



### Description

Bulletin 871R Ring and 871S Slot sensors are self-contained, general purposed, solid-state devices designed to sense the presence of ferrous and nonferrous metal objects that pass through their sensing field.

Ring sensors are available in 12, 20, 50 and 100mm ring diameter sizes with minimum ball sizes ranging from 2.5mm to 8.0mm.

Slot sensors are available in 30mm slot gap. When mounting two slot sensors side by side, it is necessary to use different models with different operating frequencies.

### Features

- Cable or micro QD style
- Short circuit protection
- Reverse polarity protection
- CE marked for all applicable directives.

### Styles

- 871R DC 3-Wire Ring . . . . page 2–178
- 871S DC 3-Wire Slot . . . . . page 2–181

### QD Cordsets

- Quick-Disconnect Cables . . . page 7–1

### General Information

- Torque Chart . . . . . page 2–201
- Metric/English
- Conversion Chart . . . . . page 10–9

## 871R 3-Wire DC

### Ring Style



871R DC Cable Style  
12, 20mm  
page 2-179



871R DC Micro  
Quick-Disconnect Style  
50, 100mm  
page 2-180



871R DC Micro  
Quick-Disconnect Style  
100mm  
page 2-180



### Specifications

<b>Load Current</b>	≤200mA
<b>Leakage Current</b>	≤10μA
<b>Operating Voltage</b>	10–30V DC
<b>Voltage Drop</b>	≤2.4V
<b>Repeatability</b>	≤2%
<b>Hysteresis</b>	10% typical
<b>Reverse Polarity Protection</b>	Incorporated
<b>Transient Noise Protection</b>	Incorporated
<b>Short Circuit Protection</b>	Incorporated
<b>Overload Protection</b>	Incorporated
<b>False Pulse Protection</b>	Incorporated
<b>Approvals</b>	CE marked for all applicable directives
<b>Enclosure</b>	NEMA 4 IP67 (IEC529)
<b>Connections</b>	Cable: 2m (6.5ft) length 3-conductor #26AWG PVC Quick-Disconnect: 4-pin micro style
<b>LED</b>	Red: Output energized
<b>Operating Temperature</b>	–25°C to +70°C (–13°F to +158°F)
<b>Shock and Vibration</b>	5g, 10–55Hz

### Features

- 3-wire operation
- 3-conductor, 4-pin micro QD style
- 10–30V DC
- Reverse polarity, short circuit, overload, false pulse, and transient noise protection
- CE marked for all applicable directives

**Product Selection**

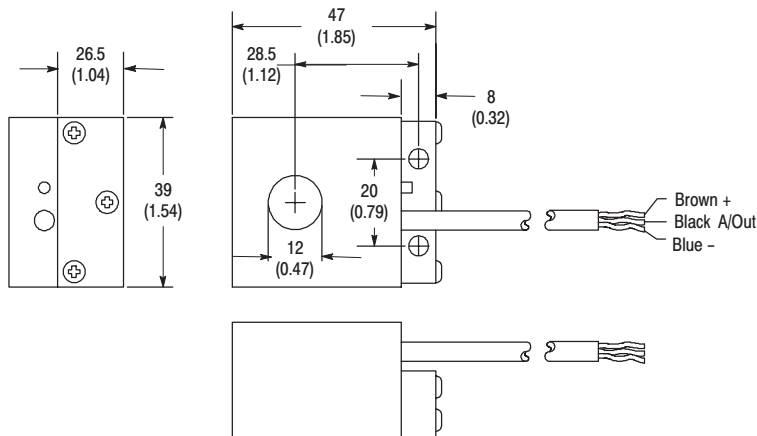
Ring Diameter	Minimum Ball Size mm (inches)	Output Configuration		Switching Frequency (Hz)	Catalog Number	
					Cable Style	Micro QD Style
12mm	2.5 (0.10)	N.O.	PNP	800	871R-D12NP39-E2	—
20mm	6 (0.24)			1000	871R-D20NP73-E2	—
50mm	3 (0.12)	N.O. and N.C.	PNP	500	—	871R-D50NP90-D4
100mm	8 (0.31)		NPN			871R-D50NN90-D4
			PNP			871R-D100NP120-D4
			NPN			871R-D100NN120-D4
Recommended Standard QD Cordset (-6F = 1.8m (6ft), -2 = 2m (6.5ft))						889D-F4AC-2

