



# BX04 e BX10 series

Medium resolution area sensors



Medium resolution



## features

- IP67 protection degree (IP69K special model)
- Complete protection against electrical damages
- Detection of objects with irregular shape
- ATEX models, cat. 2 and cat. 3, available on request
- LED indicators
- Crossed beams detection

## web contents



- Application notes
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## code description

**BX04S / 00 - HB**

series	<b>BX</b>	Compact area sensor
optics	<b>04</b>	4 optics, 90 mm area height, 30 mm optic step
	<b>10</b>	10 optics, 90 mm area height, 10 mm optic step
emitter / receiver	<b>S</b>	Emitter with sensitivity adjustment
	<b>R</b>	Receiver
	<b>SR</b>	Kit emitter + receiver
emitter / receiver	<b>0</b>	Emitter
	<b>X</b>	Emitter with check
	<b>A</b>	Receiver NO (Dark ON)
emitter / receiver	<b>C</b>	Receiver NO (Light ON)
	<b>0</b>	Emitter
cable exit	<b>D</b>	Receiver NPN + PNP
	<b>H</b>	M12 plug cable exit
distance	<b>A</b>	Cable exit
	<b>B</b>	Sensing distance 0.3 ... 2 m (standard version)
version		Standard version
	<b>6X</b>	Models with 4 m sensing distance
	<b>6A</b>	Models with 6 m sensing distance
	<b>79</b>	Models with aluminium enclosure and air cooling inlet
	<b>DA</b>	Models with glass optic window
	<b>70</b>	Models with reduced sensing distance 100...350 mm
	<b>SY</b>	Models with impulse synchronisation
	<b>9K</b>	Models with IP69K protection
	<b>AN</b>	ATEX models 3 GD
	<b>AT</b>	ATEX models 2 GD

BX04  
BX10

## available models

Medium resolution

area (mm)	n° of beams	distance (m)	resolution (mm)	model	output	NPN + PNP NO	NPN + PNP NC	
90	4	0.3...2	$\varnothing 35^{(1)}$ $\varnothing 25^{(2)}$ $\varnothing 15^{(3)}$	emitter	M12	BX04S/00-HB		
					cable	BX04S/00-AB		
				emitt. + check	M12	BX04S/X0-HB		
					cable	BX04S/X0-AB		
				receiver	M12	BX04R/AD-HB	-	
					cable	BX04R/AD-AB	-	
	10	0.3...2	$\varnothing 15^{(1)}$ $\varnothing 7.5^{(2)}$ $\varnothing 5^{(3)}$	emitter	M12	BX10S/00-HB		
					cable	BX10S/00-AB		
				emitt. + check	M12	BX10S/X0-HB		
					cable	BX10S/X0-AB		
				receiver	M12	BX10R/AD-HB	BX10R/CD-HB	
					cable	BX10R/AD-AB	BX10R/CD-AB	
		0.3...4	0.3...4	$\varnothing 15^{(1)}$ $\varnothing 7.5^{(2)}$ $\varnothing 5^{(3)}$	emitter	M12	BX10S/00-HB6X	
							receiver	BX10R/AD-HB6X
					emitter	M12	BX10S/00-HB6A	
							receiver	BX10R/AD-HB6A

### KIT

area (mm)	n° of beams	distance (m)	resolution (mm)	model	output	NPN + PNP NO	
90	4	0.3...2	$\varnothing 35^{(1)}$ $\varnothing 25^{(2)}$ $\varnothing 15^{(3)}$	emitter + receiver	M12	BX04SR/0A-HB	
					cable	BX04SR/0A-AB	
					M12	BX04SR/XA-HB	
					cable	BX04SR/XA-AB	
					M12	BX10SR/0A-HB	
					cable	BX10SR/0A-AB	
	10	0.3...2	$\varnothing 15^{(1)}$ $\varnothing 7.5^{(2)}$ $\varnothing 5^{(3)}$		M12	BX10SR/XA-HB	
					cable	BX10SR/XA-AB	
					M12	BX10SR/0A-HB6X	
						BX10SR/0A-HB6A	

<sup>(1)</sup> Guaranteed resolution everywhere in the detection area

<sup>(2)</sup> Guaranteed resolution in the central part of the detection area with exclusion of the dark zones


<sup>(3)</sup> As note (2), but with sensitivity adjustment

<sup>(4)</sup> NC output models available on request

Dark zones are parts of the detection area close to the emitter and receiver, their amplitude X is proportional to the distance D between the emitter and the receiver.

