

C5 Series Stainless Steel Photoelectric Sensors



M5 (5 mm) stainless steel - DC

- 14 models available
- Diffuse and through-beam styles
- Long operating distances
- Compact stainless steel housing
- Scratch resistant and easy to clean glass lens
- Axial cable or M8 quick-disconnect models
- Complete overload protection
- IP67 rated

Company Information

Systems Overview

Programmable Controllers

Field I/O

Software

C-more & other HMI

Drives

Soft Starters

Motors & Gearbox

Steppers/Servos

Motor Controls

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Photo Sensors

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Terminal Blocks & Wiring

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| C5 Series M5 Photoelectric Sensors Selection Chart | | | | | | | | | |
|--|--|--------------------|--------------------|-----------------------|-----------------------|------------|-----------------------|---------|-------|
| Part Number | Sensing Range | Output State | Logic | Connection | Wiring | Dimensions | Characteristic Curves | Price | |
| Diffuse | | | | | | | | | |
| C5D-AN-1A | 50mm ¹ (1.97in) ¹ | N.O. | NPN | 2m (6.5') axial cable | Diagram 1 | Figure 1 | Chart 1 | <---> | |
| C5D-AP-1A | | | PNP | 2m (6.5') axial cable | Diagram 1 | Figure 1 | Chart 1 | <---> | |
| C5D-AN-1F | | | NPN | M8 (8mm) connector | Diagram 1 | Figure 2 | Chart 1 | <---> | |
| C5D-AP-1F | | | PNP | M8 (8mm) connector | Diagram 1 | Figure 2 | Chart 1 | <---> | |
| C5D-AN-2A | 10mm (0.40in) | N.O. | NPN | 2m (6.5') axial cable | Diagram 1 | Figure 1 | Chart 3 | <---> | |
| C5D-AP-2A | | | PNP | 2m (6.5') axial cable | Diagram 1 | Figure 1 | Chart 3 | <---> | |
| C5D-AN-3A | 20mm ¹ (0.79in) ¹ | N.O. | NPN | 2m (6.5') axial cable | Diagram 1 | Figure 1 | Chart 4 | <---> | |
| C5D-AP-3A | | | PNP | 2m (6.5') axial cable | Diagram 1 | Figure 1 | Chart 4 | <---> | |
| Through-beam* | | | | | | | | | |
| C5R-AN-1A | Receiver | 250mm (9.84in) | N.O. | NPN | 2m (6.5') axial cable | Diagram 1 | Figure 1 | Chart 2 | <---> |
| C5R-AP-1A | Receiver | | | PNP | 2m (6.5') axial cable | Diagram 1 | Figure 1 | Chart 2 | <---> |
| C5R-AN-1F | Receiver | | | NPN | M8 (8mm) connector | Diagram 1 | Figure 2 | Chart 2 | <---> |
| C5R-AP-1F | Receiver | | | PNP | M8 (8mm) connector | Diagram 1 | Figure 2 | Chart 2 | <---> |
| C5E-ON-1A | Emitter | Receiver dependent | Receiver dependent | NPN | 2m (6.5') axial cable | Diagram 2 | Figure 1 | Chart 2 | <---> |
| C5E-ON-1F | Emitter | | | M8 (8mm) connector | Diagram 2 | Figure 2 | Chart 2 | <---> | |

¹With 100x100mm white matte paper

*Purchase one receiver and one emitter for a complete set.

Diagram 1 Wiring diagrams

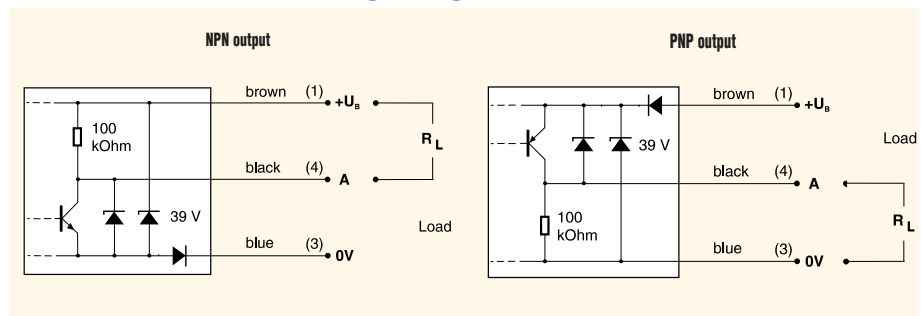
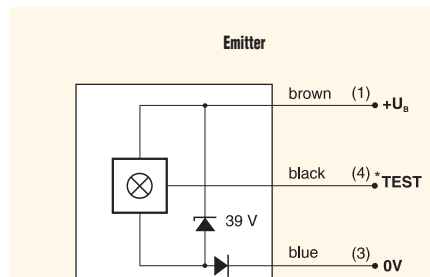
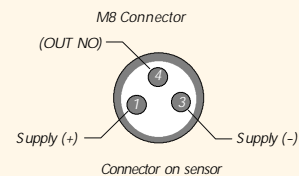


Diagram 2



*Emitter test input (<4V: OFF/ >8V or open: ON) 0.5mA

Connector



Warning: These products are not safety sensors and are not suitable for use in personal safety applications.

