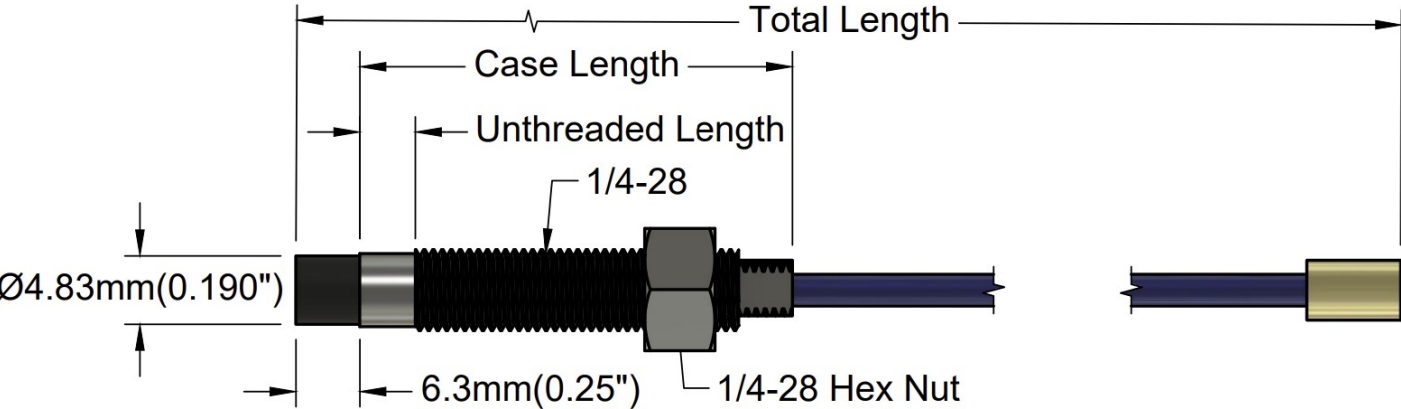


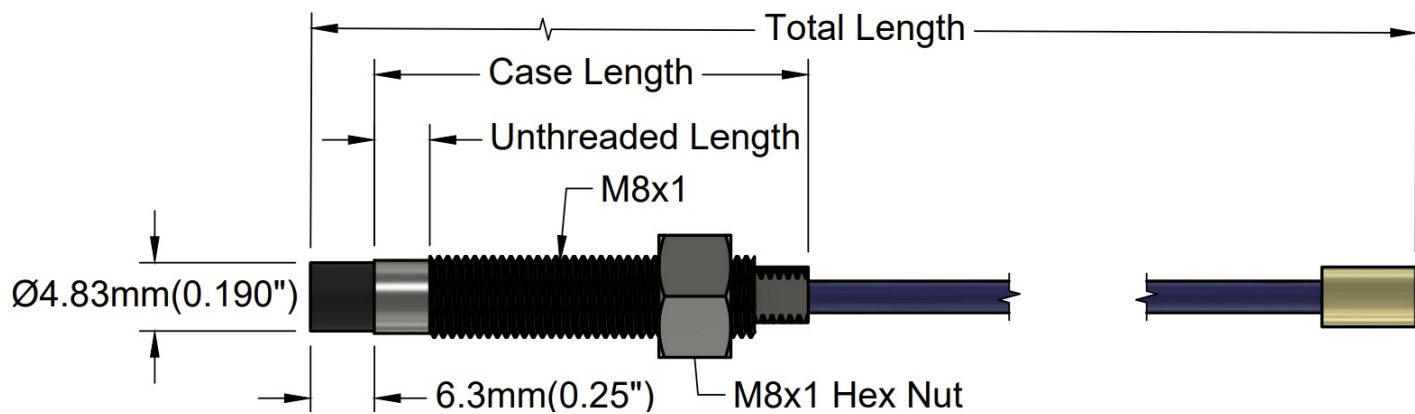
# 3000 Series

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# 3000 Specifications and Dimensions

