Autonics

Push-button Type Photomicro Sensors



BS5-P Series CATALOG

For your safety, read and follow the considerations written in the instruction manual, other manuals and Autonics website.

The specifications, dimensions, etc. are subject to change without notice for product improvement. Some models may be discontinued without notice.

Features

- Button operation enables accurate detection regardless of material, color, or reflectance of target object
- "Optimized for transport detection of semiconductor wafer enclosures (FOUP, FOSB, etc.)"
- Optical detection of button operation guarantees 5 million operations of the mechanical life cycle
- Total of 4 red LED indicators (side:2, top:2) for higher visibility of operation status
- Increased product durability with steel mounting brackets
- Emitter OFF function and check stable operation functions
- Built-in reverse polarity protection circuit and output short overcurrent protection circuit

Ordering Information

This is only for reference, the actual product does not support all combinations. For selecting the specified model, follow the Autonics website.

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Operation mode

L: Light ON (Unpressed button, indicator + output ON) D: Dark ON (Pressed button, indicator + output ON)

Control output

No mark: NPN open collector output P: PNP open collector output

O Approvals

No mark: CE Marking approved U: CE and UL Listed Marking approved

Specifications

Model		BS5-P1M	BS5-P1M□-□-U				
Sensing type		Push button type					
Button stop position ⁰¹⁾		5.0 ± 0.4 mm					
Button output switching position ⁰¹⁾		$4.0\pm0.5\text{mm}$					
Button operation limit position ⁰¹⁾		≤ 0 mm					
Op	peration load ⁰¹⁾	≤3N					
Light source		Infrared LED					
	ak emission avelength	940 nm					
Emitter OFF		YES (External input ⁰²⁾)					
Check stable operation		YES (External input ⁰²⁾)					
Operation mode		Light ON (Unpressed button, indicator + output ON) / Dark ON (Pressed button, indicator + output ON) mode model					
Indicator		Operation indicator (red)					
Approval		C E ERL	CE :@mum				
Unit weight (packaged)		≈ 30 g (≈ 50 g)	≈ 30 g (≈ 50 g)				
01)	Stop p Position of the without any applied p Operation limit Position of the when fully	osition button Ostition	ut switching position on where the output switches ON/OFF				
02)	External input	NPN output	PNP output				
		Short at 0 V or ≤ 0.25 VDC=	Short at +V or +V \geq -0.25 VDC=				
	Emitter OFF	(outflow current ≤ 30 mA)	(absortion current ≤ 30 mA)				
	Emitter ON	Open (leakage current \leq 0.4 mA)	Open (leakage current \leq 0.4 mA)				
	Response time	≤1 ms					
De		12 24//DC 1 10// (See 1 DD < 10//)					
Power supply		12-24 VDC== ±10 % (ripple P-P: ≤ 10 %)					
	rrent consumption	≤ 35 mA	Hantan and a star and all				
Control output		NPN open collector output / PNP open collector output model					
	ad voltage	≤ 26.4 VDC==					
	ad current	≤ 50 mA					
	sidual voltage	NPN: ≤ 1.5 VDC=, PNP: ≤ 1.5 VDC=					
Protection circuit		Reverse power protection circuit, output short overcurrent protection circuit					
Insulation resistance		\geq 20 M Ω (250 VDC= megger)					
	bise immunity	\pm 240 VDC= the square wave noise (pulse width: 1 µs) by the noise simulator					
Dielectric strength		1,000 VAC~ at 50/60 Hz for 1 min					
Vibration		1.5 mm double amplitude at 10 to 55 Hz frequency in each X, Y, Z direction for 2 hours					
	ock	500 m/s² (\approx 50 G) in each X, Y, Z direction					
Me	ock echanical life cycle		for 3 times				
Me An (re	ock echanical life cycle nbient illumination eceiver)	$ \begin{aligned} & 500 \text{ m/s}^2 (\approx 50 \text{ G}) \text{ in each X, Y, Z direction} \\ & \geq 5,000,000 \text{ operations} \\ & (1 \text{ operation} = \text{stop position - operation lin} \\ & \text{Fluorescent lamp:} \leq 1,000 \text{ lx} \end{aligned} $	for 3 times mit position - stop position)				
Me An (re An	ock echanical life cycle nbient illumination eceiver) nbient temperature	$\begin{array}{l} 500 \text{ m/s}^2 \ (\approx 50 \text{ G}) \text{ in each X, Y, Z direction} \\ \geq 5,000,000 \text{ operations} \\ (1 \text{ operation = stop position - operation lim} \\ \text{Fluorescent lamp: } \leq 1,000 \text{ lx} \\ \text{ -20 to 55 °C, storage - 25 to 70 °C (no freezer)} \end{array}$	for 3 times mit position - stop position) ng or condensation)				
Me An (re An An	ock echanical life cycle nbient illumination ceiver) nbient temperature nbient humidity	500 m/s^2 (≈ 50 G) in each X, Y, Z direction ≥ 5,000,000 operations (1 operation = stop position - operation lin Fluorescent lamp: ≤ 1,000 k -20 to 55 °C, storage: -25 to 70 °C (no freez 35 to 85 %RH, storage: 35 to 85 %RH (no fn	for 3 times mit position - stop position) ng or condensation)				
