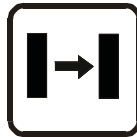
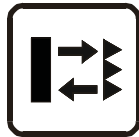
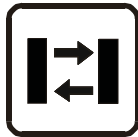


## Compact: S60 Series

### Multifunction Optoelectronic Sensors



- Long operating distance
- Sensitivity adjustment
- Independent NO-NC outputs
- M12 connection with standard NPN or PNP configuration

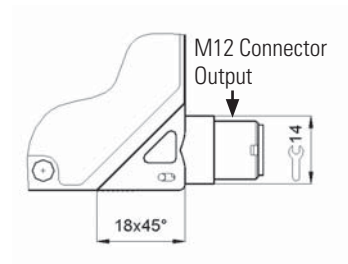
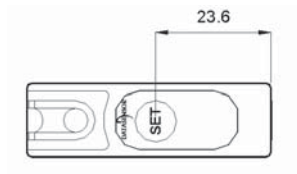
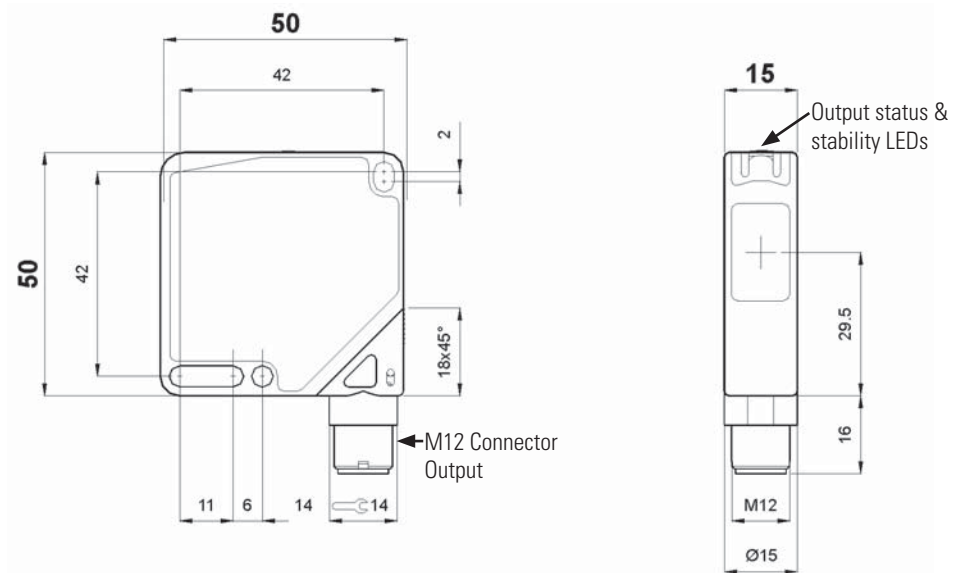
The S60 sensors have a sensitivity adjustment that provides quick and precise setting of the switching threshold. These sensors also have an M12 connection that can be used straight or rotated to a right-angle position. All versions have NPN or PNP outputs and standard configurations conforming to the EN60947-5-2 standard.

**Polarized Retro-reflective Sensor with Red Emission - 8m**

With retro-reflective sensors, the object is detected when it interrupts the light beam generated between the sensor and its associated reflector. High-polarization optic filters also allow reliable detection of very shiny objects, such as mirrored surfaces.



**Dimensions (mm)**



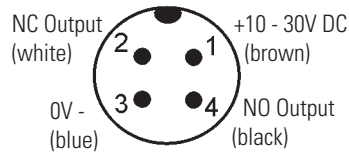
**Indicators & Settings**

Output status and stability LEDs      Sensitivity Adjustment



Single-turn sensitivity adjustment. Rotate clockwise to increase the operating distance.

**Connections**



For information on accessories, see page 171.

## Specifications

		S60-PA-5-B01-NN	S60-PA-5-B01-PP
Operating Distance	0.1 - 8m (on R5)	√	√
Power Supply	10 - 30V DC <sup>1</sup>	√	√
Ripple	≤ 2Vpp	√	√
Current Draw	≤ 40mA	√	√
Light Emission	red LED 660nm <sup>2</sup>	√	√
Spot Dimension	aprox. 90mm at 3m	√	√
Setting	sensitivity adjustment <sup>3</sup>	√	√
Indicators	yellow OUTPUT LED	√	√
	green STABILITY LED	√	√
Output Type	PNP, NO and NC	—	√
	NPN, NO and NC	√	—
Output Current	≤ 100mA	√	√
Saturation Voltage	≤ 2V	√	√
Response Time	500μs	√	√
Switching Frequency	1kHz	√	√
Operating Mode	dark on NO / light on NC	√	√
Connection	M12 4-pole connector <sup>4</sup>	√	√
Electrical Protection	class 2	√	√
Mechanical Protection	IP67	√	√
Protection Devices	A, B <sup>5</sup>	√	√
Housing Material	ABS	√	√
Lens Material	Window: PMMA <sup>6</sup>	√	√
Weight	40g max.	√	√
Operating Temperature	-25 to +55°C	√	√
Storage Temperature	-25 to +70°C	√	√
Reference Standard	EN60947-5-2, UL508	√	√



Additional models are available. Visit [www.idec-ds.com](http://www.idec-ds.com) for more information.

