



CE

### Description

Bulletin 871C inductive proximity sensors are self-contained, general purpose, solid-state devices designed to sense the presence of ferrous and non-ferrous metal objects without touching them.

The switch body consists of a plastic face and either a nickel-plated brass barrel or plastic barrel. The electronic circuitry is potted for protection against shock, vibration, and contamination.

These sensors are available in 3, 4, 5, 8, 12, 18 and 30mm diameters, with smooth or threaded barrels. Connection options include a 2m cable, micro quick-disconnect, and pico quick-disconnect.

### Features

- Cable or quick-disconnect styles
- Short circuit protection<sup>1</sup>
- Overload protection<sup>1</sup>
- Transient noise protection
- False pulse protection
- Reverse polarity protection
- CE marked for all applicable directives (most models)

### Styles

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### General Information

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<sup>1</sup> AC full-featured and DC models only.

# 871C 3-Wire DC

Plastic Face/Small Threaded or Smooth Nickel-Plated Brass Barrel



871C DC Cable Style  
Smooth Barrel  
3, 4mm



871C DC Cable Style  
Threaded Barrel  
4, 5mm



871C DC Cable Style  
Smooth Barrel  
4mm



871C DC Pico Quick-Disconnect  
Style Threaded Barrel  
5mm



## Specifications

Barrel Diameter	3mm	4, 5mm
Load Current	≤100mA	≤200mA
Leakage Current	≤0.1mA	
Operating Voltage	10–30V DC	
Voltage Drop	≤2.5V	
Repeatability	≤5%	
Hysteresis	15% typical	
False Pulse Protection	Incorporated	
Transient Noise Protection	No	Incorporated
Reverse Polarity Protection	Incorporated	
Short Circuit Protection	Incorporated (most models)	
Approvals	CE marked for all applicable directives (except for 3mm models)	
Enclosure	NEMA 1, 2, 3, 4, 12, 13 IP67 (cable only) IP65 (qd only) (IEC 529); Nickel-plated brass barrel	
Connections	Cable: 2m (6.5ft) length 3-conductor PVC Quick-Disconnect: 3-pin pico style	
LED	Red or Yellow: Output energized	
Operating Temperature	-25°C to +70°C (-13°F to +158°F)	
Shock	30g, 11ms	
Vibration	55Hz, 1mm amplitude, 3 planes	

### Correction Factors

Target Material	Correction Factor
Steel	1.0
Stainless Steel	0.7–0.8
Brass	0.4–0.5
Aluminum	0.3–0.4
Copper	0.3–0.4

## Features

- 3-wire operation
- 3-conductor, 3-pin or 4-pin connection
- 10–30V DC
- Normally open or normally closed output
- False pulse, transient noise, reverse polarity and short circuit protections (most models)
- CE marked for all applicable directives (except for 3mm models)

## Product Selection

Barrel Diameter	Barrel Type	Nominal Sensing Distance mm (in)	Shielded	Output Configuration	Switching Frequency (Hz)	Catalog Number		
						Cable Style	Pico QD Style	
3mm	Smooth	0.6 (0.02)	Y	N.O.	3000	NPN	871C-DM1NN3-E2	—
						PNP	871C-DM1NP3-E2	—
4mm	Smooth	0.8 (0.03)	Y	N.O.	3000	NPN	871C-DM1NN4-E2	871C-DM1NN4-P3
						PNP	871C-DM1NP4-E2	—
4mm	Threaded	0.6 (0.02)	Y	N.O.	3000	NPN	871C-D1NN4-E2	—
						PNP	871C-D1NP4-E2	—
5mm	Threaded	1 (0.04)	Y	N.O.	3000	NPN	871C-D1NN5-E2	871C-D1NN5-P3
						PNP	871C-D1NP5-E2	871C-D1NP5-P3
Recommended Standard QD Cordset (-2 = 2m (6.5ft))								889P-F3AB-2

## QD Cordsets and Accessories

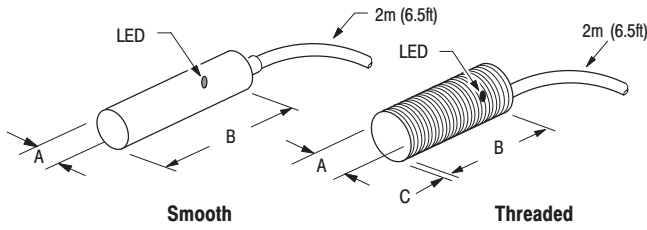
Description	Page Number
Other Cordsets Available	R8-2
Terminal Chambers	R8-2
Mounting Brackets	R2-196 - R2-200
End Caps	R2-206
Mounting Nuts	R2-207 - R2-208