C5 Series Stainless Steel Photoelectric Sensors

| Specifications | Diffuse and Through-beam Models |
|---|--|
| Emission | Infrared (880nm) |
| Differential Travel | ≤10% |
| Operating Voltage | 10-30VDC |
| Ripple | ≤20% |
| Current Draw | Emitter: 10mA Receiver: 5mA |
| Load Current | ≤100mA |
| Leakage Current | ≤10μA |
| Voltage Drop | ≤2.0V |
| Output Type | NPN or PNP; N.O. only |
| Switching Frequency | 250Hz |
| (tv) Time Delay Before Availability | 20ms |
| Protection from Input Voltage Transients | Up to 30VDC |
| Input Power Polarity Reversal Protection | Yes |
| Output Power Short-Circuit Protection | Yes (switch autoresets after overload is removed) |
| Temperature Range | 0° to +55° C (32° to 131° F) |
| Temperature Drift | ≤3% |
| Interference to External Light | 3,000 lux (incandescent lamp) 10,000 lux (sunlight) |
| Protection Degree (DIN 400050) | IEC IP67 |
| Agency Approvals | UL file E328811 |
| LED Indicators | Yellow (output energized), yellow flashing (excess light indication) |
| Housing Material | Stainless steel |
| Lens Material | Glass |
| Weight (cable/connector) | 76g (2.68 oz)/18g (0.63 oz) |

Dimensions (mm)

Figure 1

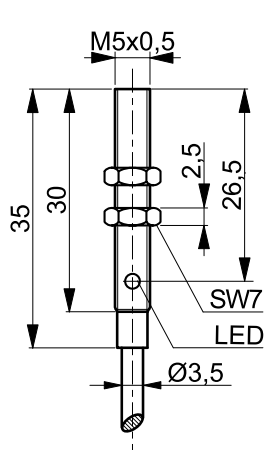
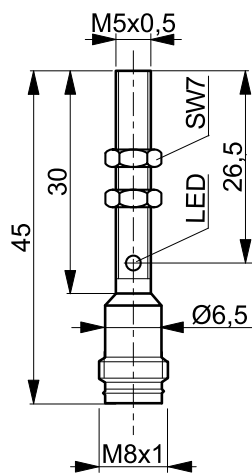


Figure 2



Characteristic curves

Chart 1

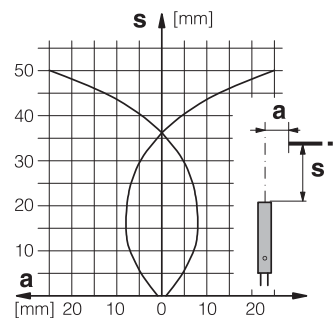


Chart 2

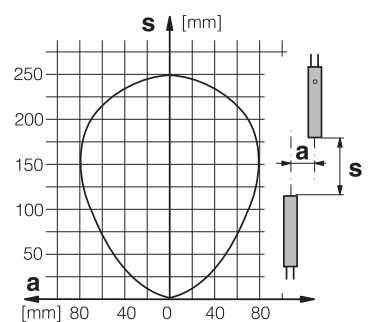


Chart 3

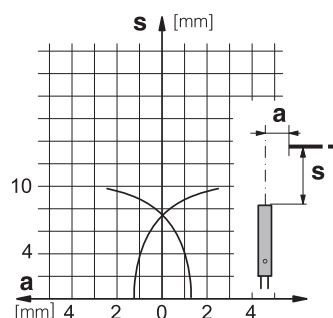
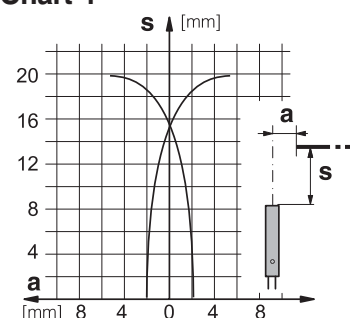


Chart 4



Sensors Accessories: Cables

Cables with quick-disconnect plugs

- Industry standard axial and right-angle M8/M12 screw-lock connectors with open leads. The cables listed can be used with patch cables
- 2m, 5m, 7m and 10m cable lengths
- PVC (polyvinyl chloride) jacket for typical industrial applications
- PUR (polyurethane) jacket for oily and direct sunlight applications
- IP67 rated



CD08-0A-020-A1 and -C1 shown



CD08-0A-050-A1 and -C1 shown



CD12L-0B-020-A0 and -C0 shown



CD12M-0B-050-C1 and -A1 shown

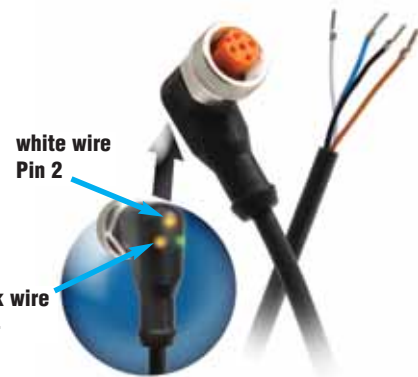
| M8 Quick-Disconnect Cables (Pico, Nano) | | | | | | | |
|---|-------|--------------|-------|-------------|-----|--------|------------|
| Part Number | Price | Length | Poles | Connector | LED | Jacket | Dimensions |
| M8 Quick-Disconnects | | | | | | | |
| CD08-0A-020-A1 | <---> | 2m (6.5ft.) | 3 | Axial | No | PVC | Figure 1 |
| CD08-0A-020-C1 | <---> | 2m (6.5ft.) | 3 | Right-angle | No | PVC | Figure 2 |
| CD08-0A-050-A1 | <---> | 5m (16.4ft.) | 3 | Axial | No | PVC | Figure 4 |
| CD08-0C-050-A1 | <---> | 5m (16.4ft.) | 3 | Axial | No | PUR | Figure 3 |
| CD08-0A-050-C1 | <---> | 5m (16.4ft.) | 3 | Right-angle | No | PVC | Figure 5 |
| CD08-0C-050-C1 | <---> | 5m (16.4ft.) | 3 | Right-angle | No | PUR | Figure 5 |
| CD08-0A-070-A1 | <---> | 7m (23ft.) | 3 | Axial | No | PVC | Figure 1 |
| CD08-0A-070-C1 | <---> | 7m (23ft.) | 3 | Right-angle | No | PVC | Figure 2 |

| M12 Quick-Disconnect Cables (Euro, Micro DC-Single Key) | | | | | | | |
|---|-------|-------------|-------|-------------|-----|--------|------------|
| Part Number | Price | Length | Poles | Connector | LED | Jacket | Dimensions |
| M12 Quick-Disconnects | | | | | | | |
| CD12L-0B-020-A0 | <---> | 2m (6.5ft) | 4 | Axial | No | PVC | Figure 6 |
| CD12L-0B-020-C0 | <---> | 2m (6.5ft) | 4 | Right-angle | No | PVC | Figure 7 |
| CD12M-0B-050-A1* | <---> | 5m (16.4ft) | 3 | Axial | No | PVC | Figure 8 |
| CD12M-0D-050-A1* | <---> | 5m (16.4ft) | 3 | Axial | No | PUR | Figure 9 |
| CD12M-0B-050-C1* | <---> | 5m (16.4ft) | 3 | Right-angle | No | PVC | Figure 10 |
| CD12M-0D-050-C1* | <---> | 5m (16.4ft) | 3 | Right-angle | No | PUR | Figure 11 |
| CD12M-0B-070-A1 | <---> | 7m (23ft) | 4 | Axial | No | PVC | Figure 6 |
| CD12M-0B-070-C1 | <---> | 7m (23ft) | 4 | Right-angle | No | PVC | Figure 7 |

* Note: Do not use with: DM, FA, QX, SS, SSF, SU, TU, VM, VK, MV, MS or MSF series sensors. These sensors require 4-pole cables.

