

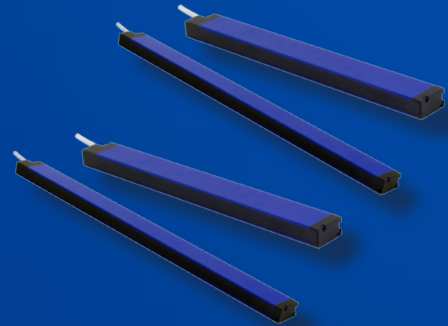


CX2 series

Area sensors with high resolution and compact housing with digital and analogue output



Area sensor
high resolution



features

- Parallel beams and floating crossbeams with variable amplitude
- Synchronization by cable. Pitch 5, 10 and 20mm
- Control height up 480mm (pitch 5mm) and up 960mm (pitch 10mm and 20mm)
- Maximum operating distance up to 3m (for 5mm pitch) and 6m (for 10mm and 20 pitch)
- Digital outputs NPN and PNP ; analogue current output (4...20mA) and analogue voltage output (0..10V), mix outputs : digital PNP and analogue voltage output (0..10V)
- Adjustment by teach-in , 2 levels of adjustment
- Blanking function . Available analogue versions TOP BEAM

web contents



- Application notes
- Photos
- Catalogue / Manuals



code description


	CX2	E	0	R	B	/	05	-	016	V	
series	CX2	Area Sensor cubic section									
emitter	E	Emitter									
emitter type	0	Emitter with I/O standard configuration									
receiver	R	Receiver									
receiver type	A	Receiver with two analogue outputs (voltage 0...10 V and current 4...20 mA)									
	B	Receiver with two digital outputs (NPN and PNP)									
	F	Receiver with one digital output PNP and one analogue output (voltage 0...10 V)									
pitch	05	Pitch 5 mm									
	10	Pitch 10 mm									
	20	Pitch 20 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									
output	096	Controlled height 960 mm									
	V	Output cable length 220 mm with M12 pigtail									
special function	TB	Analogue reading last led TOP BEAM (CX2RA)									

available models

Area sensor
high resolution

OUTPUT			INPUT			beams number	pitch (mm)	plot (P/I) ⁽¹⁾	working range (m)	detection height	KIT (E + R)							
state	logic	output	blanking	test	adjustment													
NO/NC	NPN + PNP					33	5	I/P	0.3...3	160 mm	CX2E0RB/05-016V							
						65		P		320 mm	CX2E0RB/05-032V							
						97				480 mm	CX2E0RB/05-048V							
						17	10						0.3...6	160 mm	CX2E0RB/10-016V			
						33								320 mm	CX2E0RB/10-032V			
						49								480 mm	CX2E0RB/10-048V			
						65								640 mm	CX2E0RB/10-064V			
						81								800 mm	CX2E0RB/10-080V			
						97								960 mm	CX2E0RB/10-096V			
						9	20						0.3...6	160 mm	CX2E0RB/20-016V			
						17								320 mm	CX2E0RB/20-032V			
						25								480 mm	CX2E0RB/20-048V			
						33								640 mm	CX2E0RB/20-064V			
						41								800 mm	CX2E0RB/20-080V			
						49								960 mm	CX2E0RB/20-096V			
	33	analog voltage output + analog current output	2	●	●	Teach-In			0.3...3	160 mm	CX2E0RA/05-016V							
	65									320 mm	CX2E0RA/05-032V							
	97									480 mm	CX2E0RA/05-048V							
	17									10						0.3...6	160 mm	CX2E0RA/10-016V
	33																320 mm	CX2E0RA/10-032V
	49																480 mm	CX2E0RA/10-048V
	65																640 mm	CX2E0RA/10-064V
	81																800 mm	CX2E0RA/10-080V
	97																960 mm	CX2E0RA/10-096V
	9									20						0.3...6	160 mm	CX2E0RA/20-016V
	17																320 mm	CX2E0RA/20-032V
	25																480 mm	CX2E0RA/20-048V
	33																640 mm	CX2E0RA/20-064V
	41																800 mm	CX2E0RA/20-080V
	49																960 mm	CX2E0RA/20-096V
33	PNP + analog voltage output							0.3...3	160 mm	CX2E0RF/05-016V								
65									320 mm	CX2E0RF/05-032V								
97									480 mm	CX2E0RF/05-048V								
17									10						0.3...6	160 mm	CX2E0RF/10-016V	
33																320 mm	CX2E0RF/10-032V	
49																480 mm	CX2E0RF/10-048V	
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41																800 mm	CX2E0RF/20-080V	
49																960 mm	CX2E0RF/20-096V	

