



Description

Bulletin 871FM inductive flat pack 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.

These sensors are ideal for applications in which space is limited. They are available in three compact sizes. Connection options include 3-conductor PVC cable or pico quick-disconnect.

Features

- Cable or quick-disconnect styles
- Short circuit protection (DC models)
- Overload protection (DC models)
- Transient noise protection
- False pulse protection
- Reverse polarity protection (DC models)
- CE marked for all applicable directives

Styles

AC 2-wire		page 2–164
DC 3-wire		page 2–166

Accessories

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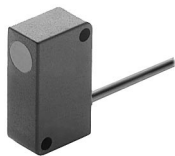
General Information

Metric/English Conversion Chart		page 11–1
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Inductive Proximity Sensors

871FM 2-Wire AC

Miniature Flat Pack Style



871FM AC Cable Style
28 x 16 x 11mm
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871FM AC Cable Style
40 x 26 x 12mm
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Specifications

	28 x 16 x 11mm	40 x 26 x 12mm
Load Current	≤100mA	≤180mA
Minimum Load Current	4mA	
Leakage Current	<2mA	
Operating Voltage	90–250V AC	
Voltage Drop	≤15V	
Repeatability	≤5%	
Hysteresis	10% typical	
False Pulse Protection	Incorporated	
Transient Noise Protection	Incorporated	
Approval	CE marked for all applicable directives	
Enclosure	NEMA 4, IP67 (IEC 529) Plastic	
Connections	Cable: 2m (6.5ft) length 2-conductor PVC	
LED	Orange: Output Energized	
Operating Temperature	–25°C to +70°C (–13°F to +158°F)	
Shock	30g, 11ms	
Vibration	55Hz, 1mm amplitude, 3 planes	

Features

- 2-wire operation
- 2-conductor connection
- 90–250V AC
- Normally open or normally closed output
- False pulse and transient noise protection
- CE marked for all applicable directives

Correction Factors

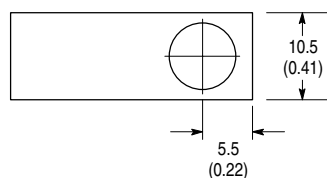
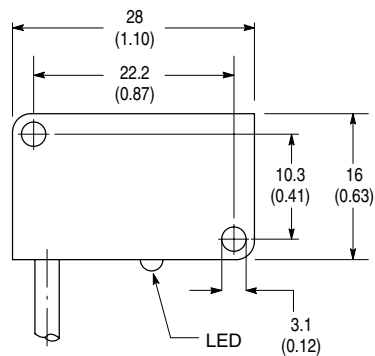
Target Material	Correction Factor
Steel	1.0
Stainless Steel	0.85
Brass	0.55
Aluminum	0.50
Copper	0.45

Selection Guide

Sensor Size	Sensing Direction	Nominal Sensing Distance mm (inches)	Shielded	Output Configuration	Switching Frequency (Hz)	Catalog Number Cable Style
28 x 16 x 11mm	Side	2 (0.08)	Y	N.O.	10	871FM-A2N11-A2
40 x 26 x 12mm				N.C.		871FM-A2C12-A2
		4 (0.16)	N	N.O.		871FM-A4N12-A2

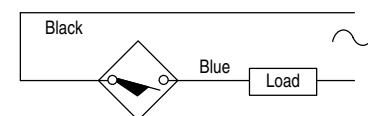
Dimensions—mm (inches)

Cable Style

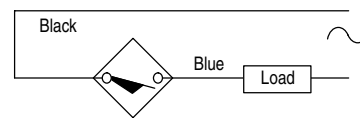
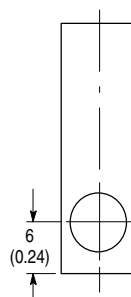
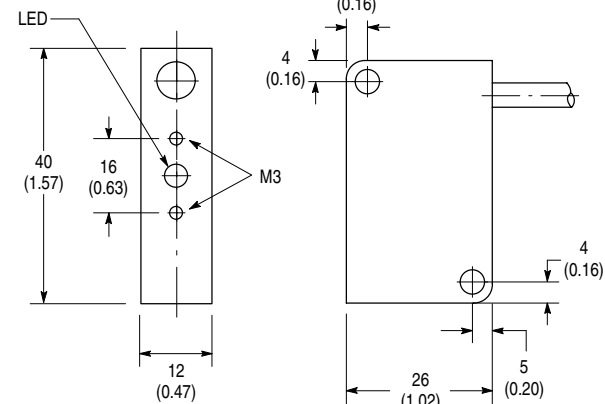
28 x 16 x 11mm

Wiring Diagram

Cable Style

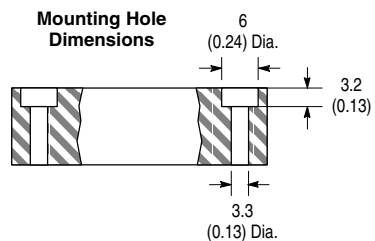


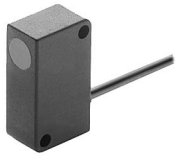
Note: Load can be switched to black wire.