Cables with LED and quick-disconnect plugs

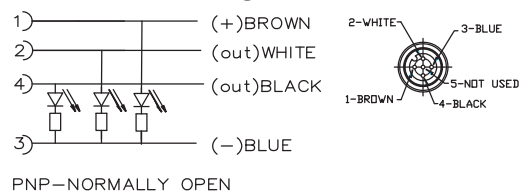
- Industry standard M12 right angle female plug with open leads
- These cables can be used with patch cables
- 2m, 5m and 10m cable lengths
- PUR (polyurethane) jacket for oily and direct sunlight applications
- IP67 /IP68 / IP69K, II rated
- LED indication for 10 -36 VDC PNP sensors only



| M12 Quick-Disconnect Cables with LED Indicator (Euro, Micro DC-Single Key) | | | | | | | |
|--|-------|--------------|-------|-------------|-----|--------|------------|
| Part Number | Price | Length | Poles | Connector | LED | Jacket | Dimensions |
| M12 Quick-Disconnects | | | | | | | |
| EVC178* | <---> | 2m (6.5ft) | 4 | Right-angle | Yes | PUR | Figure 12 |
| EVC179* | <---> | 5m (16.4ft) | 4 | Right-angle | Yes | PUR | Figure 12 |
| EVC180* | <---> | 10m (32.8ft) | 4 | Right-angle | Yes | PUR | Figure 12 |

*Note: LED for 10 to 36 VDC PNP only.
Do not use when white wire (Pin 2) is used for selection of a sensor function.

LED Models' Wiring



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Part # Index

Sensors Accessories: Cables

| Cable Specifications | | | | | |
|---|--------------------------------------|-------------------------------------|--------------------------------------|--|--|
| Specification | M8 | | M12 | | M12 with LED |
| Length | 2m (6.5ft) / 7m (23ft) | 5m (16.4ft) | 2m (6.5ft) / 7m (23ft) | 5m (16.4ft) | 2m (6.5 ft) / 5m (16.4ft) / 10m (32.8ft) |
| Nominal Voltage | 50VAC/75VDC | 60VAC/DC | 300VAC | 250VAC/DC | 10 to 36VDC |
| Max Current | 4A | | 4A | | 4A |
| LED Current Loading | N/A | N/A | N/A | N/A | 10V input Brown wire LED: 1.7mA White and/or Black LED: 0.9mA 36V input Brown wire LED: 7.3mA White and/or Black LED: 4.7mA |
| Protection Degree | IP67 | IP65 / IP68 / IP69K | IP67 | PVC: IP68 PUR: IP68 / IP69K | IP67 / IP68 / IP69K |
| Material Nut | brass; nickel plated | | brass; nickel plated | | brass; nickel plated |
| Jacket Material | PVC | PVC:CD08-0A-xxx. PUR:CD08-0C-xxx | PVC | PVC:CD12M-0B-xxx. PUR:CD12M-0D-xxx | PUR |
| Housing Material | PUR | | PUR | | PUR |
| Contacts Material | Copper-Tin Alloy (CuSn) -gold plated | | Copper-Tin Alloy (CuSn) -gold plated | | Gold plated brass |
| Tightening Torque | 0.5 Nm | ≤ 0.4 Nm | 0.5 Nm | ≤ 0.4 Nm | 0.6 to 1.5 Nm |
| Conductors Cross Section (AWG) | 0.25mm ² (24 AWG) | 0.25mm ² (24 AWG) | 0.25mm ² (24 AWG) | 0.34mm ² (22 AWG) | 4 x 0.34mm ² (4 x 22 AWG) |
| Ø Outer Cable | 5mm | PVC: 4 mm PUR: 4 mm | 5mm | PVC: 4.2 mm PUR: 4.3 mm | 5mm |
| Temperature Range | -25° to +80°C (-13° to 176°F) | -25° to 90°C (-13° to 194°F) | -25° to +80°C (-13° to 176°F) | PVC: -30° to 70°C (-22° to 158°F) PUR: -50° to 90°C (-58° to 194°F) | -25° to +90°C (-13° to 194°F) |
| Environmental | N/A | Halogen free, Silicone free | N/A | Halogen free, Silicone free | Halogen free, Silicone free |
| Function Display Power LED | N/A | N/A | N/A | N/A | Green |
| Switching Status LED | N/A | N/A | N/A | N/A | 2 x Yellow |
| Drag Chain (Roller Cable Tray) Suitability | Bending Radius | min. 10 x cable diameter | | | |
| | Bending Cycles | N/A | N/A | N/A | >5 million |
| | Travel Speed | N/A | N/A | N/A | Max. 3.3 m/s for a horizontal travel length of 5 meters and max. acceleration of 5 m/s ² |
| | Torsional Strain | N/A | N/A | N/A | ±180°/m |
| Agency Approvals | RoHS | | | | UL File E191684, RoHS |

| UL Reference | |
|---|--|
| Part Number | Mini-Series Female Cord Connectors Series M12, UL Catalog Number |
| EVC178 | ADOAH043MSS0002H04 |
| EVC179 | ADOAH043MSS0005H04 |
| EVC180 | ADOAH043MSS0010H04 |
| <i>Note: Shown in UL file under Mini-series Female Cord Connectors using catalog number</i> | |

