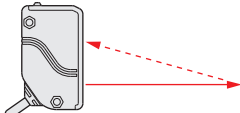
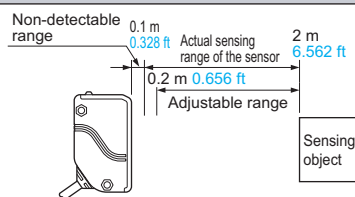


## ORDER GUIDE

| Type        | Appearance                                                                        | Adjustable range (Note)         | Model No.       | Output                                    |
|-------------|-----------------------------------------------------------------------------------|---------------------------------|-----------------|-------------------------------------------|
| NPN output  |  | 0.2 to 2 m<br>0.656 to 6.562 ft | <b>EQ-34</b>    | NPN open-collector transistor             |
| PNP output  |                                                                                   |                                 | <b>EQ-34-PN</b> | PNP open-collector transistor             |
| Two outputs |                                                                                   |                                 | <b>EQ-34W</b>   | Two NPN open-collector transistor outputs |

**NOTE:** Mounting bracket is not supplied with the sensor. Please select from the range of optional sensor mounting brackets (two types).

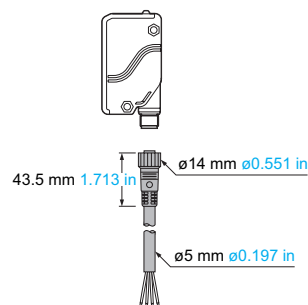
Note: The adjustable range stands for the maximum sensing range which can be set with the adjuster.  
The sensor can detect an object 0.1 m 0.328 ft, or more, away.  
However, the detectable range of Near (Sub) type of **EQ-34W** begins at 0.2 m 0.656 ft.



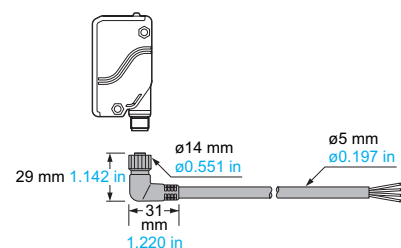
### Plug-in connector type (Not available for EQ-34W)

Plug-in connector type (standard: cable type) is also available. (excluding **EQ-34W**)  
When ordering this type, suffix "-J" to the model No.  
Please order the suitable mating cable separately.  
Model No.: **EQ-34-J**, **EQ-34-PN-J**

#### • CN-24-C□



#### • CN-24L-C□



### • Mating cable

| Type     | Model No.        | Description              |                                                                                                                 |
|----------|------------------|--------------------------|-----------------------------------------------------------------------------------------------------------------|
| Straight | <b>CN-24-C2</b>  | Length: 2 m<br>6.562 ft  | 0.34 mm <sup>2</sup> 4-core cabtyre cable with connector on one end<br>Cable outer diameter:<br>ø5 mm ø0.197 in |
|          | <b>CN-24-C5</b>  | Length: 5 m<br>16.404 ft |                                                                                                                 |
| Elbow    | <b>CN-24L-C2</b> | Length: 2 m<br>6.562 ft  | 0.34 mm <sup>2</sup> 4-core cabtyre cable with connector on one end<br>Cable outer diameter:<br>ø5 mm ø0.197 in |
|          | <b>CN-24L-C5</b> | Length: 5 m<br>16.404 ft |                                                                                                                 |

### 5 m 16.404 ft cable length type

5 m 16.404 ft cable length type (standard : 2 m 6.562 ft) is also available for NPN output type and two outputs type.  
When ordering this type, suffix "-C5" to the model No.  
Model No.: **EQ-34-C5**, **EQ-34W-C5**

## OPTIONS

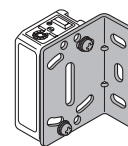
| Designation             | Model No.       | Description                  |
|-------------------------|-----------------|------------------------------|
| Sensor mounting bracket | <b>MS-EQ3-1</b> | Back angled mounting bracket |
|                         | <b>MS-EQ3-2</b> | Foot angled mounting bracket |

Note: The plug-in connector type does not allow use of some sensor mounting brackets because of the protrusion of the connector.

### Sensor mounting bracket

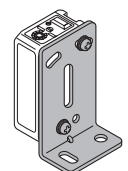
#### • MS-EQ3-1

Two M4 (length 25 mm 0.984 in) screws with washers and two M4 nuts are attached.



#### • MS-EQ3-2

Two M4 (length 25 mm 0.984 in) screws with washers and two M4 nuts are attached.



