Inductive Proximity Sensors

**871F 4-Wire DC Complementary Output**

**Flat Pack Style**

<table>
<thead>
<tr>
<th>Specifications</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Load Current</td>
<td>≤200mA</td>
</tr>
<tr>
<td>Minimum Load Current</td>
<td>1mA</td>
</tr>
<tr>
<td>Leakage Current</td>
<td>≤10µA</td>
</tr>
<tr>
<td>Operating Voltage</td>
<td>10–30V DC</td>
</tr>
<tr>
<td>Voltage Drop</td>
<td>≤2.5V</td>
</tr>
<tr>
<td>Repeatability</td>
<td>≤2%</td>
</tr>
<tr>
<td>Hysteresis</td>
<td>≤5% typical</td>
</tr>
<tr>
<td>False Pulse Protection</td>
<td>Incorporated</td>
</tr>
<tr>
<td>Transient Noise Protection</td>
<td>Incorporated</td>
</tr>
<tr>
<td>Reverse Polarity Protection</td>
<td>Incorporated</td>
</tr>
<tr>
<td>Short Circuit Protection</td>
<td>Incorporated</td>
</tr>
<tr>
<td>Overload Protection</td>
<td>Incorporated</td>
</tr>
<tr>
<td>Approvals</td>
<td>UL listed, c-UL certified, and CE marked for all applicable all directives</td>
</tr>
<tr>
<td>Enclosure</td>
<td>NEMA 1, 2, 3, 4, 6, 6P, 12 and 13, IP67 (IEC 529), 1200psi (8270kPa) washdown; Housing material: Valox®</td>
</tr>
</tbody>
</table>

**Connections**
- Cable: 2m (6.5ft) length
- 4-conductor #22AWG ToughLink™
- Quick Disconnect: 4-pin mini style
- Conduit Opening: 1/2-14 NPT thread, PG13.5 thread

**LEDs**
- Green: Power
- Orange: 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**

<table>
<thead>
<tr>
<th>Target Material</th>
<th>Correction Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steel</td>
<td>1.0</td>
</tr>
<tr>
<td>Stainless Steel</td>
<td>0.7–0.8</td>
</tr>
<tr>
<td>Brass</td>
<td>0.4–0.5</td>
</tr>
<tr>
<td>Aluminum</td>
<td>0.3–0.4</td>
</tr>
<tr>
<td>Copper</td>
<td>0.2–0.3</td>
</tr>
</tbody>
</table>

**Features**

- 4-wire operation
- 4-pin, 4-conductor or 4-terminal connection
- 10–30V DC
- Complementary normally open and normally closed outputs
- False pulse, transient noise, reverse polarity, short circuit and overload protection
- UL listed, c-UL certified, and CE marked for all applicable directives
- DIN rail mounting option on quick-disconnect and cable models
- Adjustable sensing models available

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871F DC Cable Style page 2-121

871F DC Mini Quick-Disconnect Style page 2-121

871F DC Micro Quick-Disconnect Style page 2-122
## Product Selection

<table>
<thead>
<tr>
<th>Head Size</th>
<th>Nominal Sensing Distance mm (in)</th>
<th>Shielded</th>
<th>Output Configuration</th>
<th>Switching Frequency (Hz)</th>
<th>Catalog Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>63 (2.56)</td>
<td>N.O. and N.C.</td>
<td></td>
<td>PNP</td>
<td>100</td>
<td>871F-PS0BPB0-H2</td>
</tr>
<tr>
<td>65 (2.56)</td>
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<td>NPN</td>
<td>100</td>
<td>871F-PS0BN0-H2</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Mini QD Style</th>
<th>Micro QD Style</th>
<th>Conduit 1/2 NPT</th>
<th>Conduit PG13.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>871F-PS0BPB0-H2</td>
<td>871F-PS0BPB0-N4</td>
<td>871F-PS0BPB0-D4</td>
<td>871F-PS0BPB0-T4</td>
<td>871F-PS0BPB0-Q4</td>
</tr>
<tr>
<td>871F-PS0BN0-H2</td>
<td>871F-PS0BN0-N4</td>
<td>871F-PS0BN0-D4</td>
<td>871F-PS0BN0-T4</td>
<td>871F-PS0BN0-Q4</td>
</tr>
<tr>
<td>871F-NS5BP0-H2</td>
<td>871F-NS5BP0-N4</td>
<td>871F-NS5BP0-D4</td>
<td>871F-NS5BP0-T4</td>
<td>871F-NS5BP0-Q4</td>
</tr>
</tbody>
</table>

Recommended Standard Cord Set (6F = 1.8m (6ft), -2 = 2m (6.5ft))

### Dimensions—mm (inches)

#### Cable Style

- 65.0 (2.56)
- 65.0 (2.56)
- 83.0 (3.27)
- 40.0 (1.57)
- 30.0 (1.19)
- 6.0 (0.24)
- 129.0 (5.08)

#### Mini QD Style

- 65.0 (2.56)
- 65.0 (2.56)
- 83.0 (3.27)
- 40.0 (1.57)
- 16.0 (0.63)
- 6.0 (0.24)
- 116.0 (4.57)

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### Wiring Diagram

#### Complementary Normally Open and Normally Closed

**PNP (Sourcing)**

- Brown
- Black
- White
- Blue

**NPN (Sinking)**

- Brown
- Black
- White
- Blue

#### Complementary Normally Open and Normally Closed Outputs

**PNP (Sourcing)**

- N.C. +
- N.O. +

**NPN (Sinking)**

- Load
- Load
Inductive Proximity Sensors
871F 4-Wire DC Complementary Output
Flat Pack Style

Dimensions—mm (inches)
Micro QD Style

Conduit Style 1/2in NPT

Conduit Style PG13.5

QD Cordsets and Accessories

<table>
<thead>
<tr>
<th>Description</th>
<th>Page Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other Cordsets Available</td>
<td>NO TAG, 7–68</td>
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</table>

Wiring Diagram
Complementary Normally Open and Normally Closed

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NPN (Sinking)

Complementary Normally Open and Normally Closed Outputs

NPN (Sinking)

Complementary Normally Open and Normally Closed Outputs

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Allen-Bradley

2–122