

871TM 3-Wire DC Ferrous or Nonferrous Selective

Stainless Steel Face/Threaded Stainless Steel Barrel



871TM DC Cable Style
12, 18, 30mm
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871TM DC Mini
Quick-Disconnect Style
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871TM DC Micro
Quick-Disconnect Style
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**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 the factory for details.

Specifications

Load Current	≤200mA
Capacitive Load	≤1μF
Leakage Current	≤10μA
Operating Voltage	10–30 V DC
Voltage Drop	≤1V DC at 200mA
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 340mA typical)
Overload Protection	Incorporated
Approvals	UL listed, CSA certified, and CE marked for all applicable directives (May not be available for some special order models.)
Enclosure	NEMA 1, 2, 3, 3R, 4, 4X, 6, 6P, 12, 13 IP67 (IEC 529), 1200psi (8270kPa) washdown Stainless steel face and barrel
Connections	Cable: 2m (6.5ft) length A2–3-conductor PVC C2–3-conductor #22 AWG ToughLink™ H2–3-conductor #18 AWG ToughLink™ Quick-Disconnect: 4-pin mini style 4-pin micro style
LEDs	Red: Output Energized Green: Power/Short Circuit (flashing)—18mm models only
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	
	Ferrous Selective	Nonferrous Selective
Steel	1.0	0.0
Stainless Steel	0–1.0①	0–1.0①
Brass	0.0	1.0
Aluminum	0.0	1.0
Aluminum >0.003 Thick	0.0	1.0
Copper	0.0	1.0

① Variation due to differences in alloy composition.

Allen-Bradley HMIs

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Product Selection

Barrel Dia.	Nominal Sensing Distance mm (in)	Shielded	Output Configuration		Switching Frequency (Hz)	Target Type	Catalog Number			
							PVC Cable	ToughLink Cable	Mini QD Style	Micro QD Style
12mm	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-C2*	871TM-DN2NP12-N4*	871TM-DN2NP12-D4*
				NPN			—	871TM-DN2NN12-C2*	871TM-DN2NN12-N4*	871TM-DN2NN12-D4*
			N.C.	PNP			—	871TM-DN2CP12-C2*	871TM-DN2CP12-N4*	871TM-DN2CP12-D4*
				NPN			—	871TM-DN2CN12-C2*	871TM-DN2CN12-N4*	871TM-DN2CN12-D4*
18mm	3 (0.12)	N.O.	PNP	10	Ferrous	—	871TM-DF3NP18-H2	871TM-DF3NP18-N4	871TM-DF3NP18-D4	
			NPN			—	871TM-DF3NN18-H2*	871TM-DF3NN18-N4	871TM-DF3NN18-D4*	
		N.C.	PNP			—	871TM-DF3CP18-H2*	871TM-DF3CP18-N4*	871TM-DF3CP18-D4*	
			NPN			—	871TM-DF3CN18-H2*	871TM-DF3CN18-N4*	871TM-DF3CN18-D4*	
	5 (0.20)	N.O.	PNP	20	Nonferrous	871TM-DN5NP18-A2	871TM-DN5NP18-H2	871TM-DN5NP18-N4	871TM-DN5NP18-D4	
			NPN			—	871TM-DN5NN18-H2*	871TM-DN5NN18-N4*	871TM-DN5NN18-D4*	
		N.C.	PNP			—	871TM-DN5CP18-H2*	871TM-DN5CP18-N4*	871TM-DN5CP18-D4*	
			NPN			—	871TM-DN5CN18-H2*	871TM-DN5CN18-N4*	871TM-DN5CN18-D4*	
30mm	7.5 (0.30)	N.O.	PNP	15	Ferrous	—	871TM-DF8NP30-H2*	871TM-DF8NP30-N4*	871TM-DF8NP30-D4*	
			NPN			—	871TM-DF8NN30-H2*	871TM-DF8NN30-N4*	871TM-DF8NN30-D4*	
		N.C.	PNP			—	871TM-DF8CP30-H2*	871TM-DF8CP30-N4*	871TM-DF8CP30-D4*	
			NPN			—	871TM-DF8CN30-H2*	871TM-DF8CN30-N4*	871TM-DF8CN30-D4*	
	10 (0.39)	N.O.	PNP	Nonferrous	871TM-DN10NP30-A2	871TM-DN10NP30-H2	871TM-DN10NP30-N4	871TM-DN10NP30-D4		
			NPN		—	871TM-DN10NN30-H2*	871TM-DN10NN30-N4*	871TM-DN10NN30-D4*		
		N.C.	PNP		—	871TM-DN10CP30-H2*	871TM-DN10CP30-N4*	871TM-DN10CP30-D4*		
			NPN		—	871TM-DN10CN30-H2*	871TM-DN10CN30-N4*	871TM-DN10CN30-D4*		
Recommended Standard QD Cordset (-6F = 1.8m (6ft), -2 = 2m (6.5ft))							889N-F4AFC-6F	889D-F4AC-2		

* Available as a special order item. AC/DC models also available. Specifications and dimensions subject to change. Fifteen piece minimum order required. Consult the factory for prices and lead times.

