



Description

Bulletin 871L and 872L inductive proximity sensors are self-contained, general purpose, solid state devices designed to sense the presence of metal objects (ferrous and nonferrous) without touching them.

These devices provide mounting interchangeability, easily-wired terminations, rugged construction. The adjustable head can be positioned for top or side sensing. In side-sensing applications, the head can be rotated in 22.5-degree increments and locked in any of 16 positions.

These sensors are available with a 1/2–14NPT conduit opening, mini quick-disconnect, or micro quick-disconnect.

Features

- 17 sensing head positions (1 top, 16 side)
- Conduit or quick-disconnect styles
- Short circuit protection
- Overload protection
- Transient noise protection
- False pulse protection
- Reverse polarity protection
- Selectable normally open or normally closed output
- CE marked for all applicable directives

Styles

- AC 2-Wire page 2–144
- AC/DC 2-Wire page 2–144
- DC 3-Wire page 2–146

Accessories

- Quick-Disconnect Cables . . . page 5–1

General Information

- Metric/English Conversion Chart page 11–1

871L AC/DC & 872L AC 2-Wire

Limit Switch Style



871L AC/DC & 872L AC
Mini Quick-Disconnect Style
page 2-145



871L AC/DC & 872L AC
Micro Quick-Disconnect Style
page 2-145



871L AC/DC & 872L AC
Conduit Style
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Specifications

	871L Models	872L Models
Load Current	≤400mA	≤500mA
Minimum Load Current	2mA	2mA
Inrush Current (1 cycle)	≤8A	≤8A
Leakage Current	≤2mA	≤2mA
Operating Voltage	20-250V AC/DC	20-250V AC
Voltage Drop	≤5V	≤5V
Repeatability	≤5%	≤5%
Hysteresis	≤20%	≤20%
False Pulse Protection	Incorporated	Incorporated
Transient Noise Protection	Incorporated	Incorporated
Short Circuit Protection	Incorporated	Incorporated
Approvals	CE marked for all applicable directives	
Enclosure	NEMA 3, 4, 6, 12, 13, IP65 (IEC 529) Polyloy	
Connections	Quick Disconnect: 3-pin mini style 3-pin micro style Conduit Opening: 1/2-14 NPT internal thread with screw terminals	
LEDs	Green: Power (Blinks in SCP/Overload) 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

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

Features

- 2-wire operation
- 2-terminal or 3-pin connection
- 20-250V AC/DC on 871L models
- 20-250V AC on 872L models
- Switch selectable normally open or normally closed output on 871L models
- Normally open or normally closed output programmable via jumper on 872L models
- False pulse, transient noise, short circuit and overload protection
- CE marked for all applicable directives

Selection Guide

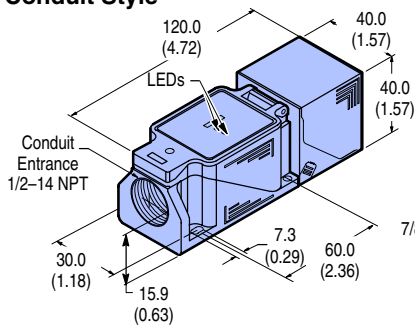
Head Size	Nominal Sensing Distance mm (inches)	Shielded	Output Configuration	Switching Frequency (Hz)	Catalog Number		
					Conduit Style	Mini QD Style	Micro QD Style
40	20 (0.79)	Y	Selectable N.O. or N.C.	15	871L-B20E40-T2	871L-B20E40-N3	871L-B20E40-R3
	40 (1.57)	N			871L-B40E40-T2	871L-B40E40-N3	871L-B40E40-R3
	20 (0.79)	Y	Programmable N.O. or N.C.		872L-A20E40-T2	872L-A20E40-N3	872L-A20E40-R3
	40 (1.57)	N			872L-A40E40-T2	872L-A40E40-N3	872L-A40E40-R3
Recommended Standard QD Cordset (-6F = 1.8m (6ft), -2 = 2m (6.5ft))					889N-F3AFC-6F	889R-F3ACA-2	

QD Cordsets and Accessories

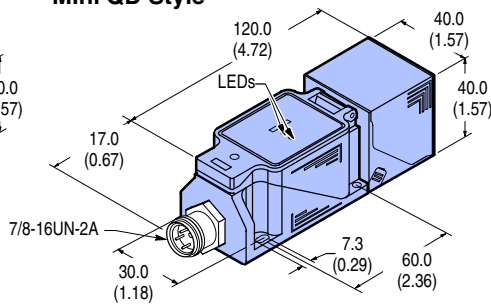
Description	Page Number
Other Cordsets Available	5-8, 5-44

