

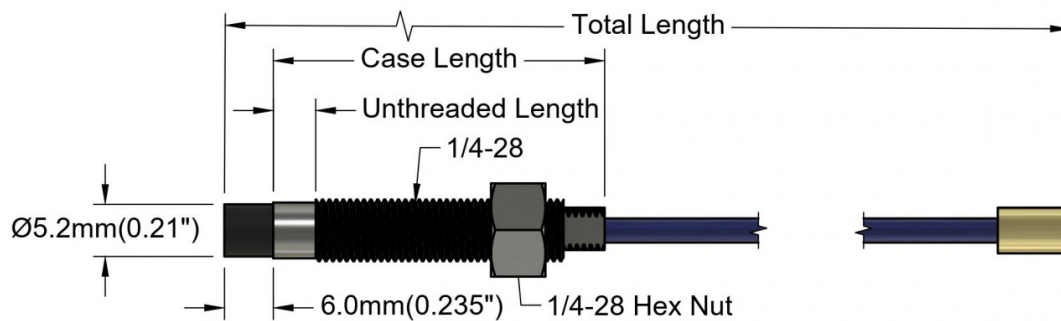
# 3300 Series

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# 3300 5mm Specifications and Dimensions

<b>Extension Cable Armor (optional)</b>	Flexible AISI 302 SST with/without FEP outer jacket
<b>Tensile Strength (maximum rated)</b>	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
<b>Connector material</b>	Gold-plated brass
<b>Recommended Connector Torque</b>	Hand tightened
<b>Maximum torque</b>	0.56 N•m (5 in•lb)
<b>Minimum bend Radius (with or without SS armor)</b>	25.4 mm (1.0 in)
<b>Probe Temperature Range Operating Temperature</b>	-34°C to +177°C (-30°F to +350°F)
<b>Storage Temperature</b>	-51°C to +177°C (-60°F to +350°F)
<b>Extension Cable Operating and Storage Temperature</b>	-51°C to +177°C (-60°F to +350°F)
<b>Relative Humidity</b>	100% condensing, non-submersible when connectors are protected

Imperial/US



PROJECT  
**3300\_5MM**

TITLE  
**MS330171/MS330172**

APPROVED Leo Bach 5/10/2022

CHECKED Bryson Carroll 5/10/2022

DRAWN Luke Benjamin 5/10/2022

SIZE

A

SCALE

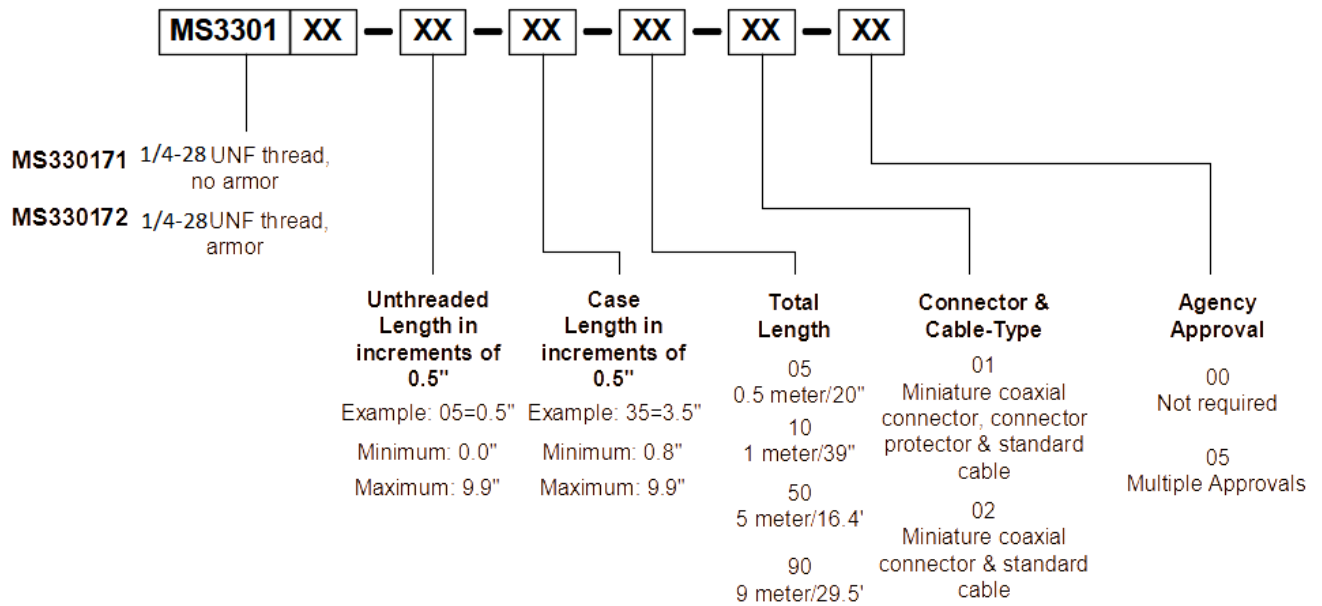
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DWG NO

