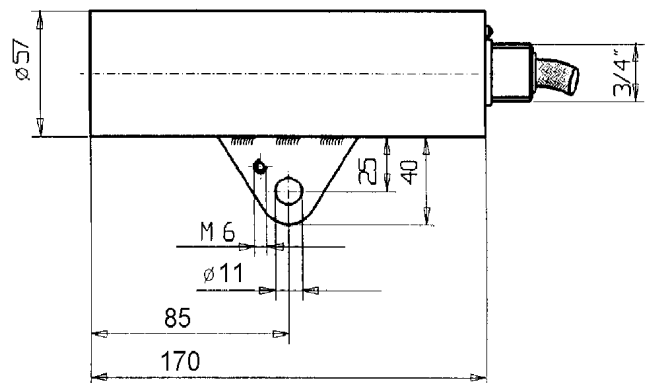
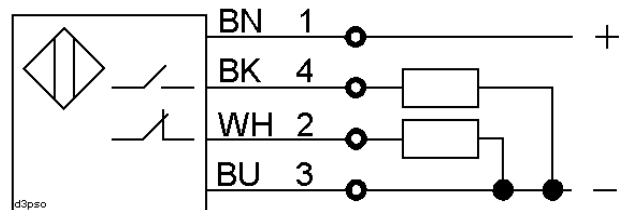
Infrared Sensors recognize the natural radiation of warm objects over a great distance. They are applied when other proximity switches cannot operate properly because of high radiation or ambient temperatures.



Technical Data

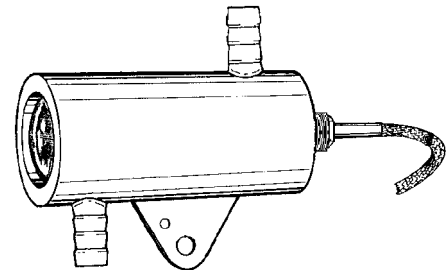
Type	OKA 704.38 G
Art.-No.	6122B
Response temperature	450 °C
View angle	7 °
Distance ratio	8:1
Detected surface at 2m	Ø 250 mm
Output	PNP n. o. + n. c.
Supply voltage	10 - 55 V DC
Ripple voltage	< 15 %
Load current max.	0 - 400 mA
Short-time load current	0,8 A / 100 ms 2 A / 10 ms
Short circuit protection	yes, pulsing
No load current	3 mA
Voltage drop	2 V
Operating frequency	1500 Hz
Switching hysteresis	3 - 10 %
Ambient temperature	-20 ... +75 °C
Protection class	IP 67
Connection	2 m POKT-Therm cable with G 3/4" flexible tube connection
Function display	LED
Housing material	stainless steel
further available designs	
	view angle 0,5°, 1°, 2°, 25° and 2° x 25°
	Response temperatures from +80 °C upto +1000 °C
	AC/DC 2-wire technology

Diagram of Connections



Infrared Sensors recognize the natural radiation of warm objects over a great distance. They are applied when other proximity switches cannot operate properly because of high radiation or ambient temperatures.

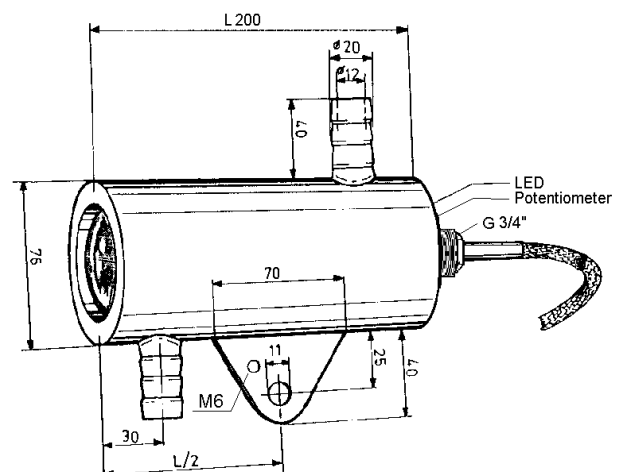
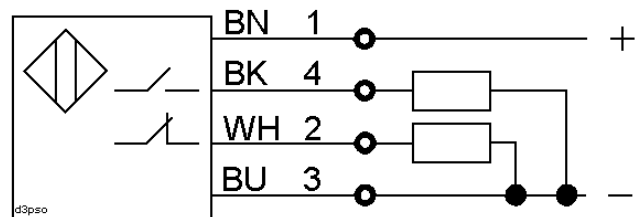
- Response temperature adjustable
- Cooling water connection
- Optional air connection for optic cleaning



