



# E58 Series Photoelectric Sensors

## Overview

All models in the E58 series offer incredible excess gain, which is a measurement of how much sensing power a photoelectric sensor has available beyond the power required to detect an object. Excess gain of 1.00 at a given range means there is just enough sensing power to detect an object under perfect conditions. Dust, dirt, oils, and debris can settle in the air or on the lens and reduce light transmission. As the level of contamination increases, more excess gain is needed to push through contamination in the environment.

The E58 series will report less "false trips" and "lock-ons" common in dusty or wet environments. The bottom line: higher long-term reliability in the worst applications.

## M30 (30mm) Stainless steel – DC and AC/DC units

- Diffuse reflective with background suppression, retroreflective, polarized reflective, and through-beam styles
- AC micro 1/2in-20 UNF thread or M12 quick-disconnect models; purchase cable separately
- Complete overload protection
- IP69 rated



### M30 Stainless Steel Photoelectric Sensors

| Part Number                                    | Price    | Sensing Range       | Switching Frequency | Light Type  | Operating Voltage        | Logic             | Output Function | Connection Type                               | Wiring                                | Drawing Link        |                     |
|------------------------------------------------|----------|---------------------|---------------------|-------------|--------------------------|-------------------|-----------------|-----------------------------------------------|---------------------------------------|---------------------|---------------------|
| Diffuse reflective with background suppression |          |                     |                     |             |                          |                   |                 |                                               |                                       |                     |                     |
| <a href="#">E58-30DP150-GLP</a>                | \$370.00 | 150mm               | 100 Hz              | Visible red | 15-30 VDC/<br>20-132 VAC | solid state relay | Light-on        | 3-wire,4-pin AC micro<br>1/2in-20 UNF thread  | 2                                     | <a href="#">PDF</a> |                     |
| <a href="#">E58-30DP150-GDP</a>                | \$370.00 | [5.90 in]           |                     |             |                          | solid state relay | Dark-on         |                                               | 2                                     | <a href="#">PDF</a> |                     |
| <a href="#">E58-30DPS280-GLP</a>               | \$370.00 | 280mm               |                     |             |                          | solid state relay | Light-on        |                                               | 2                                     | <a href="#">PDF</a> |                     |
| <a href="#">E58-30DPS280-GDP</a>               | \$370.00 | [11.02 in]          |                     |             |                          | solid state relay | Dark-on         |                                               | 2                                     | <a href="#">PDF</a> |                     |
| <a href="#">E58-30DP150-HLP</a>                | \$370.00 | 150mm               | 625 Hz              |             | 10-30 VDC                | NPN/PNP           | Light-on        | 4-wire, 4-pin M12<br>quick-disconnect         | 4                                     | <a href="#">PDF</a> |                     |
| <a href="#">E58-30DP150-HDP</a>                | \$370.00 | [5.90 in]           |                     |             |                          | NPN/PNP           | Dark-on         |                                               | 4                                     | <a href="#">PDF</a> |                     |
| <a href="#">E58-30DPS280-HLP</a>               | \$370.00 | 280mm               |                     |             |                          | NPN/PNP           | Light-on        |                                               | 4                                     | <a href="#">PDF</a> |                     |
| <a href="#">E58-30DPS280-HDP</a>               | \$370.00 | [11.02 in]          |                     |             |                          | NPN/PNP           | Dark-on         |                                               | 4                                     | <a href="#">PDF</a> |                     |
| *Retroreflective                               |          |                     |                     |             |                          |                   |                 |                                               |                                       |                     |                     |
| <a href="#">E58-30RS18-GLP</a>                 | \$355.00 | 18m<br>[59.05 ft]   | 100 Hz              | Visible red | 15-30 VDC/<br>20-132 VAC | solid state relay | Light-on        | 3-wire, 4-pin AC micro<br>1/2in-20 UNF thread | 2                                     | <a href="#">PDF</a> |                     |
| <a href="#">E58-30RS18-GDP</a>                 | \$355.00 |                     |                     |             |                          | solid state relay | Dark-on         |                                               | 2                                     | <a href="#">PDF</a> |                     |
| <a href="#">E58-30RS18-HLP</a>                 | \$355.00 |                     | 625 Hz              |             |                          | 10-30 VDC         | NPN/PNP         | Light-on                                      | 4-wire, 4-pin M12<br>quick-disconnect | 4                   | <a href="#">PDF</a> |