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CY-100

EX-10

EX-20

EX-30

EX-40

CX-440

EQ-30

EQ-500

MQ-W

RX-LS200

RX

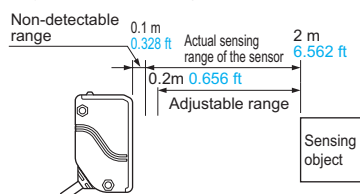
RT-610

**SPECIFICATIONS**

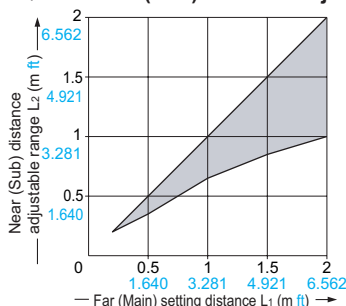
| Type                                                                                       | NPN output                                                                                                                                                                                                                                   | PNP output                                                                                                                                                                                                                                        | Two outputs                                                                                                                                                                                                                                                                            |
|--------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Item                                                                                       | Model No.                                                                                                                                                                                                                                    | EQ-34-PN                                                                                                                                                                                                                                          | EQ-34W                                                                                                                                                                                                                                                                                 |
| Adjustable range (Note 2)                                                                  | 0.2 to 2 m <b>0.656 to 6.562 ft</b>                                                                                                                                                                                                          |                                                                                                                                                                                                                                                   | Far (Main): 0.2 to 2 m <b>0.656 to 6.562 ft</b><br>Near (Sub): Refer to diagram in (Note 3)                                                                                                                                                                                            |
| Sensing range<br>(with white non-glossy paper<br>at setting distance 2 m <b>6.562 ft</b> ) | 0.1 to 2 m <b>0.328 to 6.562 ft</b>                                                                                                                                                                                                          |                                                                                                                                                                                                                                                   | Far (Main): 0.1 to 2 m <b>0.328 to 6.562 ft</b><br>Near (Sub): 0.2 to 2 m <b>0.656 to 6.562 ft</b><br>[with Near (Sub) distance for adjuster at max.]                                                                                                                                  |
| Hysteresis                                                                                 | 10 % or less of operation distance (With white non-glossy paper)                                                                                                                                                                             |                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                        |
| Repeatability                                                                              | Along sensing axis: 10 mm <b>0.394 in</b> or less, Perpendicular to sensing axis: 1 mm <b>0.039 in</b> or less (with white non-glossy paper)                                                                                                 |                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                        |
| Supply voltage                                                                             | 10 to 30 V DC Ripple P-P 10 % or less                                                                                                                                                                                                        |                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                        |
| Current consumption                                                                        | 50 mA or less                                                                                                                                                                                                                                | 55 mA or less                                                                                                                                                                                                                                     | 90 mA or less                                                                                                                                                                                                                                                                          |
| Output                                                                                     | NPN open-collector transistor<br>• Maximum sink current: 100 mA<br>• Applied voltage: 30 V DC or less<br>(between output and 0 V)<br>• Residual voltage: 1 V or less<br>(at 100 mA sink current)<br>0.4 V or less<br>(at 16 mA sink current) | PNP open-collector transistor<br>• Maximum source current: 100 mA<br>• Applied voltage: 30 V DC or less<br>(between output and +V)<br>• Residual voltage: 1 V or less<br>(at 100 mA source current)<br>0.4 V or less<br>(at 16 mA source current) | <Far (Main) output, Near (Sub) output><br>NPN open-collector transistor<br>• Maximum sink current: 100 mA<br>• Applied voltage: 30 V DC or less<br>(between output and 0 V)<br>• Residual voltage: 1 V or less<br>(at 100 mA sink current)<br>0.4 V or less<br>(at 16 mA sink current) |
| Utilization category                                                                       | DC-12 or DC-13                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                        |
| Output operation                                                                           | Switchable either Detection-ON or Detection-OFF                                                                                                                                                                                              |                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                        |
| Short-circuit protection                                                                   | Incorporated                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                        |
| Response time                                                                              | 2 ms or less                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                        |
| Operation indicator                                                                        | Red LED (lights up when the output is ON)                                                                                                                                                                                                    |                                                                                                                                                                                                                                                   | Far (Main) output: Red LED<br>[lights up when the Far (Main) output is ON]<br>Near (Sub) output: Red LED<br>[lights up when the Near (Sub) output is ON]                                                                                                                               |
| Stability indicator                                                                        | Green LED (lights up under stable light received condition or stable dark condition) (Note 4)                                                                                                                                                |                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                        |
| Distance adjuster                                                                          | 2-turn mechanical adjuster with pointer                                                                                                                                                                                                      |                                                                                                                                                                                                                                                   | Far (Main): 2-turn mechanical adjuster with pointer<br>Near (Sub): Variable adjuster                                                                                                                                                                                                   |
| Automatic interference prevention function                                                 | Incorporated (Note 5)                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                        |
| Pollution degree                                                                           | 3 (Industrial environment)                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                        |
| Protection                                                                                 | IP67 (IEC)                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                        |
| Ambient temperature                                                                        | -20 to +55 °C <b>-4 to +131 °F</b> (No dew condensation or icing allowed), Storage: -25 to +70 °C <b>-13 to +158 °F</b>                                                                                                                      |                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                        |
| Ambient humidity                                                                           | 35 to 85 % RH, Storage: 35 to 85 % RH                                                                                                                                                                                                        |                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                        |
| Ambient illuminance                                                                        | Incandescent light: 3,000 lx at the light-receiving face                                                                                                                                                                                     |                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                        |
| EMC                                                                                        | EN 60947-5-2                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                        |
| Voltage withstandability                                                                   | 1,000 V AC for one min. between all supply terminals connected together and enclosure                                                                                                                                                        |                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                        |
| Insulation resistance                                                                      | 20 MΩ, or more, with 250 V megger between all supply terminals connected together and enclosure                                                                                                                                              |                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                        |
| Vibration resistance                                                                       | 10 to 55 Hz frequency, 1.5 mm <b>0.059 in</b> amplitude (10 G max.) in X, Y and Z directions for two hours each                                                                                                                              |                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                        |
| Shock resistance                                                                           | 500 m/s <sup>2</sup> acceleration (50 G approx.) in X, Y and Z directions for three times each                                                                                                                                               |                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                        |
| Emitting element                                                                           | Infrared LED (Peak emission wavelength: 880 nm <b>0.035 mil</b> , modulated)                                                                                                                                                                 |                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                        |
| Material                                                                                   | Enclosure: Polyallylate and Polyethylene terephthalate, Lens: Polyallylate                                                                                                                                                                   |                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                        |
| Cable                                                                                      | 0.3 mm <sup>2</sup> 3-core ( <b>EQ-34W</b> : 4-core) cabtyre cable, 2 m <b>6.562 ft</b> long                                                                                                                                                 |                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                        |
| Cable extension                                                                            | Extension up to total 100 m <b>328.084 ft</b> is possible with 0.3 mm <sup>2</sup> , or more, cable.                                                                                                                                         |                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                        |
| Weight                                                                                     | Net weight: 150 g approx., Gross weight: 200 g approx.                                                                                                                                                                                       |                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                        |
| Accessory                                                                                  | Adjusting screwdriver: 1 pc.                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                        |