Technical Data

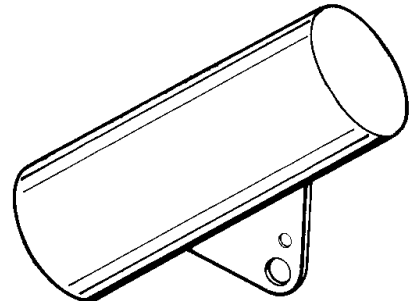
Type	OKB 2047.18 G
Art.-No.	6125F
Response temperature	400 - 700 °C
View angle	2°
Distance ratio	29:1
Detected surface at 2m	Ø 70 mm
Output	PNP n. o. + n. c.
Supply voltage	24 V DC
Ripple voltage	< 15 %
Load current max.	0 - 400 mA
Short-time load current	0,8 A / 100 ms 2 A / 10 ms
Short circuit protection	yes, pulsing
No load current	3 mA
Voltage drop	2 V
Operating frequency	1500 Hz
Switching hysteresis	3 - 10 %
Ambient temperature	-20 ... +75 °C (without cooling)
Protection class	IP 67
Connection	10 m Pokt therm-cable with G 3/4" flexible tube connection
Function display	LED
Housing material	stainless steel with cooling jacket
Accessories	Tube OL 21
Further available designs:	Type:
With air connection (housing length +30 mm)	OKB 2047.18 GL

Diagram of Connections



Infrared Sensors recognize the natural radiation of warm objects over a great distance. They are applied when other proximity switches cannot operate properly because of high radiation or ambient temperatures.

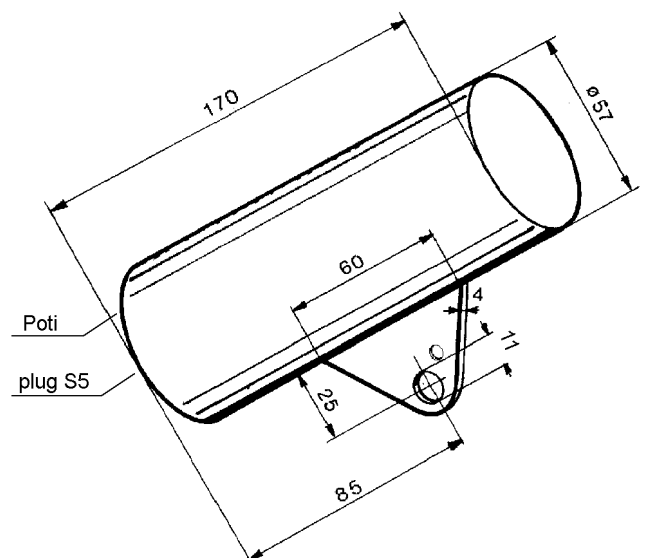
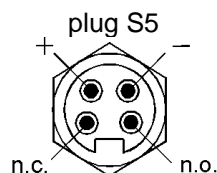
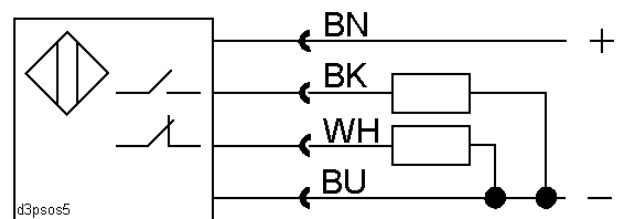
response temperature
adjustable



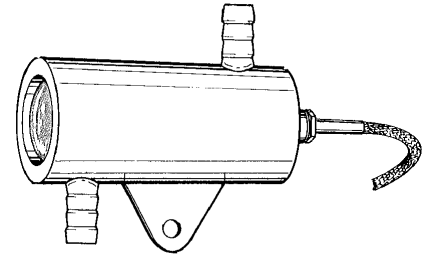
Technical Data

Type	OKA 7047.18 G S5
Art.-Nr.	6127B
Response temperature adjustable	400 - 700 °C
View angle	7 °
Detected surface at 2m	250 mm
Output	PNP n.o. PNP n.c.
Supply voltage	24 V DC
Ripple voltage	< 15 %
Load current max.	0 - 400 mA
Short-time load current	0,8 A / 100 ms 2 A / 10 ms
Short circuit protection	yes, pulsing
Voltage drop	2 V
Operating frequency	1500 Hz
Switching hysteresis	3 - 10 %
Ambient temperature	-20 to +75 °C
Protection class	IP 67
Connection	plug S5 (7/8")
Function display	LED
Housing material	stainless steel
Accessories	Art.-Nr.
(not included in the scope of supply)	
5 m connection cable ST S5-DC5	9844B
Swivel Stand HM 1	9816A
Tube OL 19	9828A

Diagram of Connections



Infrared Sensors recognize the natural radiation of warm objects over a great distance. They are applied when other proximity switches cannot operate properly because of high radiation or ambient temperatures.