Me An (re An An Pre	ock echanical life cycle nbient illumination ceiver) nbient temperature nbient humidity otection rating	500 m/s ² (≈ 50 G) in each X, Y, Z direction ≥ 5,000,000 operations (1 operation = stop position - operation lin Fluorescent lamp: ≤ 1,000 lx -20 to 55 °C, storage: -25 to 70 °C (no freez 35 to 85 %RH, storage: 35 to 85 %RH (no fr IP40 (IEC standard)	for 3 times mit position - stop position) ng or condensation)				
Me An (re An An Pro	ock echanical life cycle nbient illumination ceiver) nbient temperature nbient humidity otection rating nnection method	500 m/s ² (≈ 50 G) in each X, Y, Z direction ≥ 5,000,000 operations (1 operation = stop position - operation lin Fluorescent lamp: ≤ 1,000 k -20 to 55 °C, storage: -25 to 70 °C (no freez 35 to 85 %RH, storage: 35 to 85 %RH (no fr IP40 (IEC standard) Cable type	for 3 times mit position - stop position) ng or condensation)				
Me An (re An Pro Co Ca	ock echanical life cycle nbient illumination ceiver) nbient temperature nbient humidity otection rating nnection method ble spec.	500 m/s ² (≈ 50 G) in each X, Y, Z direction ≥ 5,000,000 operations (1 operation = stop position - operation lin Fluorescent lamp: ≤ 1,000 k -20 to 55 °C, storage: -25 to 70 °C (no freez 35 to 85 %RH, storage: 35 to 85 %RH (no fr IP40 (IEC standard) Cable type Ø 3 mm, 4-wire, 1 m	for 3 times mit position - stop position) ng or condensation) eezing or condensation)				
Me An (re An An Pro Co Ca Wi	ock echanical life cycle nbient illumination ceiver) nbient temperature nbient humidity otection rating nnection method ble spec. re spec.	500 m/s ² (≈ 50 G) in each X, Y, Z direction ≥ 5,000,000 operations (1 operation = stop position - operation lin Fluorescent lamp: ≤ 1,000 k -20 to 55 °C, storage: -25 to 70 °C (no freez 35 to 85 %RH, storage: 35 to 85 %RH (no fr IP40 (IEC standard) Cable type	for 3 times mit position - stop position) ng or condensation) eezing or condensation)				
Me An (re An Pr Co Co Ca Wi BS	ock echanical life cycle nbient illumination ceciver) nbient temperature nbient humidity otection rating nnection method ble spec. re spec. 5-P1M	500 m/s^2 (≈ 50 G) in each X, Y, Z direction ≥ 5,000,000 operations (1 operation = stop position - operation lin Fluorescent lamp: ≤ 1,000 k -20 to 55 °C, storage: -25 to 70 °C (no freez 35 to 85 %RH, storage: 35 to 85 %RH (no fi IP40 (IEC standard) Cable type Ø 3 mm, 4-wire, 1 m Refer to the specifications below dependi AWG26 (0.08 mm, 30-core), insulator oute	for 3 times mit position - stop position) ng or condensation) eezing or condensation) ng on the models. r diameter: Ø 0.93 mm				
Me An (re An Pro Co Ca Wi BS BS	ock chanical life cycle nbient illumination ceiver) nbient temperature nbient humidity otection rating nnection method ble spec. re spec. 5-P1M 5-P1MU	500 m/s^2 (≈ 50 G) in each X, Y, Z direction ≥ 5,000,000 operations (1 operation = stop position - operation lin Fluorescent lamp: ≤ 1,000 k -20 to 55 °C, storage: -25 to 70 °C (no freez 35 to 85 %RH, storage: 35 to 85 %RH (no fr IP40 (IEC standard) Cable type Ø 3 mm, 4-wire, 1 m Refer to the specifications below dependi AWG26 (0.08 mm, 30-core), insulator oute AWG26 (0.08 mm, 28-core), insulator oute	for 3 times mit position - stop position) ng or condensation) eezing or condensation) ng on the models. r diameter: Ø 0.93 mm r diameter: Ø 0.9 mm				
Me An (re An An Pro Co Ca Wi BS BS BS	ock chanical life cycle nbient illumination cceiver) nbient temperature nbient humidity otection rating nnection method ble spec. re spec. S-P1M 5-P1M terial	500 m/s^2 (≈ 50 G) in each X, Y, Z direction ≥ 5,000,000 operations (1 operation = stop position - operation lin Fluorescent lamp: ≤ 1,000 k -20 to 55 °C, storage: -25 to 70 °C (no freez 35 to 85 %RH, storage: 35 to 85 %RH (no fr IP40 (IEC standard) Cable type Ø 3 mm, 4-wire, 1 m Refer to the specifications below dependid AWG26 (0.08 mm, 30-core), insulator oute Refer to the specifications below dependid	for 3 times mit position - stop position) ng or condensation) eezing or condensation) ng on the models. diameter: Ø 0.93 mm r diameter: Ø 0.9 mm ng on the models.				
Me Ann (ree Ann Pro Co Ca Wi BS BS Ma BS	ock chanical life cycle nbient illumination ceiver) nbient temperature nbient humidity otection rating nnection method ble spec. re spec. 5-P1M 5-P1MU	500 m/s^2 (≈ 50 G) in each X, Y, Z direction ≥ 5,000,000 operations (1 operation = stop position - operation lin Fluorescent lamp: ≤ 1,000 k -20 to 55 °C, storage: -25 to 70 °C (no freez 35 to 85 %RH, storage: 35 to 85 %RH (no fr IP40 (IEC standard) Cable type Ø 3 mm, 4-wire, 1 m Refer to the specifications below dependi AWG26 (0.08 mm, 30-core), insulator oute AWG26 (0.08 mm, 28-core), insulator oute	for 3 times mit position - stop position) ng or condensation) eezing or condensation) ng on the models. diameter: Ø 0.93 mm r diameter: Ø 0.9 mm ng on the models.				

Dimensions

• Unit: mm, For the detailed drawings, follow the Autonics website.

