

## Description

The Red Line of the Series 5000 photoelectric sensor family is intended for use as an economical solution for AC-powered applications. Like all other Series 5000 sensors, the sensor consists of a power/terminal base and a separate photohead that houses the electronics. In the event that the head needs to be replaced, it can be done so without disturbing any wiring or realignment.

A single red LED indicator located on the top of the photohead provides a visual indication of the sensor output state. This output can be set to activate in either a light or dark operate mode. For increased flexibility, there are multiple output types to choose from. A single-turn sensitivity adjustment is provided on the top cover for use in the installation phase.

## General Specifications

<b>Light Source</b>	Infrared LED (880nm), visible red (polarized models)
<b>Unit Protection</b>	False pulse
<b>Supply Voltage</b>	120V AC
<b>Current Consumption</b>	See Product Selection table
<b>Output Type</b>	SPDT relay, FET, TRIAC—see Product Selection table
<b>Output Mode</b>	Light/dark operate selectable
<b>Output Rating</b>	30mA to 2A—see Product Selection table
<b>Response Time</b>	1 to 8ms—see Product Selection table
<b>Housing Material</b>	Valox®
<b>Lens Material</b>	Acrylic (glass on polarized models)
<b>LED Indicators</b>	See User Interface on page 1-258
<b>Connection Types</b>	2m 300V cable, screw terminal
<b>Supplied Accessories</b>	None
<b>Optional Accessories</b>	Mounting brackets, reflectors, cordsets
<b>Operating Environment</b>	NEMA 3, 4, 12, 13 (IP66)
<b>Vibration</b>	10-55Hz, 1mm amplitude, Meets or exceeds IEC 60947-5-2
<b>Shock</b>	30g with 1ms pulse duration, Meets or exceeds IEC 60947-5-2
<b>Operating Temperature</b>	-40°C to +52°C (-40°F to +125°F) for TRIAC output -40°C to +65°C (-40°F to +150°F) for all others
<b>Relative Humidity</b>	90% maximum
<b>Approvals</b>	UL listed, CSA approved, and CE marked for all applicable directives

## Features

- Modular package for increased flexibility
- Economical AC-powered sensor
- Three sensing modes
- Selectable light/dark operation
- Variety of output types
- Screw terminal or cable connections

## General Information

Wiring Diagrams . . . . . page 1-258  
Dimensions . . . . . page 1-256

## Sensing Modes

Retroreflective/  
Standard Diffuse . . . . . page 1-259  
Polarized Retroreflective . . . . . page 1-260

## Accessories

Mounting Assemblies . . . . . page 1-375  
Right Angle Mirror Adaptor . . . . . page 1-380  
Protective Photoguard . . . . . page 1-380  
NEMA 7 and 9 Enclosure . . . . . page 1-380  
Reflectors, Reflective Tape . . . . . page 1-386