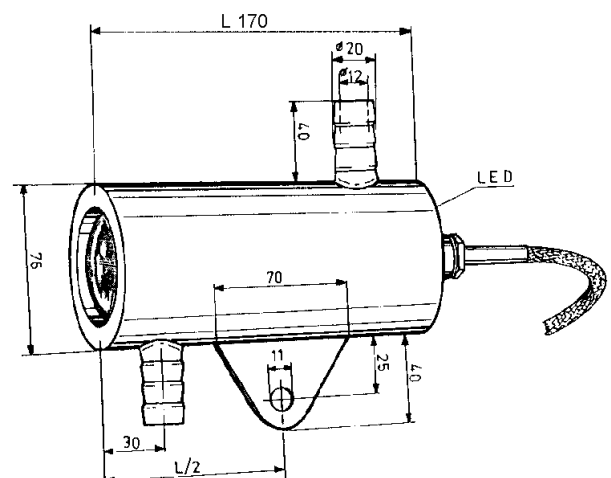
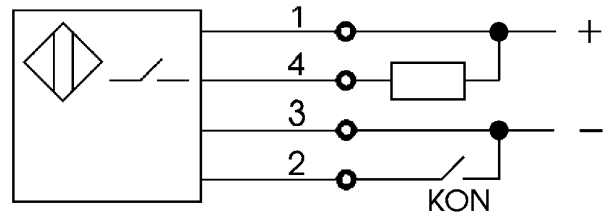


Technical Data

Type	OKB 204.31 GK
Art.-No.	6010B
Response temperature	430 °C
View angle	2°
Detected surface at 2m	Ø 70 mm
Output	NPN n.o.
Function Check	yes
Supply voltage	10 - 80 V DC
Ripple voltage	< 15 %
Load current max.	0 - 400 mA
Short-time load current	0,8 A / 100 ms 2 A / 10 ms
Short circuit protection	yes
Voltage drop	1,5 V
Operating frequency	1500 Hz
Ambient temperature	-20 to +75 °C
Protection class	IP 67
Connection	2 m POKT-Therm cable
Function display	LED
Housing material	Stainless steel cooling jacket

Diagram of Connections

DC 3-Draht NPN Schließer Kon

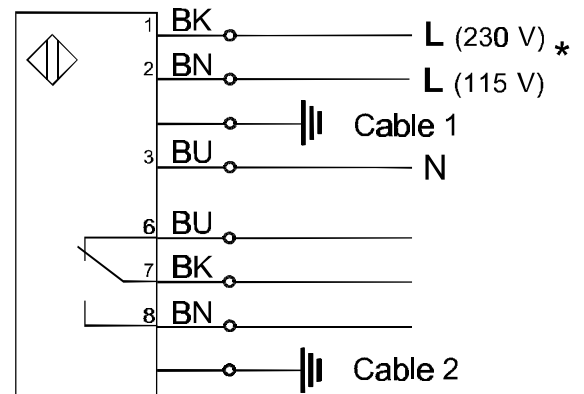


Infrared Sensors recognize the natural radiation of warm objects over a great distance. They are applied when other proximity switches cannot operate properly because of high radiation or ambient temperatures.

Technical Data

Type	OKB 204.6 R
Art.-Nr.	6210F
Response temperature	450 °C
View angle	2°
Distance ratio	29:1
Detected surface at 2m	70 mm Ø
Output	Relay changeover contact
Supply voltage	115 / 230 V AC +/- 15 %
Power frequency	60 Hz
Current absorbed	max. 50 mA
Relay contact load max.	240 V AC / 40 VA 110 V DC / 20 W
Operating frequency	20 Hz
Switching hysteresis	3 - 10 %
Ambient temperature	-20 ... +80 °C without cooling
Protection class	IP 67
Connection	2 x 2 m POKT- Therm cable
Function display	LED
Housing	1.4301 stainless steel cooling jacket