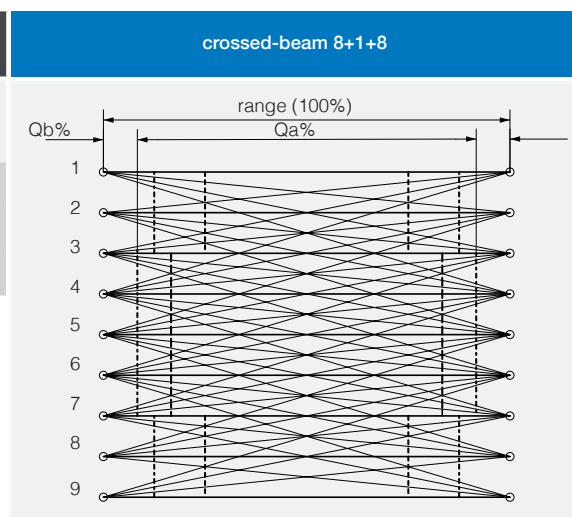
⁽¹⁾Plot: P = parallel beams, I = crossed beams

CX2E*R*/**_***V	
	
nominal sensing distance	0.1 ... 3 m (beam pitch 5 mm) 0.3 ... 6 m (beam pitch 10 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...2.5 W
power consumption (emitter)	1...3 W
output	1 x PNP, 1 x NPN (CX2E0RB); 1 x analogue voltage output, 1 x analog current output (CX2E0RA); 1 x PNP, 1 X analogue voltage output (CX2E0RF)
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	< 3 sec ⁽¹⁾
Teach-In	(0.5 x N beams) sec
response time	((0.2 x (N beams - 1)) + 1) x 2 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 (CX2E), 1 x M12, 8 poles, male (CX2R)
housing material	painted aluminium RAL5002
optic materials	PMMA

⁽¹⁾ Power on delay with blanking function: (1 x N beams) sec

MDO (Minimum Detectable Object)

beams	step (mm)	resolution ⁽¹⁾ (mm)	qa 17 beams	qa 32 beams
crossed ⁽²⁾	5	2,5	-	93%
	10	5	93%	
parallel	5	5	-	-
	10	10		
	20	20		



⁽¹⁾ = resolution detected 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.

