

# SAFETY LIGHT CURTAIN

## YBB-14 □4-□□□□-G012



RESOLUTION 14 MM

TYPE 4 / PL e

### OUTSTANDING FEATURES

- Protective height: 142 mm ... 1690 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
Housing size	42 mm x 48 mm x Ht
Total height (Ht)	see type-specific data (page 2)
Housing height (Hb)	see type-specific data (page 2)
Protective height (Hs)	see type-specific data (page 2)
Number of beams	see type-specific data (page 2)
Response time	see type-specific data (page 2)
Supply voltage	24 VDC ± 20 %
Current consumption	see type-specific data (page 2)
Dissipated power	see type-specific data (page 2)
Polarity	2 PNP outputs
Output protection	short-circuit, overload protected
Output monitoring	cross-circuit monitored
Output 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), PLe (see also type-specific data on page 2)
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. (IEC 61496-2)
Ambient temperature range	-35 ... +60 °C (-31 ... +140 °F)
Storage temperature range	-40 ... +70 °C (-40 ... +158 °F)
Air humidity	15 ... 95 % (non-condensing)
Enclosure rating	IP65 + IP67 (EN 60529/A1)
Housing material	aluminum profile, PMMA front screen
Material of upper and lower cover	PA + 30% fiberglass
Cable runs	100 m max. (at 10 nF capacitive load)
Weight	see type-specific data (page 2)
Reference standards: safety	IEC 61496-1, IEC 61496-2, EN 60204-1, EN 50178
environment	EN 60068-2-1,2,3,6,29
EMC	EN 61000-4-2,3,4,5,6,11
radio disturbance	EN 55011/A2

**TYPE-SPECIFIC DATA**

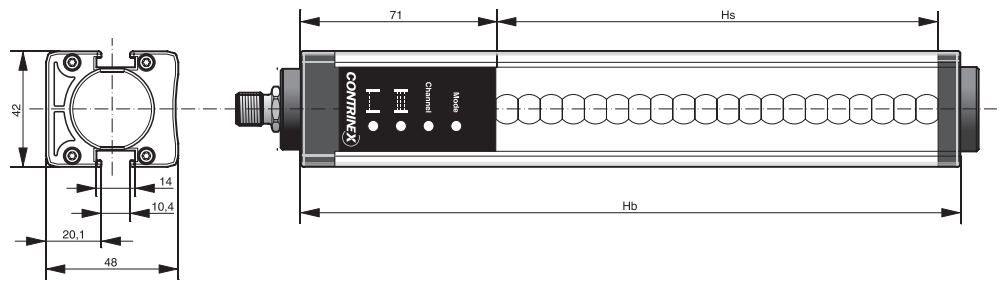
BEAM RESOLUTION: 14 MM

Part reference	Protective Height Hs [mm]	Housing Height Hb [mm]	Total Height Ht [mm]	Number of Beams	Current Consumption [mA max.]*	Response Time [ms]	MTTF <sub>d</sub> [years]	DC <sub>avg</sub>	Dissipated power [W max.]*	Weight [g]
YBB-14x4-0150-G012	142	221	251	17	50 (S)/90 (R)	5.2	142	96%	1.4 (S)/2.6 (R)	470
YBB-14x4-0250-G012	271	350	380	33	50 (S)/95 (R)	8.4	114	96%	1.4 (S)/2.7 (R)	740
YBB-14x4-0400-G012	400	479	509	49	50 (S)/100 (R)	11.6	96	95%	1.4 (S)/2.9 (R)	1000
YBB-14x4-0500-G012	529	608	638	65	50 (S)/110 (R)	14.8	83	95%	1.4 (S)/3.2 (R)	1270
YBB-14x4-0700-G012	658	737	767	81	50 (S)/115 (R)	18	73	95%	1.4 (S)/3.3 (R)	1540
YBB-14x4-0800-G012	787	866	896	97	50 (S)/120 (R)	21.2	65	94%	1.4 (S)/3.5 (R)	1800
YBB-14x4-0900-G012	916	995	1025	113	50 (S)/125 (R)	24.4	59	94%	1.4 (S)/3.6 (R)	2070
YBB-14x4-1000-G012	1045	1124	1154	129	50 (S)/130 (R)	27.6	53	94%	1.4 (S)/3.7 (R)	2340
YBB-14x4-1200-G012	1174	1253	1283	145	50 (S)/140 (R)	30.8	49	94%	1.4 (S)/4.0 (R)	2600
YBB-14x4-1300-G012	1303	1382	1412	161	50 (S)/145 (R)	34	45	94%	1.4 (S)/4.2 (R)	2870
YBB-14x4-1400-G012	1432	1511	1541	177	50 (S)/150 (R)	37.2	42	94%	1.4 (S)/4.3 (R)	3140
YBB-14x4-1600-G012	1561	1640	1670	193	50 (S)/155 (R)	40.4	39	94%	1.4 (S)/4.5 (R)	3400
YBB-14x4-1700-G012	1690	1769	1799	209	50 (S)/160 (R)	43.6	37	94%	1.4 (S)/4.6 (R)	3670