**QD Cordsets**

Description	Page Number
Other Cordsets Available	7-41
Terminal Chambers	7-20

**Dimensions—mm (inches)**

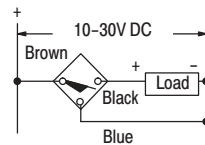
**Cable Style (871R-D12NP39-E2)**



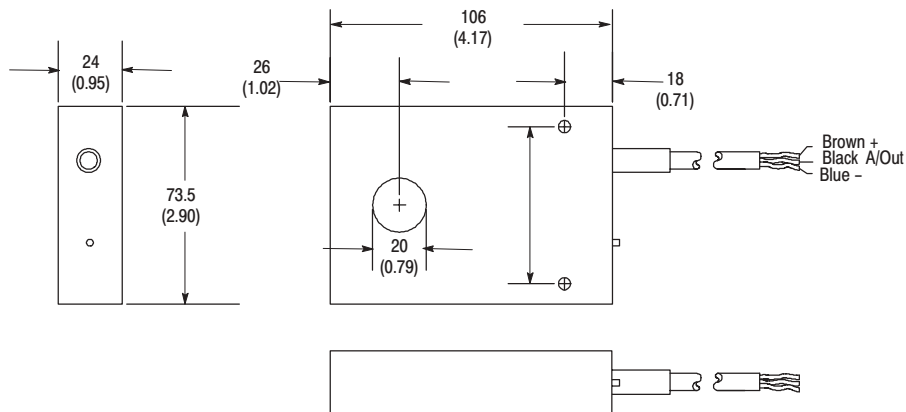
**Wiring Diagrams**

**Normally Open**

**PNP (Sourcing)**

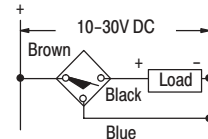


**Cable Style (871R-D20NP73-E2)**



**Normally Open**

**PNP (Sourcing)**

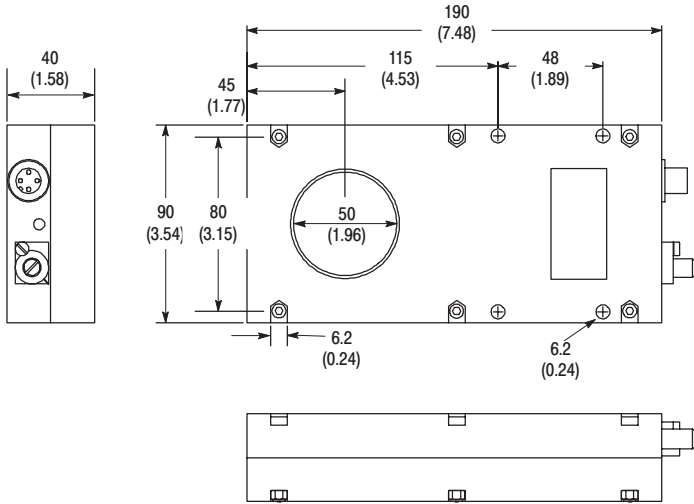


# 871R 3-Wire DC

## Ring Style

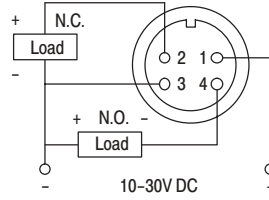
### Dimensions—mm (inches)

Micro Quick-Disconnect Style (871R-D50NP90-D4 & 871R-D50NN90-D4)

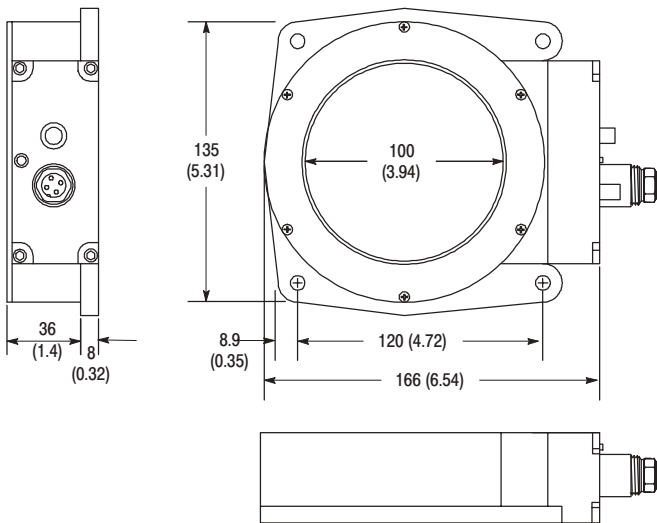


### Wiring Diagrams

Complementary Normally Open and Normally Closed PNP (Sourcing)



Micro Quick-Disconnect Style (871R-D100NP120-D4 & 871R-D100NN120-D4)



Complementary Normally Open and Normally Closed PNP (Sourcing)