Notes: 1) Where measurement conditions have not been specified precisely, the conditions used were an ambient temperature of +23 °C **+73.4 °F**.

- 2) The adjustable range stands for the maximum sensing range which can be set with the adjuster. The sensor can detect an object 0.1 m **0.328 ft**, or more, away. However, the detectable area of the Near (Sub) type of the **EQ-34W** begins at 0.2 m **0.656 ft**.



- 3) The Near (Sub) distance adjustable range, L<sub>2</sub>, changes with the setting of the Far (Main) distance, L<sub>1</sub>, as shown in the table below.

**EQ-34W Near (Sub) distance adjustable range**

| EQ-34W                                     |                                                     |
|--------------------------------------------|-----------------------------------------------------|
| Far (Main) setting distance L <sub>1</sub> | Near (Sub) distance adjustable range L <sub>2</sub> |
| 2 m <b>6.562 ft</b>                        | 1 to 2 m <b>3.281 to 6.562 ft</b>                   |
| 1.5 m <b>4.921 ft</b>                      | 0.85 to 1.5 m <b>2.789 to 4.921 ft</b>              |
| 1 m <b>3.281 ft</b>                        | 0.65 to 1 m <b>2.133 to 3.281 ft</b>                |
| 0.5 m <b>1.640 ft</b>                      | 0.35 to 0.5 m <b>1.148 to 1.640 ft</b>              |
| 0.2 m <b>0.656 ft</b>                      | 0.2 m <b>0.656 ft</b>                               |

- 4) Refer to "Stability indicator (p.361)" of "PRECAUTIONS FOR PROPER USE" for details of the stability indicator.

- 5) Detection may become unstable depending on the setting conditions or the sensing objects. After setting up this product, make sure to check operations using actual sensing objects.

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RX

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