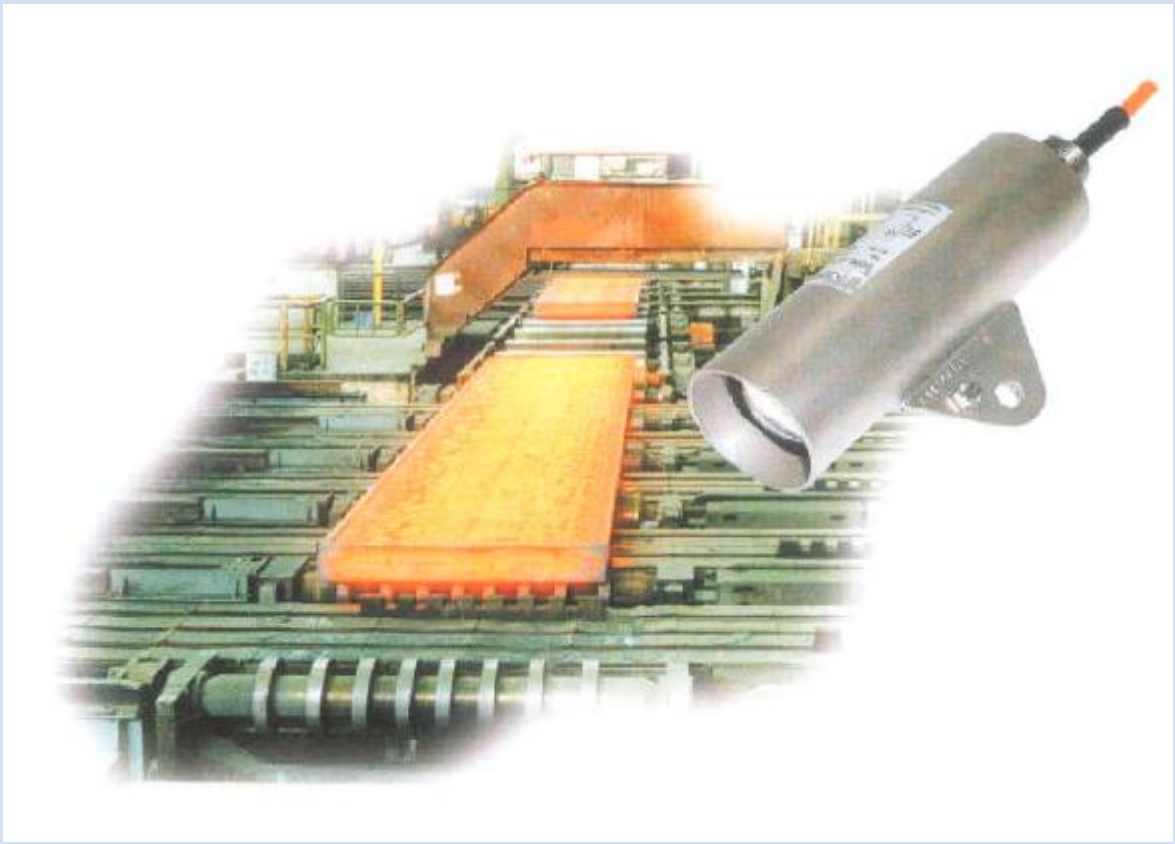
Product catalogue



Special Sensors

for smelting works and rolling mills

MEYLE

. . . three companies, one service . . .

IHM
INGENIEURBÜRO
HERBERT MEYER
Systems for the Automation Industry

System Integrator and Engineering company for applications and systems

MEYLE
MEYER INDUSTRIE-
ELECTRONIC GMBH
Components for the Automation Industry

Distribution of a wide range of components for the automation-, process-, machine building- and manufacturing industries

ISR
INGENIEURGESELLSCHAFT
SACHVERSTÄNDIGER
REVISIONSINGENIEURE MBH
Inspection Company for Quality Assurance

Certified test laboratory for medical equipment and commercial building safety and quality tests

MEYLE

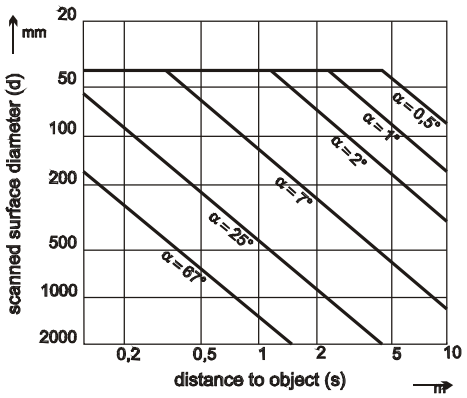
Infrared-sensors detect the infrared radiation emitted by hot materials and transform it into an electrical signal.

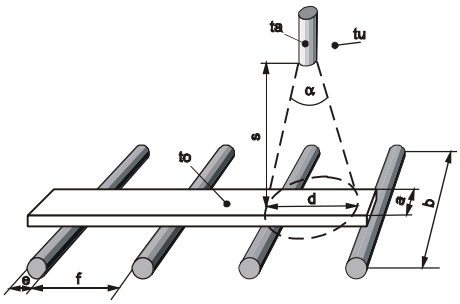
Built-in optics to narrow the field of view, combined with a predetermined switching temperature, provide for a wide range of applications. These include precise location and positioning of hot objects in, for example, steel and rolling mills, forges and foundries, and glass and ceramic installations. 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 senors 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 these sensors 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.

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

S50x/R50x:
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.

Overview

Compact sensors (integrated evaluating electronics)

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

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

Sensors with fibre optic cable

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

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

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.

OK1 **OK2** **OK3**

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

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

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

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

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.

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

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: ICE-V204-05-SP:

ICE Compact sensor

V20 2° lens

4 450 °C response temperature

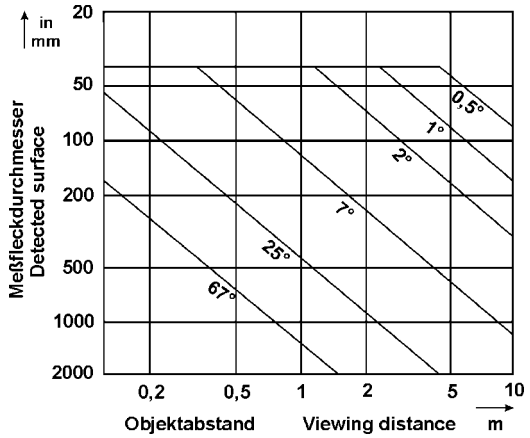
05 20 - 260 V AC/DC, 2-wire NC

Infrared Sensor
Data for Type Selection

This questionary 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.

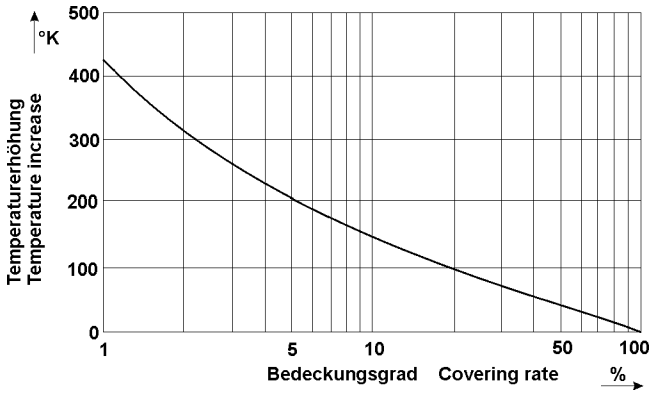
The response temperature should be approx. 50 to 100 K below the lowest object temperature. However, it should be so high that background radiation of frame parts or of foreign objects is not detected.

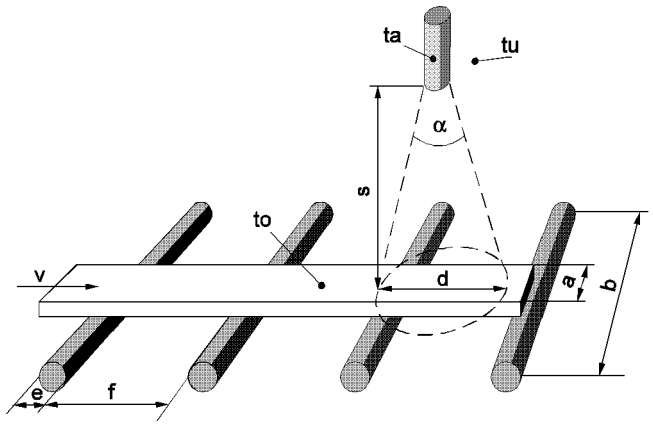
The relation between distance s, detected surface d and view angle α is d = 2s x tan α/2 and can also be described by the distance ratio (s:d).