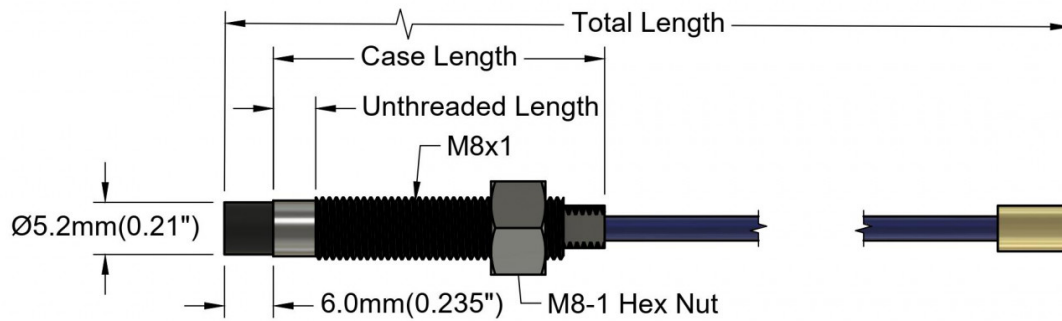
MS330171-MS330172

REV

1.01



## Metric



PROJECT  
**3300\_5MM**

TITLE  
**MS330173/MS330174**

APPROVED Leo Bach 5/10/2022

CHECKED Bryson Carroll 5/10/2022

DRAWN Luke Benjamin 5/10/2022

SIZE

A

SCALE

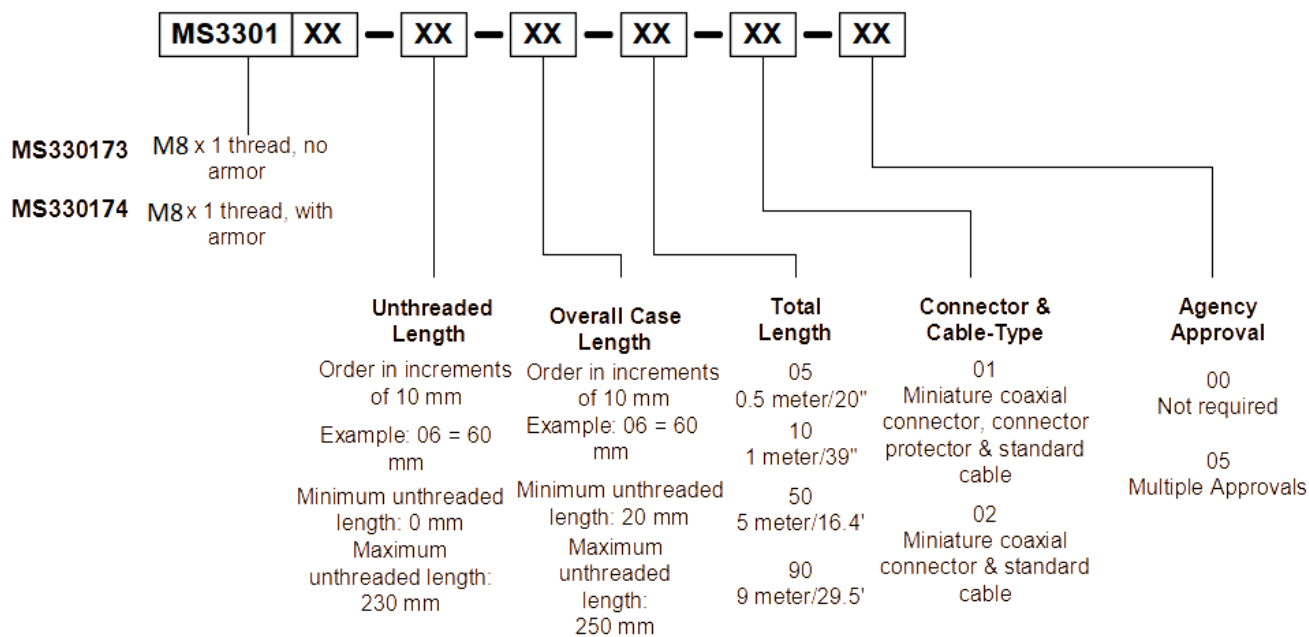
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DWG NO

MS330173-MS330174

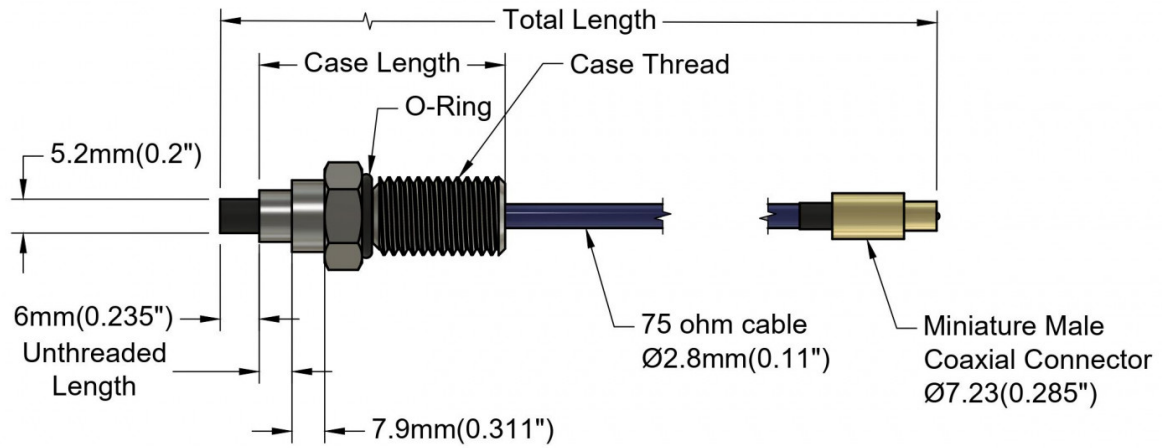
REV

1.01



## Reverse Mount - Metric or Imperial





PROJECT  
3300\_5mm\_Series\_Proximity

TITLE  
MS330175-330176

APPROVED Leo Bach 8/1/2022

CHECKED Bryson Carroll 8/1/2022

DRAWN Luke Benjamin 8/1/2022

SIZE

A

SCALE

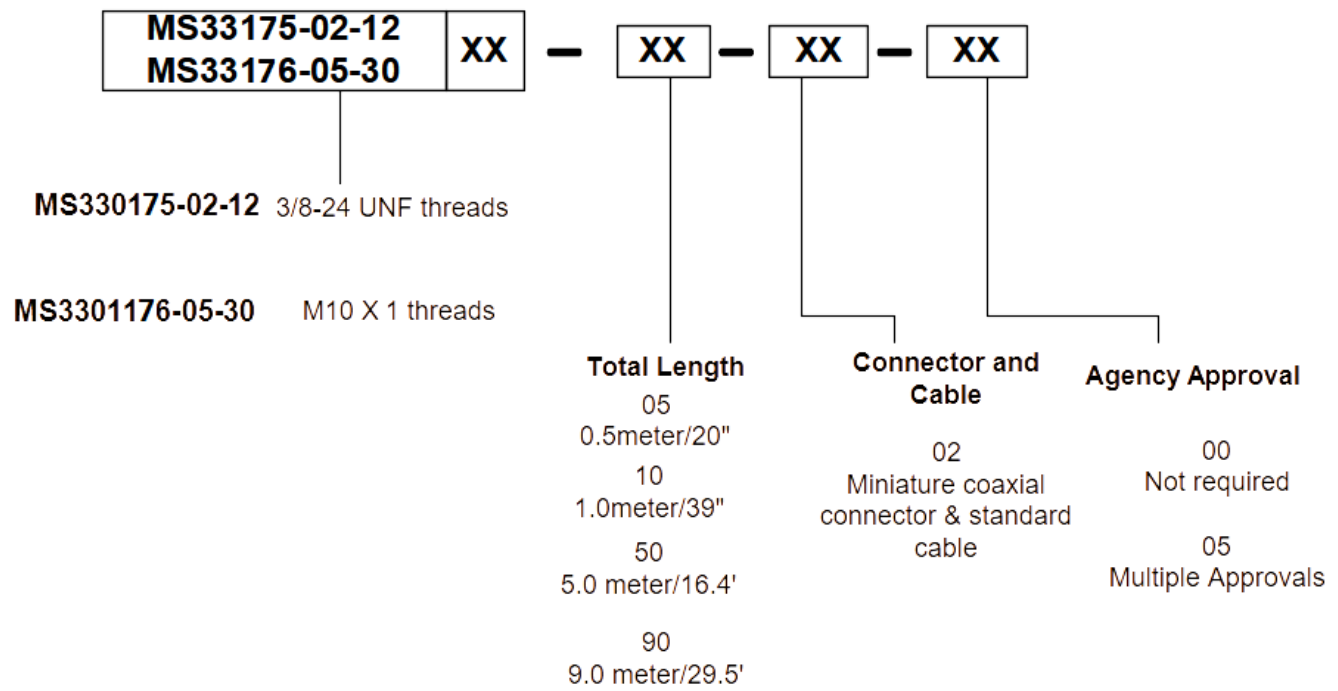
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DWG NO

