

# SAFETY LIGHT CURTAIN

**YBB-14 □4-1600-□□□□**



RESOLUTION 14 MM

TYPE 4 / PL e

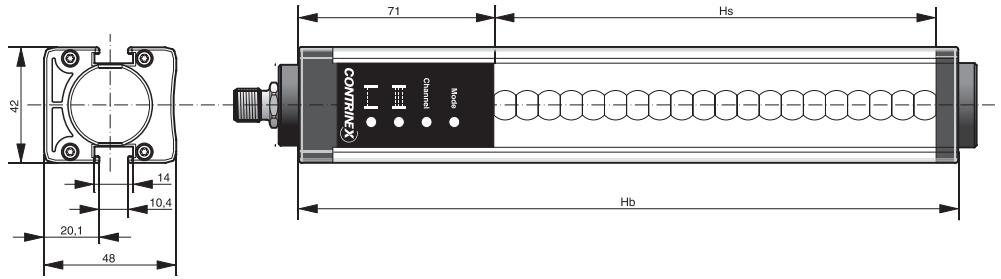
## OUTSTANDING FEATURES

- Protective height: 1561 mm
- Operating range: 0.25 ... 3.5 m
- Category 4, PL e according to EN/ISO 13849-1 (former EN 954-1)
- Type 4 according to IEC 61496-1/2
- 2-channel selection
- Optically synchronized units
- Permanent autocontrol

## TECHNICAL DATA (at +23 °C ±5 °C, 24 VDC)

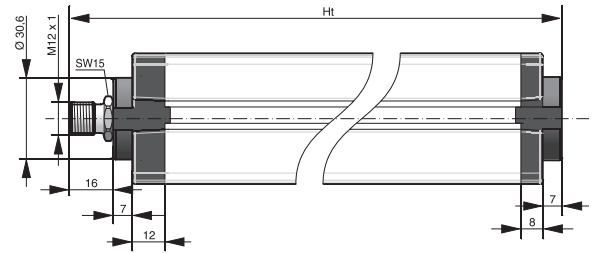
Resolution	14 mm
Beam axis interval	8 mm
Effective aperture angle	< ± 2.5° (when operating distance ≥ 3 m)
Operating range	0.25 ... 3.5 m
Dimensions	42 mm x 48 mm x Ht (total height with M12 connector)
Total height (Ht)	1670 mm
Housing height (Hb)	1640 mm
Protective height (Hs)	1561 mm
Number of beams	193
Response time	40.4 ms
Supply voltage range	24 VDC ± 20 %
Current consumption	sender: 50 mA max. / receiver: 155 mA max. (excl. load)
Dissipated power	sender: 1.4 W max. / receiver: 4.5 W max. (excl. load)
Output type	2 PNP outputs
Output protection	short-circuit, overload protected
Output monitoring	cross-circuit monitored
Load current	max. 200 mA per output (at 50 °C / 122 °F)
Output voltage ON min.	-1.0 V of the operating voltage
Output voltage OFF max.	1.0 V
Output monitoring frequency	500 Hz
Leakage current when OFF state	< 1 mA
Maximum load inductance	100 mH
Sender wavelength	IR 950 nm
Safety level	Category 4, Type 4 (IEC 61496-1/2)
	PL e, MTTF <sub>d</sub> = 39 years, DC <sub>avg</sub> = 94% (EN/ISO 13849-1)
Electrical protection class	III (IEC 61140)
Startup delay	< 0.5 s
Vibration resistance	10 to 55 Hz, 0.35 mm amplitude, 1 octave/min., 20 sweeps for each axis
Shock resistance	10 g during 16 ms, 1000 times for each axis
Light immunity	incandescent lamp: 3000 lx max. (light intensity on receiver surface) xenon flash tube: flash duration 1.2 ms max. with a frequency of 2 Hz max. (TS 61496-2:2006)
Ambient temperature range	-35 ... +60 °C (-31 ... +140 °F)
Storage temperature range	-40 ... +70 °C (-40 ... +158 °F)
Air humidity	15 ... 95 % (non-condensing)
Degree of protection	IP 65 + IP 67 (EN 60529/A1:2000)
Housing material	aluminum profile, PMMA front screen
Material of upper and lower cover	PA + 30% fiberglass
Cable runs	10 m max. (at 10 nF capacitive load)
Weight	3400 g per unit (with M12 connector)
Reference standards:	safety IEC 61496-1:2004, IEC 61496-2:2006, EN 60204-1:2006, EN 50178:1997
	environment EN 60068-2-1,2,3,6,29
	EMC EN 61000-4-2,3,4,5,6,11
	radio disturbance EN 55011/A2:2007

