

## 872C WorldProx™ 3- and 4-wire DC Tubular Sensors

### Plastic Face/Threaded Nickel-plated Brass Barrel



DC Micro Quick-disconnect Style  
8 mm, 12 mm, 18 mm, and 30 mm



DC Pico Quick-disconnect Style  
6.5 mm, 8 mm, and 12 mm



DC Cable Style  
6.5 mm, 8 mm, 12 mm, 18 mm, and 30 mm



Pigtail Cable with Integral Micro QD Connector  
8 mm, 12 mm, 18 mm, and 30 mm

#### Specifications

Attribute	8 mm	12 mm	18 mm	30 mm
Load Current	≤100 mA	≤200 mA		
Leakage Current	≤5 µA	≤10 µA		
Operating Voltage	5...30V DC	10...30V DC		
Voltage Drop	≤1.5V	≤1.8V		
Switching Frequency	≤2500 Hz	≤1300 Hz <sup>(1)</sup>	≤1500 Hz <sup>(1)</sup>	≤1000 Hz <sup>(1)</sup>
No-load Supply Current	≤10 mA			
Repeatability	≤5%			
Hysteresis	≤10% typical			
Protection Type	False pulse on power, transient noise, reverse polarity, short circuit, and overload			
Certifications	c-UL-us Listed and CE Marked for all applicable directives			
Enclosure Type Rating	IP67			
Housing Material	Nickel-plated brass barrel nuts with integral locking feature, plastic face (LCP)		Nickel-plated brass barrel nuts with integral locking feature, plastic face (PBT)	
Connections	<ul style="list-style-type: none"> <li>Cable (PVC/PUR): 2 m (6.5 ft), 5 m (16.4 ft), 10 m (32.8 ft) length, 3.5 mm (0.175 in.) dia. (PVC); 3.3 mm dia. (PUR); 3 x 0.14 mm<sup>2</sup> PVC or PP</li> <li>Cable (Pigtail): 0.2 m (0.7 ft), 0.5 m (1.6 ft), 1 m (3.3 ft) length</li> <li>Connector: 3-pin M12 or 3-pin M8</li> </ul>		<ul style="list-style-type: none"> <li>Cable (PVC/PUR): 2 m (6.5 ft), 5 m (16.4 ft), 10 m (32.8 ft) length, 4.3 mm (0.17 in.) diameter; 3x 0.34 mm<sup>2</sup> (0.01 in.<sup>2</sup>) or 4x 0.34 mm<sup>2</sup> PVC or PUR</li> <li>Cable (Pigtail): 0.2 m (0.7 ft), 0.5 m (1.6 ft), 1 m (3.3 ft) length, Integral connector (M12) 3- or 4-pin micro QD</li> <li>Quick-disconnect: 3- or 4-pin micro QD (M12) or [3-pin pico QD (M8) for 12 mm only]</li> </ul>	
Status Indicator	Amber: output energized		Amber: output energized	
Operating Temperature	-25...+70 °C (-13...+158 °F)			
Shock	30 g (1.06 oz), 11 ms half-sine			
Vibration	55 Hz, 1 mm amplitude, 3 planes			

#### Nominal Sensing Distance (mm [in.])

Size	Description	Standard Sensing Range	Extended Sensing Range
6.5 mm	Shielded	2 (0.08)	—
	Unshielded	3 (0.12)	—
8 mm	Shielded	2 (0.08)	3 (0.12)
	Unshielded	3 (0.12)	4 (0.16)
12 mm	Shielded	3 (0.12)	4 (0.16)
	Unshielded	4 (0.16)	8 (0.31)
18 mm	Shielded	5 (0.20)	8 (0.31)
	Unshielded	8 (0.31)	12 (0.47)
30 mm	Shielded	10 (0.39)	15 (0.59)
	Unshielded	15 (0.59)	20 (0.79)

#### Correction Factors (mm [in.])

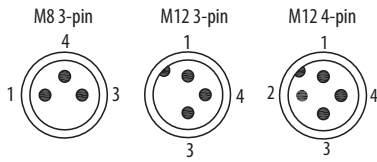
Target Material	6.5 mm	8 mm	12 mm	18 mm	30 mm
Steel	1.0	1.0	1.0	1.0	1.0
Stainless Steel	0.7...0.8	0.7...0.8	0.7...0.8	0.7...0.8	0.7...0.8
Brass	0.45...0.55	0.45...0.55	0.45...0.55	0.45...0.55	
Aluminum	0.3...0.4	0.45...0.55	0.45...0.55	0.4...0.5	0.45...0.55
Copper	0.2...0.3	0.35...0.45	0.35...0.45	0.3...0.45	0.35...0.45