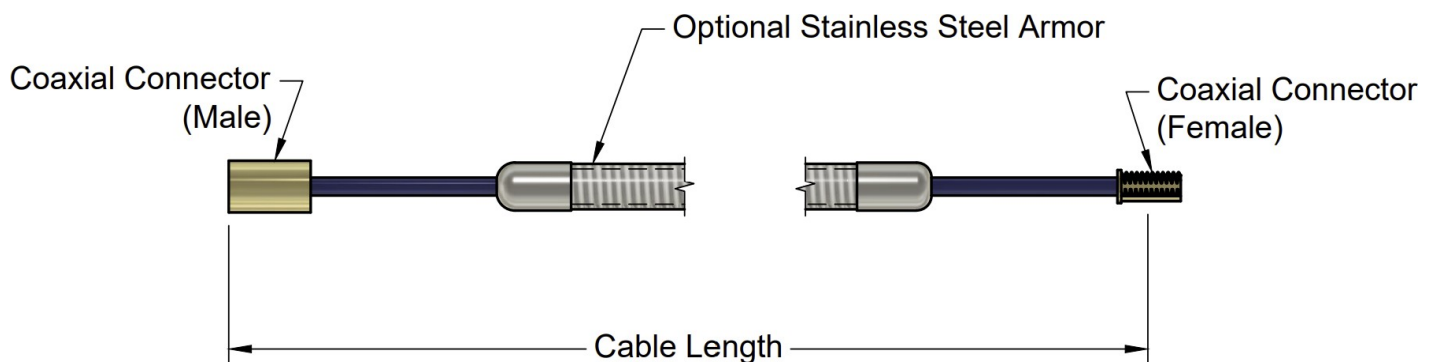
MS330175-MS330176

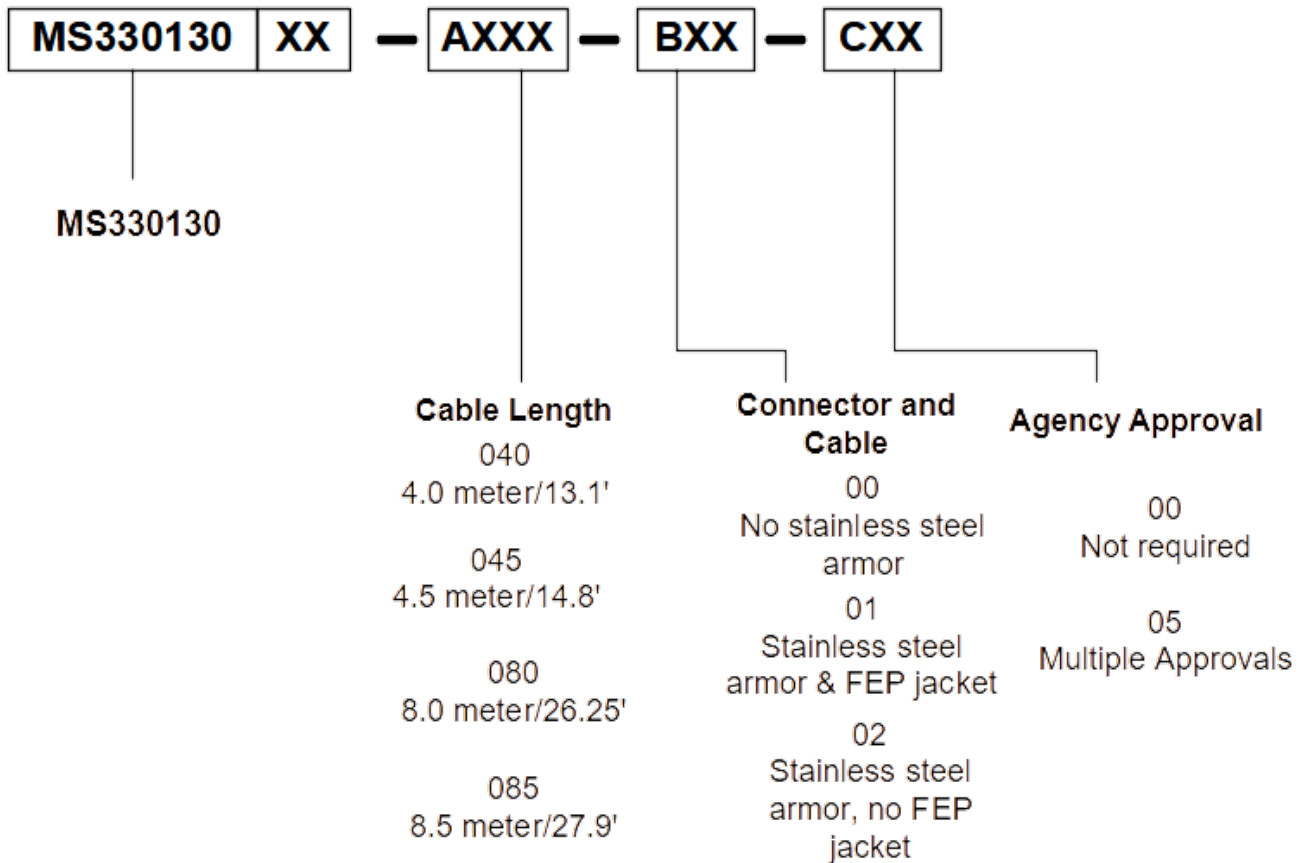
REV

1.01



## Extension Cables





## Electrical

### Linear Range:

2.0 mm (80 mils). Linear range begins at 0.38 mm (15 mils) from target and is from 0.38 to 2.41mm (15 to 95 mils).

### Incremental Scale Factor (ISF):

7.87 V/mm (200 mV/mil) +/-6.5% error (including interchangeability error) when measured in 10 mil increments when measured in increments of 0.25 mm (10 mils) over the 2.0 mm (80 mils) linear range.

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

1 to 5 meter system length is less than  $\pm 0.025$  mm ( $\pm 1$  mil).

9 meter system length is less than  $\pm 0.038$  mm ( $\pm 1.5$  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:**

75  $\Omega$  coaxial, fluoroethylene propylene (FEP) insulated probe cable in the following total probe lengths: 0.5, 1, 5, or 9 meters.

**Extension Cable Material:**

75  $\Omega$  coaxial, fluoroethylene propylene (FEP) insulated.

**System Length:**

1 (probe only), 5 or 9 meters including extension cable

**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 +177°C (-30°F to +350°F)

**Storage Temperature:**

-51°C to +177°C (-60°F to +350°F)

### Extension Cable Temperature Range

**Operating and Storage Temperature:**

-51°C to +177°C (-60°F to +350°F)

**Storage Temperature:**

-51°C to +177°C (-60°F to +350°F)

### Proximity Sensor Temperature Range

**Operating Temperature:**

-35°C to +177°C (-31°F to +350°F)

**Storage Temperature:**

-51°C to +177°C (-60°F to +350°F)

**Relative Humidity:**

100% condensing, non-submersible when connectors are protected

# 3300 5mm Ordering

## Imperial/US

Standard Option Descriptions

Model	AA: Unthreaded Length	BB: Overall Case Length	CC: Total Length	DD: Connector & Cable Type	EE: Agency Approval
MS330171-AA-BB-CC-DD-EE 1/4-28 UNF thread, no armor	Order in increments of 0.5 in	Order in increments of 0.5 in	05 = 0.5 meter/20 in	01 = Miniature coaxial connector, connector protector & standard cable	00 = Not Required
MS330172-AA-BB-CC-DD-EE 1/4-28 UNF thread, with armor	Example: 05 = 0.5 in	Example: 35 = 3.5 in	10 = 1.0 meter/39 in	02 = Miniature coaxial connector & standard cable	05 = Multiple Approvals
	Minimum unthreaded length: 0.0 in	Minimum unthreaded length: 0.8 in	50 = 5.0 meter/16.4 feet		
	Maximum unthreaded length: 9.9 in	Maximum unthreaded length: 9.9 in	90 = 9.0 meter/29.5 feet		

