

# General Catalog



## NEW

### INDUCTIVE SENSORS

- Full Inox Basic with IO-Link
- Full Inox Weld-Immune, M8
- Full Inox C23, cubic with IO-Link
- High Temperature, 230°C (440°F)

### PHOTOELECTRIC SENSORS

- Contrast sensor with IO-Link
- C12: Cubic Subminiature
- C23: Cubic with IO-Link
- C23 Distance: Triangulation
- C55 Distance: TOF

### SAFETY

- Type 2 light curtains for hand protection

### RFID

- LF + HF R/W modules in ContriNet
- HF tags for 180°C (356°F), embeddable in metal
- HF tags for 250°C (482°F)
- EtherCat interface



A  
Swiss  
Company

# INTRODUCTION

## CONTRINEX

Contrinex is a leading manufacturer of sensors for factory automation. The Swiss company, headquartered in Givisiez near Fribourg (CH), has a unique and innovative range of products whose features far surpass those of standard sensors.

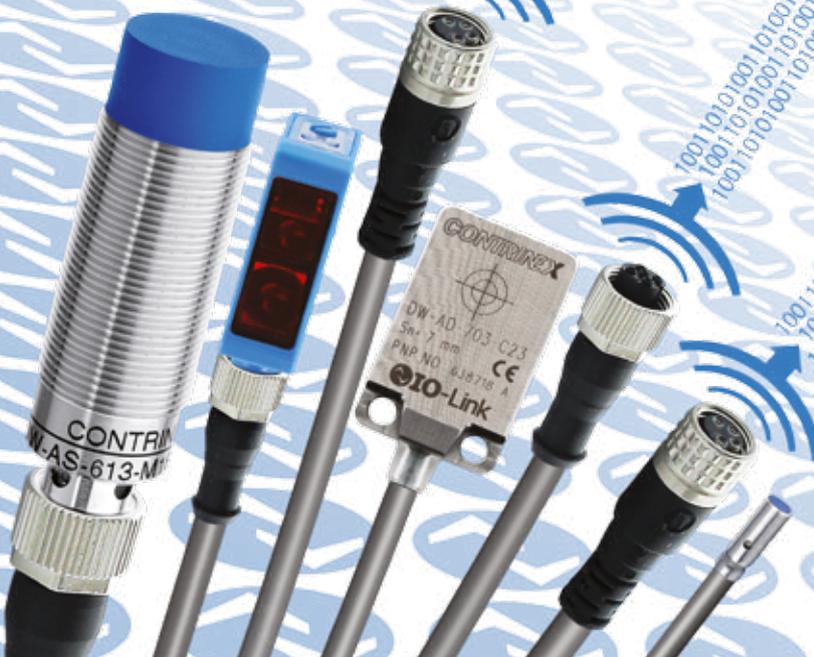
Since its foundation in 1972 by Peter Heimlicher, Dipl Ing ETH, Contrinex has grown from a one-man operation to a multinational group with over 500 employees worldwide. More than 15 subsidiaries cover the core markets in Europe, Asia, North and South America.

### At a glance

- Technology leading manufacturer of inductive and photoelectric sensors as well as safety and RFID systems
- World market leader for miniature sensors, sensors with long operating distances and devices for particularly demanding operating conditions (all-metal, high-pressure and high-temperature resistant sensors)
- Represented in over 60 countries worldwide, headquarters in Switzerland
- 8000 products

**Technology leader for sensor intelligence and industrial RFID**

## CONTRINEX - SENSE MORE, DO MORE



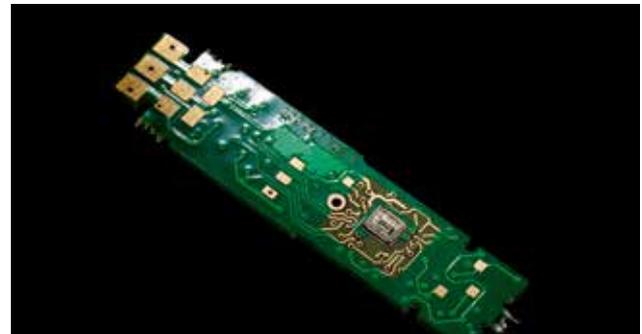


# MARKET-LEADING INNOVATION

- 1979** Sensor business starts with self-contained subminiature inductive sensors: Ø4 mm (instead of M8 before)
- 1982** Launch of inductive sensor with patented Condist® technology – market leadership with operating distances 3x standard
- 1986** Launch of Ø3 mm inductive sensors, now market leader for subminiature inductive sensors
- 1996** Market launch of Ø4 mm subminiature photoelectric sensors
- 1999** Launch of world's first inductive sensor with full-metal housing – thanks to patented Condet® technology
- 2005** Integration of Contrinex's excellent performance for inductive sensors in CMOS-ASIC (Application-Specific Integrated Circuit), a proprietary development
- 2007** Launch of RFID products for closed loop industrial applications. First RFID product range with tags and readers in full-metal housing
- 2008** Launch of Safetinex®, the industrial safety product range
- 2009** The smart sensor is born. Launch of next generation ASIC, a "system on a chip", including IO-Link interface
- 2011** Development starts on Contrinex's first ASIC for photoelectric sensors
- 2014** Launch of photoelectric sensor with new generation Contrinex ASIC and IO-Link



*Early inductive sensor produced for own use in 1973 (special version for extreme conditions)*



*ASIC sensor technology*



*Safety product range*



*Subminiature photoelectric sensor*



## SENSORS

### INDUCTIVE

BASIC  
MINIATURE  
EXTREME  
EXTRA PRESSURE  
HIGH PRESSURE  
EXTRA TEMPERATURE  
HIGH TEMPERATURE  
WASHDOWN  
ANALOG OUTPUT  
2-WIRE  
WELD-IMMUNE  
SPECIAL

### PHOTOELECTRIC

CYLINDRICAL SUBMINIATURE  
CYLINDRICAL MINIATURE  
CYLINDRICAL SMALL  
CUBIC SUBMINIATURE  
CUBIC MINIATURE  
CUBIC SMALL  
CUBIC COMPACT  
FIBER-OPTIC AMPLIFIERS, FIBERS

### ULTRASONIC

MINIATURE  
SMALL  
COMPACT

### CAPACITIVE

BASIC  
HIGH PERFORMANCE

## SAFETY

### LIGHT CURTAINS

FINGER PROTECTION type 4  
HAND PROTECTION type 4 and type 2  
SAFETY RELAYS  
ACCESS CONTROL type 4

## RFID

### LOW AND HIGH FREQUENCY

TRANSPONDERS  
CONTRINET  
USB READ/WRITE MODULES  
HANDHELD DEVICES  
ACCESSORIES  
SOFTWARE  
STARTER KITS





**CONTRINEX**

# SAFETINEX

## SAFETY LIGHT CURTAINS AND ACCESS CONTROL BARRIERS

### HIGHLIGHTS

- ✓ Finger, Hand and Body Access resolutions
- ✓ Operating range from 0.25...50 m
- ✓ Protective heights from 142...1827 mm
- ✓ Category 2 or 4 according to EN/ISO 13489-1
- ✓ Certified TÜV, CE and UL
- ✓ IP 65 and IP 67
- ✓ Permanent autocontrol
- ✓ 2 channel selection
- ✓ Low power consumption

### NEW

- ✓ Category 2, Type 2, SIL 1 (pending), PL c light curtains with hand resolution



**CONTRINEX**

## THE SAFETINEX PRODUCT RANGE INCLUDES:



### SAFETINEX YBB TYPE 4 FOR FINGER PROTECTION

- Safety light curtain with 14 mm resolution
- Protective height from 142 mm to 1690 mm
- Operating range up to 3.5 m
- Cable version : 2, 5 and 10 m PUR-UL shielded cable
- M12 connector



### SAFETINEX YBB TYPE 4 FOR HAND PROTECTION

- Safety light curtain with 30 mm resolution
- Protective height from 279 mm to 1827 mm
- Operating range up to 12 m
- Cable version : 2, 5 and 10 m PUR-UL shielded cable
- M12 connector



### SAFETINEX YCA TYPE 4 FOR ACCESS CONTROL

- Safety access control barriers with beam gap of 300, 400 or 500 mm
- Protective height from 832 mm to 1532 mm
- Operating range : 1 ... 15 m / 10 ... 50 m (can be configured)
- Cable version : 2, 5 and 10 m PUR-UL shielded cable
- M12 connector



### SAFETINEX YBB TYPE 2 FOR HAND PROTECTION

- Safety light curtain with 30 mm resolution
- Protective height from 150 mm to 1827 mm
- Operating range up to 12 m
- M12 connector

Each component is housed in a rugged aluminum profile fitted with two lateral sliding grooves.

The Safetinex product range is complemented by a range of accessories.

# INTRODUCTION

## SAFETINEX SAFETY SYSTEMS

The Safetinx product line produced by Contrinex offers high-quality safeguarding solutions for both personnel and machinery. The range comprises highly sensitive Type-4 devices for finger, hand and access protection in various lengths.

The safety portfolio now also comprises a complete range of hand protection devices in various lengths for Type 2, category 2, PL c applications.

Safetinx products have been developed in compliance with the applicable international safety standards and have obtained the required product certification for use in the European Union, the United States of America and all other countries where the applicable IEC standards have been adopted. A complete range of Safetinx light curtains and access control barriers is offered for the highest safety requirements: safety category 4, PL e according to EN/ISO 13849-1, Type 4 according to IEC 61496-1 and -2. In addition, hand protection devices are available with a Type 2 safety rating (IEC 61496-1 and -2) which meet category 2, PL c according to EN/ISO 13849-1 and SIL 1 according to IEC 61508 (pending). All Safetinx products have successfully obtained the highly rated TÜV certification.

## ACTIVE OPTOELECTRONIC PROTECTIVE DEVICES (AOPD)

Whenever a safety system around a danger zone is necessary, the first consideration is whether or not optical protection is suitable at all. For this to be the case, it must be possible for the machine control to be electrically influenced by means of the device's semiconductor output. Moreover, it must also be possible to instantly terminate or exit the hazardous process in every operating phase. Further, there must be no danger of injury due to heat, radiation or from materials or components ejected by the machine. If such danger exists, then either the optical system is not suitable, or the danger must be otherwise excluded by applying additional safety measures.

The selection of a specific safeguarding measure involves an evaluation of the hazard, in order to determine the applicable safety level and resolution of the protective device.

Inductive

Photoelectric

Ultrasonic

Capacitive

Safety

RFID

Connectivity

Accessories

Glossary

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# INTRODUCTION

## SAFEGUARDING FUNCTION

The resolution of the safety light curtain or access control barrier must be chosen according to the application and the required safeguarding function. It is defined as the minimum size of an object that can be reliably and safely detected at any position when placed in the protective field. The choice of a specific resolution depends on the part of the body which needs protection (finger, hand or whole body). In all cases, the primary function of the protective device is to stop the machine before the hazardous point is reached and to prevent unintentional machine start-up. This function must comply with the category of the safety-related components of the machine.

## OPERATING PRINCIPLE

The Safetinex YBB light curtains and YCA access control barriers operate with infrared beams. When the device detects a finger, a hand or a person entering the defined hazardous area, the protective equipment immediately stops the machine, or renders it harmless. When operating in manual restart mode, the reset button enabling the operator to restart the machine must be located outside the hazardous area. From there, the operator must have a full view of the hazardous area to make sure that nobody is in danger before restarting the machine.

Safetinex light curtains and access control barriers are designed to ensure protection of operators working in hazardous areas. A high reliability is achieved by implementing a fail-safe system: devices are thus permanently self-controlled. An internal failure deactivates the output signals, as would an intrusion into the protective field.

## APPLICATION AREAS

The Safetinex YBB range is best suited where finger and hand protection is required close to the hazardous area (point of operation). Depending on the application, a resolution of either 14 mm (finger protection) or 30 mm (hand protection) will be advisable. Safetinex YCA access control barriers, on the other hand, are suitable for the protection of people potentially entering a larger dangerous area.

Thanks to their Type 4, category 4, PL e safety level, Safetinex devices can be used on equipment requiring high protection reliability, such as machine tools, robots, hydraulic presses, automated stock management, weaving looms, etc. If the result of the risk assessment allows their use, Type 2 devices (category 2, PL c, SIL 1 (pending)) offer cost effective and safe solutions.



## AVANTAGES OF THE SAFETINEX RANGE

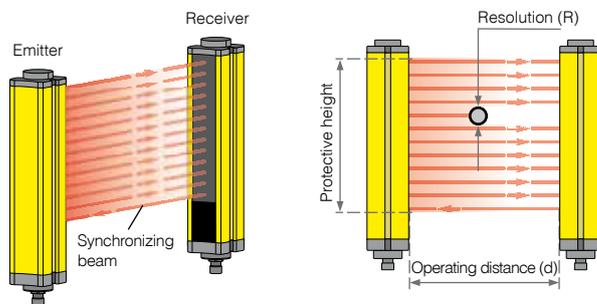
Safetinx safety devices offer the following advantages:

- Very short response time:
  - Finger protection Type 4: 5.2 to 43.6 ms
  - Hand protection Type 4: 5.2 to 24.4 ms
  - Access control Type 4: 4.2 to 6.7 ms
  - Hand protection Type 2: 14 to 66 ms
- Up to 50 m operating distance
- 2-channel selection minimizing safety relevant cross-talk between neighboring AOPDs (type 4 only)
- Fully compliant with industry standards and certified by internationally recognized organizations
- Devices with TÜV certification, either Type 4 with Performance Level e, or Type 2 with Performance Level c
- Beam synchronized, no need for wired connection between sender and receiver
- Short-circuit protected outputs and voltage-reversal protection
- Low power consumption
- Built-in alignment system and easy adjustment of the units thanks to the high flexibility of the Safetinx bracket
- Various connector versions to fit any application
- Robust aluminum housing coated with resistant finish
- Compact design: 42 mm x 48 mm housing profile
- Competitive price

Furthermore, Safetinx light curtains and access control barriers have been designed to provide users with a comfortable work environment. Their use involves no additional unproductive movements and no waste of time. Users can freely access and move around the machine in complete safety.