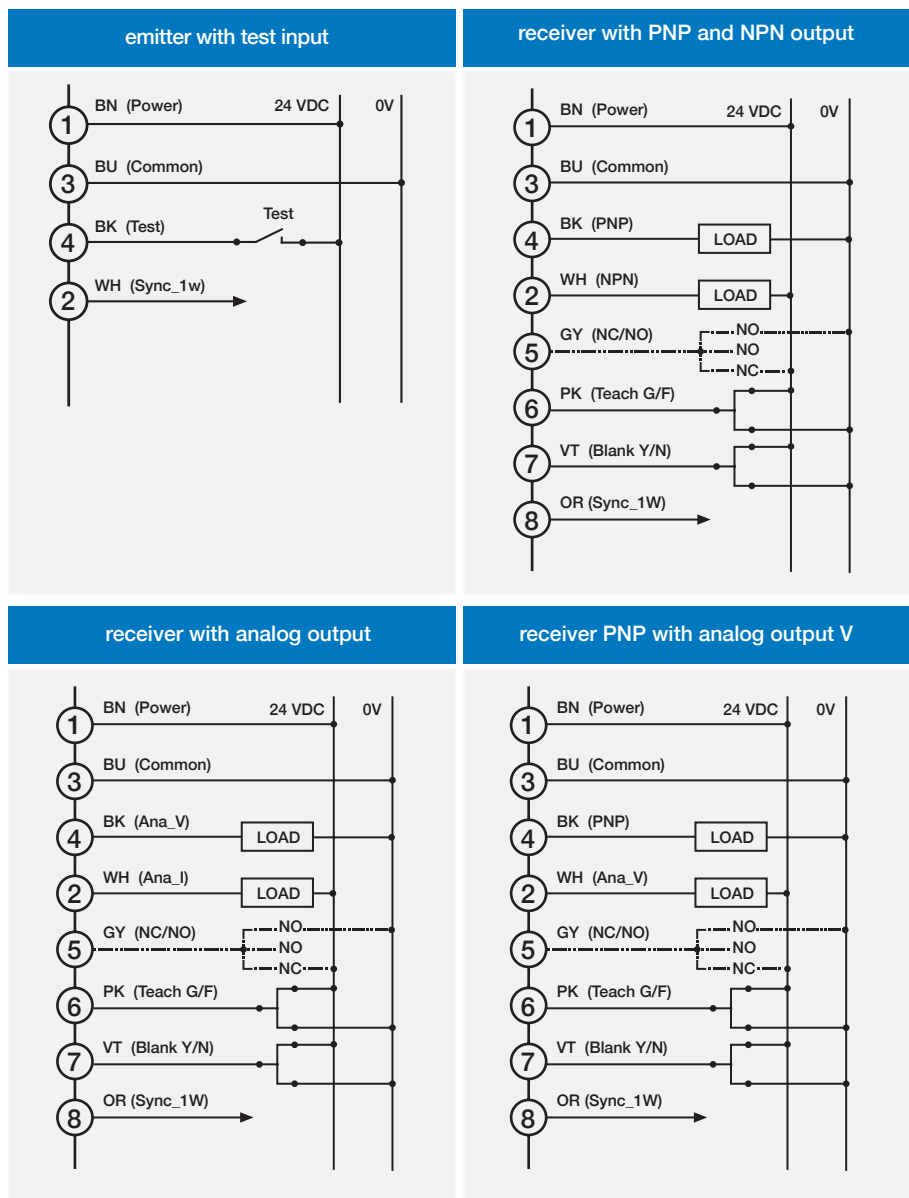
plugs

CX2E0/**-**-** emitter with test input	CX2RB/**-**-** receiver with PNP and NPN output
CX2RA/**-**-** receiver with analog output	CX2RF/**-**-** receiver PNP with analog output V

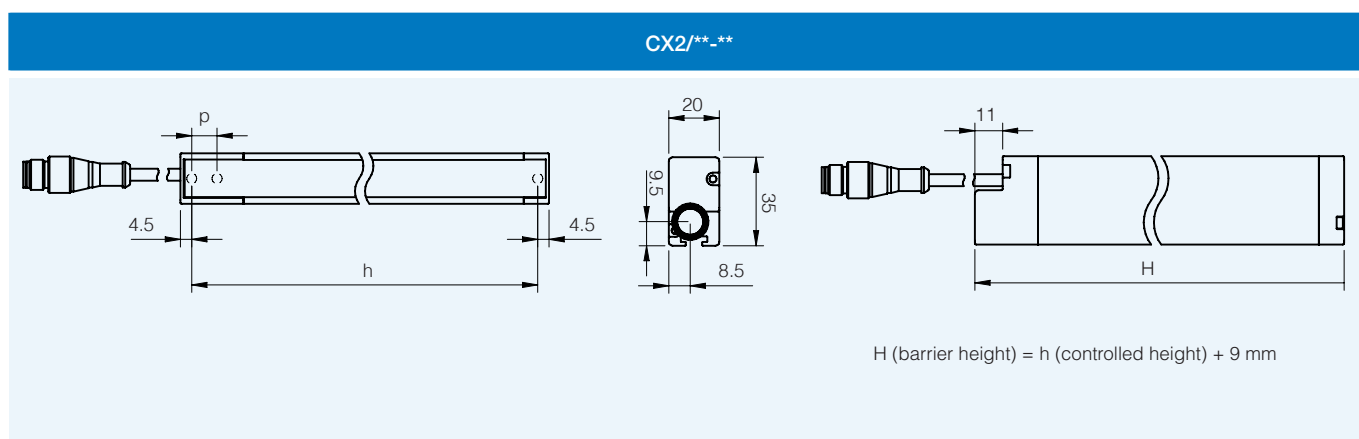


Area sensor
high resolution

electric diagrams of the connections



dimensions (mm)



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

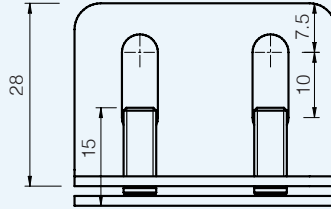
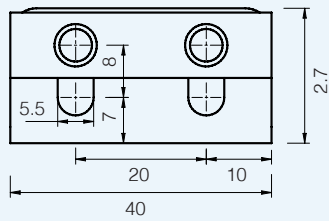
CX2

accessories

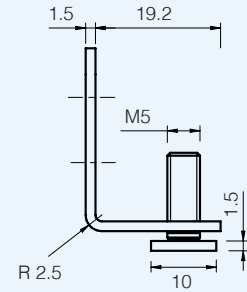
included with all models

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

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/0X-050A5	power connector M12, 8 wires, female, axial, cable 5 m PUR
CD12M/0X-100A5	power connector M12, 8 wires, female, axial, cable 10 m PUR
CD12M/0X-150A5	power connector M12, 8 wires, female, axial, cable 15 m PUR