



CX1 series

Area sensors with high resolution and compact housing with digital output



Area sensor
high resolution

features

- Crossed beam (parallel beams for height with more of 33 beams)
- Optical synchronization
- Pitch 5mm and 10mm
- Control height up 480mm (pitch 5mm) and up 960mm (pitch 10mm)
- Maximum operating distance up to 3m (for 5mm pitch) and 6m (for 10mm pitch)
- NPN and PNP digital outputs
- For a correct use it is necessary to manually adjustment the emitter (accessory ST140)



web contents



- Application notes
- Photos
- Catalogue / Manuals



code description

	CX1	E	0	R	B	/	05	-	016	V	
series	CX1	Area Sensor cubic section									
emitter	E	Emitter									
emitter type	0	Emitter with I/O standard configuration									
receiver	R	Receiver									
receiver type	B	Receiver with two digital outputs (NPN / PNP)									
pitch	05	Pitch 5 mm									
	10	Pitch 10 mm									
height	016	Controlled height 160 mm									
	032	Controlled height 320 mm									
	048	Controlled height 480 mm									
	064	Controlled height 640 mm									
	080	Controlled height 800 mm									
	096	Controlled height 960 mm									
output	V	Output cable length 220 mm with M12 pigtail									


available models

Area sensor
high resolution

OUTPUT			INPUT			beams number	pitch (mm)	plug (P/I) ⁽³⁾	working range (m)	detection height (mm)	KIT (E + R)
state	logic	output	blanking	test	adjustment						
NO/NC	NPN + PNP	2	-	●	External Trimmer ⁽¹⁾	33	5	I	0.3...3	160	CX1E0RB/05-016V
						65				320	CX1E0RB/05-032V
						97				480	CX1E0RB/05-048V
						17	10	I	0.3...6	160	CX1E0RB/10-016V
						33				320	CX1E0RB/10-032V
						49				480	CX1E0RB/10-048V
						65				640	CX1E0RB/10-064V
						81				800	CX1E0RB/10-080V
						97				960	CX1E0RB/10-096V
						97				P	
33	320	CX1E0RB/10-032V									
49	480	CX1E0RB/10-048V									

⁽¹⁾ External trimmer ST 140 sold separately ⁽²⁾ Sales code; single code (emitter or receiver) not available ⁽³⁾ Plot: P = parallel beams, I = crossed beams

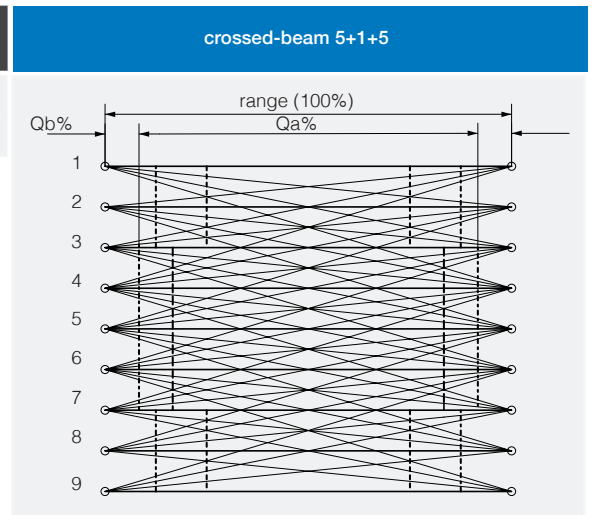
technical specifications

CX1E*R*/**-***	
	
nominal sensing distance	0.3 ... 6 m (beam pitch 10 mm) 0.3... 3 m (beam pitch 5 mm)
emission	850 nm (beam pitch 5mm) 880 nm (beam pitch ≥10mm)
operating voltage	16.8...30 Vdc
ripple	< 1.2 Vpp
power consumption (receiver)	1...1.5 W
power consumption (emitter)	1...1.5 W
output	1 x PNP, 1 x NPN
output current	< 100 mA
output voltage drop	< 1.5 V @ 100 mA
minimum load resistance	280 Ω
leakage current	≤ 10 μA
tolerated capacitive load	< 0.7 μF
power on delay	200 ms
Teach-In	< 15 s
response time	< 17 ms
operating temperature	-10°C...55°C
storage temperature	-25°C...60°C
artificial light rejection	IEC EN 60947-5-2
ambient light rejection	IEC EN 60947-5-2
IP mechanical protection	IP67
humidity	95% max (no condensation)
vibrations	IEC EN 60947-5-2
shocks	IEC EN 60947-5-2
cable length	< 20 m
connectors / cables	1 x M12, 4 poles, male (CX1E), 1 x M12, 5 poles, male (CX1R)
housing material	painted aluminium RAL5002
optic materials	PMMA

CX1

MDO (Minimum Detectable Object)

