

Installation Instructions

PHOTOSWITCH® Bulletin 42BC Rectangular

IMPORTANT: SAVE THESE INSTRUCTIONS FOR FUTURE USE.

Description

The Bulletin 42BC offers high performance Long Range Background Suppression Diffuse photoelectric sensing. Sensing distances of up to 6.56ft (2m) are possible, making this sensor an ideal solution for many material handling applications.

Each Bulletin 42BC comes complete with a steel right angle mounting bracket which provides a variety of mounting options.

Features

- True Background Suppression Technology
- Removable cover with screw terminal connections
- Dual LED indicators: output (red), stability (green)
- Range adjustment potentiometer

Features (continued)

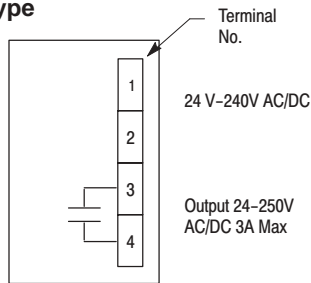
- Short-circuit protection (Solid State sensor output only)
- Switch selectable light or dark operate
- Reverse polarity protection
- False pulse protection
- Transient noise protection

General Specifications

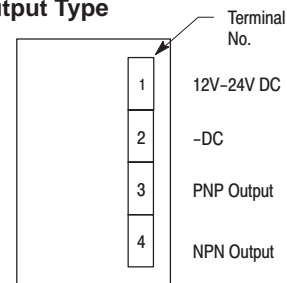
Relative Humidity	85% max
Ambient Temperature	-13°F to +131°F (-25°C to +55°C)
Lens Material	Acrylic
Housing Material	Polycarbonate
Operating Environment	NEMA 1, 12, 13 and IP65
Approvals	DC versions are UL listed and CSA certified, class 2 source required
Weight	170 grams (6 oz)

Wiring

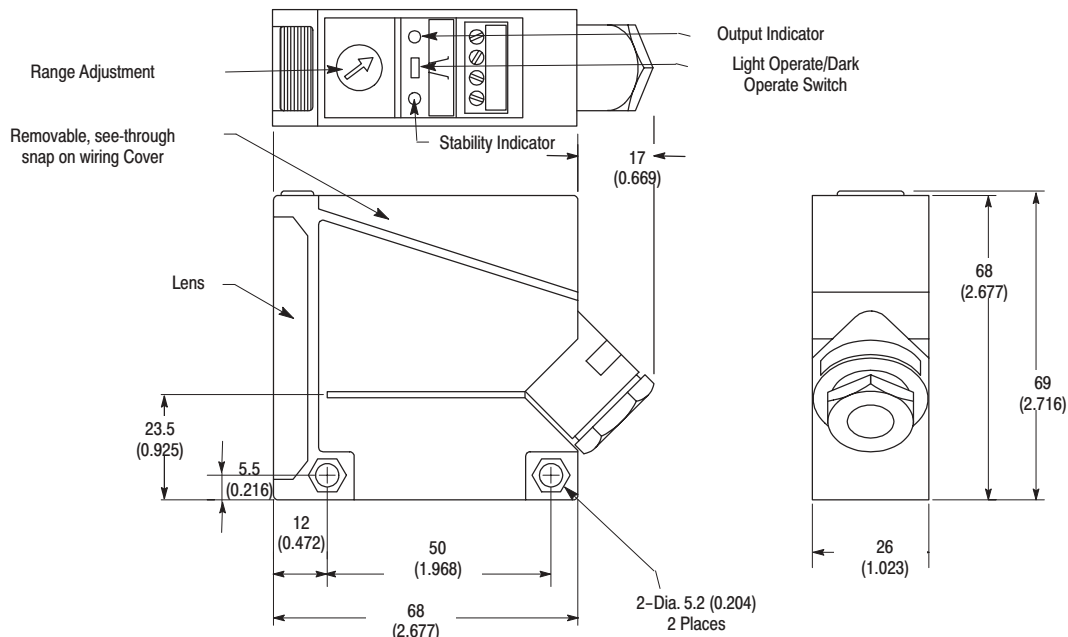
Relay Output Type



Solid State Output Type

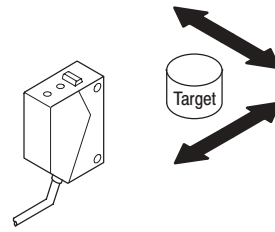


Dimensions—mm (inches)



Detection Direction

Due to the detection method, the sensor must be positioned such that the target passes in one of the following directions. Motion in up/down direction cannot be detected.



	Long Range Background Suppression Diffuse
Field of View	3.5°
Transmitting LED	Infrared 880nm
Connections	4 pressure-type screw terminals

Minimum Distance for Margin 2:1	
Near Setting	
2.5% black	8cm (3.15in)
100% white	3cm (1.18in)
Far Setting	
2.5% black	20cm (7.9in)
100% white	4cm (1.57in)

Targets are rarely as dark as 2.5% reflective. For practical purposes, data for 14% reflective targets is also provided.

Typical Suppression Quality for 1m Max Sensors

White Background 100% Reflective Sensor Off	Black Target 2.5% Reflective Sensor On	Black Target 14% Reflective Sensor On	Catalog Number
"Near" 20.0cm (7.9in)	19.8cm (7.8in)	19.8cm (7.8in)	42BC-B1LBAL-T4 42BC-B1CRAL-T4
40.0cm (15.7in)	38.6cm (15.2in)	39.2cm (15.4in)	
60.0cm (23.6in)	53.9cm (21.2in)	58.2cm (23in)	
80.0cm (31.5in)	64.8cm (25.5in)	75.8cm (29.8in)	
"Far" 100.0cm (39.3in)	72.2cm (28.4in)	91.4cm (36in)	

Typical Suppression Quality for 2m Max Sensors

White Background 100% Reflective Sensor Off	Black Target 2.5% Reflective Sensor On	Black Target 14% Reflective Sensor On	Catalog Number
"Near" 20.0cm (7.9in)	19.7cm (7.8in)	19.7cm (7.8in)	42BC-B1LBAL-T4 42BC-B1CRAL-T4
60.0cm (23.6in)	54.4cm (21.4in)	58.8cm (21.4in)	
100.0cm (39.3in)	73.8cm (29.1in)	91.5cm (36in)	
140.0cm (55.1in)	83.3cm (32.8in)	116.2cm (45.7in)	
180.0cm (70.9in)	88.3cm (34.8in)	133.4cm (52.5in)	
"Far" 200.0cm (78.7in)	89.9cm (35.4in)	139.6cm (55in)	

Long Range Background Suppression Diffuse

Operating Voltage	Supply Current	Output Energized	Output Characteristics			Response Time	Catalog Number
			Type	Max Load Current	Max Leakage Current		Cable
12-24V DC ±10%	30mA	Light/Dark Selectable	NPN/PNP Selectable	100mA	0.5mA	20ms	42BC-B1LBAL-T4
							42BC-B1LBAN-T4
24-240V AC/DC ±10%	30mA (DC) 4W (AC)	Light/Dark Selectable	S.P.S.T. N.O. Relay	3A (250V AC, 750VA) 3A (30V DC, 90W)	—	30ms	42BC-B1CRAL-T4
							42BC-B1CRAN-T4