Sensors Accessories: Cables

Dimensions (in/mm)

Figure 1

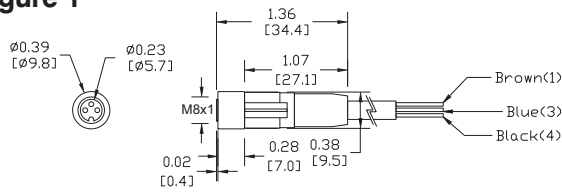


Figure 2

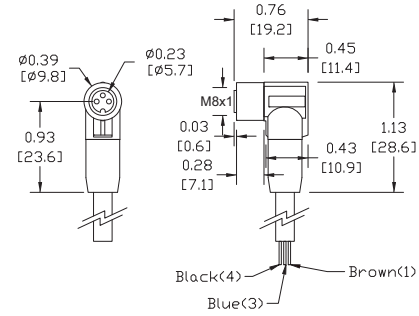


Figure 3

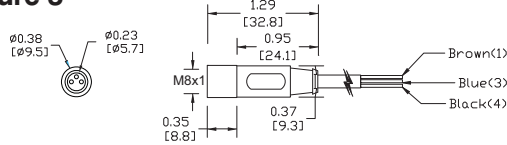


Figure 4

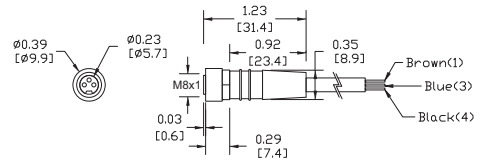


Figure 5

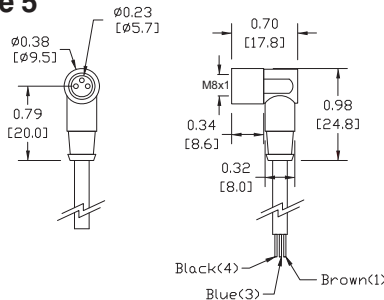


Figure 6

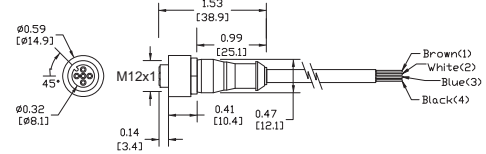


Figure 7

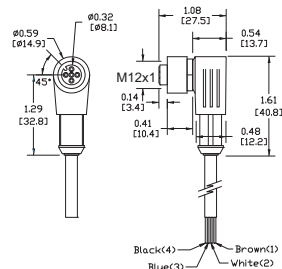


Figure 8

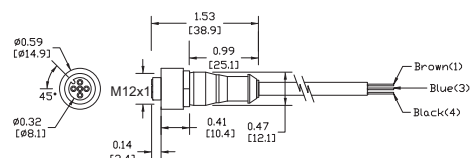


Figure 9

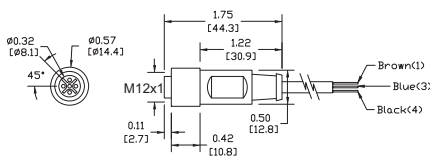


Figure 10

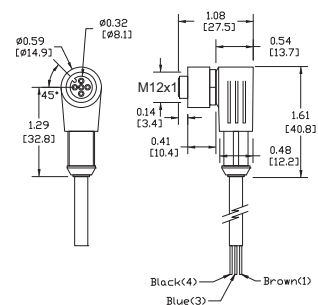


Figure 11

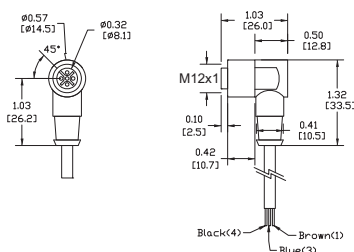
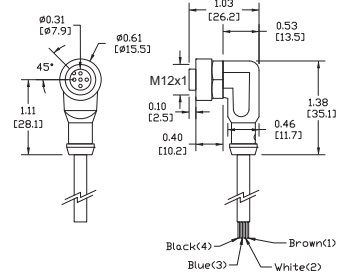


Figure 12



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Part # Index

Sensors Accessories: Cables

Patch cables with quick-disconnect plugs on each end

Available patch cables include:

- Industry standard M8 and M12 screw-lock connectors

- One male and one female connector
- Axial and right-angle connector models
- 1m and 3m cable lengths
- PVC (polyvinyl chloride) jacket for typical industrial applications
- IP67 rated



| M8 Patch Cables with Quick-Disconnect on Each End (Pico, Nano) | | | | | | |
|--|-------|-------------|-------|--|--------|------------|
| Part Number | Price | Length | Poles | Connectors | Jacket | Dimensions |
| M8 Quick-Disconnect Patch Cables | | | | | | |
| CDP08-0A-010-AA | <---> | 1m (3.28ft) | 3 | 2 Axial. One male and one female connector | PVC | Figure 1 |
| CDP08-0A-010-BB | <---> | 1m (3.28ft) | 3 | 2 Right-angle. One male and one female connector | PVC | Figure 3 |
| CDP08-0A-030-AA | <---> | 3m (9.84ft) | 3 | 2 Axial. One male and one female connector | PVC | Figure 2 |
| CDP08-0A-030-BB | <---> | 3m (9.84ft) | 3 | 2 Right-angle. One male and one female connector | PVC | Figure 3 |

