

OPTEX FA

Fiber-Optic Sensor
Data sheet



D12R-TNC4

OPTEX
FA

FASTUS | D12R Series

D12R-TNC4

Fiber-Optic Sensor

FASTUS | D12R Series

Model Configuration



| | |
|----------|-----------|
| Part No. | 20991 |
| Model | D12R-TNC4 |



Specifications

| | | |
|----------------------------------|---|---|
| Product category | Fiber-Optic Sensor | |
| Type | Stand alone | |
| Light source | 4-element Red LED (Wavelength: 660 nm) | |
| Response time | 50 μ s, 250 μ s, 1 ms, 4 ms | |
| Teach mode | 1 point, 2 points, Auto, Through, 1-point Zone, 2-point Zone, Manual | |
| Display | Digital display | OLED display 128 x 22 pixel Menu languages: English, Japanese, Traditional Chinese |
| | Indicators | Output indicator (orange), Power indicator (green) |
| Timer function | Function | On delay, Off delay, On/off delay, Pulse output, On delay pulse |
| | Time | Adjustable 0.1 ... 30,000 ms |
| Control output | NPN, open collector Max. 100 mA/30 VDC residual voltage 1.8 V or less | |
| Output mode | Light ON/Dark ON, selectable by setting | |
| External input | Teach input, Emitter off, Zero reset, Trigger | |
| Protection circuit | Reverse polarity protection, Output overcurrent protection, Output short circuit protection | |
| Connection | M8 4-pin plug connector | |
| Interference prevention quantity | Up to 4 units (frequency-selective) | |
| Supply voltage | 10 ... 30 VDC \pm 10 % including 10 % ripple (p-p) | |
| Current consumption | Eco mode: Off | 42 mA at 10 VDC, 19 mA at 30 VDC |
| | Eco mode: On | 30 mA at 10 VDC, 15 mA at 30 VDC |
| Warm-up time | 300 ms | |

Specifications are subject to change without prior notice.

D12R-TNC4

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| | | |
|--------------------------|------------------------------|--|
| Applicable regulations | EMC | EU EMC directive (2014/30/EU) UK EMC (The Electromagnetic Compatibility Regulations 2016) FCC Part 15 subpart B |
| | Environment | EU RoHS directive (2011/65/EU) UK RoHS (The Restriction of Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012) China RoHS (MIIT Order No. 32) |
| Applicable standards | | EN/IEC 60947-5-2 |
| NRTL certification | | UL Listed certification for the US and Canada |
| Environmental resistance | Ambient illuminance | Sunlight: 67,000 lx or less, Incandescent light: 99,000 lx or less, LED lighting (DC light): 16,000 lx or less |
| | Ambient temperature/humidity | -25 ... 55 °C/35 ... 85 % RH (no freezing or condensation) |
| | Storage temperature/humidity | -40 ... 70 °C/35 ... 85 % RH (no freezing or condensation) |
| | Vibration resistance | 10 ... 55 Hz Double amplitude 1.5 mm 2 hours in each X, Y, Z directions |
| | Shock resistance | 500 m/s ² 3 times in each X, Y, Z directions |
| | Degree of protection | IP50 (IEC 60529) |
| Material | | Housing, cover: PC |
| Weight | | Approx. 25 g |

