# Bulletin 871TM

## Stainless Steel Face/Threaded Stainless Steel Barrel

## Description

Designed to reduce your downtime, the Bulletin 871TM is an excellent choice for harsh-environment applications because it stands up to conditions that standard plastic face sensors cannot tolerate. Each sensor is housed by a stainless steel face and barrel which make the front of the sensor leakproof and significantly improve resistance to chemicals, cutting fluid, oils and abrasion. Mechanical seals are provided at all barrel openings. Full epoxy encapsulation provides protection against shock, vibration, and contamination. The electronic circuitry is equipped with transient noise, false pulse, reverse polarity, short-circuit and overload protection.

In addition to standard all-metal sensing models, the 871TM is available in ferrous and nonferrous selective versions that differentiate between iron-based and other metals as well as extended range models for increased sensing distance. For some metals, nonferrous selective sensors can have up to four times the sensing distance of their all-metal sensing equivalents.

Although most carry a NEMA 6P enclosure rating, one style of 871TM is designed particularly for use under temporary submersion and in other extremely wet environments. Its cable grommet is fused directly to the cable jacketing for superior sealing. LEDs have been eliminated to reduce points of possible fluid ingress.

871TM sensors are also available in high- and low-temperature models. Consult your local Rockwell Automation sales office or Allen-Bradley distributor for details.

DeviceNet™ 871TM sensors are also available. These sensors are designed to be connected directly to DeviceNet networks. These models have built-in advanced features and diagnostics such as autobaud, timing options, analog output capability, target too close, target too far, motion detection and teach and learn capabilities.

The Bulletin 871TM is available with Rockwell Automation/Allen-Bradley exclusive ToughLink™ cable, which exceeds SOOW-A ratings and reduces cable failure due to cracking, wearing, melting, or breaking. Other connection options include a PVC cable, mini quick-disconnect, micro quick-disconnect, and EAC micro quick-disconnect.

## Features

- Stainless steel face and barrel
- Full mechanical seals (all-metal sensing models)
- ToughLink™ or PVC cable styles
- Mini, micro or EAC micro quick-disconnect styles
- Short circuit protection ❶
- Overload protection ❶
- Transient noise protection
- False pulse protection
- Reverse polarity protection (DC models)
- Radio frequency interference protection
- UL Listed, CSA Certified, and CE Marked for all applicable directives (most models)

## Styles



## Accessories



## General Information



❶ Not available on PLC Interfacer models.

# 871TM 3-Wire DC

## Stainless Steel Face/Threaded Short Stainless Steel Barrel

*871TM DC Cable Style*
*12, 18, 30 mm*

*871TM DC Mini*
*Quick-Disconnect Style*
*12, 18, 30 mm*

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

## Features

- 3-wire operation
- 3-conductor or 4-pin connection
- 10…30V DC
- Short circuit, overload, false pulse, reverse polarity, and transient noise protection
- Normally open or normally closed output
- UL Listed, CSA Certified, and CE Marked for all applicable directives

## Specifications

| | |
|---|---|
| Load Current | ≤200 mA |
| Capacitive Load | ≤1 μF |
| Leakage Current | ≤10 mA |
| Operating Voltage | 10…30V DC |
| Voltage Drop | ≤1V DC at 200 mA |
| Repeatability | ≤10% at constant temperature |
| Hysteresis | 10% typical |
| False Pulse Protection | Incorporated |
| Transient Noise Protection | Incorporated |
| Reverse Polarity Protection | Incorporated |
| Short Circuit Protection | Incorporated (trigger at 340 mA typical) |
| Overload Protection | Incorporated |
| Certifications | UL Listed, CSA Certified, and CE Marked for all applicable directives |
| Enclosure | NEMA 1, 2, 3, 3R, 4, 4X, 6, 6P, 12, 13; IP67 (IEC529) all models;<br>1200 psi (8270 kPa) washdown; stainless steel face and barrel;<br>ToughLink™ and micro connector versions are also rated IP69K (IEC 529) |
| Connections | Cable: 2 m (6.5 ft) length<br>A2-3-conductor PVC<br>C2-3-conductor #22AWG ToughLink<br>H2-3-conductor #18 AWG ToughLink<br>Quick-Disconnect: 4-pin mini style<br>4-pin micro style |
| LED | Red: Output Energized |
| 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 Factor |
|---|---|
| Steel | 1.0 |
| Stainless Steel | 0.9…1.0 |
| Brass | 0.3…0.5 |
| Aluminum | 0.1…0.4 |
| Aluminum ≤0.020 Thick | 0.9…1.1 |
| Copper | 0.4…0.6 |

## Product Selection

| Barrel Dia. | Nominal Sensing Distance [mm (in.)] | Shielded | Output Configuration | | Switching Frequency [Hz] | Cat. No. | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | PVC Cable | ToughLink™ Cable | Mini QD Style | Micro QD Style |
| 12 mm | 2 (0.08) | Y | N.O. | NPN | 75 | 871TM-DH2NN12-A2 | 871TM-DH2NN12-C2 | 871TM-DH2NN12-N4 | 871TM-DH2NN12-D4 |
| | | | | PNP | | 871TM-DH2NP12-A2 | 871TM-DH2NP12-C2 | 871TM-DH2NP12-N4 | **871TM-DH2NP12-D4** |
| | 4 (0.16) | N | | NPN | 70 | 871TM-DH4NN12-A2 | 871TM-DH4NN12-C2 | 871TM-DH4NN12-N4 | 871TM-DH4NN12-D4 |
| | | | | PNP | | 871TM-DH4NP12-A2 | 871TM-DH4NP12-C2 | 871TM-DH4NP12-N4 | **871TM-DH4NP12-D4** |
| | 2 (0.08) | Y | N.C. | NPN | 75 | 871TM-DH2CN12-A2 | 871TM-DH2CN12-C2 | 871TM-DH2CN12-N4 | 871TM-DH2CN12-D4 |
| | | | | PNP | | 871TM-DH2CP12-A2 | 871TM-DH2CP12-C2 | 871TM-DH2CP12-N4 | 871TM-DH2CP12-D4 |
| | 4 (0.16) | N | | NPN | 70 | 871TM-DH4CN12-A2 | 871TM-DH4CN12-C2 | 871TM-DH4CN12-N4 | 871TM-DH4CN12-D4 |
| | | | | PNP | | 871TM-DH4CP12-A2 | 871TM-DH4CP12-C2 | 871TM-DH4CP12-N4 | 871TM-DH4CP12-D4 |
| 18 mm | 5 (0.20) | Y | N.O. | NPN | 60 | 871TM-DH5NN18-A2 | 871TM-DH5NN18-H2 | 871TM-DH5NN18-N4 | **871TM-DH5NN18-D4** |
| | | | | PNP | | 871TM-DH5NP18-A2 | 871TM-DH5NP18-H2 | **871TM-DH5NP18-N4** | **871TM-DH5NP18-D4** |
| | 8 (0.31) | N | | NPN | 40 | 871TM-DH8NN18-A2 | 871TM-DH8NN18-H2 | 871TM-DH8NN18-N4 | **871TM-DH8NN18-D4** |
| | | | | PNP | | 871TM-DH8NP18-A2 | 871TM-DH8NP18-H2 | 871TM-DH8NP18-N4 | **871TM-DH8NP18-D4** |
| | 5 (0.20) | Y | N.C. | NPN | 60 | 871TM-DH5CN18-A2 | 871TM-DH5CN18-H2 | 871TM-DH5CN18-N4 | 871TM-DH5CN18-D4 |
| | | | | PNP | | 871TM-DH5CP18-A2 | 871TM-DH5CP18-H2 | 871TM-DH5CP18-N4 | 871TM-DH5CP18-D4 |
| | 8 (0.31) | N | | NPN | 40 | 871TM-DH8CN18-A2 | 871TM-DH8CN18-H2 | 871TM-DH8CN18-N4 | 871TM-DH8CN18-D4 |
| | | | | PNP | | 871TM-DH8CP18-A2 | 871TM-DH8CP18-H2 | 871TM-DH8CP18-N4 | 871TM-DH8CP18-D4 |
| 30 mm | 10 (0.39) | Y | N.O. | NPN | 40 | 871TM-DH10NN30-A2 | 871TM-DH10NN30-H2 | 871TM-DH10NN30-N4 | 871TM-DH10NN30-D4 |
| | | | | PNP | | 871TM-DH10NP30-A2 | 871TM-DH10NP30-H2 | 871TM-DH10NP30-N4 | **871TM-DH10NP30-D4** |
| | 15 (0.59) | N | | NPN | 30 | 871TM-DH15NN30-A2 | 871TM-DH15NN30-H2 | 871TM-DH15NN30-N4 | 871TM-DH15NN30-D4 |
| | | | | PNP | | 871TM-DH15NP30-A2 | 871TM-DH15NP30-H2 | 871TM-DH15NP30-N4 | **871TM-DH15NP30-D4** |
| | 10 (0.39) | Y | N.C. | NPN | 40 | 871TM-DH10CN30-A2 | 871TM-DH10CN30-H2 | 871TM-DH10CN30-N4 | 871TM-DH10CN30-D4 |
| | | | | PNP | | 871TM-DH10CP30-A2 | 871TM-DH10CP30-H2 | 871TM-DH10CP30-N4 | 871TM-DH10CP30-D4 |
| | 15 (0.59) | N | | NPN | 30 | 871TM-DH15CN30-A2 | 871TM-DH15CN30-H2 | 871TM-DH15CN30-N4 | 871TM-DH15CN30-D4 |
| | | | | PNP | | 871TM-DH15CP30-A2 | 871TM-DH15CP30-H2 | 871TM-DH15CP30-N4 | 871TM-DH15CP30-D4 |
| Recommended Standard QD Cordset (-6F = 1.8 m (6 ft), -2 = 2 m (6.5 ft)) | | | | | | | | 889N-F4AFC-6F | 889D-F4AC-2 |

## QD Cordsets and Accessories

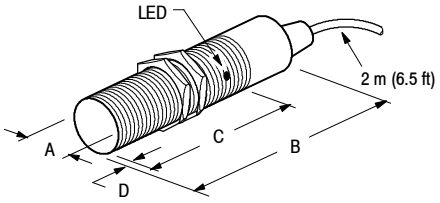
| Description | Page Number |
|---|---|
| Other Cordsets Available | 8-2 |
| Terminal Chambers | 8-2 |
| Mounting Brackets | 2-210…2-214 |
| End Caps | 2-219, 2-220 |
| Mounting Nuts | 2-221…2-222 |

# 871TM 3-Wire DC

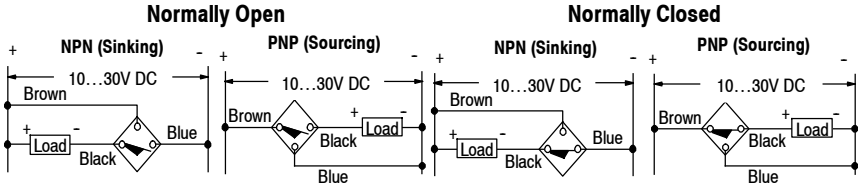
## Stainless Steel Face/Threaded Short Stainless Steel Barrel

### Approximate Dimensions [mm (in.)]

#### Cable Style

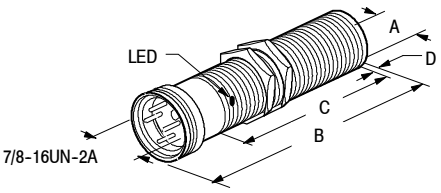


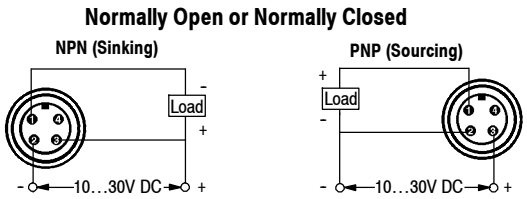

### Wiring Diagrams




| Thread Size | Shielded | [mm (in.)] A | B | C | D |
|---|---|---|---|---|---|
| M12 X 1 | Y | 12.0 (0.47) | 49.8 (1.96) | 26.4 (1.04) | 2.5 (0.10) |
| | N | | | 19.5 (0.77) | 9.4 (0.37) |
| M18 X 1 | Y | 18.0 (0.71) | 55.4 (2.18) | 41.7 (1.64) | 2.5 (0.10) |
| | N | | | | 14.5 (0.57) |
| M30 X 1.5 | Y | 30.0 (1.18) | 57.9 (2.28) | 41.9 (1.65) | 2.5 (0.10) |
| | N | | | 39.4 (1.55) | 18.0 (0.71) |