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 ▭ a x d/▭ x d²/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 Supply voltage AC others	Ub [V] Ub [V]	■24 / ■... ■115 / ■ 230
Function only DC: ■ PNP / ■ NPN		■ normally open ■ normally closed

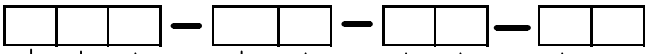
* = indication absolutely required

** = sensor parameter

Technical Data

Ambient temperature IR-sensor without cooling	-20 to +75°C
Ambient temperature fibre optic cable (LLK) and optics	-20 to +75°C
Protecton class	IP67
Switching hysteresis	3-10%
Switching frequency (DC/AC)	1500Hz / 25Hz
Load currentmax. 2-wire (AC/DC)	5-400mA
Load current 3-wire (DC)	0-400mA
Short-circuit protection	yes, pulsing
Residual current 2-wire AC/DC	1,7mA
No load current 3-wire DC	3mA
Voltage drop 2-wire AC/DC	9V
Voltage drop 3-wire DC	2V

Typecode



Infrared-sensor	I					
Compaktversion		C				
Evaluation electronic for fibre optic cable (LLK)		V				
Optics for fibre optic cable (LLK)		O				
Stainless steel housing Ø57mm			E			
Stainless steel housing with cooling jacket Ø76mm			K			
Stainless steel housing Ø25mm			C			
Stainless steel housing Ø25mm with air connection			F			
Brass nickel plated housing M30			L			
View angle 0,5°				V05		
View angle 1°				V10		
View angle 2°				V20		
View angle 5°				V50		
View angle 7°				V70		
View angle 25°				V25		
View angle 2 x 25°				V26		
Response temperature 80°C or higher					1	
Response temperature 290°C or higher					2	
Response temperature 350°C / 380°C with LLK 2m					3	
Response temperature 430°C / 450°C with LLK 2m					4	
Response temperature 650°C / 680°C with LLK 2m					6	
Response temperature 800°C / 800°C with LLK 2m					8	
Adjustable 120°C - 350°C					13	
Adjustable 350°C - 650°C / 380°C – 680°C with LLK 2m					36	
Adjustable 400°C - 700°C					47	
Adjustable 600°C - 900°C / 650°C – 950°C with LLK 2m					69	
Automatical response temperature adjustment 350°C – 800°C					TA	
20 – 260VAC/DC						0
24VDC						1
10-55VDC						3
90-260VAC						6
NPN-N.C.							0
NPN-N.O.							1
PNP-N.C. or AC 3-wire-N.C.							2
PNP-N.O. or AC 3-wire-N.O.							3
2-wire N.C. AC/DC							4
2-wire N.C. AC/DC							5
PNP-N.O.+ N.C.							8
Relay instead semiconductor output							R
Short-circuit protected								SP

Option	Function check	K
	Air connection for lens cleaning	L
	IP68 connetor 7/8“ 16 UN	S5
Or other specifications to be indicated in plain text.(customer specific variant)		Z

Please note that not every compilation is possible! If you have a concrete application, we will try to satisfy your requirements.
Therefore please contact us directly.

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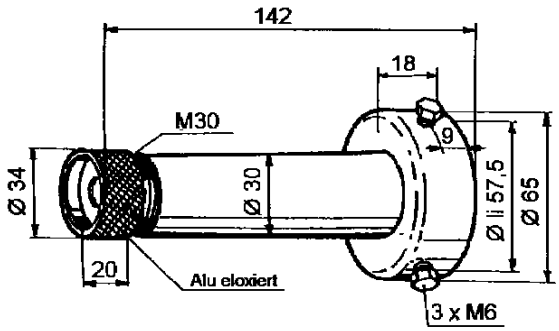
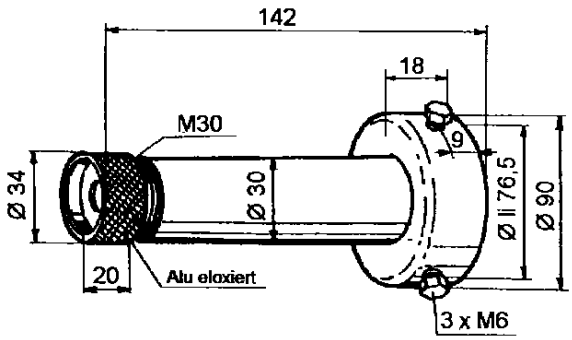
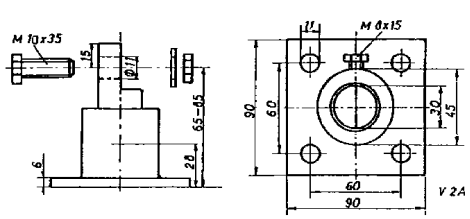
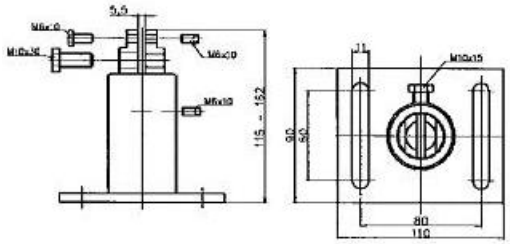
Accessories for IR sensors and light barriers

Tube T01 for units of Ø 57 mm housing		Tube T02 for units with Ø 76 mm housing (cooling jacket)	
			
The tube with 2 srew-in orifices reduces the view angle for avoiding disturbing radiation because of foreign radiation or reflections (e.g. by water vapour). Using the safety rope including in the delivery protects against falling down.			
Type	T01	Type	T02
Art.-No.	AS254	Art.-No.	AS255
Housing material	stainless steel 1.4301	Housing material	stainless steel 1.4301
Applicable for series	S501, E501	Applicable for series	S502, E502
	IOE, ICE, RL12		ICK, ICE, RL12K
M30 union of stainless steel if requested		M30 union of stainless steel if requested	

Swifel Stand GF 1		Swifel Stand GF 2	
			
The swifel stand GF1 can be hinged in two axis and thus facilitates adjusting of IR sensors and light barriers		Improved version of GF1 with additional safety mechanism of shaft and movability of the mounting foot	
Type	GF1	Type	GF2
Housing material	stainless steel 1.4301	Housing material	stainless steel 1.4301
Applicable for series	IOE, IOK, ICE, ICK, SVE, SVK S/E501, S/E502	Applicable for series	IOE, IOK, ICE, ICK SVE, SVK, RL12x S/E501, S/E502

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Komponenten für die Automatisierungstechnik

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Infrared-sensor
ICE-V20T-38-SP

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 ICE / ICK-V20T-38-SP 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.