BX04 => X = 0,17D

BX10 => X = 0,06D

	BX04	BX10
		
nominal sensing distance	0.3...2 m (standard model) 0.3...1.5 m (model DA) 0.3...4 m (model 6X) 0.3...6 m (model 6A)	
controlled height	90 mm	
n° of beams	4	10
beams space	30 mm	10 mm
minimum detectable object	Ø 35 mm <sup>(1)</sup> Ø 25 mm <sup>(2)</sup> Ø 15 mm <sup>(3)</sup>	Ø 15 mm <sup>(1)</sup> Ø 7.5 mm <sup>(2)</sup> Ø 5 mm <sup>(3)</sup>
emission	infrared	
hysteresis	≤ 10%	
supply voltage	10 ... 26 V cc/dc	
ripple	≤ 10%	
no-load supply current	50 mA (emitter) 25 mA (receiver)	
load current	≤ 100 mA	
leakage current	≤ 10 µA	
voltage drop	≤ 2 V @ IL = 100 mA	
output type	NPN + PNP NO or NC	
response time (light/dark)	500 µs (800 µs models 6X and 6A)	
response time (dark/light)	5 ms (8 ms models 6X and 6A)	
power on delay	≤ 85 ms	
power supply protections	polarity reversal, transient	
output protections	short circuit (autoreset)	
sensitivity adjustment	trimmer	
operative temperature range	0 ... +50°C (without freeze)	
temperature drift	≤ 10%	
interference to external light	1000 lux (incandescent lamp) 1500 lux (sunlight)	
IP mechanical protection degree	IP67 (IP69K 9K version)	
LED indicators	green (emitter) red, yellow (receiver)	
housing materials	PBT (PC 9K version)	
optic materials	PC	
tightening torque	25 Nm	
weight	230 g connector / 300 g cable	

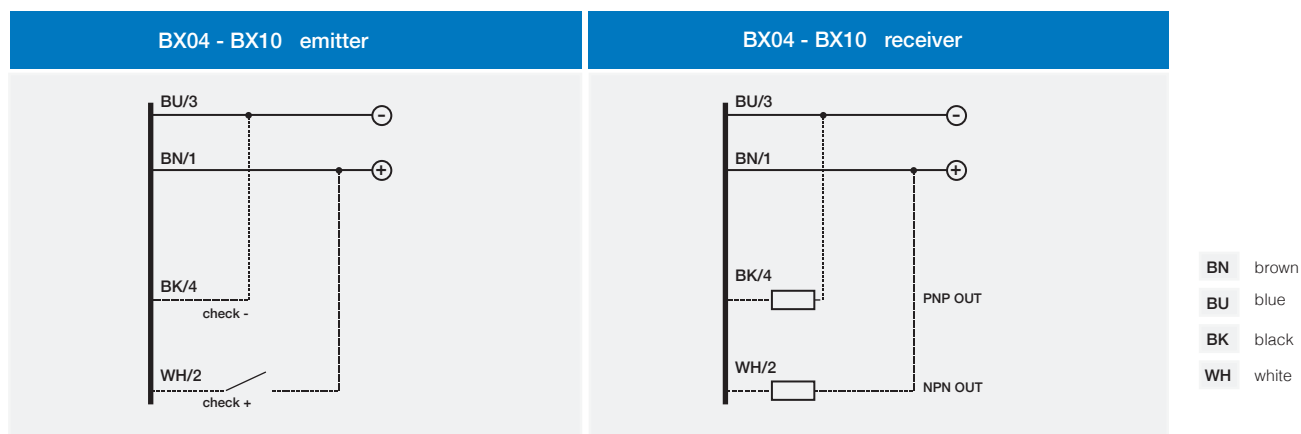
<sup>(1)</sup> Guaranteed resolution everywhere in the detection area  
<sup>(2)</sup> Guaranteed resolution in the central part of the detection area  
<sup>(3)</sup> As note (2), but with sensitivity adjustment  
<sup>(4)</sup> NC output models available on request

Dark zones are parts of the detection area close to the emitter and receiver, their amplitude X is proportional to the distance D between the emitter and the receiver.

