

**871Z 2-Wire AC/DC Weld Field Immune**

Thermoset Plastic Face/Threaded PTFE-Coated Brass Barrel

871Z AC/DC Cable Style  
18 & 30 mm871Z AC/DC Mini  
Quick-Disconnect Style  
12, 18, and 30 mm871Z AC/DC Micro  
Quick-Disconnect Style  
12, 18, and 30 mm**Features**

- 2-wire operation
- 3-conductor or 3-pin connection
- 20...250V AC/DC
- Normally open or normally closed output
- Weld field immunity
- Short circuit, false pulse, overload, and transient noise protection
- UL Listed, CSA Certified, and CE Marked for all applicable directives

**Specifications**

	12 mm	18 & 30 mm
Load Current	5...200 mA	5...250 mA
Inrush Current (1 cycle)	≤2 A	≤4 A
Leakage Current	≤1.9 mA @ 120V AC	
Operating Voltage	20...250V AC/DC	
Voltage Drop	≤10V @ 5...200 mA	≤10V @ 5...250 mA
Repeatability	≤10% at constant temperature	
Hysteresis	7% typical	
Protection Type	Short circuit (trigger @ 5 A typical), false pulse, reverse polarity (DC output), overload (trigger @ 260 mA typical), and transient noise	Short circuit (trigger @ 8 A typical), false pulse, reverse polarity (DC output), overload (trigger @ 320 mA typical), and transient noise
Weld Field Immunity	20,000 A at 1 inch	
Certifications	UL Listed, CSA Certified, and CE Marked for all applicable directives	
Enclosure Type Rating	NEMA 1, 2, 3, 3R, 4, 4X, 6, 6P, 12, 13; IP67 (IEC529) PTFE coated housing	
Connection Type	Cable: 2 m (6.5 ft) length H2 - 3 conductor #18 AWG ToughLink™ Quick-Disconnect: 3-pin micro style, 3-pin mini style	
LED	Red: Output energized Green: Power	Red: Flashing short circuit/overload
Operating Temperature [C (F)]	-25...+70 ° (-13...+158 °)	
Shock	30 g, 11 ms	
Vibration	55 Hz, 1 mm amplitude, 3 planes	

**Correction Factors**

Target Material	Correction Factors
Steel	1.0
Stainless Steel	0.7...0.8
Brass	0.4...0.5
Aluminum	0.3...0.4
Copper	0.3...0.4

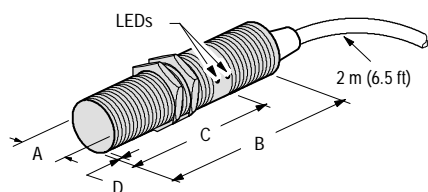
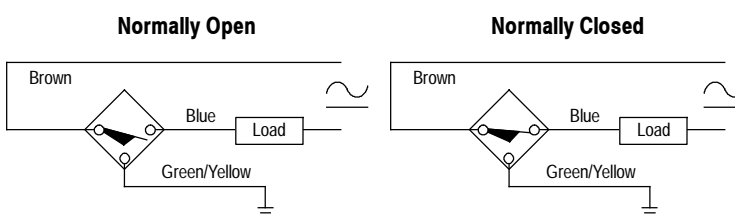
**871Z 2-Wire AC/DC Weld Field Immune****Thermoset Plastic Face/Threaded PTFE-Coated Brass Barrel****Product Selection**

Barrel Diameter [mm]	Nominal Sensing Distance [mm (in.)]	Shielded	Output Configuration	Switching Frequency [Hz]	Cat. No.		
					Cable Style	Mini QD Style	Micro QD Style
12	2 (0.08)	Yes	N.O.	30	—	871Z-BW2N12-N3	871Z-BW2N12-R3
			N.C.	20	—	871Z-BW2C12-N3	871Z-BW2C12-R3
	4 (0.16)	No	N.O.	30	—	871Z-BW4N12-N3	871Z-BW4N12-R3
			N.C.	20	—	871Z-BW4C12-N3	871Z-BW4C12-R3
18	5 (0.20)	Yes	N.O.	30	871Z-BW5N18-H2	871Z-BW5N18-N3	871Z-BW5N18-R3
			N.C.	20	871Z-BW5C18-H2	871Z-BW5C18-N3	871Z-BW5C18-R3
30	10 (0.39)	Yes	N.O.	30	871Z-BW10N30-H2	871Z-BW10N30-N3	871Z-BW10N30-R3
			N.C.	20	871Z-BW10C30-H2	871Z-BW10C30-N3	—
Recommended Standard QD Cordset (-6F = 1.8 m (6 ft), -2 = 2 m (6.5 ft))						889N-F3AFC-6F	889R-F3WEA-2

**Note:** This Allen-Bradley Weld Field Immune proximity sensor is also available with additional weld slag resistant material on the sensing face. Consult your local Rockwell Automation sales office or Allen-Bradley distributor for details.