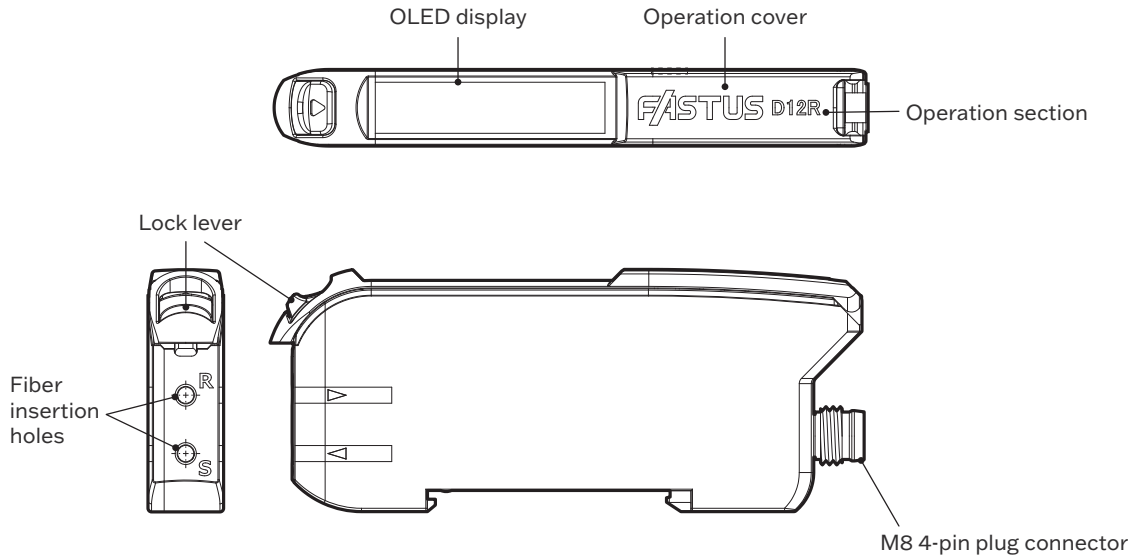
Specifications are subject to change without prior notice.

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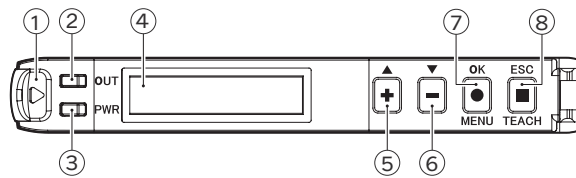
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Part Names



Display and Operation Section



| | |
|-----------------------------|---|
| ① Lock lever | Locks and releases the fiber cable. |
| ② Output indicator (orange) | Illuminates in orange when output is ON. |
| ③ Power indicator (green) | Illuminates in green when the power is turned on. |
| ④ OLED display | Display the present receiving light level and threshold, and the parameters during set menu. |
| ⑤ Selection keys (+/- keys) | Manually adjusts the threshold. In the settings menu select the item, and during item input, increase/decrease the value. |
| ⑥ OK/MENU key | Selects a setting menu and sets the parameters. |
| ⑦ ESC/TEACH key | Performs teach and exits menus during setting. |

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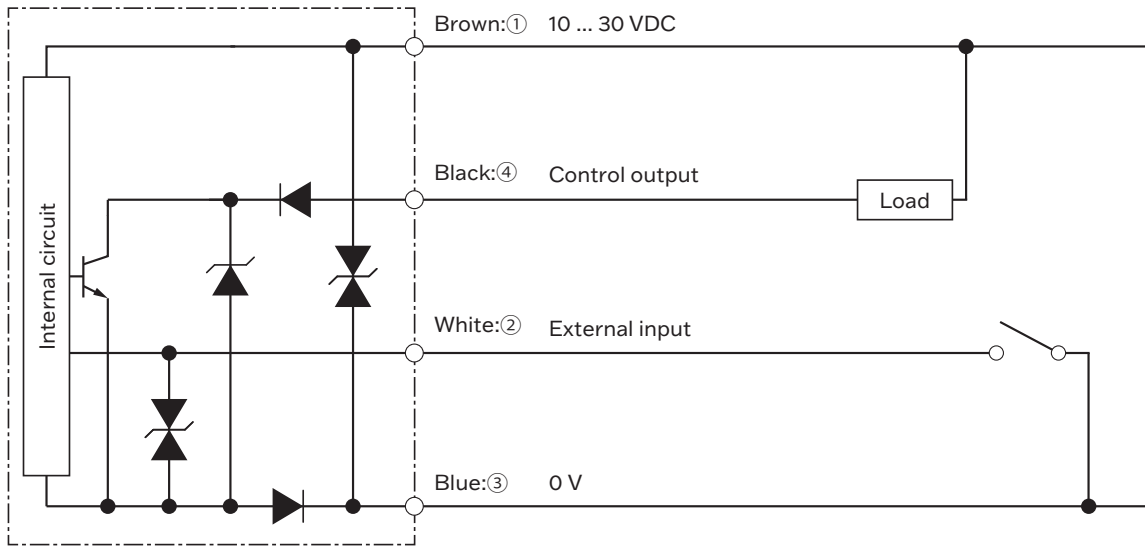
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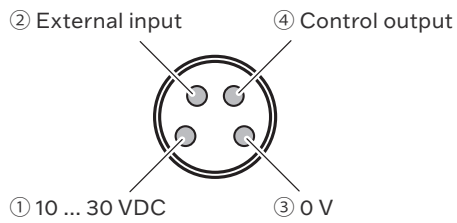
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I/O Circuit Diagrams