## Metric

Standard Option Descriptions

Model	AA: Unthreaded Length	BB: Overall Case Length	CC: Total Length	DD: Connector & Cable Type	EE: Agency Approval
MS330173-AA-BB-CC-DD-EE M8 x 1 thread, no armor	Order in increments of 10 mm	Order in increments of 10 mm	05 = 0.5 Meter/20 in	01 = Miniature coaxial connector, connector protector & standard cable	00 = Not Required
MS330174-AA-BB-CC-DD-EE M8 x 1 thread, with armor	Example: 06 = 60 mm	Example: 06 = 60 mm	10 = 1.0 meter/39 in	02 = Miniature coaxial connector & standard cable	05 = Multiple Approvals

	Minimum unthreaded length: 0 mm	Minimum unthreaded length: 20 mm	50 = 5.0 meter/16.4 feet		
	Maximum unthreaded length: 230 mm	Maximum unthreaded length: 250 mm	90 = 9.0 meter/29.5 feet		

## Reverse Mount

Model	AA: Total Length	BB: Connector & Cable Type	CC: Agency Approval
MS330175-02-12-AA-BB-CC ¾-24 UNF threads	05 0.5 meter/20 in	01 = Miniature coaxial connector, connector protector & standard cable	00 = Not Required
MS330176-05-30-AA-BB-CC M10 X 1 threads	10 1.0 meter/39 in	02 = Miniature coaxial connector & standard cable	05 = Multiple Approvals
	50 5.0 meter/16.4 feet		
	90 9.0 meter/29.5 feet		

## Extension Cable

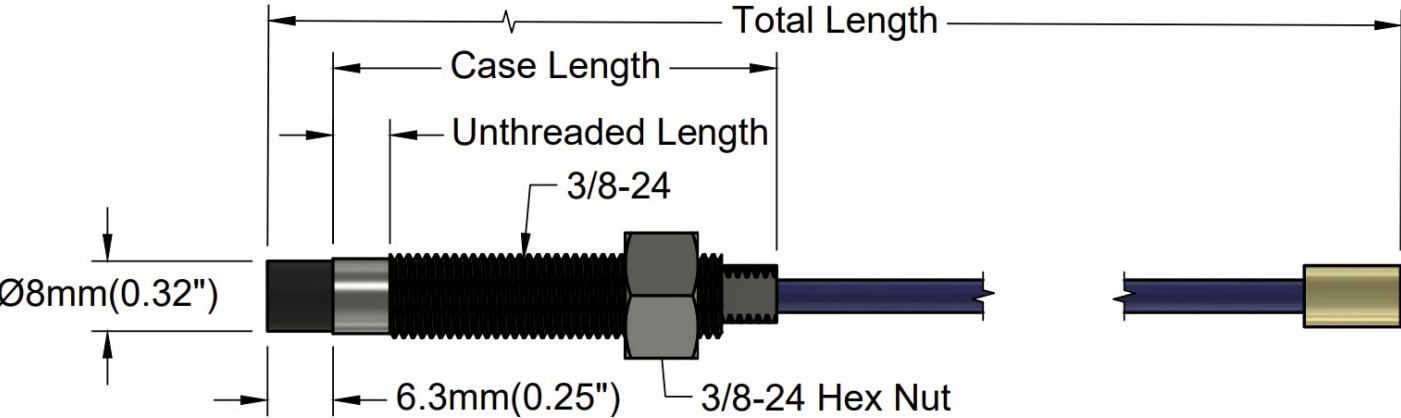
Model	AA: Cable Length	BB: Connector & Cable Type	CC: Agency Approval
MS330130	05 0.5 meter/20 in	00 = No stainless steel armor.	00 = Not Required
	10 1.0 meter/39 in	01 = Stainless steel armor & FEP Jacket.	05 = Multiple Approvals
	50 5.0 meter/16.4 feet	02 = Stainless steel armor, no FEP Jacket	
	90 9.0 meter/29.5 feet		

# 3300 8mm Specifications and Dimensions



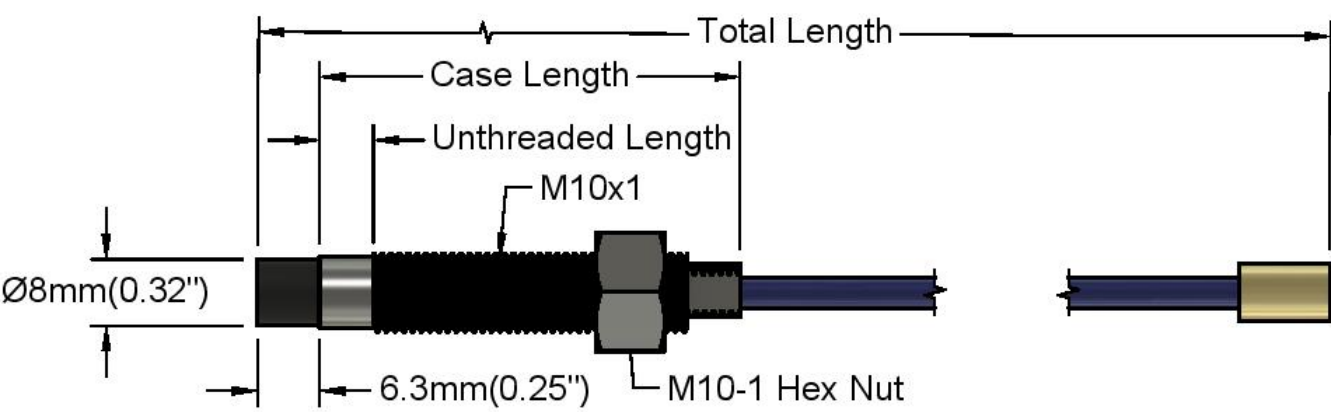
Extension Cable Armor (optional)	Flexible AISI 302 SST with/without FEP outer jacket
Tensile Strength (maximum rated)	220 N (50 lb) probe case to probe lead. 220 N (50 lb) at probe lead to extension cable connectors. 220 N (50 lb) probe case to stainless steel armor
Connector material	Gold-plated brass
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)
Probe Temperature Range Operating Temperature	-34°C to +177°C (-30°F to +350°F)
Storage Temperature	-51°C to +177°C (-60°F to +350°F)
Extension Cable Operating and Storage Temperature	-51°C to +177°C (-60°F to +350°F)
Relative Humidity	100% condensing, non-submersible when connectors are protected

