Proximity Products Specifications

Transducers

Probes, Cables & Drivers for System Series:
Metrix 10000, MX (7200), MX (3000), MX (3301), MX (3309)

Transmitters
- **Loop-Powered**
- **Radial Vibration**
- **Position / Thrust**
- **Phase**
- **Speed**

Signal Conditioners

Accessories

Features

- **Interchangable with most existing transducer installations**
- **System lengths of 5 m, 7 m, 9 m, 15 ft. or 20 ft.**
- **Armored or unarmored cable**
- **Available English or metric threads**
- **Intrinsically safe versions available**

Applications of Shaft Monitoring

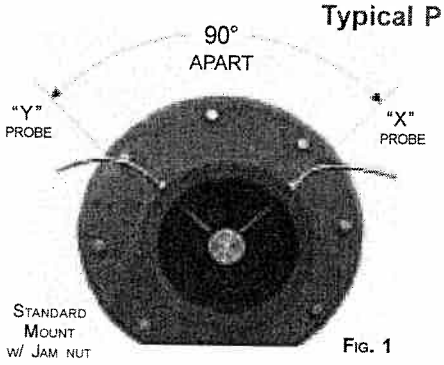
- **Journal bearing machines:**
  - **Centrifugal pumps**
  - **Turbo compressors**
  - **Steam turbines**
  - **Fans and blowers**
  - **Gear boxes**
  - **Generators**
  - **Electric motors**

A probe and extension cable are matched with an application specific electronic assembly. (e.g. 5533, 5465, 5488 or PT5521). Metrix makes it easier for parts inventory and field personnel with our exclusive ProxMatch™ system approach of color coding the series including the instrument and labeling the system components to assure a proper match. The system will not function properly if mismatched, which has been a common problem in the field

The 3 piece proximity sensor system senses machinery shaft conditions relative to the bearing housing. Operating on the eddy current principle, these proximity sensor systems provide excellent resolution and stability by creating a magnetic field within which vibration or position sensing occurs.
For vibration, a *standard mount* probe may be mounted radially at or near a bearing via a tapped hole (fig. 1) or by using P/N 7646 Mounting Bracket (See Accessories). A *reverse mount* probe, with a Probe Housing (fig. 2), provides extra mechanical protection plus a sliding adjustment (VerniGap ™) which reduces set up (gapping) and maintenance time.

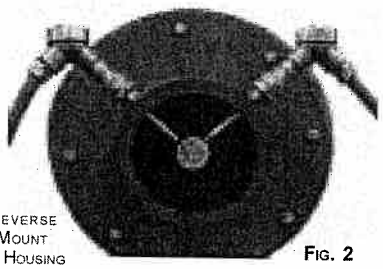
For axial position, a standard mount probe is threaded through the end of the machinery case to observe thrust bearing wear. For vibration phase, reference or RPM, it is located over a keyway to observe a once-per-revolution event. The electronic assembly should be located within an appropriate enclosure on or near the machinery skid.

Typical Probe Mounting



STANDARD MOUNT w/ JAM NUT

FIG. 1



REVERSE MOUNT w/ HOUSING

FIG. 2

Where to start

NEW INSTALLATIONS

If you are outfitting new machines or older machines that have no proximity probes, refer to our standard series **10000 proximity probes, 7402 cables and 5533 drivers, 5465 transmitters, model 5000 multi-channel signal conditioners, DataWatch or System 670 monitors**

EXISTING INSTALLATIONS:

If you are replacing parts of an existing proximity system manufactured by a major competitor, we make it simple. Take the part number on the components, **add the prefix MX to their part number**, and let us know how many you need and when. Our database is large and growing daily. No matter how old, chances are we made it before and can help you keep your system running. Our proximity products are not interchangeable with other manufacturers, just the big one.