(1) Select 3-wire models have switching frequency less than previously specified:  
 12 mm diameter shielded, extended range, N.O., PNP, micro QD ≤800 Hz  
 12 mm diameter unshielded, extended range, N.O., PNP, micro QD ≤1000 Hz  
 18 mm diameter shielded, extended range, N.O., PNP, micro QD, and cable ≤500 Hz  
 30 mm diameter shielded, extended range, N.O., PNP, micro QD <100 Hz at SD = 7.5 mm (0.3 in.), 200 Hz at SD = 10 mm (0.39 in.)

## 872C WorldProx 3- and 4-wire DC Tubular Sensors

### Plastic Face/Threaded Nickel-plated Brass Barrel

#### 8 mm, 12 mm, 18 mm, and 30 mm Pinouts



1 BN (brown) 2 WH (white) 3 BU (blue) 4 BK (black)

#### 8 mm, 12 mm, 18 mm, and 30 mm 3-wire DC Wiring

NPN/PNP	Cable	M12 Micro Connector	M8 Pico Connector
NPN N.O.			
NPN N.C.			
PNP N.O.			
PNP N.C.			

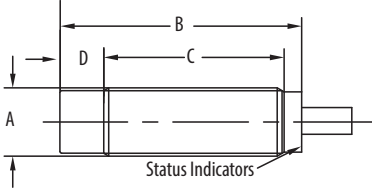
#### 12 mm, 18 mm, and 30 mm 4-wire DC Complementary Wiring

NPN/PNP	Cable	M12 Micro Connector	M8 Pico Connector
NPN N.O. + N.C. Complementary			
PNP N.O. + N.C. Complementary			

## 872C WorldProx 3- and 4-wire DC Tubular Sensors — Standard and Extended Sensing

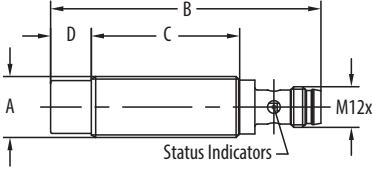
### Plastic Face/Threaded Nickel-plated Brass Barrel — Standard Barrel Length

#### Cable Style Approximate Dimensions

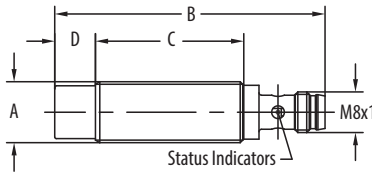
Dimensions [mm (in.)]	Thread Size	Barrel Type	Smooth Diameter	Shielded	mm (in.)			
					A	B (Max)	C (Min)	D (Max)
	—	Nickel-plated Brass	6.5 <sup>(1)</sup>	Yes	6.50 (0.26)	33.0 (1.30)	—	—
	M8 X 1	Nickel-plated Brass	—	Yes	8.00 (0.31)	30.0 (1.18)	30.2 (1.19)	—
			—	No	—	35.0 (1.38)		5.0 (0.20)
	M12 X 1	Nickel-plated Brass	—	Yes	12.0 (0.47)	50.8 (2.00)	46.7 (1.84)	—
			—	No	—	58.8 (2.31)		8.0 (0.31)
	M18 X 1	Nickel-plated Brass	—	Yes	18.0 (0.71)	50.8 (2.00)	46.7 (1.84)	—
			—	No	—	60.8 (2.39)		10.0 (0.39)
	M30 X 1	Nickel-plated Brass	—	Yes	30.0 (1.18)	50.8 (2.00)	47.8 (1.88)	—
			—	No		63.0 (2.48)		18.0 (0.71)

