2.1

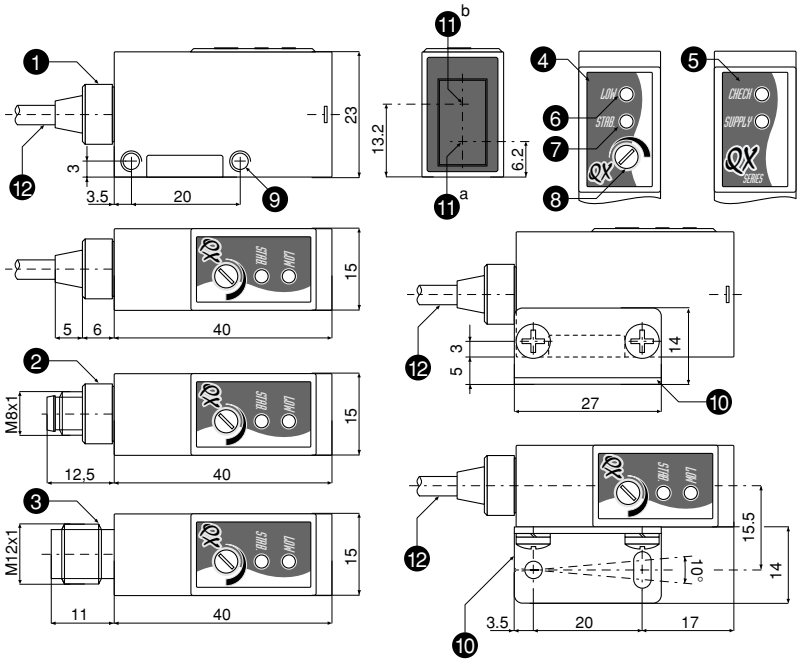
SERIE QX

Miniature photoelectric sensors with higher performances - DC

- Wide range of models: diffuse, diffuse with sensitivity adj., retro-reflective, polarized light and through-beam detection
- Housing with small dimensions (15x23x40mm)
- Axial and right angle optics
- 2 LED indicators (threshold and signal margin)
- Visible red light in retro-reflective, polarized and through-beam models
- Long distances capability
- Precision beam
- Fast response time (0,75-0,5ms)
- NPN-PNP selectable output
- High output current (>300mA)
- 3 different output cable: axial, M8 and new
- IP65 protection degree
- Complete protection againts electrical damage

CE

DIMENSIONAL DRAWING



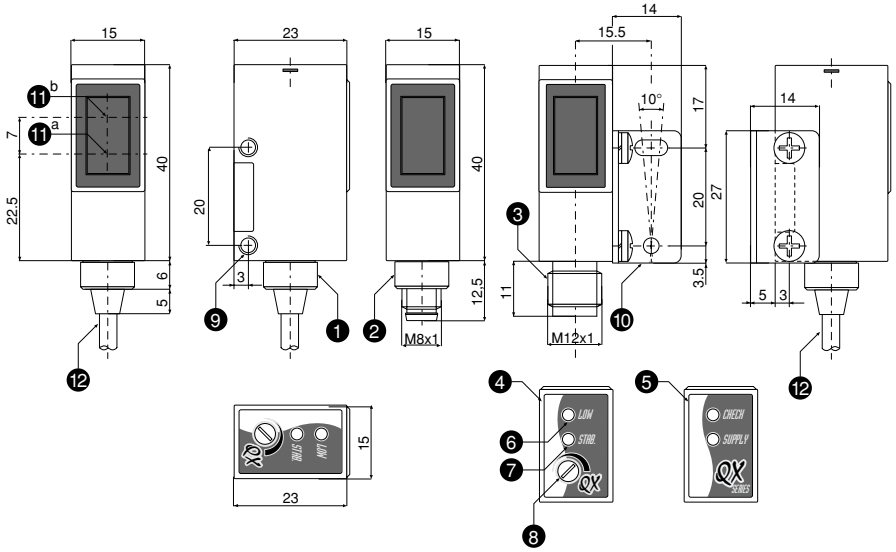
Key

1	Axial cable exit
2	M8 plug cable exit
3	M12 plug cable exit
4	Receiver, retro-reflective, diffuse models functional panel
5	Emitter with check functional panel
6	Red LED (low margin signal QX*) Red LED (check QXX)
7	Green LED (stability QX*) Green LED (supply QXX)
8	Sensitivity adjustment trimmer (1 turn)
9	Holes for M3 screws
10	Bracket ST70 and screws (included)
11	Optical axis position (a: QX3, QXC, QXP - b: QXE, QXR)
12	Cable 4x0,14 mm^2, Ø3,75mm, PVC, 2m