## OPERATING PRINCIPLE

Safetinx light curtains and access control barriers are optoelectronic safety devices that include a sender and a receiver unit between which coded infrared beams are sequentially exchanged. The receiver unit is connected to a safety relay which transmits signals to the machine control system. Synchronization between the sender and receiver devices is performed optically, i.e. wired connection between the two units is not necessary.



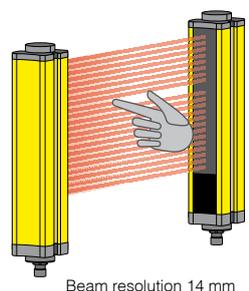
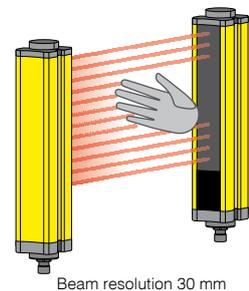
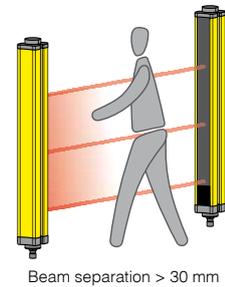
Reception of all beams activates the two independently generated semiconductor outputs (OSSDs) of the receiver unit. The interruption of one or more beams deactivates the outputs within the response time of the AOPD. Any internal fault is detected by the device's permanent self-control function and has the same result as an intrusion into the protective field.

## SELF PROTECTED OUTPUTS

Both OSSD1 and OSSD2 are self-protected and actively monitored PNP outputs. Both outputs are controlled by independent current-monitored high-side switches. Thanks to continuous monitoring, any short-circuit between an output and the power supply or ground is detected within the response time, leading to the deactivation of the other output. Similarly, a cross-circuit between the two outputs is also detected and both OSSDs are deactivated within the specified response time. The OSSD outputs are switched off and remain in that state as long as the fault remains.

## AOPD DETECTION CAPABILITY

The light curtain or barrier detection capability (or resolution) depends on the distance between the centerlines of each beam emitted by the sender. The choice for a specific resolution depends on the part of the body which needs protection (finger, hand, whole body).





CONTRINEX SAFETINEX

Power

Channel



CONTRINEX

CONTRINEX  
1-1-1  
Channel  
Test



# LIGHT CURTAINS

## FINGER PROTECTION TYPE 4

### MAIN FEATURES

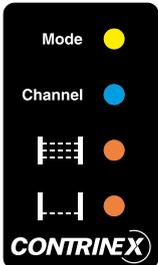
- ✓ Resolution: 14 mm
- ✓ Operating range: 0.25 ... 3.5 m
- ✓ Protective height: 142 ... 1690 mm
- ✓ Category 4, PL e according to EN/ISO 13849-1
- ✓ Type 4 according to IEC 61496-1 and -2
- ✓ Certified TÜV, CE and UL
- ✓ IP 65, IP 67 with operating temperatures as low as -35°C (-31°F)
- ✓ 2-channel selection
- ✓ Optical synchronization
- ✓ Permanent autocontrol



# FINGER PROTECTION

## LEDS

LED indicators on the YBB **sender** unit



### Mode:

Yellow when test mode is active

### Channel:

Blue when channel 1 is selected

Purple when channel 2 is selected

### Alignment (full):

Steady orange when the screen is not fully aligned

Blinking orange when the first third of the screen is aligned

Off when screen is fully aligned

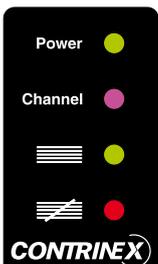
### Alignment (low beam):

Steady orange when the lowest beam is not aligned

Blinking orange when the lowest beam is aligned

Off when screen is fully aligned

LED indicators on the YBB **receiver** unit



### Power:

Green when power is ON

### Channel:

Blue when channel 1 is selected

Purple when channel 2 is selected

### Status ON:

Green when OSSD outputs are ON

### Status OFF:

Red when OSSD outputs are OFF

## TECHNICAL DATA

Dimensions	42 mm x 48 mm x Ht
Resolution	14 mm
Protective height	142 ... 1690 mm
Supply voltage range	24 VDC $\pm$ 20 %
Current consumption sender	50 mA max. / 1.5 W max.
Current consumption receiver (excl. load)	160 mA max. / 4.7 W max.
Output current	0.2 A max. per output
Safety level (EN/ISO 13849-1)	Category 4, PL e
Safety type (IEC 61496-1 and -2)	Type 4
Protection class (IEC 61140)	III
Ambient temperature range	-35 ... +60°C (-31 ... +140°F)
Storage temperature range	-40 ... +70°C (-40 ... +158°F)
Degree of protection (EN 60529)	IP 65 + IP 67
Housing material	Aluminum
Material of optical parts	PMMA
Operating range	0.25 ... 3.5 m
Sender wavelength	IR 950 nm

## HOUSING

Aluminum profile 42 mm x 48 mm with dual fixing groove.

## ELECTRONIC PROTECTION

Safetinex light curtains are self-protected against overloads and short-circuits. They can also withstand short high-voltage overloads.

## CONNECTION

Safetinex light curtains with M12 5-pole connector are standard. Versions with PUR cable, 2 m, 5 m or 10 m long, are available on request.

## DOCUMENTATION

Detailed data sheets for these products can be found on the Contrinex website [www.contrinex.com](http://www.contrinex.com) or ordered free of charge from our distributors.

Inductive

Photoelectric

Ultrasonic

Capacitive

Safety

RFID

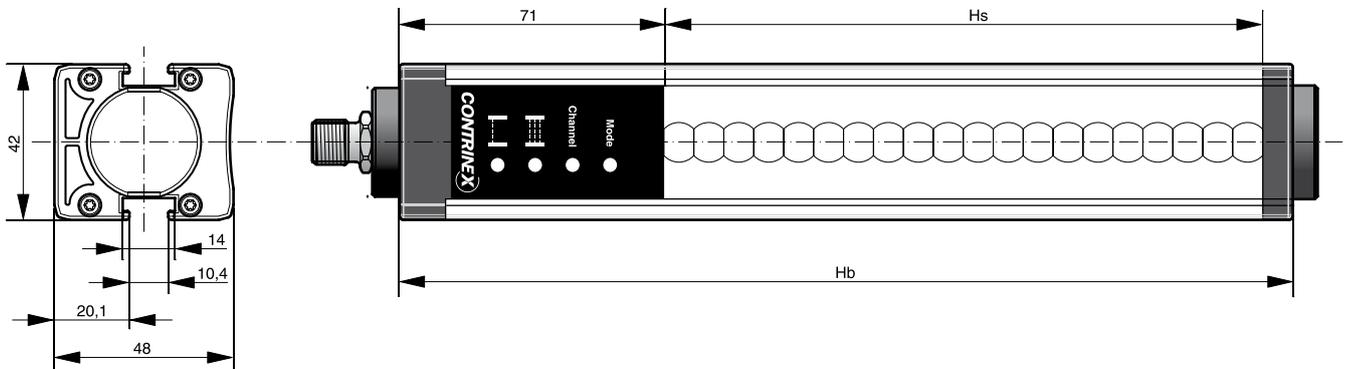
Connectivity

Accessories

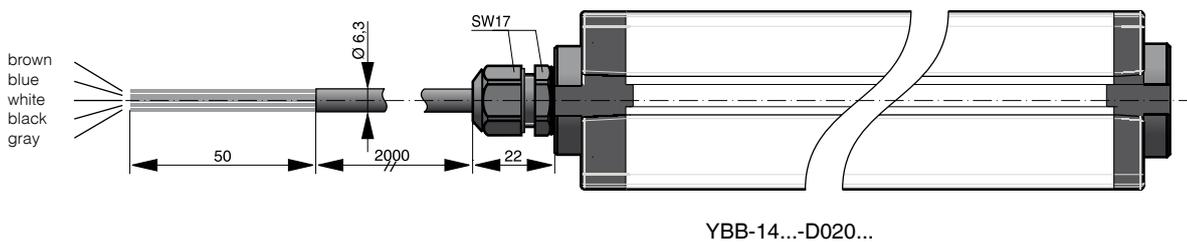
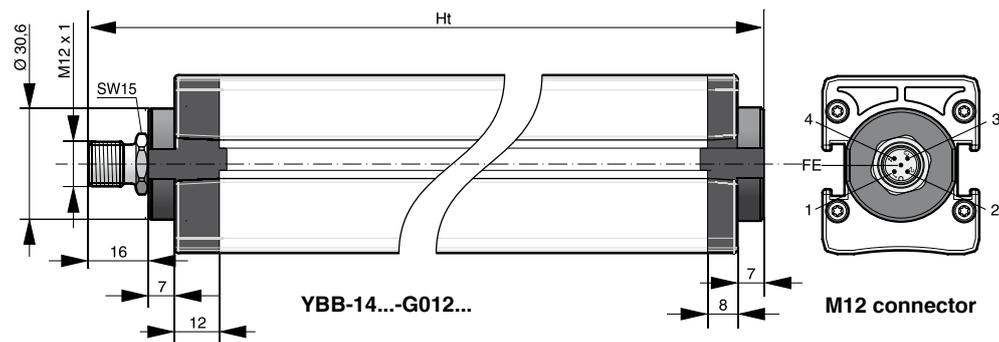
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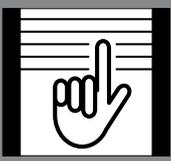
## DIMENSIONS



## PIN ASSIGNMENT



ASSIGNMENT	FUNCTION	PINS/WIRES ON SENDER		PINS/WIRES ON RECEIVER	
		M12 CONNECTOR	CABLE	M12 CONNECTOR	CABLE
Supply voltage	24 VDC for channel 1 / 0 V for channel 2	1	brown	1	brown
Supply voltage	0 V for channel 1 / 24 VDC for channel 2	3	blue	3	blue
Test mode	0 V: test active / 24 V: test inactive	4	black	-	-
Output	OSSD1	-	-	2	white
Output	OSSD2	-	-	4	black
Functional earth	Shield	FE	gray	FE	gray



# FINGER PROTECTION



## TYPE-SPECIFIC DATA

Type	0150	0250	0400
Total height (Ht) [mm] *	251	380	509
Housing height (Hb) [mm]	221	350	479
Protective height (Hs) [mm]	142	271	400
Number of beams	17	33	49
Current consumption [mA]	135	140	145
Response time [ms]	5.2	8.4	11.6

## PART REFERENCE (BOLD: PREFERRED TYPES)

PNP / Connector M12	Sender	<b>YBB-14S4-0150-G012</b>	<b>YBB-14S4-0250-G012</b>	<b>YBB-14S4-0400-G012</b>
	Receiver	<b>YBB-14R4-0150-G012</b>	<b>YBB-14R4-0250-G012</b>	<b>YBB-14R4-0400-G012</b>
PNP / PUR-cable 2 m	Sender	YBB-14S4-0150-D020	YBB-14S4-0250-D020	YBB-14S4-0400-D020
	Receiver	YBB-14R4-0150-D020	YBB-14R4-0250-D020	YBB-14R4-0400-D020
PNP / PUR-cable 5 m	Sender	YBB-14S4-0150-D050	YBB-14S4-0250-D050	YBB-14S4-0400-D050
	Receiver	YBB-14R4-0150-D050	YBB-14R4-0250-D050	YBB-14R4-0400-D050
PNP / PUR-cable 10 m	Sender	YBB-14S4-0150-D100	YBB-14S4-0250-D100	YBB-14S4-0400-D100
	Receiver	YBB-14R4-0150-D100	YBB-14R4-0250-D100	YBB-14R4-0400-D100

## TYPE-SPECIFIC DATA

Type	1000	1200	1300
Total height (Ht) [mm] *	1154	1283	1412
Housing height (Hb) [mm]	1124	1253	1382
Protective height (Hs) [mm]	1045	1174	1303
Number of beams	129	145	161
Current consumption [mA]	175	185	190
Response time [ms]	27.6	30.8	34

## PART REFERENCE (BOLD: PREFERRED TYPES)

PNP / Connector M12	Sender	<b>YBB-14S4-1000-G012</b>	<b>YBB-14S4-1200-G012</b>	<b>YBB-14S4-1300-G012</b>
	Receiver	<b>YBB-14R4-1000-G012</b>	<b>YBB-14R4-1200-G012</b>	<b>YBB-14R4-1300-G012</b>
PNP / PUR-cable 2 m	Sender	YBB-14S4-1000-D020	YBB-14S4-1200-D020	YBB-14S4-1300-D020
	Receiver	YBB-14R4-1000-D020	YBB-14R4-1200-D020	YBB-14R4-1300-D020
PNP / PUR-cable 5 m	Sender	YBB-14S4-1000-D050	YBB-14S4-1200-D050	YBB-14S4-1300-D050
	Receiver	YBB-14R4-1000-D050	YBB-14R4-1200-D050	YBB-14R4-1300-D050
PNP / PUR-cable 10 m	Sender	YBB-14S4-1000-D100	YBB-14S4-1200-D100	YBB-14S4-1300-D100
	Receiver	YBB-14R4-1000-D100	YBB-14R4-1200-D100	YBB-14R4-1300-D100

\* Total height given with M12 connector. For cable version, add 6 mm.