# 871C 3-Wire DC

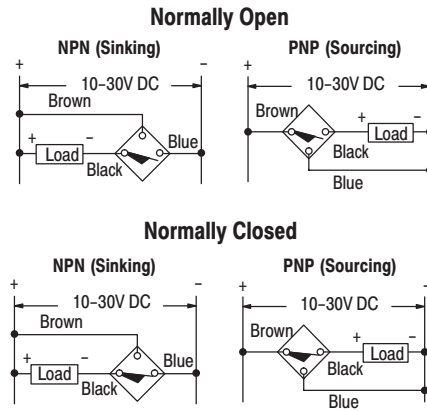
Plastic Face/Small Threaded or Smooth Nickel-Plated Brass Barrel

## Dimensions—mm (inches)

Cable Style

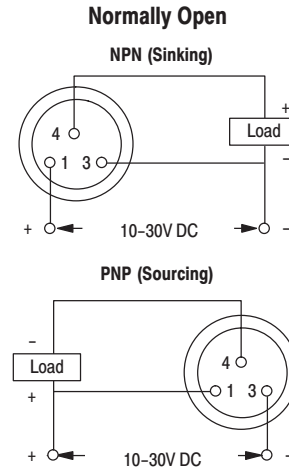
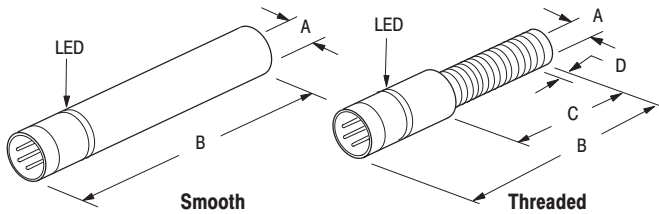


## Wiring Diagram



Smooth Diameter	Thread Size	Shielded	mm (inches)		
			A	B	C
3.0	—	Y	3.0 (0.12)	22.0 (0.87)	—
4.0	—	Y	4.0 (0.16)	25.0 (0.98)	—
—	M4 x 0.5	Y	4.0 (0.16)	22.0 (0.87)	—
—	M5 x 0.5	Y	5.0 (0.20)	25.0 (0.98)	—

## Pico QD Style



Smooth Diameter	Thread Size	Shielded	mm (inches)			
			A	B	C	D
4.0	—	Y	4.0 (0.16)	38.0 (1.50)	19.0 (0.74)	—
—	M5 x 0.5	Y	5.0 (0.20)	38.0 (1.50)	23.0 (0.90)	—

**871C 3-Wire DC Extended Temperature**

Plastic Face/Threaded Nickel-Plated Brass Barrel



871C DC Cable Style  
12, 18, 30mm



871C DC Micro  
Quick-Disconnect Style  
12, 18, 30mm

**Specifications**

<b>Load Current</b>	1-200mA
<b>Leakage Current</b>	≤10μA
<b>Operating Voltage</b>	10-30V DC
<b>Voltage Drop</b>	≤2.4V
<b>Repeatability</b>	≤10%
<b>Hysteresis</b>	≤15% typical
<b>False Pulse Protection</b>	Incorporated
<b>Transient Noise Protection</b>	Incorporated
<b>Reverse Polarity Protection</b>	Incorporated
<b>Short Circuit Protection</b>	Incorporated
<b>Overload Protection</b>	Incorporated
<b>Approvals</b>	CE marked for all applicable directives
<b>Enclosure</b>	NEMA 1, 2, 3, 4, 12, 13, IP67 (IEC 529 ) Nickel-plated brass barrel
<b>Connections</b>	Cable: 2m (6.5ft) length 3-conductor PUR Quick-Disconnect: 4-pin micro style
<b>LED</b>	Orange: Output Energized
<b>Operating Temperature</b>	-40°C to +100°C (-40°F to +212°F)
<b>Shock</b>	30g, 11ms
<b>Vibration</b>	55Hz, 1mm amplitude, 3 planes

**Description**

Bulletin 871C inductive proximity sensors are self-contained, solid state devices designed for most industrial applications where it is required to sense the presence of metal objects without touching them. These special extended temperature models are ideal for industrial environments where temperatures can reach as high as 212°F (100°C) or as low as -40°F (-40°C). They are available for current source (PNP) operation with a normally open output.

Each switch has a plastic face and a nickel-plated brass housing which meet NEMA 1, 2, 3, 4, 12, 13 and IP67 (IEC 529) enclosure standards. The electronic circuitry is potted for protection against shock, vibration, and contamination.