# Allen-Bradley Parts

**Series 5000**

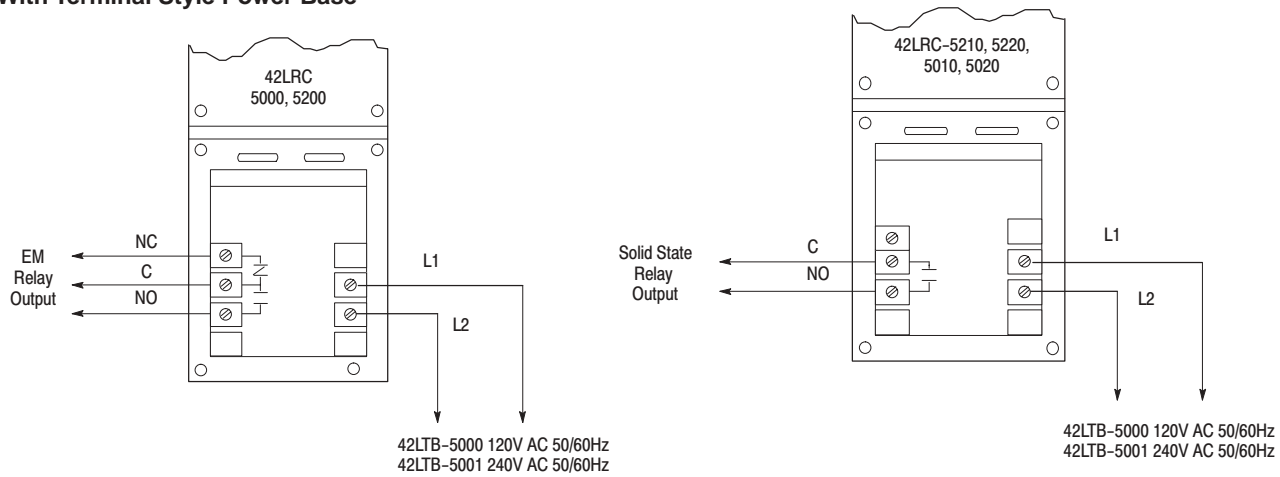
**Red Line**

**User Interface Panel**

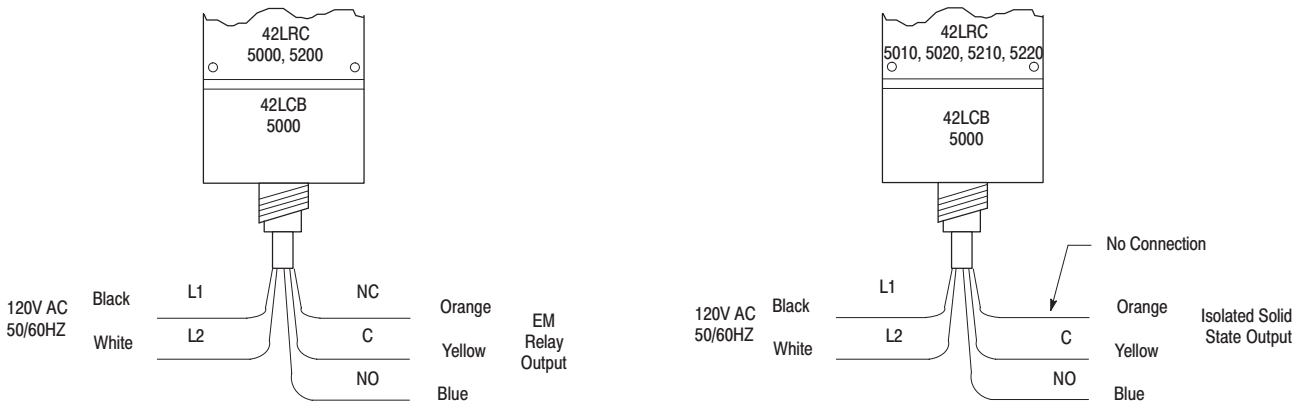
Label	Color	State	Status
Output	Red	OFF	Sensor output de-activated
		ON	Sensor output activated

**Wiring Diagrams**

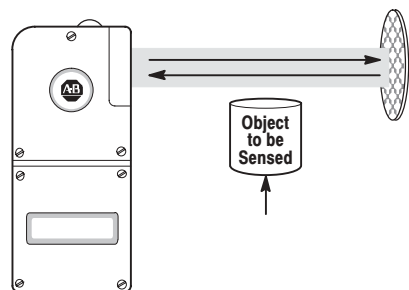
**With Terminal Style Power Base**



**With Cable Style Power Base**



**Note:** Details of connection of Allen-Bradley Series 5000 photoelectric sensors to Allen-Bradley Programmable Controllers can be found in publication 42-2.0.

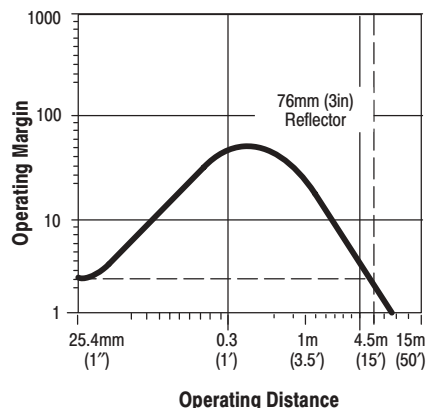


### QD Cordsets and Accessories

Description	Catalog/Page Number
Terminal Chambers	7-20
Right Angle Bracket	60-1785
Conduit Adaptor, 1/2in NPT	60-2213
Armoured Cable Adaptor	60-1577
76mm (3in) Diameter Reflector	92-39
32mm (1.25in) Diameter Reflector	92-47