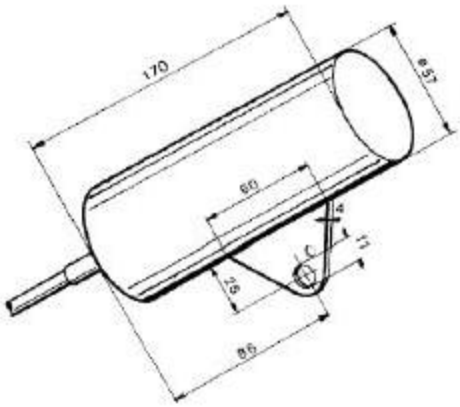
Technical Data

Type MY-ICEV20T-38-SP

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

Diagram of Connections

Dimensions:



Accessories
(not included in the scope of supply)

Art.-Nr.	
Swivel Stand	GF1
Tube	T01

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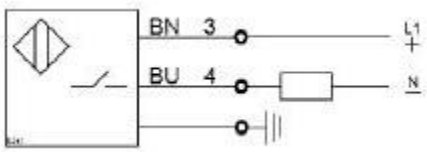
Infrared-sensor
ICE-V703-05-SP

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 ICE-V703-05-SP

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 1.4305
Weight	1,4 kg

Diagram of Connections



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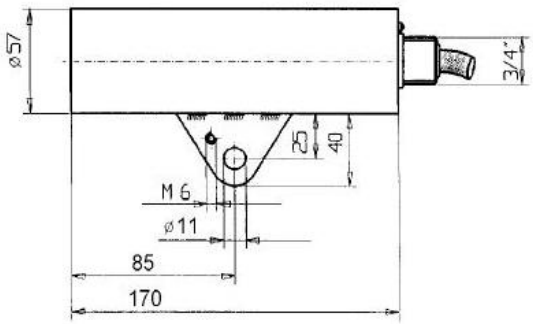

further available designs	
view angle	0,5°, 1° ,2°, 25° and 2° x 25°
Response temperatures	from +80 °C upto +1000 °C
DC 3-wire technology	

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Infrared-sensor
ICE-V7013-13-SP

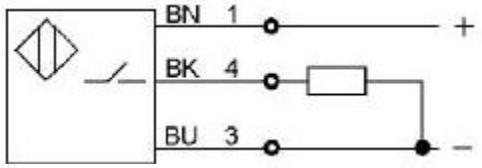
Infrared Sensors recognise the natural radiation of warm objects over a great distance. They are applied when other proximity switches cannot operate properly because of high radiation or ambient temperatures.

Technical Data

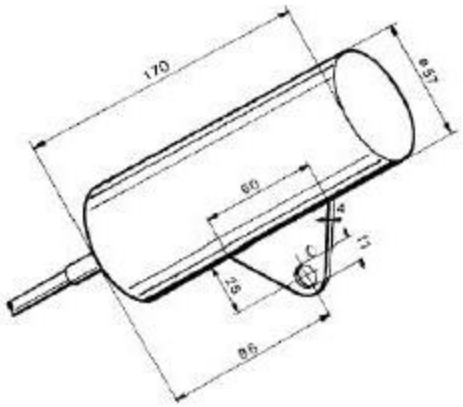
Type ICE-V7013-13-SP

Response temperature	adjustable 120 - 350 °C
View angle	7 °
Distance ratio	8:1
Detected surface at 2m	Ø 250 mm
Output	PNP n. o.
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
Current absorbed	10 mA
Voltage drop	2 V
Operating frequency	5 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)	G 3/4" tube connection
Function display	LED
Housing material	stainless steel

Diagram of Connections



Dimensions:



Accessories
(not included in the scope of supply)

Art.-Nr.	
Swivel Stand	GF1
Tube	T01

Details are subject to change without notice.

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Infrared-sensor
ICE-V704-38-SP

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 ICE-V704-38-SP

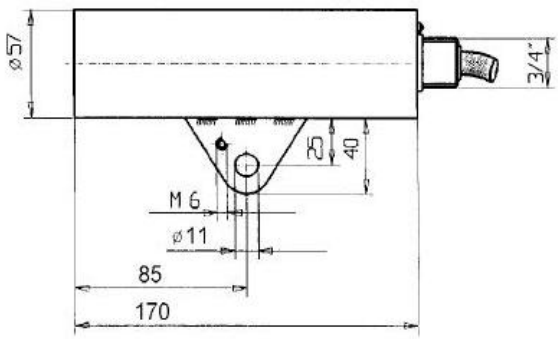
Response temperature	450 °C
View angle	7 °
Distance ratio	8:1
Detected surface at 2m	Ø 250 mm
Output	PNP n. o. + n. c.
Supply voltage	10 - 55 V DC
Ripple voltage	< 15 %
Load current max.	0 - 400 mA
Short-time load current	0,8 A / 100 ms 2 A / 10 ms
Short circuit protection	yes, pulsing
No load current	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

Dimensions



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Infrared-sensor
ICK-V2047-18-SP

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.

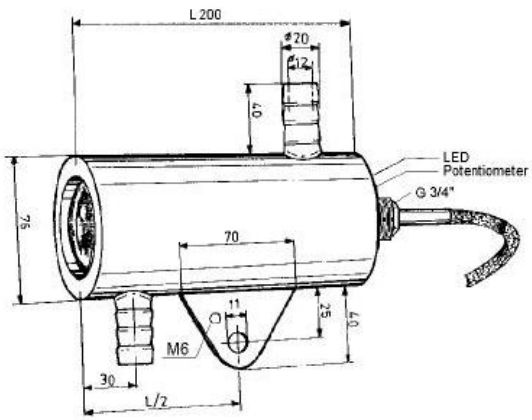
- Response temperature adjustable
- Cooling water connection
- Optional air connection for optic cleaning

Technical Data
Type ICK-V2047-18-SP

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	24VDC
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 T01

Diagram of Connections

Dimensions



Further available designs:	**Tpe:**
With air connection (housing lenght +30 mm)	ICK-V2047-18L-SP

MEYER INDUSTRIE-ELECTRONIC GMBH
Komponenten für die Automatisierungstechnik

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Infrared-sensor
ICK-V7047-18-SP

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

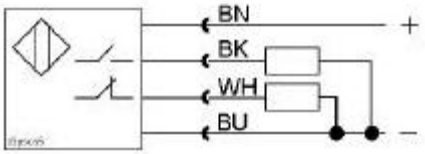
Type ICK-V7047-18-SP

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 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	-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:
With air connection
(housing lenght +30 mm)

Type:
ICK-V2047-18L-SP

Diagram of Connections



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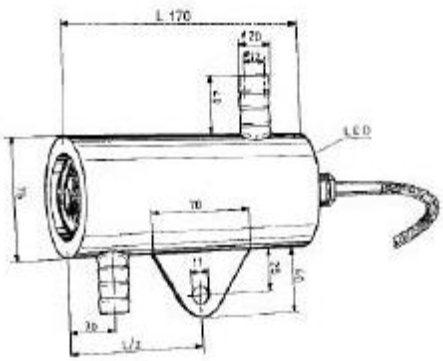

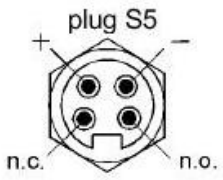

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Komponenten für die Automatisierungstechnik

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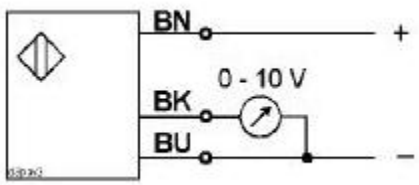
Infrared Sensor
ICE-V2036-19

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 ICE-V2036-19

View angle	2 °
Detected surface at 2m	Ø 70 mm
Measuring range	350 - 650 °C
Output	0 - 10 V
Supply voltage	24 V DC
Ripple voltage	< 15 %
Response time	1 ms
Ambient temperature	-25 ... +70 °C
Protection class	IP 67
Connection	2 m silicon cable
Housing material	Stainless steel
Weight	1,4 kg

Diagram of Connections



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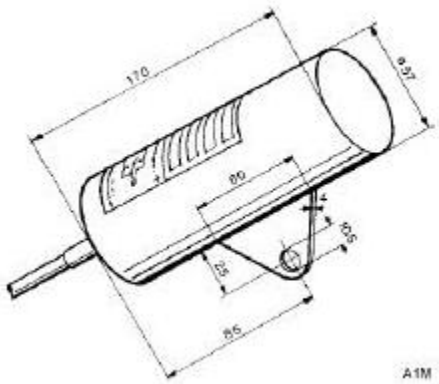

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Infrared-sensor
ICE-V7013-13-SP

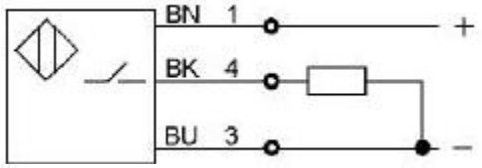
Infrared Sensors recognise the natural radiation of warm objects over a great distance. They are applied when other proximity switches cannot operate properly because of high radiation or ambient temperatures.

