prosense® RW Series Photoelectric Sensors

Overview

The RW series photoelectric sensors are great for particularly small applications where space is restricted. They are reliable for position detection in feeding and handling technology, and offer precise detection of small, flat or highly reflective components. The compact light spot is ideal for precise detection even at longer distances.

RWRR-DN-0F

14x8x28 mm Plastic – DC

- Diffuse reflective with background suppression, diffuse reflective, polarized retroreflective, through-beam styles
- Axial cable or M8 quick-disconnect models; purchase cable separately
- Complete overload protection
- IP65/67 rated

CE   c(UL)us

NEED CABLES?

RW Series Photoelectric Sensors Selection Table									
Part Number	Price	Sensing Distance [1]	Switching Frequency	Light Emission	Logic	Output Function	Connection Type	Wiring	Drawing Link
Diffuse Reflective with Background Suppression									
RWRS-LP-1A	$46.00	3 to 15 mm [0.11 to 0.59 in]	1000 Hz	Visible red	PNP	Light-on	3-wire, pigtail, 2m [6.5ft] cable	Diagram 2	PDF
RWRS-LP-1F	$48.00				PNP		3-wire, 4-pin M8 quick-disconnect 300mm [11.8in]	Diagram 2	PDF
RWRS-LN-1F	$48.00				NPN			Diagram 1	PDF
RWRS-LP-3A	$46.00	1 to 30 mm [0.03 to 1.18 in]			PNP		3-wire, pigtail, 2m [6.5ft] cable	Diagram 2	PDF
RWRS-LP-3F	$48.00				PNP		3-wire, 4-pin M8 quick-disconnect 300mm [11.8in]	Diagram 2	PDF
RWRS-LN-3F	$48.00				NPN			Diagram 1	PDF
RWRS-LP-5A	$46.00	1 to 50 mm [0.03 to 1.96 in]			PNP		3-wire, pigtail, 2m [6.5ft] cable	Diagram 2	PDF
RWRS-LP-5F	$48.00				PNP		3-wire, 4-pin M8 quick-disconnect 300mm [11.8in]	Diagram 2	PDF
RWRS-LN-5F	$48.00				NPN			Diagram 1	PDF
RWRS-LP-7A	$46.00	1 to 80 mm [0.03 to 3.14 in]			PNP		3-wire, pigtail, 2m [6.5ft] cable	Diagram 2	PDF
RWRS-LP-7F	$48.00				PNP		3-wire, 4-pin M8 quick-disconnect 300mm [11.8in]	Diagram 2	PDF
RWRS-LN-7F	$48.00				NPN			Diagram 1	PDF
Diffuse Reflective									
RWRT-LP-0A	$46.00	180mm [7.08 in]	1000 Hz	Visible red	PNP	Light-on	3-wire, pigtail, 2m [6.5ft] cable	Diagram 2	PDF
RWRT-LP-0F	$46.00				PNP		3-wire, 4-pin M8 quick-disconnect 300mm [11.8in]	Diagram 2	PDF
RWRT-LN-0F	$46.00				NPN			Diagram 1	PDF
*Polarized Retroreflective									
RWRP-DP-0A	$46.00	0.02 to 1.8 m [0.06 to 5.90 ft]	1000 Hz	Visible red	PNP	Dark-on	3-wire, pigtail, 2m [6.5ft] cable	Diagram 2	PDF
RWRP-DP-0F	$46.00				PNP		3-wire, 4-pin M8 quick-disconnect 300mm [11.8in]	Diagram 2	PDF
RWRP-DN-0F	$46.00				NPN			Diagram 1	PDF
*Purchase reflector separately									
Through-beam Emitters									
RWRE-00-0A	$31.50	3m [9.84 ft]	N/A	Visible red	N/A	N/A	2-wire, pigtail, 2m [6.5ft] cable	Diagram 3	PDF
RWRE-00-0F	$31.50				N/A	N/A	2-wire, 3-pin M8 quick-disconnect 300mm [11.8in]	Diagram 3	PDF
Through-beam Receivers									
RWRR-DP-0A	$39.50	3m [9.84 ft]	1000 Hz	Visible red	PNP	Dark-on	3-wire, pigtail, 2m [6.5ft] cable	Diagram 2	PDF
RWRR-DP-0F	$39.50				PNP		3-wire, 4-pin M8 quick-disconnect 300mm [11.8in]	Diagram 2	PDF
RWRR-DN-0F	$39.50				NPN			Diagram 1	PDF

[1] **Object with 90% reflectance (standard white paper)**
Warning: These products are not safety sensors and are not suitable for use in personal safety applications.