0500	0700	0800	0900
638	767	896	1025
608	737	866	995
529	658	787	916
65	81	97	113
150	160	165	170
14.8	18	21.2	24.4

**YBB-14S4-0500-G012**  
**YBB-14R4-0500-G012**

YBB-14S4-0500-D020  
 YBB-14R4-0500-D020  
 YBB-14S4-0500-D050  
 YBB-14R4-0500-D050  
 YBB-14S4-0500-D100  
 YBB-14R4-0500-D100

**YBB-14S4-0700-G012**  
**YBB-14R4-0700-G012**

YBB-14S4-0700-D020  
 YBB-14R4-0700-D020  
 YBB-14S4-0700-D050  
 YBB-14R4-0700-D050  
 YBB-14S4-0700-D100  
 YBB-14R4-0700-D100

**YBB-14S4-0800-G012**  
**YBB-14R4-0800-G012**

YBB-14S4-0800-D020  
 YBB-14R4-0800-D020  
 YBB-14S4-0800-D050  
 YBB-14R4-0800-D050  
 YBB-14S4-0800-D100  
 YBB-14R4-0800-D100

**YBB-14S4-0900-G012**  
**YBB-14R4-0900-G012**

YBB-14S4-0900-D020  
 YBB-14R4-0900-D020  
 YBB-14S4-0900-D050  
 YBB-14R4-0900-D050  
 YBB-14S4-0900-D100  
 YBB-14R4-0900-D100

1400	1600	1700	
1541	1670	1799	
1511	1640	1769	
1432	1561	1690	
177	193	209	
195	200	210	
37.2	40.4	43.6	

**YBB-14S4-1400-G012**  
**YBB-14R4-1400-G012**

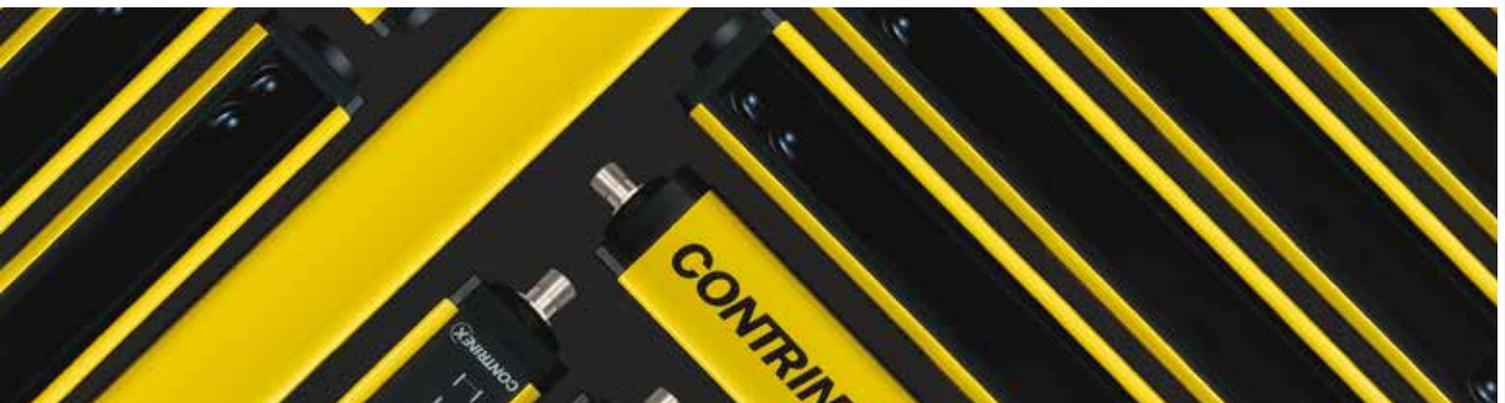
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 YBB-14R4-1400-D020  
 YBB-14S4-1400-D050  
 YBB-14R4-1400-D050  
 YBB-14S4-1400-D100  
 YBB-14R4-1400-D100

**YBB-14S4-1600-G012**  
**YBB-14R4-1600-G012**

YBB-14S4-1600-D020  
 YBB-14R4-1600-D020  
 YBB-14S4-1600-D050  
 YBB-14R4-1600-D050  
 YBB-14S4-1600-D100  
 YBB-14R4-1600-D100

**YBB-14S4-1700-G012**  
**YBB-14R4-1700-G012**

YBB-14S4-1700-D020  
 YBB-14R4-1700-D020  
 YBB-14S4-1700-D050  
 YBB-14R4-1700-D050  
 YBB-14S4-1700-D100  
 YBB-14R4-1700-D100





CONTRINEX SAFETINE X

CONTRINEX

Power

Channel

# LIGHT CURTAINS

## HAND PROTECTION TYPE 4

### MAIN FEATURES

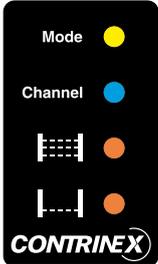
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- ✓ Protective height: 279 ... 1827 mm
- ✓ Category 4, PL e according to EN/ISO 13849-1
- ✓ Type 4 according to IEC 61496-1 and -2
- ✓ Certified TÜV, CE and UL
- ✓ IP 65, IP 67 with operating temperatures as low as -35°C (-31°F)
- ✓ 2-channel selection
- ✓ Optical synchronization
- ✓ Permanent autocontrol



# HAND PROTECTION

## LEDS

LED indicators on the YBB **sender** unit



### Mode:

Yellow when test mode is active

### Channel:

Blue when channel 1 is selected

Purple when channel 2 is selected

### Alignment (full):

Steady orange when the screen is not fully aligned

Blinking orange when the first third of the screen is aligned

Off when screen is fully aligned

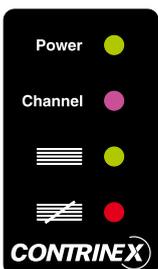
### Alignment (low beam):

Steady orange when the lowest beam is not aligned

Blinking orange when the lowest beam is aligned

Off when screen is fully aligned

LED indicators on the YBB **receiver** unit



### Power:

Green when power is ON

### Channel:

Blue when channel 1 is selected

Purple when channel 2 is selected

### Status ON:

Green when OSSD outputs are ON

### Status OFF:

Red when OSSD outputs are OFF

## TECHNICAL DATA

Dimensions	42 mm x 48 mm x Ht
Resolution	30 mm
Protective height	279 ... 1827 mm
Supply voltage range	24 VDC $\pm$ 20 %
Current consumption sender	45 mA max. / 1.5 W max.
Current consumption receiver (excl. load)	130 mA max. / 4.7 W max.
Output current	0.2 A max. per output
Safety level (EN/ISO 13849-1)	Category 4, PL e
Safety type (IEC 61496-1 and -2)	Type 4
Protection class (IEC 61140)	III
Ambient temperature range	-35 ... +60°C (-31 ... +140°F)
Storage temperature range	-40 ... +70°C (-40 ... +158°F)
Degree of protection (EN 60529)	IP 65 + IP 67
Housing material	Aluminum
Material of optical parts	PMMA
Operating range	0.25 ... 12 m
Sender wavelength	IR 850 nm

## HOUSING

Aluminum profile 42 mm x 48 mm with dual fixing groove.

## ELECTRONIC PROTECTION

Safetinx light curtains are self-protected against overloads and short-circuits. They can also withstand short high-voltage overloads.

## CONNECTION

Safetinx light curtains with M12 5-pole connector are standard. Versions with PUR cable, 2 m, 5 m or 10 m long, are available on request.

## DOCUMENTATION

Detailed data sheets for these products can be found on the Contrinex website [www.contrinex.com](http://www.contrinex.com) or ordered free of charge from our distributors.

Inductive

Photoelectric

Ultrasonic

Capacitive

Safety

RFID

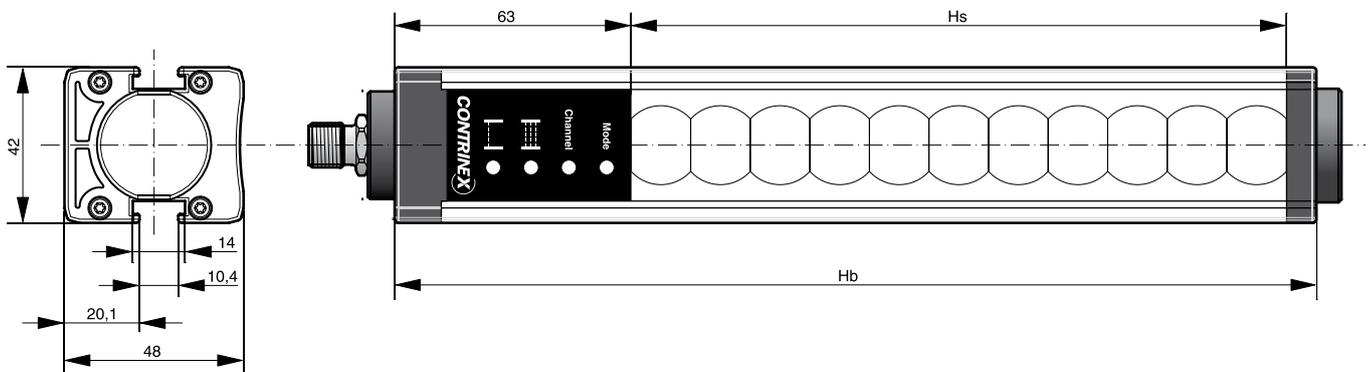
Connectivity

Accessories

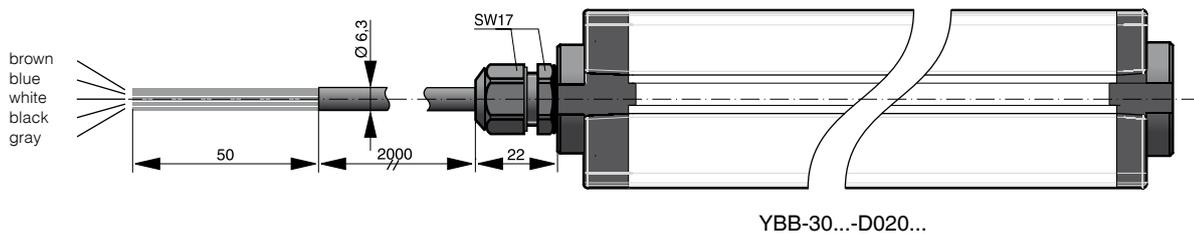
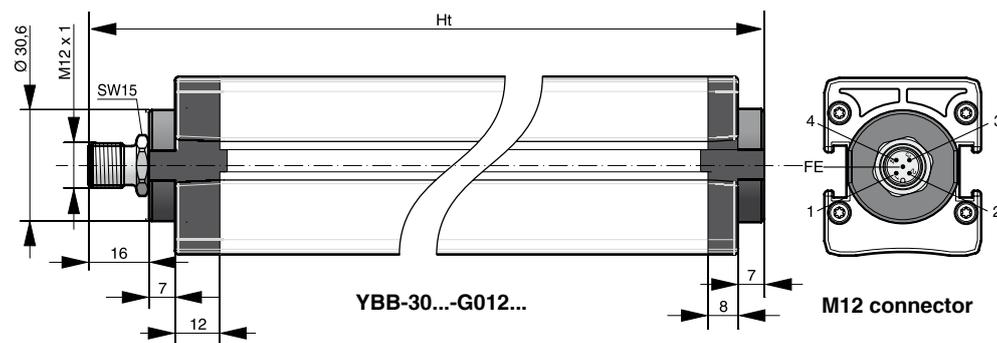
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## DIMENSIONS



## PIN ASSIGNMENT



ASSIGNMENT	FUNCTION	PINS/WIRES ON SENDER		PINS/WIRES ON RECEIVER	
		M12 CONNECTOR	CABLE	M12 CONNECTOR	CABLE
Supply voltage	24 VDC for channel 1 / 0 V for channel 2	1	brown	1	brown
Supply voltage	0 V for channel 1 / 24 VDC for channel 2	3	blue	3	blue
Test mode	0 V: test active / 24 V: test inactive	4	black	-	-
Output	OSSD1	-	-	2	white
Output	OSSD2	-	-	4	black
Functional earth	Shield	FE	gray	FE	gray



# HAND PROTECTION



## TYPE-SPECIFIC DATA

Type	0250	0400	0500
Total height (Ht) [mm] *	380	509	638
Housing height (Hb) [mm]	350	479	608
Protective height (Hs) [mm]	279	408	537
Number of beams	17	25	33
Current consumption [mA]	125	130	130
Response time [ms]	5.2	6.8	8.4

## PART REFERENCE (BOLD: PREFERRED TYPES)

PNP / Connector M12	Sender	<b>YBB-30S4-0250-G012</b>	<b>YBB-30S4-0400-G012</b>	<b>YBB-30S4-0500-G012</b>
	Receiver	<b>YBB-30R4-0250-G012</b>	<b>YBB-30R4-0400-G012</b>	<b>YBB-30R4-0500-G012</b>
PNP / PUR-cable 2 m	Sender	YBB-30S4-0250-D020	YBB-30S4-0400-D020	YBB-30S4-0500-D020
	Receiver	YBB-30R4-0250-D020	YBB-30R4-0400-D020	YBB-30R4-0500-D020
PNP / PUR-cable 5 m	Sender	YBB-30S4-0250-D050	YBB-30S4-0400-D050	YBB-30S4-0500-D050
	Receiver	YBB-30R4-0250-D050	YBB-30R4-0400-D050	YBB-30R4-0500-D050
PNP / PUR-cable 10 m	Sender	YBB-30S4-0250-D100	YBB-30S4-0400-D100	YBB-30S4-0500-D100
	Receiver	YBB-30R4-0250-D100	YBB-30R4-0400-D100	YBB-30R4-0500-D100

## TYPE-SPECIFIC DATA

Type	1200	1300	1400
Total height (Ht) [mm] *	1283	1412	1541
Housing height (Hb) [mm]	1253	1382	1511
Protective height (Hs) [mm]	1182	1311	1440
Number of beams	73	81	89
Current consumption [mA]	150	155	160
Response time [ms]	16.4	18	19.6

## PART REFERENCE (BOLD: PREFERRED TYPES)

PNP / Connector M12	Sender	<b>YBB-30S4-1200-G012</b>	<b>YBB-30S4-1300-G012</b>	<b>YBB-30S4-1400-G012</b>
	Receiver	<b>YBB-30R4-1200-G012</b>	<b>YBB-30R4-1300-G012</b>	<b>YBB-30R4-1400-G012</b>
PNP / PUR-cable 2 m	Sender	YBB-30S4-1200-D020	YBB-30S4-1300-D020	YBB-30S4-1400-D020
	Receiver	YBB-30R4-1200-D020	YBB-30R4-1300-D020	YBB-30R4-1400-D020
PNP / PUR-cable 5 m	Sender	YBB-30S4-1200-D050	YBB-30S4-1300-D050	YBB-30S4-1400-D050
	Receiver	YBB-30R4-1200-D050	YBB-30R4-1300-D050	YBB-30R4-1400-D050
PNP / PUR-cable 10 m	Sender	YBB-30S4-1200-D100	YBB-30S4-1300-D100	YBB-30S4-1400-D100
	Receiver	YBB-30R4-1200-D100	YBB-30R4-1300-D100	YBB-30R4-1400-D100

\* Total height given with M12 connector. For cable version, add 6 mm.