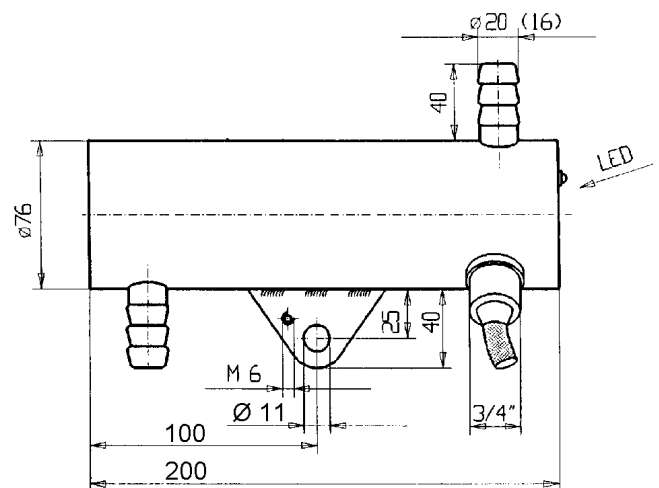
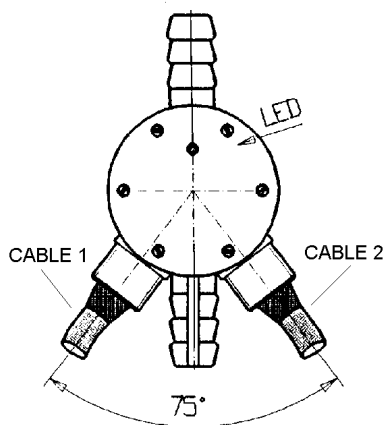
Diagram of Connections



Relay contacts at no object and mains voltage applied

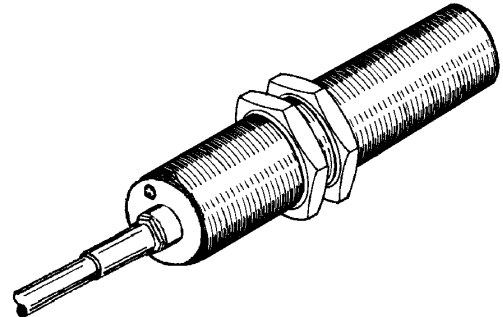
*L-Connection alternative (115 or 230 V AC)

Due to the existing voltage the not used connection has to be safety isolated



Sensor for ejection control at forging presses. The formed pressed parts are detected in non-contacting manner so that the machine control interrupts the working cycle in case of material stoppage. The response sensibility regarding the warm material depends on temperature, size and distance of the object.

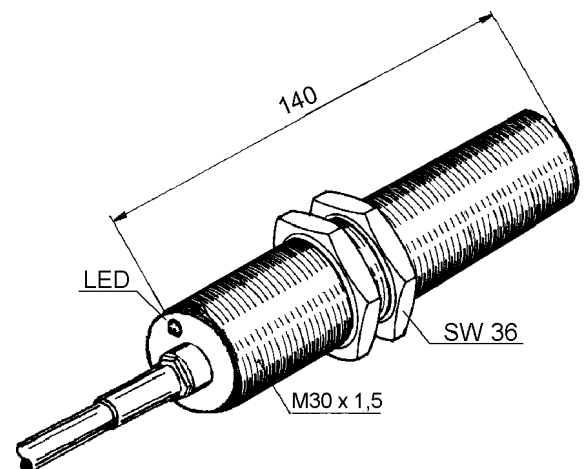
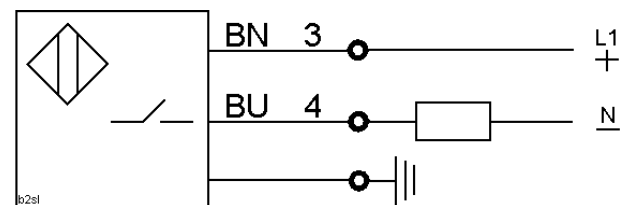
The short-circuit-proof all-current design with two-wire connection is also suitable for relay and SPS controls due to its low residual current.



Technical Data

Type	OKL 203.05 G
Art.-No.	7802A
Response temperature	350 °C / 623 K
View angle	2°
Distance ratio	29:1
Detected surface at 2m	∅ 70 mm
Output	normally open
Supply voltage	20 - 260 V AC/DC
Power frequency	40 - 440 Hz
Ripple voltage	max. 15 % (DC)
Load current max.	5 - 400 mA
Short-time load current	2 A / 10 ms 0,8 A / 100 ms
Short circuit protection	yes, pulsing
Residual current	1,7 mA / 260 V AC 1,0 mA / 24 V DC
Voltage drop	9 V
Operating frequency	1500 Hz (DC)
Ambient temperature	-25 ... +60 °C
Protection class	IP 67
Connection	2 m PUR-cable
Function display	LED
Housing	Brass, nickel plated
Accessories (not included in the scope of supply)	Art.-No.
Tube with air connection OL 25 L	9828G

Diagram of Connections



Infrared Sensors recognise the natural radiation of warm objects over a great distance. They are applied when other proximity switches cannot operate properly because of high radiation or ambient temperatures. The types OSA 673 transmit the IR- radiation with fibre optic cable (LLK 2) between the optic (OAC 204) and the electronic.