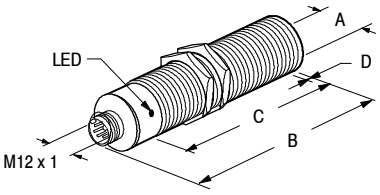
#### Mini QD Style

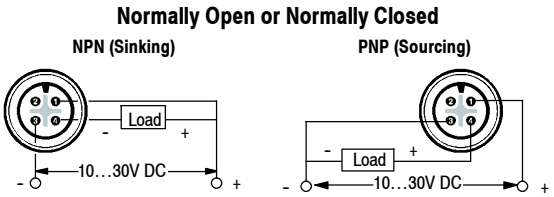



| Thread Size | Shielded | [mm (in.)] A | B | C | D |
|---|---|---|---|---|---|
| M12 X 1 | Y | 12.0 (0.47) | 63.5 (2.50) | 25.4 (1.00) | 2.5 (0.10) |
| | N | | | 18.5 (0.73) | 9.4 (0.37) |
| M18 X 1 | Y | 18.0 (0.71) | 56.1 (2.21) | 35.1 (1.38) | 2.5 (0.10) |
| | N | | | 29.2 (1.15) | 14.5 (0.57) |
| M30 X 1.5 | Y | 30.0 (1.18) | 68.1 (2.68) | 41.9 (1.65) | 2.5 (0.10) |
| | N | | | 39.4 (1.55) | 18.0 (0.71) |

#### Micro QD Style




| Thread Size | Shielded | [mm (in.)] A | B | C | D |
|---|---|---|---|---|---|
| M12 X 1 | Y | 12.0 (0.47) | 61.0 (2.40) | 26.4 (1.04) | 2.5 (0.10) |
| | N | | | 28 (1.10) | 9.4 (0.37) |
| M18 X 1 | Y | 18.0 (0.71) | 65.0 (2.56) | 41.7 (1.64) | 2.5 (0.10) |
| | N | | | | 14.5 (0.57) |
| M30 X 1.5 | Y | 30.0 (1.18) | 66.3 (2.61) | 41.9 (1.65) | 2.5 (0.10) |
| | N | | | 39.4 (1.55) | 18.0 (0.71) |

# 871TM 3-Wire DC Extended Sensing

## Stainless Steel Face/Threaded Stainless Steel Barrel

*871TM DC Cable Style*
*8 mm*

*871TM DC Micro*
*Quick-Disconnect Style*
*12 mm*

*871TM DC Micro*
*Quick-Disconnect Style*
*18 mm*

*871TM DC Micro*
*Quick-Disconnect Style*
*30 mm*

## Specifications

| | |
|---|---|
| Load Current | ≤200 mA |
| Capacitive Load | ≤1 μF |
| Leakage Current | ≤0.1 mA |
| Operating Voltage | 10…30V DC |
| Voltage Drop | ≤2.0V DC at 200 mA |
| Repeatability | ≤5% at constant temperature |
| Hysteresis | 10% typical |
| False Pulse Protection | Incorporated |
| Transient Noise Protection | Incorporated |
| Reverse Polarity Protection | Incorporated |
| Short Circuit Protection | Incorporated (trigger at 340 mA typical) |
| Overload Protection | Incorporated |
| Certifications | CE Marked for all applicable directives |
| Enclosure | IP67 |
| Connections | Cable: 2 m (6.5 ft) length PUR<br>Quick Disconnect: 4-pin micro style<br>3-pin pico style |
| LED | Yellow: Output energized/360° LED visibility; flashing LED indicates target located between 80…100% of rated sensing distance |
| 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 Factor |
|---|---|
| Steel | 1.0 |
| Stainless Steel (1 mm thick) | 0.1 |
| Brass | 1.2 |
| Aluminum | 1.0 |
| Copper | 0.8 |

## Features

- 3-wire operation
- 3-conductor, 4-pin connection
- 10…30V DC
- Short circuit, overload, false pulse, reverse polarity, and transient noise protection
- Normally open or normally closed output
- Equal sensing for both steel and aluminum
- CE Marked for all applicable directives

| | |
|---|---|
| **IMPORTANT** | Due to the extended sensing capabilities of these products, special mounting/installation considerations may be necessary, please refer to publication 871TM-UM001A-EN-P. |

# 871TM 3-Wire DC Extended Sensing

## Stainless Steel Face/Threaded Stainless Steel Barrel

### Product Selection

| Barrel Dia. | Nominal Sensing Distance [mm (in.)] | Shielded | Output Configuration | | Max Switching Frequency [Hz] | Cat. No. | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | PUR Cable Style | Micro QD Style | Pico QD Style |
| 8 mm | 3 (0.12) | Y | N.O. | NPN | ≤ 700 | 871TM-M3NN8-J2 | 871TM-M3NN8-D4 | 871TM-M3NN8-P3 |
| | | | | PNP | | 871TM-M3NP8-J2 | 871TM-M3NP8-D4 | 871TM-M3NP8-P3 |
| | 6 (0.23) | N | | NPN | | 871TM-N6NN8-J2 | 871TM-N6NN8-D4 | 871TM-N6NN8-P3 |
| | | | | PNP | | 871TM-N6NP8-J2 | 871TM-N6NP8-D4 | 871TM-N6NP8-P3 |
| | 3 (0.12) | Y | N.C. | NPN | | 871TM-M3CN8-J2 | 871TM-M3CN8-D4 | 871TM-M3CN8-P3 |
| | | | | PNP | | 871TM-M3CP8-J2 | 871TM-M3CP8-D4 | 871TM-M3CP8-P3 |
| | 6 (0.23) | N | | NPN | | 871TM-N6CN8-J2 | 871TM-N6CN8-D4 | 871TM-M6CN8-P3 |
| | | | | PNP | | 871TM-N6CP8-J2 | 871TM-N6CP8-D4 | 871TM-N6CP8-P3 |
| Recommended standard QD cordset (-2 = 2 m (6.5 ft) PUR | | | | | | | 889D-F4AC-2 | 889P-F3AB-2 |

| Barrel Dia. | Nominal Sensing Distance [mm (in.)] | Shielded | Output Configuration | | Max Switching Frequency [Hz] | Cat. No. | |
|---|---|---|---|---|---|---|---|
| | | | | | | PUR Cable Style | Micro QD Style |
| 12 mm | 6 (0.23) | Y | N.O. | NPN | 400 | 871TM-M6NN12-A2 | 871TM-M6NN12-D4 |
| | | | | PNP | | 871TM-M6NP12-A2 | **871TM-M6NP12-D4** |
| | 10 (0.39) | N | | NPN | | 871TM-N10NN12-A2 | 871TM-N10NN12-D4 |
| | | | | PNP | | 871TM-N10NP12-A2 | **871TM-N10NP12-D4** |
| | 6 (0.23) | Y | N.C. | NPN | | 871TM-M6CN12-A2 | 871TM-M6CN12-D4 |
| | | | | PNP | | 871TM-M6CP12-A2 | 871TM-M6CP12-D4 |
| | 10 (0.39) | N | | NPN | | 871TM-N10CN12-A2 | 871TM-N10CN12-D4 |
| | | | | PNP | | 871TM-N10CP12-A2 | 871TM-N10CP12-D4 |
| 18 mm | 10 (0.39) | Y | N.O. | NPN | 200 | 871TM-M10NN18-A2 | 871TM-M10NN18-D4 |
| | | | | PNP | | 871TM-M10NP18-A2 | **871TM-M10NP18-D4** |
| | 20 (0.79) | N | | NPN | | 871TM-N20NN18-A2 | 871TM-N20NN18-D4 |
| | | | | PNP | | 871TM-N20NP18-A2 | 871TM-N20NP18-D4 |
| | 10 (0.39) | Y | N.C. | NPN | | 871TM-M10CN18-A2 | 871TM-M10CN18-D4 |
| | | | | PNP | | 871TM-M10CP18-A2 | 871TM-M10CP18-D4 |
| | 20 (0.79) | N | | NPN | | 871TM-N20CN18-A2 | 871TM-N20CN18-D4 |
| | | | | PNP | | 871TM-N20CP18-A2 | 871TM-N20CP18-D4 |
| 30 mm | 20 (0.79) | Y | N.O. | NPN | 80 | 871TM-M20NN30-A2 | 871TM-M20NN30-D4 |
| | | | | PNP | | 871TM-M20NP30-A2 | **871TM-M20NP30-D4** |
| | 40 (1.57) | N | | NPN | | 871TM-N40NN30-A2 | 871TM-N40NN30-D4 |
| | | | | PNP | | 871TM-N40NP30-A2 | 871TM-N40NP30-D4 |
| | 20 (0.79) | Y | N.C. | NPN | | 871TM-M20CN30-A2 | 871TM-M20CN30-D4 |
| | | | | PNP | | 871TM-M20CP30-A2 | 871TM-M20CP30-D4 |
| | 40 (1.57) | N | | NPN | | 871TM-N40CN30-A2 | 871TM-N40CN30-D4 |
| | | | | PNP | | 871TM-N40CP30-A2 | 871TM-N40CP30-D4 |
| Recommended Standard QD Cordset (-2 = 2 m (6.5 ft)) | | | | | | | 889D-F4AC-2 |

### QD Cordsets and Accessories

| Description | Page Number |
|---|---|
| Other Cordsets Available | 8-2 |
| Terminal Chambers | 8-2 |
| Mounting Brackets | 2-210…2-214 |
| End Caps | 2-219, 2-220 |
| Mounting Nuts | 2-221…2-222 |



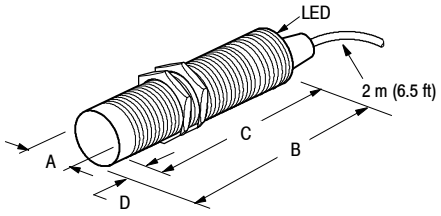
Visit our website: *www.ab.com/catalogs*.
Preferred availability cat. nos. are printed in **bold**.

