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Introduction

This brochure provides an overview of accessories for our industrial sensors. It supplements the specifications in the data sheets and operation manuals of the individual sensors. For each accessory, it is exactly specified for which sensor it is suitable and which one has been used most. So you can quickly and easily find the right accessories for your MTS sensor. In order to simplify the search, the articles are sorted in ascending order according to their part number.

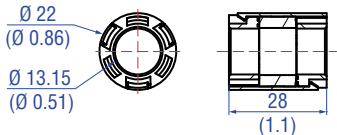
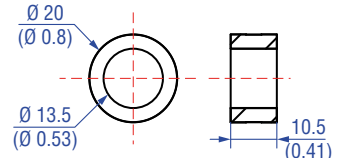
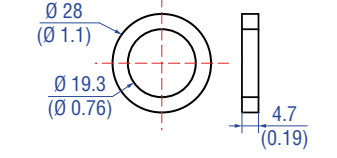
1. Position magnets

1.1 Ring magnets

Drawing	Name & part number	Description	Series & design
	Ring magnet OD33 Part no. 201 542-2	Material: PA ferrite GF20 Weight: Approx. 14 g Surface pressure: Max. 40 N/mm ² Fastening torque for M4 screws: 1 Nm Operating temperature: -40...+105 °C (-40...+221 °F)	E-Series EH, EE, ET (rod) G-Series GH, GT, GTE GB-Series GB R-Series RH, RD4, RT4 R-Series V RH5 T-Series TH (standard), TH (SIL)
	Ring magnet OD63.5 Part no. 201 554	Material: PA 66-GF30, magnet slugs potted Weight: Approx. 35 g Surface pressure: Max. 20 N/mm ² Fastening torque for M4 screws: 1 Nm Operating temperature: -40...+75 °C (-40...+167 °F)	E-Series EH, EE, ET (rod) G-Series GH, GT, GTE GB-Series GB R-Series RH, RD4, RT4, RF R-Series V RH5 T-Series TH (standard)

Recommended accessories are marked with the following sign:

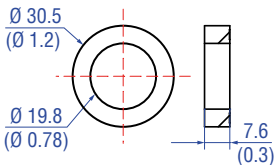
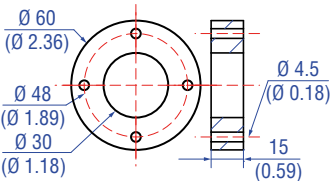
Controlling design dimensions are in millimeters and measurements in () are in inches

Drawing	Name & part number	Description	Series & design
	System magnet Part no. 253 928	Material: Composite POM Weight: Approx. 14 g Surface pressure: Max. 20 N/mm ² Operating temperature: -40...+75 °C (-40...+167 °F)	E-Series EH, EE, ET (rod) G-Series GH, GT, GTE GB-Series GB R-Series RH, RD4, RT4 R-Series V RH5 T-Series TH (standard)
	Ring magnet OD20 Part no. 254 012	Material: Composite neobond Weight: Approx. 8.5 g Surface pressure: Max. 20 N/mm ² Operating temperature: -40...+75 °C (-40...+167 °F)	E-Series EH, EE, ET (rod) G-Series GH, GT, GTE GB-Series GB R-Series RH, RD4, RT4 R-Series V RH5 T-Series TH (standard)
	Ring magnet OD28 Part no. 400 424	Material: Composite PA ferrite GF20 Weight: Approx. 6 g Surface pressure: Max. 20 N/mm ² Operating temperature: -40...+100 °C (-40...+212 °F)	E-Series EH, EE, ET (rod) G-Series GH, GT, GTE GB-Series GB R-Series RH, RD4, RT4, RF R-Series V RH5 T-Series TH (standard), TH (SIL)

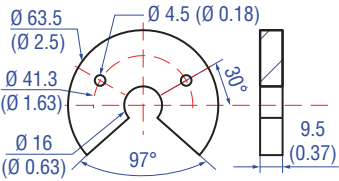
Drawing	Name & part number	Description	Series & design
	Ring magnet OD25.4 Part no. 400 533	Material: PA ferrite Weight: Approx. 10 g Surface pressure: Max. 40 N/mm ² Operating temperature: -40...+105 °C (-40...+221 °F)	E-Series
			EH, EE, ET (rod)
	Ring magnet OD17.4 Part no. 401 032	Material: PA neobond Weight: Approx. 5 g Surface pressure: Max. 20 N/mm ² Operating temperature: -40...+105 °C (-40...+221 °F)	G-Series
			GH, GT, GTE
	Ring magnet Part no. 401 468	Material: PA ferrite Weight: Approx. 17 g Surface pressure: Max. 20 N/mm ² Operating temperature: -40...+100 °C (-40...+212 °F) Contact application engineering for handling guidelines.	GB-Series
			GB
			R-Series
			RH, RD4, RT4, RF
			R-Series V
			RH5
			T-Series
			TH (standard)