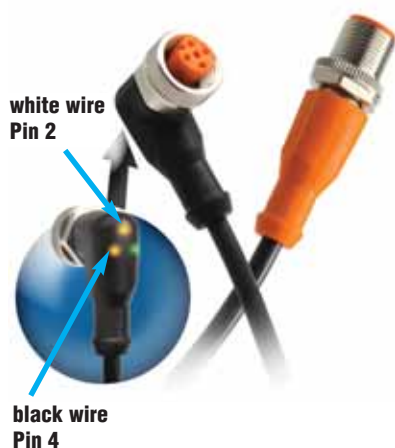
| M12 Patch Cables with Quick-Disconnect on Each End (Euro, Micro DC-Single Key) | | | | | | |
|--|-------|-------------|-------|--|--------|------------|
| Part Number | Price | Length | Poles | Connectors | Jacket | Dimensions |
| M12 Quick-disconnect Patch Cables | | | | | | |
| CDP12-0B-010-AA | <---> | 1m (3.28ft) | 4 | 2 Axial. One male and one female connector | PVC | Figure 4 |
| CDP12-0B-010-BB | <---> | 1m (3.28ft) | 4 | 2 Right-angle. One male and one female connector | PVC | Figure 5 |
| CDP12-0B-030-AA | <---> | 3m (9.84ft) | 4 | 2 Axial. One male and one female connector | PVC | Figure 4 |
| CDP12-0B-030-BB | <---> | 3m (9.84ft) | 4 | 2 Right-angle. One male and one female connector | PVC | Figure 5 |

Patch Cables with LED

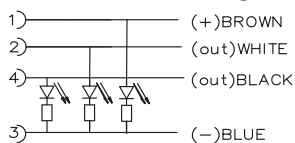
Available patch cables with LED include:

- Right-angle M12 female plug with LED indication on one end and axial male plug on the other end
- 0.3m, 0.6m, 1m, 2m, 5m, and 10m cable lengths

- PUR (polyurethane) jacket for oily and direct sunlight applications
- IP67 / IP68 / IP69K, II rated
- LED indication for 10 -36 VDC PNP sensors only



LED Models' Wiring



| M12 Patch Cables with LED Indicator (Euro, Micro DC-Single Key) | | | | | | | |
|---|-------|---------------|-------|--------------------------------|-----|--------|------------|
| Part Number | Price | Length | Poles | Connectors | LED | Jacket | Dimensions |
| M12 Patch Cables | | | | | | | |
| EVC322* | <---> | 0.3m (0.98ft) | 4 | Right-angle female, axial male | Yes | PUR | Figure 6 |
| EVC323* | <---> | 0.6m (1.97ft) | 4 | Right-angle female, axial male | Yes | PUR | Figure 6 |
| EVC324* | <---> | 1m (3.28ft) | 4 | Right-angle female, axial male | Yes | PUR | Figure 6 |
| EVC325* | <---> | 2m (6.5ft) | 4 | Right-angle female, axial male | Yes | PUR | Figure 6 |
| EVC326* | <---> | 5m (16.4ft) | 4 | Right-angle female, axial male | Yes | PUR | Figure 6 |
| EVC327* | <---> | 10m (32.8ft) | 4 | Right-angle female, axial male | Yes | PUR | Figure 6 |

**Note: LED for 10 to 36 VDC PNP only.
Do not use when white wire (Pin 2) is used for selection of a sensor function.**

Sensors Accessories: Cables

| Cable Specifications | | | |
|---|-------------------------------|---|--|
| Specification | M8 | M12 | M12 with LED |
| Length | 1m (3.28ft.) / 3m (9.84ft.) | | 0.3m (0.98ft) / 0.6m (1.97ft) / 1m (3.28ft) 2m (6.5ft) / 5m (16.4ft) / 10m (32.8ft) |
| Nominal Voltage | 60 VAC/DC | 250 VAC/DC | 10 to 36VDC |
| Max Current | 4A | | 4A |
| LED Current Consumption | N/A | | 10V input Brown wire LED: 1.7mA White and/or Black LED: 0.9mA 36V input Brown wire LED: 7.3mA White and/or Black LED: 4.7mA |
| Protection Degree | IEC IP67 | | IEC IP67/IP68/IP69K |
| Material Nut | Brass: nickel plated | | Brass: nickel plated |
| Jacket Material | PVC | | PUR |
| Housing Material | PUR | | Connector: Orange PUR, Socket: Black PUR |
| Contacts Material | Copper-tin(CuSn)=Brass | | Brass; gold plated |
| Conductors Cross Section (AWG) | 0.34mm ² | | 0.34mm ² (22 AWG) |
| Tightening Torque | 0.5 Nm | Plug: 0.6 to 1.5 Nm (take into account the maximum value of the counterpart) Socket: 0.6 to 1.5 Nm | |
| Ø Outer Cable | 5mm | | 5mm |
| Temperature Range | -25° to +70°C (-13° to 158°F) | | -25° to +90°C (-13° to 194°F) |
| Function Display LED | N/A | | Green |
| Switching Status LED | N/A | | 2 x Yellow |
| Drag Chain (Roller Cable Tray) Suitability | Bending Radius | min. 10 x cable diameter | |
| | Bending Cycles | >5 million | |
| | Travel Speed | N/A Max. 3.3 m/s for a horizontal travel length of 5 m and max. acceleration of 5 m/s ² | |
| | Torsional Strain | N/A ±180°/m | |
| Agency Approvals | RoHS | | UL File E191684, RoHS |

| UL Reference | |
|---|--|
| Part Number | Cable Assemblies Series M12, UL Catalog Number |
| EVC322 | VDOAH043MSS00.3H04STGH040MSS |
| EVC323 | VDOAH043MSS00.6H04STGH040MSS |
| EVC324 | VDOAH043MSS0001H04STGH040MSS |
| EVC325 | VDOAH043MSS0002H04STGH040MSS |
| EVC326 | VDOAH043MSS0005H04STGH040MSS |
| EVC327 | VDOAH043MSS0010H04STGH040MSS |
| Note: Shown in UL file under Cable Assemblies using catalog number | |

Sensors Accessories: Cables

Dimensions (in/mm)

