



Description

Bulletin 871D cylinder position inductive proximity sensors are self-contained solid state devices. These devices are designed for sensing metal objects without physical contact. Bulletin 871D cylinder position sensors are specifically designed for end of stroke detection of both hydraulic and pneumatic cylinders.

The innovative design of the 871D product family allows 304° of rotational movement of the sensor body after installation without breaking the seal. The sensor body is locked into place through the use of one of two set screws on the sensor mounting flange. This system provides simpler and faster sensor installation as well as neat cable runs.

Each 871D sensor mounts into the industry standard in-port cylinder position sensor bolt pattern with two (1/4"–20UNC x 3/4") grade 8 screws and is sealed with an O-ring to withstand pressures of 3000psi (207 BAR). All models are weld field immune and employ full electrical protections including short circuit, overload, false pulse, reverse polarity (DC models), and transient noise protection. All units meet IEC IP67 enclosure standards and are CE rated for all applicable directives.

Bulletin 871D sensors are available in both 3-wire DC and 2-wire AC/DC versions with either mini- or micro-style connectors. Each sensor type is available in six industry standard probe lengths from 26mm to 115.9mm (1.025in to 4.560in). Custom probe lengths and special spacers are also available for specific applications.

Features

- Stainless steel probe with ceramic face
- Low profile housing can be rotated 304° after installation without breaking pressure seal
- Shielded construction
- Weld-field immune
- Short circuit protection
- Overload protection
- Transient noise protection
- False pulse protection
- Reverse polarity protection (DC models)
- UL listed, c-UL certified, and CE marked for all applicable directives

Styles

- DC 3-wire page 2–110
- AC/DC 2-wire page 2–112

Accessories

- Quick-Disconnect Cables . . . page 5–1
- Spacer Kits page 2–202

General Information

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

Inductive Proximity Sensors
Bulletin 871D 3-Wire DC
Cylinder Position Inductive Style



*871D DC Mini
 Quick-Disconnect Style
 12mm
 page 2-111*



*871D DC Micro
 Quick-Disconnect Style
 12mm
 page 2-111*



Specifications

Outputs	Normally Open
Max. Load Current	<200mA
Leakage Current	< 80uA
Operating Voltage	10–30VDC
Voltage Drop	< 2.5VDC @200mA
Switching Frequency	10Hz
Repeatability	5% typical
Hysteresis	15% typical
Reverse Polarity Protection	Incorporated
False Pulse Protection	Incorporated
Transient Noise Protection	Incorporated
Short Circuit Protection	Incorporated
Overload Protection	Incorporated
Weld Field Immunity	20,000A at 1in
Approvals	UL listed, c-UL certified for Canada, and CE marked for all applicable directives
Enclosure	NEMA 1, 2, 3, 3R, 4, 6, 12, 13, IP67 (IEC 529)
Connections	Quick Disconnect: 4-pin mini style 4-pin micro style
LED	Green: Power; Orange: Output
Operating Temperature	-25°C to 70°C (-13°F to 158°F)
Shock	30g, 11ms
Vibration	55Hz, 1mm amplitude, 3 planes
Housing Material	Machined aluminum
Probe Material	Stainless steel, ceramic face

Features

- Rugged low profile housing
- 3-wire operation
- Housing 304° rotatable after installation without breaking pressure seal
- 10–30V DC
- Normally open output
- Weld-field immune
- Short circuit, overload, false pulse, transient noise, and reverse polarity protection
- UL listed, c-UL certified, and CE marked for all applicable directives

