

Q50BVPY Photoelectric Sensor – Triangulation Sensor with Switching Output



Technical data

ID 3065288 Optical dataFunctionProximity switchOperating modeTriangulationLight typeRedWavelength 685 nm Range 100300 mm Ambient light immunity 10000 lux Electrical data 0000 lux Operating voltage 1230 VDC No-load current $\leq 70 \text{ mA}$ Output functionNO/NC, PNPSwitching frequency $\leq 112 \text{ Hz}$ Readiness delay $\leq 2 \text{ s}$ Readiness delay $\leq 2000 \text{ ms}$ Response time typical $< 4 \text{ ms}$ Mechanical dataDesignDimensions $49.8 \times 19.7 \times 60 \text{ mm}$ Housing materialPlastic, ABS/PolycarbonateLensplastic, AcrylicElectrical connectionCable, 2 m, PVCNumber of cores 5 Core cross-section 0.5 mm^2 Ambient temperature $-10+55 \text{ °C}$	Туре	Q50BVPY
FunctionProximity switchOperating modeTriangulationLight typeRedWavelength685 nmRange100300 mmAmbient light immunity10000 luxElectrical data 300 NDC Operating voltage1230 VDCNo-load current $\leq 70 \text{ mA}$ Output functionNO/NC, PNPSwitching frequency $\leq 112 \text{ Hz}$ Readiness delay $\leq 2 \text{ s}$ Readiness delay $\leq 2000 \text{ ms}$ Response time typical $< 4 \text{ ms}$ Mechanical dataUDesignRectangular, Q50Dimensions49.8 x 19.7 x 60 mmHousing materialPlastic, ABS/PolycarbonateLensplastic, AcrylicElectrical connectionCable, 2 m, PVCNumber of cores 5 Core cross-section 0.5 mm^2	ID	3065288
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Range100300 mmAmbient light immunity10000 luxElectrical data 0 perating voltageOperating voltage1230 VDCNo-load current \leq 70 mAOutput functionNO/NC, PNPSwitching frequency \leq 112 HzReadiness delay \leq 2 sReadiness delay \leq 2000 msResponse time typical $<$ 4 msMechanical dataDesignRectangular, Q50Dimensions49.8 x 19.7 x 60 mmHousing materialPlastic, ABS/PolycarbonateLensplastic, AcrylicElectrical connectionCable, 2 m, PVCNumber of cores 5 Core cross-section 0.5 mm^2	Light type	Red
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Electrical dataOperating voltage 1230 VDC No-load current $\leq 70 \text{ mA}$ Output functionNO/NC, PNPSwitching frequency $\leq 112 \text{ Hz}$ Readiness delay $\leq 2 \text{ s}$ Readiness delay $\leq 2000 \text{ ms}$ Response time typical $< 4 \text{ ms}$ Mechanical data 2000 ms DesignRectangular, Q50Dimensions $49.8 \times 19.7 \times 60 \text{ mm}$ Housing materialPlastic, ABS/PolycarbonateLensplastic, AcrylicElectrical connectionCable, 2 m, PVCNumber of cores 5 Core cross-section 0.5 mm^2	Range	100300 mm
Operating voltage 1230 VDC No-load current $\leq 70 \text{ mA}$ Output functionNO/NC, PNPSwitching frequency $\leq 112 \text{ Hz}$ Readiness delay $\leq 2 \text{ s}$ Readiness delay $\leq 2000 \text{ ms}$ Response time typical $< 4 \text{ ms}$ Mechanical data $Design$ Dimensions $49.8 \times 19.7 \times 60 \text{ mm}$ Housing materialPlastic, ABS/PolycarbonateLensplastic, AcrylicElectrical connectionCable, 2 m, PVCNumber of cores 5 Core cross-section 0.5 mm^2	Ambient light immunity	10000 lux
No-load current \leq 70 mAOutput functionNO/NC, PNPSwitching frequency \leq 112 HzReadiness delay \leq 2 sReadiness delay \leq 2000 msResponse time typical $<$ 4 msMechanical dataDesignRectangular, Q50Dimensions49.8 x 19.7 x 60 mmHousing materialPlastic, ABS/PolycarbonateLensplastic, AcrylicElectrical connectionCable, 2 m, PVCNumber of cores5Core cross-section 0.5 mm^2	Electrical data	