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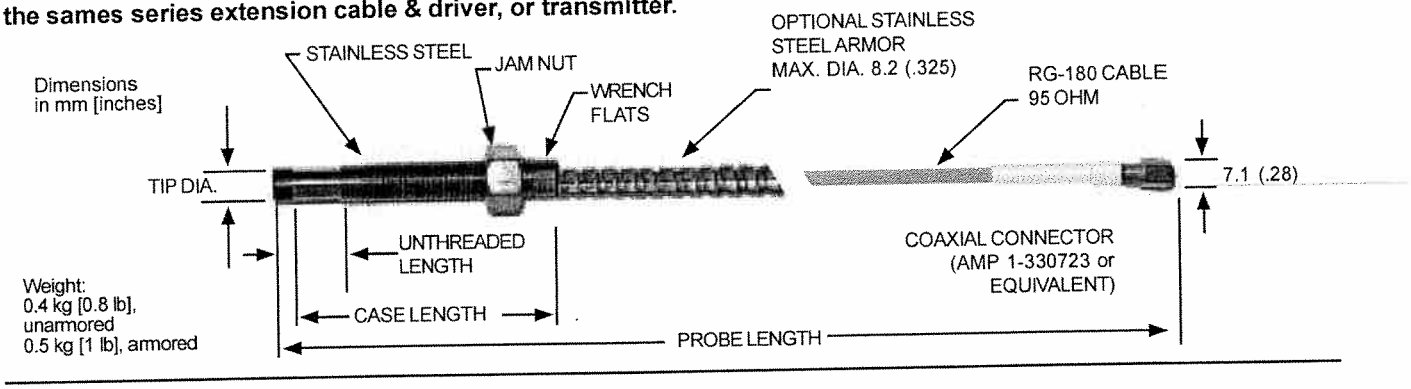
Proximity Probes
Series 10000, MX3301, & MX3309

PROXIMITY PROBES: SELECT a probe to suit the mechanical requirements of the machine and mates with the sames series extension cable & driver, or transmitter.



Model No. Metrix Series 10000

10 0 X X – □□ – □□ – □□ – 02

Model No.	Tip Diam.	Case Threads	Armor	Unthreaded Length	Case Length	ProbeLength	Connector		Ext. Cable
10001	5 mm	1/4"-28	No	Standard: 00 = 0.0 in. Increments of: 05 = 0.5 in. Maximum: Case Length minus 1.0 in.	Standard: 30 = 3.0 in. Increments of: 05 = 0.5 in. Minimum: 10 = 1.0 in. Maximum: 95 = 9.5 in.	05 = 0.5 m ± .05 m 10 = 1.0 m ± .1 m	00 = none 02 = Yes		Model 7402
10002	5 mm	1/4"-28	Yes						
10005	8 mm	3/8"-24	No						
10006	8 mm	3/8"-24	Yes						
10003	5 mm	M8X1	No	Standard: 00 = 0 mm. Increments of: 01 = 10 mm. Maximum: Case Length minus 20 mm.	Standard: 07 = 70 mm. Increments of: 01 = 10 mm. Minimum: 02 = 20 mm. Maximum: 25 = 250 mm.	05 = 0.5 m ± .05 m 10 = 1.0 m ± .1 m	00 = none 02 = Yes		Model 7402
10004	5 mm	M8X1	Yes						
10007	8 mm	M10X1	No						
10008	8 mm	M10X1	Yes						

STANDARD (Metric threads) 10007 – 0 0 – 0 7 – 0 5 – 0 2

Model No. Series 3301

note: 3301 series has extra 2 digits at the end denoting certification requirements

MX 3 3 0 1 X X – □□ – □□ – □□ – 02 – □□

Model No.	Tip Diam.	Case Threads	Armor	Unthreaded Length	Case Length	ProbeLength	Connector	Agency Approval	Ext. Cable
MX330171	5 mm	1/4"-28	No	Standard: 00 = 0.0 in. Increments of: 05 = 0.5 in. Maximum: Case Length minus 1.0 in.	Standard: 30 = 3.0 in. Increments of: 05 = 0.5 in. Minimum: 10 = 1.0 in. Maximum: 95 = 9.5 in.	05 = 0.5 m ± .05 m 10 = 1.0 m ± .1 m 50 = 5 m 90 = 9 m (when no extension cable is used)	00 = none 02 = Yes	00 = none 05 = pending	MX 330130
MX330172	5 mm	1/4"-28	Yes						
MX330101	8 mm	3/8"-24	No						
MX330102	8 mm	3/8"-24	Yes						
MX330173	5 mm	M8X1	No	Standard: 00 = 0 mm. Increments of: 01 = 10 mm. Maximum: Case Length minus 20 mm.	Standard: 07 = 70 mm. Increments of: 01 = 10 mm. Minimum: 02 = 20 mm. Maximum: 25 = 250 mm.				
MX330174	5 mm	M8X1	Yes						
MX330103	8 mm	M10X1	No						
MX330104	8 mm	M10X1	Yes						

