

阅读申明

- 1.本站收集的数据手册和产品资料都来自互联网，版权归原作者所有。如读者和版权方有任何异议请及时告之，我们将妥善解决。
- 2.本站提供的中文数据手册是英文数据手册的中文翻译，其目的是协助用户阅读，该译文无法自动跟随原稿更新，同时也可能存在翻译上的不当。建议读者以英文原稿为参考以便获得更精准的信息。
- 3.本站提供的产品资料，来自厂商的技术支持或者使用者的心得体会等，其内容可能存在描述上的差异，建议读者做出适当判断。
- 4.如需与我们联系，请发邮件到marketing@iczoom.com，主题请标有“数据手册”字样。

Read Statement

1. The datasheets and other product information on the site are all from network reference or other public materials, and the copyright belongs to the original author and original published source. If readers and copyright owners have any objections, please contact us and we will deal with it in a timely manner.
2. The Chinese datasheets provided on the website is a Chinese translation of the English datasheets. Its purpose is for reader's learning exchange only and do not involve commercial purposes. The translation cannot be automatically updated with the original manuscript, and there may also be improper translations. Readers are advised to use the English manuscript as a reference for more accurate information.
3. All product information provided on the website refer to solutions from manufacturers' technical support or users the contents may have differences in description, and readers are advised to take the original article as the standard.
4. If you have any questions, please contact us at marketing@iczoom.com and mark the subject with "Datasheets" .


EE-SB5M/SB5MC/SB5V/SB5VC/SB5V-E

Photomicrosensor with 80-mA
Switching Capacity that can be Built into
Equipment

- Built-in amplifier with NPN output
- Models available with 5- to 12-VDC and 5- to 15-VDC input
- CMOS- and TTL-compatible
- 19-mm sensing distance (EE-SB5V-E)
- Model with easy adjustment with an external sensitivity adjuster (EE-SB5V)
- Connectors available (EE-1001/1006)
- Convert to PNP output with EE-2002 conversion connector



Ordering Information

Appearance	Sensing method	Sensing distance	Output configuration	Weight	Part number
	Diffuse	5 mm	Light-ON	Approx. 3.0 g	EE-SB5M
			Dark-ON		EE-SB5MC
			Light-ON		EE-SB5V
			Dark-ON		EE-SB5VC
		19 mm	Light-ON	Approx. 2.8 g	EE-SB5V-E

■ ACCESSORIES

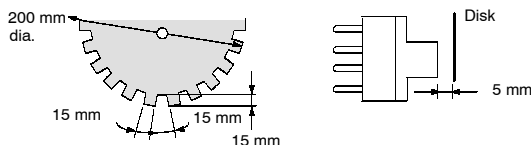
Name	Part number
Solder connector	EE-1001
Connector with 2 m cable	EE-1006

Specifications

■ RATINGS

Item		Diffuse			
		EE-SB5M	EE-SB5MC	EE-SB5V(-E)	EE-SB5VC
Supply voltage		5 to 12 VDC ±10%, ripple (p-p): 10% max.		5 to 15 VDC ±10%, ripple (p-p): 10% max.	
Current consumption		36 mA max.		48 mA max. (DC current: I _F = 25 mA)	
Maximum forward direct current (I _F)		—		30 mA max.	
Forward voltage (V _F)		—		1.5 V max. (I _F = 30 mA)	
Reverse voltage (V _R)		—		4 V max.	
Standard reference object		White paper with reflection factor of 90% (standard sensing object: 15 x 15 mm)			
Differential distance		0.1 mm			
Control output		At 5 to 24 VDC: 80-mA load current (I _C) with a residual voltage of 0.8 V max. When driving TTL: 40-mA load current (I _C) with a residual voltage of 0.4 V max.			
Output configuration	Transistor on output stage without detecting object	OFF	ON	OFF	ON
	Transistor on output stage with detecting object	ON	OFF	ON	OFF
Response frequency (See note)		50 Hz			
Connecting method		EE-1001/1006 Connectors; soldering terminals/cordset			
Light source		GaAs infrared LED with a peak wavelength of 940 nm			
Receiver		Si photo-transistor with a sensing wavelength of 850 nm max.			

Note: The response frequency was measured by detecting the following disks rotating.



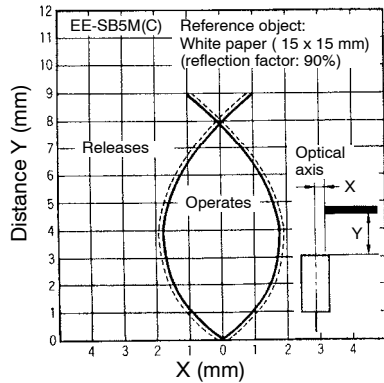
■ CHARACTERISTICS

Ambient temperature	Operating	-25°C to 55°C (-13°F to 131°F)
	Storage	-30°C to 80°C (-22°F to 176°F)
Ambient humidity	Operating	45% to 85%
	Storage	35% to 95%
Vibration resistance	Destruction: 20 to 2,000 Hz (with a peak acceleration of 20G's), 1.5-mm double amplitude for 4 min each in X, Y, and Z directions	
Shock resistance	Destruction: 500 m/s ² for 3 times each in X, Y, and Z directions	
Soldering heat resistance	260°±5°C (See Note.) when the portion between the tip of the terminals and the position 1.5 mm from the terminal base is dipped into the solder for 10±1 seconds	