# 871TM 3-Wire DC Extended Sensing

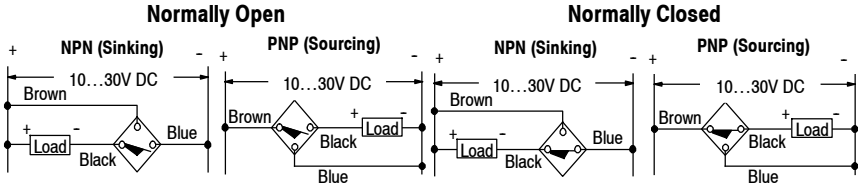
## Stainless Steel Face/Threaded Stainless Steel Barrel

## Approximate Dimensions [mm (in.)]

### Cable Style

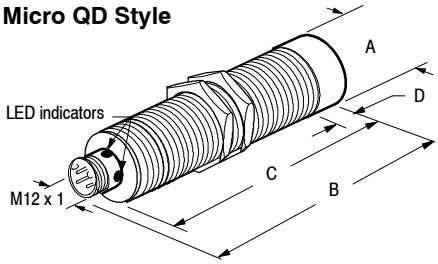


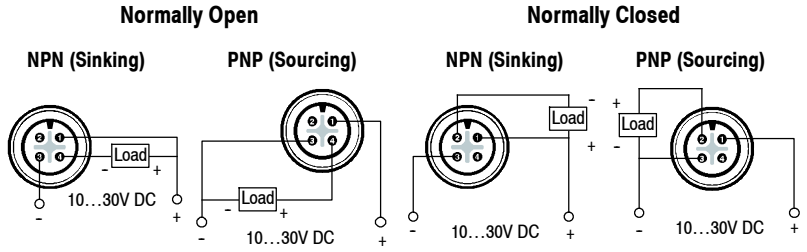

## Wiring Diagrams




| Thread Size | Shielded | [mm (in.)] A | B | C | D |
|---|---|---|---|---|---|
| M8 X 1 | Y | 8.0 (0.31) | 45 (1.76) | 45 (1.76) | — |
| | N | | | 41 (1.61) | 4 (0.16) |
| M12 X 1 | Y | 12.0 (0.47) | 50 (1.96) | 50 (1.96) | — |
| | N | | | 45 (1.77) | 5 (0.19) |
| M18 X 1 | Y | 18.0 (0.71) | | 50 (1.96) | — |
| | N | | | 43 (1.69) | 7 (0.27) |
| M30 X 1.5 | Y | 30.0 (1.18) | | 50 (1.96) | — |
| | N | | | 40 (1.57) | 10 (0.39) |

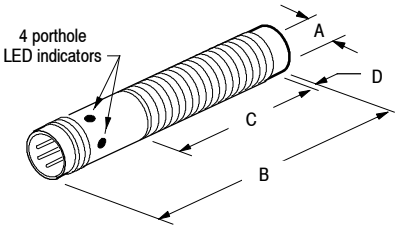
### Micro QD Style

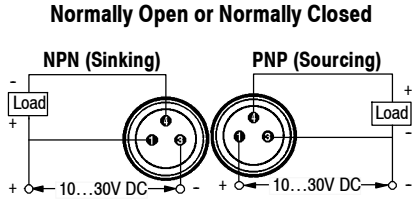



| Thread Size | Shielded | [mm (in.)] A | B | C | D |
|---|---|---|---|---|---|
| M8 X 1 | Y | 8.0 (0.31) | 66 (2.59) | 46 (1.81) | — |
| | N | | | 42 (1.65) | 4 (0.16) |
| M12 X 1 | Y | 12.0 (0.47) | 60 (2.36) | 41 (1.61) | — |
| | N | | | 36 (1.42) | 5 (0.20) |
| M18 X 1 | Y | 18.0 (0.71) | 63.5 (2.5) | 42.5 (1.67) | — |
| | N | | | 35.5 (1.40) | 7 (0.28) |
| M30 X 1.5 | Y | 30.0 (1.18) | 63.5 (2.5) | 42.5 (1.67) | — |
| | N | | | 32.5 (1.28) | 10 (0.39) |

### Pico QD Style




| Thread Size | Smooth Diameter | Shielded | [mm (in.)] A | B (max) | C (min) | D (max) |
|---|---|---|---|---|---|---|
| M8 X 1 | — | Y | 8.0 (0.31) | 60 (2.35) | 45.5 (1.79) | — |
| | | N | | | 41.5 (1.63) | 4.0 (0.16) |

# 871TM 3-Wire DC Ferrous or Nonferrous Selective

## Stainless Steel Face/Threaded Stainless Steel Barrel

*871TM DC Cable Style*
*12, 18, 30 mm*

*871TM DC Mini*
*Quick-Disconnect Style*
*12, 18, 30 mm*

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

## Features

- 3-wire operation
- 3-conductor or 4-pin connection
- 10…30V DC
- Ferrous or nonferrous selective sensing
- Short circuit, overload, false pulse, reverse polarity, and transient noise protection
- Normally open or normally closed output
- UL Listed, CSA Certified, and CE Marked for all applicable directives (may not be available for some special order models)

**Note:** AC/DC models also available as special order items. Consult your local Rockwell Automation sales office or Allen-Bradley distributor for details.

## Specifications

| | |
|---|---|
| Load Current | ≤200 mA |
| Capacitive Load | ≤1 μF |
| Leakage Current | ≤10 mA |
| Operating Voltage | 10…30 V DC |
| Voltage Drop | ≤1V DC at 200 mA |
| Repeatability | ≤10% at constant temperature |
| Hysteresis | 10% typical |
| False Pulse Protection | Incorporated |
| Transient Noise Protection | Incorporated |
| Reverse Polarity Protection | Incorporated |
| Short Circuit Protection | Incorporated (trigger at 340 mA typical) |
| Overload Protection | Incorporated |
| Certifications | UL Listed, CSA Certified, and CE Marked for all applicable directives<br>(May not be available for some special order models.) |
| Enclosure | NEMA 1, 2, 3, 3R, 4, 4X, 6, 6P, 12, 13 IP67 (IEC529) all models;<br>1200 psi (8270 kPa) washdown; stainless steel face and barrel;<br>ToughLink™ and micro connector versions are also rated IP69K (IEC 529) |
| Connections | Cable: 2 m (6.5 ft) length<br>A2–3-conductor PVC<br>C2–3-conductor #22 AWG ToughLink™<br>H2–3-conductor #18 AWG ToughLink<br>Quick-Disconnect: 4-pin mini style<br>4-pin micro style |
| LEDs | Red: Output Energized<br>Green: Power/Short Circuit (flashing)—18 mm models only |
| 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 Factor | |
|---|---|---|
| | Ferrous Selective | Nonferrous Selective |
| Steel | 1.0 | 0.0 |
| Stainless Steel | 0…1.0❶ | 0…1.0❶ |
| Brass | 0.0 | 1.0 |
| Aluminum | 0.0 | 1.0 |
| Aluminum >0.003 Thick | 0.0 | 1.0 |
| Copper | 0.0 | 1.0 |

❶ Variation due to differences in alloy composition.

# 871TM 3-Wire DC Ferrous or Nonferrous Selective

## Stainless Steel Face/Threaded Stainless Steel Barrel

## Product Selection

| Barrel Dia. | Nominal Sensing Distance [mm (in.)] | Shielded | Output Configuration | | Switching Freq. [Hz] | Target Type | Cat. No. | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | PVC Cable | ToughLink Cable | Mini QD Style | Micro QD Style |
| 12 mm | 1 (0.04) | Y | N.O. | PNP | 25 | Ferrous | 871TM-DF1NP12-A2 | 871TM-DF1NP12-C2 | 871TM-DF1NP12-N4 | 871TM-DF1NP12-D4 |
| | | | | NPN | | | 871TM-DF1NN12-A2 | 871TM-DF1NN12-C2 | 871TM-DF1NN12-N4 | 871TM-DF1NN12-D4 |
| | | | N.C. | PNP | | | 871TM-DF1CP12-A2 | 871TM-DF1CP12-C2 | 871TM-DF1CP12-N4 | 871TM-DF1CP12-D4 |
| | | | | NPN | | | 871TM-DF1CN12-A2 | 871TM-DF1CN12-C2 | 871TM-DF1CN12-N4 | 871TM-DF1CN12-D4 |
| | 2 (0.08) | | N.O. | PNP | | Nonferrous | — | 871TM-DN2NP12-C2❶ | 871TM-DN2NP12-N4❶ | 871TM-DN2NP12-D4❶ |
| | | | | NPN | | | — | 871TM-DN2NN12-C2❶ | 871TM-DN2NN12-N4❶ | 871TM-DN2NN12-D4❶ |
| | | | N.C. | PNP | | | — | 871TM-DN2CP12-C2❶ | 871TM-DN2CP12-N4❶ | 871TM-DN2CP12-D4❶ |
| | | | | NPN | | | — | 871TM-DN2CN12-C2❶ | 871TM-DN2CN12-N4❶ | 871TM-DN2CN12-D4❶ |
| 18 mm | 3 (0.12) | | N.O. | PNP | 10 | Ferrous | — | 871TM-DF3NP18-H2 | 871TM-DF3NP18-N4 | 871TM-DF3NP18-D4 |
| | | | | NPN | | | — | 871TM-DF3NN18-H2❶ | 871TM-DF3NN18-N4 | 871TM-DF3NN18-D4❶ |
| | | | N.C. | PNP | | | — | 871TM-DF3CP18-H2❶ | 871TM-DF3CP18-N4❶ | 871TM-DF3CP18-D4❶ |
| | | | | NPN | | | — | 871TM-DF3CN18-H2❶ | 871TM-DF3CN18-N4❶ | 871TM-DF3CN18-D4❶ |
| | 5 (0.20) | | N.O. | PNP | 20 | Nonferrous | 871TM-DN5NP18-A2 | 871TM-DN5NP18-H2 | 871TM-DN5NP18-N4 | 871TM-DN5NP18-D4 |
| | | | | NPN | | | — | 871TM-DN5NN18-H2❶ | 871TM-DN5NN18-N4❶ | 871TM-DN5NN18-D4❶ |
| | | | N.C. | PNP | | | — | 871TM-DN5CP18-H2❶ | 871TM-DN5CP18-N4❶ | 871TM-DN5CP18-D4❶ |
| | | | | NPN | | | — | 871TM-DN5CN18-H2❶ | 871TM-DN5CN18-N4❶ | 871TM-DN5CN18-D4❶ |
| 30 mm | 7.5 (0.30) | | N.O. | PNP | 15 | Ferrous | — | 871TM-DF8NP30-H2❶ | 871TM-DF8NP30-N4❶ | 871TM-DF8NP30-D4❶ |
| | | | | NPN | | | — | 871TM-DF8NN30-H2❶ | 871TM-DF8NN30-N4❶ | 871TM-DF8NN30-D4❶ |
| | | | N.C. | PNP | | | — | 871TM-DF8CP30-H2❶ | 871TM-DF8CP30-N4❶ | 871TM-DF8CP30-D4❶ |
| | | | | NPN | | | — | 871TM-DF8CN30-H2❶ | 871TM-DF8CN30-N4❶ | 871TM-DF8CN30-D4❶ |
| | 10 (0.39) | | N.O. | PNP | | Nonferrous | 871TM-DN10NP30-A2 | 871TM-DN10NP30-H2 | 871TM-DN10NP30-N4 | 871TM-DN10NP30-D4 |
| | | | | NPN | | | — | 871TM-DN10NN30-H2❶ | 871TM-DN10NN30-N4❶ | 871TM-DN10NN30-D4❶ |
| | | | N.C. | PNP | | | — | 871TM-DN10CP30-H2❶ | 871TM-DN10CP30-N4❶ | 871TM-DN10CP30-D4❶ |
| | | | | NPN | | | — | 871TM-DN10CN30-H2❶ | 871TM-DN10CN30-N4❶ | 871TM-DN10CN30-D4❶ |
| Recommended Standard QD Cordset (-6F = 1.8 m (6 ft), -2 = 2 m (6.5 ft)) | | | | | | | | | 889N-F4AFC-6F | 889D-F4AC-2 |

❶ Available as a special order item. AC/DC models also available. Specifications and dimensions subject to change. Fifteen piece minimum order required. Consult your local Rockwell Automation sales office or Allen-Bradley distributor for prices and lead times.

