OMCH®

Model E3Z-□□□

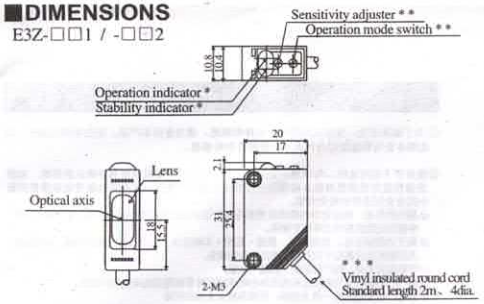
PHOTOELECTRIC SWITCH

INSTRUCTION SHEET

Thank you for selecting "OMCH" product. This sheet primarily describes precautions required in installing and operating the product.
Before operating the product, read the sheet thoroughly to acquire sufficient knowledge of the product. For your convenience, keep the sheet at your disposal.

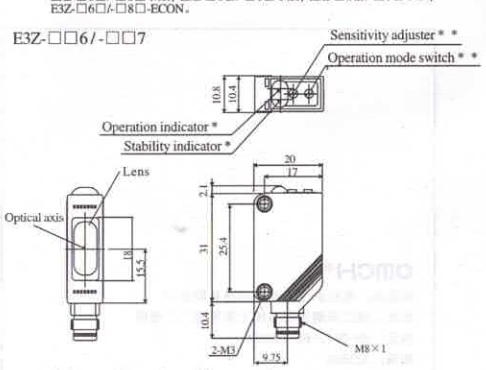
■DIMENSIONS

E3Z-□□1 / -□□2



* Only power indicator is on a light source of Separate type.
* * The form differs because a light source of Separate type does not have it.
* * * Please refer to the product specification sheet.
E3Z-□6□/-□8□-M1J, E3Z-□6□/-□8□-M3J, E3Z-□6□/-□8□-M5J, E3Z-□6□/-□8□-ECON.

E3Z-□□6/-□□7



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SAFETY NOTE

●Meaning of warning symbol

⚠WARNING	This symbol indicates a potentially hazardous situation which, if not avoid, could result in death or serious injury.

●Warning symbol

⚠ WARNING

Do not connect sensor to AC power supply.
Risk of explosion.

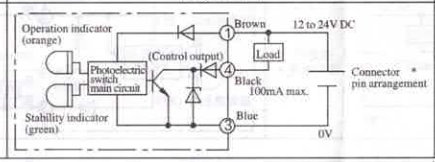
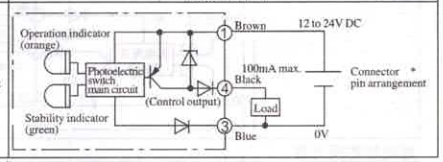
■RATED PERFORMANCE

0.7

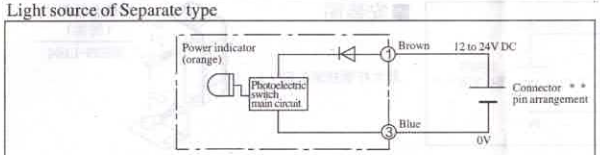
Detection system		Separate type		Retroreflective type	Diffuse reflection type	
Function		Infrared beam type	Rde beam type			
Type	NPN	E3Z-T61/-T66	E3Z-T61A/-T66A	E3Z-R61/-R66	E3Z-D61/-D66	E3Z-D62/-D67
*	PNP	E3Z-T81/-T86	E3Z-T81A/-T86A	E3Z-R81/-R86	E3Z-D81/-D86	E3Z-D82/-D87
Detecting distance		10m	5m	0.1 to 2m (with E39-R1)	0.1m (white mat paper 100×100mm)	0.7m (white mat paper 300×300mm)
Operating angle		Light source/Receiver: 3 to 15°		2 to 10°	–	
Light source(luminescence wavelength)		Infrared LED (870nm)	Red LED(660nm)		Infrared LED (860nm)	
Supply voltage		12 to 24VDC±10% (Ripple (p-p) 10% max.)				
Current consumption		Light source: 15mA max. Receiver: 20mA max.		30mA max.		
Control output		Load supply voltage : 26.4V DC max. Load current : 100mA max. Open collector output (NPN/PNP output, changing with forms) Light-ON/Dark-ON switch selecable				
Residual voltage		1V or less : Load current less than 10mA. 2V or less : Load current less than 10 to 100mA.				
Response time		1ms max.				
Ambient temperature		Operating : -25 to +55℃, Storage : -40 to + 70℃ (no freezing and condensation)				
Ambient humidity		Operating : 35 to 85%RH, Storage : 35 to 95%RH (no freezing and condensation)				
Protection structure		IEC60529 : IP67				
Materials	Case	Polybutylene Telephthalate resin (PBT)				
	Display	Denatured polyallylate				
	Lens	Denatured polyallylate		Methacrylate resin (PMMA)	Denatured polyallylate	

* "-M□J" are added at the and of type name in case of extension. And "-ECON" are added at the end of type name in case of extension.