Technical Data

Type ICE-V7013-13-SP

Response temperature	adjustable 120 - 350 °C
View angle	7 °
Distance ratio	8:1
Detected surface at 2m	Ø 250 mm
Output	PNP n. o.
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
Current absorbed	10 mA
Voltage drop	2 V
Operating frequency	5 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)	G 3/4" tube connection
Function display	LED
Housing material	stainless steel

Diagram of Connections



Dimensions:

Accessories
(not included in the scope of supply)

Art.-Nr.	
Swivel Stand	GF1
Tube	T01

Details are subject to change without notice.

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Infrared-sensor
ICE-V7013-13-SP

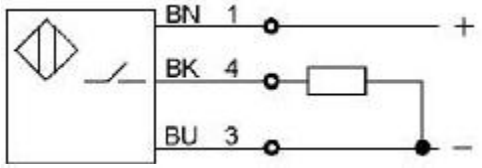
Infrared Sensors recognise the natural radiation of warm objects over a great distance. They are applied when other proximity switches cannot operate properly because of high radiation or ambient temperatures.

Technical Data

Type ICE-V7013-13-SP

Response temperature	adjustable 120 - 350 °C
View angle	7 °
Distance ratio	8:1
Detected surface at 2m	Ø 250 mm
Output	PNP n. o.
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
Current absorbed	10 mA
Voltage drop	2 V
Operating frequency	5 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)	G 3/4" tube connection
Function display	LED
Housing material	stainless steel

Diagram of Connections



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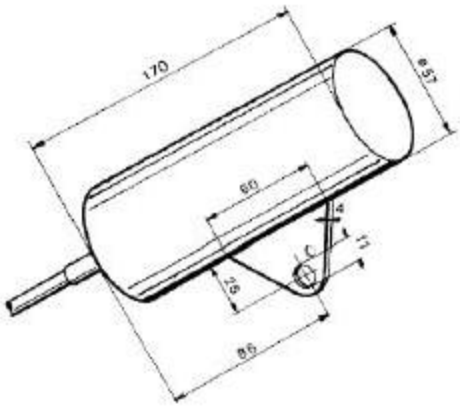

Accessories
(not included in the scope of supply)

Art.-Nr.	
Swivel Stand	GF1
Tube	T01

Details are subject to change without notice.

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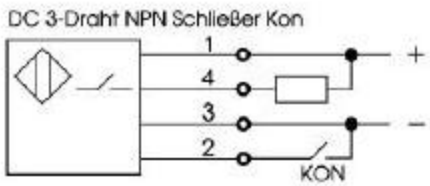
Infrared Sensor
ICK-V204-31-SPK

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 ICK-204-31-SPK

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 with cooling jacket

Diagram of Connections



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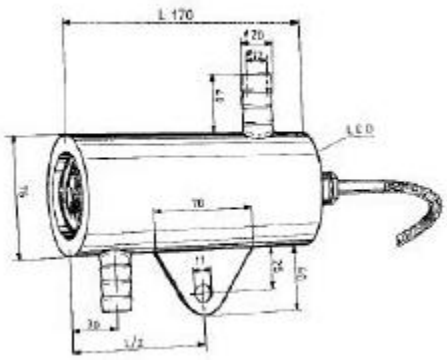

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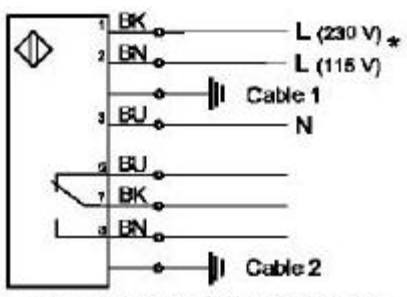
Infrared Sensor
ICK-V204-6R

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 ICK-V204-6R

Response temperature	450 °C
View angle	2°
Distance ratio	27:1
Detected surface at 2m	Ø 70 mm
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	1.4305 stainless steel cooling jacket

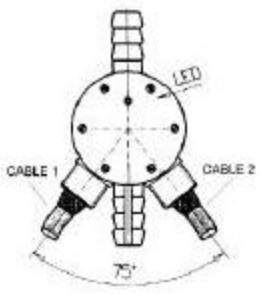
Diagram of Connections

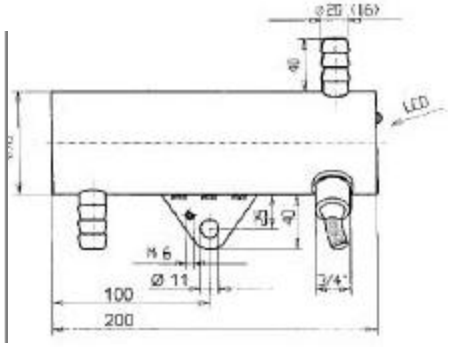


Relay contacts at no object and mains voltage applied

*L-Connection alternative (115 or 230 V AC)
Due to the exiting voltage the not used connection has to be safety isolated

Dimensions





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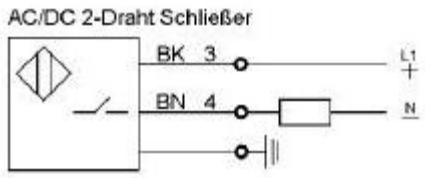
Infrared Sensor
ICL-V203-05-SP

Sensors 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 is low residual current.

Technical Data
Type ICL-V203-05-SP

Response temperature	350 °C / 623 K
View angle	2°
Distance ratio	27:1
Detected surface at 2m	Ø 75 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

Diagram of Connections



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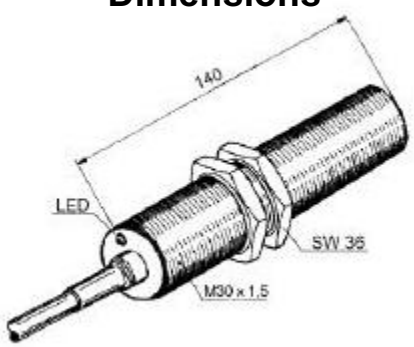

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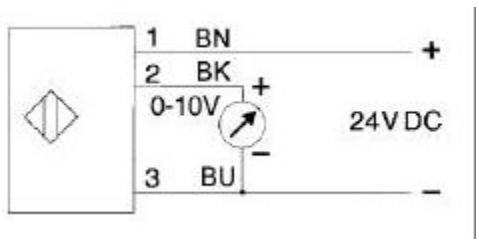
Infrared Sensor
ICZ-V1135-19

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 ICZ-V1135-19

View angle	11 °
Detected surface at 2m	400 mm
Measuring range	350 - 650 °C
Target Æ 9 mm at distance 350 mm	430 - 730 °C
Output	0 - 10 V
Supply voltage	24 V DC
Ripple voltage	max. 15 %
Ambient temperature	-25 ... +70 °C
Protection class	IP 67
Connection	2m cable
Housing material	Nickel plated brass

Diagram of Connections



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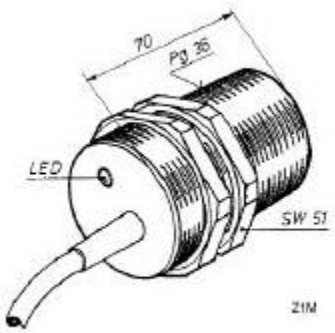

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Infrared-Sensor
IVE-V673-33-SP

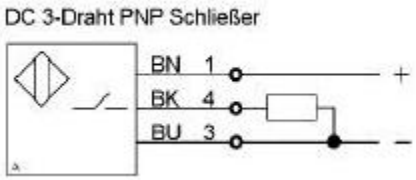
Infrared Sensors recognise the natural radiation of warm objects over a great distance.
They are applied when other proximity switches cannot operate properly because of high radiation or ambient temperatures. The types MY-IVE 673 transmit the IR- radiation with fiber optic cable (LLK 2) between the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

Technical Data

Type IVE-673-33-SP

Type		**LLK 2**
Type		**MY-IOC 204**
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	MY-IVE	-20 to +70 °C
	LLK + MY-IOC	-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



