

## Series 7000 Cylindrical

### Miniature Cylindrical Style



#### Description

Series 7000 Cylindrical sensors can provide a lower-cost replacement for fiber optic sensors and glass fiber optic cables in many simple Transmitted Beam applications.

Only 6.4mm (0.25in) in diameter, these sensors can operate in 12V DC or 24V DC (nominal) applications. The maximum sensing distance is 530mm (21.0in).

Series 7000 Cylindrical Receivers have a single red LED output indicator. A single NPN or PNP, Light Operate or Dark Operate output can be selected by catalog number. Most versions can supply 100mA output current.

#### Features

- Miniature cylindrical package
- Transmitted beam sensing mode
- 12 or 24V DC operation
- NPN or PNP outputs
- Fast response time
- 3m (10ft) cable connection

#### General Specifications

<b>Light Source</b>	Infrared 940nm
<b>Unit Protection</b>	Reverse polarity
<b>Supply voltage</b>	See Product Selection
<b>Current Consumption</b>	35mA maximum
<b>Output Type</b>	NPN or PNP
<b>Output Mode</b>	Light/dark operate
<b>Output Rating</b>	100mA @ 28V DC
<b>Response Time</b>	500µs
<b>Housing Material</b>	Stainless steel
<b>Lens Material</b>	Acrylic
<b>LED Indicators</b>	See User Interface on page 1-79
<b>Connection Types</b>	3m 300V cable
<b>Supplied Accessories</b>	None
<b>Optional Accessories</b>	Mounting brackets
<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 +65°C (-40°F to +150°F)
<b>Relative Humidity</b>	5...95%
<b>Approvals</b>	UL listed, CSA approved, and CE marked for all applicable directives

#### General Information

Wiring Diagrams . . . . . page 1-79  
 Dimensions . . . . . page 1-79

#### Cylindrical Sensing Modes

Transmitted Beam . . . . . page 1-80

#### Accessories

Mounting Assemblies . . . . . page 1-375

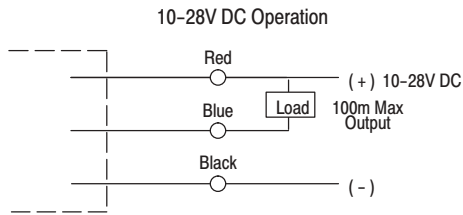
**User Interface Panel**

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

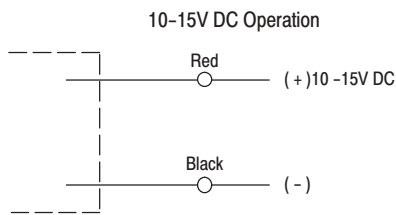
**Wiring Diagrams**

**Connection Diagrams**

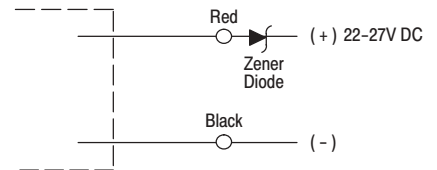
**Receiver**



**Light Source**



**22-27V DC Operation**

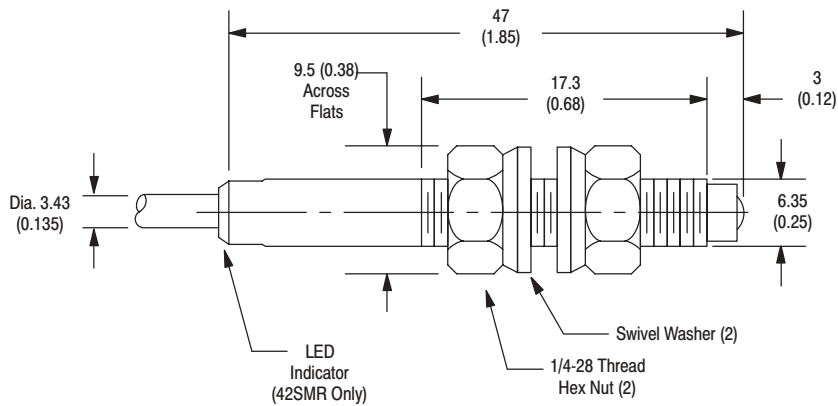


For sensors with NPN output: connect load between blue and red.  
 For sensors with PNP output: connect load between blue and black.

12V Zener diode (supplied) must be used for 22-27V DC operation.  
 Class 2 source required.

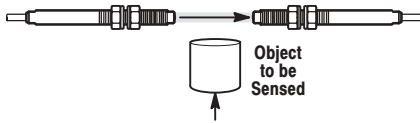
**Note:** Details regarding connection of Allen-Bradley Series 7000 photoelectric sensors to Allen-Bradley Programmable Controllers can be found in publication 42-2.0.

**Dimensions—mm (inches)**



## Series 7000 Cylindrical Transmitted Beam

### Miniature Cylindrical Style



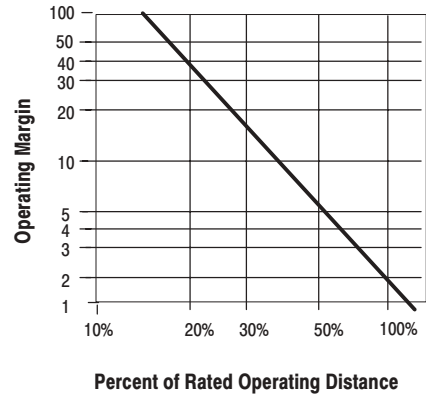
#### Accessories

Description	Page Number
Mounting Assemblies	1-375

#### Specifications

Field of View	See Product Selection
Emitter LED	Infrared 940nm

#### Typical Response Curve



#### Product Selection for Light Source

Operating Voltage Supply Current	Sensing Distance @ 1X Margin	Output Type Capacity Response Time	Max Leakage Current	Field of View	Connection Type	Catalog Number
10-15V DC 22-27V DC with Zener 35mA	5mm (0.19in) to 533.4mm (21in)	—	—	3°	3m cable	42SML-7000

#### Product Selection for Receiver

Operating Voltage Supply Current	Output Energized	Output Type Capacity Response Time	Max Leakage Current	Field of View	Connection Type	Catalog Number
10-28V DC 20mA	Light	NPN 100mA 500µs	10µA	7.5°	3m cable	42SMR-7000
	Dark					42SMR-7001
	Light	PNP 100mA (24V) 50mA (12V) 500µs				42SMR-7002
	Dark					42SMR-7003

# Allen-Bradley Replacements