Example (English threads) MX330102 – 0 0 – 2 5 – 0 5 – 0 2 - 0 0

Model No. Series 3309

note: 3309 series has extra 2 digits at the end denoting certification requirements

MX 3 3 0 9 X X – □□ – □□ – □□ – 02 – □□

Model No.	Tip Diam.	Case Threads	Armor	Unthreaded Length	Case Length	ProbeLength	Connector	Agency Approval	Ext. Cable
MX3309XX				Same as 3301 above	Same as 3301 above	05 = 0.5 m ± .05 m 10 = 1.0 m ± .1 m	00 = none 02 = Yes	00 = none	MX 330930

See Attachment A

This product in 5 & 7 meter system lengths was introduced for the OEMs in the air compressor market. Metrix is building our database on this series. Advise the model number as in this example, put MX in front of it and you have our part number. We will advise price and availability.

Example: model no. 3309__ –00–30–05–02-00
becomes model no. MX3309__ –00–30–05–02-00

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Proximity Extension Cables
Series 10000, MX3301, & MX3309

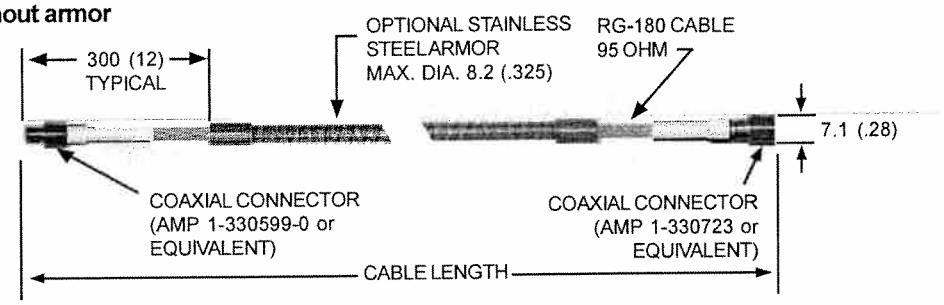
EXTENSION CABLES: How To Select

1) **Pick an Extension Cable from SAME SERIES as probe & electronics (across the page)**
2) **Given the probe length, pick a cable length so the sum of probe & cable add up to the system length**
3) **Decide with or without armor**

Dimensions in mm [inches]

Weights:
0.5 kg [1lb] for 5 m, unarmored
0.7 kg [1.5 lbs] for 5 m, armored
0.7 kg [1.5 lbs] for 9 m, unarmored
1.0 kg [2.2 lbs] for 9 m, armored

Extension Cable Temp Rating:
-40°C to +177°C



Metrix series 10000 Extension cables

Agency approval is standard

Model 7402 — ☐☐☐ — ☐☐

Probe Length		Cable Length	Armor		System Length
0.5 m	+	045 = 4.5 m	00 = NO	=	5 m
1.0 m		040 = 4.0 m			5 m
0.5 m		085 = 8.5 m	01 = YES		9 m
1.0 m		080 = 8.0 m			9 m

Example: 7402 - 0 4 5 - 0 0
(This cable would combine with a 0.5 m Probe Length for a 5 m System Length)

Series 3301 Extension cables

MX330130 — ☐☐☐ — ☐☐ ☐☐

Probe Length		Cable Length	Armor	Agency Approval		System Length
0.5 m	+	045 = 4.5 m	00 = NO	00 = NO	=	5 m
1.0 m		040 = 4.0 m				5 m
0.5 m		085 = 8.5 m	01 = YES	05 = YES		9 m
1.0 m		080 = 8.0 m				9 m

Example: MX330130 - 0 4 5 - 0 0 - 0 0
(This cable would combine with a 0.5 m Probe Length for a 5 m System Length)