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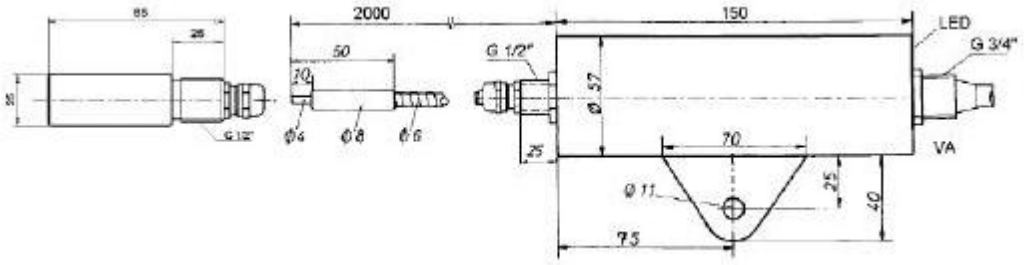

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Infrared-Sensor
IVE-674-05-SP

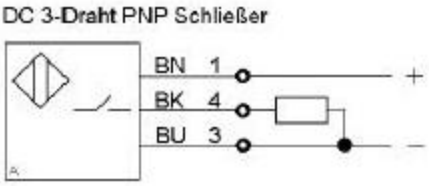
Infrared Sensors recognize the natural radiation of warm objects over a great distance.
They are applied when other proximity switches cannot operate properly because of high radiation or ambient temperatures. The types MY-EVE 674 transmit the IR radiation with fiber optic cable (LLK 2) between the optic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

Technical Data

Type IVE-674-05-SP

Type		**LLK 2**
Type		**MY-IOE 703**
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	MY-IVE	-20 to +75 °C
	LLK + MY-IOE	-20 to +75 °C
		-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



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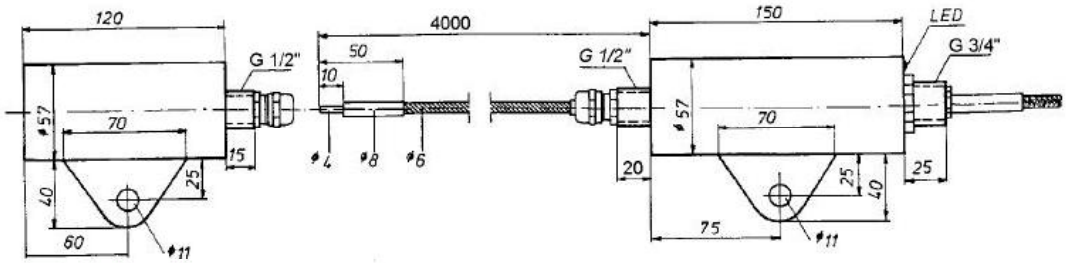

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Infrared-Sensor
IVE-674-33-SP

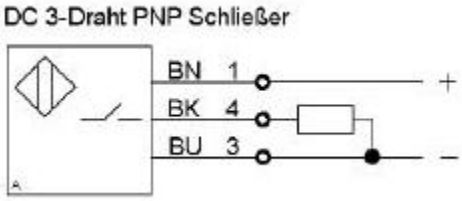
Infrared Sensors recognize the natural radiation of warm objects over a great distance.
They are applied when other proximity switches cannot operate properly because of high radiation or ambient temperatures. The types MY-IVE 674 transmit the IR radiation with fiber opticcable (LLK 4) between the optic (MY-IOE703) and the electronic.

Technical Data

Type IVE-674-33-SP

Type		**LLK 4**
Type		**MY-IOE 703**
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	MY-IVE LLK + MY-IOE	-20 to +75 °C 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



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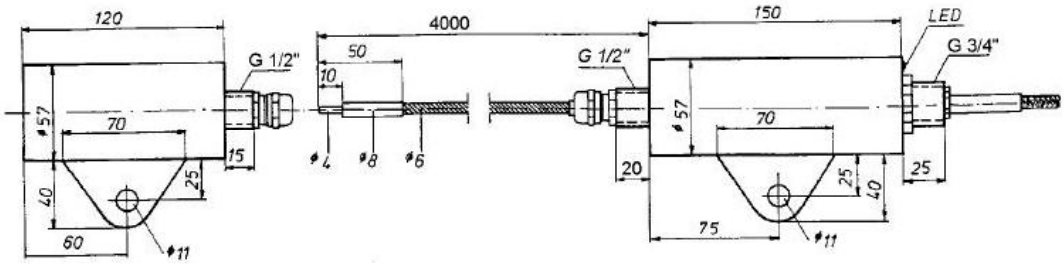

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Infrared-Sensor
IVE-6747-18-SP

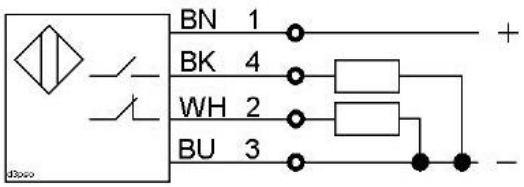
Infrared Sensors recognize the natural radiation of warm objects over a great distance. They are applied when other proximity switches cannot operate properly because of high radiation or ambient temperatures. The types MY-IVE transmit the IR- radiation with fibre optic cable (LLK 4) between the optic (MY-IOC704) and the electronic. The response temperature is adjustable.

Technical Data

Type: IVE-6747-18-SP

Type		**LLK 4**
Type		**MY-IOC 704**
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	MY-IVE	-20 ... +70 °C
	LLK + MY-IOC	-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



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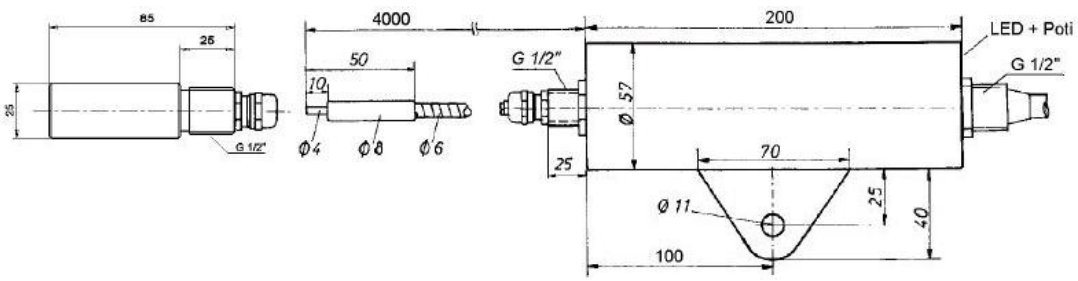

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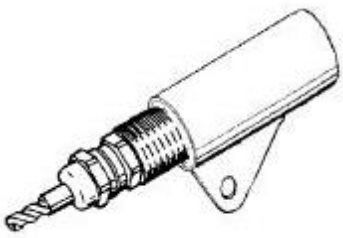
Infrared-Sensors
Optics

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.

∅ 25 mm

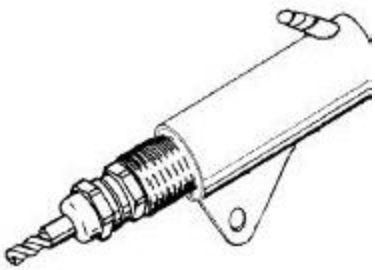


Type	**MY-IOC/F 204**
View angel	2°
Distance ratio	29:1
Detected surface at 2m	70 mm ∅
Type	**MY-IOC/F 704**
View angel	7°
Distance ratio	8:1
Detected surface at 2m	250 mm ∅
Ambient temperature	-30 ...+290C°
Housing material	stainless steel

∅ 25 mm

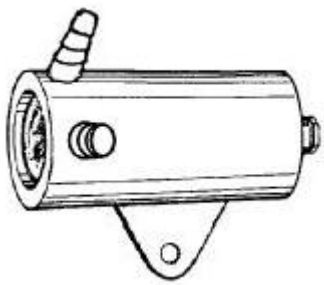
Type	**MY-IOC 204**
View angel	2°
Distance ratio	29:1
Detected surface at 2m	70 mm ∅
Type	**MY-IOC 704**
View angel	7°
Distance ratio	8:1
Detected surface at 2m	250 mm ∅
Type	**MY-IOC 204M**
Special features as OAC 204 with 5/16" hose union	
Ambient temperature	-30 ... +290 C°
Housing material	stainless steel