Imperial/US



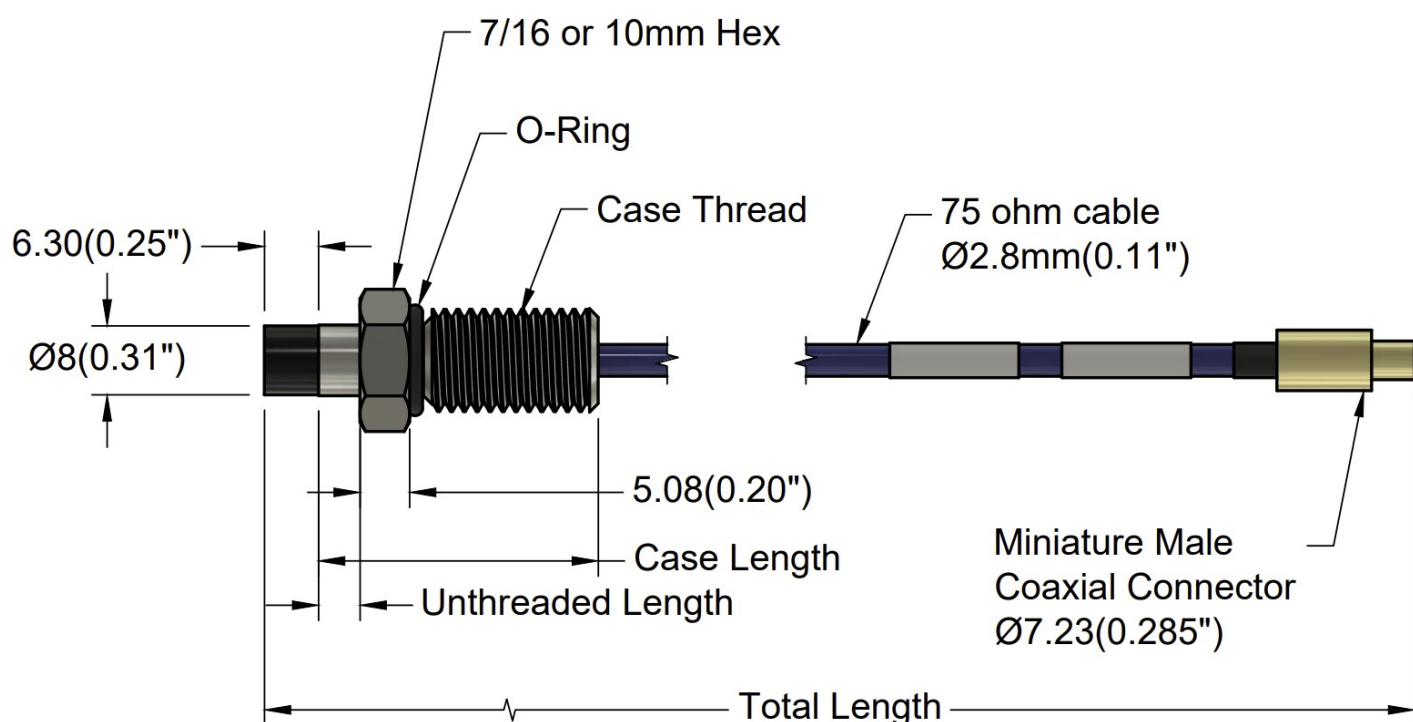
MS3301	XX	XX	XX	XX	XX	XX
<b>MS330101</b>	3/8-24 UNF thread, no armor					
<b>MS330102</b>	3/8-24 UNF thread, armor					
	Unthreaded Length in increments of 0.5"	Case Length in increments of 0.5"	Total Length	Connector & Cable-Type	Agency Approval	
	Example: 05=0.5"	Example: 35=3.5"	05 0.5 meter/20"	01 Miniature coaxial connector, connector protector & standard cable	00 Not required	
	Minimum: 0.0"	Minimum: 0.8"	10 1 meter/39"		05 Multiple Approvals	
	Maximum: 9.9"	Maximum: 9.9"	50 5 meter/16.4'	02 Miniature coaxial connector & standard cable		
			90 9 meter/29.5'			

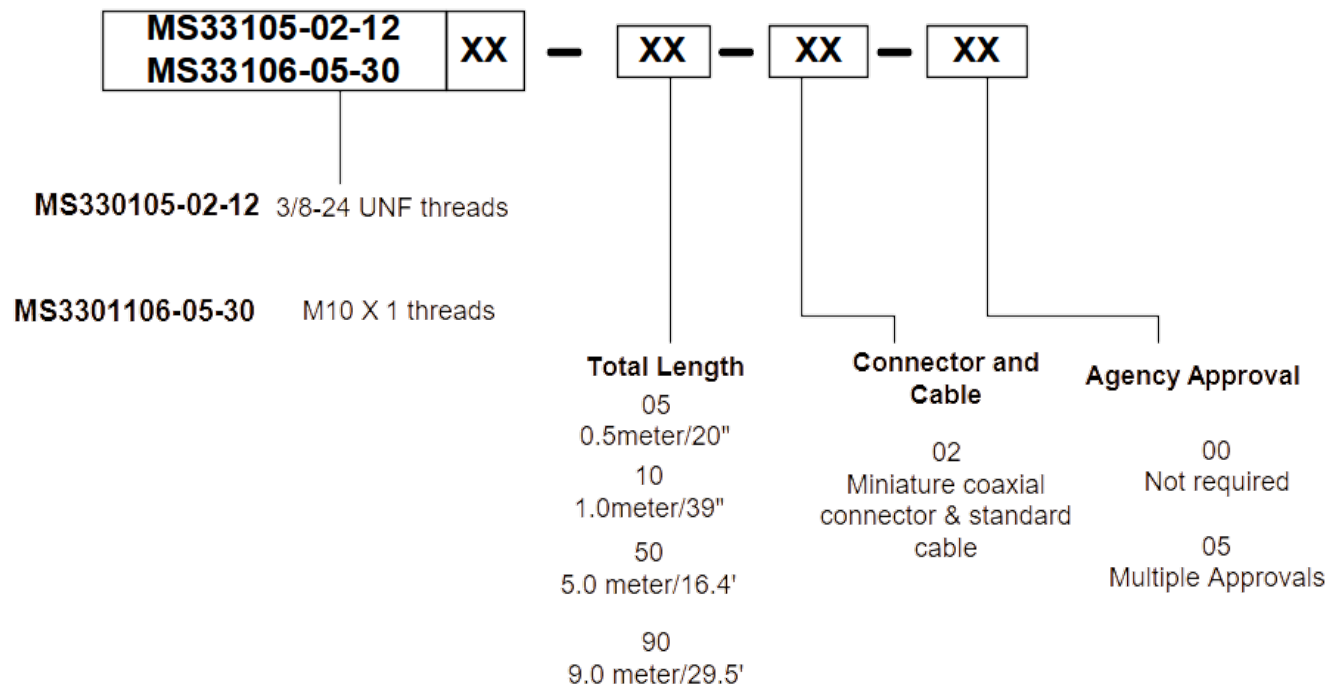
Metric



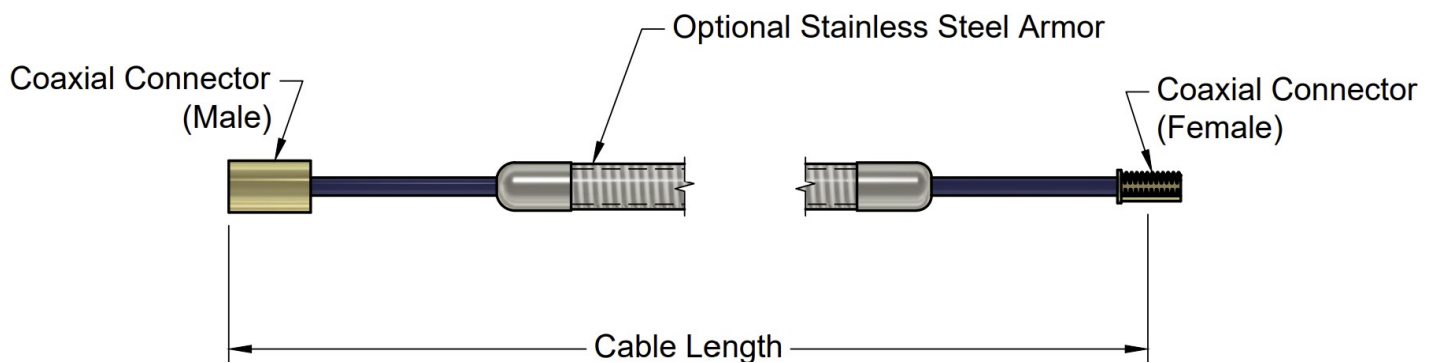
MS3301		XX	XX	XX	XX	XX	XX
MS330103	M10 x 1 thread, no armor						
MS330104	M10 x 1 thread, with armor						
Unthreaded Length		Overall Case Length		Total Length		Connector & Cable-Type	Agency Approval
Order in increments of 10 mm		Order in increments of 10 mm		05 0.5 meter/20"		01 Miniature coaxial connector, connector protector & standard cable	00 Not required
Example: 06 = 60 mm		Example: 06 = 60 mm		10 1 meter/39"			
Minimum unthreaded length: 0 mm		Minimum unthreaded length: 20 mm		50 5 meter/16.4'		02 Miniature coaxial connector & standard cable	05 Multiple Approvals
Maximum unthreaded length: 230 mm		Maximum unthreaded length: 250 mm		90 9 meter/29.5'			