Selection Guide

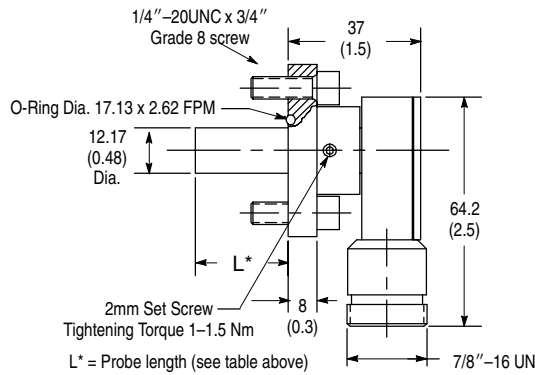
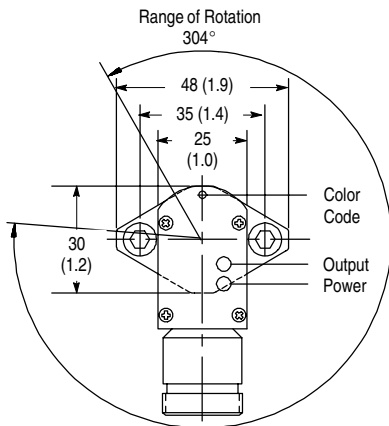
Barrel Dia.	Nominal Sensing Distance mm (inches)	Shielded	Output Configuration	Probe Length mm (inches)	Color Code	Catalog Numbers	
						Mini QD	Micro QD
12mm	2 (0.08)	Y	N.O.	26.0 (1.025)	Blue	871D-DW2NP260-N4	871D-DW2NP260-D4
				31.7 (1.250)	White	871D-DW2NP317-N4	871D-DW2NP317-D4
				52.4 (2.062)	Red	871D-DW2NP524-N4	871D-DW2NP524-D4
				73.0 (2.875)	Orange	871D-DW2NP730-N4	871D-DW2NP730-D4
				95.9 (3.775)	Silver	871D-DW2NP959-N4	871D-DW2NP959-D4
				115.9 (4.560)	Gold	871D-DW2NP1159-N4	871D-DW2NP1159-D4
Recommended Standard QD Cordset (-6F = 1.8m (6ft), -2 = 2m (6.5ft))						889N-F4AFC-6F	889D-F4AC-2

QD Cordsets and Accessories

Description	Page Number
Other Cordsets Available	5-8, 5-26
Terminal Chambers	5-19
Spacer Kits	2-202

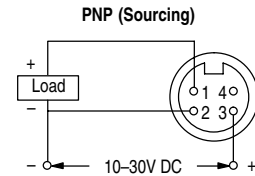
Dimensions—mm (inches)

Mini Connector Models

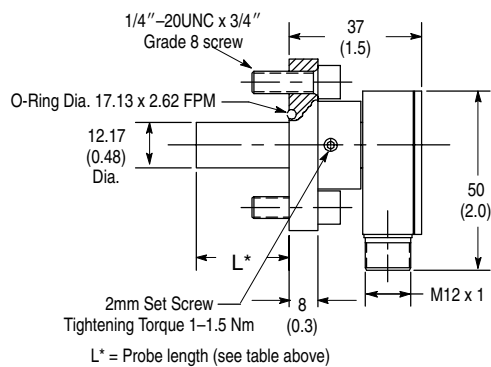
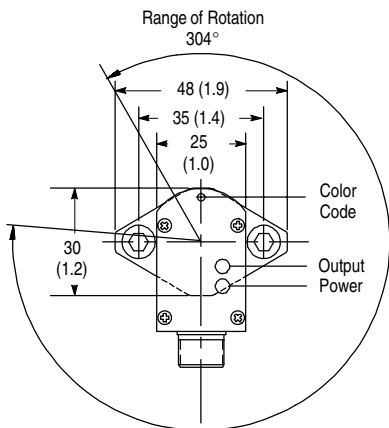


Wiring Diagrams

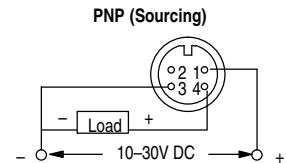
**Mini Quick-Disconnect Style
Normally Open**