∅ 25 mm with air connection



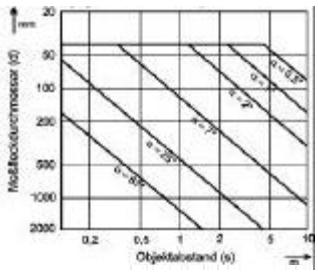
Type	**MY-IOF 204**
View angel	2°
Distance ratio	29:1
Detected surface at 2m	70 mm ∅
Type	**MY-IOF 704**
Special feature with air connection	
View angel	7°
Distance ratio	8:1
Detected surface at 2m	250 mm ∅
Ambient temperature	-30 ...+290°C
Housing material	stainless steel

∅ 76 mm with cooling jacket

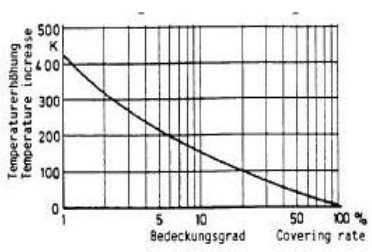


Type	**MY-IOK 203L**
View angel	2°
Distance ratio	29:1
Detected surface at 2m	70 mm ∅
Ambient temperature	-30 ...+150°C
Housing material	stainless steel

Detected surface, view distance relationship



Temperature increase at incomplete coverage



MEYLE

infrared pyrometer

-32 °C ... 1800 °C

® HT

Non-contact temperature measurement
Steel glass paper plastics ceramics

These pyrometers are non-contact measuring thermometers with analog outputs. They complement the infrared sensor range with switching performance in the IVE/ICE/ICK range, which have been tried and tested for years *(please request brochure!)*.
For temperature measurement we also have a selection of stationary designs in the S range (IMS and ICS) available, in addition to the sensor HT (IHT) hand-held thermometer in various types with measurement ranges between -32 and +1800 °C.

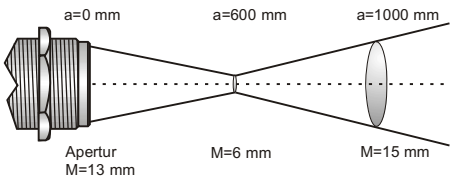
The sensors have been designed for control and monitoring tasks in many varied industries:

- steel works and rolling mills,
- forging works,
- presses,
- soldering, sintering and hardening works
- glass industry,
- food industry.

We recommend the use of our questionnaire for application analysis so that the user does not necessarily need to cope with the theory of radiation measurement.

The following criteria are relevant for selection of the correct sensor:

- size and condition of the object;
- minimum/maximum object temperature;
- distance from sensor;
- measurement range;
- interference influences and environment;
- required output signal



Various optical systems ensure optimum adaptation of the measured area to the object size. Please see the type summary for a list of measured area size in relationship to object distance.

Highlight overview

IMS

Stainless steel housing with Pg11 thread
Temperature range 100 - 650 °C,

Electrical connection: 24 V DC, analog output (+, -)

Three alternative measured value outputs:
10mV/°C,
according to thermal element type J,
according to thermal element type K.
These outputs enable simple replacement of contact-measuring thermometers.

Accessories: cooling jacket, 90°- mirror, fixing bracket.

ICS

Stainless steel housing with M40 thread
Temperature range from -32 to 1300 °C, for metal, glass or other materials

Electrical connection:
24 V DC as current loop with 4 - 20 mA measuring signal

With integrated laser pilot light and maximum value memory depending on model.

Integrated service interface for parameterisation via PC or hand-held parameterisation device.

Accessories: fixing bracket, refrigerated jacket, blowing attachment, laser pilot light unit, software and RS232 cable, hand-held parameterisation device.

IHT

Mobile hand-held measuring device in ergonomic plastic housing with display and user guidance in transport case.

Switch for continous measurement mode

Accumulator operation,

With laser pilot light, analog output, RS232 interface, data memory, hi/lo alarm, min/max/average/difference/ hold functions, accumulator charging connection, depending on model

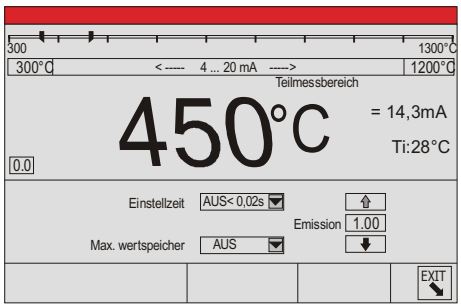
Accessories: tripod, holster, software and RS232 cable, calibration certificate, lens attachment, contact thermometer.

Software and hand-held programming devices for ICS and IHT

The integrated service interface enables display and adaptation of the following parameters

- temperature display °C / °F
- measurement range settings
- emission degree
- maximum value memory
- setting time (90% time)

Settings can be carried out using a laptop or PC with the aid of the optional service software and the interface cable provided. The software runs under Windows. The temperature display can be shown as °C or °F. The user guidance system is multilingual (German, English, French, Italian, Spanish) and entirely intuitive.



The DAK 316 hand-held parameterisation device allows temperature display on site at any time in addition to changes to all device parameters without PC or software.

Type summary for infrared pyrometer

Sensor S

IMS

Type	Art. No.:	Application	Measuring range	Output	Measuring point/ distance	Remarks
IMS 500.1U L	6905A		100 - 500 °C	10 mV / C°	60 mm / 300 mm	
IMS 500.1J L	6906A	Non-metals	100 - 500 °C	Contact potential J	60 mm / 300 mm	
IMS 500.1K L	6907A		150 - 650 °C	Contact potential K	60 mm / 300 mm	

ICS

Type	Art. No.:	Application	Measuring range	Output	Measuring point/ distance	Remarks
ICS 1 GA13.14	6901-A				6 mm / 600 mm	
ICS 2 GA13.14	6901-B	Metals	300 - 1300 °C		9 mm / 1000 mm	
ICS 3 GA13.14	6901-C				11 mm / 1500 mm	
ICS 4 T410.14	6902-A	Objects in			2,5 mm / 100 mm	
ICS 5 T410.14	6902-B	furnaces	200 - 1000 °C		6 mm / 300 mm	
ICS 6 T410.14	6902-C				24 mm / 1200 mm	
				4 - 20 mA		
ICS 4 T512.14	6903-A				2,5 mm / 100 mm	
ICS 5 T512.14	6903-B	Glass	100 - 1200 °C		6 mm / 300 mm	
ICS 6 T512.14	6903-C				24 mm / 1200 mm	
ICS 7 T1409.14	6904-A				2 mm / 100 mm	
ICS 8 T1409.14	6904-B	Non-metals	-32 - 900 °C		6 mm / 300 mm	
ICS 9 T1409.14	6904-C				16 mm / 800 mm	

Sensor HT

IHT

Type	Art. No.:	Application	Measuring range	Output	Measuring point/ distance	Remarks
IHT 400	6908-A	Non-metals	-32 - 400 °C		100 mm / 1000 mm	
IHT 900	6909-A	All			20 mm / 1000 mm	
IHT 900 P	6910-A	Surfaces	-32 - 900 °C	1 mV / C°	20 mm / 1000 mm	
IHT 900 PS	6911-A			1 mV / C°	20 mm / 1000 mm	incl. Accessories
IHT 1800GL PS	6912-A	Glass	150 - 1800 °C	1 mV / C°	13 mm / 650 mm	incl. accessories

infrared pyrometer

S / HT accessories

A wide selection of accessories rounds off our product range, and allows adaptation to many different application conditions.

Type	Art. No.:	Application
OMS accessories		
DAM 201	6914-A	Cooling jacket
DAM 202	6914-B	90° deflection mirror
DAM 203	6914-C	Adjustable fixing bracket
DAM 204	6914-D	Rigid fixing bracket
ICS accessories		
DAK 301	6913-A	Interface cable + software
DAK 302	6913-B	Cooling jacket
DAK 303	6913-C	Heavy blower attachment
DAK 304	6913-D	Light blower attachment
DAK 305	6913-E	Adjustable fixing bracket
DAK 308	6913-G	Laser Pilot light unit
DAK 316	6913-H	Parameterisation device
IHT accessories		
DAH 101	6915-A	Lens attachment
DAH 202	6916-B	Interface cable + software

Applications

- **Temperature measurement of glass surfaces**
- **Material monitoring in presses**
- **Material detection for the paper or plastics industries**
- **Temperature monitoring for food industry**
- **Monitoring object temperatures in furnaces or behind gas flames.**
- **Heating and air-conditioning**
- **Electrical equipment, electronics**
- **Automobile diagnostics**
- **Road construction**
- **Chemical industry**
- **Furnace construction**
- **Research and development**

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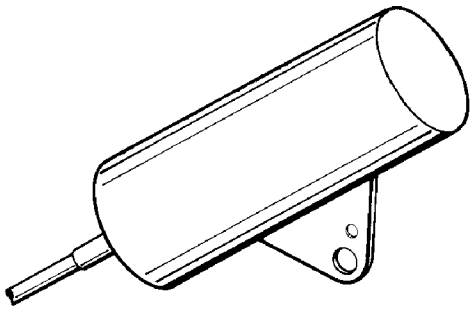
P22E 1103

Retro-Reflective Sensors
RL 12

Retro-reflective sensor with for material monitoring and object detection in steel and rolling mills.