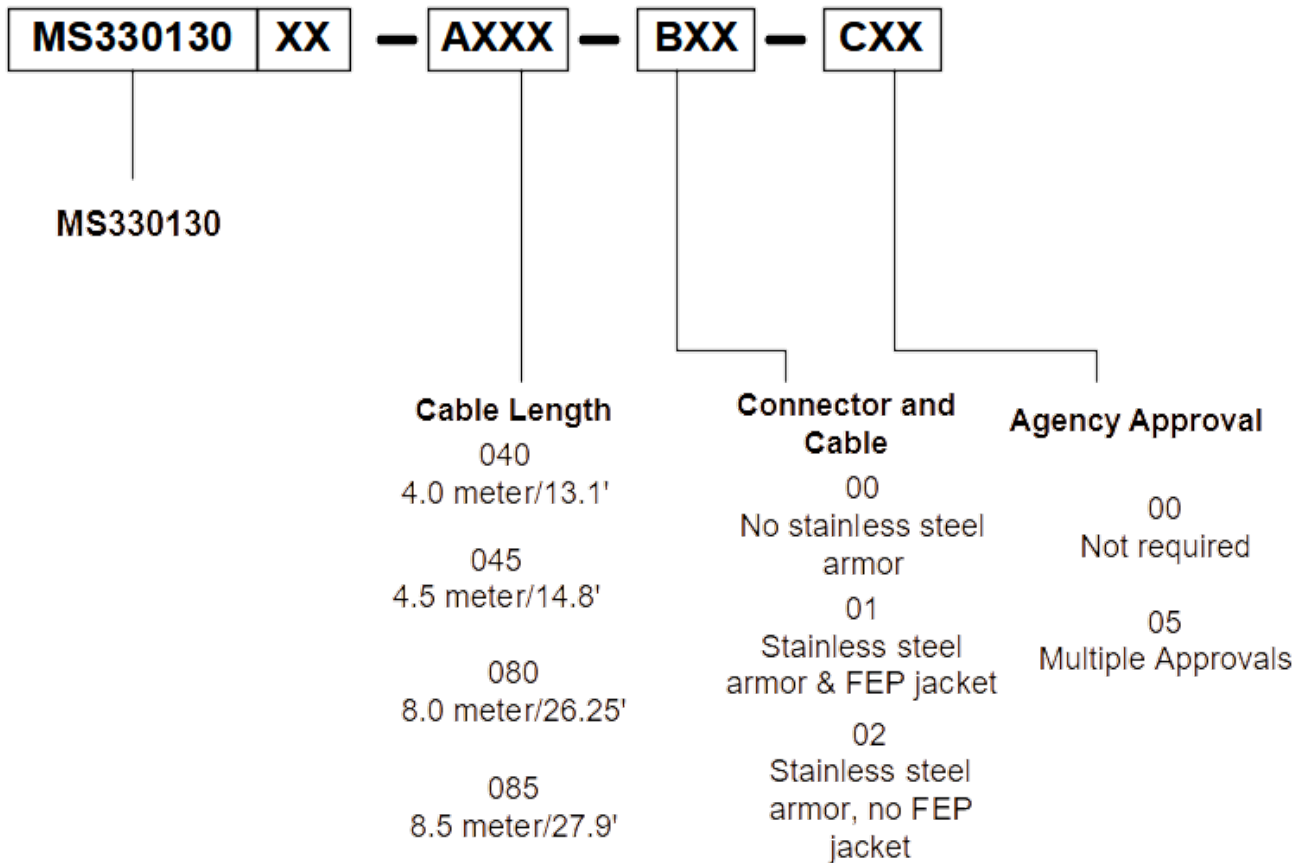
## Reverse Mount - Metric or Imperial





## Extension Cables





## Electrical

### Linear Range:

2.0 mm (80 mils). Linear range begins at 0.38 mm (15 mils) from target and is from 0.38 to 2.41 mm (15 to 95 mils).

### Incremental Scale Factor (ISF):

7.87 V/mm (200 mV/mil) +/-6.5% error (including interchangeability error) when measured in 10 mil increments when measured in increments of 0.25 mm (10 mils) over the 2.0 mm (80 mils) linear range.

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

1 to 5 meter system length is less than  $\pm 0.025$  mm ( $\pm 1$  mil).

9 meter system length is less than  $\pm 0.038$  mm ( $\pm 1.5$  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:**

75  $\Omega$  coaxial, fluoroethylene propylene (FEP) insulated probe cable in the following total probe lengths: 0.5, 1, 5, or 9 meters.

**Extension Cable Material:**

75  $\Omega$  coaxial, fluoroethylene propylene (FEP) insulated.

**System Length:**

1 (probe only), 5 or 9 meters including extension cable

**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 +177°C (-30°F to +350°F)

**Storage Temperature:**

-51°C to +177°C (-60°F to +350°F)

### Extension Cable Temperature Range

**Operating and Storage Temperature:**

-51°C to +177°C (-60°F to +350°F)

**Storage Temperature:**

-51°C to +177°C (-60°F to +350°F)

### Proximity Sensor Temperature Range

**Operating Temperature:**

-35°C to +177°C (-31°F to +350°F)

**Storage Temperature:**

-51°C to +177°C (-60°F to +350°F)

**Relative Humidity:**

100% condensing, non-submersible when connectors are protected

# 3300 8mm Ordering

## Imperial/US

Standard Option Descriptions

Model	AA: Unthreaded Length	BB: Overall Case Length	CC: Total Length	DD: Connector & Cable Type	EE: Agency Approval
MS330101-AA-BB-CC-DD-EE 3/8-24 UNF thread, no armor	Order in increments of 0.5 in	Order in increments of 0.5 in	05 = 0.5 meter/20 in	01 = Miniature coaxial connector, connector protector & standard cable	00 = Not Required
MS330102-AA-BB-CC-DD-EE 3/8-24 UNF thread, with armor	Example: 05 = 0.5 in	Example: 35 = 3.5 in	10 = 1.0 meter/39 in	02 = Miniature coaxial connector & standard cable	05 = Multiple Approvals
	Minimum unthreaded length: 0.0 in	Minimum unthreaded length: 0.8 in	50 = 5.0 meter/16.4 feet		
	Maximum unthreaded length: 9.9 in	Maximum unthreaded length: 9.9 in	90 = 9.0 meter/29.5 feet		