Series 3309 Extension cables

MX330930 — ☐☐☐ — ☐☐ ☐☐

Probe Length		Cable Length	Armor	Agency Approval		System Length
0.5 m	+	045 = 4.5 m	00 = NO	00 = NO	=	5 m
1.0 m		040 = 4.0 m				5 m
0.5 m		065 = 6.5 m	01 = YES	05 = YES		7 m
1.0 m		060 = 6.0 m				7 m

Example: MX330930 - 0 6 0 - 0 0 - 0 0
(This cable would combine with a 1.0 m Probe Length for a 7m System Length)

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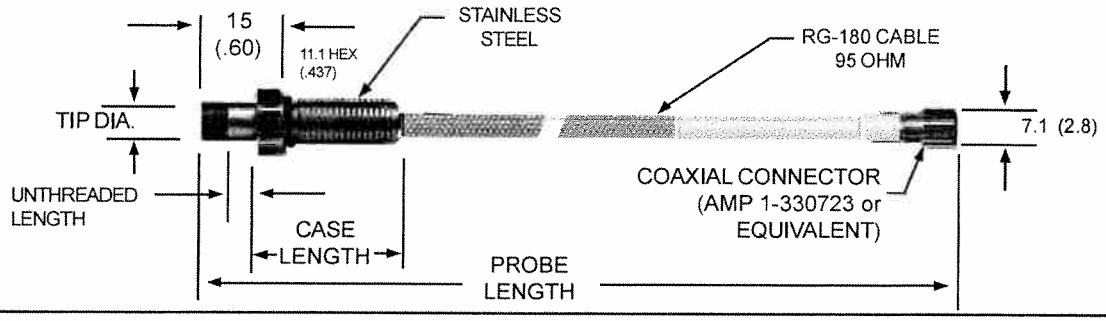
Proximity Probes, Reverse Mount
Series Metrix 10000, MX3301, & 7200

REVERSE MOUNTED PROBES: How To Select

ALL REQUIRE A PROBE HOUSING FOR MOUNTING SEE PAGE 1.34

Dimensions in mm [inches]



Weight:
0.5 kg [1lb]

Metrix Series 10000

Model — 1 0 0 ☐☐ — ☐☐ — ☐☐ — ☐☐ — ☐☐

Model No.	Tip Diam.	Case Threads	Unthreaded Length	Case Length	Probe Length	Connector	Extension Cable	Mounting
10026	8 mm	3/8"-24	02 =0.2 in.	12 =1.2 in.	05 = 0.5 m ± .05 m	02 = Yes	Use Model 7402 on page 1.14	Model 5499 is required page 1.34
		3/8"-24			10 = 1.0 m ± .10 m			
10030		M10X1	05 =5 mm.	30 =30 mm.	05 = 0.5 m ± .05 m			
		M10X1			10 = 1.0 m ± .10 m			

Standard (English threads): 10026 — 0 2 — 1 2 — 0 5 — 0 2

Standard (Metric threads): 10030 — 0 5 — 3 0 — 0 5 — 0 2

Series MX3301

Model MX 3 3 0 1 0 ☐☐ — ☐☐ — ☐☐ — ☐☐ — ☐☐ — ☐☐

Mounting using Model 5499 is required page 1.34

Model No.	Tip Diam.	Case Threads	Unthreaded Length	Case Length	Probe Length	Connector	Agency Approval	Extension Cable
MX330105	8 mm	3/8"-24	02 =0.2 in.	12 =1.2 in.	05 = 0.5 m ± .05 m	02 = Yes	00 = NO 05 = YES	Use MX330130 on page 1.16
		3/8"-24			10 = 1.0 m ± .10 m			
MX330106		M10X1	05 =5 mm.	30 =30 mm.	05 = 0.5 m ± .05 m			
		M10X1			10 = 1.0 m ± .10 m			

Standard (English threads): MX330105 — 0 2 — 1 2 — 0 5 — 0 2 — 0 0

Standard (Metric threads): MX330106 — 0 5 — 3 0 — 0 5 — 0 2 — 0 0

Series 7200

note: The 7200 series is interchangeable with Metrix 10000 series (component for component).

