



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 2–180
- 871S DC 3-Wire Slot page 2–183

QD Cordsets and Accessories

- Quick-Disconnect Cables . . . page 5–1

General Information

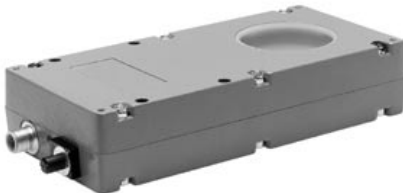
- Torque Chart page 2–203
- Metric/English
- Conversion Chart page 11–1

871R 3-Wire DC

Ring Style



871R DC Cable Style
12, 20mm
page 2-181



871R DC Micro
Quick-Disconnect Style
50, 100mm
page 2-182



871R DC Micro
Quick-Disconnect Style
100mm
page 2-182



Specifications

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

Selection Guide

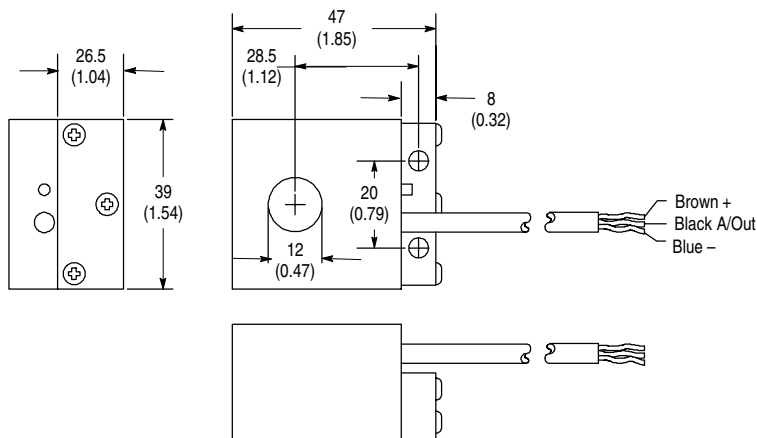
Ring Diameter	Minimum Ball Size mm (inches)	Output Configuration		Switching Frequency (Hz)	Catalog Number	
					Cable Style	Micro QD Style
12mm	2.5 (0.10)	N.O.	PNP	800	871R-D12NP39-E2	—
20mm	6 (0.24)			1000	871R-D20NP73-E2	—
50mm	3 (0.12)	N.O. and N.C.	PNP	500	—	871R-D50NP90-D4
			NPN			871R-D50NN90-D4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

QD Cordsets and Accessories

Description	Page Number
Other Cordsets Available	5-26
Terminal Chambers	5-19

Dimensions—mm (inches)

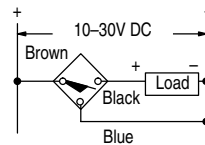
Cable Style (871R-D12NP39-E2)



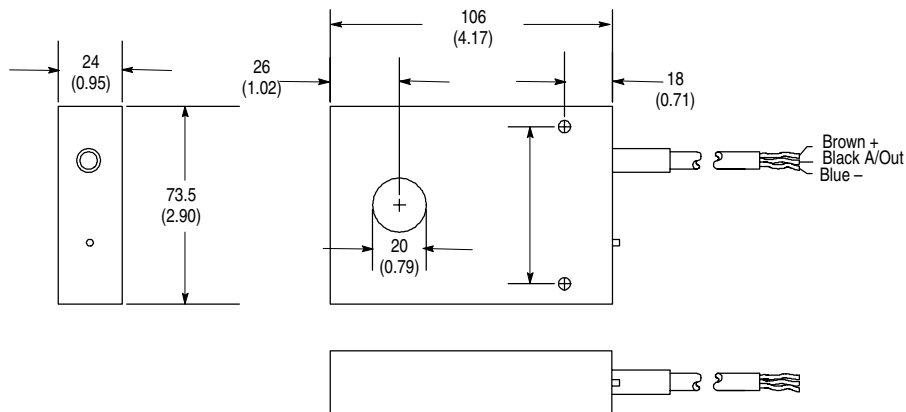
Wiring Diagrams

Normally Open

PNP (Sourcing)

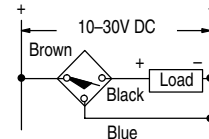


Cable Style (871R-D20NP73-E2)



Normally Open

PNP (Sourcing)

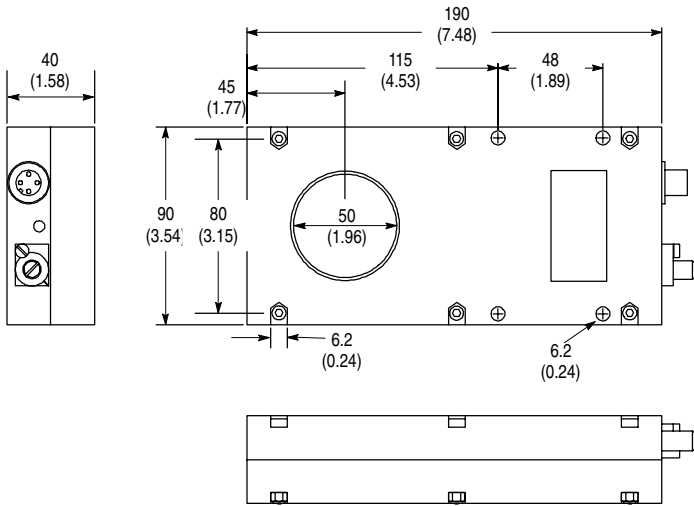


871R 3-Wire DC

Ring Style

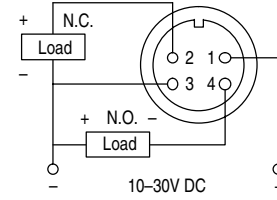
Dimensions—mm (inches)