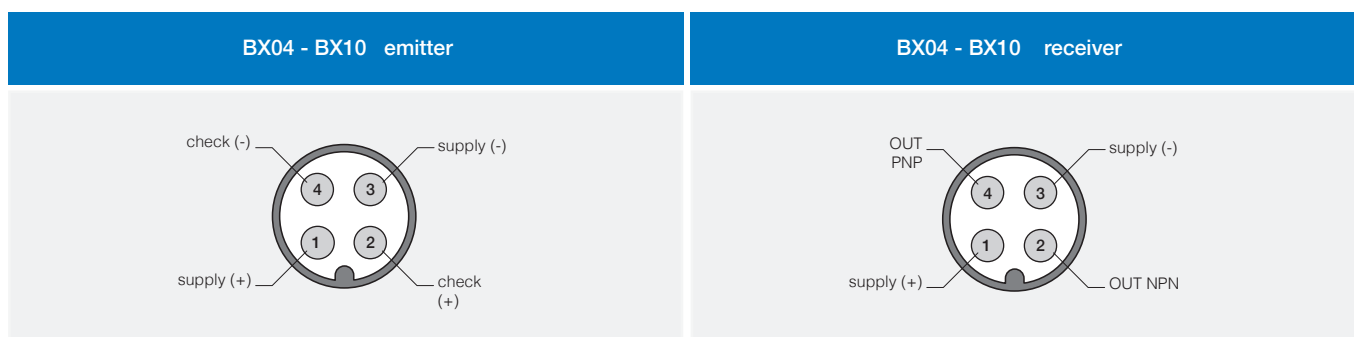
BX04 => X = 0,17D

BX10 => X = 0,06D

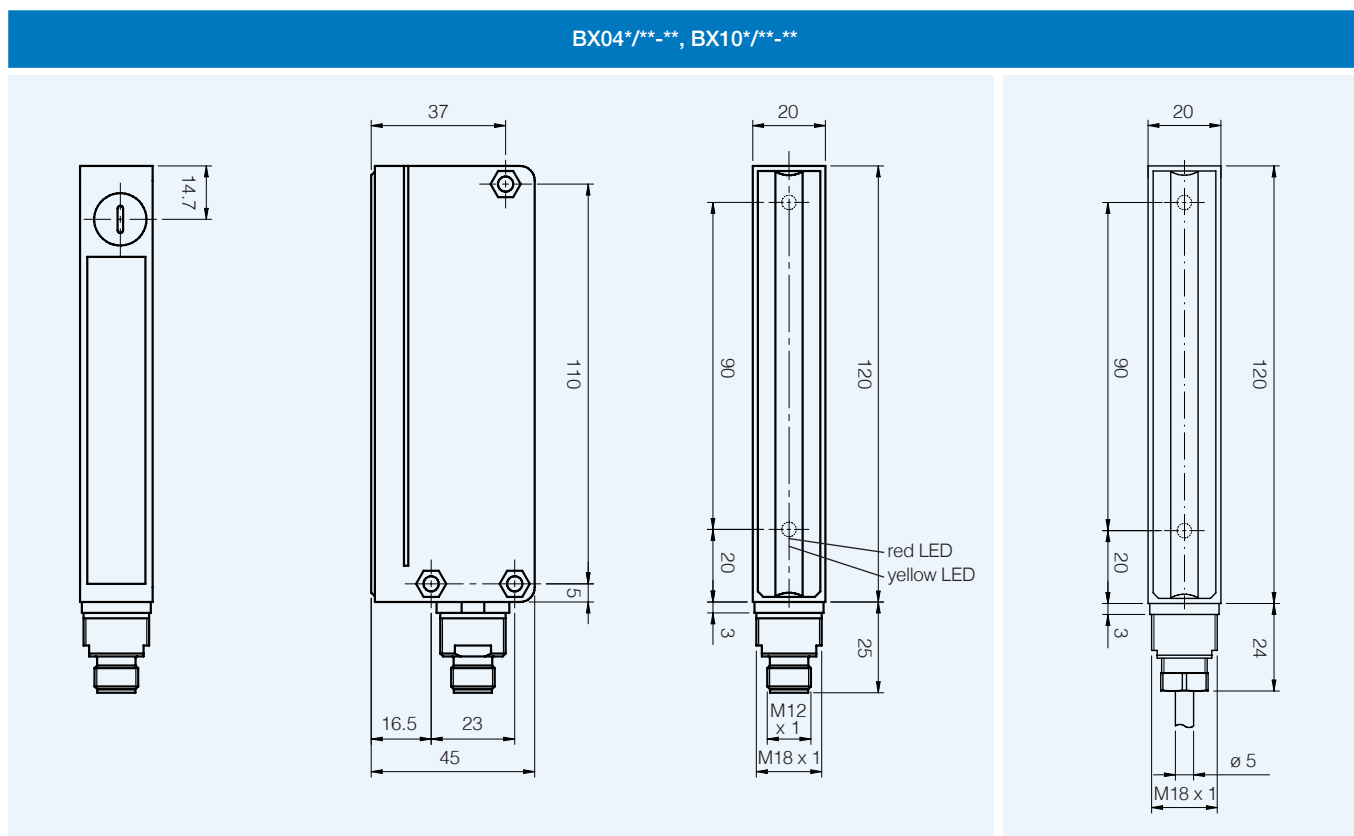
## electrical diagrams of the connections