## QD Cordsets and Accessories

| Description | Page Number |
|---|---|
| Other Cordsets Available | 8-2 |
| Terminal Chambers | 8-2 |
| Mounting Brackets | 2-210…2-214 |
| End Caps | 2-219, 2-220 |
| Mounting Nuts | 2-221…2-222 |

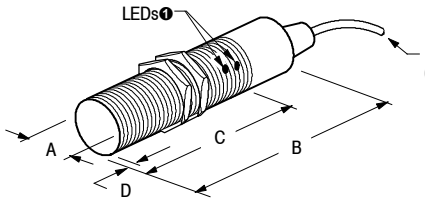
# 871TM 3-Wire DC Ferrous or Nonferrous Selective

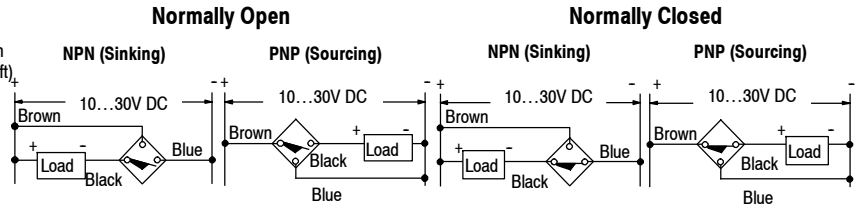
## Stainless Steel Face/Threaded Stainless Steel Barrel

### Approximate Dimensions [mm (in.)]

### Wiring Diagrams

**Cable Style**

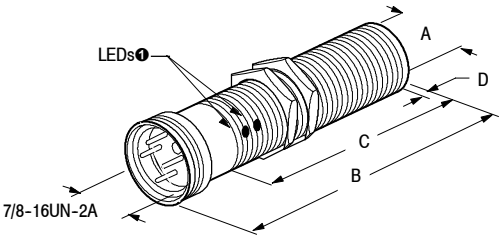


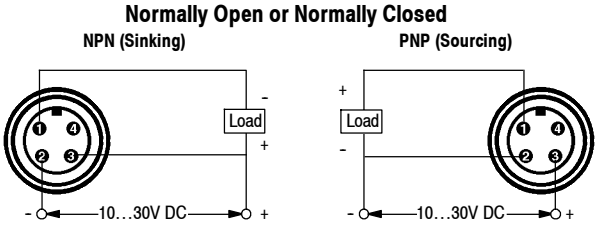




❶ Available for 18 mm models only

| Thread Size | Shielded | Target Type | [mm (in.)] A | B | C | D |
|---|---|---|---|---|---|---|
| M12 X 1 | Y | Ferrous and Nonferrous | 12.0 (0.47) | 51.0 (2.01) | 27.5 (1.08) | — |
| M18 X 1 | | Ferrous | 18.0 (0.71) | 76.8 (3.02) | 65.0 (2.56) | — |
| | | Nonferrous | 18.0 (0.71) | 74.7 (2.94) | 60.0 (2.36) | 2.5 (0.10) |
| M30 X 1.5 | | Ferrous and Nonferrous | 30.0 (1.18) | 77.5 (3.05) | 63.0 (2.48) | 2.5 (0.10) |

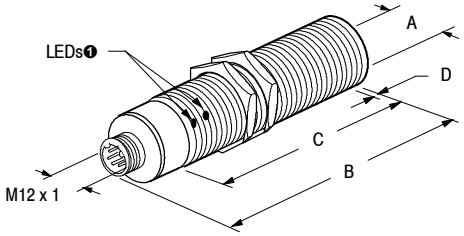
**Mini QD Style**

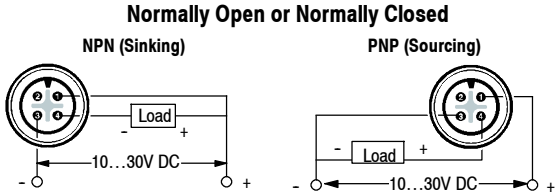



| Thread Size | Shielded | Target Type | [mm (in.)] A | B | C | D |
|---|---|---|---|---|---|---|
| M12 X 1 | Y | Ferrous and Nonferrous | 12.0 (0.47) | 61.3 (2.45) | 30.4 (1.20) | — |
| M18 X 1 | | Ferrous | 18.0 (0.71) | 78.5 (3.14) | 60.0 (2.40) | — |
| | | Nonferrous | 18.0 (0.71) | 76.6 (3.02) | 54.9 (2.16) | 2.5 (0.10) |
| M30 X 1.5 | | Ferrous and Nonferrous | 30.0 (1.18) | 86.0 (3.39) | 63.5 (2.50) | 2.5 (0.10) |

**Micro QD Style**




❶ Available for 18 mm models only

| Thread Size | Shielded | Target Type | [mm (in.)] A | B | C | D |
|---|---|---|---|---|---|---|
| M12 X 1 | Y | Ferrous and Nonferrous | 12.0 (0.47) | 62.3 (2.45) | 30.4 (1.20) | 0.9 (0.04) |
| M18 X 1 | | Ferrous | 18.0 (0.71) | 85.0 (3.35) | 65.5 (2.58) | 2.0 (0.08) |
| | | Nonferrous | 18.0 (0.71) | 84.3 (3.32) | 60.0 (2.36) | 2.5 (0.10) |
| M30 X 1.5 | Y | Ferrous and Nonferrous | 30.0 (1.18) | 85.5 (3.37) | 63.0 (2.48) | 2.5 (0.10) |

# 871TM 3-Wire DC Submersible

## Stainless Steel Face/Threaded Short Stainless Steel Barrel

*871TM DC Cable Style*
*18 mm*

## Features

- 3-wire operation
- 3-conductor or 4-pin connection
- 10…30V DC
- Short circuit, overload, false pulse, reverse polarity and transient noise protection
- Normally open or normally closed output

## Specifications

| | |
|---|---|
| Load Current | ≤200 mA |
| Capacitive Load | ≤ 1μF |
| Leakage Current | ≤10 mA |
| Operating Voltage | 10…30V DC |
| Voltage Drop | ≤1V DC at 200 mA |
| Repeatability | ≤1% at constant temperature |
| Hysteresis | 10% typical |
| False Pulse Protection | Incorporated |
| Transient Noise Protection | Incorporated |
| Reverse Polarity Protection | Incorporated |
| Short Circuit Protection | Incorporated (trigger at 340 mA typical) |
| Overload Protection | Incorporated |
| Enclosure | NEMA 1, 2, 3, 3R, 4, 4X, 6, 6P, 12, 13; IP68 (IEC529) and IP69K (IEC 529); 1200 psi (8270 kPa) washdown; stainless steel face and barrel; |
| Connections | Cable: 5 m (16.4 ft) length<br>3-conductor #18 AWG ToughLink |
| LED | None |
| 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 Factor |
|---|---|
| Steel | 1.0 |
| Stainless Steel | 0.9…1.0 |
| Brass | 0.3…0.5 |
| Aluminum | 0.1…0.4 |
| Aluminum ≤0.020 Thick | 0.9…1.1 |
| Copper | 0.4…0.6 |

# 871TM 3-Wire DC Submersible

## Stainless Steel Face/Threaded Short Stainless Steel Barrel

### Product Selection

| Barrel Diameter | Nominal Sensing Distance [mm (in.)] | Shielded | Output Configuration | | Switching Frequency [Hz] | Cat. No. Cable Style |
|---|---|---|---|---|---|---|
| 18 mm | 5 (0.20) | Y | N.O. | NPN | 60 | 871TM-DX14 |
| | | | | PNP | | 871TM-DX15 |
| | 8 (0.31) | N | | NPN | 40 | 871TM-DX16 |
| | | | | PNP | | 871TM-DX09 |
| | 5 (0.20) | Y | N.C. | NPN | 60 | 871TM-DX17 |
| | | | | PNP | | 871TM-DX18 |
| | 8 (0.31) | N | | NPN | 40 | 871TM-DX19 |
| | | | | PNP | | 871TM-DX20 |

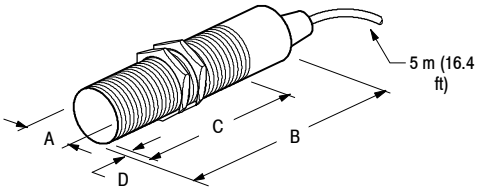
**Note**: These models are available as special order items. AC/DC and other DC models also available. Consult the factory for details.

### QD Cordsets and Accessories

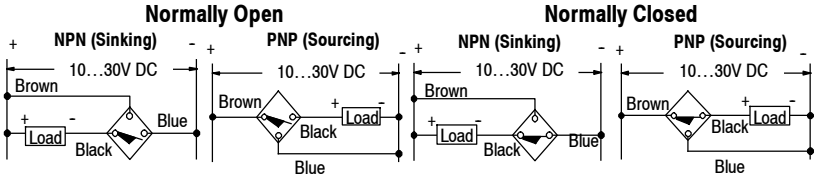
| Description | Page Number |
|---|---|
| Other Cordsets Available | 8-2 |
| Terminal Chambers | 8-2 |
| Mounting Brackets | 2-210…2-214 |
| End Caps | 2-219, 2-220 |
| Mounting Nuts | 2-221…2-222 |

### Approximate Dimensions [mm (in.)]

**Cable Style**




### Wiring Diagrams




| Thread Size | Shielded | [mm (in.)] A | B | C | D |
|---|---|---|---|---|---|
| M18 X 1 | Y | 18.0 (0.71) | 55.4 (2.18) | 41.7 (1.64) | 2.5 (0.10) |
| | N | | | | 14.5 (0.57) |

*871TM DC Cable Style*
*12, 18, 30 mm*

*871TM DC Mini*
*Quick-Disconnect Style*
*12, 18, 30 mm*

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

## Features

- 2-wire operation
- 2-conductor or 4-pin connection
- 10…30V DC
- Normally open or normally closed output
- Short circuit, overload, false pulse, reverse polarity, and transient noise protection
- UL Listed, CSA Certified and CE Marked for all applicable directives

## Specifications

| | |
|---|---|
| Load Current | ≤25 mA |
| Minimum Load Current | 2 mA |
| Leakage Current | ≤0.9 mA |
| Operating Voltage | 10…30V DC |
| Voltage Drop | ≤8V |
| Repeatability | 10% typical |
| Hysteresis | 10% typical |
| False Pulse Protection | Incorporated |
| Transient Noise Protection | Incorporated |
| Reverse Polarity Protection | Incorporated |
| Short Circuit Protection | Incorporated |
| Overload Protection | Incorporated |
| Certifications | UL Listed, CSA Certified and CE Marked for all applicable directives |
| Enclosure | NEMA 1, 2, 3, 3R, 4, 4X, 6P, 12, 13; IP67 (IEC 529) all models;<br>1200 psi (8270 kPa) washdown; stainless steel face and barrel;<br>ToughLink™ and micro connector versions are also rated IP69K (IEC 529) |
| Connections | Cable: 2 m (6.5 ft) length<br>A2—2-conductor #22 AWG PVC<br>C2—2-conductor #22 AWG ToughLink<br>H2—2-conductor #18 AWG ToughLink<br>Quick-Disconnect: 4-pin mini style<br>4-pin micro style |
| LED | Red: Output energized |
| 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 Factor |
|---|---|
| Steel | 1.0 |
| Stainless Steel | 0.9…1.0 |
| Brass | 0.3…0.5 |
| Aluminum | 0.1…0.4 |
| Aluminum ≤0.020 Thick | 0.9…1.1 |
| Copper | 0.4…0.6 |