**QD Cordsets and Accessories**

Description	Page Number
Other Cordsets Available	8-2
Terminal Chambers	8-2
Mounting Brackets	2-210...2-214
PTFE End Caps	2-219
Mounting Nuts	2-221...2-222

**Approximate Dimensions —[mm (in.)]****Cable Style****Wiring Diagram**

**Note:** Rear portion of barrel left uncoated for ground contact on 12 mm models.

Thread Size	Shielded	[mm (in.)]			
		A	B	C	D
M18 X 1	Y	18.0 (0.71)	74.68 (2.94)	61.6 (2.43)	0.8 (0.03)
M30 X 1.5	Y	30.0 (1.18)	77.52 (3.05)	64.3 (2.53)	

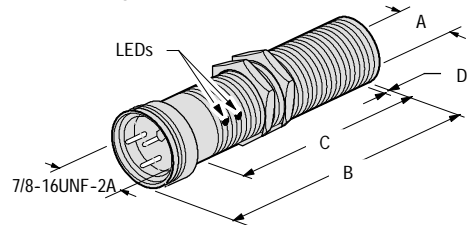
Inductive Proximity Sensors

871Z 2-Wire AC/DC Weld Field Immune

Thermoset Plastic Face/Threaded PTFE-Coated Brass Barrel

Approximate Dimensions [mm (in.)]

Mini QD Style

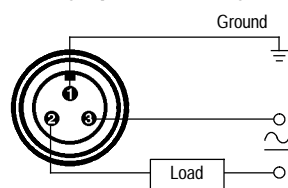


**Note:** Rear portion of barrel left uncoated for ground contact on 12 mm models.

Thread Size	Shielded	mm (inches)			
		A	B	C	D
M12 X 1	Y	12.0 (0.47)	93.45 (3.68)	46.2 (1.82)	0.8 (0.03)
	N			40.7 (1.52)	8.1 (0.32)
M18 X 1	Y	18.0 (0.71)	75.82 (2.99)	57.28 (2.26)	0.8 (0.03)
M30 X 1.5	Y	30.0 (1.18)	86.66 (3.41)	64.3 (2.53)	

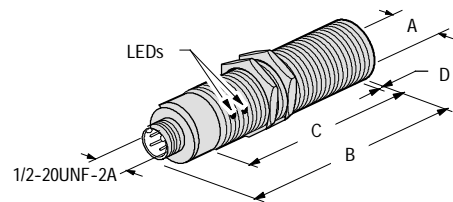
Wiring Diagram

Normally Open or Normally Closed



**Note 1:** No ground pin on 12 mm. Attach housing to ground.  
**Note 2:** Load can be switched to pin 3.

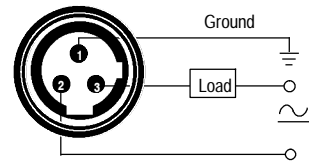
Micro QD Style



**Note:** Rear portion of barrel left uncoated for ground contact on 12 mm models.

Thread Size	Shielded	mm (inches)			
		A	B (max)	C (min)	D (max)
M12 x 1	Y	12.0 (0.47)	90.1 (3.55)	46.7 (1.85)	0.8 (0.03)
	N			39.7 (1.56)	8.10 (0.32)
M18 x 1	Y	18.0 (0.71)	83.5 (3.29)	61.6 (2.43)	0.8 (0.03)
M30 X 1.5	Y	30.0 (1.18)	86.0 (3.38)	64.3 (2.53)	0.8 (0.03)

Normally Open or Normally Closed



**Note 1:** No ground pin on 12 mm. Attach housing to ground.  
**Note 2:** Load can be switched to pin 3.