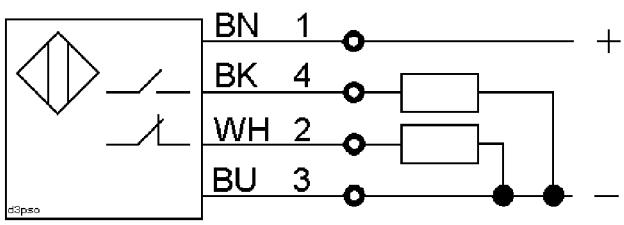
Robust stainless steel design with electronic adjusting aid and contamination control by LED indication



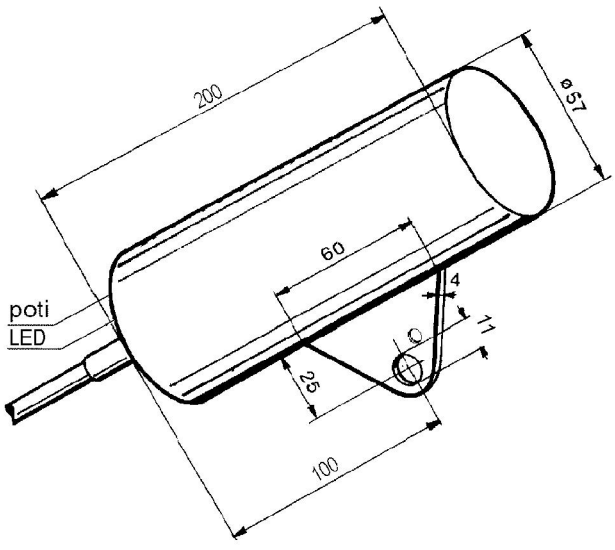
Technical data

Type		**RL 12**
Art.-No.		AS261
Output	closed by beam-interruption	PNP n. o.
	opened by beam-interruption	PNP n. c.
Range		12 m
Supply voltage		24 V DC
Ripple voltage		15 % max.
Load current max.		0 - 400 mA
Short-time load current		2 A / 10 ms 0,8 A / 100 ms
Short circuit protection		yes, pulsing
Voltage drop		2 V
Operating frequency		100 Hz
Ambient temperature		-20 to +75 °C
Protection class		IP 67
Connection		2m POKT-Therm cable
Function display		LED Ø 5mm
Adjusting device and contamination control		3 LED Ø 3mm
Housing material		stainless steel

Diagram of Connections



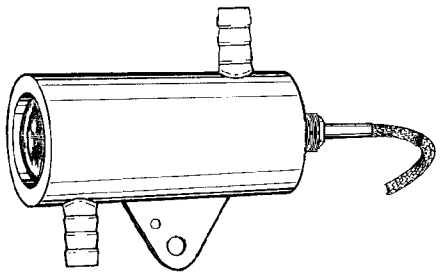
By means of the electronic adjusting unit align the sensor exactly. When the sensor swivels, the green LEDs reach their max. indication in the center of the optic axis.
If required the approx. point of operation of retro-reflective sensors is to be determined by means of the potentiometer. The position of the potentiometer has different meanings dependent on the application: If in case of max. position of the poti (at the right) all green LEDs give light, max. protection against contamination of sensor and reflector is achieved – however in the near range of the sensor there is danger of misfunction because of possible reflection by the object itself. Therefore the point of operation is to be shifted by turning the potentiometer to the left until only the 2-colour LED gives green light.
If safety in operation is not longer achieved, e. g. by contamination, the LED changes from green to red blinking.
NOTE: If the sensor does not work at max. position of potentiometer (at the right), you must find out when the sensor begins working by slight turning to the left.



Retro-Reflective Sensor
RL 12-K

Retro-reflective sensor with cooling shell for material monitoring and object detection in steel and rolling mills.

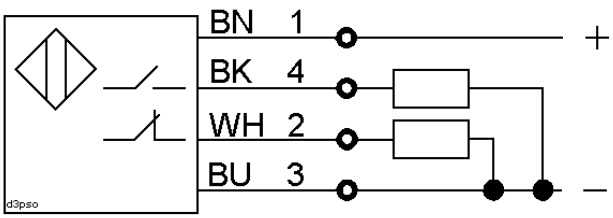
Robust stainless steel design with electronic adjusting aid and contamination control by LED indication

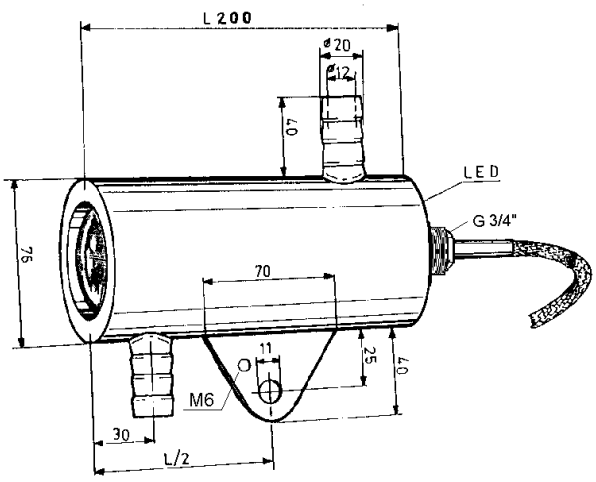


Technical data

Type		**RL 12-K**
Art.-No.		AS262
Output	closed by beam-interruption	PNP n. o.
	opened by beam-interruption	PNP n. c.
Range		12 m adjustable
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
Voltage drop		2 V
Operating frequency		100 Hz
Ambient temperature		-20 to +80 °C (without cooling)
Protection class		IP 67
Connection		2 m POKT-Therm cable
Function display		LED Ø 5mm
Adjusting device and contamination control		3 LED Ø 3mm
Housing material		stainless steel cooling jacket

Diagram of Connections





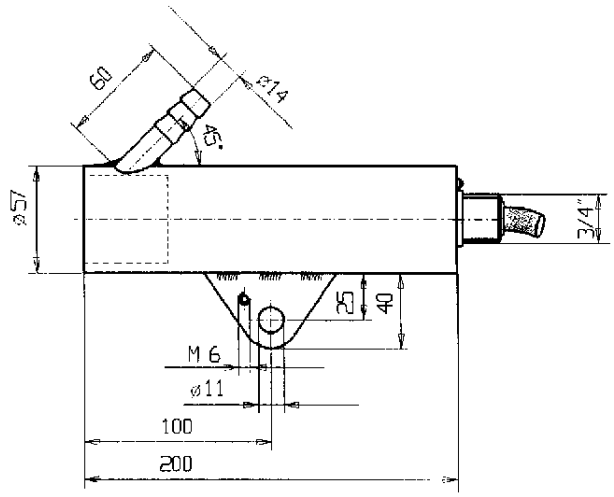
Einweg-Lichtschranke
S 501 (Sender)

Einweg-Lichtschranke zur Materialverfolgung und Objekterkennung für Stahl- und Walzwerke. Robuste Edelstahlausführung mit LED-Anzeige.