Technical Data

Type	OSA 673.33 G
Art.-Nr.	6129L
Type	LLK 2
Art.-Nr.	6436F
Type	OAC 204
Art.-Nr.	6036A
Response temperature	380 °C
View angel	2 °
Distance ratio	29:1
Detected surface at 2m	Ø 70 mm
Output	PNP n. o.
Supply voltage	10 - 80 V DC
Ripple voltage	max. 15 %
Load current max.	0 - 400 mA
Short-time load current	2 A / 10 ms 0,8 A / 100 ms
Short circuit protection	yes, pulsing
No load current	3 mA
Voltage drop	2 V
Operating frequency	1500 Hz
Switching hysteresis	3 - 10 %
Ambient temperature	OSA -20 to +70 °C LLK + OAC -20 to +290 °C
Protection class	IP 67
Connection	2 m POKT-Therm cable with G 3/4" flexible tube connection
Function display	LED
Housing material	Stainless steel

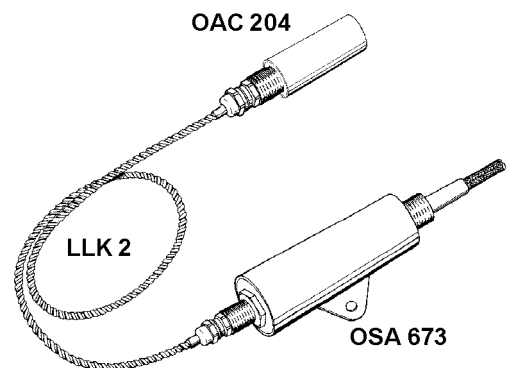
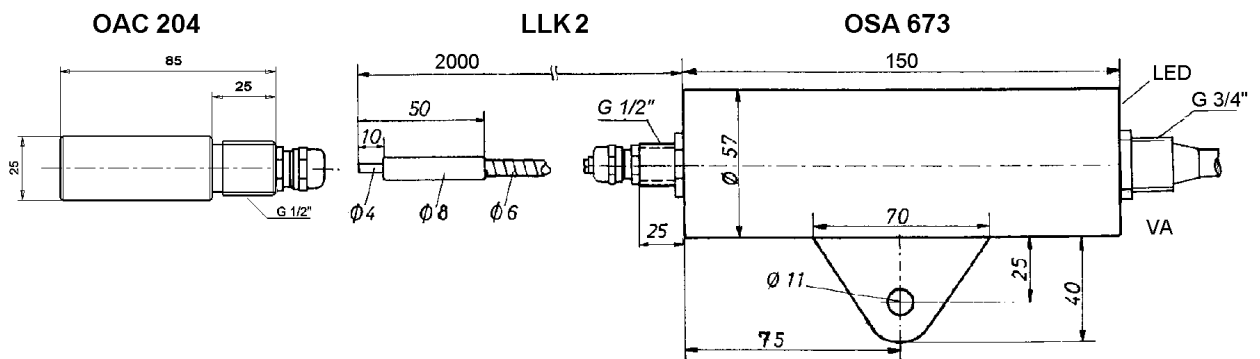
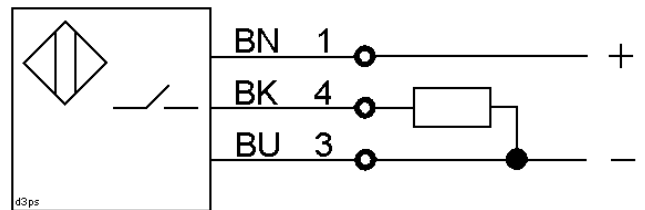


Diagram of Connections



Infrared Sensors recognize the natural radiation of warm objects over a great distance. They are applied when other proximity switches cannot operate properly because of high radiation or ambient temperatures. The types OSA 674 transmit the IR radiation with fibre optic cable (LLK 2) between the optic (OAA 703) and the electronic (OSA 674).

Technical Data

Type	OSA 674.05 G
Art.-No.	6430L
Type	LLK 2
Art.-No.	6436F
Type	OAA 703
Art.-No.	6048A
Response temperature	450 °C
View angel	7 °
Distance ratio	8:1
Detected surface at 2m	Ø 250 mm
Output	normally open
Supply voltage	20 – 260 V AC/DC
Power frequency	40 – 440 Hz
Load current max.	5 - 400 mA
Short-time load current	2 A / 10 ms 0,8 A / 100 ms
Short circuit protection	yes
Residual current	1,7 mA
Voltage drop	9 V
Operating frequency (DC)	1500 Hz
Switching hysteresis	3 - 10 %
Ambient temperature	OSA -20 to +75 °C LLK + OAA -20 to +150 °C
Protection class	IP 67
Connection	2 m POKT-Therm cable with G 3/4" flexible tube connection
Function display	LED
Housing material	Stainless steel