Probe Cable Specifications	50 ? coaxial, fluoroethylene propylene (FEP) insulated probe cable
Probe Case Material	AISI 303 or 304 stainless steel (SST).
Extension Cable Material	95 ? coaxial, fluoroethylene propylene (FEP) insulated extension cable
System Length	15 ft or 20 ft.
Extension Cable Armor (optional)	Flexible AISI 302 SST with/without FEP outer jacket.
Tensile Strength (maximum rated)	220 N (50 lb) probe case to probe lead. 220 N (50 lb) at probe lead to extension cable connectors. 220 N (50 lb) probe case to stainless steel armor.
Connector material	Gold-plated brass
Recommended Connector Torque	Hand tightened
Maximum torque	0.56 N• m (5 in• lb)
Minimum bend Radius (with or without SS armor)	25.4 mm (1.0 in)





**MS190 XX - AXX - BXX - CXX - DXX**

**MS19000** ¼-28 UNF thread, no armor

**MS19001** ¼-28 UNF thread, with armor

**MS19008** M8x1, with armor

#### Unthreaded Length

English  
Standard: 00 (0.0")

Increment: 05 (0.5")

Maximum: 10 (1.0")

Metric  
Standard: 00 (0 mm)

Increment: 01 (10 mm)

Maximum: 02 (20 mm)

#### Case Length in increments of 0.5"

English  
Standard: 30 (3.0")

Increment: 05 (0.5")

Minimum: 11 (1.1")

Maximum: 96 (9.6")

Metric  
Standard: 07 (70 mm)

Increment: 01 (10 mm)

Minimum: 02 (20 mm)

Maximum: 25 (250 mm)

#### Total Length

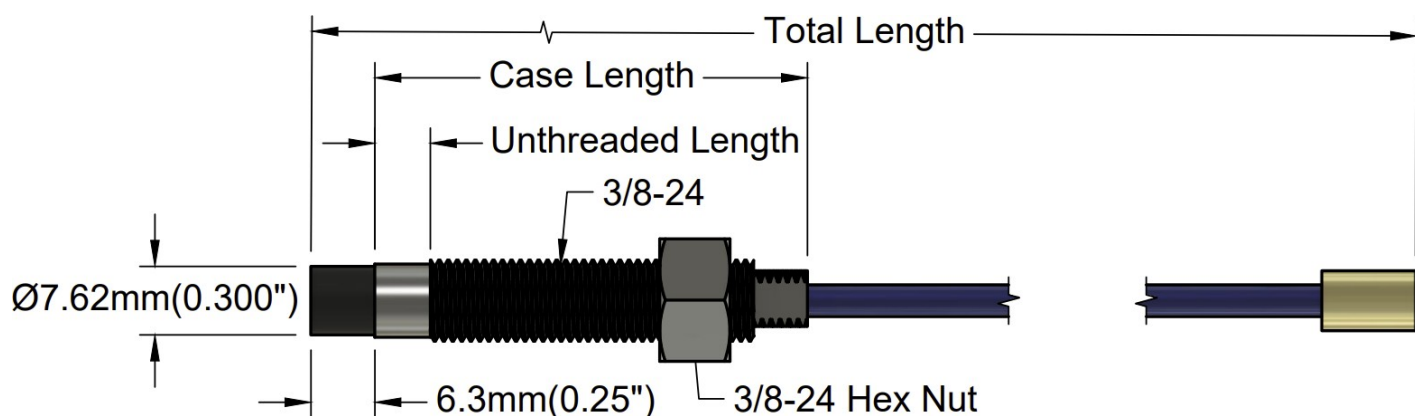
Minimum: 06  
6"