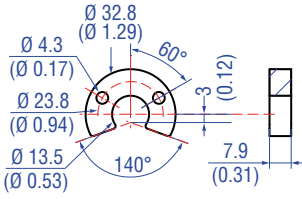
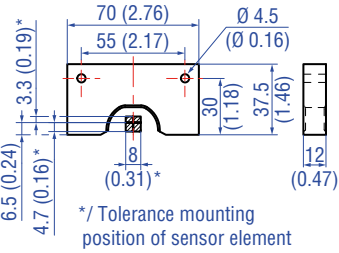
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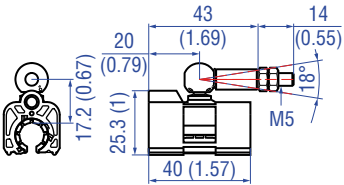
Drawing	Name & part number	Description	Series & design
	Ring magnet Part no. 402 316	Material: PA ferrite coated Weight: Approx. 13 g Surface pressure: Max. 20 N/mm ² Operating temperature: -40...+100 °C (-40...+212 °F)	E-Series
			EH, EE, ET (rod)
	Ring magnet OD60 Part no. MT0162	Material: AlCuMgPb, magnets compound-filled Weight: Approx. 90 g Surface pressure: Max. 20 N/mm ² Fastening torque for M4 screws: 1 Nm Operating temperature: -40...+75 °C (-40...+167 °F)	E-Series
			EH, EE, ET (rod)
			G-Series
			GH, GT, GTE
			GB-Series
			GB
			R-Series
			RH, RD4, RT4, RF
			R-Series V
			RH5
			T-Series
			TH (standard), TH (SIL)
			E-Series
			EH, EE, ET (rod)
			G-Series
			GH, GT, GTE
			GB-Series
			GB
			R-Series
			RH, RD4, RT4, RF
			R-Series V
			RH5
			T-Series
			TH (standard)

1.2 U-magnets

Drawing	Name & part number	Description	Series & design
	U-magnet OD63.5 Part no. 201 553	Material: PA 66-GF30, magnets compound-filled Weight: Approx. 26 g Surface pressure: 20 N/mm ² Fastening torque for M4 screws: 1 Nm Operating temperature: -40...+75 °C (-40...+167 °F)	E-Series
			EH, EE, ET (rod)
			G-Series
			GH, GT, GTE
			GB-Series
			GB
			R-Series
			RH, RD4, RT4, RF
			R-Series V
			RH5
			T-Series
			TH (standard), TH (SIL)

Drawing	Name & part number	Description	Series & design
	U-magnet OD33 Part no. 251 416-2	Material: PA ferrite GF20 Weight: Approx. 11 g Surface pressure: Max. 40 N/mm ² Fastening torque for M4 screws: 1 Nm Operating temperature: -40...+105 °C (-40...+221 °F)	E-Series EH, EP, EE, ET (rod/profile) G-Series GH, GP, GT, GTE GB-Series GB R-Series RH, RP, RD4, RT4, RF + HFP R-Series V RH5, RP5 T-Series TH (standard), TH (SIL)
	U-magnet Part no. 252 185	Material: AlMg4.5Mn, black anodised; magnets compound-filled Weight: Approx. 125 g Surface pressure: Max. 20 N/mm ² Fastening torque for M4 screws: 4 Nm Operating temperature: -40...+75 °C (-40...+167 °F) This magnet may influence the sensor performance specifications for some applications.	E-Series EH, EP, EL, EE, ET (rod/profile) G-Series GH, GP, GT, GTE GB-Series GB R-Series RH, RP, RD4, RT4, RF R-Series V RH5, RP5 T-Series TH (standard), TH (SIL)

1.3 Magnet sliders

Drawing	Name & part number	Description	Series & design
	Magnet slider S, joint at top Part no. 252 182	Material: GRP, magnet hard ferrite Weight: Approx. 35 g Operating temperature: -40...+85 °C (-40...+185 °F)	E-Series EP, EL, ET (profile) G-Series GP R-Series RP R-Series V RP5

Recommended accessories are marked with the following sign: 

Controlling design dimensions are in millimeters and measurements in () are in inches