Notice can be a seried of the seried of t	Operating voltage	1230 VDC
Switching frequency $\leq 112 \text{ Hz}$ Readiness delay $\leq 2 \text{ s}$ Readiness delay $\leq 2000 \text{ ms}$ Response time typical $< 4 \text{ ms}$ Mechanical data \qquad DesignRectangular, Q50Dimensions49.8 x 19.7 x 60 mmHousing materialPlastic, ABS/PolycarbonateLensplastic, AcrylicElectrical connectionCable, 2 m, PVCNumber of cores5Core cross-section 0.5 mm^2	No-load current	≤ 70 mA
Readiness delay $\leq 2 \text{ s}$ Readiness delay $\leq 2000 \text{ ms}$ Response time typical $< 4 \text{ ms}$ Mechanical data \qquad DesignRectangular, Q50Dimensions $49.8 \times 19.7 \times 60 \text{ mm}$ Housing materialPlastic, ABS/PolycarbonateLensplastic, AcrylicElectrical connectionCable, 2 m, PVCNumber of cores5Core cross-section 0.5 mm^2	Output function	NO/NC, PNP
Readiness delay≤ 2000 msResponse time typical< 4 ms	Switching frequency	≤ 112 Hz
Response time typical< 4 msMechanical dataDesignRectangular, Q50Dimensions49.8 x 19.7 x 60 mmHousing materialPlastic, ABS/PolycarbonateLensplastic, AcrylicElectrical connectionCable, 2 m, PVCNumber of cores5Core cross-section0.5 mm²	Readiness delay	≤ 2 s
Mechanical dataDesignRectangular, Q50Dimensions49.8 x 19.7 x 60 mmHousing materialPlastic, ABS/PolycarbonateLensplastic, AcrylicElectrical connectionCable, 2 m, PVCNumber of cores5Core cross-section0.5 mm²	Readiness delay	≤ 2000 ms
DesignRectangular, Q50Dimensions49.8 x 19.7 x 60 mmHousing materialPlastic, ABS/PolycarbonateLensplastic, AcrylicElectrical connectionCable, 2 m, PVCNumber of cores5Core cross-section0.5 mm²	Response time typical	< 4 ms
Dimensions49.8 x 19.7 x 60 mmHousing materialPlastic, ABS/PolycarbonateLensplastic, AcrylicElectrical connectionCable, 2 m, PVCNumber of cores5Core cross-section0.5 mm²	Mechanical data	
Housing materialPlastic, ABS/PolycarbonateLensplastic, AcrylicElectrical connectionCable, 2 m, PVCNumber of cores5Core cross-section0.5 mm²	Design	Rectangular, Q50
Lens plastic, Acrylic Electrical connection Cable, 2 m, PVC Number of cores 5 Core cross-section 0.5 mm²	Dimensions	49.8 x 19.7 x 60 mm
Electrical connectionCable, 2 m, PVCNumber of cores5Core cross-section0.5 mm²	Housing material	Plastic, ABS/Polycarbonate
Number of cores 5 Core cross-section 0.5 mm ²	Lens	plastic, Acrylic
Core cross-section 0.5 mm²	Electrical connection	Cable, 2 m, PVC
	Number of cores	5
Ambient temperature -10+55 °C	Core cross-section	0.5 mm ²
	Ambient temperature	-10+55 °C

Features

Foreground and background suppression

Operating range 100...300 mm

2 m cable, 5-pole

Operating voltage 12...30 VDC

- PNP switching output
- Response time of output 4 ms

Wiring diagram



Functional principle

The function principle of the Q50 is based on optical triangulation. The emitter and the optics create a light source that is directed towards a target. The target reflects the light back to the receiver lens of the sensor, from where it then is directed to the position sensitive device (PSD) as the receiver element. The target's distance from the receiver determines the angle at which the light meets the receiver element. This angle in turn determines where the reflected light falls onto the PSD. The microprocessor analyses and compares the target position to the programmed position values and creates a corresponding output signal.



Technical data

Relative humidity

90 %

IP67

LED, Yellow

Switching state

Protection class

Tests/approvals