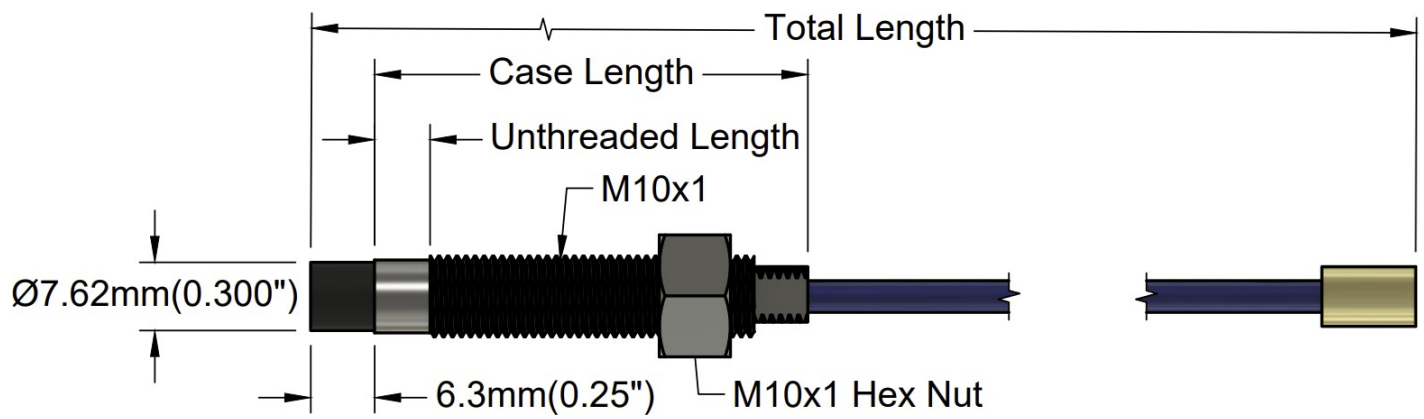
Maximum: 36  
36"

Order in  
increments of  
6"

#### Connector & Cable-Type

02  
with connector





MS30000		XX	—	AXX	—	BXX	—	CXX	—	DXX	
MS30000	3/8-28 UNF thread, no armor										
MS30001	3/8-24 UNF thread, with armor										
MS30011	M10x1, no armor										
MS30012	M10x1, with armor										
			Unthreaded Length		Overall Case Length		Total Length		Connector & Cable-Type		
			English		English						
			Standard: 00 (0.0")		Standard: 30 (3.0")		Minimum: 06 6"		02		
			Increment: 05 (0.5")		Increment: 05 (0.5")		Maximum: 36 36"		with connector		
			Maximum: 10 (1.0")		Minimum: 11 (1.1")						
					Maximum: 96 (9.6")						
			Metric		Metric		Order in increments of 6"				
			Standard: 00 (0 mm)		Standard: 07 (70 mm)						
			Increment: 01 (10 mm)		Increment: 01 (10 mm)						
			Maximum: 02 (20 mm)		Minimum: 02 (20 mm)						
					Maximum: 25 (250 mm)						
			Maximum: 9.9"								

## Electrical

### Linear Range:

0.190" 1.43 mm (45 mils) Linear range begins at 0.25 mm (10 mils) to 1.40 mm (55 mils)

0.300" 1.53 mm (60 mils) Linear range begins at 0.25 mm (10 mils) to 1.78 mm (70 mils)

### Incremental Scale Factor (ISF):

7.87 V/mm (200 mV/mil) +/-10% error (including interchangeability error) when measured in 10 mil increments when measured in increments of 0.25 mm (10 mils) over the linear range.

### Deviation from best fit straight line (DSL):

15 ft. system length is less than ±0.05 mm (±2 mil).

20 ft. system length is less than ±0.076 mm (±3 mil).

**Frequency response:**

0 to 10kHz (-3 dB) typical, with up to 100 meters (300 feet) of field wiring.

**Target Size:**

Minimum flat: 25 mm (1.0 in) diameter

Minimum perpendicular to shaft 50mm (2 in.)

Recommended perpendicular to shaft 75mm (3 in.)

## Mechanical

**Probe Tip Material:**

Polyphenylene sulfide (PPS).

**Probe Case Material:**

AISI 303 or 304 stainless steel (SST).

**Probe Cable Specifications:**

50  $\Omega$  coaxial, fluoroethylene propylene (FEP) insulated probe cable.

**Extension Cable Material:**

95  $\Omega$  coaxial, fluoroethylene propylene (FEP) insulated extension cable.

**System Length:**

15 ft or 20 ft.