### Typical Response Curve

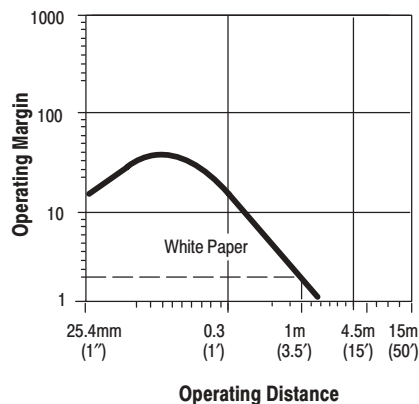
#### Retroreflective



### Specifications

Field of View	3°
Emitter LED	Infrared 880nm

#### Standard Diffuse



### Product Selection

#### 1. Select Photohead.

Sensing Mode	Sensing Distance	Output Energized	Output Type Capacity	Max Leakage Current	Response Time <sup>①</sup>		Catalog Number
					Sensor	Output	
Selectable Retroreflective or Standard Diffuse	50.8mm (2in) to 6m (20ft) with 76mm (3") Reflector	Light/Dark Selectable	EM Relay (SPDT) 2.0A-120V AC 1.0A-240V AC	—	5ms	On 10ms Off 15ms	42LRC-5000
			AC/DC Solid State FET (SP-N.O.) 30mA 0-120V AC/DC	10µA		1ms	42LRC-5010
	50.8mm (2in) to 1.5m (5ft) with White Paper		AC Solid State TRIAC (SP-N.O.) 0.75A 240V AC cont.	1mA		8ms	42LRC-5020

① Add Sensor and Output for total response time.

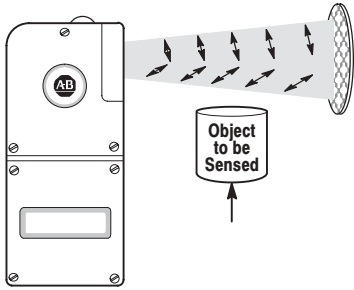
#### 2. Select Power Base.

Style	Operating Voltage	Supply Current	Catalog Number
Terminal	120V AC, 50/60Hz	2VA	42LTB-5000
	240V AC, 50/60Hz	4VA	42LTB-5001
Cable	120V AC, 50/60Hz	2VA	42LCB-5000

Allen-Bradley Parts

Series 5000 Polarized Retroreflective

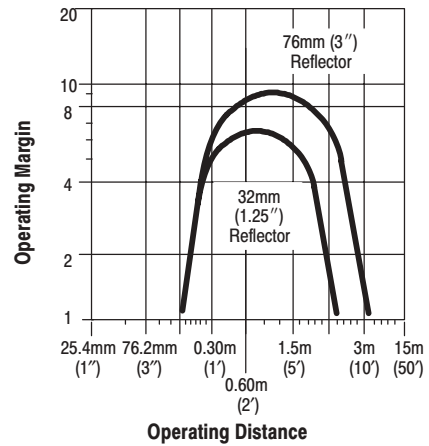
Red Line



QD Cordsets and Accessories

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Conduit Adaptor, 1/2in NPT	60-2213
Armoured Cable Adaptor	60-1577
76mm (3in) Diameter Reflector	92-39
32mm (1.25in) Diameter Reflector	92-47

Typical Response Curve



Specifications

Field of View	3°
Emitter LED	Visible red 660nm

Product Selection

1. Select Photohead.

Sensing Distance	Output Energized	Output Type Capacity	Max Leakage Current	Response Time①		Catalog Number
				Sensor	Output	
50.8mm (2in) to 6m (20ft) with 76mm (3") Reflector	Light/Dark Selectable	EM-Relay (SPDT) 2.0A-120V AC 1.0A-240V AC	—	5ms	On 10ms Off 15ms	42LRC-5200
		AC/DC Solid State FET (SP-N.O.) 30mA 0-120V AC/DC	10µA		1ms	42LRC-5210
		AC Solid State TRIAC (SP-N.O.) 0.75A 240V AC cont.	1mA		8ms	42LRC-5220

① Add Sensor and Output for total response time.

2. Select Power Base.

Style	Operating Voltage	Supply Current	Catalog Number
Terminal	120V AC, 50/60Hz	2VA	42LTB-5000
	240V AC, 50/60Hz	4VA	42LTB-5001
Cable	120V AC, 50/60Hz	2VA	42LCB-5000