Figure 1

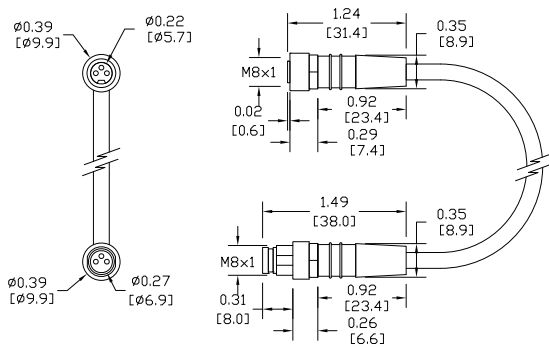


Figure 2

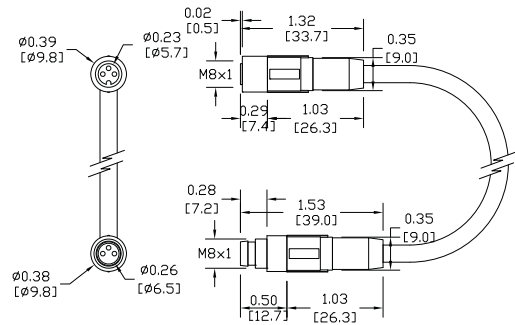


Figure 3

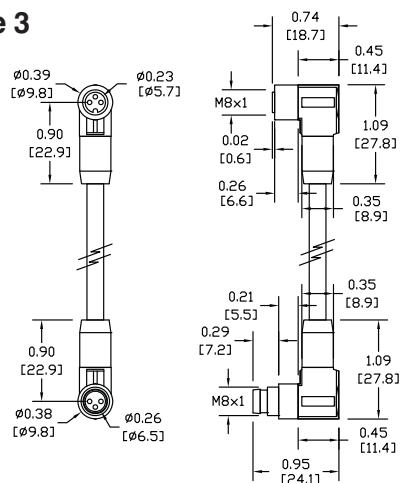


Figure 4

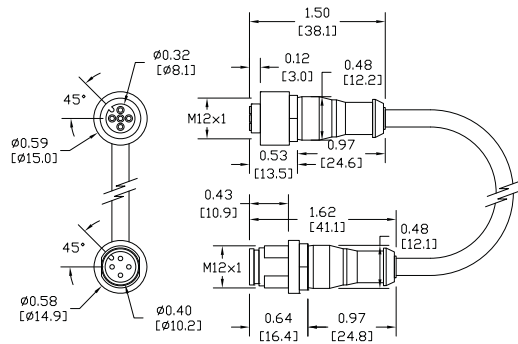


Figure 5

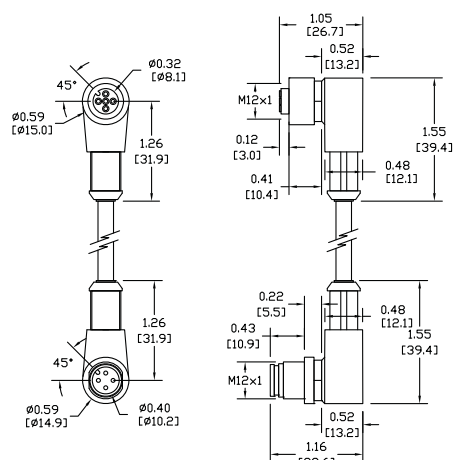
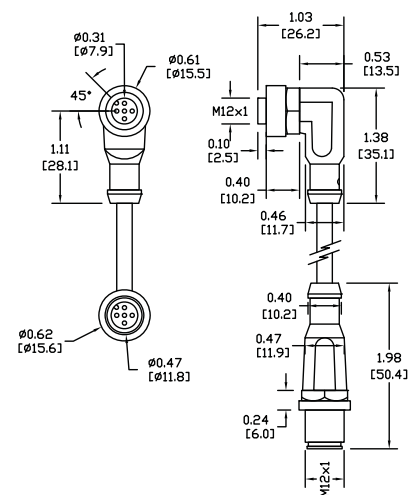


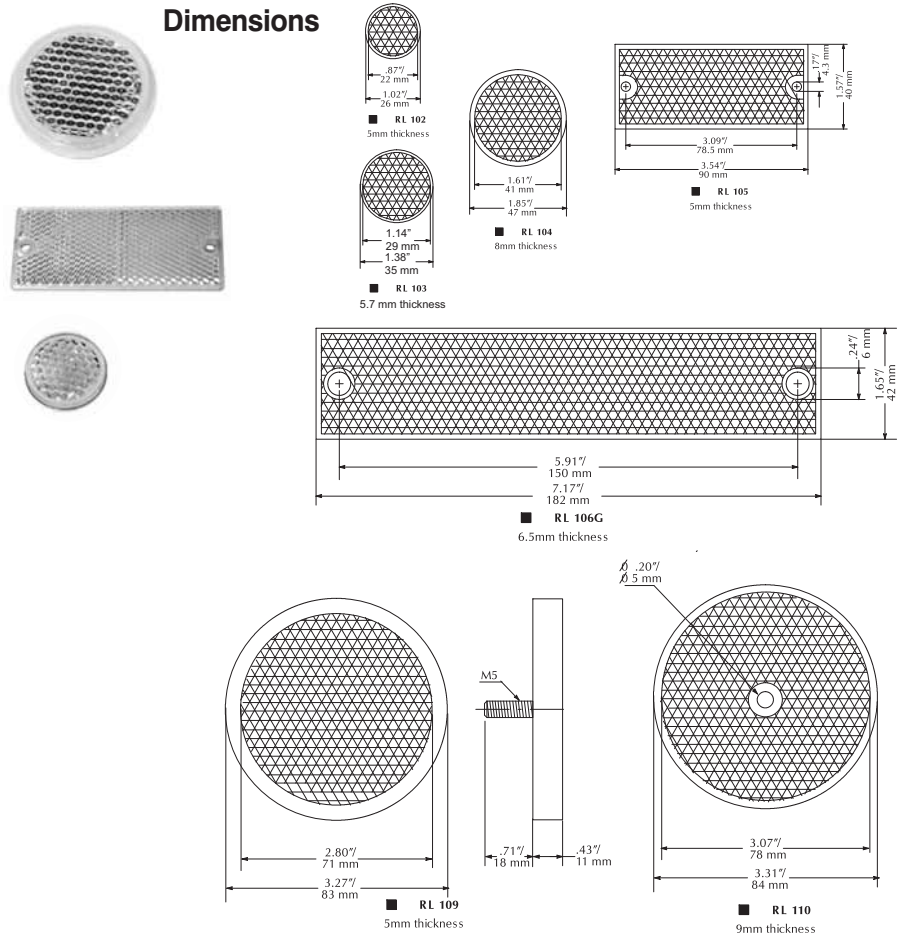
Figure 6



Accessories: Reflectors and Shutters

RL series reflectors for polarized reflective photoelectric sensors (all models)