Dimensions—mm (inches)

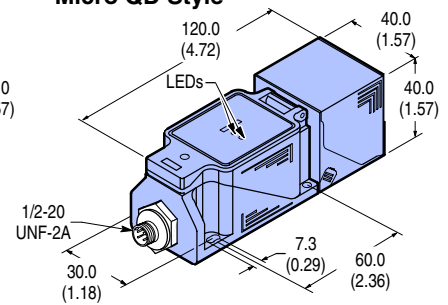
Conduit Style



Mini QD Style



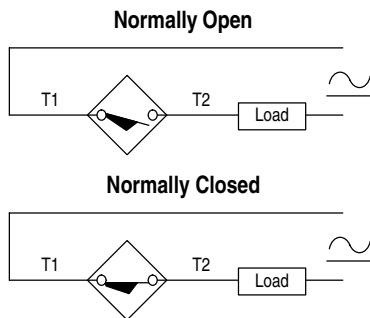
Micro QD Style



Note: Head can be rotated in 22.5° increments to provide 16 side-sensing positions or rotated for top-sensing.

Wiring Diagram

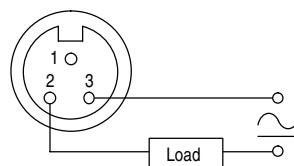
Conduit Style



Note: Load can be switched to Terminal 1.

Mini QD Style

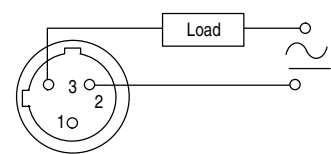
Normally Open or Normally Closed



Note: Load can be switched to pin 3.

Micro QD Style

Normally Open or Normally Closed



Note: Load can be switched to pin 2.



871L & 872L DC
Mini Quick-Disconnect Style
page 2-147



871L & 872L DC
Micro Quick-Disconnect Style
page 2-147



871L & 872L DC
Conduit Style
page 2-147



Specifications

	871L Models	872L Models
Load Current	≤400mA	≤120mA
Leakage Current	≤10μA	≤10μA
Operating Voltage	10-60V DC	10-30V DC
Voltage Drop	≤2.4V	≤2.5V
Repeatability	≤5%	≤5%
Hysteresis	≤20% typical	≤20% typical
False Pulse Protection	Incorporated	Incorporated
Transient Noise Protection	Incorporated	Incorporated
Reverse Polarity Protection	Incorporated	Incorporated
Short Circuit Protection	Incorporated	Incorporated
Overload Protection	Incorporated	Incorporated
Approvals	CE marked for all applicable directives	
Enclosure	NEMA 3, 4, 6, 12, 13, IP67 (IEC 529) Polyloy	
Connections	Quick-Disconnect: 4-pin mini style 4-pin micro style Conduit Opening: 1/2-14 NPT internal thread with screw terminals	
LEDs	Green: Power (Blinks in SCP/Overload) Orange: Output Energized Red: Alignment Indicator	Green: Power (Blinks in SCP/Overload) 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

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

Features

- 3-wire operation
- 3-terminal or 4-pin connection
- 10-60V DC for 871L models
- 10-30V DC for 872L models
- Switch selectable normally open or normally closed output on 871L models
- Normally open or normally closed outputs programmable via jumper on 872L models
- Alignment LED on 871L models
- False pulse, transient noise, reverse polarity, short circuit and overload protection
- CE marked for all applicable directives