Micro Connector Models



**Micro Quick-Disconnect Style
Normally Open**





871D AC/DC Mini
Quick-Disconnect Style
12mm
page 2-113



871D AC/DC Micro
Quick-Disconnect Style
12mm
page 2-113



Specifications

Outputs	Normally Open
Load Current	5–400mA
Inrush Current (1 cycle)	< 3A (t < 20msec)
Leakage Current	< 1.7mA @ 120V AC
Operating Voltage	20–250V AC/DC
Voltage Drop	< 6V at 400mA
Switching Frequency	50Hz
Repeatability	5% typical
Hysteresis	15% typical
False Pulse Protection	Incorporated
Transient Noise Protection	Incorporated
Short Circuit Protection	Incorporated
Overload Protection	Incorporated
Weld Field Immunity	20,000A at 1in
Approvals	UL listed, c-UL certified for Canada, and CE marked for all applicable directives
Enclosure	NEMA 1, 2, 3, 3R, 4, 6, 12, 13, IP67 (IEC 529)
Connections	Quick Disconnect: 3-pin mini style 3-pin micro style
LED	Green: Power; Orange: Output
Operating Temperature	–25°C to 70°C (–13°F to 158°F)
Shock	30g, 11ms
Vibration	55Hz, 1mm amplitude, 3 planes
Housing Material	Nickel plated brass
Probe Material	Stainless steel, ceramic face

Features

- Rugged low profile housing
- 2-wire operation
- Housing 304° rotatable after installation without breaking pressure seal
- 20–250V AC/DC
- Normally open output
- Weld-field immune
- Short circuit, overload, false pulse, and transient noise protection
- UL listed, c-UL certified, and CE marked for all applicable directives

Selection Guide

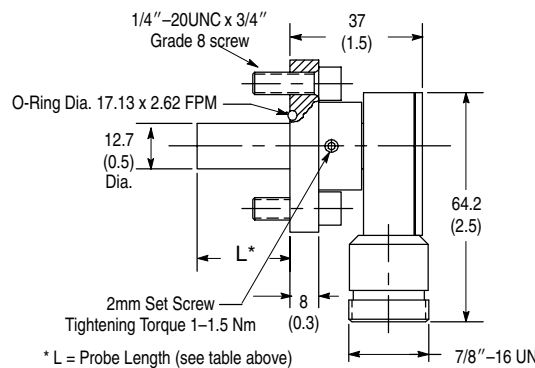
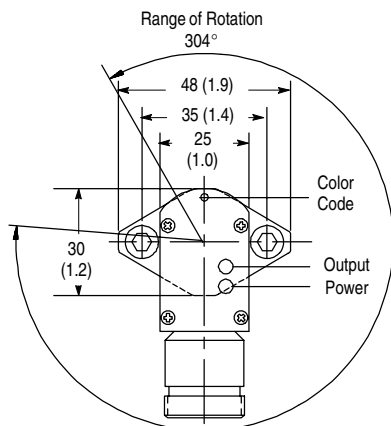
Barrel Dia.	Nominal Sensing Distance mm (inches)	Shielded	Output Configuration	Probe Length mm (inches)	Color Code	Catalog Numbers	
						Mini QD	Micro QD
12mm	2 (0.08)	Y	N.O.	26.0 (1.025)	Blue	871D-BW2N260-N3	871D-BW2N260-R3
				31.7 (1.250)	White	871D-BW2N317-N3	871D-BW2N317-R3
				52.4 (2.062)	Red	871D-BW2N524-N3	871D-BW2N524-R3
				73.0 (2.875)	Orange	871D-BW2N730-N3	871D-BW2N730-R3
				95.9 (3.775)	Silver	871D-BW2N959-N3	871D-BW2N959-R3
				115.9 (4.560)	Gold	871D-BW2N1159-N3	871D-BW2N1159-R3
Recommended Standard QD Cordset (-6F = 1.8m (6ft), -2 = 2m (6.5ft))						889N-F3AFC-6F	889R-F3ACA-2

QD Cordsets and Accessories

Description	Page Number
Other Cordsets Available	5-8, 5-26
Terminal Chambers	5-19
Spacer Kits	2-202