Model — MX 2 1 5 0 8 — 0 2 — 1 2 — ☐☐ — ☐☐

Model No.	Tip Diam.	Case Threads	Unthreaded Length	Case Length	Probe Length	Connector	Extension Cable	Mounting
21508	8 mm	3/8"-24	02 = 0.2 in.	12 = 1.2 in.	05 = 0.5 m ± .05 m	02 = Yes	Use MX21747 or Model 7402 page 1.16	Use Required Model 5499 page 1.34
					10 = 1.0 m ± .10 m			

Standard (English threads): MX21508 — 0 2 — 1 2 — 0 5 — 0 2

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Proximity Extension Cables
Series 10000, MX3301, & 7200

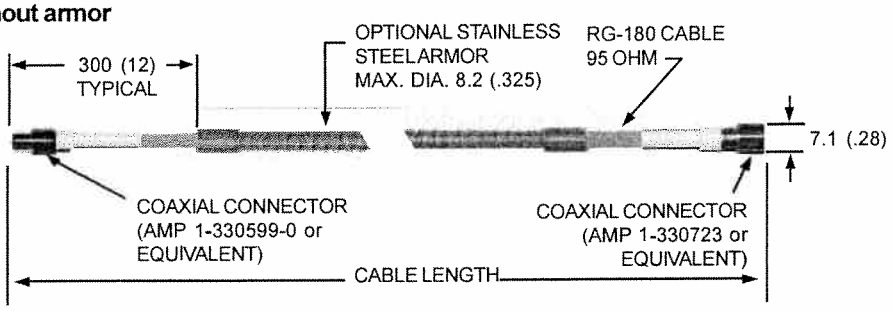
EXTENSION CABLES: How To Select

1) Pick an Extension Cable from SAME SERIES as probe & electronics (across the page)
2) Given the probe length, pick a cable length so the sum of probe & cable add up to the system length
3) Decide with or without armor

Dimensions in mm [inches]

Weights:
0.5 kg [1lb] for 5 m, unarmored
0.7 kg [1.5 lbs] for 5 m, armored
0.7 kg [1.5 lbs] for 9 m, unarmored
1.0 kg [2.2 lbs] for 9 m, armored

Extension Cable Temp Rating:
-40°C to +177°C



Extension cable for Metrix Series 10000 probes

Agency approval is standard

REQUIRED mounting accessory for all reverse mounted probes is Metrix Model 5499-xxx. It is a unique design for mounting in the machine, adjusting probe gap and terminating the probes.

For details see accessory section page 1.34

MODEL 7402 — ☐☐☐ — ☐☐

Probe Length		Cable Length	Armor		System Length
0.5 m		**045** = 4.5 m	**00** = NO		5 m
1.0 m	+	**040** = 4.0 m		=	5 m
0.5 m		**085** = 8.5 m	**01** = YES		9 m
1.0 m		**080** = 8.0 m			9 m

Example: 7402 - 0 4 5 - 0 0

(This cable would combine with a 0.5 m Length probe for a 5 m System Length)

Extension cable for probes from Series 3301

REQUIRED mounting accessory for all reverse mounted probes is Metrix Model 5499-xxx. It is a unique design for mounting in the machine, adjusting probe gap and terminating the probes.

For details see accessory section page 1.34

MODEL MX330130 — ☐☐☐ — ☐☐ — ☐☐

Probe Length		Cable Length	Armor	Agency Approval		System Length
0.5 m		**045** = 4.5 m	**00** = NO	**00** = NO		5 m
1.0 m	+	**040** = 4.0 m			=	5 m
0.5 m		**085** = 8.5 m	**01** = YES	**05** = YES		9 m
1.0 m		**080** = 8.0 m				9 m

Example: MX330130 - 0 4 0 - 0 0 - 0 0

(This cable would combine with a 1.0 m Length probe for a 5 m System Length)

Extension cable for Series 7200 probes

REQUIRED mounting accessory for all reverse mounted probes is Metrix Model 5499-xxx. It is a unique design for mounting in the machine, adjusting probe gap and terminating the probes.