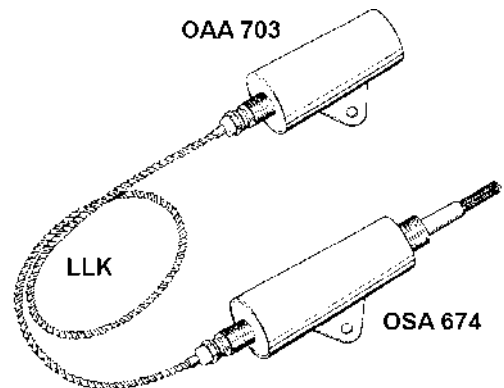
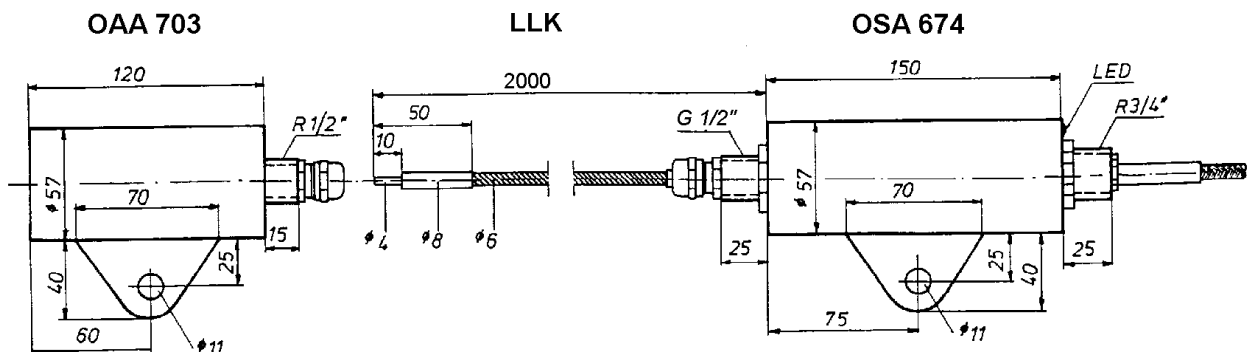
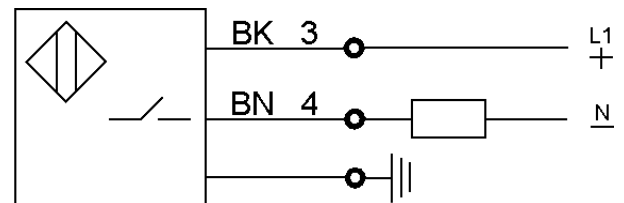


Diagram of Connections



Infrared Sensors recognize the natural radiation of warm objects over a great distance. They are applied when other proximity switches cannot operate properly because of high radiation or ambient temperatures. The types OSA 674 transmit the IR radiation with fibre optic cable (LLK 4) between the optic (OAA 703) and the electronic.

Technical Data

Type	OSA 674.33 G
Art.-No.	6130L
Type	LLK 4
Art.-No.	6436l
Type	OAA 703
Art.-No.	6048A
Response temperature	500 °C
View angel	7 °
Distance ratio	8:1
Detected surface at 2m	Ø 250 mm
Output	PNP-n.o.
Supply voltage	10 - 80 V DC
Ripple voltage	max. 15 %
Load current max.	0 - 400 mA
Short-time load current	2 A / 10 ms 0,8 A / 100 ms
Short circuit protection	yes
No load current	3 mA
Voltage drop	2 V
Operating frequency	1500 Hz
Switching hysteresis	3 - 10 %
Ambient temperature	OSA -20 to +75 °C LLK + OAA -20 to +150 °C
Protection class	IP 67
Connection	2 m POKT-Therm cable with G 3/4" flexible tube connection
Function display	LED
Housing material	Stainless steel