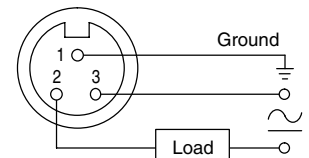
Dimensions—mm (inches)

Mini Connector Models



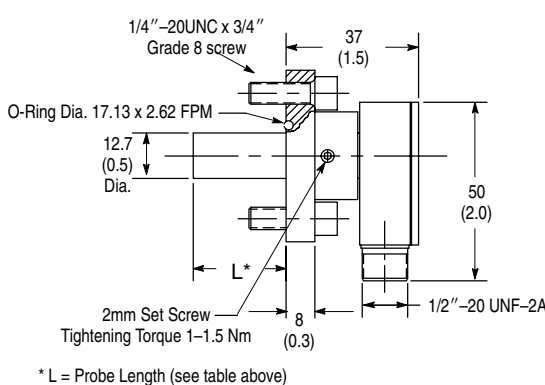
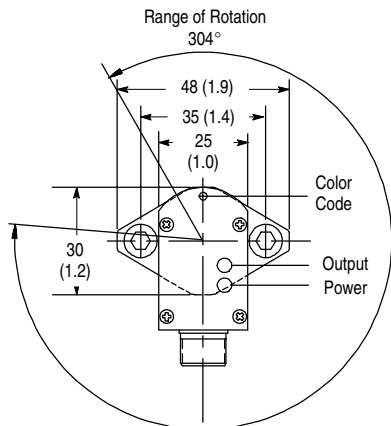
Wiring Diagrams

**Mini Quick-Disconnect Style
Normally Open**

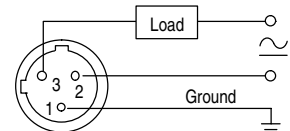


Note 1: Load can be switched to pin 3.

Micro Connector Models

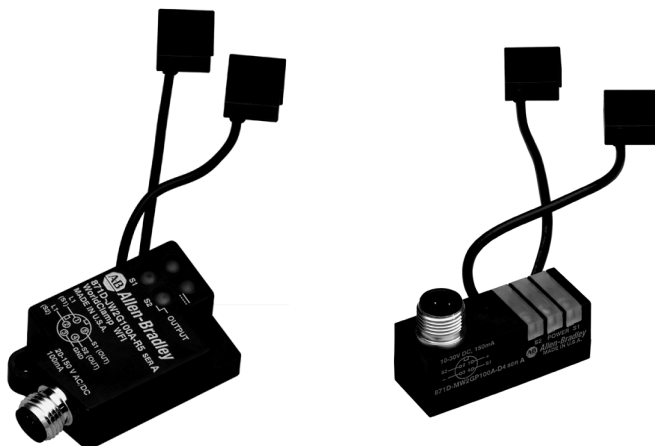


**Micro Quick-Disconnect Style
Normally Open or Normally Closed**



Note 1: Load can be switched to pin 2.

Notes



Description

Bulletin 871D WorldClamp™ proximity sensors are specifically designed for use in power clamp and gripper applications. These devices incorporate two sensors into one unit, reducing the number of sensors and connection systems required for applications. Each sensor has two sensing coils (chicklets) that are used to detect whether the clamp/gripper is in the open or closed position.

The 871D WorldClamp has a compatible mounting configuration for the cartridges used by the major clamp manufacturers. These models are weld-field immune and have full electrical protections including short circuit, overload, false pulse, reverse polarity (DC models), and transient noise protection. All units meet IEC IP67 enclosure standards and are CE marked for all applicable directives.

Bulletin 871D WorldClamp™ proximity sensors are available in both 4-wire DC and 5-wire AC/DC micro quick-disconnect styles. Each sensor type is available in 100mm, 165mm, and 200mm lead lengths with either the large or small chicklet size.