## Metric

Metric Option Descriptions

Model	AA: Unthreaded Length	BB: Overall Case Length	CC: Total Length	DD: Connector & Cable Type	EE: Agency Approval
MS330103-AA-BB-CC-DD-EE M10 x 1 thread, no armor	Order in increments of 10 mm	Order in increments of 10 mm	05 = 0.5 Meter/20 in	01 = Miniature coaxial connector, connector protector & standard cable	00 = Not Required
MS330104-AA-BB-CC-DD-EE M10 x 1 thread, with armor	Example: 06 = 60 mm	Example: 06 = 60 mm	10 = 1.0 meter/39 in	02 = Miniature coaxial connector & standard cable	05 = Multiple Approvals



	Minimum unthreaded length: 0 mm	Minimum unthreaded length: 20 mm	50 = 5.0 meter/16.4 feet		
	Maximum unthreaded length: 230 mm	Maximum unthreaded length: 250 mm	90 = 9.0 meter/29.5 feet		

## Reverse Mount

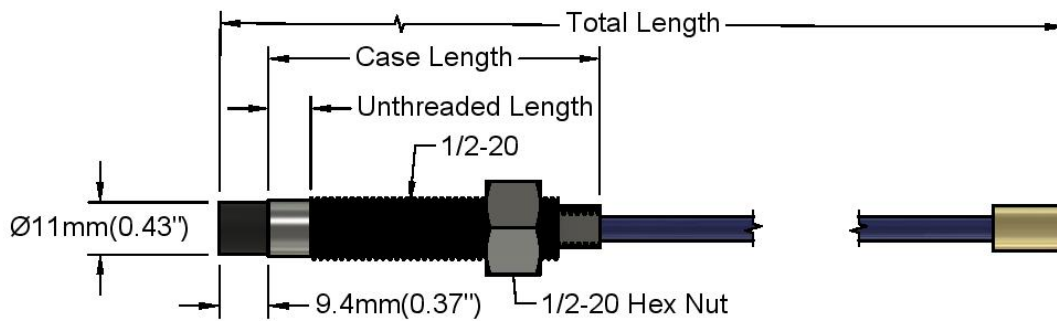
Model	AA: Total Length	BB: Connector & Cable Type	CC: Agency Approval
MS330105-02-12-AA-BB-CC ¾-24 UNF threads	05 0.5 meter/20 in	01 = Miniature coaxial connector, connector protector & standard cable	00 = Not Required
MS330106-05-30-AA-BB-CC M10 X 1 threads	10 1.0 meter/39 in	02 = Miniature coaxial connector & standard cable	05 = Multiple Approvals
	50 5.0 meter/16.4 feet		
	90 9.0 meter/29.5 feet		

## Extension Cable

Model	AA: Cable Length	BB: Connector & Cable Type	CC: Agency Approval
MS330130	05 0.5 meter/20 in	00 = No stainless steel armor.	00 = Not Required
	10 1.0 meter/39 in	01 = Stainless steel armor & FEP Jacket.	05 = Multiple Approvals
	50 5.0 meter/16.4 feet	02 = Stainless steel armor, no FEP Jacket	
	90 9.0 meter/29.5 feet		

# 3300 11mm Specifications and Dimensions

Imperial



PROJECT  
3300\_11MM\_Series\_Proximity

TITLE  
MS330701/MS330702

APPROVED Leo Bach 5/10/2022

CHECKED Bryson Carroll 5/10/2022

DRAWN Luke Benjamin 5/10/2022

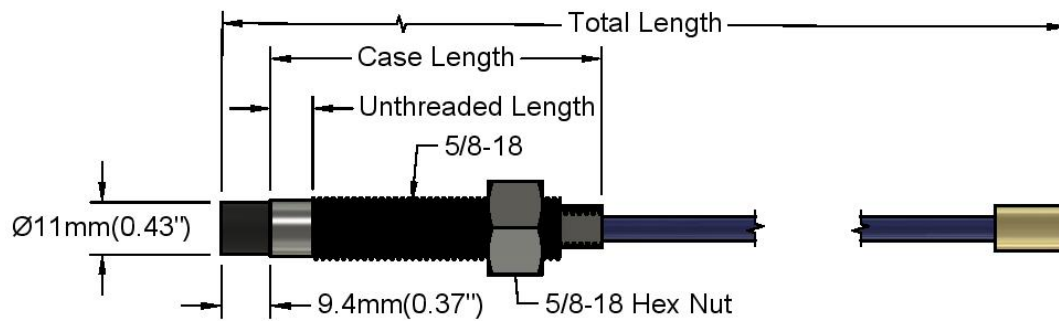
SIZE  
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SCALE  
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DWG NO

MS330701-MS330702

REV  
1.01



PROJECT  
3300\_11MM\_Series\_Proximity

TITLE  
MS330707/MS330708

APPROVED Leo Bach 5/10/2022

CHECKED Bryson Carroll 5/10/2022

DRAWN Luke Benjamin 5/10/2022

SIZE

A

SCALE

1:1

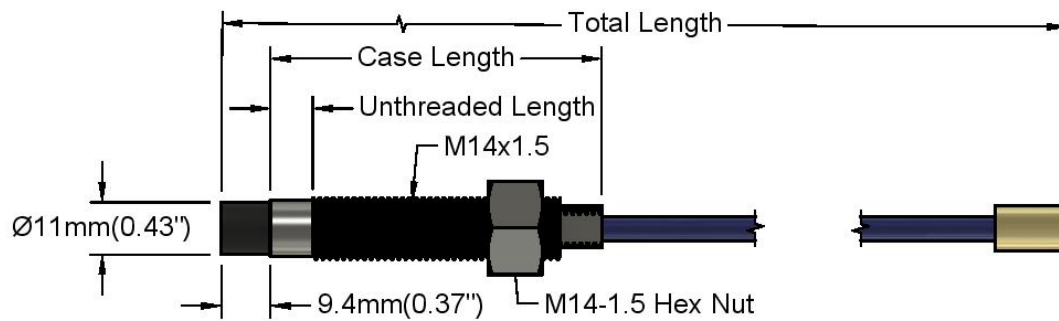
DWG NO

MS330707-MS330708

REV

1.01

Metric



PROJECT  
3300\_11MM\_Series\_Proximity

TITLE  
MS330703/MS330704

APPROVED Leo Bach 5/10/2022

CHECKED Bryson Carroll 5/10/2022

DRAWN Luke Benjamin 5/10/2022

SIZE

A

SCALE

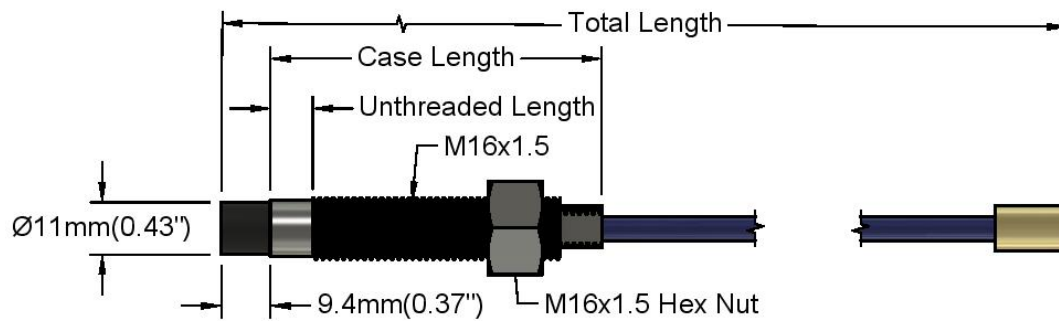
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DWG NO