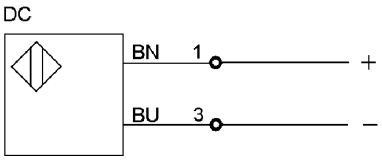
Technische Daten

Passend zu Empfänger	E 501 E 502
Reichweite	50 m max.
Funktion	Sender
Betriebsspannung	24 VDC
Restwelligkeit	15 % max.
Stromaufnahme	ca. 30 mA
Umgebungstemperatur	-20 ... +80°C
Schutzart	IP 67
Anschlußart	2 m PVC-Kabel
Netzspannungskontrolle	LED
Gehäusewerkstoff	Edelstahl 1.4301 mit Luftanschluß

Abmessung



Anschlussplan



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Germany

One-way Lightbarrier
E 501 (Receiver)

One-way light barrier for material monitoring and object detection in steel and rolling mills. Robust stainless steel design with air connection, electronic adjusting aid and contamination control output.

Technical data

Useable with transmitter	S 501 S 502
Output closed by beam-interruption	PNP- norm. open
Contamination output (Alarm) closed at contamination	PNP- norm. open
Range	50 m
Function	Receiver
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
Current absorbed	ca. 35 mA
Voltage drop	1,5 V
Operating frequency	100 Hz
Ambient temperature	-20 bis +80 °C
Protection class	IP 67
Connection	2 m PVC-cable
Function display	LED Ø 5 mm
Adjusting device and contamination control	3 LED Ø 3mm
Housing	stainless steel with airconnection

The electronic adjusting device of Proxitron thru-beam sensor receivers serves for exact alignment to the transmitter. When the thru-beam sensor swivels, the green LEDs reach their max. indication in the centre of the optic axis. If no IR-radiation from the transmitter reaches the receiver, all three 3 mm LEDs remain dark. Already slight transmitter radiation incoming causes the receiver to switch. Normally-close: large LED (red) gives light. Normally-open: large LED (red) stops to give light.
In the moment of switching the left 3 mm LED starts blinking in red. Thus it indicates: there is radiation, but it is not sufficient for safe operation. If this situation longer exist than 200 ms the alarm output close. With increasing radiation the left LED changes from blinking in red to green light. Now safe operation is guaranteed. During alignment it should be tried to induce the second and third green LED to show green as well, in order to reach max. possible safety margin for operation.

Dimensions

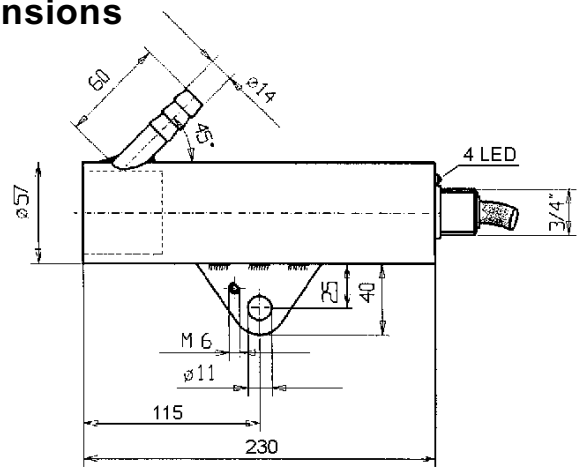
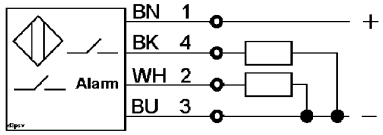


Diagram of connections



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11.01.2002 Details are subject to change without notice

One-way Lightbarrier
S 502 (Transmitter)

One-way Lightbarrier with cooling shell for material monitoring and object detection in steel and rolling mills. Robust stainless steel design with LED indication.

Tecnical Data

Usable with receiver	E 501 E 502
Range	50 m max.
Function	Transmitter
Supply voltage	24 VDC
Ripple voltage	15 % max.
Current absorbed	ca. 30 mA
Ambient temperature	-20 ... +80°C (ohne Kühlung)
Protection class	IP 67
Connection	2 m POKT therm cable
Supply voltage display	LED
Housing	stainless steel with cooling jacket and air connection

Dimensions

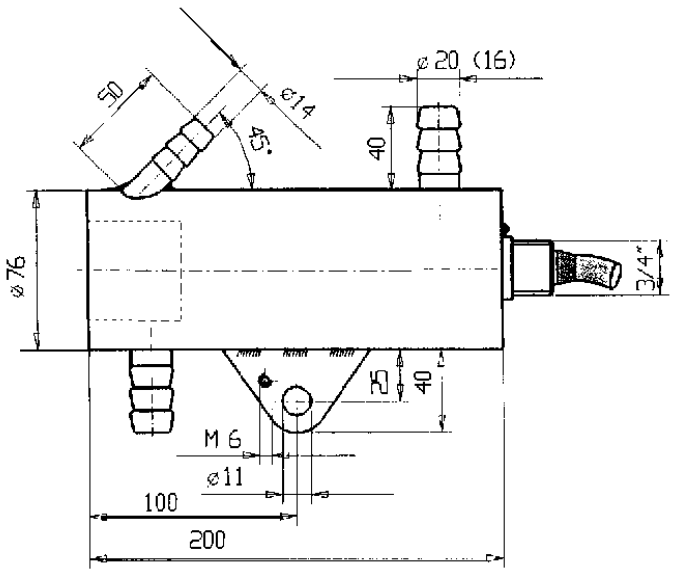
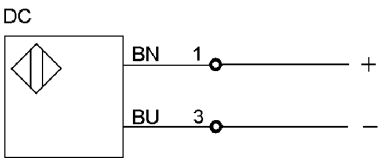


Diagram of connections



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One-way Lightbarrier
E 502 (Receiver)

One-way Lightbarrier for material monitoring and object detection in steel and rolling mills. Robust stainless steel design with cooling jacket, air connection, electronic adjusting aid and contamination control output.

Technical Data

Usable with transmitter	S 501 S 502
Output closed by beam-interruption	PNP- norm. open
Contamination output (Alarm) closed at contamination	PNP- norm. open
Range	50 m
Function	Receiver
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
Current absorbed	approx. 35 mA
Voltage drop	1,5 V
Operating frequency	100 Hz
Ambient temperature	-20 bis +80 °C (without cooling)
Protection class	IP 67
Connection	2 m POKT therm cable
Function display	LED Ø 5 mm
Adjusting device and contamination control	3 LED Ø 3mm
housing	stainless steel

The electronic adjusting device of Proxitron thru-beam sensor receivers serves for exact alignment to the transmitter. When the thru-beam sensor swivels, the green LEDs reach their max. indication in the centre of the optic axis. If no IR-radiation from the transmitter reaches the receiver, all three 3 mm LEDs remain dark. Already slight transmitter radiation incoming causes the receiver to switch. Normally-close: large LED (red) gives light. Normally-open: large LED (red) stops to give light.
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Dimensions

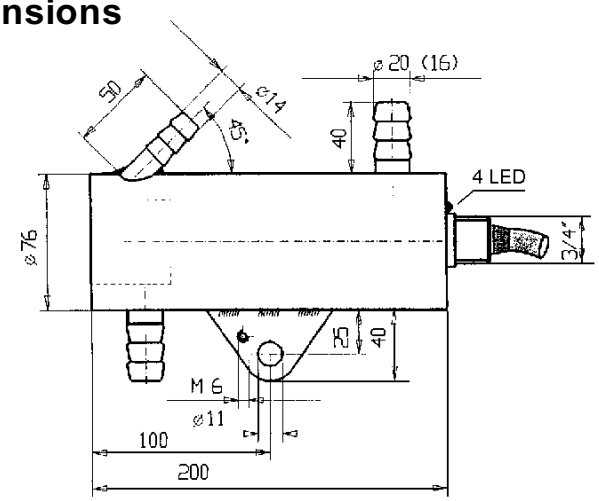
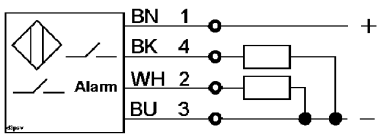


Diagram of connections



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- Profibus Encoder
- CAN-Bus Encoder
- Interbus Encoder
- Length Measuring Systems
- Heavy Duty Encoder
- Hollow Shaft Encoder with inside diameter 6–60 mm

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- Totalizing Counters
- Preset Counters
- Position Indicators
- Timers/Time Relays
- Tachometers
- Pneumatic Timers
- Process Controllers

Sensors for all Applications

- Opto-electronic sensors
- Contrast scanners
- Colour sensors
- Distance sensors
- Safety light curtain
- Light grid
- Laser scanner
- Safety switches
- Proximity switches

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