Features

- Superior LED visibility
- Weld-field immune
- Shielded construction
- Short circuit protection
- Overload protection
- Transient noise protection
- False pulse protection
- Reverse polarity protection (DC models)
- UL listed, c-UL certified, and CE marked for all applicable directives

Styles

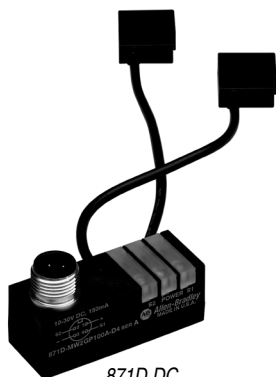
- DC 4-wire page 2-116
- AC/DC 5-wire page 2-118

Accessories

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

General Information

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



871D DC
100, 165, 200mm



Features

- 2 normally open outputs
- Superior LED visibility
- 10–30V DC
- Weld field immune
- Short circuit, overload, false pulse, reverse polarity, and transient noise protection
- 100, 165, and 200mm lead length for chicklets
- Small or large chicklet sizes
- Impact resistant housing
- 4-pin micro quick-disconnect
- UL listed, c–UL certified, and CE marked for all applicable directives

Specifications

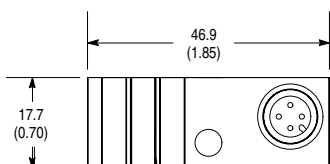
Load Current	150mA max
Leakage Current	< 10µA
Operating Voltage	10–30V DC
Voltage Drop	< 2.5V
Repeatability	< 2%
Hysteresis	5% typical
False Pulse Protection	Incorporated
Transient Noise Protection	Incorporated
Short Circuit Protection	Incorporated
Overload Protection	Incorporated
Weld Field Immunity	1600 Gauss
Approvals	UL listed, c–UL certified, and CE marked for all applicable directives
Enclosure	IP67
Connections	4-pin micro quick-disconnect
LED	Green: power; orange: S1 output; red: S2 output
Operating Temperature	–25°C to +70°C (–13°F to +158°F)
Shock	30g, 11ms
Vibration	55Hz, 1mm amplitude, 3 planes

Selection Guide

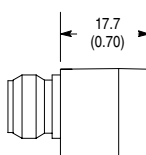
Nominal Sensing Distance mm (in)	Shielded	Output Configuration	Switching Frequency (Hz)	Lead Length mm (inches)	Chicklet Size	Catalog Number
2 (0.08)	Y	2 N.O. PNP Outputs	15	100 (3.94)	Large	871D-MW2GP100A-D4
					Small	871D-MW2GP100B-D4
				165 (6.50)	Large	871D-MW2GP165A-D4
					Small	871D-MW2GP165B-D4
				200 (7.88)	Large	871D-MW2GP200A-D4
					Small	871D-MW2GP200B-D4
Recommended Standard QD Cordset (-2 = 2m (6.5ft))						889D-F4AC-2

Dimensions—mm (inches)

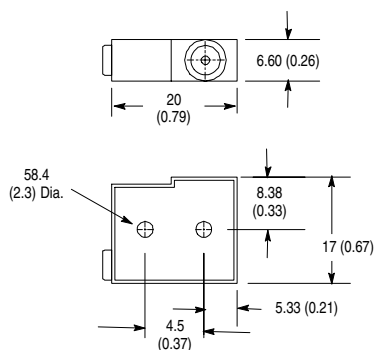
Front View



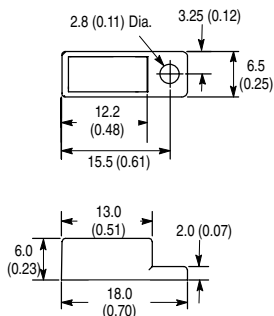
Side View



Large Chicklet

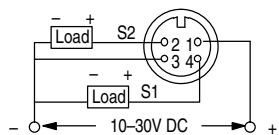


Small Chicklet



Wiring Diagram

**Normally Open Output
PNP (Sourcing)**





871D AC/DC
100, 165, 200mm



Features

- 2 normally open outputs
- 20–150V AC/DC
- Weld field immune
- Short circuit, overload, false pulse, and transient noise protection
- 100, 165, and 200mm lead length for chicklets
- Small or large chicklet sizes
- Impact resistant housing
- 5-pin micro quick-disconnect
- UL listed, c–UL certified, and CE marked for all applicable directives