Drawing	Name & part number	Description	Series & design
	Magnet slider N longer ball-joint arm Part no. 252 183	Material: GRP, magnet hard ferrite Weight: Approx. 35 g Operating temperature: -40...+85 °C (-40...+185 °F)	E-Series EP, EL, ET (profile) G-Series GP R-Series RP R-Series V RP5
	Magnet slider V, joint at front Part no. 252 184	Material: GRP, magnet hard ferrite Weight: Approx. 35 g Operating temperature: -40...+85 °C (-40...+185 °F)	E-Series EP, EL, ET (profile) G-Series GP R-Series RP R-Series V RP5
	Magnet slider G, backlash free Part no. 253 421	Material: GRP, magnet hard ferrite Weight: Approx. 25 g Operating temperature: -40...+85 °C (-40...+185 °F)	E-Series EP, EL, ET (profile) G-Series GP R-Series RP R-Series V RP5
	Magnet slider P, with additional end plates Part no. 253 673	Material: GRP, magnet hard ferrite Weight: Approx. 38 g Operating temperature: -40...+75 °C (-40...+167 °F)	E-Series EP, EL, ET (profile) G-Series GP R-Series RP R-Series V RP5

1.4 Block magnets

Drawing	Name & part number	Description	Series & design
	Block magnet K Part no. 251 298-2	Material: XOLOX Neobond 50L Weight: Approx. 22 g Surface pressure: Max. 20 N/mm ² Fastening torque for M4 screws: 1 Nm Operating temperature: -40...+105 °C (-40...+221 °F) This magnet may influence the sensor performance specifications for some applications.	E-Series EH, EP, EL, EE, ET (rod/profile) G-Series GH, GP, GT, GTE GB-Series GB R-Series RH, RP, RD4, RF R-Series V RH5, RP5 T-Series TH (standard), TH (SIL)
	Block magnet L Part no. 403 448	Material: Plastic carrier with hard ferrite magnet Weight: Approx. 20 g Fastening torque for M4 screws: 1 Nm Operating temperature: -40...+75 °C (-40...+167 °F) This magnet may influence the sensor performance specifications for some applications.	E-Series EH, EP, EP2, EL, EE, ET (rod/profile) G-Series GH, GP, GT, GTE GB-Series GB R-Series RH, RP, RD4, RF R-Series V RH5, RP5 T-Series TH (standard), TH (SIL)

1.5 Floats

Drawing	Name & part number	Description	Series & design
	Float Part no. 200 938-2	Material: Stainless steel (AISI 316L) Weight offset: Yes Pressure: 8.6 bar (125 psi) Magnet offset: No Specific gravity: Max. 0.74 Operating temperature: -40...+125 °C (-40...+257 °F)	E-Series EH, EE, ET (rod) G-Series GH, GT, GTE GB-Series GB R-Series RH, RD4, RT4, RF R-Series V RH5 T-Series TH (standard), TH (SIL)

- Be sure that the float specific gravity is at least 0.05 less than that of the measured liquid as a safety margin at ambient temperature.
- For interface measurement: A minimum of 0.05 specific gravity differential is required between the upper and lower liquids.
- When the magnet is not shown, the magnet is positioned at the center line of float.

- An offset weight is installed in the float to bias or tilt the float installed on the sensor tube. So the float remains in contact with the sensor tube at all times and guarantees permanent potential equalization of the float. The offset is required for installations that must conform to hazardous location standards.

Controlling design dimensions are in millimeters and measurements in () are in inches

Drawing	Name & part number	Description	Series & design
	Float Part no. 201 605-2	Material: Stainless steel 1.4571 (AISI 316 Ti) Weight offset: Yes Pressure: 4 bar (60 psi) Magnet offset: Yes Specific gravity: Max. 0.6 Operating temperature: -40...+125 °C (-40...+257 °F)	E-Series EH, EE, ET (rod) G-Series GH, GT, GTE GB-Series GB R-Series RH, RD4, RT4, RF R-Series V RH5 T-Series TH (standard)
	Float Part no. 201 606-2	Material: Stainless steel 1.4571 (AISI 316 Ti) Weight offset: Yes Pressure: 4 bar (60 psi) Magnet offset: Yes Specific gravity: 0.93 ± 0.01 Operating temperature: -40...+125 °C (-40...+257 °F)	E-Series EH, EE, ET (rod) G-Series GH, GT, GTE GB-Series GB R-Series RH, RD4, RT4, RF R-Series V RH5 T-Series TH (standard)
	Float Part no. 251 981-2	Material: Stainless steel (AISI 316L) Weight offset: Yes Pressure: 29.3 bar (425 psi) Magnet offset: No Specific gravity: Max. 0.67 Operating temperature: -40...+125 °C (-40...+257 °F)	E-Series EH, EE, ET (rod) G-Series GH, GT, GTE GB-Series GB R-Series RH, RD4, RT4, RF R-Series V RH5 T-Series TH (standard)

- Be sure that the float specific gravity is at least 0.05 less than that of the measured liquid as a safety margin at ambient temperature.
- For interface measurement: A minimum of 0.05 specific gravity differential is required between the upper and lower liquids.
- When the magnet is not shown, the magnet is positioned at the center line of float.