| <a href="#">E58-30RS18-HDP</a>                 | \$355.00 |                     |                     |             |                          |                   | NPN/PNP         | Dark-on                                       |                                       | 4                   | <a href="#">PDF</a> |
| *Purchase reflector separately                 |          |                     |                     |             |                          |                   |                 |                                               |                                       |                     |                     |
| *Polarized reflective                          |          |                     |                     |             |                          |                   |                 |                                               |                                       |                     |                     |
| <a href="#">E58-30RP10-GLP</a>                 | \$365.00 | 10m<br>[32.80 ft]   | 100 Hz              | Visible red | 15-30 VDC/<br>20-132 VAC | solid state relay | Light-on        | 3-wire,4-pin AC micro<br>1/2in-20 UNF thread  | 2                                     | <a href="#">PDF</a> |                     |
| <a href="#">E58-30RP10-GDP</a>                 | \$365.00 |                     |                     |             |                          | solid state relay | Dark-on         |                                               | 2                                     | <a href="#">PDF</a> |                     |
| <a href="#">E58-30RP10-HLP</a>                 | \$365.00 |                     | 625 Hz              |             |                          | 10-30 VDC         | NPN/PNP         | Light-on                                      | 4-wire, 4-pin M12<br>quick-disconnect | 4                   | <a href="#">PDF</a> |
| <a href="#">E58-30RP10-HDP</a>                 | \$365.00 |                     |                     |             |                          |                   | NPN/PNP         | Dark-on                                       |                                       | 4                   | <a href="#">PDF</a> |
| *Purchase reflector separately                 |          |                     |                     |             |                          |                   |                 |                                               |                                       |                     |                     |
| Through-beam emitters                          |          |                     |                     |             |                          |                   |                 |                                               |                                       |                     |                     |
| <a href="#">E58-30TS250-GAP</a>                | \$265.00 | 250m<br>[820.21 ft] | N/A                 | Visible red | 15-30 VDC/<br>20-132 VAC | N/A               | N/A             | 2-wire, 4-pin AC micro<br>1/2in-20 UNF thread | 1                                     | <a href="#">PDF</a> |                     |
| <a href="#">E58-30TS250-HAP</a>                | \$265.00 |                     |                     |             | 10-30 VDC                |                   |                 | 2-wire, 4-pin M12<br>quick-disconnect         | 3                                     | <a href="#">PDF</a> |                     |
| Through-beam receivers                         |          |                     |                     |             |                          |                   |                 |                                               |                                       |                     |                     |
| <a href="#">E58-30TD250-GDP</a>                | \$280.00 | 250m<br>[820.21 ft] | 100 Hz              | N/A         | 15-30 VDC/<br>20-132 VAC | solid state relay | Dark-on         | 3-wire, 4-pin AC micro<br>1/2in-20 UNF thread | 2                                     | <a href="#">PDF</a> |                     |
| <a href="#">E58-30TD250-GLP</a>                | \$280.00 |                     |                     |             |                          | solid state relay | Light-on        |                                               | 2                                     | <a href="#">PDF</a> |                     |
| <a href="#">E58-30TD250-HLP</a>                | \$280.00 |                     | 625 Hz              |             |                          | 10-30 VDC         | NPN/PNP         | Light-on                                      | 4-wire, 4-pin M12<br>quick-disconnect | 4                   | <a href="#">PDF</a> |
| <a href="#">E58-30TD250-HDP</a>                | \$280.00 |                     |                     |             |                          |                   | NPN/PNP         | Dark-on                                       |                                       | 4                   | <a href="#">PDF</a> |

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

## Mounting Bracket

| Mounting Bracket         |         |                                                                                                                      |                     |
|--------------------------|---------|----------------------------------------------------------------------------------------------------------------------|---------------------|
| Part Number              | Price   | Description                                                                                                          | Drawing Link        |
| <a href="#">E58KAM30</a> | \$62.00 | Eaton mounting bracket, right-angle, vertical and horizontal adjustment, stainless steel. For use with 30mm sensors. | <a href="#">PDF</a> |