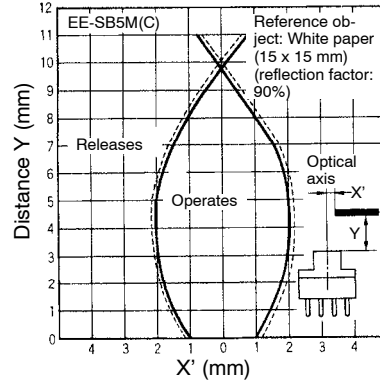
Note: This conforms to MIL-STD-750-2031-1.

Engineering Data

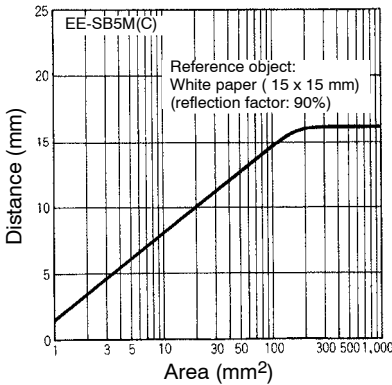
OPERATING RANGE (TYPICAL 1)



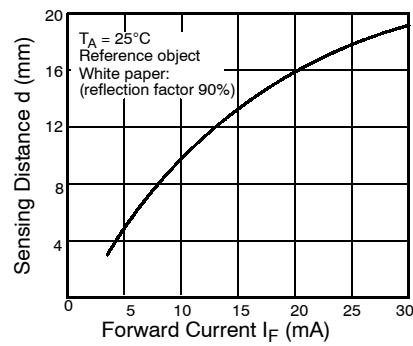
OPERATING RANGE (TYPICAL 2)



SENSING DISTANCE VS. OBJECT AREA (TYPICAL)



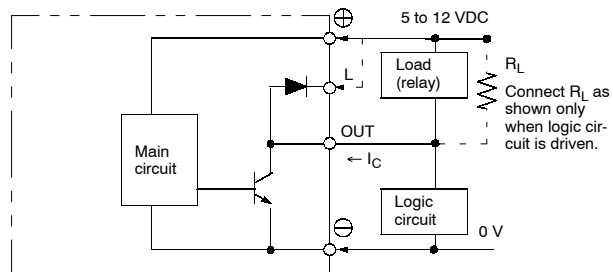
SENSING DISTANCE VS. I_F EE-SB5V-E (TYPICAL)



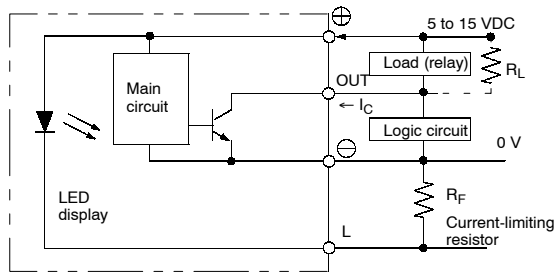
Operation

INTERNAL/EXTERNAL CIRCUIT DIAGRAMS

EE-SB5M(C) Light-ON/Dark-ON

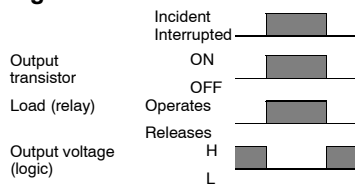


EE-SB5V(C), EE-SB5V-E Light-ON/Dark-ON

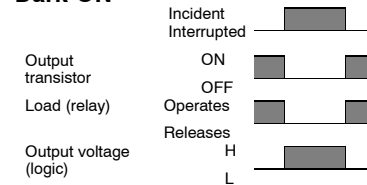


TIMING CHART

Light-ON



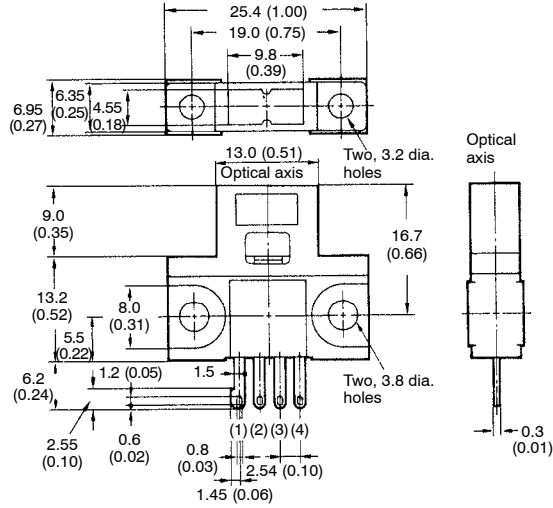
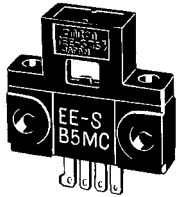
Dark-ON