**DIMENSIONS**



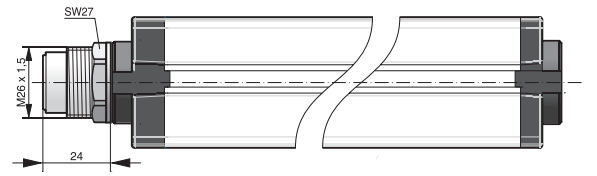
**connector M12**

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



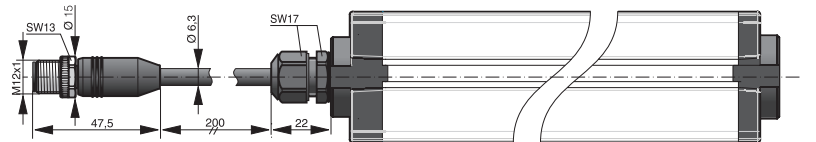
**connector M26**

YBB-14S4-1600-G026  
YBB-14R4-1600-G026



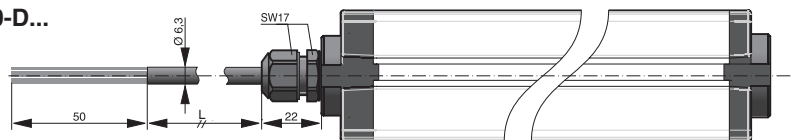
**pigtail M12**

YBB-14S4-1600-P012  
YBB-14R4-1600-P012



**cable**

YBB-14S4-1600-D...  
YBB-14R4-1600-D...

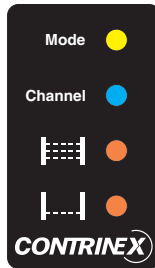


**PART REFERENCE**

Output type	Sender	Receiver
PNP / Connector M12	YBB-14S4-1600-G012	YBB-14R4-1600-G012
PNP / Connector M26	YBB-14S4-1600-G026	YBB-14R4-1600-G026
PNP / Pigtail M12	YBB-14S4-1600-P012	YBB-14R4-1600-P012
PNP / PUR cable 2 m	YBB-14S4-1600-D020	YBB-14R4-1600-D020
PNP / PUR cable 5 m	YBB-14S4-1600-D050	YBB-14R4-1600-D050
PNP / PUR cable 10 m	YBB-14S4-1600-D100	YBB-14R4-1600-D100

### LED INDICATORS

LED indicators on the YBB **sender** unit



- Test : yellow when test mode is active
- Channel : blue when channel 1 is selected  
purple when channel 2 is selected
- Alignment : steady orange when the screen is not fully aligned  
flashing orange when the first third of the screen is aligned  
off when screen is fully aligned
- Alignment : steady orange when the lowest beam is not aligned  
flashing orange when the lowest beam is aligned  
off when screen is fully aligned

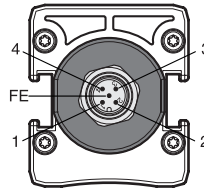
LED indicators on the YBB **receiver** unit



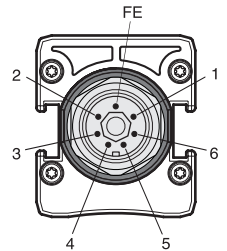
- Power : green when power is ON
- Channel : blue when channel 1 is selected  
purple when channel 2 is selected
- Status : green when OSSD outputs are ON
- Status : red when OSSD outputs are OFF

### PIN ASSIGNMENT

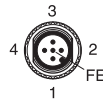
**M12 connector**



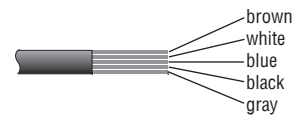
**M26 connector**



**Pigtail M12**



**cable**



ASSIGNMENT	FUNCTION	PINS/WIRES ON SENDER			PINS/WIRES ON RECEIVER		
		M12 / PIGTAIL	M26	OPEN CABLE	M12 / PIGTAIL	M26	OPEN CABLE
Power supply	24 VDC for channel 1 0 V for channel 2	1	1	brown	1	1	brown
Power supply	0 V for channel 1 24 VDC for channel 2	3	2	blue	3	2	blue
Test mode	0 V: test active 24 V: test inactive	4	3	black	-	-	-
Output	OSSD1	-	-	-	2	3	white
Output	OSSD2	-	-	-	4	4	black
Functional earth	Shield	FE	FE	gray	FE	FE	gray