# E58 Series Photoelectric Sensors

## Specifications



| M30 Stainless Steel Photoelectric Sensors Specifications |                                                                                                                  |                                   |                         |                                                              |
|----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|-----------------------------------|-------------------------|--------------------------------------------------------------|
| Sensor type                                              | Diffuse Reflective with background suppression                                                                   | Retroreflective                   | Polarized Reflective    | Through-Beam                                                 |
| Optimum Sensing Range                                    | DP150 models: 1 to 6in [26 to 150mm]<br>DPS280 models: 1 to 9in [26 to 228 mm]                                   | 1 to 40 ft [0.03 to 12m]          | 1 to 20 ft [0.03 to 6m] | 0.1 to 300 ft [0.03 to 90m]                                  |
| Light Spot Diameter (Distance)                           | DP150 models: 0.75 in [19mm] diameter at 6in [150mm]<br>DPS280 models: 1.0 in [26mm] diameter at 11.0 in [280mm] | 6in [150mm] diameter at 20ft [6m] |                         | 33in [830mm] diameter at 25ft [7.6 m]                        |
| Emission                                                 | Visible Red                                                                                                      |                                   |                         |                                                              |
| Sensitivity                                              | N/A                                                                                                              |                                   |                         |                                                              |
| Output Types                                             | NPN/PNP or solid state relay                                                                                     |                                   |                         |                                                              |
| Operating Voltage                                        | HDP, HLP, HAP: 10-30 VDC<br>GDP, GLP, GAP: 15-30 VDC / 20-132 VAC                                                |                                   |                         |                                                              |
| No Load Supply Current                                   | ≤ 30mA                                                                                                           | ≤ 15mA                            |                         |                                                              |
| Operating (Load) Current                                 | GLP, GDP 300mA<br>HLP, HDP 100mA                                                                                 |                                   |                         | Emitters: N/A<br>Receivers: GLP, GDP 300mA<br>HLP, HDP 100mA |
| Off-state (Leakage) Current                              | DC/AC Models: 250 µA typical: 500 µA maximum<br>DC Only Models: 10 µA maximum                                    |                                   |                         |                                                              |
| Response Time                                            | DC/AC Models: AC operation 10ms<br>DC Operation 2ms<br>DC Only Models: 1.6ms                                     |                                   |                         |                                                              |
| Switching Frequency                                      | GLP, GDP 100Hz ; HLP, HDP 625Hz                                                                                  |                                   |                         |                                                              |
| Ripple                                                   | N/A                                                                                                              |                                   |                         |                                                              |
| Voltage Reversal Protection                              | Yes                                                                                                              |                                   |                         |                                                              |
| Short-circuit Protection <sup>1</sup>                    | Sensor will turn off immediately when a short or overload is detected (LED indicator will flash)                 |                                   |                         |                                                              |
| Operating Temperature                                    | -40 to 55°C [-40 to 131°F]                                                                                       |                                   |                         |                                                              |
| Protection Degree                                        | IP69                                                                                                             |                                   |                         |                                                              |
| Shock/Vibration                                          | Vibration: 30g over 20Hz to 2 kHz; shock: 100g for 3ms 1/2 sinewave pulse                                        |                                   |                         |                                                              |
| LED Indicators                                           | Output status: red                                                                                               |                                   |                         |                                                              |
| Housing Material                                         | 303 Stainless Steel                                                                                              |                                   |                         |                                                              |
| Lens Material                                            | Glass                                                                                                            |                                   |                         |                                                              |
| Tightening Torque                                        | 100 in-lbs max                                                                                                   |                                   |                         |                                                              |
| Weight                                                   | 6g [0.21 oz]                                                                                                     |                                   |                         |                                                              |
| IO-Link                                                  | N/A                                                                                                              |                                   |                         |                                                              |
| Connectors                                               | 4-pin AC micro 1/2in-20 UNF thread or 4-pin M12 quick-disconnect                                                 |                                   |                         |                                                              |
| Agency Approvals                                         | cULus, CE for DC models only - not DC/AC                                                                         |                                   |                         |                                                              |

<sup>1</sup> Turn power OFF and back ON to reset. Sensor will reset when short is removed.