Dimensions

Unit: mm (inch)

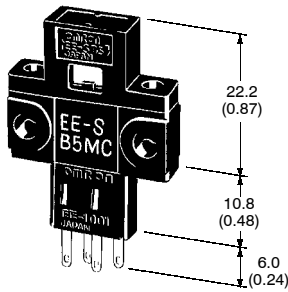
■ EE-SB5M(C), EE-SB5V(C), EE-SB5V-E



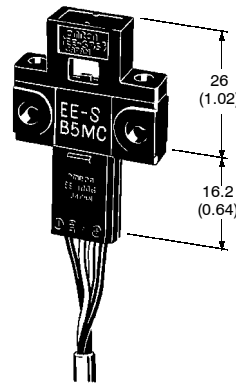
Terminal Arrangement

(1)	⊕	V _{CC}
(2)	L	L
(3)	OUT	OUTPUT
(4)	⊖	GND (0 V)

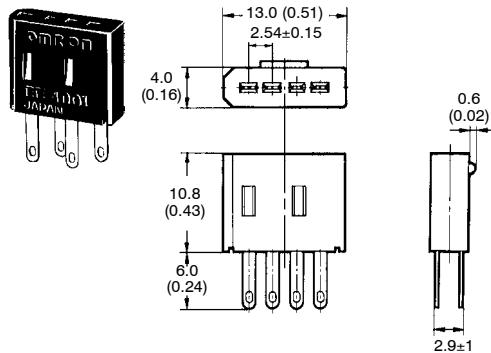
■ EE-SB5M(C)/SB5V(C)/SB5V-E + EE-1001



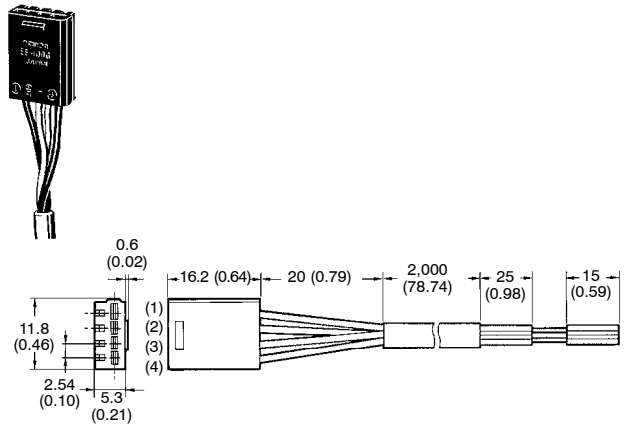
■ EE-SB5M(C)/SB5V(C)/SB5V + EE-1006



■ EE-1001 SOLDER CONNECTOR



■ EE-1006 CONNECTOR WITH CABLE



Terminal Arrangement

(1)	Red (Brown)	⊕	V _{CC}
(2)	Yellow (Pink)	L	L
(3)	White (Black)	OUT	OUTPUT
(4)	Black (Blue)	⊖	GND (0 V)

IEC colors are shown in parentheses.

Note: Supply 5 to 12 V to the EE-SB5M(C). Wire as shown by the following diagram if the supply voltage exceeds 12 V.



Note: Z is the internal impedance between the positive and negative terminals.

Model	V _{CC} (2)	Z (Ω)
EE-SB5M(C)	5 to 12 V	360

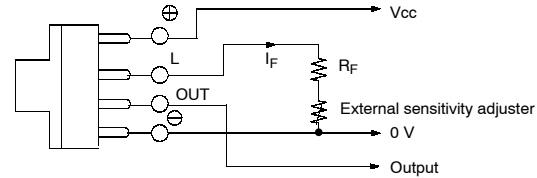
Precautions

Refer to the Technical Information Section for general precautions.

An external sensitivity adjuster can be connected to the EE-SB5V(C), EE-SB5V-E Photomicrosensor. When connecting the sensitivity adjuster, insert resistor R_F (current-limiting resistor), as shown by the diagram. The value of R_F is obtainable as follows:

$$R_F > (V_{CC} - 1.5 \text{ V}) / 30 \text{ mA}$$

Note: The EE-SB5V(C) and EE-SB5V-E have no constant current circuit to protect the LED. For this reason, the LED will be damaged by excessive current applied to the positive terminal. To prevent potential LED damage, connect a current-limiting resistor, as shown previously.



NOTE: DIMENSIONS SHOWN ARE IN MILLIMETERS. To convert millimeters to inches divide by 25.4.

OMRON[®]
OMRON ELECTRONICS LLC
 One East Commerce Drive
 Schaumburg, IL 60173
1-800-55-OMRON

OMRON ON-LINE
 Global - <http://www.omron.com>
 USA - <http://www.omron.com/oei>
 Canada - <http://www.omron.com/oci>

OMRON CANADA, INC.
 885 Milner Avenue
 Toronto, Ontario M1B 5V8
416-286-6465