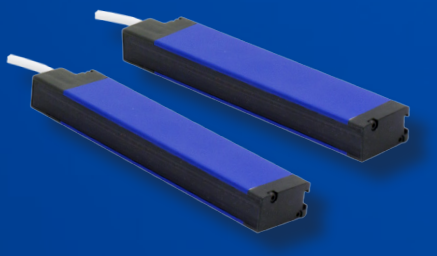
CX0 series

Area sensors with high resolution and compact housing

features

- **Total crossbeam through all the optics**
- **Crossed area 160 and 320mm**
- **Pitch 5mm and 10mm**
- **Operating distance up to 3m (for 5mm pitch) and 6m (for 10mm pitch)**
- **2 digital NPN and PNP outputs (teach-in model available only with PNP logic) NO/NC configurable**
- **Available with Teach in adjustment or with external trimmer**
- **High switching frequency to detection**
- **Intrinsic synchronism by cable (Teach-in models)**



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code description

CX0 E 1 R P / 05 - 016 V

series	CX0	Area Sensor cubic section
emitter	E	Emitter
emitter type	0	Emitter with I/O standard configuration
	1	Emitter with special I/O configuration: input Teach-in instead of test
receiver	R	Receiver
receiver type	P	Receiver with PNP output
	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
output	V	Output cable length 220 mm with M12 pigtail
special function		Standard version
	1	Emitter and receiver with CX0 common wire and Teach-in emitter

available models

OUTPUT			INPUT			beams number	pitch (mm)	plot (P/I) [3]	working range (m)	detection height (h)	KIT (E + R) [2]
state	logic	output	blanking	test	adjustment						
NO/NC	NPN + PNP	2	-	•	External Trimmer [1]	32	5	I	0.3...3	160 mm	CX0E0RB/05-016V
						17	10		0.5...6		CX0E0RB/10-016V
						32			1...6	320 mm	CX0E0RB/10-032V
	PNP	1		-	Teach-In		5		0.3...3	160 mm	CX0E1RP/05-016V
						17	10		0.5...6		CX0E1RP/10-016V
						32			1...6	320 mm	CX0E1RP/10-032V

[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

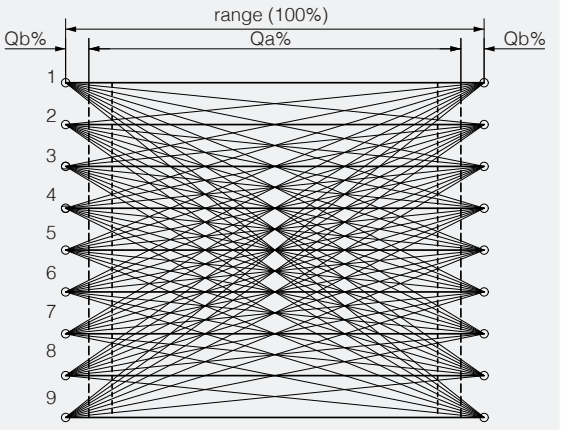
technical specifications

	CX0E*R*/**-***
	
nominal sensing distance	0.3 ... 3 m (beam pitch 5 mm, detection height 160 mm) 0.5 ... 6 m (beam pitch 10 mm, detection height 160 mm) 1 ... 6 m (beam pitch 10 mm, detection height 320 mm)
emission	850 nm (beam pitch 5 mm) 880 nm (beam pitch ≥10 mm)
operating voltage	16.8...30 Vdc
ripple	< 1.2 Vpp
power consumption (receiver)	1...1.5 W
power consumption (emitter)	1...1.5 W
outputs	1 x PNP, 1 x NPN (CX0RB); 1 x PNP (CX0RP)
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	< 6.6 ms Dark On; < 11 ms Light On
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 (CX0E), 1 x M12, 5 poles, male (CX0R)
housing material	painted alluminium RAL5002
optic materials	PMMA

MDO (Minimum Detectable Object)

beams	step (mm)	resolution [1] (mm)	Qa 17 beams	Qa 32 beams
crossed [2]	5	2,5	-	96%
	10	5	93%	

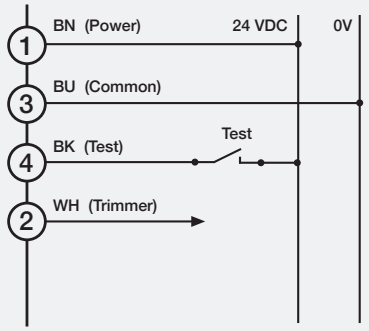
total crossed-beam



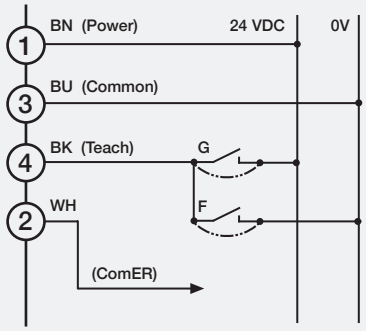
[1] = Resolution detected with ST140 or with Teach Gross
[2] = The optics cross beam allows detection of objects with a very small diameter or very thin (such as a sheet of paper or an envelope). For those targets with small diameter, the detecting resolution is less effective exactly in the centre between 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