Connectors **CD** serie

Accessories **ST** serie

DIMENSIONAL DRAWING



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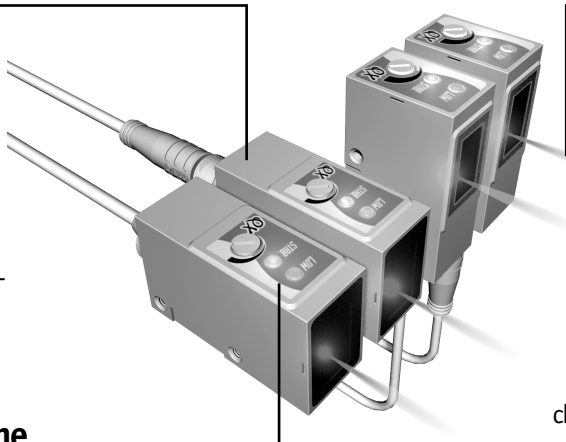
Miniature housing

New QX serie offers very small standard housing for all applications where extremely reduced dimensions are required. Available with axial and right angle optics suitable for any installation need.

High performance

Although small dimensions, QX series allows high performances and thanks to its very popular housing it has become top on the market.



Red light visible and long distance capability

Available in retro-reflective and through-beam models.

The most precise beam

The QX series is able to perform the most precise detection for this kind of sensor; thanks to reduced beam can detect very small objects (Ø2mm) without using accessories. This characteristic allows also the possibility to detect through slits.

The fastest in response time

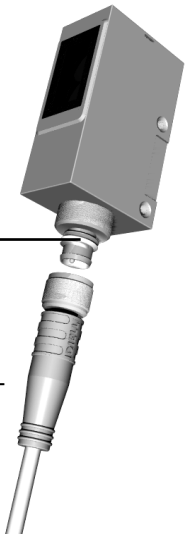
With only 0,5ms response time (diffuse or retro-reflective) and 0,75ms (through-beam), QX series reachs the top of performances in this kind of sensor (2-4 times faster than the other series).

Easy installation

The QX series is quick to install thanks to double alignment LED (indicating threshold and signal margin) and red light in retro-reflective and through-beam models.

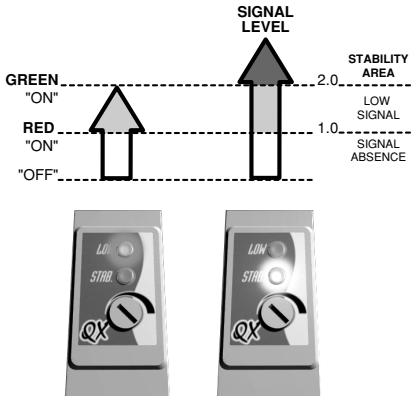
3 different types of output cable: axial, M8 and M12

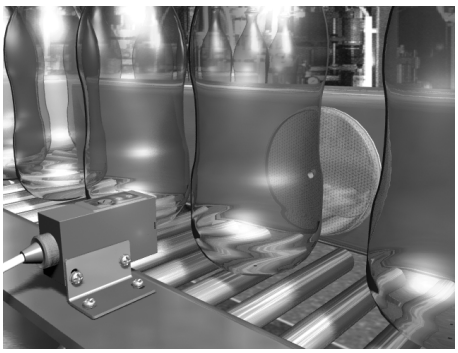
For a safewiring and the easiest maintenance, on all models of the QX serie is also available the miniature M8 threaded plug-in exit an the new M12 plug-in cable exit.



Costs reduced

The output can be selected both in NPN-PNP mode, reducing the number of models and stocking costs.
The output current is very high (300mA) mantaining both overload and short circuit protections.