**Extension Cable Armor (optional):**

Flexible AISI 302 SST with/without FEP outer jacket.

**Tensile Strength (maximum rated):**

220 N (50 lb) probe case to probe lead. 220 N (50 lb) at probe lead to extension cable connectors.

220 N (50 lb) probe case to stainless steel armor.

**Connector material:**

Gold-plated brass.

**Recommended Connector Torque:**

Hand-tightened.

**Maximum torque:**

0.56 N•m (5 in•lb).

**Minimum bend Radius (with or without SS armor):**

25.4 mm (1.0 in).

## Environmental Limits

**Probe Temperature Range****Operating Temperature:**

-34°C to +125°C (-30°F to +257°F)

**Storage Temperature:**

-51°C to +125°C (-60°F to +257°F)

**Extension Cable Temperature Range****Operating and Storage Temperature:**

-51°C to +125°C (-60°F to +257°F).

**Storage Temperature:**

-51°C to +125°C (-60°F to +257°F).

### **Proximity Sensor Temperature Range**

#### **Operating Temperature:**

-35°C to +125°C (-31°F to +257°F).

#### **Storage Temperature:**

-51°C to +125°C (-60°F to +257°F).

#### **Relative Humidity:**

100% condensing, non-submersible when connectors are protected.

# 3000 Ordering

## 3000 Series, 190 Probes

Option Descriptions				
Model	AA: Unthreaded Length	BB: Overall Case Length	CC: Total Length	DD: Connector & Cable Type
MS19000 ¼-28 UNF thread, no armor	English	English	Minimum: 06 6 in.	02 with connector
MS19001 ¼-28 UNF thread, with armor	Standard: 00 (0.0 in.)	Standard: 30 (3.0 in.)	Maximum: 36 36 in.	
MS19007 M8x1, no armor	Increment: 05 (0.5 in.)	Increment: 05 (0.5 in.)	Increment: of 6 in	
MS19008 M8x1, with armor	Minimum: 00 (0.0 in.)	Minimum: 11 (1.1 in.)		
	Maximum: 10 (1.0 in.)	Maximum: 96 (9.6 in.)		
	Metric	Metric		
	Standard: 00 (0 mm)	Standard: 07 (70 mm)		
	Increment: 01 (10 mm)	Increment: 01 (10 mm)		
	Minimum: 00 (0.0 mm)	Minimum: 02 (20 mm)		
	Maximum: 02 (20 mm)	Maximum: 25 (250 mm)		

## 3000 Series, 300 Probes

Option Descriptions				
Model	AA: Unthreaded Length	BB: Overall Case Length	CC: Total Length	DD: Connector & Cable Type
MS30000 ¾-28 UNF thread, no armor	English	English	Minimum: 06 6 in.	02 with connector



MS30001 3⁄8-24 UNF thread, with armor	Standard: 00 (0.0 in.)	Standard: 30 (3.0 in.)	Maximum: 36 36 in.	
MS30011 M10x1, no armor	Increment: 05 (0.5 in.)	Increment: 05 (0.5 in.)	Increment: of 6 in	
MS30012 M10x1, with armor	Minimum: 00 (0.0 in.)	Minimum: 11 (1.1 in.)		
	Maximum: 10 (1.0 in.)	Maximum: 96 (9.6 in.)		
	<b>Metric</b>	<b>Metric</b>		
	Standard: 00 (0 mm)	Standard: 07 (70 mm)		
	Increment: 01 (10 mm)	Increment: 01 (10 mm)		
	Minimum: 00 (0.0 mm)	Minimum: 02 (20 mm)		
	Maximum: 02 (20 mm)	Maximum: 25 (250 mm)		

## Extension Cable

Model	AA: Cable Length
MS2789-AXXX no armor	108 = 108 in / 9 ft
MS4454-AXXX with armor	120 = 120 in / 10 ft
	132 = 132 in / 11 ft
	144 = 144 in / 12 ft
	156 = 156 in / 13 ft
	168 = 168 in / 14 ft
	180 = 180 in / 15 ft
	192 = 192 in / 16 ft
	204 = 204 in / 17 ft