NPN setting



M8 connector pin

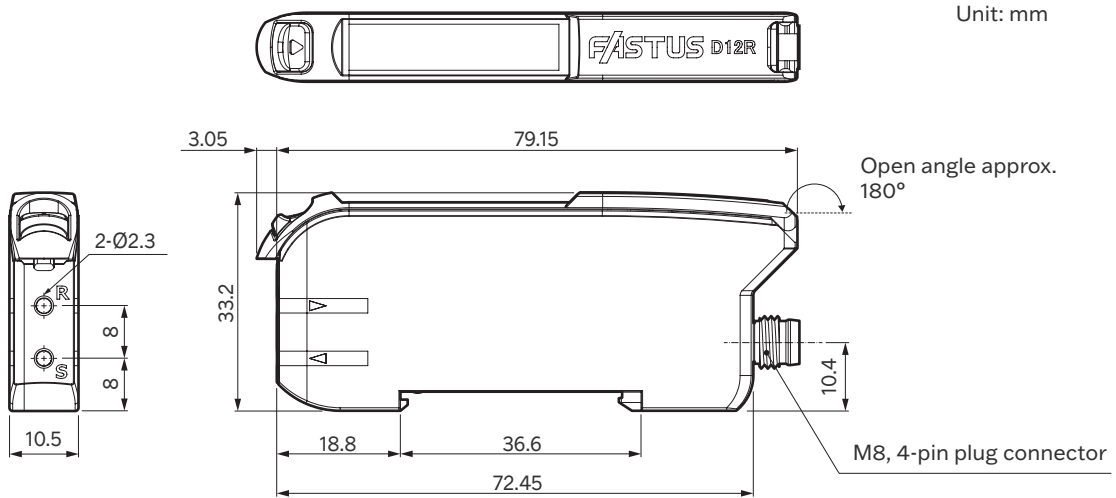


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Dimensions



Accessories

Connector cables



| | |
|----------|----------|
| Part No. | 20191 |
| Model | M84CN-2S |

- Straight
- Cable length: 2 m
- Minimum bending radius: 24 mm (when fixed in place)



| | |
|----------|----------|
| Part No. | 20193 |
| Model | M84CN-5S |

- Straight
- Cable length: 5 m
- Minimum bending radius: 24 mm (when fixed in place)



| | |
|----------|-----------|
| Part No. | 20195 |
| Model | M84CN-10S |

- Straight
- Cable length: 10 m
- Minimum bending radius: 24 mm (when fixed in place)

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D12R-TNC4

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| | |
|----------|----------|
| Part No. | 20192 |
| Model | M84CN-2L |

- L-shaped
- Cablelength: 2 m
- Minimum bending radius: 24 mm (when fixed in place)



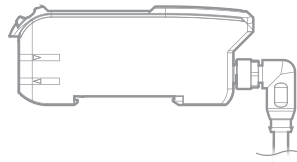
| | |
|----------|----------|
| Part No. | 20194 |
| Model | M84CN-5L |

- L-shaped
- Cablelength: 5 m
- Minimum bending radius: 24 mm (when fixed in place)



| | |
|----------|-----------|
| Part No. | 20196 |
| Model | M84CN-10L |

- L-shaped
- Cablelength: 10 m
- Minimum bending radius: 24 mm (when fixed in place)



Connector orientation is as shown in the left diagram when using the L-shaped connector cable. Rotation is not possible.

Mounting bracket



| | |
|----------|---------|
| Part No. | 21062 |
| Model | BEF-001 |

End plate



| | |
|----------|---------|
| Part No. | 21063 |
| Model | BEF-002 |

- 2 pieces

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