



Introducing Another Sensor Solution From Rockwell Automation/Allen-Bradley

Bulletin 871D Cylinder Position Proximity Sensors



**Rockwell
Automation**

Bringing Together Leading Brands in Industrial Automation

A Tough Sensor Built to Address *Your* Challenges

The 871D cylinder position sensor family was designed with *your* application in mind. A rugged sensor to address *your* needs in demanding real world world applications.



Convenience

- Simple 3-step mounting
- Housing rotatable without breaking pressure seal
- 3-wire DC models and 2-wire AC/DC models
- Available in multiple standard probe lengths

Durability

- Weld field immunity on all models
- Shielded sensor construction
- Stainless steel probe with ceramic face
- IP67 rated housing
- 3000psi pressure rated

Peace of Mind

- Full electrical protections on all models
- Rockwell Automation/Allen-Bradley worldwide support
- Rockwell Automation/Allen-Bradley's Forever Warranty

Simple 3-Step Mounting

The innovative design of the 871D product family allows 304° of rotational movement after installation without breaking the pressure seal. This system provides simpler and faster sensor installation and results in neater cable runs. The sensor body is locked into place through the use of one of two set screws on the sensor mounting flange, allowing for sensor body orientation in any position in the 304° of rotation (even over mounting bolts!).

Just ***Bolt*** the 871D onto the cylinder...



Then ***Position*** the sensor body to allow for desired cable routing...



And ***Lock*** the housing into place with one or both of two integral setscrews...



Selection Guide

Probe Length ^① mm (in)	Color Code	DC 4-pin micro QD Catalog Numbers	DC 4-pin mini QD Catalog Numbers	AC/DC 3-pin micro QD Catalog Numbers	AC/DC 3-pin mini QD Catalog Numbers
26.0 (1.025)	Blue	871D-DW2NP260-D4	871D-DW2NP260-N4	871D-BW2N260-R3	871D-BW2N260-N3
31.7 (1.250)	White	871D-DW2NP317-D4	871D-DW2NP317-N4	871D-BW2N317-R3	871D-BW2N317-N3
52.4 (2.062)	Red	871D-DW2NP524-D4	871D-DW2NP524-N4	871D-BW2N524-R3	871D-BW2N524-N3
73.0 (2.875)	Orange	871D-DW2NP730-D4	871D-DW2NP730-N4	871D-BW2N730-R3	871D-BW2N730-N3
95.9 (3.775)	Silver	871D-DW2NP959-D4	871D-DW2NP959-N4	871D-BW2N959-R3	871D-BW2N959-N3
115.9 (4.560)	Gold	871D-DW2NP1159-D4	871D-DW2NP1159-N4	871D-BW2N1159-R3	871D-BW2N1159-N3
Allen-Bradley QD Cordset ^②		889D-F4AC-2	889N-F4AFC-6F	889R-F3AEA-2	889N-F3AFC-6F

^① Spacer kits are available for nonstandard probe lengths, for more information, contact your local Allen-Bradley distributor.

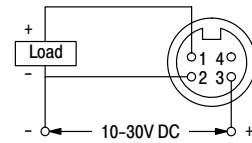
^② Cordsets above are straight 2m (-2) or 6 foot (-6F) length. Additional cordsets and other accessories are available, see Allen-Bradley *Sensor* catalog.

Specifications

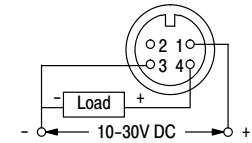
	3-Wire DC Models	2-Wire AC/DC Models
Output	Normally Open PNP (sourcing)	Normally Open
Max. Load Current	<200mA	5-500mA
Leakage Current	<80uA	<1.7mA @120V AC
Inrush Current (1 cycle)	—	<3A (t<20msec)
Operating Voltage	10-30V DC	20-250V AC/DC
Voltage Drop	<2.5V DC @200mA	<6V @400mA
Repeatability	5% typical	5% typical
Hysteresis	15% typical	15% typical
Switching Frequency	10Hz	50Hz
Reverse Polarity Protection	Incorporated	—
False Pulse Protection	Incorporated	Incorporated
Transient Noise Protection	Incorporated	Incorporated
Short Circuit Protection	Incorporated	Incorporated
Overload Protection	Incorporated	Incorporated
Weld Field Immunity	20,000A @ 25.4mm (1in)	20,000A @ 25.4mm (1in)
Pressure Rating	3000psi (207bar)	3000psi (207bar)
Enclosure	IP67 (IEC 529)	IP67 (IEC 529)
Connections	Quick Disconnect: 4-pin DC micro style 4-pin mini style	Quick Disconnect: 3-pin AC micro style 3-pin mini style
LED	Green: Power, Orange: Output	Green: Power, Orange: Output
Operating Temperature	-25°C to 70°C (-13°F to 158°F)	-25°C to 70°C (-13°F to 158°F)
Housing Material	Machined aluminum	Nickel plated brass
Probe Material	Stainless steel, ceramic face	Stainless steel, ceramic face

