


# H60 SERIES

## H60 Series - Advanced Performance Photoelectric Sensor

Image	Series Description	Modes	Ranges
	<b>Advanced Performance Photoelectric Sensor</b> <ul style="list-style-type: none"> <li>Standard 50 x 50mm Housing</li> <li>Rotatable M12 Connector</li> <li>High Quality</li> <li>Many Operating Modes Available</li> </ul>	Through Beam	0...20m
		Retroreflective	0.1...20m
		Diffuse	5...2000mm
		Background Suppression	7...200mm
		Contrast	19mm
		Distance	50...150mm

## Ordering Information

Mode	Through-beam (30m range)	Diffuse	Laser Diffuse	Polarized Retroreflective
Operating Range	0...20m (65.6 ft.)	0.005...2m (6.56 ft.)	0...0.6m (1.97 ft.)	0.1...8m (26.2 in.)
Light Emission	Infrared LED, 880nm	Red LED, 880nm	Red Laser, 650nm	Red LED, 600nm

### Part Numbers

Emitter	H60-THRU-E-PO-4Q			
NPN	H60-THRU-R-NO-4Q	H60-DIF-NO-4Q	H60-LASER-D-NO-4Q	H60-RETRO-NO-4Q
PNP	H60-THRU-R-PO-4Q	H60-DIF-PO-4Q	H60-LASER-D-PO-4Q	H60-RETRO-PO-4Q

Mode	Laser Retroreflective	Background Suppression	Contrast	Distance
Operating Range	0.1...20m (65.6 ft.)	0.007...0.2m (7.87 in.)	19mm (0.75 in.)	50...150mm (5.9 in.)
Light Emission	Red Laser, 650nm	Red LED, 670nm	White LED, 400-700nm	Red LED, 670nm

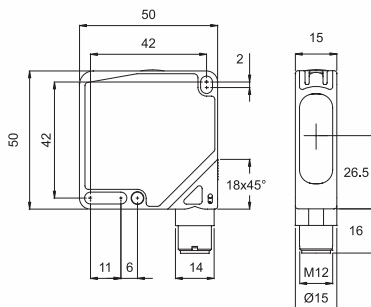
### Part Numbers

NPN	H60-LASER-R-NO-4Q	H60-BGS-NO-4Q	H60-CONTRAST-NO-4Q	H60-DISTANCE-NO-4Q
PNP	H60-LASER-R-PO-4Q	H60-BGS-PO-4Q	H60-CONTRAST-PO-4Q	H60-DISTANCE-PO-4Q

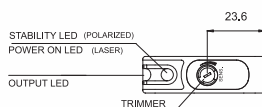
## Dimensions

## Connections

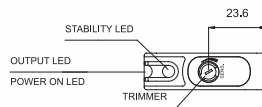
### All Models



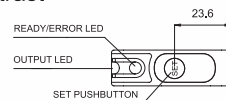
### Retroreflective



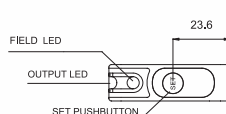
### Diffuse



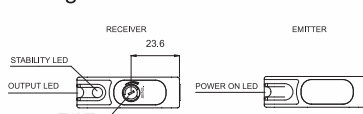
### Background Suppression & Contrast



### Distance



### Through-beam



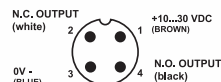
### Through-beam Emitter

BROWN	1	+10 - 30 VDC
WHITE	2	TEST +
BLACK	4	TEST -
BLUE	3	0V



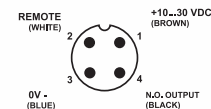
### Through-beam Receiver, Diffuse & Retroreflective

BROWN	1	+10 - 30 VDC
WHITE	2	N.C. OUTPUT
BLACK	4	N.O. OUTPUT
BLUE	3	0V



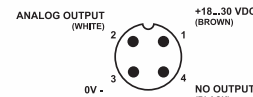
### Background Suppression & Contrast

BROWN	1	+10 - 30 VDC
WHITE	2	REMOTE
BLACK	4	N.O. OUTPUT
BLUE	3	0V



### Distance

BROWN	1	+10 - 30 VDC
WHITE	2	ANALOG OUTPUT
BLACK	4	NO OUTPUT
BLUE	3	0V



# TECHNICAL DATA

	Through-beam	Diffuse		Retroreflective		BGS	Contrast	Distance
		Standard	Laser	Polarized	Laser			
Power Supply:	10...30 VDC							18...30 VDC
Ripple:	≤ 2 Vpp							
Current Consumption:	≤ 35 mA	≤ 40 mA	≤ 35 mA	≤ 40 mA	≤ 35 mA	≤ 30 mA	≤ 30 mA	≤ 60 mA
Spot Dimension:	approx. 200 mm at 4m	approx. 250mm at 1m	approx. 0.2mm @ 15cm approx. 2mm @ 50cm	approx. 90mm at 3m	approx. 10mm	approx. 16mm at 200mm	approx. 3.5mm at 19mm	approx. 16 mm at 150mm
Setting:	sensitivity trimmer					push-button teaching		
Indicators:	yellow: OUTPUT LED green: STABILITY LED green (emitter): POWER ON LED	yellow: OUTPUT LED green: STABILITY LED	yellow: OUTPUT LED green: POWER ON LED	yellow: OUTPUT LED green: STABILITY LED	yellow: OUTPUT LED green: POWER ON LED	yellow: OUTPUT LED green / red READY / ERROR LED		yellow: OUTPUT LED red: FIELD LED
Output Type:	PNP, N.O. and N.C. / NPN, N.O. and N.C.					PNP, N.O. / NPN, N.O.		PNP, NO NPN, NO analog with 0...10 V (8 bit)
Output Current:	≤ 100 mA							
Saturation Voltage:	≤ 2 V							
Response Time:	1 ms	500 μs	250 μs	500 μs	250 μs	500 μs	100 μs	1 ms
Switching Frequency:	500 Hz	1 kHz	2 kHz	1 kHz	2 kHz	1 kHz	5 kHz	500 Hz
Operating Mode:	dark on N.O. / light on N.C.	light on N.O. / dark on N.C.		dark on N.O. / light on N.C.		dark / light configurable	automatic dark / light fine acquisition	automatic dark / light fine acquisition configurable direct / inverse proportionality
Timing Function:	-						20 ms minimum output ON	-
Auxiliary Functions:	Test + and Test -	-		-		remote teach/ keylock		-
Connection:	M12, 4-pin (90° rotatable) - Recommended Mating Cable: part # R-FS4TZ-V075 (straight), R-FA4TZ-V075 (right-angle)							
Electrical Protection:	class 2							
Mechanical Protection:	IP67							
Protection Devices:	Reverse Polarity, Overload, Short-circuit Protection							
Housing Material:	ABS							
Lens Material:	External - PMMA, Internal - Polycarbonate						Glass	External - PMMA, Internal - Polycarbonate
Operating Temperature:	-25...+55°C							
Storage Temperature:	-25...+70°C							
Reference Standard:	EN 60947-5-2 (Laser Models: EN 60947-5-2 , EN 60825-1, CDRH21 CFR 1040.10)							