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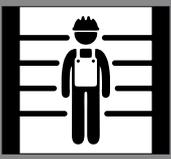


# BARRIERS

## ACCESS CONTROL TYPE 4

### MAIN FEATURES

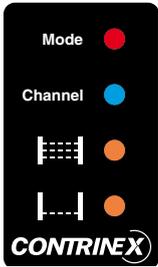
- ✓ Beam gap: 300, 400 or 500 mm (3 to 6 beams)
- ✓ Operating range: 1 ... 15 m or 10 ... 50 m (can be configured)
- ✓ Protective height: 832 ... 1532 mm
- ✓ Category 4, PL e according to EN/ISO 13849-1
- ✓ Type 4 according to IEC 61496-1 and -2
- ✓ Certified TÜV, CE and UL
- ✓ IP 65, IP 67 with operating temperatures as low as -35°C (-31°F)
- ✓ 2-channel selection
- ✓ Optical synchronization
- ✓ Permanent autocontrol



# ACCESS CONTROL

## LEDS

LED indicators on the YCA **sender** unit



### Mode:

Off when max. operating range 15 m  
Blue when max. operating range 50 m  
Red or purple in case of wiring error

### Channel:

Blue when channel 1 selected  
Purple when channel 2 selected

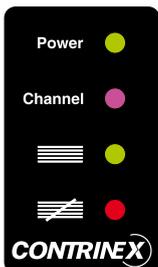
### Alignment (full):

Steady orange when screen not fully aligned  
Blinking orange when first third of screen aligned  
Off when screen is fully aligned

### Alignment (low beam):

Steady orange when lowest beam not aligned  
Blinking orange when lowest beam aligned  
Off when screen fully aligned

LED indicators on the YCA **receiver** unit



### Power:

Green when power ON

### Channel:

Blue when channel 1 selected  
Purple when channel 2 selected

### Status ON:

Green when OSSD outputs ON

### Status OFF:

Red when OSSD outputs OFF

## TECHNICAL DATA

Dimensions	42 mm x 48 mm x Ht
Beam gap	300, 400 or 500 mm (3 to 6 beams)
Protective height	832 ... 1532 mm
Supply voltage range	24 VDC $\pm$ 15 %
Current consumption sender	35 mA max. / 1.0 W max.
Current consumption receiver (excl. load)	75 mA max. / 2.2 W max.
Output current	0.2 A max. per output
Safety level (EN/ISO 13849-1)	Category 4, PL e
Safety type (IEC 61496-1 and -2)	Type 4
Protection class (IEC 61140)	III
Ambient temperature range	-35 ... +60°C (-31 ... +140°F)
Storage temperature range	-40 ... +70°C (-40 ... +158°F)
Degree of protection (EN 60529)	IP 65 + IP 67
Housing material	Aluminum
Material of optical parts	PMMA
Operating range	1 ... 15 m / 10 ... 50 m (can be configured)
Sender wavelength	IR 850 nm

## HOUSING

Aluminum profile 42 mm x 48 mm with dual fixing groove.

## CONFIGURATION OF OPERATING RANGE

Depending on wiring, the maximum operating range can be fixed to either 50 m or 15 m.

## ELECTRONIC PROTECTION

Safetinx access control barriers are self-protected against overloads and short-circuits. They can also withstand short high-voltage overloads.

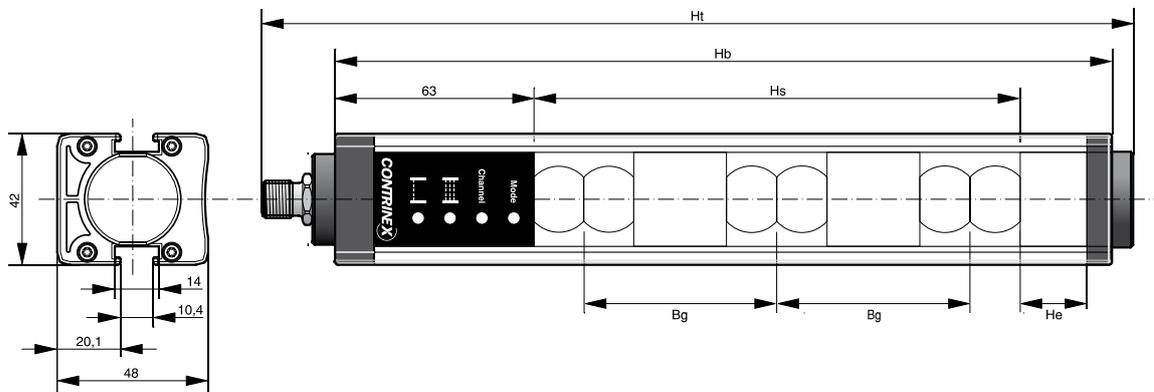
## CONNECTION

Safetinx light curtains with M12 5-pole connector are standard. Versions with PUR cable, 2 m, 5 m or 10 m long, are available on request.

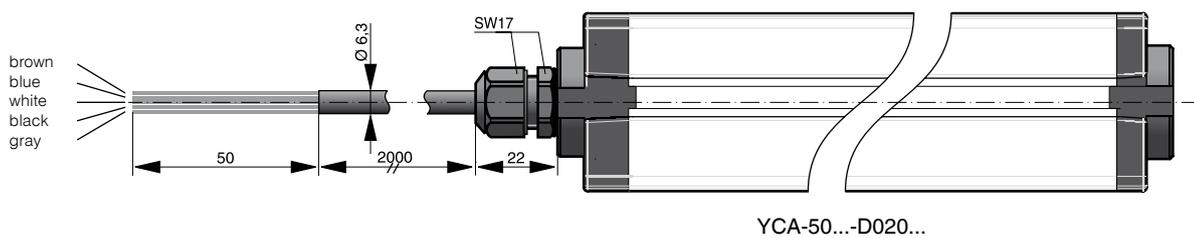
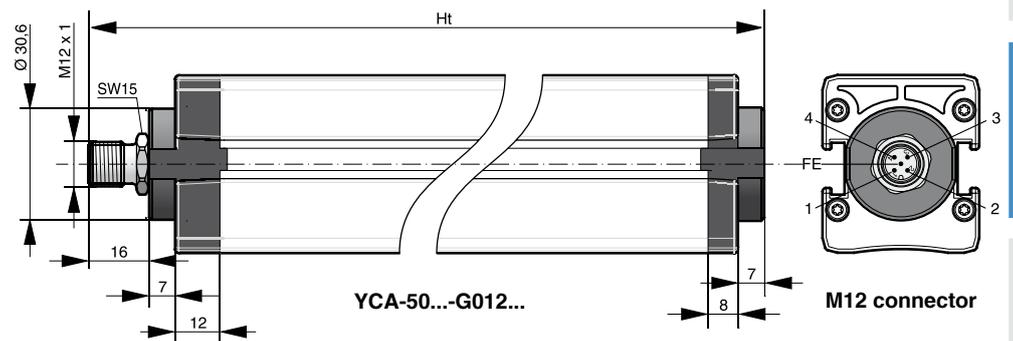
## DOCUMENTATION

Detailed data sheets for these products can be found on the Contrinex website [www.contrinex.com](http://www.contrinex.com) or ordered free of charge from our distributors.

## DIMENSIONS

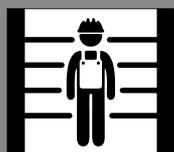


## PIN ASSIGNMENT



Cable

ASSIGNMENT	FUNCTION	PINS/WIRES ON SENDER		PINS/WIRES ON RECEIVER	
		M12 CONNECTOR	CABLE	M12 CONNECTOR	CABLE
Supply voltage	24 VDC for channel 1 / 0 V for channel 2	1	brown	1	brown
Supply voltage	0 V for channel 1 / 24 VDC for channel 2	3	blue	3	blue
Operating range selection	24 V: operating range 10 ... 50 m 0 V: operating range 1 ... 15 m	4	black	-	-
Operating range selection	0 V: operating range 10 ... 50 m 24 V: operating range 1 ... 15 m	2	white	-	-
Output	OSSD1	-	-	2	white
Output	OSSD2	-	-	4	black
Functional earth	Shield	FE	gray	FE	gray



# ACCESS CONTROL



## TYPE-SPECIFIC DATA

Number of beams	4	5	6
<b>Beam gap (Bg) [mm]</b>	<b>300</b>	<b>300</b>	<b>300</b>
Total height (Ht) [mm] *	1154	1412	1670
Housing height (Hb) [mm]	1124	1382	1640
Protective height (Hs) [mm]	932	1232	1532
Height extension (He) [mm]	121	79	37
Current consumption [mA]	110	110	110
Response time [ms]	5.0	5.9	6.7

## PART REFERENCE (BOLD: PREFERRED TYPES)

PNP / Connector M12	Sender	<b>YCA-50S4-4300-G012</b>	<b>YCA-50S4-5300-G012</b>	<b>YCA-50S4-6300-G012</b>
	Receiver	<b>YCA-50R4-4300-G012</b>	<b>YCA-50R4-5300-G012</b>	<b>YCA-50R4-6300-G012</b>
PNP / PUR-cable 2 m	Sender	YCA-50S4-4300-D020	YCA-50S4-5300-D020	YCA-50S4-6300-D020
	Receiver	YCA-50R4-4300-D020	YCA-50R4-5300-D020	YCA-50R4-6300-D020
PNP / PUR-cable 5 m	Sender	YCA-50S4-4300-D050	YCA-50S4-5300-D050	YCA-50S4-6300-D050
	Receiver	YCA-50R4-4300-D050	YCA-50R4-5300-D050	YCA-50R4-6300-D050
PNP / PUR-cable 10 m	Sender	YCA-50S4-4300-D100	YCA-50S4-5300-D100	YCA-50S4-6300-D100
	Receiver	YCA-50R4-4300-D100	YCA-50R4-5300-D100	YCA-50R4-6300-D100

## TYPE-SPECIFIC DATA

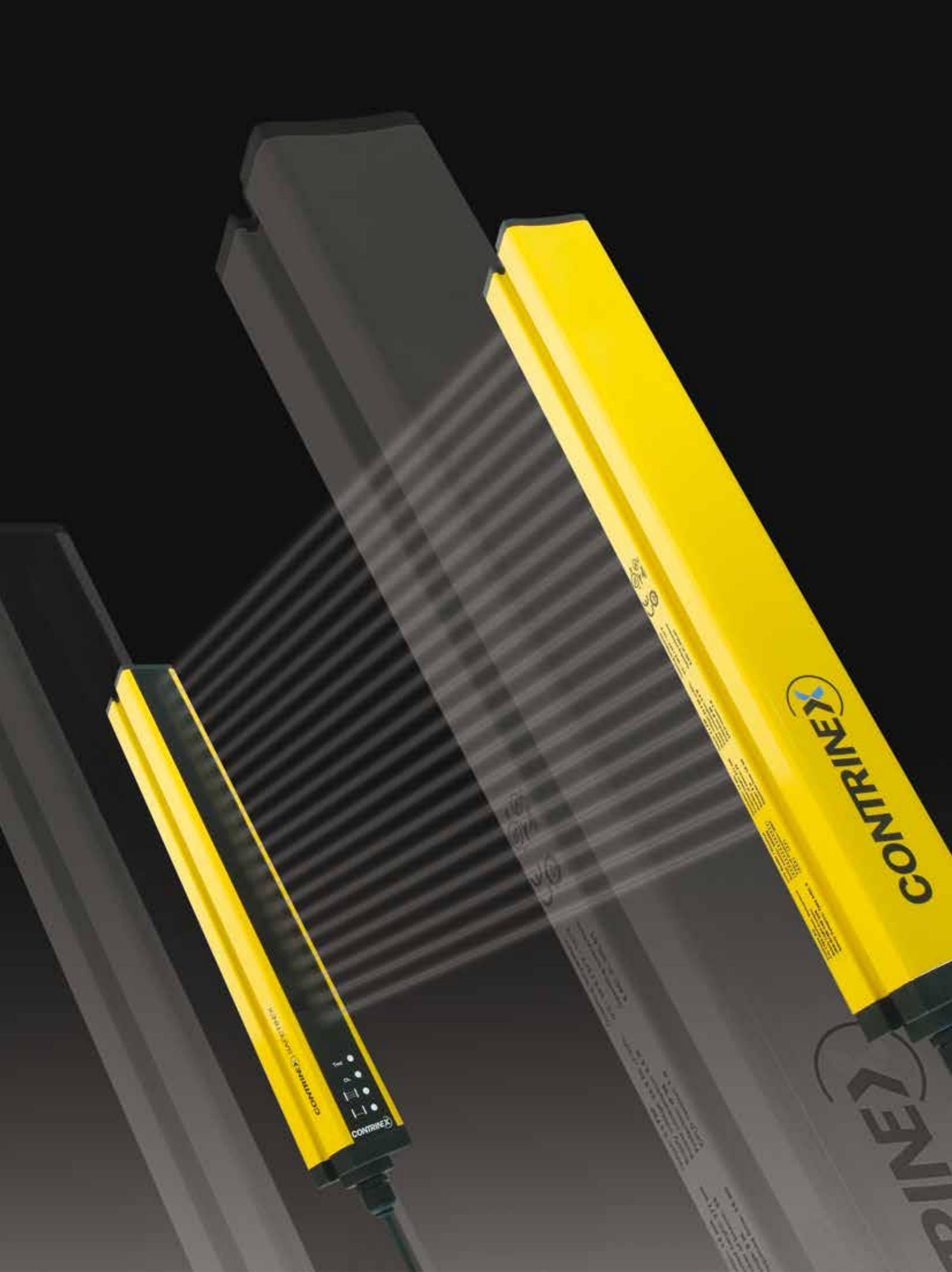
Number of beams	3	4	3
<b>Beam gap (Bg) [mm]</b>	<b>400</b>	<b>400</b>	<b>500</b>
Total height (Ht) [mm] *	1025	1412	1154
Housing height (Hb) [mm]	995	1382	1124
Protective height (Hs) [mm]	832	1232	1032
Height extension (He) [mm]	92	79	21
Current consumption [mA]	110	110	110
Response time [ms]	4.2	5.0	4.2