# 871TM 2-Wire DC

## Stainless Steel Face/Threaded Short Stainless Steel Barrel

## Product Selection

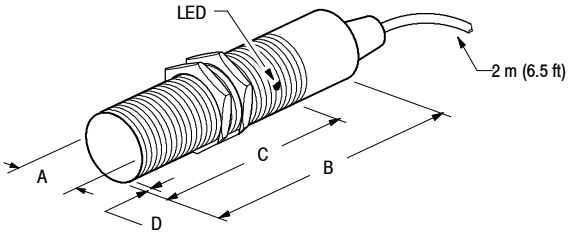
| Barrel Dia. | Nominal Sensing Distance [mm (in.)] | Shielded | Output Configuration | Switching Frequency [Hz] | Cat. No. | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | PVC Cable | ToughLink™ Cable | Mini QD Style | Micro QD Style |
| 12 mm | 2 (0.08) | Y | N.O. | 75 | 871TM-DH2NE12-A2 | 871TM-DH2NE12-C2 | 871TM-DH2NE12-N4 | **871TM-DH2NE12-D4** |
| | 4 (0.16) | N | | | 871TM-DH4NE12-A2 | 871TM-DH4NE12-C2 | 871TM-DH4NE12-N4 | 871TM-DH4NE12-D4 |
| | 2 (0.08) | Y | N.C. | 70 | 871TM-DH2CE12-A2 | 871TM-DH2CE12-C2 | 871TM-DH2CE12-N4 | 871TM-DH2CE12-D4 |
| | 4 (0.16) | N | | | 871TM-DH4CE12-A2 | 871TM-DH4CE12-C2 | 871TM-DH4CE12-N4 | 871TM-DH4CE12-D4 |
| 18 mm | 5 (0.20) | Y | N.O. | 60 | 871TM-DH5NE18-A2 | 871TM-DH5NE18-H2 | 871TM-DH5NE18-N4 | 871TM-DH5NE18-D4 |
| | 8 (0.31) | N | | | 871TM-DH8NE18-A2 | 871TM-DH8NE18-H2 | 871TM-DH8NE18-N4 | 871TM-DH8NE18-D4 |
| | 5 (0.20) | Y | N.C. | 40 | 871TM-DH5CE18-A2 | 871TM-DH5CE18-H2 | 871TM-DH5CE18-N4 | 871TM-DH5CE18-D4 |
| | 8 (0.31) | N | | | 871TM-DH8CE18-A2 | 871TM-DH8CE18-H2 | 871TM-DH8CE18-N4 | 871TM-DH8CE18-D4 |
| 30 mm | 10 (0.39) | Y | N.O. | 40 | 871TM-DH10NE30-A2 | 871TM-DH10NE30-H2 | 871TM-DH10NE30-N4 | 871TM-DH10NE30-D4 |
| | 15 (0.59) | N | | | 871TM-DH15NE30-A2 | 871TM-DH15NE30-H2 | 871TM-DH15NE30-N4 | 871TM-DH15NE30-D4 |
| | 10 (0.39) | Y | N.C. | 30 | 871TM-DH10CE30-A2 | 871TM-DH10CE30-H2 | 871TM-DH10CE30-N4 | 871TM-DH10CE30-D4 |
| | 15 (0.59) | N | | | 871TM-DH15CE30-A2 | 871TM-DH15CE30-H2 | 871TM-DH15CE30-N4 | 871TM-DH15CE30-D4 |
| Recommended Standard QD Cordset (-6F = 1.8 m (6 ft), -2 = 2 m (6.5 ft)) | | | | | | | 889N-F4AFC-6F | 889D-F4AC-2 |

## QD Cordsets and Accessories

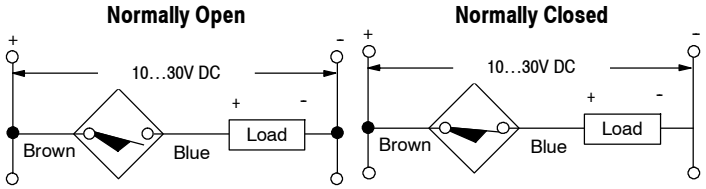
| Description | Page Number |
|---|---|
| Other Cordsets Available | 8-2 |
| Terminal Chambers | 8-2 |
| Mounting Brackets | 2-210…2-214 |
| End Caps | 2-219, 2-220 |
| Mounting Nuts | 2-221…2-222 |

## Approximate Dimensions [mm (in.)]

**Cable Style**




## Wiring Diagrams




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

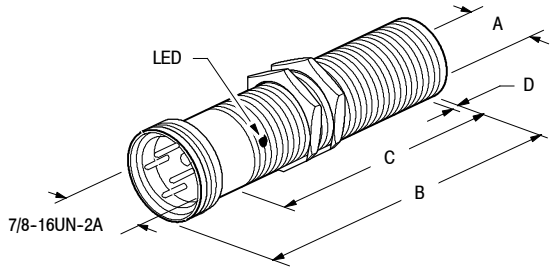
| Thread Size | Shielded | [mm (in.)] | | | |
|---|---|---|---|---|---|
| | | A | B | C | D |
| M12 X 1 | Y | 12.0 (0.47) | 49.8 (1.96) | 26.4 (1.04) | 2.5 (0.10) |
| | N | | | 19.5 (0.77) | 9.4 (0.37) |
| M18 X 1 | Y | 18.0 (0.71) | 55.4 (2.18) | 41.7 (1.64) | 2.5 (0.10) |
| | N | | | | 14.5 (0.57) |
| M30 X 1.5 | Y | 30.0 (1.18) | 57.9 (2.28) | 41.9 (1.65) | 2.5 (0.10) |
| | N | | | 39.4 (1.55) | 18.0 (0.71) |



Visit our website: *www.ab.com/catalogs*.
Preferred availability cat. nos. are printed in **bold**.

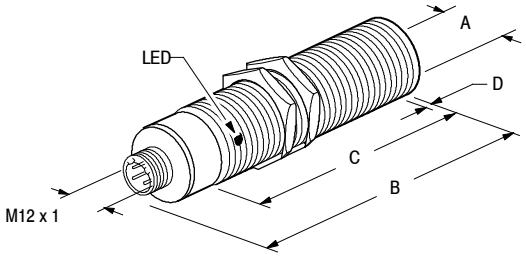
## Approximate Dimensions [mm (in.)] (continued)

### Mini Quick-Disconnect Style




| Thread Size | Shielded | [mm (in.)] A | B | C | D |
|---|---|---|---|---|---|
| M12 X 1 | Y | 12.0 (0.47) | 63.5 (2.50) | 25.4 (1.00) | 2.5 (0.10) |
| | N | | | 18.5 (0.73) | 9.4 (0.37) |
| M18 X 1 | Y | 18.0 (0.71) | 56.1 (2.21) | 35.1 (1.38) | 2.5 (0.10) |
| | N | | | 29.2 (1.15) | 14.5 (0.57) |
| M30 X 1.5 | Y | 30.0 (1.18) | 68.1 (2.68) | 41.9 (1.65) | 2.5 (0.10) |
| | N | | | 39.4 (1.55) | 18.0 (0.71) |

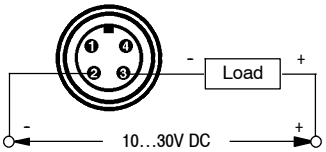
### Micro Quick-Disconnect Style




| Thread Size | Shielded | [mm (in.)] A | B | C | D |
|---|---|---|---|---|---|
| M12 X 1 | Y | 12.0 (0.47) | 61.0 (2.40) | 26.4 (1.04) | 2.5 (0.10) |
| | N | | | 19.6 (0.77) | 9.4 (0.37) |
| M18 X 1 | Y | 18.0 (0.71) | 65.0 (2.56) | 41.7 (1.64) | 2.5 (0.10) |
| | N | | | | 14.5 (0.57) |
| M30 X 1.5 | Y | 30.0 (1.18) | 66.3 (2.61) | 41.9 (1.65) | 2.5 (0.10) |
| | N | | | 39.4 (1.55) | 18.0 (0.71) |

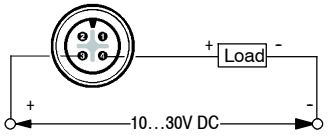
## Wiring Diagrams

**Normally Open or Normally Closed**




**Note:** Load can be switched to pin 2.

**Normally Open or Normally Closed**




**Note:** Load can be switched to pin 3.

# 871TM Intrinsically Safe, 2-Wire DC

## Stainless Steel Face and Barrel

*871TM Intrinsically Safe*
*Cable Style*

*871TM Intrinsically Safe*
*Micro Quick-Disconnect Style*

## Description

These special 871TM models are approved as Intrinsically Safe for use in hazardous areas. These special models are designed for use in Division 1, 2; Class I, II, III; Groups A, B, C, D, E, F, G areas when used in conjunction with an appropriate Intrinsically Safe approved zener diode barrier. Recommended barriers are available from Rockwell Automation/Allen-Bradley. These approved units can also be used in Division 2 locations without a barrier.

## Features

- 2-wire operation
- 2 conductor or 4 pin connection
- 10…31.5V DC
- Normally open output
- Short circuit, overload, false pulse, transient noise, and reverse polarity protection
- FM and CSA entity approved

## Specifications

| | |
|---|---|
| Outputs | Normally Open |
| Max. Load Current | 25 mA |
| Min. Load Current | 2 mA |
| Leakage Current | <1.0 mA |
| Operating Voltage | 10…31.5V DC |
| Voltage Drop | <8V DC |
| Repeatability | 10% typical |
| Hysteresis | 10% typical |
| Reverse Polarity Protection | Incorporated |
| False Pulse Protection | Incorporated |
| Transient Noise Protection | Incorporated |
| Short Circuit Protection | Incorporated |
| Overload Protection | Incorporated |
| Enclosure | NEMA 1, 2, 3, 3R, 4, 4X, 6, 6P, 12, 13, IP67 (IEC 529) all models;<br>1200 psi (8270 kPa) washdown; stainless steel face and barrel;<br>ToughLink™ and micro connector versions are also rated IP69K (IEC 529) |
| Certifications | FM and CSA Approved for<br>- Class I, II, III; Divisions 1, 2; Groups A, B, C, D, E, F, G when used in conjunction with an approved intrinsic safety barrier<br>- Class I, II, III; Division 2; Groups A, B, C, D, E, F, G without intrinsic safety barrier<br>(See control drawing 75001-437 for approval details and wiring diagrams) |
| Connections | Cable: 2 m (6.5 ft) length<br>A2 - 2 conductor #22AWG PVC<br>C2 - 2 conductor #22AWG ToughLink<br>H2 - 2 conductor #18 AWG ToughLink<br>Quick Disconnect: 4-pin micro style |
| LED | Red: Output Energized |
| 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 Factor |
|---|---|
| Steel | 1.0 |
| Stainless Steel | 0.9…1.0 |
| Brass | 0.3…0.5 |
| Aluminum | 0.1…0.4 |
| Aluminum ≤0.020 Thick | 0.9…1.1 |
| Copper | 0.4…0.6 |

### Entity Parameters

| Sensor | | | Barrier |
|---|---|---|---|
| $V_{max}$ | 31.5V | ≥ | $V_t$ |
| $I_{max}$ | 130 mA | ≥ | $I_t$ |
| $P_{max}$ | 1.25 W | ≥ | $P_t$ |
| $C_i$ | 0 µF | ≤ | $C_a$ |
| $L_i$ | 0 mH | ≤ | $L_a$ |

**ATTENTION**

Operating parameters must be adhered to.

# 871TM Intrinsically Safe, 2-Wire DC

## Stainless Steel Face and Barrel

## Product Selection

| Barrel Dia. | Nominal Sensing Distance [mm (in.)] | Shielded | Output Configuration | Switching Frequency [Hz] | Cat. No. | | |
|---|---|---|---|---|---|---|---|
| | | | | | PVC Cable | ToughLink™ Cable | Micro QD Style |
| 12 mm | 2 (0.08) | Y | N.O. | 75 | 871TM-DR2NE12-A2 | 871TM-DR2NE12-C2 | 871TM-DR2NE12-D4 |
| | 4 (0.16) | N | | | 871TM-DR4NE12-A2 | 871TM-DR4NE12-C2 | 871TM-DR4NE12-D4 |
| 18 mm | 5 (0.20) | Y | | 60 | 871TM-DR5NE18-A2 | 871TM-DR5NE18-H2 | 871TM-DR5NE18-D4 |
| | 8 (0.31) | N | | | 871TM-DR8NE18-A2 | 871TM-DR8NE18-H2 | 871TM-DR8NE18-D4 |
| 30 mm | 10 (0.39) | Y | | 40 | 871TM-DR10NE30-A2 | 871TM-DR10NE30-H2 | 871TM-DR10NE30-D4 |
| | 15 (0.59) | N | | | 871TM-DR15NE30-A2 | 871TM-DR15NE30-H2 | 871TM-DR15NE30-D4 |
| Recommended Standard QD Cordset (-2 = 2 m (6.5 ft)) | | | | | | | 889D-F4LC-2 ❶ |

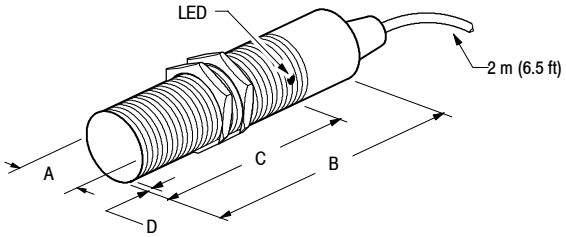
❶ Intrinsically Safe wiring labels 897H-L1 or 897H-L2 must be applied every 7.6 m (25 ft).