■OUTPUT STAGE CIRCUIT DIAGRAM

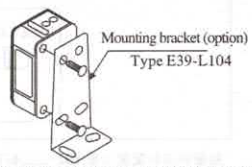
Output	NPN output	PNP output
Type *	E3Z-□6□	E3Z-□8□
Output circuit		

Light source of Separate type

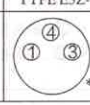


■MOUNTING

Use tightening torque
0.5N・m max.



CONNECTOR PIN ARRANGEMENT(TYPE E3Z-□□6/7,E3Z-□6□/-□8□-M1J,E3Z-□6□/-□8□-M3J,E3Z-□6□/-□8□-M5J,E3Z-□6□/-□8□-ECON)

TYPE E3Z-□6□/-□8□-M1J	TYPE E3Z-□□6/7,E3Z-□6□/-□8□-M3J	TYPE E3Z-□6□/-□8□-M5J	TYPE E3Z-□6□/-□8□-ECON
			
* Terminal 2 is not used. * * Terminal 2 and 4 are not used.	* Terminal 2 is not used. * * Terminal 2 and 4 are not used.	* * Terminal 4 is not used.	* Terminal 2 is not used. * * Terminal 2 and 4 are not used.

NOTE

Be sure to follow the safety precautions below for added safety.
(1)Do not use the sensor under the environment with explosive or ignition gas.
(2)Never disassemble, repair nor tamper with the product.
(3)Keep the supply voltage within the specified range. (12to24V DC± 10%)
(5)Do not use the product under the following conditions.
①In the place exposed to the direct sunlight.
②In the place where humidity is high and condensation may occur.
③In the place where corrosive gas exists.
④In the place where vibration or shock is directly transmitted to the product.
(6)Connection and Mounting
①Be sure that before making supply the supply voltage is less than the maximum rated supply voltage.(26.4V DC)
②There are some cases where the photoelectric switch cable is unavoidably laid in a tube or duct together with a hightension or power line.
This causes an induction, possibly resulting in malfunction of damage. In principal, the cable should be separately laid or shielded.
③For extending wires, use a cable 0.3mm² min. and 100m max. in length.
④Do not pull the wire strongly.
⑤Excessive force (hitting by hammer, etc.) should not be put on the photoelectric switch because it may damage its water-resistance characteristic. Use M3 screws to mount the photoelectric switch.
◎M 8 metal connector
⑥Plug in or out the connector after surly turning off a power supply.
⑦Plug in or out the connector with a cover part of it.
⑧Fasten a fixed implement by hand. If you use a plaier, it may be cause of malfunction or damage to it.
⑨proper bolting torque is 0.3 to 0.4N・m to keep water-resistance.
(7)Cleaning
Do not use thinner such as alcohol and benzine because it may melt a surface of a product.
(8)Power supply
When using a commercially available switching regulator, be sure to ground the FG (Frame Ground) terminals.
(9)Power supply reset time
The photoelectric switch will begin sensing no later thean 100ms arter the power is turned on. If the load and the photoelectric switch is connected to different power supply, the photoelectric switch must be always turned on first.
(10)Turning off the power supply
When turning off the power, output pulse may be generated. We recommend turning off the power supply of the load or load line first.
(11)Load short circuit protection
This product is provided with function of load short circuit protection.
Control output is turned off when this function operates.
After checking of wiring and load current, make power supply again.
Then the circuit is reset.
Load short circuit protection operates when the current is 1.8 times over than the rated load current.
The inrush current should be 1.8 times less than the rated load current when L load is used.
(12)Water resistance
Though this is type IP67, do not use in the water, rain or outdoors.

Suitability for Use

THE PRODUCTS CONTAINED IN THIS SHEET ARE NOT SAFETY RATED. THEY ARE NOT DESIGNED OR RATED FOR ENSURING SAFETY OF PERSONS, AND SHOULD NOT BE RELIED UPON AS A SAFETY COMPONENT OR PROTECTIVE DEVICE FOR SUCH PURPOSES.
Please refer to separate catalogs for OMCH's safety rated products.

"OMCH" shall not be responsible for conformity with any standards, codes, or regulations that apply to the combination of the products in the customer's application or use of the product.

Take all necessary steps to determine the suitability of the product for the systems, machines, and equipment with which it will be used.

Know and observe all prohibitions of use applicable to this product.
NEVER USE THE PRODUCTS FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE "OMCH" PRODUCT I S PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

See also Product catalog for Warranty and Limitation of Liability.

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