MS330703-MS330704

REV

1.01



PROJECT  
3300\_11MM\_Series\_Proximity

TITLE  
MS330709/MS330710

APPROVED Leo Bach 5/10/2022

CHECKED Bryson Carroll 5/10/2022

DRAWN Luke Benjamin 5/10/2022

SIZE  
A

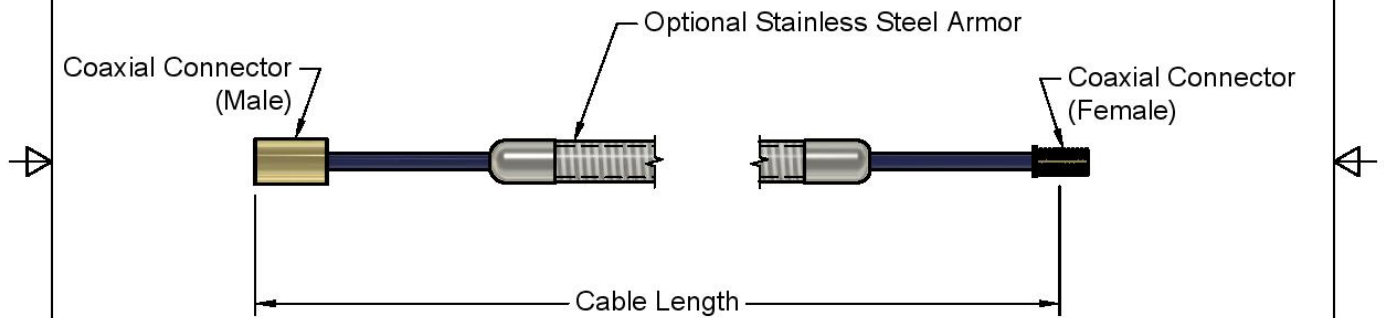
SCALE  
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DWG NO  
MS330709-MS330710

REV  
1.01

# Extension Cables





PROJECT  
3300\_11MM\_Series\_Proximity

TITLE  
MS330730

APPROVED Leo Bach 5/10/2022

CHECKED Bryson Carroll 5/10/2022

DRAWN Luke Benjamin 5/12/2022

SIZE  
A

SCALE  
1:1

DWG NO  
MS330730

REV  
1.01

# Electrical

**Linear Range:**

4.0 mm (160 mils). Linear range begins at 0.50 mm (20 mils) from target and is from 0.50 to 4.50 mm (20 to 180 mils)

**Incremental Scale Factor (ISF):**

3.94 V/mm (100 mV/mil) +/-10% error (including interchangeability error) when measured in 10 mil increments when measured in increments of 0.50 mm (20 mils) over the 4.0 mm (160 mils) linear range

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

1 to 5 meter system length is less than  $\pm 0.10$  mm ( $\pm 4$  mil).

9 meter system length is less than  $\pm 0.15$  mm ( $\pm 6$  mil).

**Frequency response:**

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

**Target Size:**

Minimum flat: 30.5 mm (1.2 in) diameter

Minimum perpendicular to shaft 150mm (6 in.)

# Mechanical

**Probe Tip Material:**

Polyphenylene sulfide (PPS).

**Probe Case Material:**

AISI 303 or 304 stainless steel (SST).

**Probe Cable Specifications:**

75  $\Omega$  coaxial, fluoroethylene propylene (FEP) insulated probe cable in the following total probe lengths: 0.5, 1, 5, or 9 meters.

**Extension Cable Material:**

75  $\Omega$  coaxial, fluoroethylene propylene (FEP) insulated.

**System Length:**

1 (probe only), 5 or 9 meters including extension cable

**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 +177°C (-30°F to +350°F)

**Storage Temperature:**

-51°C to +177°C (-60°F to +350°F)

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

-51°C to +177°C (-60°F to +350°F)

**Storage Temperature:**

-51°C to +177°C (-60°F to +350°F)

**Proximity Sensor Temperature Range****Operating Temperature:**

-35°C to +177°C (-31°F to +350°F)

**Storage Temperature:**

-51°C to +177°C (-60°F to +350°F)

**Relative Humidity:**

100% condensing, non-submersible when connectors are protected

# 3300 11mm Ordering

## Imperial/US

Standard Option Descriptions

Model	AA: Unthreaded Length	BB: Overall Case Length	CC: Total Length	DD: Connector & Cable Type	EE: Agency Approval
MS330701-AA-BB-CC-DD-EE 1/2-20 UNF thread, no armor	Order in increments of 0.5 in	Order in increments of 0.5 in	05 = 0.5 meter/20 in	01 = Miniature coaxial connector, connector protector & standard cable	00 = Not Required
MS330702-AA-BB-CC-DD-EE 1/2-20 UNF thread, with armor	Example: 05 = 0.5 in	Example: 35 = 3.5 in	10 = 1.0 meter/39 in	02 = Miniature coaxial connector & standard cable	05 = Multiple Approvals
MS330707-AA-BB-CC-DD-EE 5/8-18 UNF thread, no armor	Minimum unthreaded length: 0.0 in	Minimum unthreaded length: 0.8 in	50 = 5.0 meter/16.4 feet		
MS330708-AA-BB-CC-DD-EE 5/8-18 UNF thread, with armor	Maximum unthreaded length: 9.9 in	Maximum unthreaded length: 9.9 in	90 = 9.0 meter/29.5 feet		

## Metric

Standard Option Descriptions

Model	AA: Unthreaded Length	BB: Overall Case Length	CC: Total Length	DD: Connector & Cable Type	EE: Agency Approval
MS330703-AA-BB-CC-DD-EE M14 x 1.5 thread, no armor	Order in increments of 10 mm	Order in increments of 10 mm	05 = 0.5 Meter/20 in	01 = Miniature coaxial connector, connector protector & standard cable	00 = Not Required

MS330704-AA-BB-CC-DD-EE M14 x 1.5thread, witharmor	Example: 06 = 60 mm	Example: 06 = 60 mm	10 = 1.0 meter/39 in	02 = Miniature coaxial connector & standard cable	05 = Multiple Approvals
MS330709-AA-BB-CC-DD-EE M16 x 1.5 thread, no armor	Minimum unthreaded length: 0 mm	Minimum unthreaded length: 20 mm	50 = 5.0 meter/16.4 feet		
MS330710-AA-BB-CC-DD-EE M16 x 1.5 thread, no armor	Maximum unthreaded length: 230 mm	Maximum unthreaded length: 250 mm	90 = 9.0 meter/29.5 feet		

## Reverse Mount

Model	AA: Total Length	BB: Connector & Cable Type	CC: Agency Approval
MS330705-02-18-AA-BB-CC ¾-24 UNF threads	05 = 0.5 meter/20 in	01 = Miniature coaxial connector, connector protector & standard cable	00 = Not Required
MS330706-05-46-AA-BB-CC M10 X 1 threads	10 = 1.0 meter/39 in	02 = Miniature coaxial connector & standard cable	05 = Multiple Approvals
	50 = 5.0 meter/16.4 feet		
	90 = 9.0 meter/29.5 feet		

## Extension Cable

Model	AA: Cable Length	BB: Connector & Cable Type	CC: Agency Approval
MS330730	05 0.5 meter/20 in	00 = No stainless steel armor.	00 = Not Required
	10 1.0 meter/39 in	01 = Stainless steel armor & FEP Jacket.	05 = Multiple Approvals
	50 5.0 meter/16.4 feet	02 = Stainless steel armor, no FEP Jacket	
	90 9.0 meter/29.5 feet		