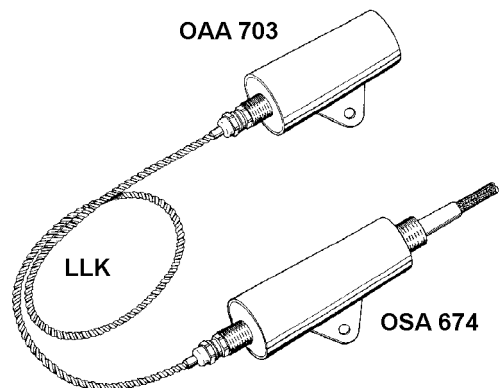
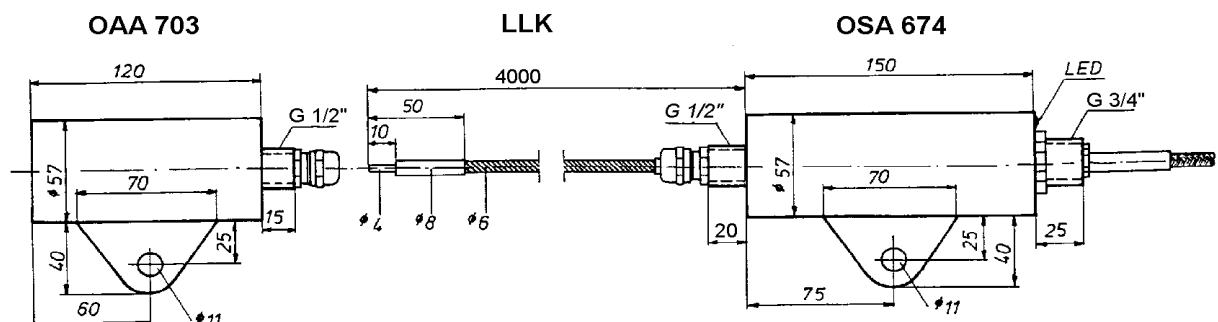
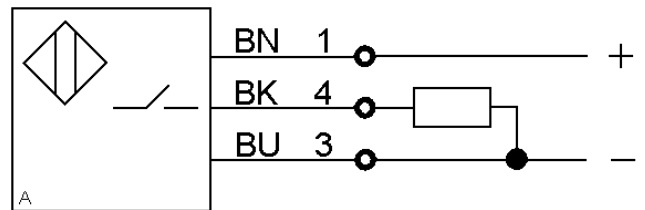


Diagram of Connections

DC 3-Draht PNP Schließer



Infrared Sensors recognize the natural radiation of warm objects over a great distance. They are applied when other proximity switches cannot operate properly because of high radiation or ambient temperatures. The types OSA transmit the IR- radiation with fibre optic cable (LLK 4) between the optic (OAC 704) and the electronic. The response temperature is adjustable.

Technical Data

Type	OSA 6747.18 G
Art.-No.	6136A
Type	LLK 4
Art.-No.	6436I
Type	OAC 704
Art.-No.	6037A
Response temperature (adjustable)	450 - 750 °C
View angel	7 °
Distance ratio	8:1
Detected surface at 2m	Ø 250 mm
Output	PNP n. o. + n. c.
Supply voltage	24 V DC
Ripple voltage	max. 15 %
Load current max.	0 - 400 mA
Short-time load current	2 A / 10 ms 0,8 A / 100 ms
Short circuit protection	yes, pulsing
No load current	3 mA
Voltage drop	2 V
Operating frequency	1500 Hz
Switching hysteresis	3 - 10 %
Ambient temperature	OSA -20 ... +70 °C LLK + OAC -20 ... +290 °C
Protection class	IP 67
Connection	2 m POKT-Therm- cable with G 3/4" flexible tube connection
Function display	LED
Housing material	Stainless steel

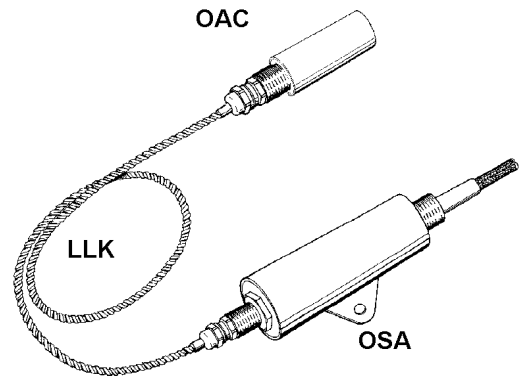
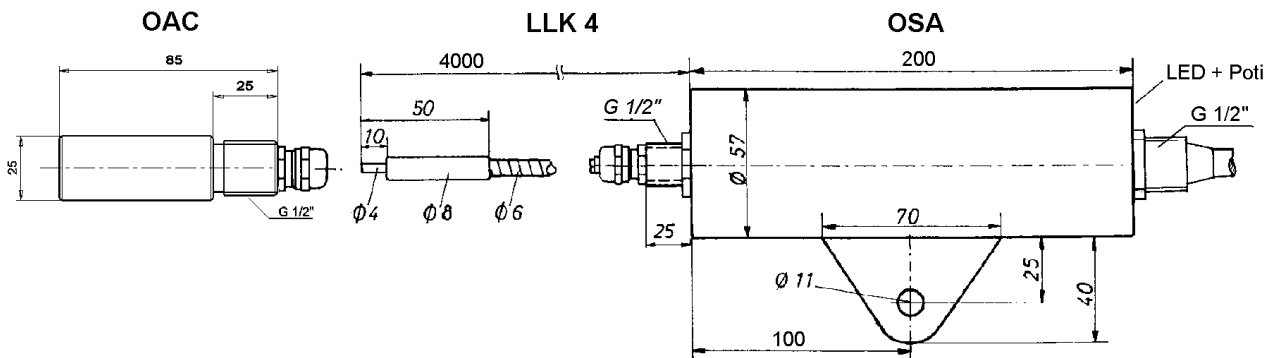
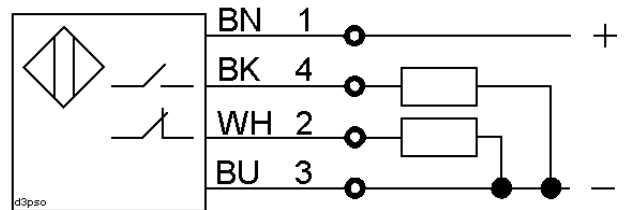