These sensors are available in 12, 18, and 30mm diameters. Connection options include: 2m (6.5ft) PUR cable or micro quick-disconnect (4 pin, 1 keyway).

**Features**

- 3-wire operation
- 3-conductor or 4-pin connection
- 10-30V DC
- Extended temperature range
- Normally open output
- Short circuit, false pulse, reverse polarity, overload and transient noise protection
- CE marked for all applicable directives

**Correction Factors**

Target Material	Correction Factor
Steel	1.0
Stainless Steel	0.9
Brass	0.5
Aluminum	0.45
Copper	0.4

# 871C 3-Wire DC Extended Temperature

Plastic Face/Threaded Nickel-Plated Brass Barrel

## Product Selection

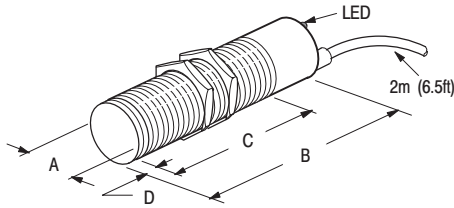
Barrel Diameter	Nominal Sensing Distance mm (inches)	Shielded	Output Configuration		Switching Frequency (Hz)	Catalog Number		
						Cable Style	Micro QD Style	
12mm	2 (0.08)	Y	N.O.	PNP	2000	871C-DT2NP12-U2	871C-DT2NP12-D4	
	4 (0.16)	N				871C-DT4NP12-U2	871C-DT4NP12-D4	
18mm	5 (0.20)	Y	N.O.	PNP	1000	871C-DT5NP18-U2	871C-DT5NP18-D4	
	8 (0.31)	N				871C-DT8NP18-U2	871C-DT8NP18-D4	
30mm	10 (0.39)	Y	N.O.	PNP	500	871C-DT10NP30-U2	871C-DT10NP30-D4	
	15 (0.59)	N				871C-DT15NP30-U2	871C-DT15NP30-D4	
Recommended Standard QD Cordset (-2 = 2m (6.5ft))							889D-F4AC-2	

## QD Cordsets and Accessories

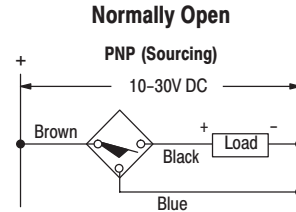
Description	Page Number
Other Cordsets Available	R8-2
Terminal Chambers	R8-2
Mounting Brackets	R2-196 - R2-200
End Caps	R2-206
Mounting Nuts	R2-207 - R2-208

## Dimensions—mm (inches)

### Cable Style

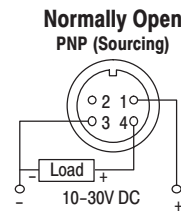
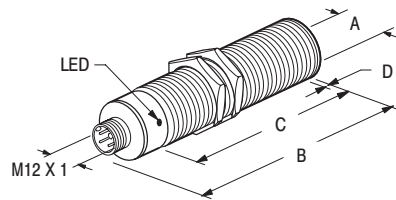


### Wiring Diagram



Thread Size	Shielded	mm (inches)			
		A	B	C	D
M12 X 1	Y	12.0 (0.47)	40.0 (1.57)	40.0 (1.57)	—
	N			34.0 (1.34)	6.0 (0.24)
M18 X 1	Y	18.0 (0.71)		40.0 (1.57)	—
	N			32.0 (1.26)	8.0 (0.31)
M30 X 1.5	Y	30.0 (1.18)		40.0 (1.57)	—
	N			28.0 (1.12)	12.0 (0.47)

### Micro QD Style



Thread Size	Shielded	mm (inches)			
		A	B	C	D
M12 X 1	Y	12.0 (0.47)	60.0 (2.36)	40.0 (1.57)	—
	N			34.0 (1.34)	6.0 (0.24)
M18 X 1	Y	18.0 (0.71)		40.0 (1.57)	—
	N			32.0 (1.26)	8.0 (0.31)
M30 X 1.5	Y	30.0 (1.18)		40.0 (1.57)	—
	N			28.0 (1.10)	12.0 (0.47)