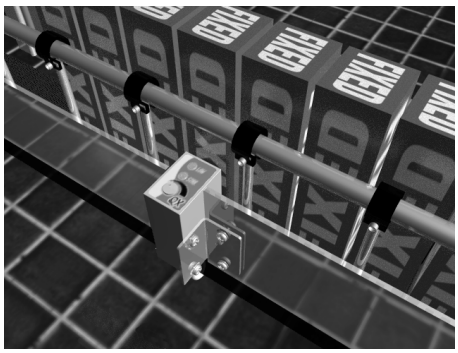




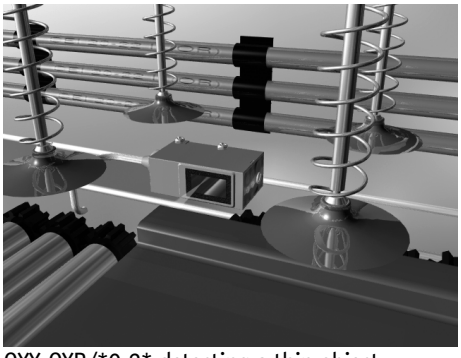
QXP/*0-1* on trasparent bottles.

Applications

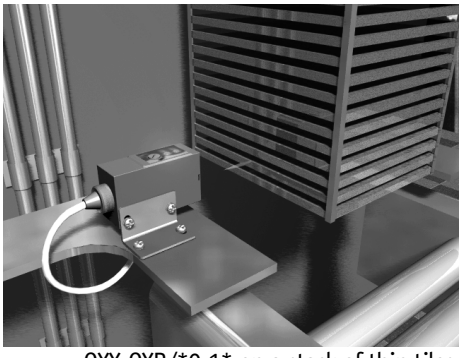
It is possible to support any kind of installation also when it is available only narrow space.



QX3/*0-2* on fast moving close packages.



QXX-QXR/*0-2* detecting a thin object in a narrow space.



QXX-QXR/*0-1* on a stack of thin tiles using side detection.

ORDERING SYSTEM

Q X 3 / 0 0 - 1 A — diffuse - retro-reflective - through-beam

serie	
miniature photoelectric sensor	QX
model	
diffuse reflection 300mm	3
retro-reflective 4m	C
emitter with check	X
receiver 8m	R
polarised retro-reflective 2,5m	P
output state	
emitter	0
NO output state	A
NC output state	C
cable exit	
axial cable exit	A
M8 plug cable exit	F
M12 plug cable exit	E
housing	
axial optics	1
right angle optics	2

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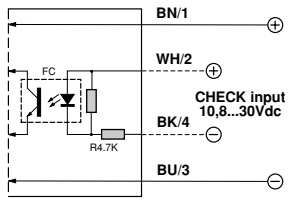
SPECIFICATIONS

Model	QX3/*0-**	QXC/*0-**	QXP/*0-**	QXX/*0-** and QXR/*0-**
Type	diffuse reflection	retro-reflective	polarized retro-reflective	through-beam
Nominal sensing distance(Sn)	300mm (1)	4m (2)	2,5m (2)	8m
Emission	infrared (880nm)	red (660nm)		
Minimum detectable object	see Characteristic curves			2mm
Tolerance	+15/-5% Sn			see Sr (glossary)
Differential travel	10%			
Repeat accuracy	5%			
Operating voltage	10,8 - 30 Vdc			
Ripple	10 % max.			
No-load supply current	20mA			20mA (em.), 5mA (rec.)
Check voltage	-			10,8 - 30Vdc (QXX)
Load current	300 mA			
Leakage current	100µA max. at 30Vdc			
Voltage drop	1,2V max. I_L=100mA			
Output type	NPN/PNP selectable - NO or NC			
Switching frequency	750Hz (Tr=0,5ms)			500Hz (Tr=0,75ms)
Time delay before availability	200 ms			
Supply electrical protections	polarity reversal, transient			
Output electrical protections	short circuit (autoreset)			
Temperature range	-25°....+70°C (without freeze)			
Interference to external light	3000 lux (incandescent lamp), 10000 lux (sunlight)			
Protection degree (DIN 40 050)	IEC IP65			
LED indicators	see Dimensional drawing			
Housing material	ABS (glass fiber reinforced)			
Lenses material	acrylic			
Weight (approx.)	70g (single)			

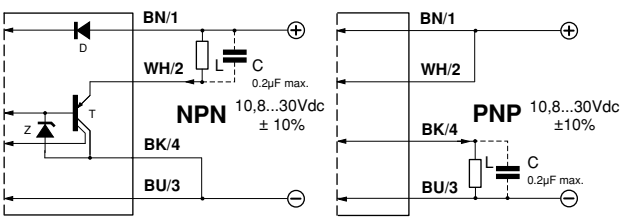
(1) with 100x100mm white matt paper; (2) with standard reflector Ø80mm (RL110 supplied seperately).