- Suitable for use with polarized light photoelectric sensors
- Shapes and sizes for most applications
- Miniature types for close mounting in multiple sensor installations
- Single hole, dual hole and stud mounting types available
- 10 reflectors per package



Installation notes

- Keep the reflector surface clean to ensure peak detection performance. This is especially true when the maximum sensing range is being used. Clean using a damp cloth
- When selecting a reflector, it is important to consider the ambient conditions it will be exposed to. Dusty or high humidity conditions may reduce the sensing range as much as 90%.
- Reflectors should be positioned at a 90° angle to the optical axis with a tolerance of ±15°.

| Specifications | | | | | | | |
|--|---|-------|------------------|----------------|-------------|---------------|--------------------|
| Model | RL102 | RL103 | RL104 | RL105 | RL106G | RL109 | RL110 ³ |
| Price (10 per pack) | <---> | <---> | <---> | <---> | <---> | <---> | <---> |
| % Sensing Range Using SSP ¹ | 50% | 40% | 50% | 50% | 50% | 50% | 100% |
| % Sensing Range Using QXP ¹ | -- | 35% | 60% | 50% | 45% | 30% | 100% |
| Dimensions | Ø26mm | Ø36mm | Ø47mm | 90x40mm | 182x42mm | Ø83mm | Ø84mm |
| Degree of Protection ² | IEC IP67 | | | | | | |
| Mounting | Customer-supplied adhesive or other mounting method required | | two Ø4.3mm holes | two Ø6mm holes | one M5 stud | one Ø5mm hole | |
| Materials | Reflective face: PMMA Polymethylmethacrylate (acrylic); base material: ABS (Acrylonitrile-butadiene-styren) | | | | | | |
| ¹ Refer to individual catalog pages for detailed explanations of these photoelectric sensors. | | | | | | | |
| ² Not recommended for applications involving moist air environments or water immersion. | | | | | | | |
| ³ All reflective sensors are shipped with an RL110 reflector. | | | | | | | |

ST0S1 through ST0S8 shutters for M18 (18 mm) through-beam sensors (SSE / SSR)



- Reduces the emitted beam, allowing the detection of small targets
- Shutter consists of a threaded ring-nut, a protective lens, an O-ring and an aperture, which can screw onto the optical head of either the emitter or receiver. The table above shows the sensing distance and minimal detectable object.

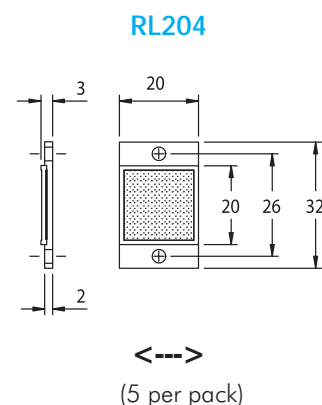
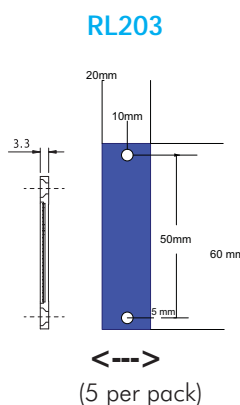
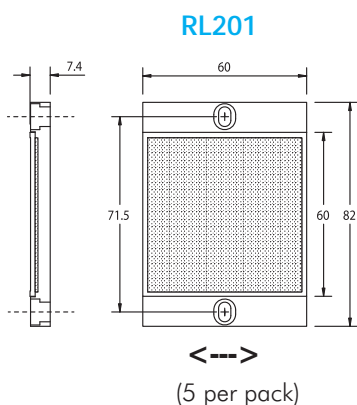
| Sensing Distance (when used with SSE / SSR Model Photoelectric switches) | | | | | | |
|--|-------|-------|--------------|-------|-------|-------|
| Model | ST0S1 | ST0S2 | ST0S3 | ST0S4 | ST0S6 | ST0S8 |
| Pieces Per Pack | 1 | 1 | 1 | 1 | 1 | 1 |
| Price | <---> | <---> | Discontinued | <---> | <---> | <---> |
| Ø x shutter (mm) | 1 | 2 | 3 | 4 | 6 | 8 |
| Distance (m) | N/A | N/A | 1 | 1.5 | 3.5 | 6.5 |
| object (mm) | N/A | N/A | 1.5 | 2 | 3 | 4 |

Accessories: Reflectors, Adapters & Mounting Brackets

RL series reflectors for polarized reflective Laser photoelectric sensors (FALN series)

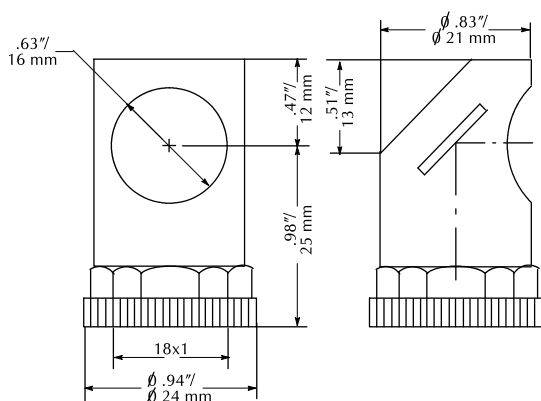
- Suitable for use with polarized light Laser photoelectric sensors
- Sizes for most applications
- Miniature types for close mounting in multiple sensor installations
- 5 reflectors per package

| Specifications | | | |
|--|-----------------------|----------------|----------------|
| Model | RL201 | RL203 | RL204 |
| Sensing Range Using FALN¹ | 30m | 7m | 7m |
| Dimensions | 60mm x 82mm | 19mm x 60mm | 20mm x 32mm |
| Mounting | two Ø4mm holes | two Ø5mm holes | two Ø3mm holes |
| Degree of Protection² | IEC IP67 | | |
| Materials | Acrylic/polycarbonate | | |
| <p>1 Refer to individual catalog pages for detailed explanations of these photoelectric sensors. 2 Not recommended for applications involving moist air environments or water immersion. Note: All reflective sensors are shipped with an RL110 reflector. Purchase additional reflectors separately.</p> | | | |