For details see accessory section page 1.34

MODEL MX21747 — ☐☐☐ — ☐☐

Probe Length		Cable Length	Armor		System Length
0.5 m		**045** = 4.5 m	**00** = NO		5 m
1.0 m	+	**040** = 4.0 m		=	5 m
0.5 m		**085** = 8.5 m	**01** = YES		9 m
1.0 m		**080** = 8.0 m			9 m

Example: MX21747 - 0 8 0 - 0 0

(This cable would combine with a 1.0 m Length probe for a 9m System Length)

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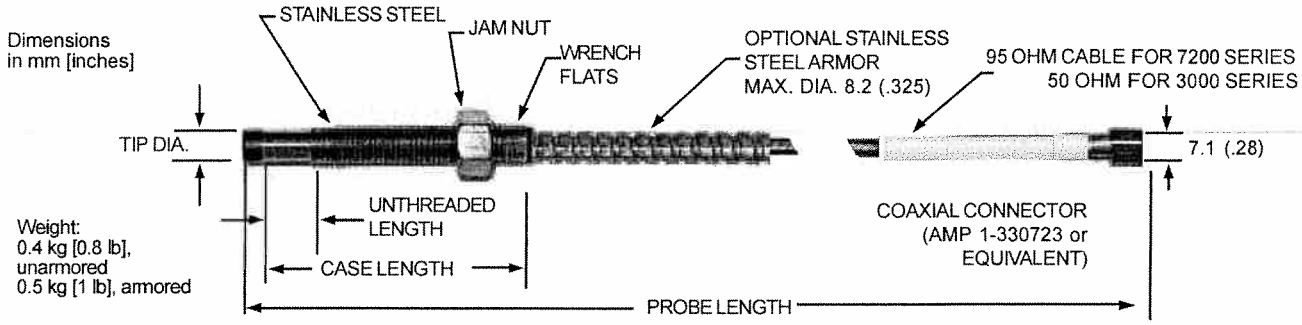
Proximity Probes
Series 7200 & 3000

PROXIMITY PROBES: SELECT a probe to suit the mechanical requirements of the machine and mates with the sames series extension cable & driver, or transmitter.



Model No. of Series 7200

MX 2 X X X X — □□ — □□ — □□ — **0 2**

Model No.	Tip Diam.	Case Threads	Armor	Unthreaded Length	Case Length	ProbeLength	Connector	Ext. Cable
21500	5 mm	1/4"-28	No	Standard: 00 = 0.0 in. Increments of: 05 = 0.5 in. Maximum: Case Length minus 1.0 in.	Standard: 30 = 3.0 in. Increments of: 05 = 0.5 in. Minimum: 10 = 1.0 in. Maximum: 95 = 9.5 in.	05 = 0.5 m ± .05 m 10 = 1.0 m ± .1 m	02 = Yes	Model 21747
21501	5 mm	1/4"-28	Yes					
21504	8 mm	3/8"-24	No					
21505	8 mm	3/8"-24	Yes					
22813	5 mm	M8X1	No	Standard: 00 = 0 mm. Increments of: 01 = 10 mm. Maximum: Case Length minus 20 mm.	Standard: 07 = 70 mm. Increments of: 01 = 10 mm. Minimum: 02 = 20 mm. Maximum: 25 = 250 mm.	05 = 0.5 m ± .05 m 10 = 1.0 m ± .1 m	02 = Yes	
22812	5 mm	M8X1	Yes					
22811	8 mm	M10X1	No					
22810	8 mm	M10X1	Yes					

STANDARD (Metric threads) MX22813 — 0 0 — 0 7 — 0 5 — 0 2

Model No. of Series 3000

** note: For probe length, SEE SPECIAL INSTRUCTIONS under extension cables. The probe length (electrical length) is expressed in inches by **doubling the physical length**.

MX 1 9 0 - X X for 0.190"coil dia.
MX 3 0 0 - X X for 0.300"coil dia.