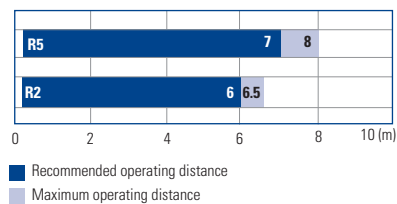
- Limit values
- Average life of 100,000 hrs with  $T_A = +25^\circ\text{C}$
- 270° sensitivity adjustment

4. Connector can be locked in two positions

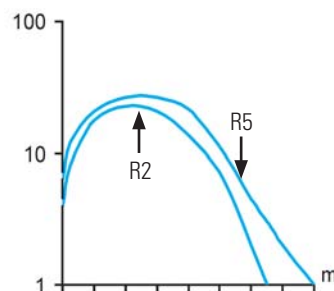
- A - reverse polarity protection
- B - overload and short-circuit protection on outputs
- Internal lens - Polycarbonate



## Operating Distance

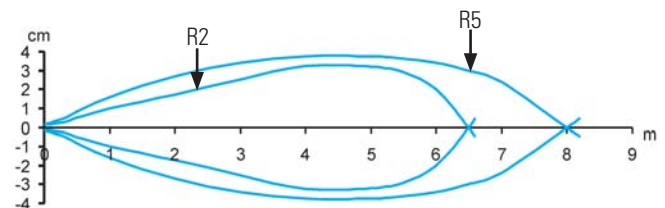


## Excess Gain



## Detection Diagrams

## Detection Area



**Technological Advantages**

The S60 series establishes a new standard in compact 50 x 50mm photoelectric sensors, offering a complete family of optical functions within a 15mm housing width.

The standard dimensions, reduced housing width, and the multi-hole mounting system make the S60 series superior to the majority of compact sensors present on the market.

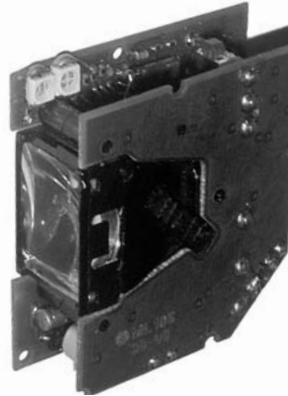
The models are available with M12 connectors, NPN or PNP output, and conform to EN60947-5-2 European standards.

The M12 connector can be easily rotated to 90° and can be locked in straight or right-angle positions compared to the optic axis. The cable emerges at 45° and can be bent almost 360°. These characteristics allow the sensor to be easily mounted on any side and at any angle.

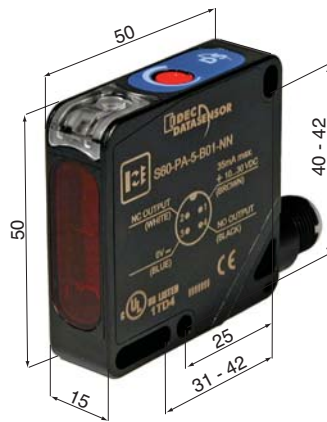
The S60 series are available in through-beam, polarized retro-reflective and diffuse proximity. The polarized retro-reflective model is available with a coaxial optical version with the emitter optic axis coinciding with the receiver. This offers superior detection axis precision and eliminates the blind zone near the sensor.

**SMT Chip-size for Electronic Miniaturization Gains More Space for the Optics**

**Coaxial Optics**

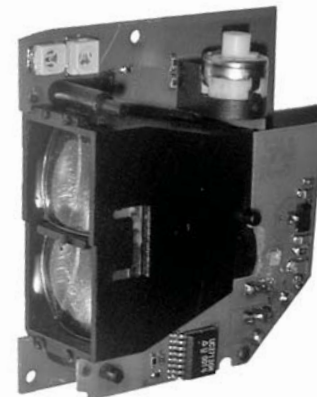


**Compact Photoelectric Sensors Standard 50 x 50 x 15mm**



**Complete External Shield for High Electromagnetic Compatibility**




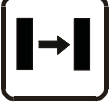
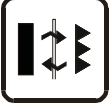
**Biaxial Optics**



Coaxial optics are also available in the polarized retro-reflective model for detection of transparent objects. This increases the performance of the optical function and its immunity to object movement inside the detection area.

The range and switching threshold output can be selected from 50 - 150mm, with a ± 1mm precision; direct or inverse proportionality and light or dark operating modes can also be selected.

## Part Numbers

Function	Connection	Output	Part Number	Page Number	
	Polarized Retro-reflective	M12 connector	NPN	S60-PA-5-B01-NN	140
	Polarized Retro-reflective	M12 connector	PNP	S60-PA-5-B01-PP	
	Diffuse Proximity (100cm)	M12 connector	NPN	S60-PA-5-C01-NN	144
	Diffuse Proximity (100cm)	M12 connector	PNP	S60-PA-5-C01-PP	
	Long Diffuse Proximity (200cm)	M12 connector	NPN	S60-PA-5-C11-NN	146
	Long Diffuse Proximity (200cm)	M12 connector	PNP	S60-PA-5-C11-PP	
	Receiver	M12 connector	NPN	S60-PA-5-F01-NN	138
	Receiver	M12 connector	PNP	S60-PA-5-F01-PP	
	Emitter	M12 connector	-	S60-PA-5-G00-XG	
	Retro-reflective for transparent objects	M12 connector	NPN	S60-PA-5-T51-NN	142
	Retro-reflective for transparent objects	M12 connector	PNP	S60-PA-5-T51-PP	