Selection Guide

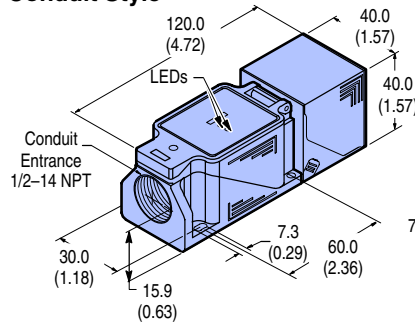
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						Conduit Style	Mini QD Style	Micro QD Style
40	20 (0.79)	Y	Selectable N.O. or N.C.	NPN	150	871L-D20EN40-T3	871L-D20EN40-N4	871L-D20EN40-D4
				PNP		871L-D20EP40-T3	871L-D20EP40-N4	871L-D20EP40-D4
	40 (1.57)	N		NPN	70	871L-D40EN40-T3	871L-D40EN40-N4	871L-D40EN40-D4
				PNP		871L-D40EP40-T3	871L-D40EP40-N4	871L-D40EP40-D4
	20 (0.79)	Y	Programmable N.O. or N.C.	NPN	100	872L-D20EN40-T3	872L-D20EN40-N4	872L-D20EN40-D4
				PNP		872L-D20EP40-T3	872L-D20EP40-N4	872L-D20EP40-D4
	40 (1.57)	N		NPN	50	872L-D40EN40-T3	872L-D40EN40-N4	872L-D40EN40-D4
				PNP		872L-D40EP40-T3	872L-D40EP40-N4	872L-D40EP40-D4
Recommended Standard QD Cordset (-6F = 1.8m (6ft), -2 = 2m (6.5ft))						889N-F4AFC-6F	889D-F4AC-2	

QD Cordsets and Accessories

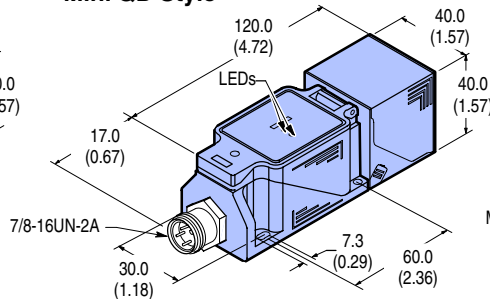
Description	Page Number
Other Cordsets Available	5-8, 5-44

Dimensions—mm (inches)

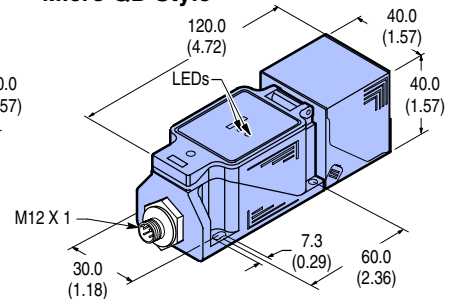
Conduit Style



Mini QD Style



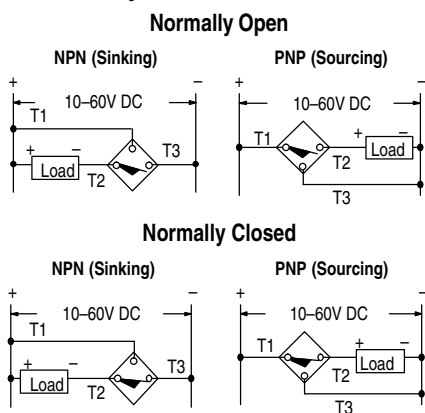
Micro QD Style



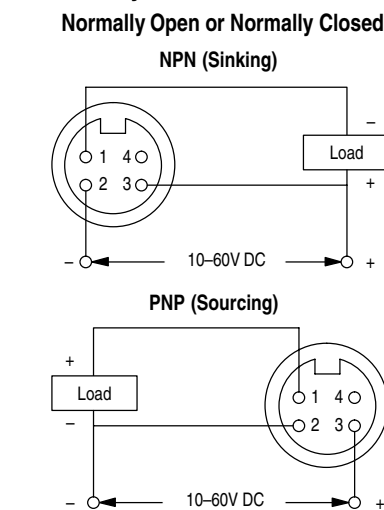
Note: Head can be rotated in 22.5° increments to provide 16 side-sensing positions or rotated for top-sensing.

Wiring Diagram

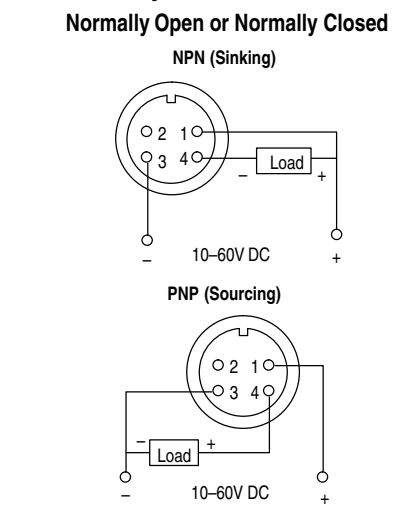
Conduit Style



Mini QD Style



Micro QD Style



Notes