□□ — □□ — ** — **0 2**

Model No.	Tip Diam.	Case Threads	Armor	Unthreaded Length	Case Length	Probe Length ** (2 x measured physical length inches)	Connector	Ext. Cables:
190-00	.190	1/4"-28	No	Standard: 00 = 0.0 in. Increments of: 05 = 0.5 in. Maximum: Case Length minus 1.0 in.	Standard: 30 = 3.0 in. Increments of: 05 = 0.5 in. Minimum: 11 = 1.1 in. Maximum: 96 = 9.6 in.	0 6 = Min. 6 in. 3 6 = Max 36 in. in 6 in. increments	02 = yes	see 4454 & 2789
190-01	.190	1/4"-28	Yes					
300-00	.300	3/8"-24	No					
300-01	.300	3/8"-24	Yes					
190-07	.190	M8X1	No	Standard: 00 = 0 mm. Increments of: 01 = 10 mm. Maximum: Case Length minus 20 mm.	Standard: 07 = 70 mm. Increments of: 01 = 10 mm. Minimum: 02 = 20 mm. Maximum: 25 = 250 mm.			
190-08	.190	M8X1	Yes					
300-11	.300	M10X1	No					
300-12	.300	M10X1	Yes					

STANDARD (Metric threads) MX190-01 — 0 0 — 32 — 18 — 0 2

For mounting accessories, see page 1.33

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Proximity Extension Cables
Series 7200 & 3000

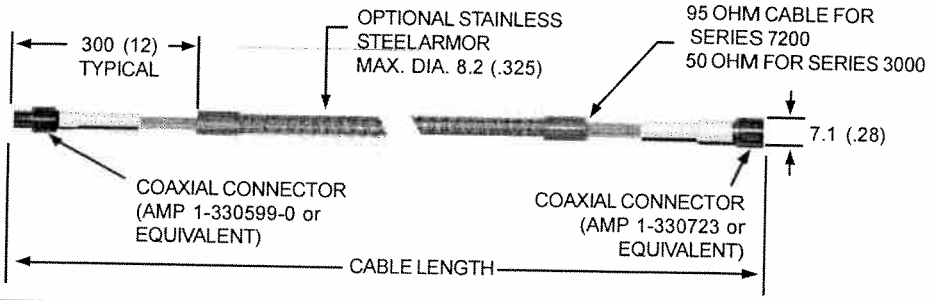
EXTENSION CABLES: How To Select

1) Pick an Extension Cable from SAME SERIES as probe (across the page) & electronics
2) Given the probe length, pick a cable length so the sum of probe & cable add up to the system length
3) Decide with or without armor

Dimensions in mm [inches]

Weights:
0.5 kg [1lb] for 5 m, unarmored
0.7 kg [1.5 lbs] for 5 m, armored
0.7 kg [1.5 lbs] for 9 m, unarmored
1.0 kg [2.2 lbs] for 9 m, armored

Extension Cable Temp Rating:
-40°C to +177°C



Series 7200 Extension Cables

MX21747 — ☐☐☐ — ☐☐

Probe Length	+	Cable Length	Armor	=	System Length

Extension cable for Metrix Series 10000 probes

MODEL 7402 — ☐☐☐ — ☐☐

Probe Length	+	Cable Length	Armor	=	System Length
0.5 m		045 = 4.5 m	00 = NO		5 m
1.0 m		040 = 4.0 m			5 m
0.5 m		085 = 8.5 m	01 = YES		9 m
1.0 m		080 = 8.0 m			9 m

Example: 7402 - 045 - 00
(This cable would combine with a 0.5 m Probe Length for a 5 m System Length)

Series 3000 Extension Cables

IMPORTANT! The 3000 series is a SPECIAL CASE when selecting & sizing
1. System lengths are in feet (15 & 20) but the cable & probe are in inches
2. The probe "physical length is doubled to get the "electrical length"
3. The same cable is used for either the .190 or the .300 dia. coil (tip dia.)

EXAMPLE: Given a .300 coil and system length 15 ft. & probe 24 inches long.
Probe might be MX300-XX-00-30-**48**-02 Armored Cable MX4454-**121**

MX2789 — ☐☐☐ (no armor)

Cable Length in inches + 2 X Probe Length in inches = System Length in feet (15 or 20)

Example: MX2789-121

MX4454 — ☐☐☐ (armored)

Cable Length in inches + 2 X Probe Length in inches = System Length in feet (15 or 20)

Example: MX4454-132

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