x = S for sender / R for receiver / K for kit (sender + receiver)

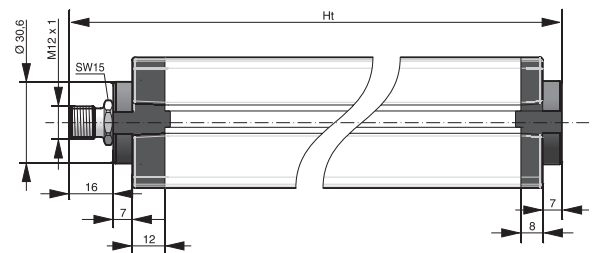
\* Excl. load

**HOUSING SIZE**



**Connector M12**

YBB-14S4-####-G012  
YBB-14R4-####-G012  
YBB-14K4-####-G012

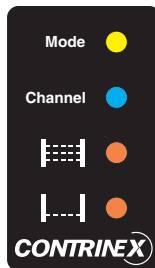


**PART REFERENCE**

Output type	Sender	Receiver	Kit (Sender + Receiver)
PNP / Connector M12	YBB-14S4-0150-G012	YBB-14R4-0150-G012	YBB-14K4-0150-G012
PNP / Connector M12	YBB-14S4-0250-G012	YBB-14R4-0250-G012	YBB-14K4-0250-G012
PNP / Connector M12	YBB-14S4-0400-G012	YBB-14R4-0400-G012	YBB-14K4-0400-G012
PNP / Connector M12	YBB-14S4-0500-G012	YBB-14R4-0500-G012	YBB-14K4-0500-G012
PNP / Connector M12	YBB-14S4-0700-G012	YBB-14R4-0700-G012	YBB-14K4-0700-G012
PNP / Connector M12	YBB-14S4-0800-G012	YBB-14R4-0800-G012	YBB-14K4-0800-G012
PNP / Connector M12	YBB-14S4-0900-G012	YBB-14R4-0900-G012	YBB-14K4-0900-G012
PNP / Connector M12	YBB-14S4-1000-G012	YBB-14R4-1000-G012	YBB-14K4-1000-G012
PNP / Connector M12	YBB-14S4-1200-G012	YBB-14R4-1200-G012	YBB-14K4-1200-G012
PNP / Connector M12	YBB-14S4-1300-G012	YBB-14R4-1300-G012	YBB-14K4-1300-G012
PNP / Connector M12	YBB-14S4-1400-G012	YBB-14R4-1400-G012	YBB-14K4-1400-G012
PNP / Connector M12	YBB-14S4-1600-G012	YBB-14R4-1600-G012	YBB-14K4-1600-G012
PNP / Connector M12	YBB-14S4-1700-G012	YBB-14R4-1700-G012	YBB-14K4-1700-G012

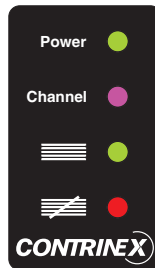
### LED INDICATORS

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  
**blinking 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  
**blinking orange** when the lowest beam is aligned  
**OFF** when screen is fully aligned

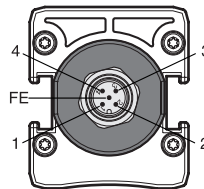
LED indicators on the YBB **receiver** unit



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

### PIN ASSIGNMENT

#### M12 connector



ASSIGNMENT	FUNCTION	PINS/WIRES ON SENDER		PINS/WIRES ON RECEIVER	
		M12	OPEN CABLE	M12	OPEN CABLE
Power supply	24 VDC for channel 1 0 V for channel 2	1	brown	1	brown
Power supply	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

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