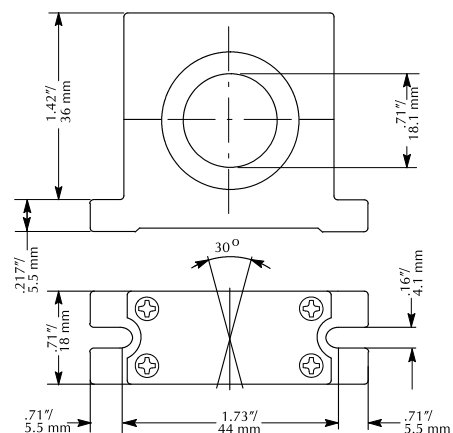
ST03 right-angle M18 (18 mm) beam adapter

For use with M18 retroreflective and through-beam photoelectric switches (not for use with diffuse reflection sensors). Allows 90° light detection using an internal mirror set at 45° to the optical axis. Sensitivity loss is about 20-30%.



ST02 plastic swivel bracket M18 (18 mm)

Plastic mounting bracket for use with M18 photoelectric switches. Has a ball-joint and set screws to adjust sensor orientation. Allows orientation in all directions for retroreflective and through-beam sensors. (Will not work with C18 series).



Accessories: Mounting Brackets

ST12A axial bracket

For mounting M12 (12 mm) sensors. Has two mounting holes (use 3 mm screws) and allows the rotation of an optical axis for right-beam angle adapter sensors.

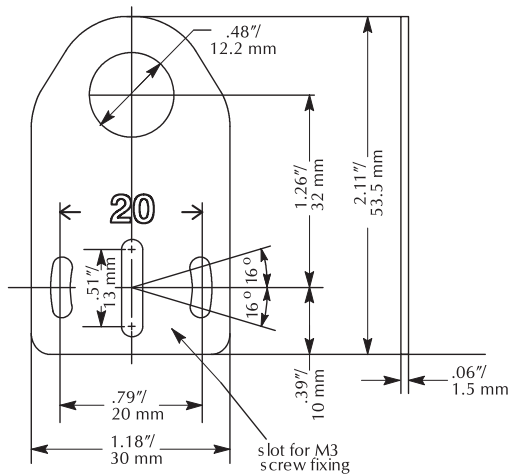


ST12C right-angle bracket

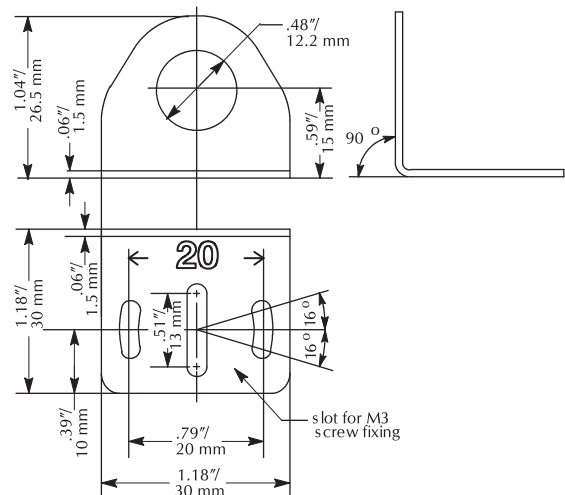
Angular mounting bracket for use with M12 (12 mm) sensors. Has two mounting holes (use 3 mm screws) and allows the rotation of an optical axis for axial sensors.



| Brackets | | |
|----------------|-------|--|
| Part Number | Price | Description |
| ST12A | <--> | Metal axial bracket for 12 mm sensors, 1/pk |
| ST12A7W | <--> | 316L stainless steel axial bracket for 12 mm sensors, 1/pk |



| Brackets | | |
|----------------|-------|--|
| Part Number | Price | Description |
| ST12C | <--> | Metal right angle bracket for 12 mm sensors, 1/pk |
| ST12C7W | <--> | 316L stainless steel right angle bracket for 12 mm sensors, 1/pk |



ST18A axial bracket

Mounting bracket for M18 (18mm) sensors. Has two mounting holes (use 4 mm screws) and allows the rotation of an optical axis for right-beam angle adapter sensors.

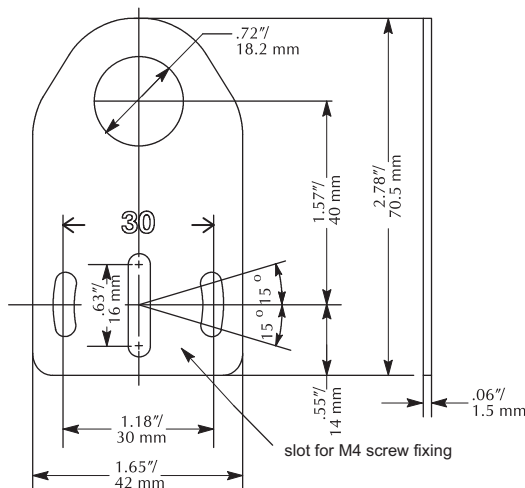


ST18C right-angle bracket

Angular mounting bracket for M18 (18 mm) sensors. Has two mounting holes (use 4 mm screws) and allows the rotation of an optical axis for axial sensors.



| Brackets | | |
|----------------|-------|--|
| Part Number | Price | Description |
| ST18A | <--> | Metal axial bracket for 18 mm sensors, 1/pk |
| ST18A7W | <--> | 316L stainless steel axial bracket for 18 mm sensors, 1/pk |



| Brackets | | |
|----------------|-------|--|
| Part Number | Price | Description |
| ST18C | <--> | Metal right angle bracket for 18 mm sensors, 1/pk |
| ST18C7W | <--> | 316L stainless steel right angle bracket for 18 mm sensors, 1/pk |