40 x 26 x 12mm

Note: Load can be switched to black wire.

Mounting Hole Dimensions

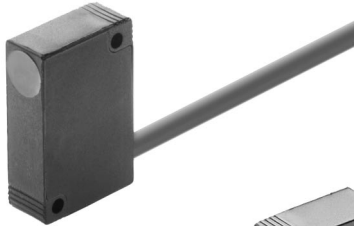


871FM 3-Wire DC**Miniature Flat Pack Style**

871FM DC Cable Style
28 x 16 x 11mm
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871FM DC Pico
Quick-Disconnect Style
28 x 16 x 11mm
page 2-167



871FM DC Cable Style
40 x 26 x 12mm
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871FM DC Pico
Quick-Disconnect Style
40 x 26 x 12mm
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871FM DC Cable Style
25 x 50 x 10mm
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871FM DC Pico
Quick-Disconnect Style
25 x 50 x 10mm
page 2-167

Specifications

	28 x 16 x 11mm	40 x 26 x 12mm	25 x 50 x 10mm
Supply Current	<11mA	<11mA	<8mA
Load Current	≤200mA	≤200mA	≤200mA
Leakage Current	<100μA	<100μA	<100μA
Operating Voltage	10–30V DC	10–30V DC	10–60V DC
Voltage Drop	≤1.8V	≤1.8V	≤2.5V
Repeatability	≤5%		
Hysteresis	10% typical		
False Pulse Protection	Incorporated		
Transient Noise Protection	Incorporated		
Reverse Polarity Protection	Incorporated		
Short Circuit Protection	Incorporated		
Overload Protection	Incorporated		
Enclosure	NEMA 4, IP67 (IEC 529) Plastic		
Connections	Cable: 2m (6.5ft) length 3-conductor PVC Quick-Disconnect: 3-pin pico style		
LED	Yellow: Output Energized		
Operating Temperature	–25°C to +70°C (–13°F to +158°F)		
Shock	30g, 11ms		
Vibration	55Hz, 1mm amplitude, 3 planes		

Features

- 3-wire operation
- 3-conductor or 3-pin connection
- 10–30V DC
- 10–60V DC (25 x 50 x 10mm only)
- Normally open or normally closed output
- False pulse, transient noise, reverse polarity, short-circuit and overload protection
- CE marked for all applicable directives

Correction Factors

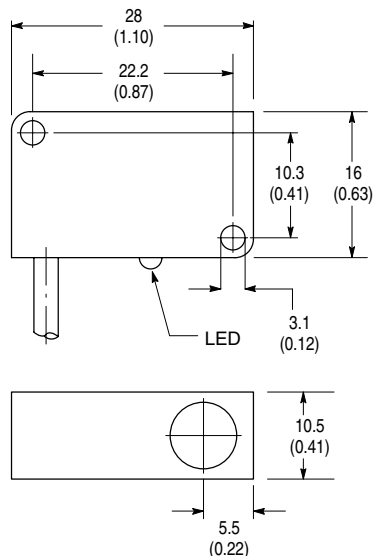
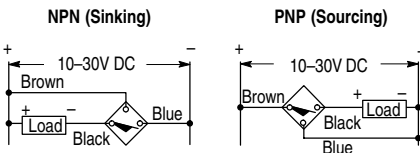
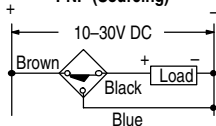
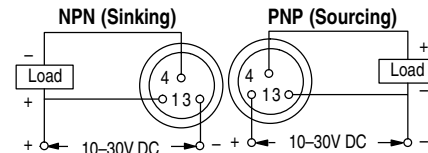
Target Material	Correction Factor
Steel	1.0
Stainless Steel	0.85
Brass	0.55
Aluminum	0.50
Copper	0.45

Selection Guide

Sensor Size	Sensing Direction	Nominal Sensing Distance mm (inches)	Shielded	Output Configuration		Switching Frequency (Hz)	Catalog Numbers	
							Cable Style	Pico QD Style
28 x 16 x 11mm	Side	2 (0.08)		N.O.	PNP	600	871FM-D2NP11-E2	871FM-D2NP11-P3
				N.C.	PNP		871FM-D2CP11-E2	871FM-D2CP11-P3
40 x 26 x 12mm		2 (0.08)	Y	N.O.	NPN	800	871FM-D2NN12-E2	871FM-D2NN12-P3
					PNP		871FM-D2NP12-E2	871FM-D2NP12-P3
				N.C.	NPN		871FM-D2CN12-E2	—
					PNP		871FM-D2CP12-E2	—
		4 (0.16)	N	N.O.	NPN	400	871FM-D4NN12-E2	871FM-D4NN12-P3
					PNP		871FM-D4NP12-E2	871FM-D4NP12-P3
				N.C.	NPN		871FM-D4CN12-E2	—
					PNP		871FM-D4CP12-E2	—
25 x 50 x 10mm		5 (0.20)	Y	N.O.	NPN	500	871FM-D5NN25-E2	—
					PNP		871FM-D5NP25-E2	871FM-D5NP25-P3
				N.C.	PNP		871FM-D5CP25-E2	—
		8 (0.31)	N	N.O.	NPN	200	871FM-D8NN25-E2	—
					PNP		871FM-D8NP25-E2	871FM-D8NP25-P3
				N.C.	PNP		871FM-D8CP25-E2	—
Recommended Standard QD Cordset (–2 = 2m (6.5ft))								889P-F3AB-2