## QD Cordsets and Accessories

| Description | Page Number |
|---|---|
| Other Cordsets Available | 8-2 |
| Terminal Chambers | 8-2 |
| Zener Diode Barriers | NO TAG |
| Intrinsically Safe Wiring Labels | 12-8 |

## Approximate Dimensions [mm (in.)]

### Cable Style




| Thread Size | Shielded | [mm (in.)] | | | |
|---|---|---|---|---|---|
| | | A | B | C | D |
| M12 x 1 | Y | 12.0 (0.47) | 72.1 (2.84) | 38.4 (1.51) | 2.5 (0.10) |
| | N | | | 31.5 (1.24) | 9.4 (0.37) |
| M18 x 1 | Y | 18.0 (0.71) | 74.7 (2.94) | 60.0 (2.36) | 2.5 (0.10) |
| | N | | | 48.2 (1.90) | 14.4 (0.56) |
| M30 x 1.5 | Y | 30.0 (1.18) | 77.2 (3.04) | 61.3 (2.41) | 2.5 (0.10) |
| | N | | | 41.6 (1.64) | 17.9 (0.70) |

## Wiring Diagrams

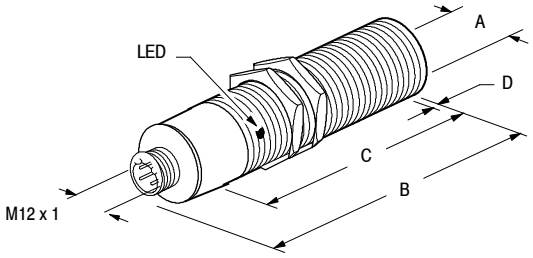
See pages 2-39 and 2-40.

# 871TM Intrinsically Safe, 2-Wire DC

## Stainless Steel Face and Barrel

### Approximate Dimensions [mm (in.)]

**Micro QD Style**




### Wiring Diagrams

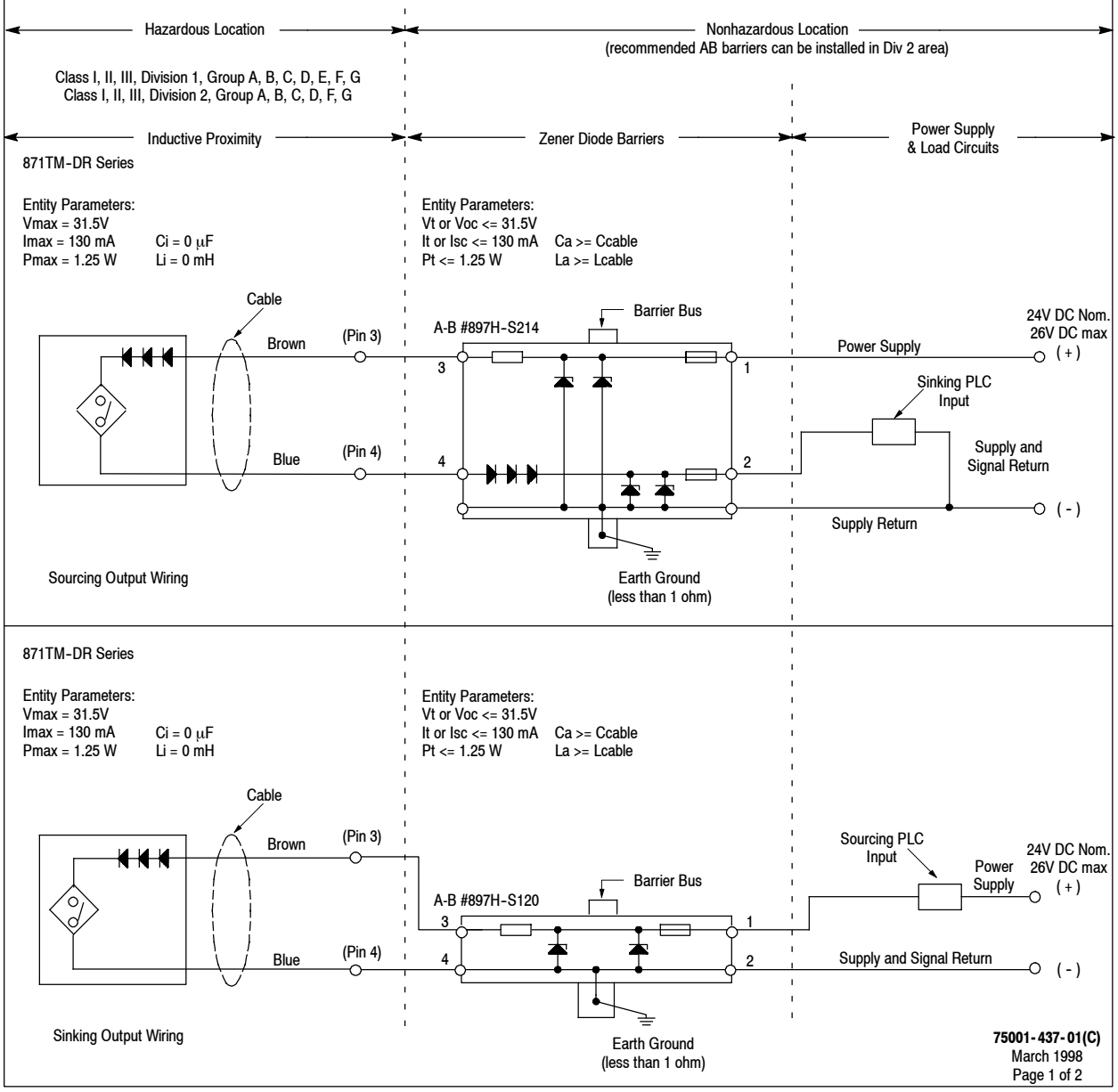
See pages 2-39 and 2-40.

| Thread Size | Shielded | [mm (in.)] | | | |
|---|---|---|---|---|---|
| | | A | B | C | D |
| M12 x 1 | Y | 12.0 (0.47) | 72.1 (2.84) | 38.4 (1.51) | 2.5 (0.10) |
| | N | | | 31.5 (1.24) | 9.4 (0.37) |
| M18 x 1 | Y | 18.0 (0.71) | 74.7 (2.94) | 60.0 (2.36) | 2.5 (0.10) |
| | N | | | 48.2 (1.90) | 14.4 (0.56) |
| M30 x 1.5 | Y | 30.0 (1.18) | 77.2 (3.04) | 61.3 (2.41) | 2.5 (0.10) |
| | N | | | 41.6 (1.64) | 17.9 (0.70) |

## Inductive Proximity Sensors

### Division 1 Installation Wiring Diagrams

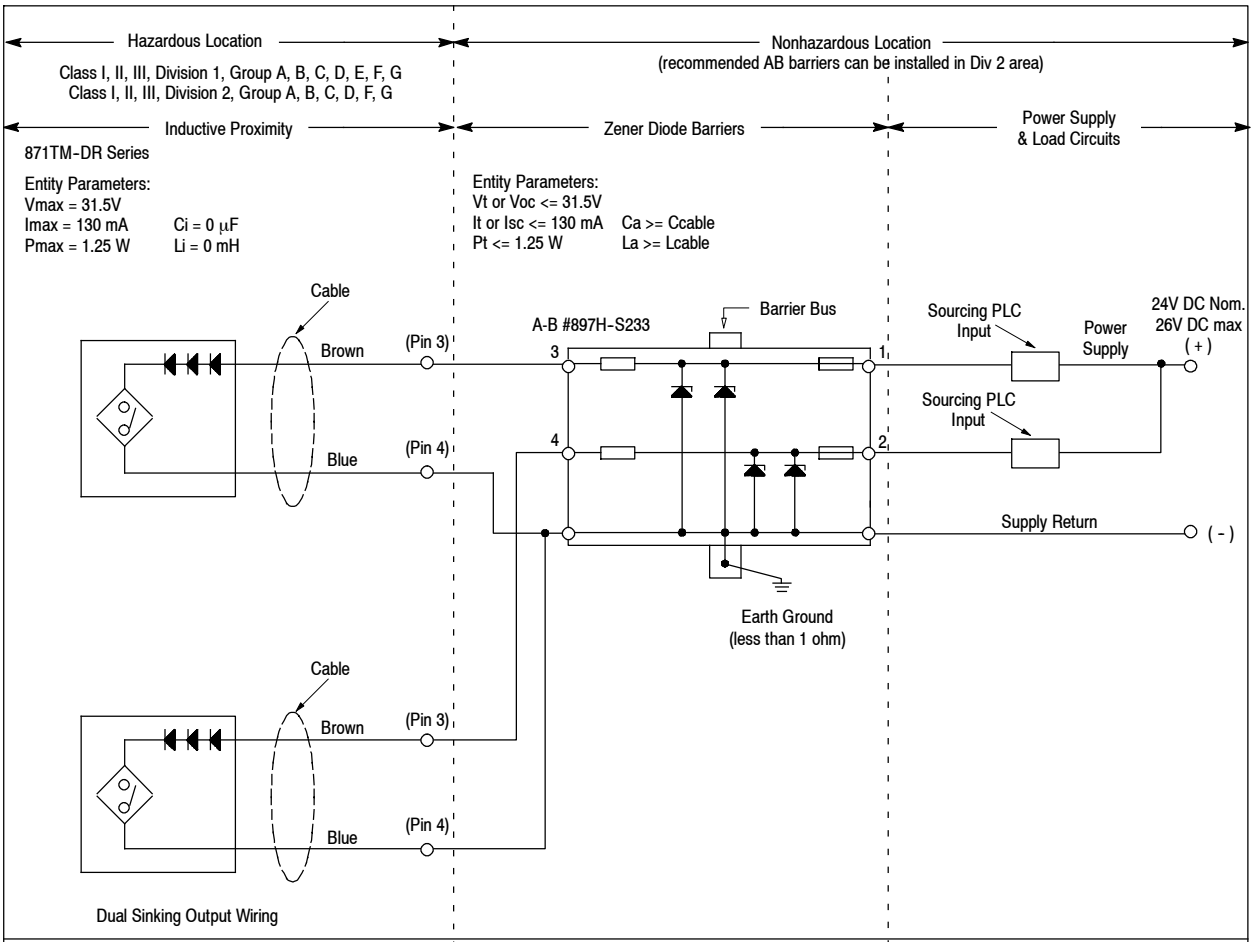
Rockwell Automation Cat. No.: 871TM-DRaNEb-c
where:
a = nominal operating distance [2, 5, or 10 (mm, shielded); 4, 8, or 15 (mm, unshielded)]
b = 12, 18, or 30 (mm, housing diameter)
c = A2 (2 meter PVC cable), D4 (4-pin micro connector), C2 (2 meter ToughLink™ cable -12 mm), or H2 (2 meter ToughLink cable -18 and 30 mm)




| ATTENTION | |
|---|---|
|  | Operating parameters must be adhered to. |

## Inductive Proximity Sensors

### Division 1 Installation Wiring Diagrams (continued)




**Factory Mutual Installation Notes**:

❶ Installation must be in accordance with the National Electrical Code® (NFPA 70, Article 504), ANSI/ISA-RP12.6, and the manufacturer's instructions.
❷ If the electrical parameters of the cable used are unknown, the following values may be used: Capacitance - 60 pF/ft.; Inductance - 0.20 µH/ft.
❸ The wiring between each Inductive Proximity Sensor and its corresponding channel of the dual-channel barrier is a separate intrinsically safe circuit. Each of the two separate intrinsically safe circuits shall be in separate cables or shall be separated from each other as specified in NEC 504-30. The supply return conductors may be connected at the barrier's grounding terminal.
❹ The Barrier bus must be insulated from other grounded metal. Use DIN Rail Mounting Kit, Rockwell Automation #64-136.
❺ The maximum nonhazardous location voltage must not exceed 250V AC or DC.
❻ Barriers are not required for Division 2 (31.5V DC max.). Division 2 applications must be installed in accordance with the NEC.
❼ WARNING: Substitution of components may impair Intrinsic Safety.
❽ No revision to drawing without prior FMRC approval.