proense® **RW Series Photoelectric Sensors**

RW Series Photoelectric Sensors Specifications				
Sensor type	**Diffuse Reflective with Background Suppression**	**Diffuse Reflective**	**Polarized Retroreflective**	**Through-beam**
Sensing Distance [1]	See selection table			
Light Spot Diameter at Max Distance	4mm	18mm	120mm	200mm
Emission	Red light 633nm			
Sensitivity	N/A			
Output Types	NPN or PNP			
Operating Voltage	10-30 VDC			
Switching Output Current Rating	0.70 A	1.00 A	0.95 A	N/A (emitter)/ 0.64 A (receiver)
Operating (Load) Current	20mA			12mA (emitter)/ 15mA (receiver)
Off-state (Leakage) Current	500 µa			
Voltage Drop (Max)	2.5 VDC			
Response Time	300ms (max)			
Voltage Reversal Protection	Yes			
Short-circuit Protection	Yes, pulsed	Yes, non-latching		
Operating Temperature	-25 to 60°C [-13 to 140°F]			
Protection Degree	IP65/IP67			
Shock/Vibration	Shock: pulse shape – half-sine, peak acceleration – 30g (300 m/s²), impulse duration – 11 ms Vibration: frequency range – 10 to 55 Hz, amplitude – 0.5 mm, vibration duration – 5 min			
LED Indicators - Switching Status	Green LED: power; yellow LED switching status			
Housing Material	ABS - Acrylonitrile Butadiene Styrene; Stainless steel 316L			
Lens Material	PMMA - Poly (methyl methacrylate)			
EMC	EN 60947-5-2			
Tightening Torque	0.2 N•m [0.14 lb•ft] max			
Weight	21g [0.74 oz] Connector version 38g [1.34 oz.] Cable version			
IO-Link	N/A			
Connectors	PVC, 2m [6.5 ft] 28 AWG 3-wire or 2-wire; 3-wire, 4-pin M8 quick-disconnect 300mm [11.8in]			
Agency Approvals	cULus, CE			

[1] **Object with 90% reflectance (standard white paper)**

Wiring Diagrams

Diagram 1
3-Wire NPN Output
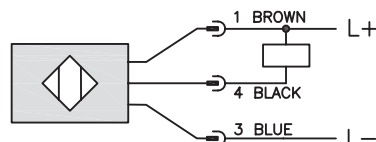
Diagram 2
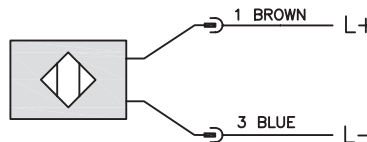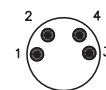**3-Wire PNP Output**
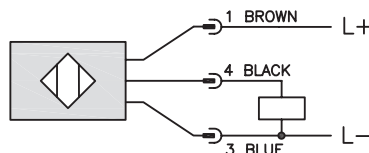
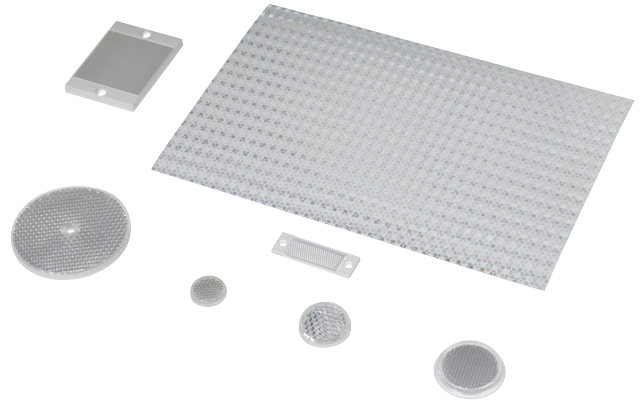**Diagram 3**
Emitter

M8 connector

Reflectors

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 self-adhesive mounting types available
• Single and 10-packs available

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°.

Reflector Specifications							
Part number	Price	Drawing Link	Quantity	Dimensions mm [in]	Degree of Protection	Mounting	Materials
RL102	$38.00	PDF	10	25 [0.98]	IEC IP67	Customer-supplied adhesive or other mounting method required	Reflective face: PMMA Polymethylmethacrylate (acrylic) Base material: ABS (Acrylonitrile-butadiene-styren)
RL102-1	$4.25		1				
RL103	$42.50	PDF	10	34.5 [1.36]			
RL103-1	$4.75		1				
RL104	$42.50	PDF	10	46 [1.81]			
RL104-1	$4.75		1				
RL105G	$38.00	PDF	10	95 x 38 [3.74 x 1.50]		Two 4.3 mm holes	
RL105G-1	$4.25		1				
RL106G	$42.50	PDF	10	182 x 42 [7.17 x 1.65]		Two 6mm holes	
RL106G-1	$4.75		1				
RL110	$19.00	PDF	10	84 [3.31]		One 5mm hole	
RL110-1	$2.00		1				
RL116	$19.00	PDF	10	41 x 60 [3.54 x 2.36]		Two 3mm holes	
RL116-1	$2.00		1				
RL100DA4	$38.50	NA	1	200 x 300 [7.87 x 11.81]		Self-adhesive	Paper (Acrylic tape with micro prism)
RL100DC4	$12.00	NA	1	50 x 300 [1.97 x 11.81]			
RL100DQ1	$8.75	NA	1	100 x 100 [3.94 x 3.94]			
RL111G	$60.00	PDF	10	22.5 x 47 [0.89 x 1.85]		Two 3mm slots	Reflective face: PMMA Polymethylmethacrylate (acrylic) Base material: ABS (Acrylonitrile-butadiene-styren)
RL111G-1	$7.25		1				
RL112G	$44.00	PDF	10	19 x 73 [0.75 x 2.87]			
RL112G-1	$4.75		1				
RL113G	$53.00	PDF	10	51.4 x 60.3 [2.02 x 2.37]		Two 4mm slots	
RL113G-1	$6.00		1				

Not recommended for applications involving moist air environments or water immersion.

Sensor Accessories tSEN-499