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

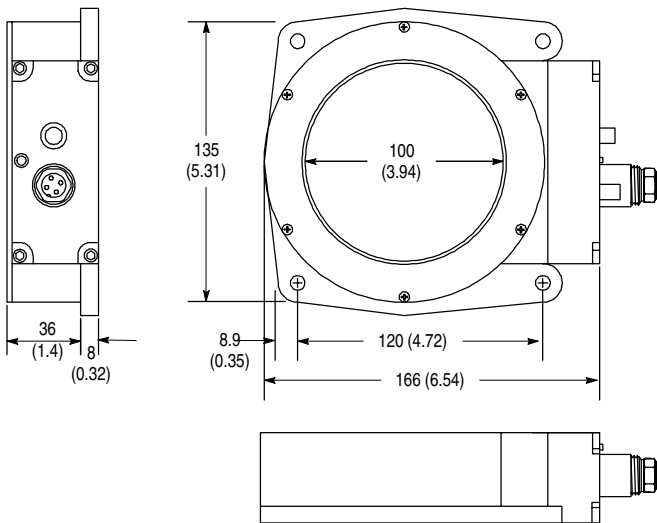


Wiring Diagrams

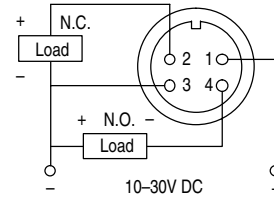
Complementary Normally Open and Normally Closed PNP (Sourcing)



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



Complementary Normally Open and Normally Closed PNP (Sourcing)





871R DC Cable Style
30mm Slot Gap
page 2-184



Specifications

Load Current	≤200mA
Leakage Current	≤10μA
Operating Voltage	18–30V DC
Voltage Drop	≤2.4V
Repeatability	≤2%
Hysteresis	15% typical
Transient Noise Protection	Incorporated
False Pulse Protection	Incorporated
Approvals	CE marked for all applicable directives
Enclosure	NEMA 4 IP65 (IEC529)
Connections	Cable: 2m (6.5ft) length 3-conductor #26AWG PVC
LED	None
Operating Temperature	–25°C to +70°C (–13°F to +158°F)
Shock and Vibration	5g, 10–55Hz

Features

- 3-wire operation
- 3-conductor
- 18–30V DC
- False pulse and transient noise protection
- CE marked for all applicable directives

Inductive Proximity Sensors

871S 3-Wire DC

Slot Style

Selection Guide

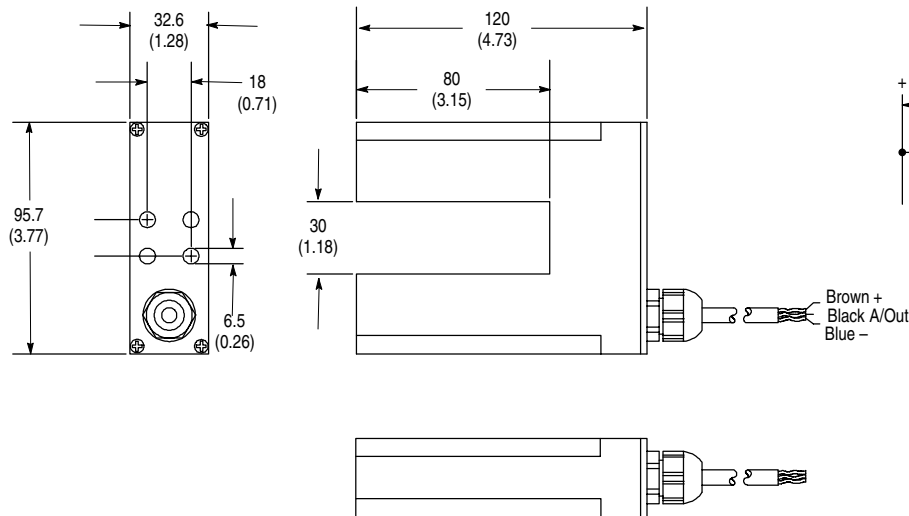
Slot Gap	Output Configuration		Switching Frequency (Hz)	Operating Frequency (KHz)	Catalog Number
					Cable Style
30mm	N.O.	PNP	500	75	871S-D20NP30-E2
				110	871S-DX20NP30-E2

QD Cordsets and Accessories

Description	Page Number
Terminal Chambers	5-1

Dimensions—mm (inches)

Cable Style



Wiring Diagrams

**Normally Open
PNP (Sourcing)**