**Canadian Standards Association Installation Notes**:

❶ Installation must be in accordance with the Canadian Electrical Code (Part I), ANSI/ISA-RP12.6, and the manufacturer's instructions.
❷ If the electrical parameters of the cable used are unknown, the following values may be used: Capacitance - 60 pF/ft.; Inductance - 0.20 µH/ft.
❸ The wiring between each Inductive Proximity Sensor and its corresponding channel of the dual-channel barrier is a separate intrinsically safe circuit. Each of the two separate intrinsically safe circuits shall be in separate cables or shall be separated from each other as specified in CEC. The supply return conductors may be connected at the barrier's grounding terminal.
❹ The Barrier bus must be insulated from other grounded metal. Use DIN Rail Mounting Kit, Allen-Bradley #64-136.
❺ The maximum nonhazardous location voltage must not exceed 250V AC or DC.
❻ Barriers are not required for Division 2 (31.5V DC max.). Division 2 applications must be installed in accordance with the CEC.
❼ In Division 2 applications without barriers observe the following warnings:
WARNING: EXPLOSION HAZARD. Do not disconnect equipment unless power has been switched off or the area is known to be nonhazardous.
❽ WARNING: Substitution of components may impair Intrinsic Safety.
❾ No revision to drawing without prior CSA approval.

**75001-437-01(C)**
March 1998
Page 2 of 2

**ATTENTION**

These parameters must be adhered to.

*871TM AC/DC Cable Style*
*12, 18, 30 mm*

*871TM AC/DC Mini*
*Quick-Disconnect Style*
*12, 18, 30 mm*

*871TM AC/DC Micro*
*Quick-Disconnect Style*
*12, 18, 30 mm*

*871TM AC/DC EAC Micro*
*Quick-Disconnect Style*
*12 mm*

## Features

- 2-wire operation
- 2-conductor, 3-conductor, 3-pin or 4-pin connection
- 20…250V AC/DC
- 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

## 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 | |
| False Pulse Protection | Incorporated | |
| Transient Noise Protection | Incorporated | |
| Short-Circuit Protection | Trigger @ 5 A typical | Trigger @ 8 A typical |
| Overload Protection | Trigger @ 260 mA typical | Trigger @ 320 mA typical |
| Certifications | 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) all models;<br>1200 psi (8270 kPa) washdown; stainless steel face and barrel;<br>ToughLink™ and micro connector versions are also rated IP69K (IEC 529) | |
| Connections | Cable: 2 m (6.5 ft) length<br>A2—2-conductor #22 AWG PVC<br>C2—2-conductor #22 AWG ToughLink<br>H2—3-conductor #18 AWG ToughLink<br>Quick-Disconnect: 3-pin mini style<br>3-pin micro style<br>4-pin EAC micro style | |
| LEDs | Red: Output energized<br>Green: Power<br>Short circuit: Red and green flashing | |
| 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 Factor |
|---|---|
| Steel | 1.0 |
| Stainless Steel | 0.9…1.0 |
| Brass | 0.3…0.5 |
| Aluminum | 0.1…0.4 |
| Aluminum ≤0.020 Thick | 0.9…1.1 |
| Copper | 0.4…0.6 |

# 871TM 2-Wire AC/DC

## Stainless Steel Face/Threaded Stainless Steel Barrel

## Product Selection

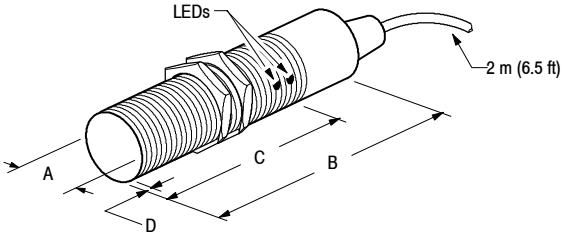
| Barrel Dia. | Nominal Sensing Distance [mm (in.)] | Shielded | Output Configuration | Switching Frequency [Hz] | Cat. No. | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | PVC Cable | ToughLink™ Cable | Mini QD Style | Micro QD Style | EAC Micro QD Style |
| 12 mm | 3 (0.12) | Y | N.O. | 35 | 871TM-B3N12-A2 | 871TM-B3N12-C2 | 871TM-B3N12-N3 | **871TM-B3N12-R3** | — |
| | | | N.C. | 30 | 871TM-B3C12-A2 | 871TM-B3C12-C2 | 871TM-B3C12-N3 | 871TM-B3C12-R3 | — |
| | 4 (0.16) | N | N.O. | 20 | 871TM-B4N12-A2 | 871TM-B4N12-C2 | 871TM-B4N12-N3 | **871TM-B4N12-R3** | 871TM-B4N12-B4 |
| | | | N.C. | 15 | 871TM-B4C12-A2 | 871TM-B4C12-C2 | 871TM-B4C12-N3 | 871TM-B4C12-R3 | — |
| 18 mm | 5 (0.20) | Y | N.O. | 20 | **871TM-B5N18-A2** | **871TM-B5N18-H2** | **871TM-B5N18-N3** | **871TM-B5N18-R3** | — |
| | | | N.C. | 15 | 871TM-B5C18-A2 | 871TM-B5C18-H2 | 871TM-B5C18-N3 | 871TM-B5C18-R3 | — |
| | 8 (0.31) | N | N.O. | 15 | 871TM-B8N18-A2 | **871TM-B8N18-H2** | **871TM-B8N18-N3** | **871TM-B8N18-R3** | — |
| | | | N.C. | 12 | 871TM-B8C18-A2 | 871TM-B8C18-H2 | 871TM-B8C18-N3 | 871TM-B8C18-R3 | — |
| 30 mm | 10 (0.39) | Y | N.O. | 15 | **871TM-B10N30-A2** | 871TM-B10N30-H2 | **871TM-B10N30-N3** | **871TM-B10N30-R3** | — |
| | | | N.C. | 12 | 871TM-B10C30-A2 | 871TM-B10C30-H2 | 871TM-B10C30-N3 | 871TM-B10C30-R3 | — |
| | 15 (0.59) | N | N.O. | 12 | **871TM-B15N30-A2** | **871TM-B15N30-H2** | **871TM-B15N30-N3** | **871TM-B15N30-R3** | — |
| | | | N.C. | 10 | 871TM-B15C30-A2 | 871TM-B15C30-H2 | 871TM-B15C30-N3 | 871TM-B15C30-R3 | — |
| Recommended Standard QD Cordset (-6F = 1.8 m (6 ft), -2 = 2 m (6.5 ft)) | | | | | | | 889N-F3AFC-6F | 889R-F3ECA-2 | 889B-F3AC-2 |

## QD Cordsets and Accessories

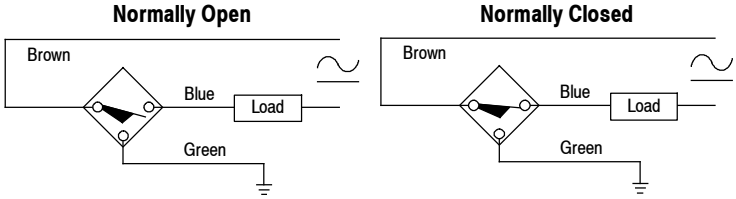
| Description | Page Number |
|---|---|
| Other Cordsets Available | 8-2 |
| Terminal Chambers | 8-2 |
| Mounting Brackets | 2-210…2-214 |
| End Caps | 2-219, 2-220 |
| Mounting Nuts | 2-221…2-222 |

## Approximate Dimensions [mm (in.)]

### Cable Style




## Wiring Diagrams

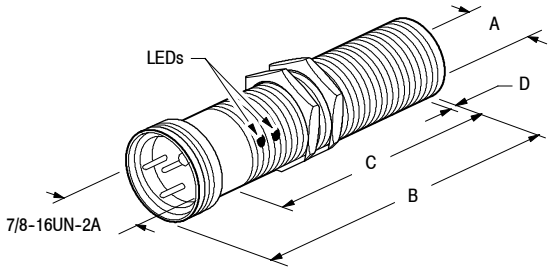



**Note 1:** No green wire on 12 mm and on sensors with PVC cable (-A2). Attach housing to ground.
**Note 2:** Load can be switched to brown wire.

| Thread Size | Shielded | [mm (in.)] | | | |
|---|---|---|---|---|---|
| | | A | B | C | D |
| M12 x 1 | Y | 12.0 (0.47) | 72.1 (2.84) | 38.4 (1.51) | 2.5 (0.10) |
| | N | | | 31.5 (1.24) | 9.4 (0.37) |
| M18 x 1 | Y | 18.0 (0.71) | 74.7 (2.94) | 60.0 (2.36) | 2.5 (0.10) |
| | N | | | 48.2 (1.90) | 14.4 (0.56) |
| M30 x 1.5 | Y | 30.0 (1.18) | 77.2 (3.04) | 61.3 (2.41) | 2.5 (0.10) |
| | N | | | 41.6 (1.64) | 17.9 (0.70) |

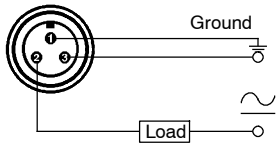
## Approximate Dimensions [mm (in.)] (continued)

### Mini Quick-Disconnect Style




## Wiring Diagrams

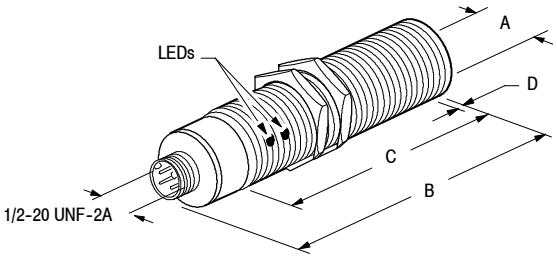
**Normally Open or Normally Closed**



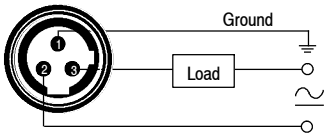

**Note 1:** No ground pin on 12 mm. Attach housing to ground.
**Note 2:** Load can be switched to pin 3.

| Thread Size | Shielded | [mm (in.)] | | | |
|---|---|---|---|---|---|
| | | A | B | C | D |
| M12 X 1 | Y | 12.0 (0.47) | 85.6 (3.37) | 37.8 (1.49) | 2.5 (0.10) |
| | N | | | 31.7 (1.25) | 9.4 (0.37) |
| M18 X 1 | Y | 18.0 (0.71) | 76.6 (3.02) | 54.9 (2.16) | 2.5 (0.10) |
| | N | | | 43.1 (1.70) | 14.4 (0.56) |
| M30 X 1.5 | Y | 30.0 (1.18) | 86.4 (3.40) | 61.3 (2.41) | 2.5 (0.10) |
| | N | | | 41.6 (1.64) | 17.9 (0.70) |

