# 871C Miniature Inductive Sensors

## Designed for Space-Critical Applications

### Features and Benefits

- Miniature barrel size (3 mm, 4 mm, 5 mm) is ideal for applications where limited space – not sensing distance – is the primary sensor selection factor
- IO-Link communications help minimize downtime and increase productivity
- Stainless steel housing (smooth and threaded barrels) are rated IP67 to stand up to tough applications
- Standard and extended sensing ranges
- False pulse, transient noise, reverse polarity, and short circuit protected to prevent damage to the sensor
- Quick disconnect and cable options

### What is IO-Link?

IO-Link is a worldwide open-standard protocol that allows sensors to easily integrate into The Connected Enterprise. Benefits of IO-Link technology include:

- Reduced inventory and operating costs
- Increased uptime/productivity
- Simplified design, installation, setup and maintenance
- Enhanced flexibility and scalability

IO-Link enabled sensors offer advanced features and diagnostics that can only be accessed through an IO-Link master.

- Real time diagnostics and sensor health
- Automatic device configuration (ADC)
- Multiple profiles
- Descriptive tags
- Device specific parameters



1732 ArmorBlock®
IO-Link Master



**IO**-Link

Rockwell Automation announces enhancements to the Allen-Bradley® 871C Miniature Inductive Sensors family to include IO-Link functionality on PNP N.O. models. IO-Link allows sensors to easily integrate with The Connected Enterprise, delivering data from the sensor directly into a control system in a very cost-efficient and easy-to-use manner via an IO-Link Master and EtherNet/IP™.

To meet the needs of today's compact machines, 871C sensors are designed specifically for mounting on machines with limited space while providing superior performance, including longer range. Longer sensing ranges allow the stainless steel 871C sensor to be mounted further away from the target reducing the risk of mechanical contact that may physically damage the sensor. Available in smooth and threaded barrels, these IP67 rated sensors are packed with features including false pulse, transient noise, reverse polarity and short circuit protections to prevent electrical damage to the sensor. For applications needing fast detection, these devices feature a high switching frequency and are vacuum potted to provide long-term reliability. A variety of quick disconnect and cable options are available.

## 871C Miniature, IO-Link Version 1.0

- IO-Link is a worldwide open-standard peer-to-peer serial communication protocol (IEC 61131-9) that allows sensors and actuators to easily integrate into The Connected Enterprise.
- The IO-Link enabled 871C miniature sensor – when connected to an IO-Link master – shares device identity, parameters, real-time diagnostics and process data with the control system to optimize machine setup, maintenance and troubleshooting.
- By combining simple implementation with powerful data and diagnostics, IO-Link sensors provide simplified integration and seamless visibility of your processes to increase uptime and productivity.

## 871C Miniature, IO-Link Device Specific Parameters

- **Output status** provides indication when the target is detected.
- **Margin status** provides indication when the target is detected beyond 80% of the specified operating range.
- **Timer functions** enable the manipulation of the sensor's output signal (i.e., Delay On, Stretch On…etc.) in relation to a selection of predetermined time periods.
- **Switching mode polarity** allows the device output type (i.e., N.O. or N.C.) to be changed for use in standard IO mode.
- **Detection counter** tallies the number of switching operations.
- **Temperature functions** identify the actual internal temperature of the sensor and the maximum internal temperature of the device recorded over the operating life of the sensor.

1734 POINT IO Master for POINT I/O™

## Product Selection – 871C Miniature, IO-Link Models

Additional product selection available on http://ab.rockwellautomation.com.

| Barrel Diameter | Nominal Sensing Distance [mm (in.)] | Shielded | Output Configuration | Switching Frequency [Hz] | Housing Length [mm (in.)] | Thread Length [mm (in.)] | Connection Type | Catalog Number | |
|---|---|---|---|---|---|---|---|---|---|
| 3 mm, smooth | 0.6 (0.02) | Yes | N.O., PNP, IO-Link Enabled | 5000 | 22 (0.87) | - | 2 m PVC cable | 871C-DM1NP3-E2 | ⟳ |
| | | | | | | | 6 in. pico QD pigtail | 871C-DM1NP3-AP3 | ⟳ |
| | 1 (0.04) | | | 3000 | 22 (0.87) | - | 2 m PVC cable | 871C-MM1NP3-E2 | ⟳ |
| | | | | | | | 6 in. pico QD pigtail | 871C-MM1NP3-AP3 | ⟳ |
| 4 mm, smooth | 0.8 (0.03) | | | 5000 | 25 (0.98) | - | 2 m PVC cable | 871C-DM1NP4-E2 | ⟳ |
| | | | | | | | 6 in. pico QD pigtail | 871C-DM1NP4-AP3 | ⟳ |
| | | | | | | | Pico QD | 871C-DM1NP4-P3 | ⟳ |
| | 1.5 (0.06) | | | 3000 | 25 (0.98) | - | 2 m PVC cable | 871C-MM2NP4-E2 | ⟳ |
| | | | | | | | Pico QD | 871C-MM2NP4-P3 | ⟳ |
| 4 mm, threaded | 0.6 (0.02) | | | 5000 | 22 (0.87) | 19 (0.74) | 2 m PVC cable | 871C-D1NP4-E2 | ⟳ |
| | | | | | | | 6 in. pico QD pigtail | 871C-D1NP4-AP3 | ⟳ |
| | 1 (0.04) | | | 3000 | 22 (0.87) | 19 (0.74) | 2 m PVC cable | 871C-M1NP4-E2 | ⟳ |
| | | | | | | | 6 in. pico QD pigtail | 871C-M1NP4-AP3 | ⟳ |
| 5 mm, threaded | 0.8 (0.03) | | | 5000 | 25 (0.98) | 20 (0.79) | 2 m PVC cable | 871C-D1NP5-E2 | ⟳ |
| | | | | | | 22 (0.87) | Pico QD | 871C-D1NP5-P3 | ⟳ |
| | 1.5 (0.06) | | | 3000 | 25 (0.98) | 20 (0.79) | 2 m PVC cable | 871C-M2NP5-E2 | ⟳ |
| | | | | | | 22 (0.87) | Pico QD | 871C-M2NP5-P3 | ⟳ |

**Note:** IO-Link Master Module for POINT I/O™ (Catalog No. 1734-4IOL or 1732-8IOLM12R) is required for premier IO-Link integration experience.  ⟳ IO-Link enabled.

## Cordsets and Accessories

| Description | Catalog Number |
|---|---|
| IO-Link Master Module for POINT I/O | 1734-4IOL |
| ArmorBlock IO-Link Master | 1732E-8I0LM12R |
| DC pico QD cordset, straight, 3-pin, 2 m (6.5 ft) | 889P-F3AB-2 |
| Clamp style bracket, 4 mm (0.16 in.) | 871A-BP4 |
| Clamp style bracket, 5 mm (0.2 in.) | 871A-BP5 |

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