871C AC Cable Style  
18, 30mm



871C AC Mini  
Quick-Disconnect Style  
12, 18, 30mm



871C AC Micro  
Quick-Disconnect Style  
12, 18, 30mm



### Specifications

Barrel Diameter	12mm	18mm
Load Current	≤250mA	≤400mA
Minimum Load Current	5mA	
Inrush Current (1 cycle)	≤2A	≤4A
Leakage Current	≤1.7mA at 120V AC	
Operating Voltage	40–250V AC	
Voltage Drop	≤5V at 250mA, 10V at 10mA	≤5V at 400mA 10V at 10mA
Repeatability	≤10% at constant temperature	
Hysteresis	10% typical	
False Pulse Protection	Incorporated	
Transient Noise Protection	Incorporated	
Short Circuit Protection	Incorporated	
Overload Protection	Incorporated	
Approvals	UL listed, CSA certified, and CE marked for all applicable directives	
Enclosure	NEMA 1, 2, 3, 3R, 4, 4X, 6, 6P, 12, 13 IP67 (IEC 529) Nickel plated brass barrel	
Connections	Cable: 2m (6.5ft) length 2-conductor PVC Quick Disconnect: 3-pin micro style 3-pin mini style	
LED	Red: Output energized Green: Power/Short Circuit (Flashing)	
Operating Temperature	–25°C to +70°C (–13°F to +158°F)	
Shock	30g, 11ms	
Vibration	55Hz, 1mm amplitude, 3 planes	

### Correction Factors

Target Material	Correction Factor
Steel	1.0
Stainless Steel	0.9
Brass	0.5
Aluminum	0.45
Copper	0.4

### Features

- 2-wire operation
- 2-conductor or 3-pin connection
- 40–250V AC
- Normally open or normally closed output
- Short circuit, false pulse, overload, and transient noise protection
- UL listed, CSA certified, and CE marked for all applicable directives

## Inductive Proximity Sensors

# 871C 2-Wire AC Full Featured

Plastic Face/Threaded Nickel-Plated Brass Barrel

### Product Selection

Barrel Diameter	Nominal Sensing Distance mm (inches)	Shielded	Output Configuration	Switching Frequency (Hz)	Catalog Number		
					Cable Style	Mini QD Style	Micro QD Style
12mm	2 (0.08)	Y	N.O.	30	—	871C-A2N12-N3	871C-A2N12-R3
			N.C.	20	—	871C-A2C12-N3	871C-A2C12-R3
18mm	5 (0.20)	Y	N.O.	30	871C-A5N18-A2	871C-A5N18-N3	871C-A5N18-R3
			N.C.	20	871C-A5C18-A2	871C-A5C18-N3	871C-A5C18-R3
30mm	10 (0.39)	Y	N.O.	30	871C-A10N30-A2	871C-A10N30-N3	871C-A10N30-R3
			N.C.	20	871C-A10C30-A2	871C-A10C30-N3	871C-A10C30-R3
Recommended Standard QD Cordset (-6F = 1.8m (6ft), -2 = 2m (6.5ft))						889N-F3AFC-6F	889R-F3ACA-2

### QD Cordsets and Accessories

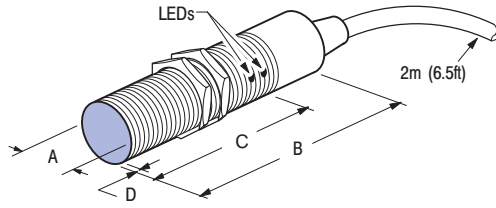
Description	Page Number
Other Cordsets Available	R8-2
Mounting Brackets	R2-196 - R2-200
End Caps	R2-206
Mounting Nuts	R2-207 - R2-208



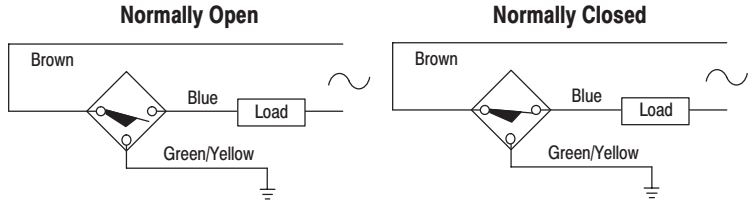
Inductive Proximity Sensors  
**871C 2-Wire AC Full Featured**  
 Plastic Face/Threaded Nickel-Plated Brass Barrel

**Dimensions—mm (inches)**

**Cable Style**



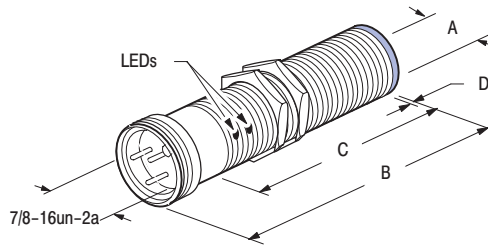
**Wiring Diagram**



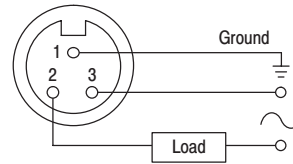
**Note:** Load can be switched to brown wire.