emitter with external trimmer

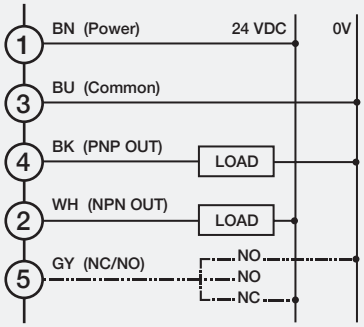


emitter with Teach-In input

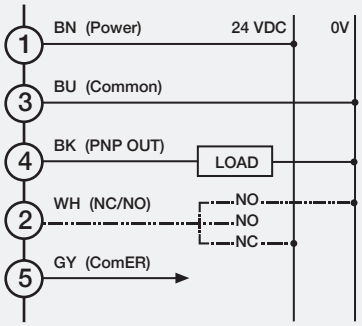


BU	blue
GY	gray
WH	white
BK	black
BN	brown
RD	red
G	gross calibration
F	fine calibration

receiver with PNP and NPN output



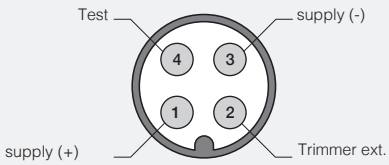
receiver with PNP output and Teach-In function



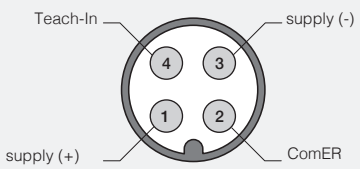
BU	blue
GY	gray
WH	white
BK	black
BN	brown
RD	red

plugs

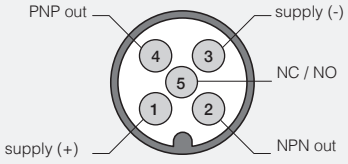
CX0E0/**-**-** emitter with external trimmer



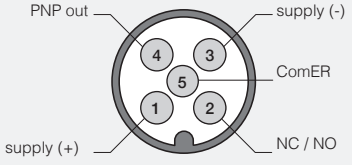
CX0E1/**-**-** emitter with Teach-In input



CX0RB/**-**-** receiver with PNP and NPN output



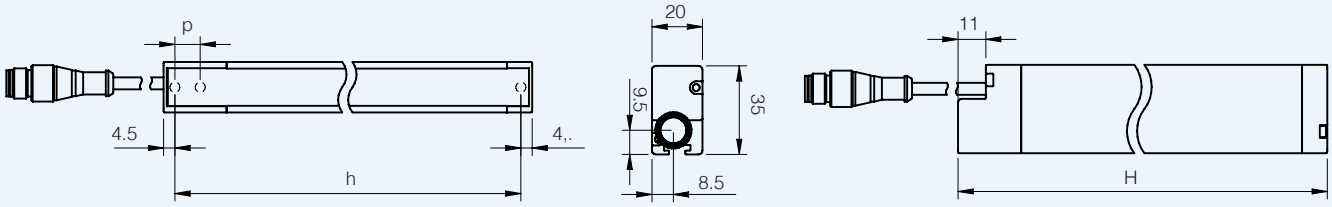
CX0RP/**-**-** receiver with PNP output and Teach-In function



dimensions (mm)

CX0/-****

H (barrier height) = h (controlled height) + 9 mm

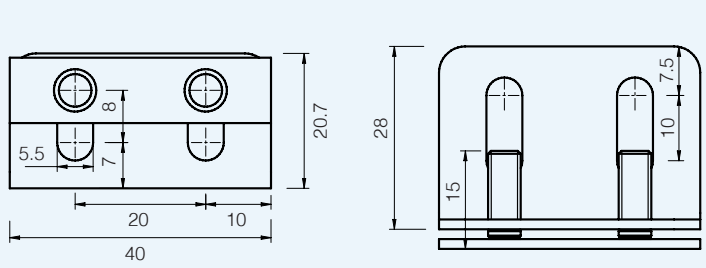


h (mm)	160	320	480	640	800	960
H (mm)	169	329	489	649	809	969

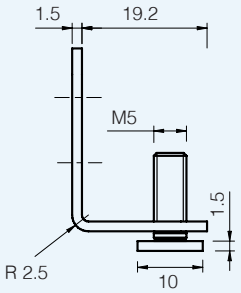
dimensions (mm)

accessories included with all models

accessories fixing kit ST151



T insert, two M5 nuts and split washers included



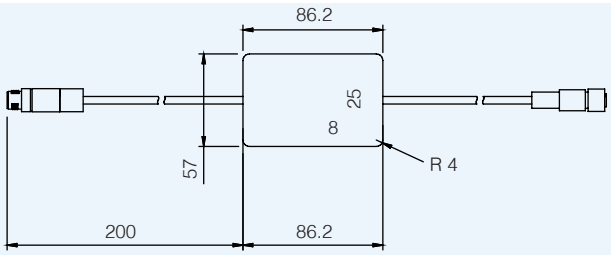
L bracket

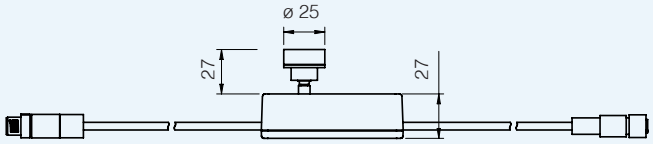
code	description
ST4V S	4 pcs. kit antivibration basement for barriers with 150 mm protected height
ST8V S	8 pcs. kit antivibration basement for barriers with protected height from 1,500 mm to 1,050 mm

accessories

not included

accessory for external adjustment ST 140





*Necessary for the adjustment for CX0E0RB models. Sale separately.

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