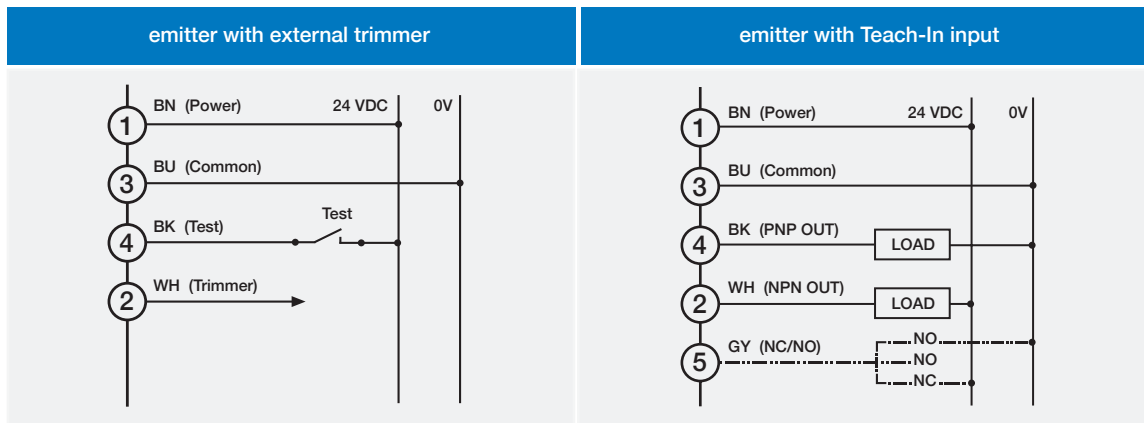
beams	step (mm)	resolution ⁽¹⁾ (mm)	qa 17 beams	qa 32 beams
crossed ⁽²⁾	5	2,5	-	80%
	10	5	80%	80%



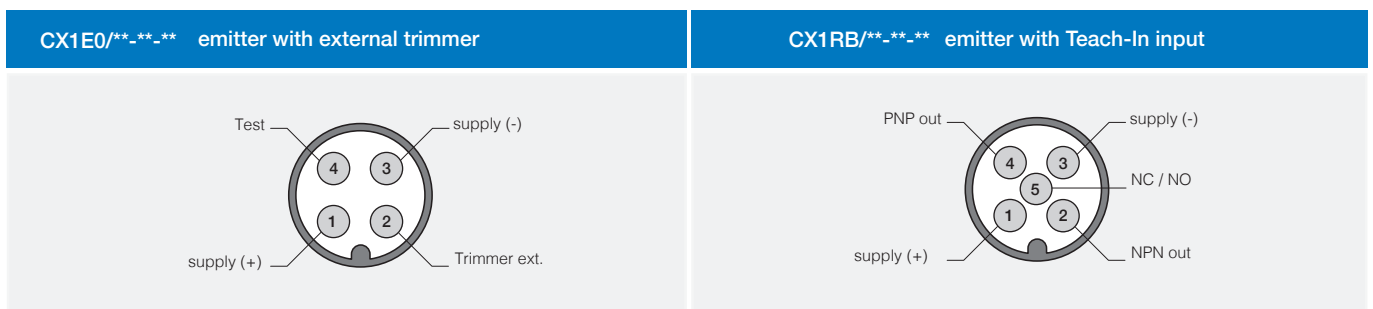
Area sensor
high resolution

⁽¹⁾ = Resolution detected with ST140
⁽²⁾ = The optics cross beam allows detection of objects with a very small diameter or very thin (such as a sheet of paper or an envelope). For those targets with small diameter, the detecting resolution is less effective exactly in the centre between Emitter and Receiver (see Resolution) as well as at the ends of detection area (near to the sensors); the mentioned detection is obtained in the central area Qa with a width equal to a certain % of the distance between the 2 sensors.