WIRING DIAGRAMS

emitter with QXX/00-**



NPN/PNP output QX*/-****



CONNECTORS

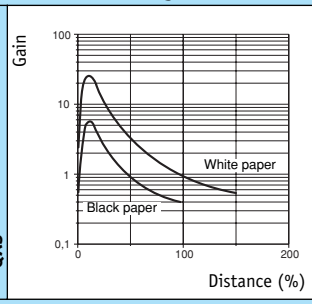
M8

M12

CHARACTERISTIC CURVES

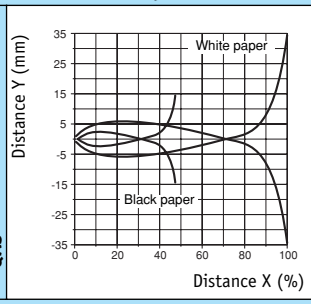
Excess gain

QX3



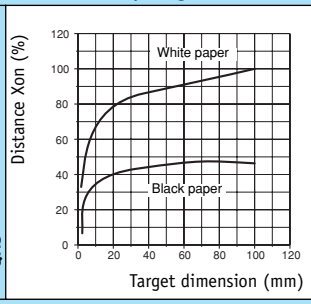
Parallel displacement

QX3



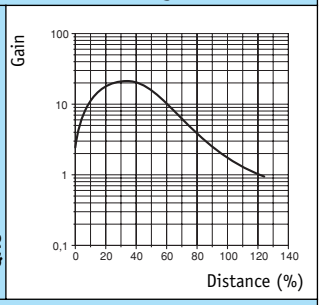
Distance / target size

QX3



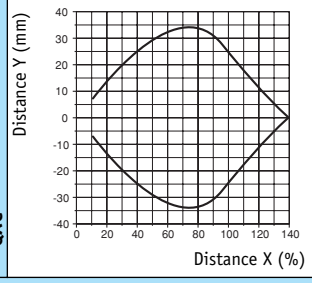
Excess gain

QXC



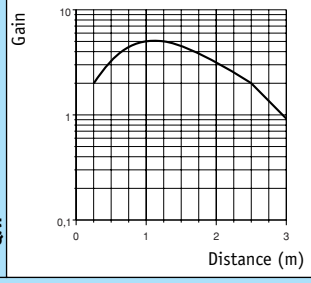
Parallel displacement

QXC



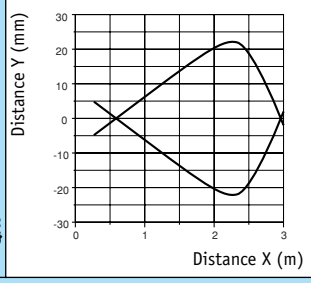
Excess gain

QXP



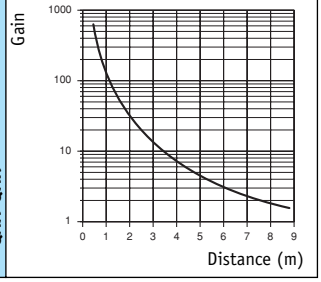
Parallel displacement

QXP



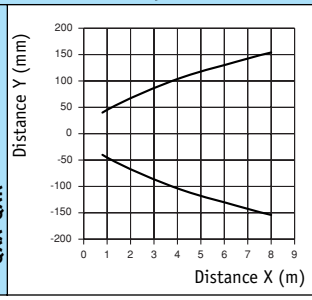
Excess gain

QXX-QXR



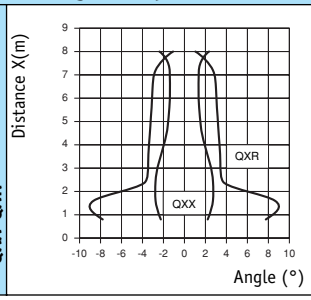
Parallel displacement

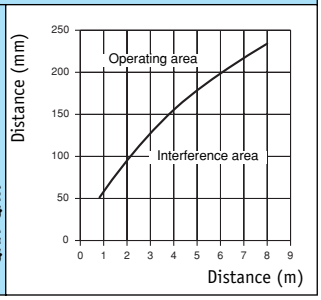
QXX-QXR



Angular displacement

QXX-QXR



Mutual interference

QXX-QXR