

Safety Light Grid

Orion2 Base

Approvals:



Application:

- For body detection
- Perimeter protection
- When a long operating distance is necessary, with deviating mirrors for example

Features:

- Body detection, 2 to 4 beams
- Transmitter + receiver units
- 50 m operating distance
- Compact dimensions
- Local reset and EDM
- Type 4



The Orion2 Base light grids are used for body detection, usually for access protection. Their long operating distance makes them appropriate to be used with deviating mirrors.

Easy to use

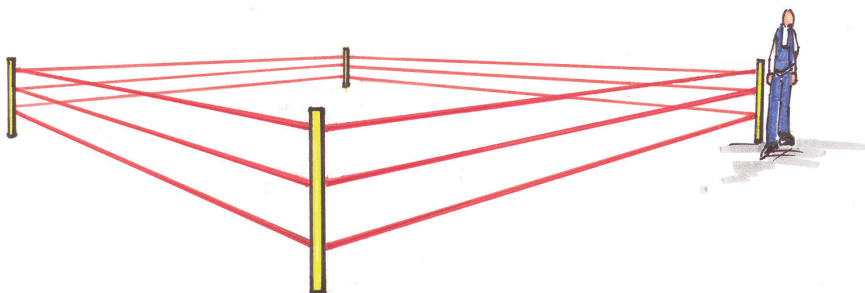
- No more functions or settings than necessary.
- A local reset button can be connected directly to the light grid: no need for cable between the reset button and the electrical cabinet or for an extra control module.
- Each light grid can monitor the actuators without any extra control module (EDM function).

Faster installation

- Alignment help and a wide angle within the limits of a Type 4 device facilitate alignment.
- Rotation brackets simplify alignment too.
- M12 connectors speed up cabling.

Less downtime

- Protective tubes and lens shields protect the devices in harsh environments.