Thread Size	Shielded	mm (inches)			
		A	B	C	D
M18 X 1	Y	18.0 (0.71)	70.5 (2.78)	57.5 (2.26)	0.8 (0.03)
M30 X 1.5	Y	30.0 (1.18)	77.4 (3.05)	63.4 (2.50)	0.8 (0.03)

**Mini QD Style**



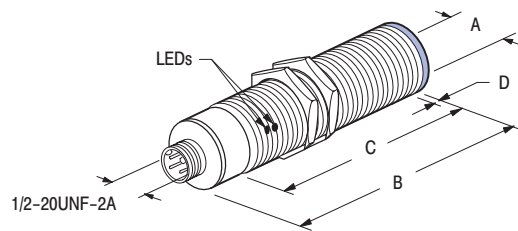
**Normally Open or Normally Closed**



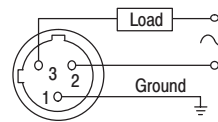
**Note 1:** No ground wire on 12mm. Attach housing to ground.  
**Note 2:** Load can be switched to pin 3.

Thread Size	mm (inches)			
	A	B	C	D
M12 X 1	12.0 (0.47)	83.3 (3.28)	37.5 (1.48)	0.8 (0.03)
M18 X 1	18.0 (0.71)	72.5 (2.85)	52.4 (2.06)	
M30 X 1.5	30.0 (1.18)	86.5 (3.41)	62.6 (2.47)	

**Micro QD Style**



**Normally Open or Normally Closed**



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

Thread Size	mm (inches)			
	A	B	C	D
M12 X 1	12.0 (0.47)	85.3 (3.36)	38.11 (1.50)	0.8 (0.03)
M18 X 1	18.0 (0.71)	80.3 (3.16)	56.7 (2.23)	
M30 X 1.5	30.0 (1.18)	85.7 (3.37)	62.6 (2.47)	

## 871C 2-Wire AC

Plastic Face/Threaded Plastic Barrel



871C AC Cable Style  
18, 30mm



### Specifications

Barrel Diameter	18mm	30mm
Load Current	≤180mA	≤300mA
Inrush Current (1 cycle)	≤1A	≤3A
Leakage Current	≤1.7mA	
Operating Voltage	24–250V AC	
Voltage Drop	≤11V	
Hysteresis	≤20% typical	
Transient Noise Protection	Incorporated	
Approvals	CE marked for all applicable directives	
Enclosure	NEMA 1, 2, 3, 4, 4X, 12, 13 IP67 (IEC 529) Plastic barrel	
Connections	Cable: 2m (6.5ft) length 2-conductor PVC	
LED	Red: Output energized	
Operating Temperature	-25°C to +55°C (-13°F to +131°F)	
Shock	30g, 11ms	
Vibration	55Hz, 1mm amplitude, 3 planes	

### Features

- 2-wire operation
- 2-conductor connection
- 24–250V AC
- Normally open or normally closed output
- Transient noise protection
- CE marked for all applicable directives

### Correction Factors

Target Material	Correction Factor
Steel	1.0
Stainless Steel	0.7–0.8
Brass	0.4–0.5
Aluminum	0.3–0.4
Copper	0.3–0.4

### Product Selection

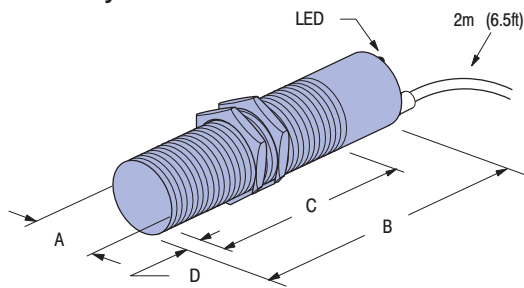
Barrel Diameter	Nominal Sensing Distance mm (inches)	Shielded	Output Configuration	Switching Frequency (Hz)	Catalog Number
					Cable Style
18mm	5 (0.20)	Y	N.O.	8	871C-C5S18
			N.C.		871C-D5S18
	8 (0.31)	N	N.O.		871C-C8R18
			N.C.		871C-D8R18
30mm	10 (0.39)	Y	N.O.		871C-C10S30
			N.C.		871C-D10S30
	15 (0.59)	N	N.O.		871C-C15R30
			N.C.		871C-D15R30

### Accessories

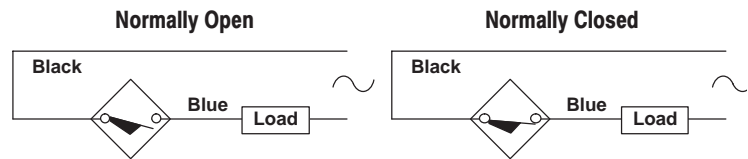
Description	Page Number
Terminal Chambers	R8-2
Mounting Brackets	R2-196 - R2-200
End Caps	R2-206
Mounting Nuts	R2-207 - R2-208

### Dimensions—mm (inches)

#### Cable Style



### Wiring Diagram



Note: Load can be switched to black wire.