QD Cordsets and Accessories

Description	Page Number
Other Cordsets Available	5–52
Terminal Chambers	5–19

Dimensions—mm (inches)**Cable & Pico QD Style****28 x 16 x 11mm****Wiring Diagrams****Cable Style****Normally Open****Normally Closed****PNP (Sourcing)****Pico QD Style****Normally Open or Normally Closed**

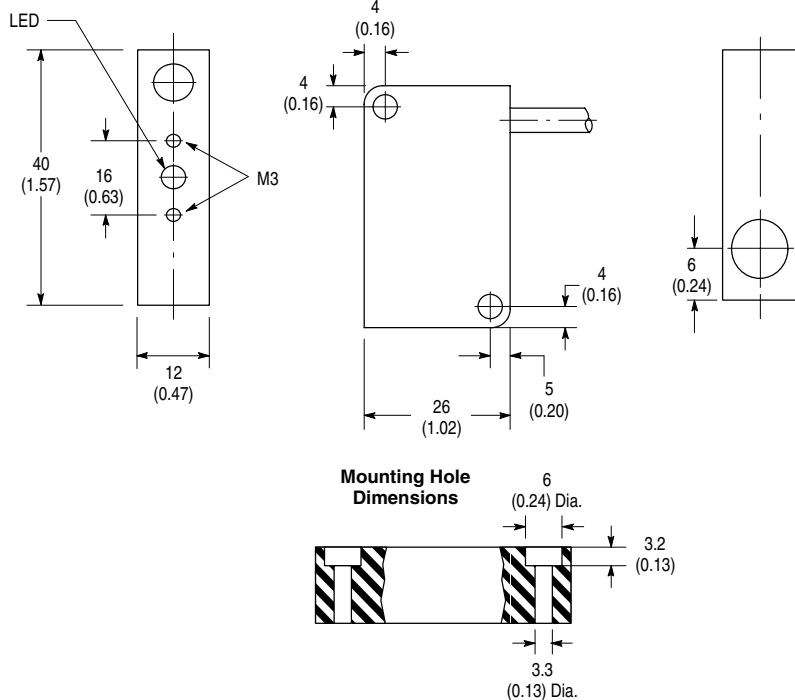
871FM 3-Wire DC

Miniature Flat Pack Style

Dimensions—mm (inches)

Cable & Pico QD Style

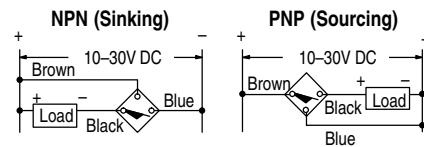
40 x 26 x 12mm



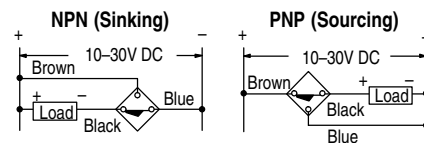
Wiring Diagrams

Cable Style

Normally Open

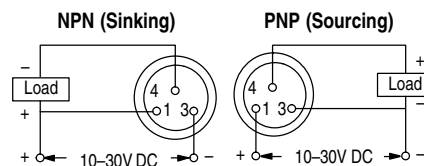


Normally Closed



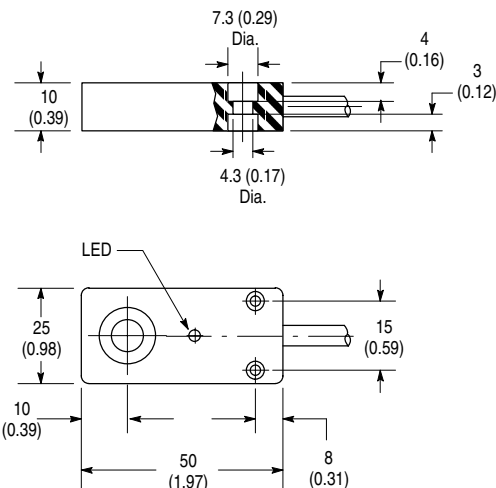
Pico QD Style

Normally Open



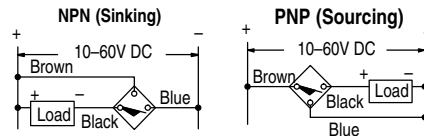
Cable & Pico QD Style

25 x 50 x 10mm

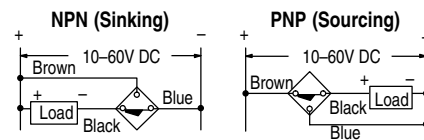


Cable Style

Normally Open



Normally Closed



Pico QD Style

PNP (Sourcing)