Perimeter / access protection

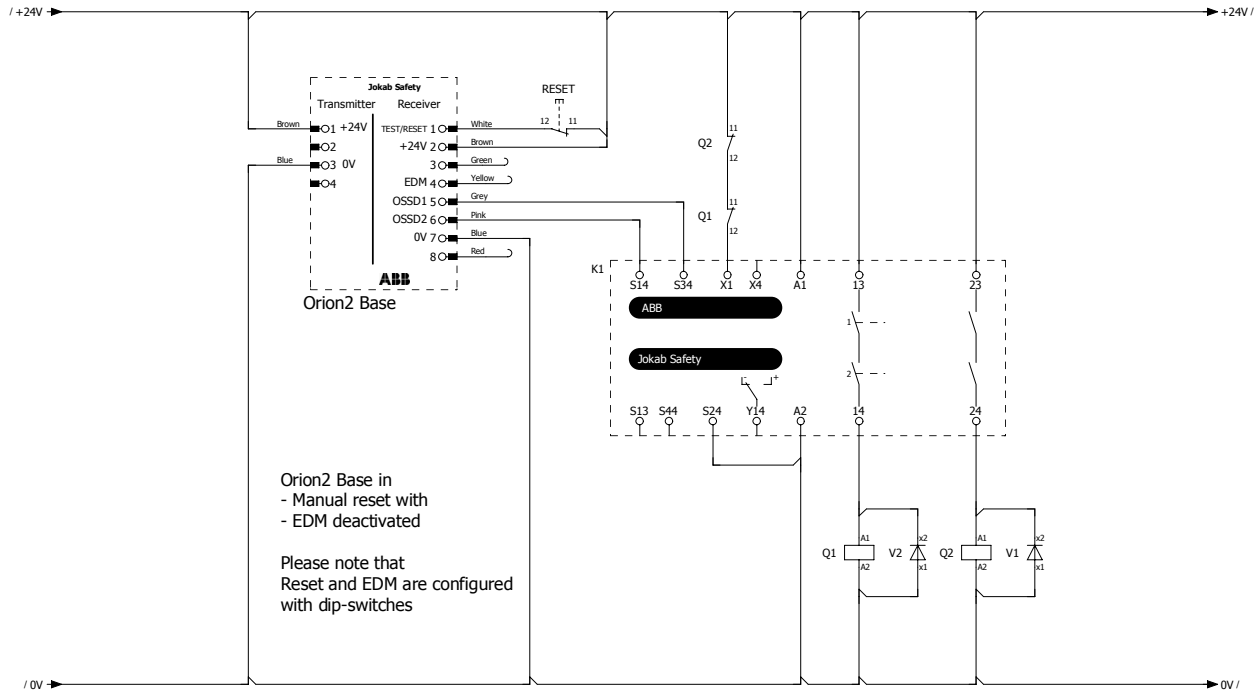
Technical data

Functional Safety Data	
EN ISO 13849-1:2008	PL e, Cat 4
EN 61508-1..4:2010	SIL3; PFH _d = 2.62 ×10 ⁻⁹ ; HFT = 1; Mission time = 20 years
EN 62061:2005/A1:2013	SIL CL 3
Power supply	+24 VDC ± 20 % (SELV/PELV)
Internal capacitance	23 nF (Transmitter) / 120 nF (Receiver)
Power consumption	
Transmitter	30 mA max / 0.9 W
Receiver	75 mA max (without load) / 2.2 W
Outputs	
Short-circuit protection:	Max. 1.4 A at 55°C, min. 1.1 A at -10°C
Output current:	0.5 A max. / output
Leakage current:	< 1 mA
Capacitive load (pure):	65 nF max at 25°C
Resistive load (pure):	56 Ω min. at +24 VDC
Connectors	
	M12 - 4 pole male on transmitter (compatible with female M12-5 pole)
	M12 - 8 pole male on receiver
Cable length (for power supply)	50 m max. with 50 nF capacitive load and +24 VDC
Light emission (λ)	Infrared (880 nm)
Resolution	315 - 515 mm
Operating distance	0.5...50 m
Ambient light rejection	According to IEC-61496-2:2013
Operating temperature	-10...+ 55 °C
Storage temperature	- 25...+ 70 °C
Humidity range	15...95 % (no condensation)
Protection class	IP65 (EN 60529:2000)
Weight	1.2 kg max. / meter for each single unit
Housing material	Painted aluminium (yellow RAL 1003)
Lens material	PMMA
Cap material	PC Lexan 943A
Connection Transmitter*	
Brown (1)	+ 24 VDC
White (2)	<i>Not used</i>
Blue (3)	0 V
Black (4)	<i>Not used</i>
Grey (5)	<i>Not used</i>
Connection Receiver*	
White (1)	Test/Reset – Automatic reset at delivery - Manual reset is selected with dip-switches.
Brown (2)	+ 24 VDC
Green (3)	<i>Not used</i>
Yellow (4)	EDM – EDM is deactivated at delivery and can be activated with dip-switches.
Grey (5)	OSSD1
Pink (6)	OSSD2
Blue (7)	0 V
Red (8)	<i>Not used</i>

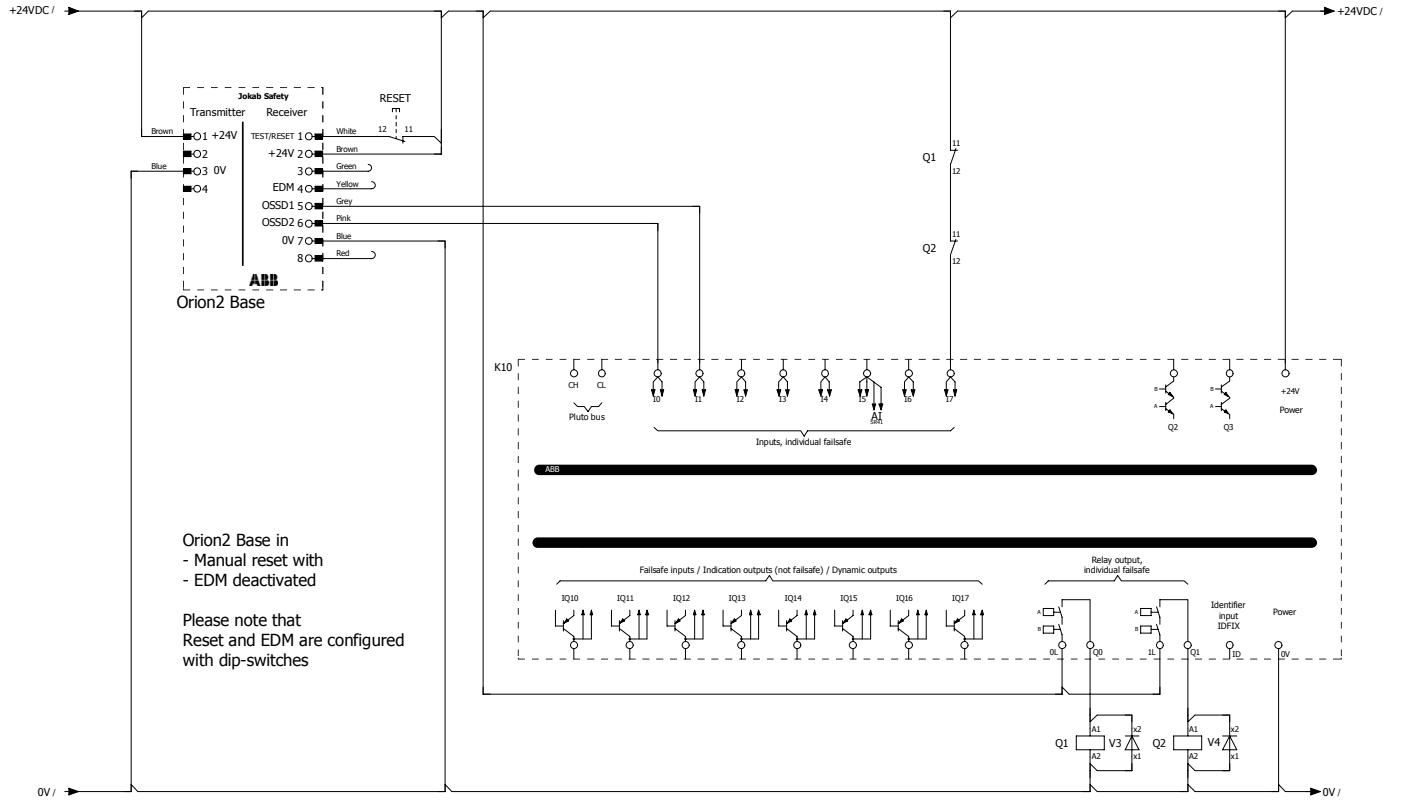
* Colors according to ABB Jokab Safety standard cables

