

Photoelectric sensors



Test the Best Photoelectric Sensors: E58 Series Harsh Duty

The E58 Harsh Duty line is built for the toughest environments. From harsh industry chemicals and high-pressure, high temperature washdowns, to heavy vibration and high shock, these sensors will keep working in the toughest environments.



The E58 Series (left) uses proven mechanical seals with Viton® o-rings in place of less reliable adhesives and potting found in competing products.

The Eaton E58 Series Harsh Duty family of photoelectric sensors was specifically designed for the most difficult physical, chemical and optical environments.

The dependability of the E58 Series has been proven over years of use in the most torturous applications:

- Lumber length detection for industrial saw mill cutters
- Food processing plants subject to daily high-pressure, high-temperature washdown
- Automotive plants where exposure to lubricants, cutting fluids, coolants and glycols are common
- Freeway overheight detection for semi trucks

Regardless of the application, the Eaton E58 Series is ready for the challenge—and backed by an industry-best five year warranty.

Every model is an outstanding performer—from the extreme precision of the six-inch Perfect Prox® model to the incredible 800-foot sensing thru-beam pair.

Unparalleled Power

Excess gain is a measurement of how much sensing power a photoelectric sensor has available beyond the power required to detect an object. An excess gain of 1.00 at a given range means there is just enough sensing power to detect an object under perfect conditions.

In the real world, there is contamination—dust, dirt, oils, and debris—that can settle in the air or the lens and reduce light transmission. As the level of contamination gets worse, more excess gain is needed to push through contamination in the environment.

All models in the E58 Series share one feature: incredible excess gain. This allows the thru-beam models to work at ranges of up to 800 feet apart, or—in shorter applications—to see through over 30 pages of white paper stacked together. Versus the competition, 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.

Check the output status and sensor operation from any angle with a bright 360° LED indicator ring found only on the E58 Series.



Test the Best

Want to learn more about the E58 Series or the rest of Eaton's line of rugged sensors? Visit us online and complete the *Test the Best* form. We're so confident in our sensors, we're willing to let you try one out—absolutely free.

Learn more at:
www.eaton.com/sensors

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Product Description

The E58 Series from Eaton was specifically designed to withstand your toughest physical, chemical and optical environments.





Extensive research dictated the choice of materials used in this sensor. Stainless steel, PVDF and tempered glass components are mechanically assembled using Viton seals to ensure complete sealing and resistance to industry chemicals. All adhesives and potting subject to failure from chemical attack have been eliminated from the design. The result is a sensor highly resistant to chemical attack and moisture intrusion, that can withstand heavy shock and vibration in the worst applications imaginable.

The performance of the E58 Series, like its build quality, is unmatched. From thru-beam models with 800-foot range, to polarized reflex models that operate to 34 feet, to Perfect Prox models with the ability to sense targets regardless of color, texture or reflectance—every model is at the top of its class!

Features

- Models available in 18 and 30 millimeter diameters
- Highly refined optics for long sensing ranges and to see through high levels of contamination
- Perfect Prox technology provides exceptional background rejection with extremely high excess gain
- Resistant to a wide range of chemicals used in automotive, food processing and forest products industries
- Visible sensing beams on all models to help you with quick setup and alignment
- Models available with both AC and DC operation in a single unit
- Four-wire DC models offer dual NPN and PNP outputs
- C-UL Listed, CE Approved