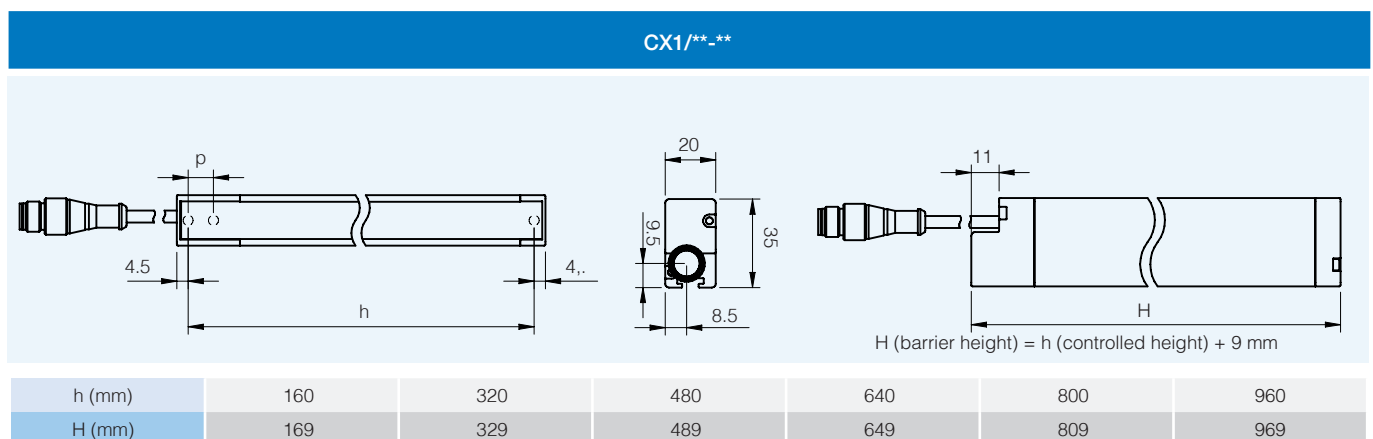
electric diagrams of the connections



plugs



dimensions (mm)



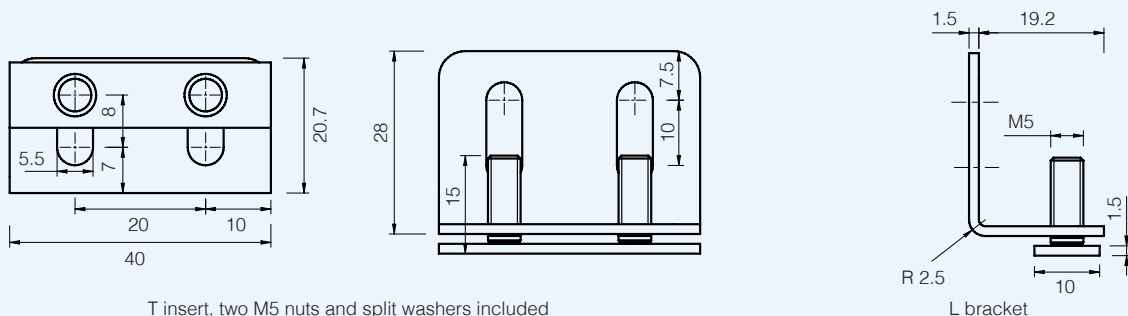
CX1

dimensions (mm)

included with all models

Area sensor
high resolution

accessories fixing kit ST151



T insert, two M5 nuts and split washers included

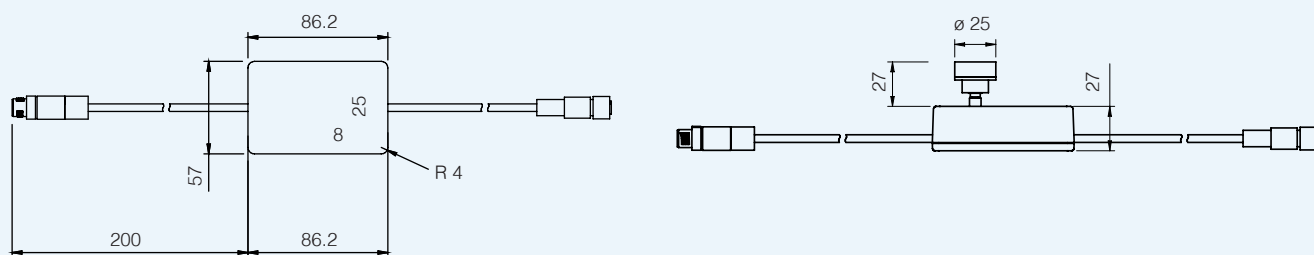
L bracket

code	description
ST4V S	4 pcs. kit antivibration basement for barriers with 150 mm protected height
ST8V S	8 pcs. kit antivibration basement for barriers with protected height from 1,500 mm to 1,050 mm

accessories

not included

accessory for external adjustment ST 140



code	description
CD12M/0B-050A1	power connector M12, 4 wires, female, axial, cable 5 m PVC
CD12M/0B-100A1	power connector M12, 4 wires, female, axial, cable 10 m PVC
CD12M/0B-150A1	power connector M12, 4 wires, female, axial, cable 15 m PVC
CD12M/0B-050A5	power connector M12, 4 wires, female, axial, cable 5 m PUR
CD12M/0B-100A5	power connector M12, 4 wires, female, axial, cable 10 m PUR
CD12M/0B-150A5	power connector M12, 4 wires, female, axial, cable 15 m PUR
CD12M/0H-050A5	power connector M12, 5 wires, female, axial, cable 5 m PUR
CD12M/0H-100A5	power connector M12, 5 wires, female, axial, cable 10 m PUR
CD12M/0H-150A5	power connector M12, 5 wires, female, axial, cable 15 m PUR

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