### Micro Quick-Disconnect Style



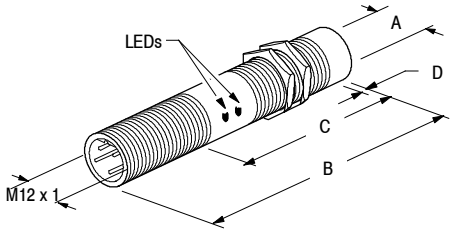

**Normally Open or Normally Closed**



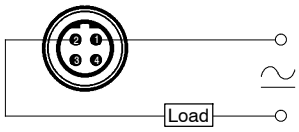

**Note 1:** No ground pin on 12 mm. Attach housing to ground.
**Note 2:** Load can be switched to pin 2.

| Thread Size | Shielded | [mm (in.)] | | | |
|---|---|---|---|---|---|
| | | A | B | C | D |
| M12 X 1 | Y | 12.0 (0.47) | 87.3 (3.44) | 38.4 (1.51) | 2.5 (0.10) |
| | N | 12.0 (0.47) | 87.3 (3.44) | 31.5 (1.24) | 9.4 (0.37) |
| M18 X 1 | Y | 18.0 (0.71) | 84.3 (3.32) | 60.0 (2.36) | 2.5 (0.10) |
| | N | 18.0 (0.71) | 84.3 (3.32) | 48.2 (1.90) | 14.4 (0.56) |
| M30 X 1.5 | Y | 30.0 (1.18) | 85.7 (3.37) | 61.3 (2.41) | 2.5 (0.10) |
| | N | 30.0 (1.18) | 85.7 (3.37) | 46.1 (1.81) | 17.9 (0.70) |

### EAC Micro Quick-Disconnect Style




**Normally Open**




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

| Thread Size | Shielded | [mm (in.)] | | | |
|---|---|---|---|---|---|
| | | A | B | C | D |
| M12 X 1 | N | 12.0 (0.47) | 83.0 (3.27) | 31.7 (1.25) | 9.4 (0.37) |

# 871TM 2-Wire AC/DC PLC Interfacer

## Stainless Steel Face/Threaded Short Stainless Steel Barrel

*871TM AC/DC Cable Style*
*12, 18, 30 mm*

*871TM AC/DC Mini*
*Quick-Disconnect Style*
*12, 18, 30 mm*

*871TM AC/DC Micro*
*Quick-Disconnect Style*
*12, 18, 30 mm*

*871TM AC/DC EAC Micro*
*Quick-Disconnect Style*
*12 mm*

## Features

- Designed for low load current PLC, I/O, and PC applications
- 2-wire operation
- 2-conductor, 3-pin or 4-pin connection
- 20…250V AC/DC
- Normally open or normally closed output
- False pulse, transient noise, and radio frequency protection
- UL Listed, CSA Certified, and CE Marked for all applicable directives

## Specifications

| | |
|---|---|
| Load Current | 2…25 mA |
| Leakage Current | ≤0.9 mA at 24V DC<br>≤1.7 mA at 20…120V AC/DC;<br>≤2.5 mA at 121…250V AC/DC |
| Operating Voltage | 20…250V AC/DC |
| Voltage Drop | ≤8V at 25 mA DC<br>≤10V at 25 mA AC |
| Repeatability | 10% typical |
| Hysteresis | 10% typical |
| False Pulse Protection | Incorporated |
| Transient Noise Protection | Incorporated |
| Radio Frequency Protection | 10V per meter<br>Frequency range 20…1000MHz |
| Certifications | 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) all models;<br>1200 psi (8270 kPa) washdown; stainless steel face and barrel;<br>ToughLink™ and micro connector versions are also rated IP69K (IEC 529) |
| Connections | Cable: 2 m (6.5 ft) length<br>A2—2-conductor #22 AWG PVC<br>C2—2-conductor #22 AWG ToughLink<br>H2—2-conductor #18 AWG ToughLink<br>Quick-Disconnect: 3-pin mini style<br>3-pin micro style<br>4-pin EAC micro style |
| LED | Red: Output energized |
| 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 Factor |
|---|---|
| Steel | 1.0 |
| Stainless Steel | 0.8…1.0 |
| Brass | 0.4…0.7 |
| Aluminum | 0.4…0.7 |
| Copper | 0.2…0.5 |

# 871TM 2-Wire AC/DC PLC Interfacer

## Stainless Steel Face/Threaded Short Stainless Steel Barrel

## Product Selection

| Barrel Dia. | Nominal Sensing Distance [mm (in.)] | Shielded | Output Config-uration | Switching Frequency [Hz] | Cat. No. | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | PVC Cable | ToughLink™ Cable | Mini QD Style | Micro QD Style | EAC Micro QD Style |
| 12 mm | 2 (0.08) | Y | N.O. | 75 | 871TM-BH2N12-A2 | 871TM-BH2N12-C2 | 871TM-BH2N12-N3 | **871TM-BH2N12-R3** | 871TM-BH2N12-B4 |
| | 4 (0.16) | N | | 35 | 871TM-BH4N12-A2 | 871TM-BH4N12-C2 | 871TM-BH4N12-N3 | **871TM-BH4N12-R3** | — |
| 18 mm | 5 (0.20) | Y | N.O. | 65 | **871TM-BH5N18-A2** | **871TM-BH5N18-H2** | **871TM-BH5N18-N3** | **871TM-BH5N18-R3** | — |
| | 8 (0.31) | N | | 30 | 871TM-BH8N18-A2 | **871TM-BH8N18-H2** | **871TM-BH8N18-N3** | **871TM-BH8N18-R3** | — |
| 30 mm | 10 (0.39) | Y | N.O. | 45 | 871TM-BH10N30-A2 | **871TM-BH10N30-H2** | **871TM-BH10N30-N3** | **871TM-BH10N30-R3** | — |
| | 15 (0.59) | N | | 20 | 871TM-BH15N30-A2 | **871TM-BH15N30-H2** | **871TM-BH15N30-N3** | **871TM-BH15N30-R3** | — |
| Recommended Standard QD Cordset (-6F = 1.8 m (6 ft), -2 = 2 m (6.5 ft)) | | | | | | | 889N-F3AFC-6F | 889R-F3ECA-2 | 889B-F3AC-2 |

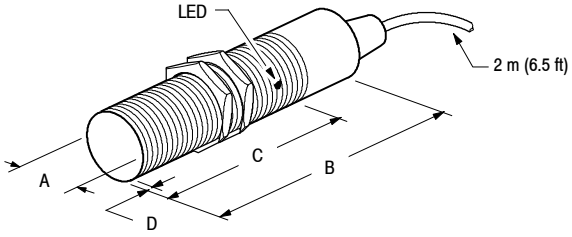
**Note**: Normally closed models available as special order items. Fifteen piece minimum order required. Consult your local Rockwell Automation sales office or Allen-Bradley distributor for prices and lead times.

## QD Cordsets and Accessories

| Description | Page Number |
|---|---|
| Other Cordsets Available | 8-2 |
| Terminal Chambers | 8-2 |
| Mounting Brackets | 2-210…2-214 |
| End Caps | 2-219, 2-220 |
| Mounting Nuts | 2-221…2-222 |

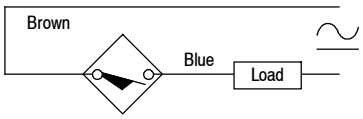
## Approximate Dimensions [mm (in.)]

### Cable Style




## Wiring Diagrams

**Normally Open**




**Note 1:** Attach housing to ground.
**Note 2:** Load can be switched to brown wire.

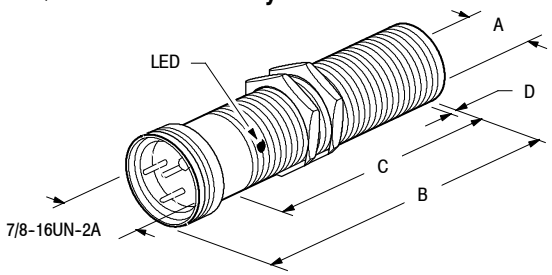
| Thread Size | Shielded | [mm (in.)] | | | |
|---|---|---|---|---|---|
| | | A | B | C | D |
| M12 X 1 | Y | 12.0 (0.47) | 49.8 (1.96) | 26.4 (1.04) | 2.5 (0.10) |
| | N | | | 19.5 (0.77) | 9.4 (0.37) |
| M18 X 1 | Y | 18.0 (0.71) | 55.4 (2.18) | 41.7 (1.64) | 2.5 (0.10) |
| | N | | | | 14.5 (0.57) |
| M30 X 1.5 | Y | 30.0 (1.18) | 57.9 (2.28) | 41.9 (1.65) | 2.5 (0.10) |
| | N | | | 39.4 (1.55) | 18.0 (0.71) |

# 871TM 2-Wire AC/DC PLC Interfacer

## Stainless Steel Face/Threaded Short Stainless Steel Barrel

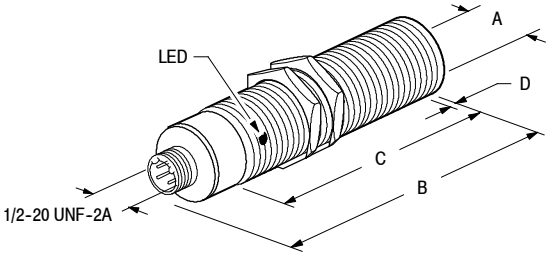
## Approximate Dimensions [mm (in.)] (continued)

### Mini Quick-Disconnect Style



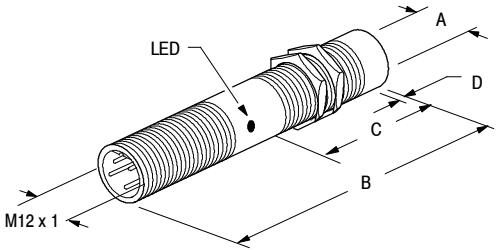

| Thread Size | Shielded | [mm (in.)] A | B | C | D |
|---|---|---|---|---|---|
| M12 X 1 | Y | 12.0 (0.47) | 63.5 (2.50) | 25.4 (1.00) | 2.5 (0.10) |
| | N | | | 18.5 (0.73) | 9.4 (0.37) |
| M18 X 1 | Y | 18.0 (0.71) | 56.1 (2.21) | 35.1 (1.38) | 2.5 (0.10) |
| | N | | | 29.2 (1.15) | 14.5 (0.57) |
| M30 X 1.5 | Y | 30.0 (1.18) | 68.1 (2.68) | 41.9 (1.65) | 2.5 (0.10) |
| | N | | | 39.4 (1.55) | 18.0 (0.71) |

### Micro Quick-Disconnect Style




| Thread Size | Shielded | [mm (in.)] A | B | C | D |
|---|---|---|---|---|---|
| M12 X 1 | Y | 12.0 (0.47) | 61.0 (2.40) | 26.4 (1.04) | 2.5 (0.10) |
| | N | | | 19.6 (0.77) | 9.4 (0.37) |
| M18 X 1 | Y | 18.0 (0.71) | 65.0 (2.56) | 41.7 (1.64) | 2.5 (0.10) |
| | N | | | | 14.5 (0.57) |
| M30 X 1.5 | Y | 30.0 (1.18) | 66.3 (2.61) | 41.9 (1.65) | 2.5 (0.10) |
| | N | | | 39.4 (1.55) | 18.0 (0.71) |

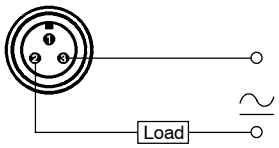
### EAC Micro Quick-Disconnect Style




| Thread Size | Shielded | [mm (in.)] A | B | C | D |
|---|---|---|---|---|---|
| M12 X 1 | Y | 12.0 (0.47) | 61.0 (2.40) | 26.4 (1.04) | 2.5 (0.10) |

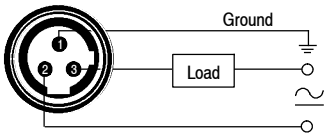
## Wiring Diagrams

**Normally Open**



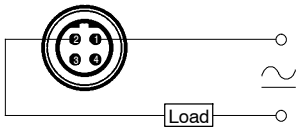

**Note 1:** Attach housing to ground.
**Note 2:** Load can be switched to pin 3.

**Normally Open**




**Note 1:** Attach housing to ground.
**Note 2:** Load can be switched to pin 2.

**Normally Open**




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