## plug

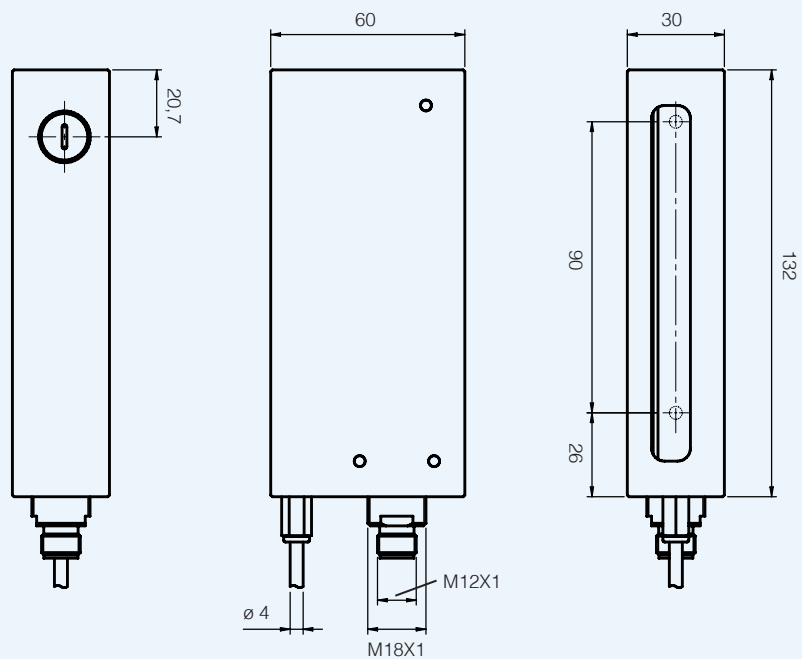


## dimensions (mm)

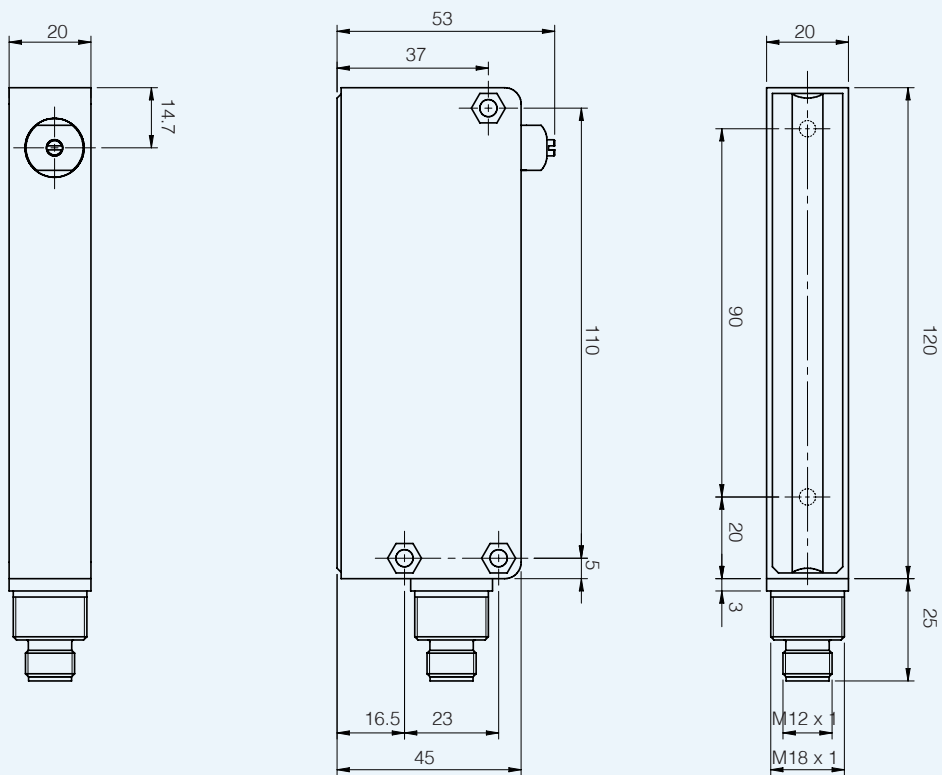




### BX10\*/\*\*-\*\*79



### BX04\*/\*\*-\*\*9K, BX10\*/\*\*-0H9K





BX04\*/\*\*\_\*\*AT, BX10\*/\*\*\_\*\*AT