Connection examples

Connection to a RT9 safety relay



Connection to a Pluto B20 Safety PLC



Models and ordering information

Orion2-4-K2-050-B	2TLA022304R0000	Orion2 Base Transmitter + Receiver - 2 beams - H = 500 mm
Orion2-4-K3-080-B	2TLA022304R0100	Orion2 Base Transmitter + Receiver - 3 beams - H = 800 mm
Orion2-4-K4-090-B	2TLA022304R0200	Orion2 Base Transmitter + Receiver - 4 beams - H = 900 mm
Orion2-4-K4-120-B	2TLA022304R0300	Orion2 Base Transmitter + Receiver - 4 beams - H = 1200 mm

Cables

M12-C61	2TLA020056R0000	Straight M12-5 female connector with 6 m shielded cable
M12-C101	2TLA020056R1000	Straight M12-5 female connector with 10 m shielded cable
M12-C201	2TLA020056R1400	Straight M12-5 female connector with 20 m shielded cable
M12-C63	2TLA020056R3000	Straight M12-8 female connector with 6 m shielded cable
M12-C103	2TLA020056R4000	Straight M12-8 female connector with 10 m shielded cable
M12-C203	2TLA020056R4100	Straight M12-8 female connector with 20 m shielded cable

Spare parts (delivered with the products originally)

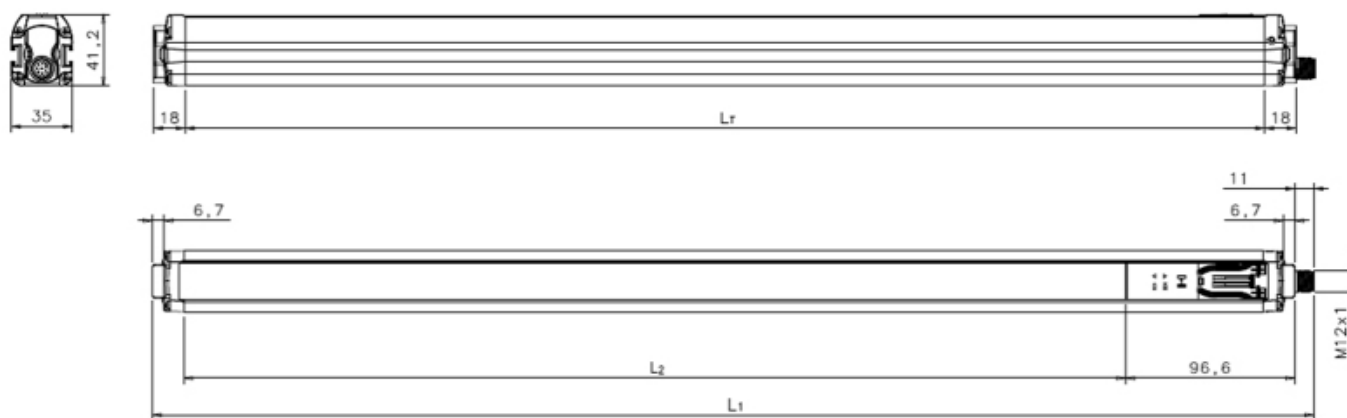
JSM Orion01	2TLA022310R0000	4 standard brackets for Orion1 & Orion2
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Accessories

Orion Laser	2TLA022310R5000	Orion Laser pointer
JSM Orion01	2TLA022310R0000	4 standard brackets for Orion1 & Orion2
JSM Orion04	2TLA022310R0200	4 rotation brackets for Orion2
JSM Orion06	2TLA022310R0400	Kit for mounting of Orion1 & Orion2 in Stand (4 pieces)
JSM Orion07	2TLA022310R0500	Kit for mounting of Orion1 & Orion2 in Stand (6 pieces)
Orion Stand Plate	2TLA022312R5000	Orion Plate kit for adjustment of protective stand
Orion Stand*		Protective stand
Orion Mirror*		Deviating mirrors in stand
Orion WET*		Protective tubes
Orion Shield*		Lens shield

* These accessories are available in different sizes. More information on www.abb.com/jokabsafety.

Dimensions



All dimensions in millimeters.

Model	Lr (mm)	L1 (mm)	L2 (mm)
Orion2-4-K2-050-B	617	664	538.40
Orion2-4-K3-080-B	917	964	838.40
Orion2-4-K4-090-B	1017	1064	938.40
Orion2-4-K4-120-B	1317	1364	1238.40