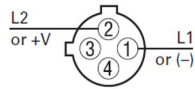


# E58 Series Photoelectric Sensors Specifications

## Wiring Diagrams

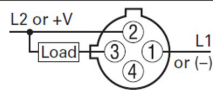
20–132 Vac  
50/60 Hz  
or 15–30 Vdc

Thru-beam source



**Diagram 1**  
**Emitter**

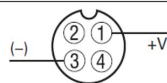
All others



**Diagram 2**  
**4-wire Solid State Output**

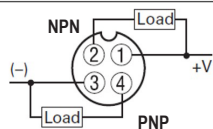
10–30 Vdc

Thru-beam source



**Diagram 3**  
**Emitter**

All others  
(NPN and PNP)



**Diagram 4**  
**4-wire PNP/NPN Output**

## Connector Cables

| Connector Cables                     |         |                                                                                                                                                              |       |                                                                                                                    |
|--------------------------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|--------------------------------------------------------------------------------------------------------------------|
| Part Number                          | Price   | Description                                                                                                                                                  | Gauge | Pin-Out Diagram                                                                                                    |
| <a href="#"><u>CSAS4F4CY2202</u></a> | \$36.00 | AC Micro connector cable for quick-disconnect photoelectric sensors, straight female, AC 4-pin/4-wire, PVC, 6 feet (2 meter) length, 1/2" - 20 UNF thread    | 22    | <ul style="list-style-type: none"> <li>1-Red/Black</li> <li>2-Red/White</li> <li>3-Red</li> <li>4-Green</li> </ul> |
| <a href="#"><u>CSAS4F4CY2205</u></a> | \$37.00 | AC Micro connector cable for quick-disconnect photoelectric sensors, straight female, AC 4-pin/4-wire, PVC, 16.4 feet (5 meter) length, 1/2" - 20 UNF thread | 22    | <ul style="list-style-type: none"> <li>1-Red/Black</li> <li>2-Red/White</li> <li>3-Red</li> <li>4-Green</li> </ul> |
| <a href="#"><u>CSDS4A4CY2202</u></a> | \$32.00 | DC Euro (Micro) connector cable for quick-disconnect photoelectric sensors, straight female, DC 4-pin/4-wire, PVC, 6 feet (2 meter) length                   | 22    | <ul style="list-style-type: none"> <li>1-Brown</li> <li>2-White</li> <li>3-Blue</li> <li>4-Black</li> </ul>        |
| <a href="#"><u>CSDS4A4CY2205</u></a> | \$33.00 | DC Euro (Micro) connector cable for quick-disconnect photoelectric sensors, straight female, DC 4-pin/4-wire, PVC, 16.4 feet (5 meter) length                | 22    | <ul style="list-style-type: none"> <li>1-Brown</li> <li>2-White</li> <li>3-Blue</li> <li>4-Black</li> </ul>        |

## Connector Cables Specifications

|                                           | Micro Style                                                       |
|-------------------------------------------|-------------------------------------------------------------------|
| <b>Jacket Material</b>                    | PVC                                                               |
| <b>Contact Material</b>                   | Gold-plated copper alloy                                          |
| <b>Coupling Nut Material</b>              | Zinc die-cast epoxy-coat                                          |
| <b>O-ring</b>                             | Nitrile rubber                                                    |
| <b>Cable</b>                              | PVC insulation and jacket, stranded copper conductors             |
| <b>Cable Strain Relief</b>                | 35 pounds minimum                                                 |
| <b>Voltage Rating</b>                     | 320 V (24 VDC for LED plugs)                                      |
| <b>Current Rating</b>                     | 4A                                                                |
| <b>Contact Resistance</b>                 | 5mΩ max                                                           |
| <b>Isolation Resistance</b>               | 1000MΩ min                                                        |
| <b>Protection</b>                         | IP67                                                              |
| <b>Temperature Range</b>                  | -25 to 90°C                                                       |
| <b>Cable Diameter (3/C = 3 Conductor)</b> | 22 AWG PVC:<br>4/C: 0.21 inch [5.3 mm]<br>5/C: 0.20 inch [5.1 mm] |
| <b>Bend Radius</b>                        | Minimum recommended bend radius is 12X cable diameter             |



[CSDS4A4CY2205](#)



[CSAS4F4CY2205](#)