Thread Size	Shielded	mm (inches)			
		A	B	C	D
M18 X 1	Y	18.0 (0.71)	81.0 (3.19)	61.0 (2.40)	2.0 (0.08)
	N				
M30 X 1.5	Y	30.0 (1.18)	81.0 (3.19)		
	N				

Unshielded proximity sensors require a metal-free zone around the sensing face. Any metal immediately opposite the sensing face should be no closer than 3 times the rated nominal sensing distance of the sensor.

# 871C 2-Wire NAMUR

Nickel-Plated Brass Barrel, Plastic Face



871C NAMUR  
Cable Style  
8, 12, 18, 30mm



871C NAMUR  
Micro Quick-Disconnect Style  
8, 12, 18, 30mm



## Description

For Allen-Bradley NAMUR style sensors, the sensor input and output conforms to NAMUR specifications (DIN 19 234) allowing these sensors to be used with any approved NAMUR style amplifier/ isolator. Allen-Bradley's NAMUR style sensors are Intrinsically Safe when used with an approved Intrinsically Safe NAMUR style isolator.

The 871C NAMUR style family of sensors can be used in Class I, II, III; Division 1 and 2; Groups A, B, C, D, E, F, and G as well as Zones 0, 1, 2; Groups IIA, IIB, IIC when used with Allen-Bradley's NAMUR style isolators/amplifiers. Installation must be in accordance with the National Electrical Code, ANSI/ISA RP12.6, or per other regulations by authority having jurisdiction over the installation site as appropriate.

## Features

- 2-Wire NAMUR operation
- 8, 12, 18, and 30mm sizes
- Short barrel length
- Shielded and Unshielded models
- FM, CSA, and CENELEC (KEMA) approved

## Specifications

<b>Outputs</b>	NAMUR (conforms to DIN 19 234)
<b>Load Current Target Present</b>	<1mA
<b>Load Current Target Absent</b>	>3mA
<b>Operating Voltage</b>	5–15V DC (8.2V DC nom., Ri = 1kohm, DIN 19 234)
<b>Ripple Voltage</b>	<5%
<b>Repeatability</b>	<10%
<b>Hysteresis</b>	10% typical
<b>Reverse Polarity Protection</b>	Incorporated
<b>False Pulse Protection</b>	Realized in amplifier
<b>Transient Noise Protection</b>	Realized in amplifier
<b>Short Circuit Protection</b>	Realized in amplifier
<b>Overload Protection</b>	Realized in amplifier
<b>Enclosure</b>	NEMA 4, IP67 (IEC 529)
<b>Approvals</b>	FM approved – Class I, II, III; Divisions 1, 2; Groups A, B, C, D, E, F, G – Class I; Zone 0, 1, 2; Groups IIC, IIB, IIA; T6 CSA approved – Class I, II, III; Divisions 1, 2; Groups A, B, C, D, E, F, G – Class I; Zone 0, 1, 2; Groups IIC, IIB, IIA CENELEC (KEMA) approved – Groups IIA, IIB, IIC; Zones 0, 1, 2 (EEx ia IIC T6) CE marked for all applicable directives
<b>Connections</b>	Cable: 2m (6.5ft) length 2 conductor #22AWG PVC Quick-Disconnect: 4-pin micro style
<b>LED</b>	None
<b>Operating Temperature</b>	–25°C to 60°C (–13°F to 140°F)
<b>Shock</b>	30g, 11ms
<b>Vibration</b>	55Hz, 1mm amplitude, 3 planes
<b>Housing Material</b>	Nickel-plated brass barrel, plastic face

### Correction Factors

Target Material	Correction Factor
Steel	1.0
Stainless Steel	0.7–0.8
Brass	0.4–0.5
Aluminum	0.3–0.4
Copper	0.2–0.3

### Entity Parameters

Sensor		Barrier
$V_{max}$	16V	$\geq V_t$
$I_{max}$	60mA	$\geq I_t$
$C_i$	150nF	$\leq C_a$
$L_i$	200μH	$\leq L_a$