## PART REFERENCE (BOLD: PREFERRED TYPES)

PNP / Connector M12	Sender	<b>YCA-50S4-3400-G012</b>	<b>YCA-50S4-4400-G012</b>	<b>YCA-50S4-3500-G012</b>
	Receiver	<b>YCA-50R4-3400-G012</b>	<b>YCA-50R4-4400-G012</b>	<b>YCA-50R4-3500-G012</b>
PNP / PUR-cable 2 m	Sender	YCA-50S4-3400-D020	YCA-50S4-4400-D020	YCA-50S4-3500-D020
	Receiver	YCA-50R4-3400-D020	YCA-50R4-4400-D020	YCA-50R4-3500-D020
PNP / PUR-cable 5 m	Sender	YCA-50S4-3400-D050	YCA-50S4-4400-D050	YCA-50S4-3500-D050
	Receiver	YCA-50R4-3400-D050	YCA-50R4-4400-D050	YCA-50R4-3500-D050
PNP / PUR-cable 10 m	Sender	YCA-50S4-3400-D100	YCA-50S4-4400-D100	YCA-50S4-3500-D100
	Receiver	YCA-50R4-3400-D100	YCA-50R4-4400-D100	YCA-50R4-3500-D100

\* Total height given with M12 connector. For cable version, add 6 mm.







TEST

ALIGN

POWER

**CONTRINEX**

ALIGN

POWER

POWER

**CONTRINEX**

# LIGHT CURTAINS

## HAND PROTECTION TYPE 2

### MAIN FEATURES

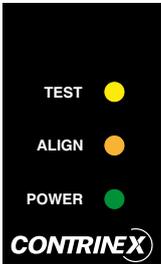
- ✓ Resolution: 30 mm
- ✓ Operating range: 0.25 ... 12 m
- ✓ Protective height: 150 ... 1827 mm
- ✓ Category 2, PL c according to EN/ISO 13849-1
- ✓ Type 2 according to IEC 61496-1 and -2
- ✓ Certified TÜV, CE
- ✓ Optical synchronization
- ✓ Permanent autocontrol



# HAND PROTECTION

## LEDS

LED indicators on the YBB **sender** unit



### Test:

Yellow when intrusion simulation is active  
Off when there is no intrusion simulation

### Alignment:

Steady orange when the lowest beam is not aligned

Quick blinking orange when the lowest beam is aligned

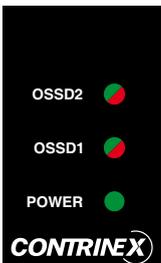
Blinking orange when at least 6 beams are aligned

Off when screen is fully aligned

### Power:

Green when power is ON

LED indicators on the YBB **receiver** unit



### OSSD2:

Green when OSSD2 is ON

Red when OSSD2 is OFF

### OSSD1:

Green when OSSD1 is ON

Red when OSSD1 is OFF

### Power:

Green when power is ON

## TECHNICAL DATA

Dimensions	42 mm x 48 mm x Ht
Resolution	30 mm
Protective height	150 ... 1827 mm
Supply voltage range	24 VDC $\pm$ 20 %
Current consumption sender	27 mA max. / 0.8 W max.
Current consumption receiver (excl. load)	58 mA max. / 1.7 W max.
Output current	0.2 A max. per output
Safety level (EN/ISO 13849-1)	Category 2, PLc
Safety type (IEC 61496-1 and -2)	Type 2
Protection class (IEC 61140)	III
Ambient temperature range	0 ... +50°C (+32 ... +122°F)
Storage temperature range	-25 ... +70°C (-13 ... +158°F)
Degree of protection (EN 60529)	IP 65 + IP 67
Housing material	Aluminum
Material of optical parts	PMMA
Operating range	0.25 ... 12 m
Sender wavelength	IR 850 nm

## HOUSING

Aluminum profile 42 mm x 48 mm with dual fixing groove.

## ELECTRONIC PROTECTION

Safetinx light curtains are self-protected against overloads and short-circuits. They can also withstand short high-voltage overloads.

## CONNECTION

Safetinx light curtains are connected via a standard M12 5-pole connector.

## DOCUMENTATION

Detailed data sheets for these products can be found on the Contrinex website [www.contrinex.com](http://www.contrinex.com) or ordered free of charge from our distributors.

Inductive

Photoelectric

Ultrasonic

Capacitive

Safety

RFID

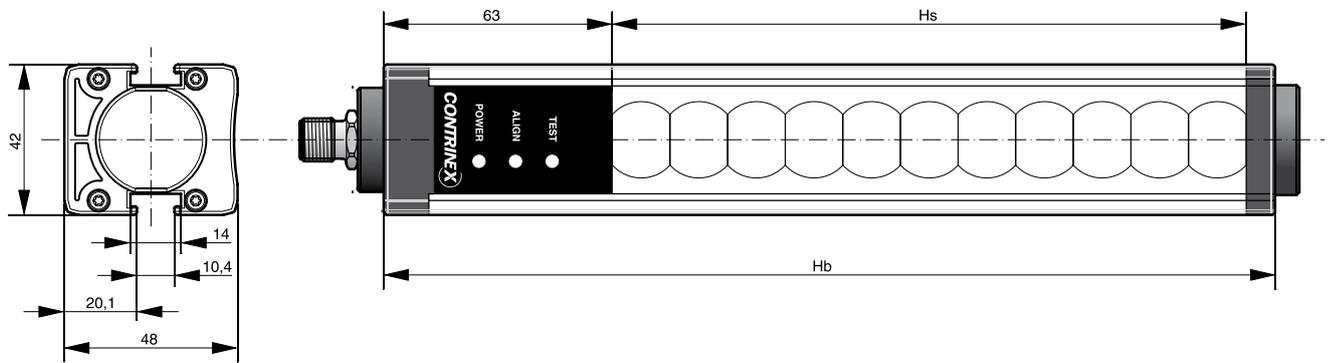
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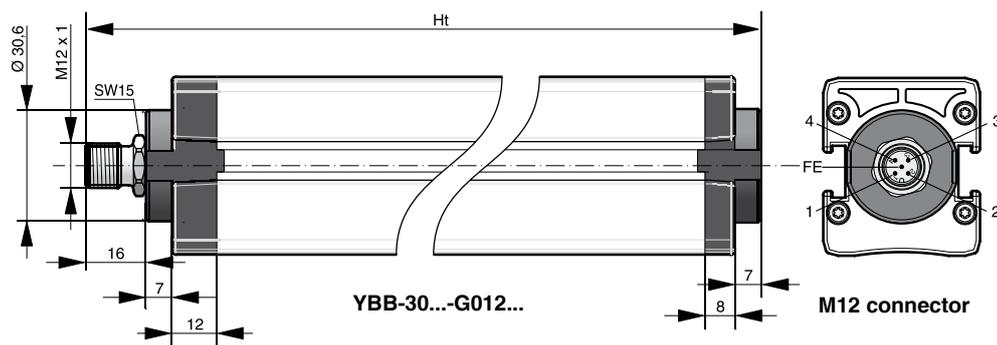
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## DIMENSIONS



## PIN ASSIGNMENT



ASSIGNMENT	FUNCTION	PINS ON SENDER		PINS ON RECEIVER	
		M12 CONNECTOR		M12 CONNECTOR	
Supply voltage	24 VDC	1		1	
Supply voltage	0 V	3		3	
Test mode	0 V: test active / 24 V: test inactive	4		-	
Output	OSSD1	-		2	
Output	OSSD2	-		4	
Functional earth	Shield	FE		FE	



# HAND PROTECTION



## TYPE-SPECIFIC DATA

Type	0150	0250	0400	0500
Total height (Ht) [mm]*	251	380	509	638
Housing height (Hb) [mm]	221	350	479	608
Protective height (Hs) [mm]	150	279	408	537
Number of beams	9	17	25	33
Current consumption [mA]	70	74	77	79
Response time [ms]	14	18	22	26

## PART REFERENCE

PNP / Connector M12	Sender	<b>YBB-30S2-0150-G012</b>	<b>YBB-30S2-0250-G012</b>	<b>YBB-30S2-0400-G012</b>	<b>YBB-30S2-0500-G012</b>
	Receiver	<b>YBB-30R2-0150-G012</b>	<b>YBB-30R2-0250-G012</b>	<b>YBB-30R2-0400-G012</b>	<b>YBB-30R2-0500-G012</b>

## TYPE-SPECIFIC DATA

Type	0700	0800	0900	1000
Total height (Ht) [mm]*	767	896	1025	1154
Housing height (Hb) [mm]	737	866	995	1124
Protective height (Hs) [mm]	666	795	924	1053
Number of beams	41	49	57	65
Current consumption [mA]	80	81	81	82
Response time [ms]	30	34	38	42

## PART REFERENCE

PNP / Connector M12	Sender	<b>YBB-30S2-0700-G012</b>	<b>YBB-30S2-0800-G012</b>	<b>YBB-30S2-0900-G012</b>	<b>YBB-30S2-1000-G012</b>
	Receiver	<b>YBB-30R2-0700-G012</b>	<b>YBB-30R2-0800-G012</b>	<b>YBB-30R2-0900-G012</b>	<b>YBB-30R2-1000-G012</b>

## TYPE-SPECIFIC DATA

Type	1200	1300	1400	1600
Total height (Ht) [mm]*	1283	1412	1541	1670
Housing height (Hb) [mm]	1253	1382	1511	1640
Protective height (Hs) [mm]	1182	1311	1440	1569
Number of beams	73	81	89	97
Current consumption [mA]	83	83	84	84
Response time [ms]	46	50	54	58

## PART REFERENCE

PNP / Connector M12	Sender	<b>YBB-30S2-1200-G012</b>	<b>YBB-30S2-1300-G012</b>	<b>YBB-30S2-1400-G012</b>	<b>YBB-30S2-1600-G012</b>
	Receiver	<b>YBB-30R2-1200-G012</b>	<b>YBB-30R2-1300-G012</b>	<b>YBB-30R2-1400-G012</b>	<b>YBB-30R2-1600-G012</b>

## TYPE-SPECIFIC DATA

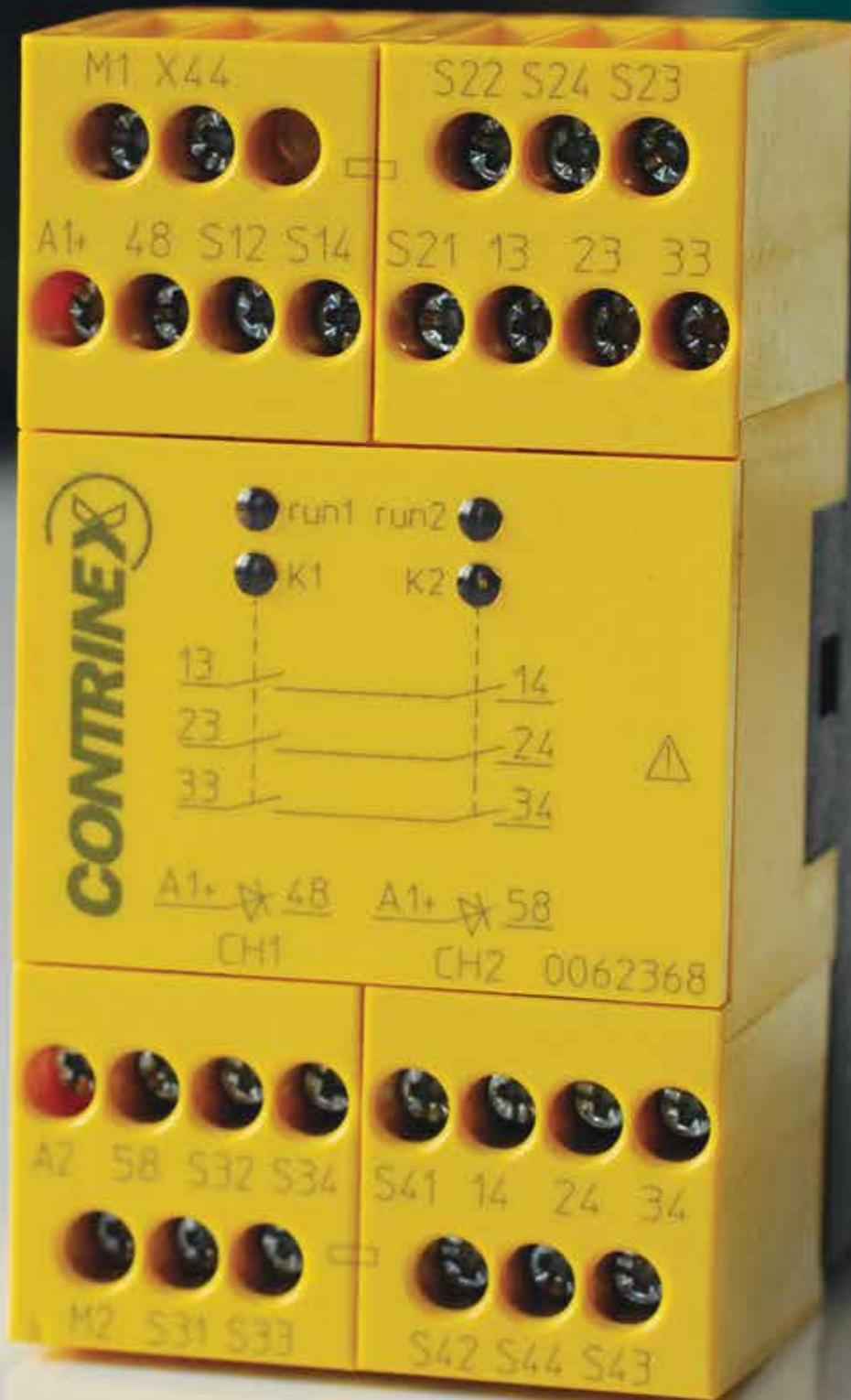
Type	1700	1800		
Total height (Ht) [mm]*	1799	1928		
Housing height (Hb) [mm]	1769	1898		
Protective height (Hs) [mm]	1698	1827		
Number of beams	105	113		
Current consumption [mA]	85	85		
Response time [ms]	62	66		