Specifications

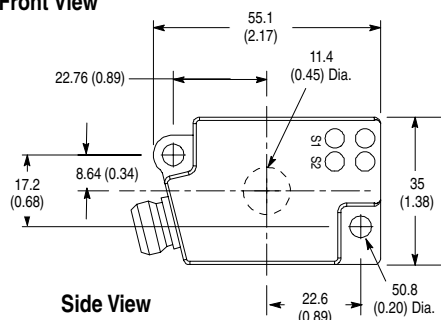
Load Current	100mA max
Inrush Current (1 cycle)	≤2A (1 cycle)
Leakage Current	< 1.7mA
Operating Voltage	20–150V AC/DC
Voltage Drop	< 10V
Repeatability	< 2%
Hysteresis	5% typical
False Pulse Protection	Incorporated
Transient Noise Protection	Incorporated
Short Circuit Protection	Incorporated
Overload Protection	Incorporated
Weld Field Immunity	1600 Gauss
Approvals	UL listed, c–UL certified, and CE marked for all applicable directives
Enclosure	IP67
Connections	5-pin AC micro quick-disconnect
LED	2 green: power S1 and S2; orange: S1 output; red: S2 output
Operating Temperature	–25°C to +70°C (–13°F to +158°F)
Shock	30g, 11ms
Vibration	55Hz, 1mm amplitude, 3 planes

Selection Guide

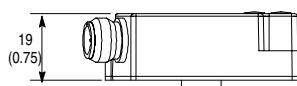
Nominal Sensing Distance mm (in)	Shielded	Output Configuration	Switching Frequency (Hz)	Lead Length mm (inches)	Chicklet Size	Catalog Number
2 (0.08)	Y	2 N.O. Outputs	20	100 (3.94)	Large	871D-JW2G100A-R5
					Small	871D-JW2G100B-R5
				165 (6.50)	Large	871D-JW2G165A-R5
					Small	871D-JW2G165B-R5
				200 (7.88)	Large	871D-JW2G200A-R5
					Small	871D-JW2G200B-R5
Recommended Standard QD Cordset (-2 = 2m (6.5ft))						889R-F5AEA-2

Dimensions—mm (inches)

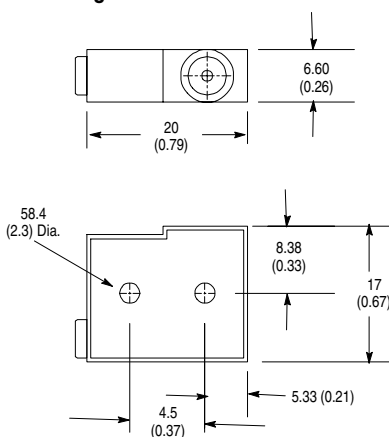
Front View



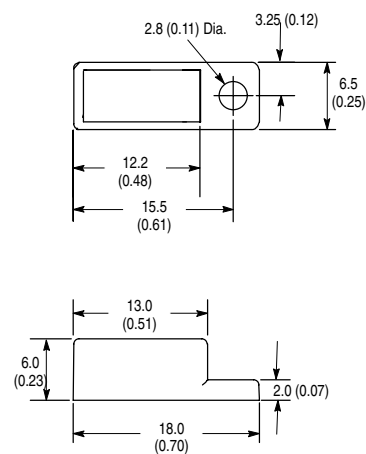
Side View



Large Chicklet

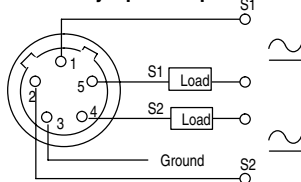


Small Chicklet



Wiring Diagram

Normally Open Outputs



Note: Load can be switched to pin 1 (S1) and pin 2 (S2).