QD Cordsets and Accessories

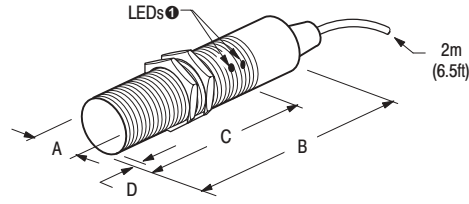
Description	Page Number
Other Cordsets Available	7-8, 7-68
Terminal Chambers	7-20
Mounting Brackets	2-186 - 2-190
End Caps	2-195, 2-196
Mounting Nuts	2-197 - 2-198

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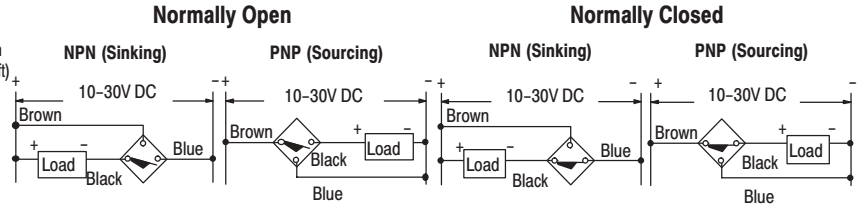
Dimensions—mm (inches)

Cable Style



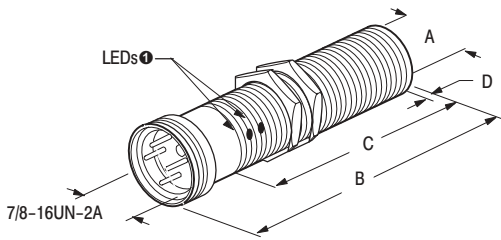
① Available for 18mm models only

Wiring Diagrams

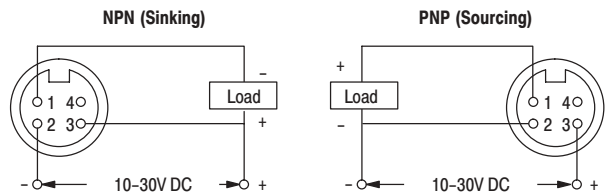


Thread Size	Shielded	Target Type	mm (inches)			
			A	B	C	D
M12 X 1	Y	Ferrous and Nonferrous	12.0 (0.47)	51.0 (2.01)	27.5 (1.08)	—
M18 X 1		Ferrous	18.0 (0.71)	76.8 (3.02)	65.0 (2.56)	—
		Nonferrous	18.0 (0.71)	74.7 (2.94)	60.0 (2.36)	2.5 (0.10)
M30 X 1.5		Ferrous and Nonferrous	30.0 (1.18)	77.5 (3.05)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

Mini QD Style

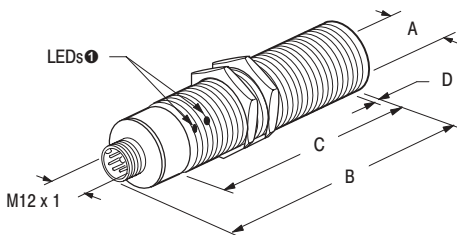


Normally Open or Normally Closed



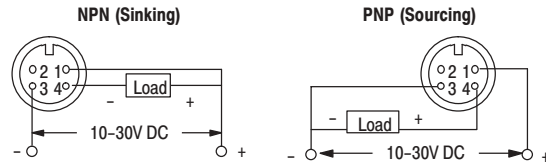
Thread Size	Shielded	Target Type	mm (inches)			
			A	B	C	D
M12 X 1	Y	Ferrous and Nonferrous	12.0 (0.47)	61.3 (2.45)	30.4 (1.20)	—
M18 X 1		Ferrous	18.0 (0.71)	78.5 (3.14)	60.0 (2.40)	—
		Nonferrous	18.0 (0.71)	76.6 (3.02)	54.9 (2.16)	2.5 (0.10)
M30 X 1.5		Ferrous and Nonferrous	30.0 (1.18)	86.0 (3.39)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

Micro QD Style



① Available for 18mm models only

Normally Open or Normally Closed



Thread Size	Shielded	Target Type	mm (inches)			
			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)

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