## PART REFERENCE

PNP / Connector M12	Sender	<b>YBB-30S2-1700-G012</b>	<b>YBB-30S2-1800-G012</b>		
	Receiver	<b>YBB-30R2-1700-G012</b>	<b>YBB-30R2-1800-G012</b>		

\* Total height given with M12 connector





# SAFETY

## RELAYS

### MAIN FEATURES

- ✓ For safety light curtains and access control barriers with symmetric (such as Safetinx YBB and YCA models) or asymmetric outputs
- ✓ Safety Integrity Level (SIL) 3 according to IEC/EN 61508
- ✓ Claimed Level (SIL CL) 3 according to IEC/EN 62061
- ✓ Performance Level (PL) e and category 4 according to EN/ISO 13849-1
- ✓ Safety category 4 according to EN 954-1
- ✓ Certified TÜV, CE and UL

### SAFETY RELAY

- ✓ Outputs: - 3 N.O. safety contacts  
- 1 N.C. monitoring contact
- ✓ Manual or automatic restart
- ✓ LED indicator for channel 1, 2 and power supply
- ✓ 22.5 mm wide, DIN-rail-mountable housing

### MULTI-FUNCTIONAL RELAY

- ✓ Outputs: - 3 x N.O. safety contacts  
- 2 semiconductor outputs, short-circuit and overload protected
- ✓ Wire-break detection on AOPD input
- ✓ Under- and overvoltage detection and indication
- ✓ Reaction time: max. 30 ms
- ✓ LED indicators for RUN operation, channel 1/2
- ✓ 45 mm wide, DIN-rail-mountable housing



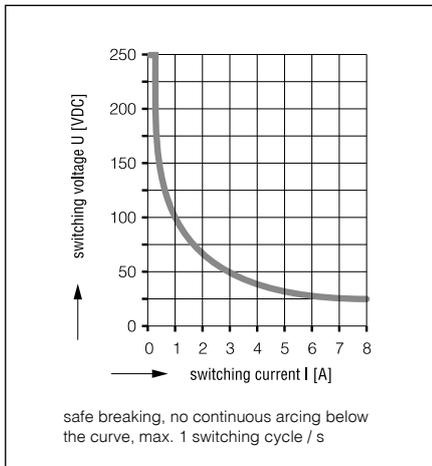


Diagram 1: limit curve for arc-free operation under resistive load

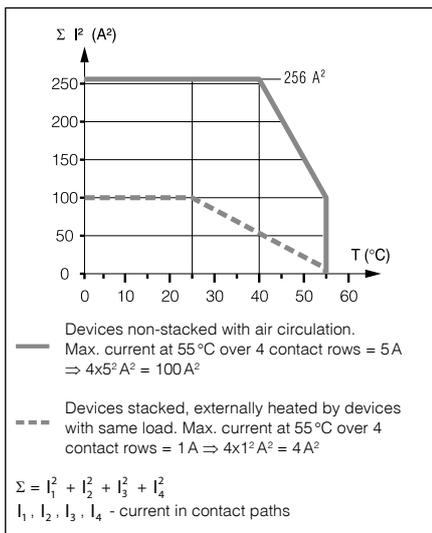
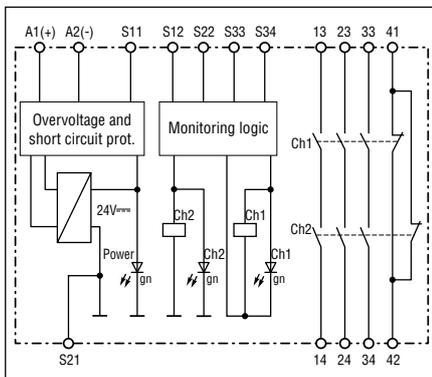


Diagram 2: total current limit curve



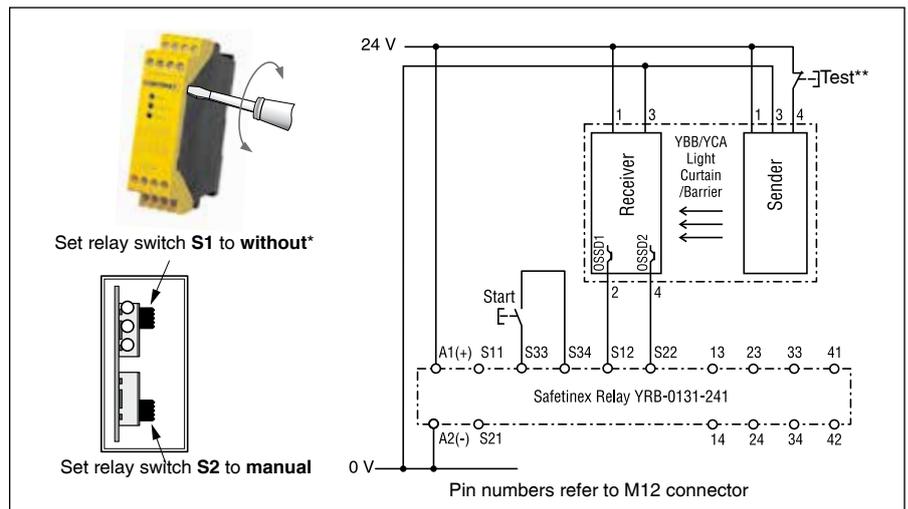
Relay block diagram

## PART REFERENCE

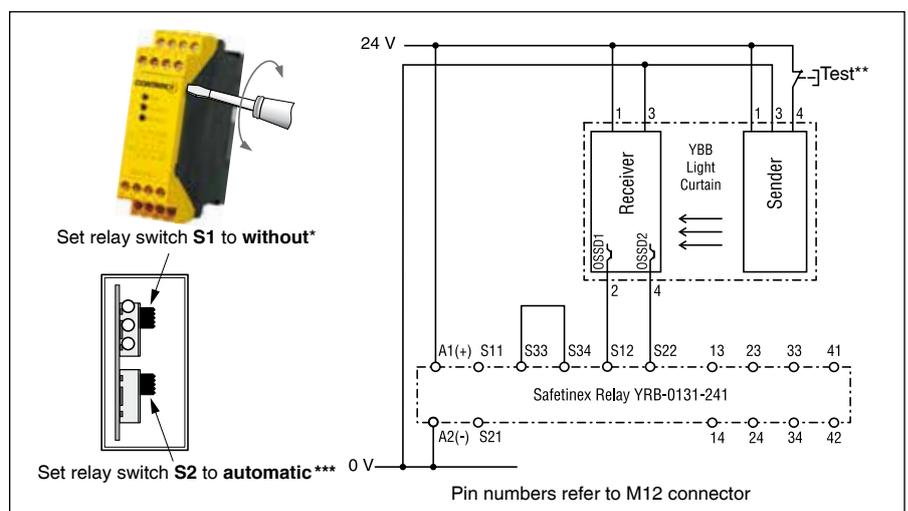
Safety relay

YRB-0131-241

### MANUAL RESTART MODE (Channel 1)



### AUTOMATIC RESTART MODE (Channel 1)



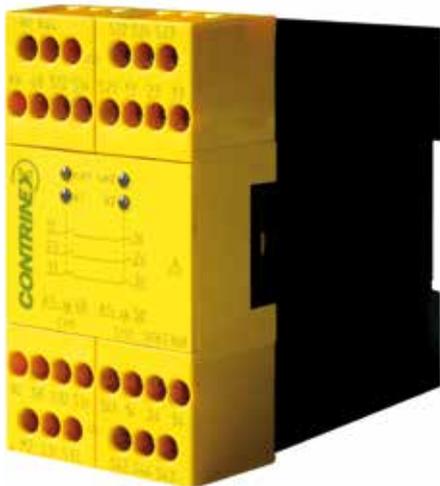
#### \* Position of switch S1:

- With symmetric outputs on light curtains or access control barriers (such as Safetinex YBB and YCA models), set switch S1 to "without".
- With asymmetric outputs on light curtains or access control barriers, set switch S1 to "with".

\*\* Test button is only applicable for YBB models.

\*\*\* Automatic restart is **not allowed** for YCA access control devices.

# MULTI-FUNCTIONAL RELAY



YRB-0330-242

## APPLICATION AREA

- The following operation types can be selected by means of a rotary switch:
  - **Protective operation**, e.g. light curtains
  - **Protective operation with muting**, e.g. conveyor belts
    - Setting of various signal cycles of muting sensors
    - Setting of max. permissible muting time
    - Override function by means of start button
  - **Stepping operation**, e.g. presses
    - 1, 2 or 3 cycles
    - Number of cycles can be set by means of key switch
- Suitable for connection of type 4 AOPDs or type 2 AOPDs according to IEC/EN 61496-1, cross-circuit monitoring in AOPDs
- Connection of max.
  - 3 2-channel AOPDs, or
  - 2 2-channel AOPDs and 2 1-channel muting sensors, or
  - 1 2-channel AOPD and 4 1-channel muting sensors, or
  - 2 2-channel AOPDs and key switch for cycle switching
  - additionally: start button and machine contact with line-fault detection

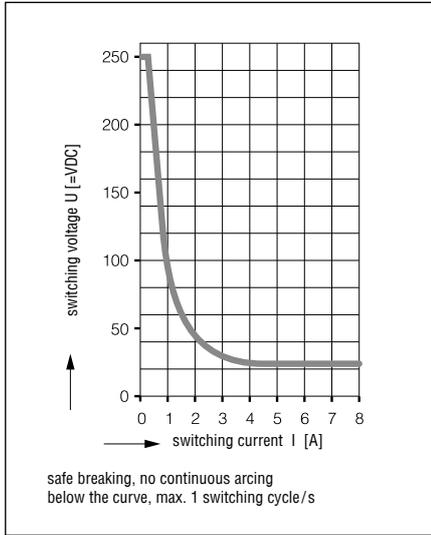
## TECHNICAL DATA

### INPUT

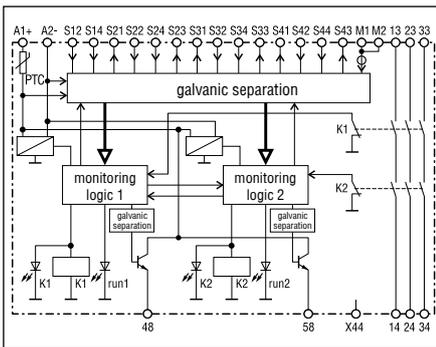
Nominal voltage $U_N$	24 VDC
Voltage range at max. 5% ripple content	0.85 ... 1.15 $U_N$
Nominal consumption	max. 170 mA (no load on semiconductor outputs)
Control voltage on	
S21, S23, S31, S33, S41, S43, 48, 58	23 VDC at $U_N$
Control current on	
S12, S14, S22, S24, S32, S34, S42, S44	4.5 mA each at $U_N$
Min. voltage on	
S12, S14, S22, S24, S32, S34, S42, S44	16 VDC
Device protection	Internal by means of PTC
Min. current on M1, M2	25 mA (lamp active)

### OUTPUT

Contacts	3 x N.O.	
Contact type	Relay, positively driven	
Operating delay (typ. at $U_N$ ):		
Manual start	max. 50 ms	
Automatic start	max. 1.5 s	
Automatic restart	max. 55 ms	
Release delay (reaction time)	max. 30 ms	
	(max. 50 ms when error on AOPD and only 1 input channel of AOPD off)	
Nominal output voltage	250 VAC	
	DC: see limit curve for arc-free operation	
Switching of low loads	$\geq 100$ mV	
Thermal current $I_{th}$	5 A	
Switching capacity		
to AC 15	3 A / 230 VAC	IEC/EN 60947-5-1
to DC 13 at 0.1 Hz	8 A / 24 VDC	IEC/EN 60947-5-1



Limit curve for arc-free operation



Block diagram

## SEMICONDUCTOR OUTPUTS

Output (terminals 48 and 58)	Transistor outputs, plus switching
Nominal output voltage	24 VDC, max. 100 mA continuous current, max. 400 mA for 0.5 s internal short-circuit, over-temperature and overload protection