Model Selection Table

E58 Series	Sensing Range	Optimum Range	Cutoff Range ❶	Field of View	Thru-Beam Component	Catalog Number	
						Light Operate	Dark Operate
Thru-Beam, 30mm Diameter, 10-30 VDC Models with 2m Cable ❸							
	800 ft. (250m)	0.1 - 300 ft. (0.03-90m)	—	33 in. @ 25 ft. (830mm @ 7.6m)	Source	E58-30TS250-HA	—
					Detector	E58-30TD250-HL	E58-30TD250-HD
Polarized Reflex, 30mm Diameter, 10-30 VDC Models ❷ with 2m Cable ❸							
	34 ft. (10m)	1-20 ft. (0.03-6m)	—	6 in. @ 20 ft. (150mm @ 6m)	—	E58-30RP10-HL	E58-30RP10-HD
Perfect Prox® Background Rejection, 18mm Diameter, 10-50 VDC Models ❷ with 2m Cable ❸							
	2 in. (50mm)	0.4-1.8 in. (10-45mm)	2.25 in. (57mm)	0.25 in. @ 2 in. (6mm @ 50mm)	—	E58-18DP50-HL	E58-18DP50-HD
	4 in. (100mm)	0.5-3.0 in. (13-76mm)	5.0 in. (127mm)	0.38 in. @ 45.0 in. (10mm @ 100mm)	—	E58-18DP100-HL	E58-18DP100-HD
Perfect Prox® Background Rejection, 30mm Diameter, 10-50 VDC Models ❷ with 2m Cable ❸							
	6 in. (150mm)	1-6 in. (26-150mm)	6.5 in. (165mm)	0.75 in. @ 6 in. (19mm @ 150 mm)	—	E58-30DP150-HL	E58-30DP150-HD
	11 in. (280mm)	1-9 in. (26-228mm)	12.5 in. (318mm)	1.0 in. @ 11 in. (26mm @ 280mm)	—	E58-30DPS280-HL	E58-30DPS280-HL

① Sensor will ignore a 90% reflectance white card at—and beyond—this range.

② This family is also available in AC/DC configuration. To specify an AC/DC model, simply substitute the H in the model number with a G (for example, E58-30TD250-HLP would become E58-30TD250-GLP). For a complete model selection table, see the Sensing Solutions Catalog (CA08100010E) available online at www.eaton.com/sensors and orderable from Eaton's Literature Fulfillment Center at 800-957-7050.

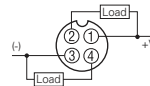
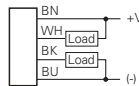
③ This family is also available with 4-pin micro connectors. To specify a micro connector model, simply add a P to the end of the model number (for example, E58-30TD250-HL would become E58-30TD250-HLP). For a complete model selection table, see the Sensing Solutions Catalog (CA08100010E) available online at www.eaton.com/sensors and orderable from Eaton's Literature Fulfillment Center at 800-957-7050.

Wiring Diagrams

Operating Voltage Cable Models Micro Connector Models

4-Wire Sensors

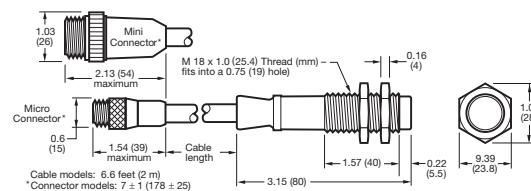
10-30V DC ④



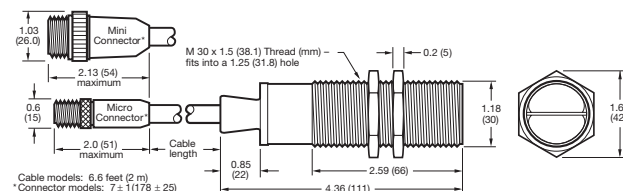
④ This family is also available in AC/DC (90-132V AC, 18-50V DC) configuration. For a complete model selection table, see the Sensing Solutions Catalog (CA08100010E)

Dimensions

18mm Diameter (Threaded Model Shown)



30mm Diameter (Threaded Model Shown)



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Options

The E58 Series can be built with certain options ideal for various industries. As these models are built-to-order, please contact Eaton's Sensor Applications Department at (800) 426-9184 for lead times.

Thru-Beam Apertured Versions

Reduces effective sensing beam to 0.2 x 0.9 in. (5 x 23mm) for accurate edge detection or sensing smaller objects. Factory installed behind lens cover for protection and sealing. Sensing range is reduced to 230 ft. (70m). To order, substitute "070" in place of "250" in source or detector catalog number.

Food Processing Versions with Threaded Housings

Upgrade to a 316 stainless steel threaded body from 303, and change the lens cover to hard-coated polycarbonate (cast acrylic for reflex models) from glass. To order, add the suffix "-FC" to the end of the catalog number.

Food Processing Versions with Smooth (Non-Threaded) Housings

Upgrade to a 316 stainless steel smooth (non-threaded) body from 303, and change the lens cover to hard-coated polycarbonate (cast acrylic for reflex models) from glass. To order, add the suffix "-FSC" to the end of the catalog number.