**WARNING:** These parameters must be adhered to. If not, injury may be caused to person or property.

Inductive Proximity Sensors  
**871C 2-Wire NAMUR, Cable Style**  
 Nickel-Plated Brass Barrel, Plastic Face

**Product Selection**

Barrel Diameter	Nominal Sensing Distance mm (inches)	Shielded	Output Configuration	Switching Frequency (Hz)	Catalog Numbers	
					Cable Style	Micro QD Style
8mm	1 (0.03)	Y	NAMUR DIN 19 234	2000	871C-DH1M8-A2	871C-DH1M8-D4
	2 (0.06)	N		1000	871C-DH2M8-A2	871C-DH2M8-D4
12mm	2 (0.08)	Y		2000	871C-DH2M12-A2	871C-DH2M12-D4
	4 (0.16)	N		1000	871C-DH4M12-A2	871C-DH4M12-D4
18mm	5 (0.20)	Y		1000	871C-DH5M18-A2	871C-DH5M18-D4
	8 (0.31)	N		500	871C-DH8M18-A2	871C-DH8M18-D4
30mm	10 (0.39)	Y		500	871C-DH10M30-A2	871C-DH10M30-D4
	15 (0.59)	N		300	871C-DH15M30-A2	871C-DH15M30-D4
				Recommended Standard QD Cordset (-2 = 2m (6.5ft))		889D-F4AC-2 ①

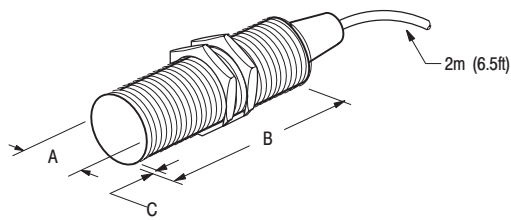
① Intrinsically Safe wiring labels 897H-L1 or 897H-L2 must be applied every 7.6m (25ft).

**QD Cordsets and Accessories**

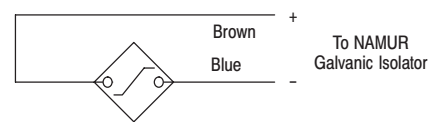
Description	Page Number
Other Cordsets Available	R8-2
Terminal Chambers	R8-2
NAMUR Amplifiers/Isolators	R2-215
Intrinsic Safety Wiring Labels	R2-216
Mounting Brackets	R2-196 - R2-200
End Caps	R2-206
Mounting Nuts	R2-207 - R2-208

**Dimensions—mm (inches)**

**Cable Style**



**Wiring Diagram**



Thread Size	Shielded	mm (inches)		
		A	B	C
M8 x 1	Y	8.0 (0.31)	30.0 (1.18)	—
	N			5.0 (0.20)
M12 x 1	Y	12.0 (0.47)		—
	N			6.0 (0.24)
M18 x 1	Y	18.0 (0.71)		—
	N			8.0 (0.31)
M30 x 1.5	Y	30.0 (1.18)	40.0 (1.57)	—
	N			12.0 (0.47)

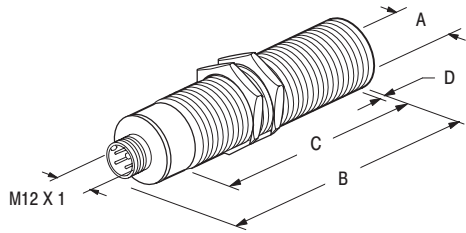
# Inductive Proximity Sensors

## 871C 2-Wire NAMUR

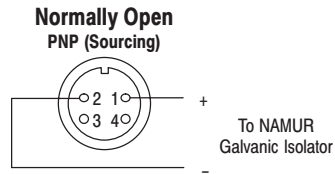
Nickel-Plated Brass Barrel, Plastic Face

### Dimensions—mm (inches)

Micro QD Style



### Wiring Diagram



Thread Size	Shielded	mm (inches)			
		A	B	C	D
M8 x 1	Y	8.0 (0.31)	50.0 (1.97)	28.0 (1.10)	—
	N			23.0 (0.91)	5.0 (0.20)
M12 x 1	Y	12.0 (0.47)		30.0 (1.18)	—
	N			24.0 (0.94)	6.0 (0.24)
M18 x 1	Y	18.0 (0.71)		30.0 (1.18)	—
	N			22.0 (0.87)	8.0 (0.31)
M30 x 1.5	Y	30.0 (1.18)	40.0 (1.57)	—	
	N		28.0 (1.10)	12.0 (0.47)	

Inductive Proximity Sensors  
**871C Analog Output, 3-Wire DC**  
 Plastic Face/Nickel-Plated Brass Barrel



871C Cable Style  
12, 18, 30mm

### Description

Bulletin 871C inductive proximity sensors are self-contained, solid-state devices designed to sense the presence of metal objects without touching them. This special version provides a 0–10V sourcing analog output proportional to the sensing distance.