## GENERAL DATA

Electrical life	10 <sup>9</sup> switching cycles	IEC/EN 60947-5-1
to AC 15 at 2 A, AC 230 V		
Permissible operating frequency	max. 1200 switching cycles/h	
Short-circuit strength:		
max. fuse rating	6 A gL	IEC/EN 60947-5-1
line circuit breaker	C 8 A	
Mechanical life	10 x 10 <sup>6</sup> switching cycles	
Temperature range	0 ... +50 °C (+32 ... +122 °F)	
Clearance and creepage distance:		
Nominal impulse voltage / Pollution degree	4 kV / 2	IEC/EN 60664-1
EMC:		
Electrostatic discharge (ESD)	8 kV (contact discharge)	IEC/EN 61000-4-2 (according to test degree 3)
HF irradiation	10 V / m	IEC/EN 61000-4-3
Fast transients:		
- on power supply wires A1 - A2	2 kV	IEC/EN 61000-4-4
- on signal and control wires	2 kV	IEC/EN 61000-4-4
Surge voltage:		
- between power supply wires	1 kV	IEC/EN 61000-4-5
- between wire and ground	2 kV	IEC/EN 61000-4-5
- HF-wire guided	10 V	IEC/EN 61000-4-6
Interference suppression	Limit value class B	EN 55011
Degree of protection:	according to IEC/EN 61496-1 (1997), the device must be installed in a control housing with degree of protection 54.	
Housing	IP 40	IEC/EN 60529
Terminals	IP 20	IEC/EN 60529
Housing	Thermoplastic polymer with V0 behavior acc. to UL Subject 94	
Vibration resistance according to IEC/EN 61496-1	Amplitude 0.35 mm Frequency 10 ... 55 Hz IEC/EN 60068-2-6	
Shock resistance:		
Acceleration	10 g	
Impulse length	16 ms	
Number of shocks	1000 per axis on three axes	
Climatic resistance	0 / 050 / 04	IEC/EN 60068-1
Terminals	EN 50005	
Wire connection	according to DIN 46228-1/-2/-3/-4	
Wire fixing	M3.5 captive plus-minus terminal screws Box terminal with wire protection	
Mounting	DIN rail	IEC/EN 60715
Weight	320 g	
Dimensions (W x H x D)	45 mm x 84 mm x 118 mm	

## PART REFERENCE

Multi-functional safety relay	YRB-0330-242
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Inductive

Photoelectric

Ultrasonic

Capacitive

Safety

RFID

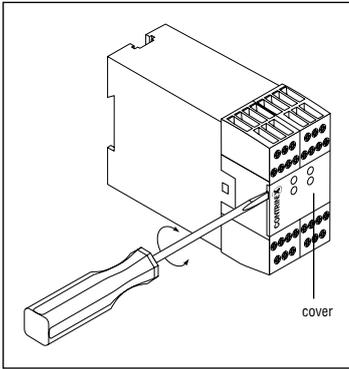
Connectivity

Accessories

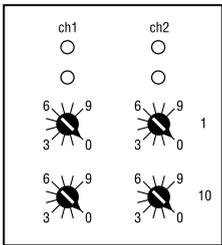
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# APPLICATION EXAMPLES



Device setting



Inside view

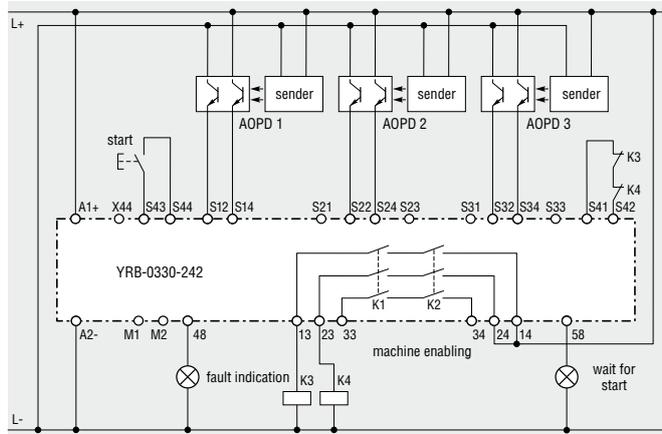


Diagram 1: Protective operation with 3 AOPDs, manual or automatic start, setting with feedback input

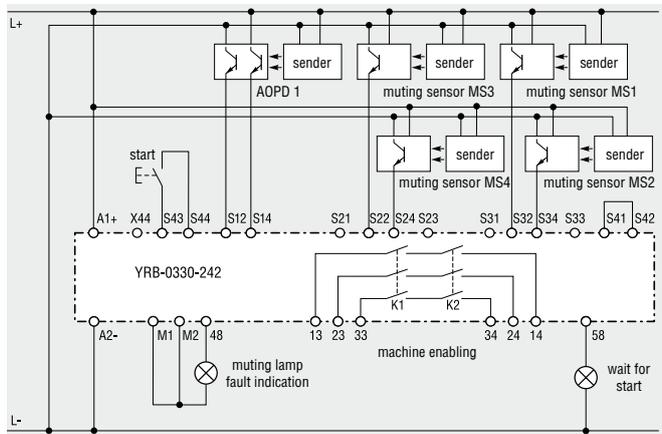


Diagram 2: Protective operation with muting, 4 muting sensors, 1 AOPD

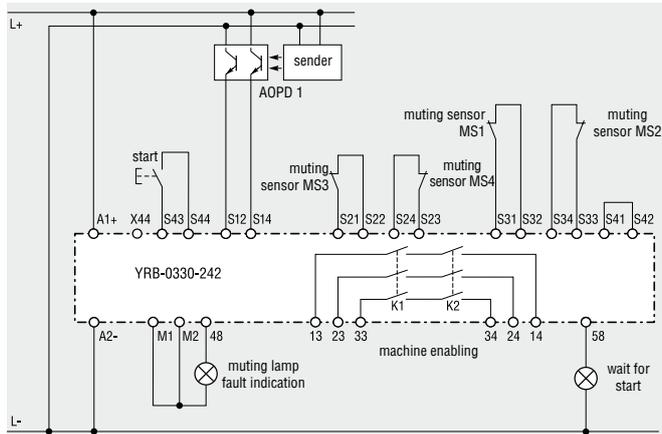


Diagram 3: Protective operation with muting via 4 muting-sensor contacts

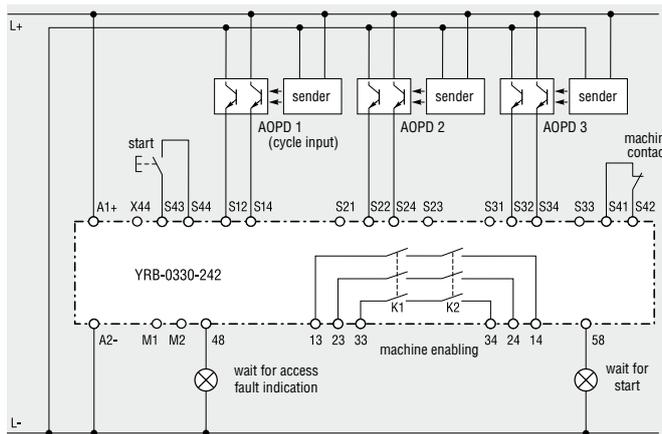


Diagram 4: Stepping operation with 3 AOPDs

# ACCESSORIES

Inductive

Photoelectric

Ultrasonic

Capacitive

Safety

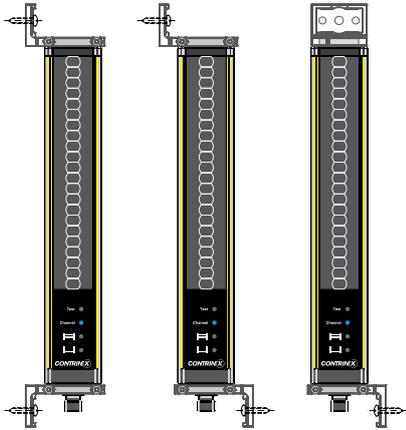
RFID

Connectivity

Accessories

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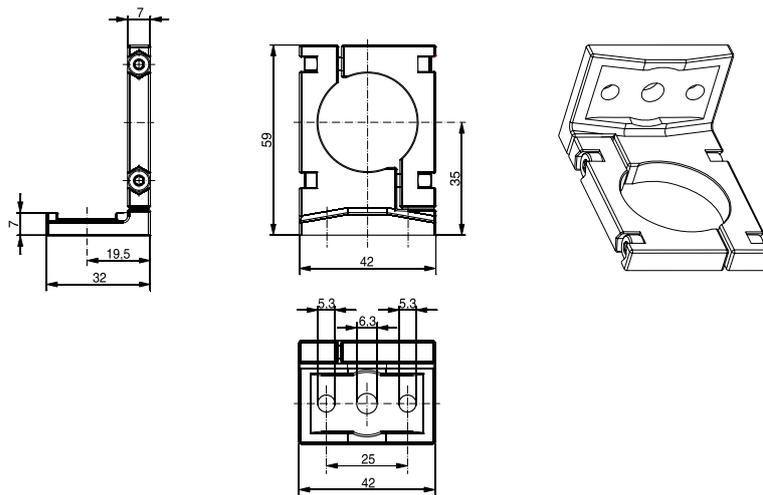
## TOP/BOTTOM MOUNTING BRACKET

- Synthetic swivel mounting bracket
- Easy-to-use

A pair of mounting brackets is supplied with each light curtain or access control barrier unit.

## DIMENSIONS

### TOP/BOTTOM MOUNTING BRACKETS



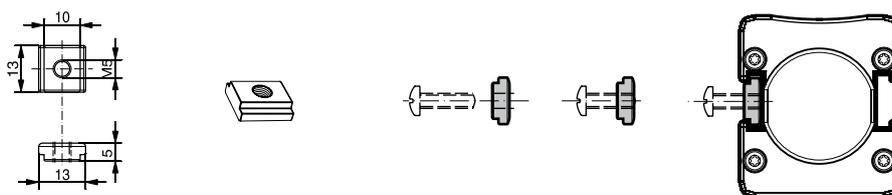
## PART REFERENCE

Top/bottom mounting brackets, synthetic (pair)

YXW-0001-000

## DIMENSIONS

### SLIDING T-NUTS FOR SIDE MOUNTING

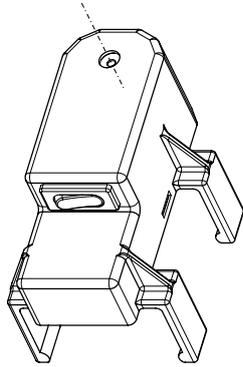


## PART REFERENCE

T-nuts for side mounting, metal (pair)

YXW-0003-000

# LASER ALIGNMENT TOOL



## MAIN FEATURES

- Easily clippable onto Safetinx YBB and YCA devices
- Range : up to 50m
- Output power < 1 mW (class 2)
- Standard AA batteries

## TECHNICAL DATA

Laser module optical output power	< 1 mW (class 2)
Laser beam spot size at 10 m	< 10 mm
Range	≤ 50 m
Housing material	PA with 30% fiberglass
Dimensions	80 mm x 48 mm x 56 mm

## PART REFERENCE

Laser alignment tool	YXL-0001-000
----------------------	--------------



LASER ALIGNMENT TOOL



# CABLE CONNECTORS

## M12 4-POLE

### TECHNICAL DATA

Rated voltage	250 V AC/DC max.
Rated current	4 A max.
Sleeve material	PUR non-inflammable IEC 332-2, halogen-free DIN VDE 0472 part 815, silicone-free, RoHS
Wire structure	4 x 0.34 mm <sup>2</sup>
Wire insulation	PP, halogen-free
Outer cable diameter	∅ 4.7 mm
Temperature range	-25 ... +80 °C (-13 ... +175 °F)
Degree of protection	IP 67
Certification	UL E227529, section 4

### PART REFERENCE

PUR, unshielded, S12 4-pole, 2 m	S12-4FUG-020
PUR, unshielded, S12 4-pole, 5 m	S12-4FUG-050
PUR, unshielded, S12 4-pole, 10 m	S12-4FUG-100

## M12 4-POLE WITH V4A (AISI 316L/DIN 1.4404) CONNECTORS (FOOD SAFE)

### TECHNICAL DATA

Rated voltage	32 V AC/DC max.
Rated current	4 A max.
Sleeve material	PVC
Wire structure	4 x 0.34 mm <sup>2</sup>
Wire insulation	PVC
Outer cable diameter	∅ 5.2 mm ± 5 %
Temperature range	-5 ... +70 °C (+23 ... +158 °F)
Degree of protection	IP 67, IP 68 & IP 69K
Certification	CSA, Ecolab

### PART REFERENCE

PVC, unshielded, S12 4-pole, 2 m	S12-4FVG-020-NNLN
PVC, unshielded, S12 4-pole, 5 m	S12-4FVG-050-NNLN
PVC, unshielded, S12 4-pole, 10 m	S12-4FVG-100-NNLN

## M12 5-POLE SHIELDED

### TECHNICAL DATA

Rated voltage	60 V AC/DC max.
Rated current	4 A max. per contact
Electromagnetic protection	shielded
Sleeve material	PUR
Wire structure	5 x 0.34 mm <sup>2</sup>
Wire insulation	PP
Outer cable diameter	∅ 6.3 mm ± 5 %
Temperature range	-25 ... +80 °C (-13 ... +175 °F)
Degree of protection	IP 67
Certification	UL, CSA

### PART REFERENCE

PUR, shielded, S12 5-pole, 2 m	S12-5FUG-020-NWSN
PUR, shielded, S12 5-pole, 5 m	S12-5FUG-050-NWSN
PUR, shielded, S12 5-pole, 10 m	S12-5FUG-100-NWSN

Inductive

Photoelectric

Ultrasonic

Capacitive

Safety

RFID

Connectivity

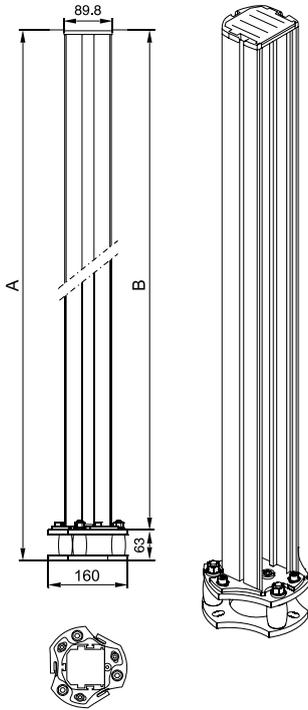
Accessories

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# DEVICE COLUMNS

## DIMENSIONS



## DEVICE COLUMNS FOR LIGHT CURTAINS AND ACCESS CONTROL BARRIERS

- Robust protective profile, attractive design
- Special spring elements automatically reset position in case of mechanical impact
- Complete assembly kit for both device and floor mounting included
- Easy to mount: vertical and axial adjustments can be quickly completed in just a few steps