Wiring Diagrams

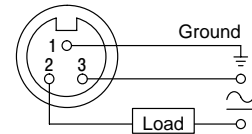
DC Mini Connector (-N4)



DC Micro Connector (-D4)

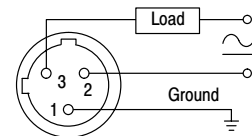


AC/DC Mini Connector (-N3)



Note 1: Load can be switched to pin 3.

AC/DC Micro Connector (-R3)

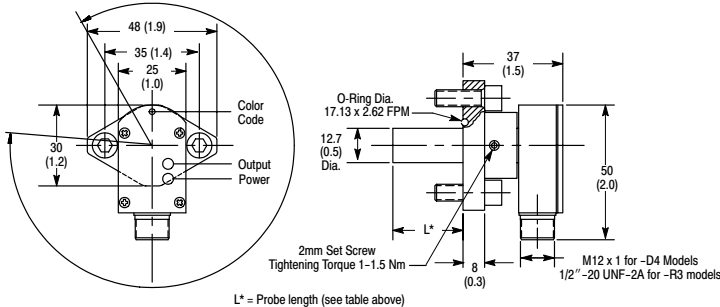


Note 1: Load can be switched to pin 2.

Dimensions—mm (in)

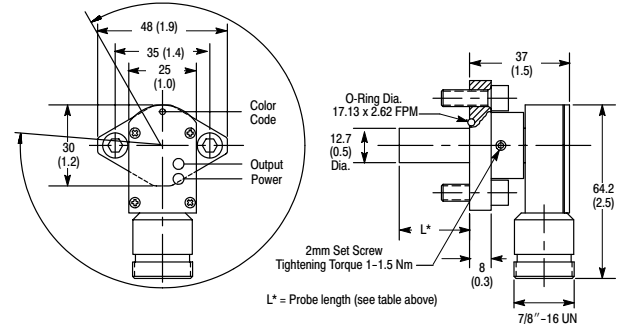
Micro Connector Models (-D4, -R3)

Range of Rotation: 304°



Mini Connector Models (-N3, -N4)

Range of Rotation: 304°



Bulletin 871D Cylinder Position Proximity Sensors

An Investment in the life of your automation application



At Rockwell Automation/Allen-Bradley, we look at your total automation investment, from short-term goals to long-term benefits. That way, we can help you maximize productivity throughout the life cycle of your proximity sensors. Here's how:

Justify

- Multiple input power options and CE marking help assure global acceptance.
- Rockwell Automation/Allen-Bradley's worldwide support network can provide assistance in almost any location throughout the world.

Apply

- Extensive part number offering helps make choosing the right sensor easy.
- Multiple standard probe lengths and availability of spacer kits for nonstandard probe length applications helps to maximize application possibilities.

Install

- Simple 3-step installation process results in quicker startup.
- Adjustment of sensor body position without breaking pressure seal allows for neat cable runs during installation.
- Quick-disconnect models provide ease of installation.

Operate

- Power and output LEDs provide feedback on sensor operation.
- Features designed to provide these sensors with protection against short circuit, overload, false pulse, transient noise, and reverse polarity[Ⓢ] problems help maximize uptime.

[Ⓢ] Incorporated in DC models only

Maintain

- Quick-disconnect features easy removal and replacement.
- Adjustment of sensor body position without breaking pressure seal provides maintenance and machine upgrade flexibility.

Improve

- Simple installation helps speed machinery upgrades.
- Part of the broad sensor line from Rockwell Automation/Allen-Bradley for one-stop shopping and easy integration.
- Rockwell Automation/Allen-Bradley's commitment to sensors ensures continued improvements in performance and application flexibility.

Reach us now at www.rockwellautomation.com

Wherever you need us, Rockwell Automation brings together leading brands in industrial automation including Allen-Bradley controls, Reliance Electric power transmission products, Dodge mechanical power transmission components, and Rockwell Software. Rockwell Automation's unique, flexible approach to helping customers achieve competitive advantage is supported by thousands of authorized partners, distributors and system integrators around the world.

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