This device is enclosed by a plastic face and a nickel-plated brass housing which meets NEMA 1, 2, 3, 4, 12, 13 and IP67 (IEC 529) enclosure standards. The electronic circuitry is potted for protection against shock, vibration and contamination.

This sensor is available in 12, 18 and 30mm diameters with a 2m (6.5ft.) PVC cable connection.

### Features

- 3-wire operation
- 18–30V DC
- Short circuit, overload, reverse polarity, and transient noise protection
- 0–10V sourcing analog output
- CE marked for all applicable directives

### Specifications

	12mm	18mm	30mm
<b>Analog Output</b>	0–10V Sourcing		
<b>Load Current</b>	5mA		
<b>Operating Voltage</b>	18–30V DC		
<b>Repeatability</b>	≤ 1%		
<b>Ripple</b>	10%		
<b>Slew Rate</b>	1.0V/ms	0.7V/ms	0.1V/ms
<b>Δ Output / Δ Distance</b>	0.25mm/V	03.75mm/V	0.875mm/V
<b>Linearity Tolerance</b>	6.25%		
<b>Temperature Tolerance</b>	± 0.3V		
<b>Transient Noise Protection</b>	Incorporated		
<b>Reverse Polarity Protection</b>	Incorporated		
<b>Short Circuit Protection</b>	Incorporated		
<b>Overload Protection</b>	Incorporated		
<b>Enclosure</b>	NEMA 1, 2, 3, 4, 12, 13; IP67 (IEC 529), Nickel-plated brass barrel, plastic face (PBT)		
<b>Connections</b>	Cable: 2m (6.5ft) length 3 conductor PVC		
<b>LED</b>	None		
<b>Operating Temperature</b>	–25°C to +70°C (–13°F to +158°F)		
<b>Shock</b>	30g, 11ms		
<b>Vibration</b>	55Hz, 1mm amplitude, 3 planes		

### Correction Factors

Target Material	Correction Factor
Steel	1.0
Stainless Steel	0.7–0.8
Brass	0.4–0.5
Aluminum	0.3–0.4
Copper	0.2–0.3

# 871C Analog Output, 3-Wire DC

Plastic Face/Nickel-Plated Brass Barrel

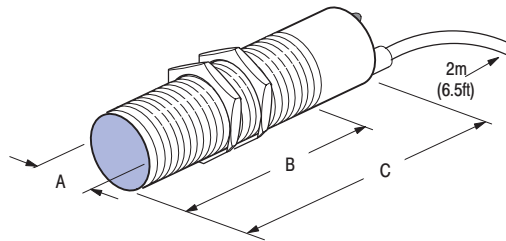
## Product Selection

Barrel Diameter	Linear Sensing Distance mm (inches)	Shielded	Output Configuration		Switching Frequency (Hz)	Catalog Number
			Analog Voltage	Sourcing		
12mm	0.5–2.5 (0.02–0.10)	Y	Analog Voltage	Sourcing	100	871C-D3AP12-E2
18mm	1–4 (0.04–0.16)	Y	Analog Voltage	Sourcing	100	871C-D4AP18-E2
30mm	7–14 (0.27–0.55)	N	Analog Voltage	Sourcing	30	871C-D14AP30-E2

## QD Cordsets and Accessories

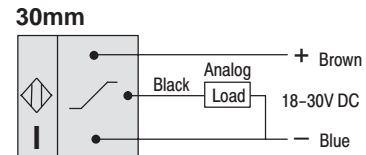
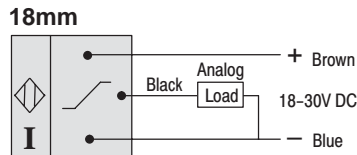
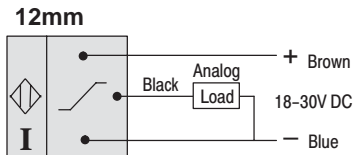
Description	Page Number
Terminal Chambers	R8-2
Mounting Brackets	R2-196 - R2-200
End Caps	R2-206
Mounting Nuts	R2-207 - R2-208

## Dimensions—mm (inches)



Thread Size	mm (inches)		
	A	B	C
12mm	12 (0.47)	70 (2.75)	80 (3.15)
18mm	18 (0.71)		
30mm	30 (1.18)	58 (2.28)	

## Wiring Diagrams



## Nominal Output