(1) 6.5 mm diameter is standard only

#### Micro QD Style Approximate Dimensions

Dimensions [mm (in.)]	Thread Size	Barrel Type	Shielded	mm (in.)			
				A	B (Max)	C (Min)	D (Max)
	M8 X 1	Nickel-plated Brass	Yes	8.00 (0.31)	55.0 (2.16)	30.0 (1.18)	—
			No		60.0 (2.36)		5.00 (0.20)
	M12 X 1	Nickel-plated Brass	Yes	12.0 (0.47)	64.3 (2.53)	38.1 (1.50)	—
			No	—	72.3 (2.85)		8.0 (0.31)
	M18 X 1	Nickel-plated Brass	Yes	18.0 (0.71)	65.5 (2.58)	38.1 (1.50)	—
			No	—	75.5 (2.97)		10.0 (0.39)
	M30 X 1.5	Nickel-plated Brass	Yes	30.0 (1.18)	64.3 (2.53)	48.3 (1.90)	—
			No		—		76.5 (3.01)

#### Pico QD Style Approximate Dimensions

Dimensions [mm (in.)]	Thread Size	Barrel Type	Smooth Diameter	Shielded	mm (in.)				
					A	B (Max)	C (Min)	D (Max)	
	—	Nickel-plated Brass	6.5 <sup>(1)</sup>	Yes	6.50 (0.26)	49.0 (1.93)	—	—	
	M8 X 1		—	Yes	8.0 (0.31)	50.0 (1.97)	35.0 (1.38)	—	
			—	No		55.0 (2.16)		5.0 (0.20)	
	M12 X 1		Nickel-plated Brass	—	Yes	12.0 (0.47)	63.5 (2.50)	47.5 (1.87)	—
				—	No	—	71.5 (2.81)		8.0 (0.31)

(1) 6.5 mm diameter is standard only

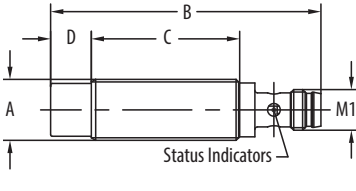
## 872C WorldProx 3- and 4-wire DC Tubular Sensors — Standard and Extended Sensing

### Plastic Face/Threaded Nickel-plated Brass Barrel — Short Barrel Length

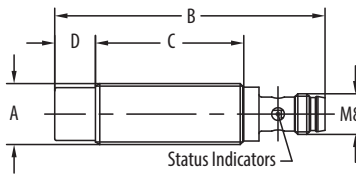
#### Cable Style Approximate Dimensions

Dimensions	Thread Size	Barrel Type	Shielded	mm (in.)			
				A	B (Max)	C (Min)	D (Max)
	M8 X 1	Nickel-plated Brass	Yes	8.0 (0.31)	25.0 (0.98)	25.0 (0.98)	—
			No		30.0 (1.18)		5.0 (0.2)
	M12 X 1		Yes	12.0 (0.47)	34.8 (1.37)	31.8 (1.25)	—
			No		42.8 (1.68)		8.0 (0.31)
	M18 X 1		Yes	18.0 (0.71)	34.8 (1.37)		—
			No		44.8 (1.76)		10.0 (0.39)
	M30 X 1		Nickel-plated Brass	Yes	30.0 (1.18)	34.8 (1.37)	—
				No		47.0 (1.85)	26.0 (1.02)

#### Micro Style Approximate Dimensions

Dimensions	Thread Size	Barrel Type	Shielded	mm (in.)				
				A	B (Max)	C (Min)	D (Max)	
	M8 X 1	Nickel-plated Brass	Yes	8.0 (0.31)	45.0 (1.77)	20.0 (0.79)	—	
			No		50.0 (1.97)		5.0 (0.20)	
	M12 X 1		Yes	12.0 (0.47)	48.3 (1.90)	27.4 (1.08)	—	
			No		56.4 (2.22)		8.0 (0.31)	
	M18 X 1		Nickel-plated Brass	Yes	18.0 (0.71)	49.5 (1.95)	26.4 (1.04)	—
				No		59.5 (2.34)		10.0 (0.39)
	M30 X 1.5		Nickel-plated Brass	Yes	30.0 (1.18)	50.8 (2.00)	31.8 (1.25)	—
				No		63.2 (2.49)		29.2 (1.15)

#### Pico Style Approximate Dimensions

Dimensions	Thread Size	Barrel Type	Shielded	mm (in.)			
				A	B (Max)	C (Min)	D (Max)
	M8 X 1	Nickel-plated Brass	Yes	8.0 (0.31)	45.0 (1.77)	30.0 (1.18)	—
			No		50.0 (1.97)		5.0 (0.2)
	M12 X 1		Yes	12.0 (0.47)	45.2 (1.78)	29.2 (1.15)	—
			No		53.2 (2.10)		8.0 (0.31)