### APPLICATION AREA

Free-standing floor mounting for safety light curtains and access control barriers, such as Safetinex YBB and YCA models

## TECHNICAL DATA

Housing  
Surface

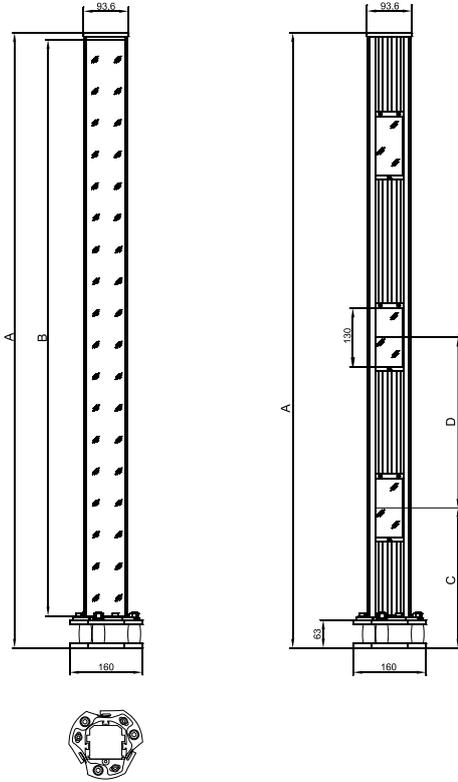
Aluminum profile and steel floor plates  
Powder-varnished, yellow (RAL 1021)

## PART REFERENCE

Device column	Total height (A) [mm]	Housing height (B) [mm]	Suitable for
<b>YXC-1060-F00</b>	1060	977	YBB-####-0150-#### to YBB-####-0800-####
<b>YXC-1360-F00</b>	1360	1277	YBB-####-0900-####, YBB-####-1000-####, YCA-####-3400-####, YCA-####-4300-####
<b>YXC-1660-F00</b>	1660	1577	YBB-####-1200-#### to YBB-####-1400-####, YCA-####-3500-####, YCA-####-5300-####, YCA-####-4400-####
<b>YXC-1960-F00</b>	1960	1877	YBB-####-1600-####, YBB-####-1700-####, YCA-####-6300-####

# MIRROR COLUMNS

## DIMENSIONS



## MIRROR COLUMNS FOR LIGHT CURTAINS AND ACCESS CONTROL BARRIERS

- Robust protective profile, attractive design
- **Special spring elements automatically reset position in case of mechanical impact**
- Complete assembly kit for both device and floor mounting included
- Easy to mount: vertical and axial adjustments can be quickly completed in just a few steps
- Single mirror or exchangeable and separately adjustable individual mirrors in accordance with EN 999

## APPLICATION AREA

The mirror columns YXC-####-M## are used for the beam deflection of safety light curtains and access control barriers, such as Safetinex YBB and YCA models, in order to achieve multi-sided safeguarding of danger zones, while eliminating the need for additional light curtains or access control barriers. Spring elements at the base of the column provide for automatic reset following mechanical impact.

YXC-####-M11 models feature a single large mirror and are therefore suitable for use with light curtains as well as access control barriers. YXC-1360-M23/M24, on the other hand, feature 3 or 4 smaller mirrors and may consequently only be used with access control barriers.

## TECHNICAL DATA

Housing	Aluminum profile and steel floor plates
Surface	Powder-varnished, yellow (RAL 1021)

## PART REFERENCE

Single-mirror column	Total height (A) [mm]	Mirror height (B) [mm]	Multi-mirror column	Total height (A) [mm]	Beam gap (D) [mm]	Height lowest beam (C) [mm]
<b>YXC-1060-M11</b>	1060	974	<b>YXC-1360-M23</b>	1360	2 x 400	300
<b>YXC-1360-M11</b>	1360	1274	<b>YXC-1360-M24</b>	1360	3 x 300	300
<b>YXC-1660-M11</b>	1660	1574				
<b>YXC-1960-M11</b>	1960	1874				

Inductive

Photoelectric

Ultrasonic

Capacitive

Safety

RFID

Connectivity

Accessories

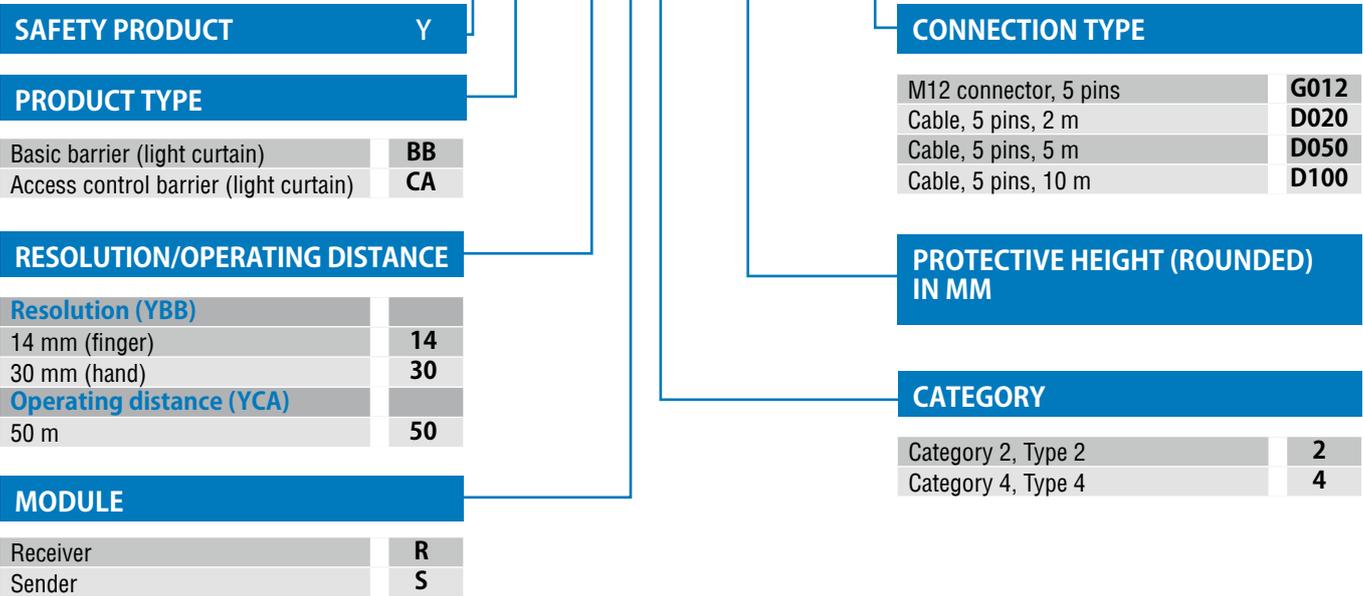
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# SAFETY PRODUCTS

## LIGHT CURTAINS

### YBB-30S4-0800-G012

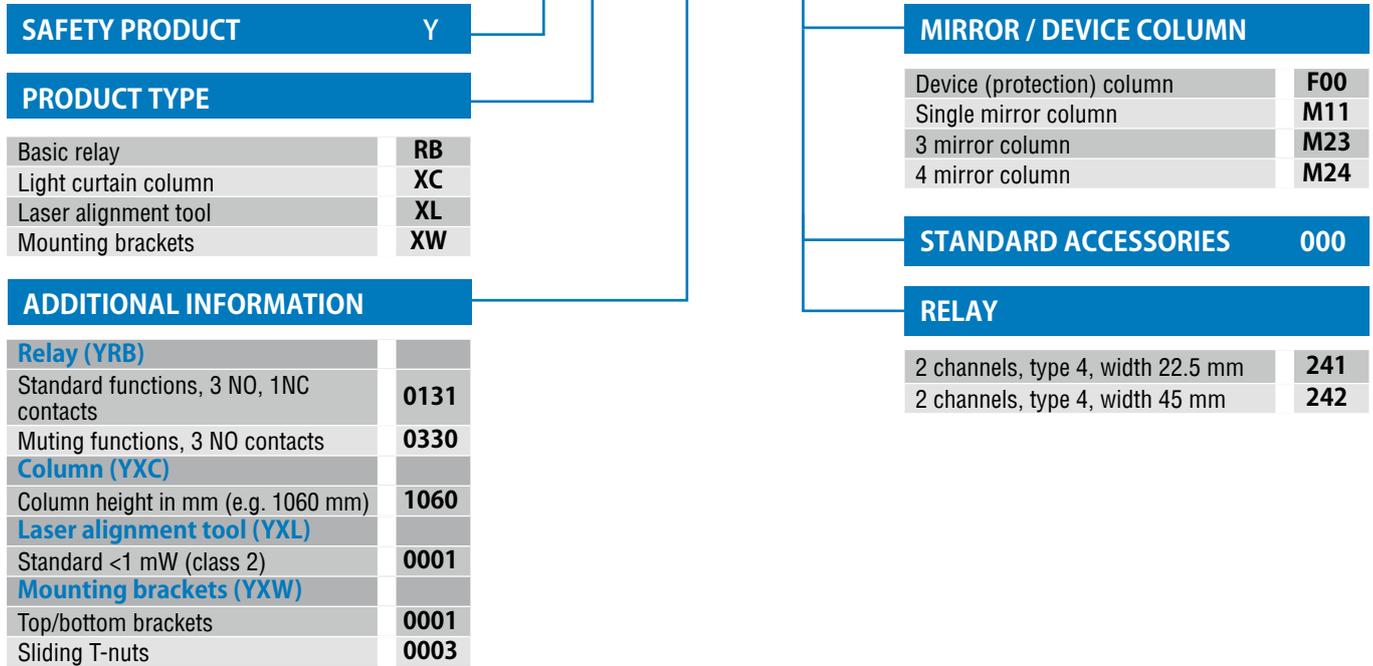


Part reference	Chapter/page	Part reference	Chapter/page	Part reference	Chapter/page
YBB-14R4-0150-G012	5/342	YBB-30R2-0900-G012	5/360	YBB-30S2-1600-G012	5/360
YBB-14R4-0250-G012	5/342	YBB-30R2-1000-G012	5/360	YBB-30S2-1700-G012	5/360
YBB-14R4-0400-G012	5/342	YBB-30R2-1200-G012	5/360	YBB-30S2-1800-G012	5/360
YBB-14R4-0500-G012	5/343	YBB-30R2-1300-G012	5/360	YBB-30S4-0250-G012	5/348
YBB-14R4-0700-G012	5/343	YBB-30R2-1400-G012	5/360	YBB-30S4-0400-G012	5/348
YBB-14R4-0800-G012	5/343	YBB-30R2-1600-G012	5/360	YBB-30S4-0500-G012	5/348
YBB-14R4-0900-G012	5/343	YBB-30R2-1700-G012	5/360	YBB-30S4-0700-G012	5/349
YBB-14R4-1000-G012	5/342	YBB-30R2-1800-G012	5/360	YBB-30S4-0900-G012	5/349
YBB-14R4-1200-G012	5/342	YBB-30R4-0250-G012	5/348	YBB-30S4-1000-G012	5/349
YBB-14R4-1300-G012	5/342	YBB-30R4-0400-G012	5/348	YBB-30S4-1200-G012	5/348
YBB-14R4-1400-G012	5/343	YBB-30R4-0500-G012	5/348	YBB-30S4-1300-G012	5/348
YBB-14R4-1600-G012	5/343	YBB-30R4-0700-G012	5/349	YBB-30S4-1400-G012	5/348
YBB-14R4-1700-G012	5/343	YBB-30R4-0800-G012	5/349	YBB-30S4-1600-G012	5/349
YBB-14S4-0150-G012	5/342	YBB-30R4-0900-G012	5/349	YBB-30S4-1700-G012	5/349
YBB-14S4-0250-G012	5/342	YBB-30R4-1000-G012	5/349	YBB-30S4-1800-G012	5/349
YBB-14S4-0400-G012	5/342	YBB-30R4-1200-G012	5/348	YBB-50S4-4300-G012	5/354
YBB-14S4-0500-G012	5/343	YBB-30R4-1300-G012	5/348	YCA-50R4-3400-G012	5/354
YBB-14S4-0700-G012	5/343	YBB-30R4-1400-G012	5/348	YCA-50R4-3500-G012	5/354
YBB-14S4-0800-G012	5/343	YBB-30R4-1600-G012	5/349	YCA-50R4-4300-G012	5/354
YBB-14S4-0900-G012	5/343	YBB-30R4-1700-G012	5/349	YCA-50R4-4400-G012	5/354
YBB-14S4-1000-G012	5/342	YBB-30R4-1800-G012	5/349	YCA-50R4-5300-G012	5/354
YBB-14S4-1200-G012	5/342	YBB-30S2-0150-G012	5/360	YCA-50R4-6300-G012	5/354
YBB-14S4-1300-G012	5/342	YBB-30S2-0250-G012	5/360	YCA-50S4-3400-G012	5/354
YBB-14S4-1400-G012	5/343	YBB-30S2-0400-G012	5/360	YCA-50S4-3500-G012	5/354
YBB-14S4-1600-G012	5/343	YBB-30S2-0500-G012	5/360	YCA-50S4-4300-G012	5/354
YBB-14S4-1700-G012	5/343	YBB-30S2-0700-G012	5/360	YCA-50S4-4400-G012	5/354
YBB-30R2-0150-G012	5/360	YBB-30S2-0800-G012	5/360	YCA-50S4-5300-G012	5/354
YBB-30R2-0250-G012	5/360	YBB-30S2-0900-G012	5/360	YCA-50S4-6300-G012	5/354
YBB-30R2-0400-G012	5/360	YBB-30S2-1000-G012	5/360		
YBB-30R2-0500-G012	5/360	YBB-30S2-1200-G012	5/360		
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