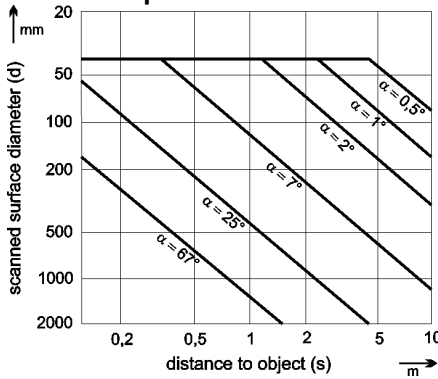
Diagram of Connections



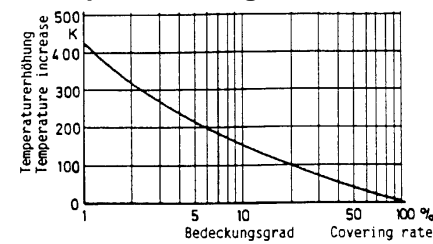
Piros infrared sensors detect the natural radiation of warm objects via large distances. They are applied where other proximity switches cannot work because of high radiation or ambient temperature. Via the optics stated here and a fibre optic the infrared radiation is transmitted from the high temperature range to a separate evaluation electronics.

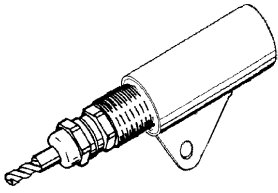
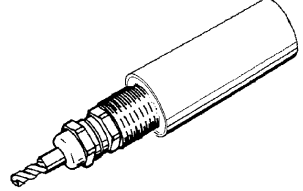
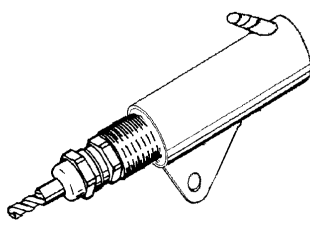
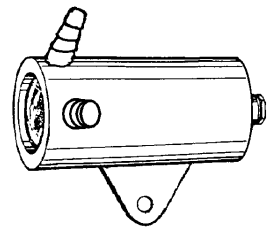
We shall be glad to let you have detailed data sheets.

Detected surface, view distance relationship



Temperature increase at incomplete coverage



Ø 25 mm		Ø 25 mm	
			
Type	OACF 204	Type	OAC 204
Art.-no.	6036K	Art.-no.	6036A
View angel	2°	View angel	2°
Distance ratio	29:1	Distance ratio	29:1
Detected surface at 2m	70 mm Ø	Detected surface at	70 mm Ø
Type	OACF 704	Type	OAC 704
Art.-no.	6036L	Art.-no.	6037A
View angel	7°	View angel	7°
Distance ratio	8:1	Distance ratio	8:1
Detected surface at 2m	250 mm Ø	Detected surface at	250 mm Ø
		Type	OAC 204 M
		Art.-no.	6036G
		Special features	as OAC 204 with 5/16" hose union
Ambient temperature	-30 ... +290 °C	Ambient temperature	-30 ... +290 °C
Housing material	stainless steel	Housing material	stainless steel
Ø 25 mm with air connection		Ø 76 mm with cooling jacket	
			
Type	OAF 204	Type	OAB 203 L
Art.-no.	6036B	Art.-no.	6042D
View angel	2°	View angel	2°
Distance ratio	29:1	Distance ratio	29:1
Detected surface at 2m	70 mm Ø	Detected surface at	70 mm Ø
Type	OAF 704	Special feature	with air connection
Art.-no.	6036F		
View angel	7°		
Distance ratio	8:1		
Detected surface at 2m	250 mm Ø		
Ambient temperature	-30 ... +290 °C	Ambient temperature	-30 ... +150 °C
Housing material	stainless steel	Housing material	stainless steel