- An offset weight is installed in the float to bias or tilt the float installed on the sensor tube. So the float remains in contact with the sensor tube at all times and guarantees permanent potential equalization of the float. The offset is required for installations that must conform to hazardous location standards.

Controlling design dimensions are in millimeters and measurements in () are in inches

Drawing	Name & part number	Description	Series & design
	Float Part no. 251 982-2	Material: Stainless steel (AISI 316L) Weight offset: Yes Pressure: 29.3 bar (425 psi) Magnet offset: No Specific gravity: 0.93 ± 0.01 Operating temperature: -40...+125 °C (-40...+257 °F)	E-Series EH, EE, ET (rod) G-Series GH, GT, GTE GB-Series GB R-Series RH, RD4, RT4, RF R-Series V RH5 T-Series TH (standard)
	Float Part no. 251 983-2	Material: Stainless steel (AISI 316L) Weight offset: Yes Pressure: 29.3 bar (425 psi) Magnet offset: No Specific gravity: 1.06 ± 0.01 Operating temperature: -40...+125 °C (-40...+257 °F)	E-Series EH, EE, ET (rod) G-Series GH, GT, GTE GB-Series GB R-Series RH, RD4, RT4, RF R-Series V RH5 T-Series TH (standard)
	Float Part no. 251 387-2	Material: Stainless steel (AISI 316L) Weight offset: Yes Pressure: 22.4 bar (325 psi) Magnet offset: No Specific gravity: Max. 0.48 Operating temperature: -40...+125 °C (-40...+257 °F)	E-Series EH, EE, ET (rod) G-Series GH, GT, GTE GB-Series GB R-Series RH, RD4, RT4, RF R-Series V RH5 T-Series TH (standard), TH (SIL)

- Be sure that the float specific gravity is at least 0.05 less than that of the measured liquid as a safety margin at ambient temperature.
- For interface measurement: A minimum of 0.05 specific gravity differential is required between the upper and lower liquids.
- When the magnet is not shown, the magnet is positioned at the center line of float.

- An offset weight is installed in the float to bias or tilt the float installed on the sensor tube. So the float remains in contact with the sensor tube at all times and guarantees permanent potential equalization of the float. The offset is required for installations that must conform to hazardous location standards.

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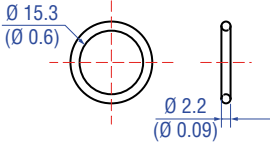
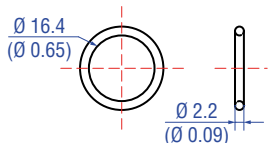
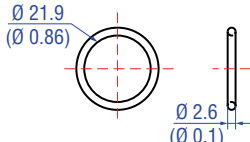
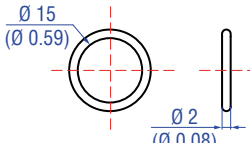
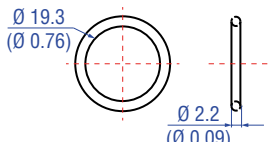
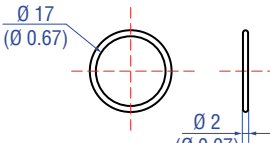
Drawing	Name & part number	Description	Series & design
	Float Part no. 251 447	Material: Stainless steel (AISI 304) Weight: Ca. 42 ± 3 g Specific gravity: Max. 0.72 Pressure: Max. 60 bar (870 psi) Operating temperature: -40...+145 °C (-40...+293 °F)	E-Series EH, EE, ET (rod) G-Series GH, GT, GTE GB-Series GB R-Series RH, RD4, RT4, RF R-Series V RH5
	Float Part no. 251 469-2	Material: Stainless steel (AISI 316L) Weight offset: Yes Pressure: 29.3 bar (425 psi) Magnet offset: No Specific gravity: Max. 0.45 Operating temperature: -40...+125 °C (-40...+257 °F)	E-Series EH, EE, ET (rod) G-Series GH, GT, GTE GB-Series GB R-Series RH, RD4, RT4, RF R-Series V RH5 T-Series TH (standard)
	Stop collar for Ø 10 mm Part no. 560 777	Provides end of stroke stops for float Material: Stainless steel 1.4301 (AISI 304) Weight: Approx. 30 g Hex key 1/64" required	E-Series EH, EE, ET (rod) G-Series GH, GT, GTE GB-Series GB R-Series RH, RD4, RT4 R-Series V RH5 T-Series TH (standard), TH (SIL)

- Be sure that the float specific gravity is at least 0.05 less than that of the measured liquid as a safety margin at ambient temperature.
- For interface measurement: A minimum of 0.05 specific gravity differential is required between the upper and lower liquids.
- When the magnet is not shown, the magnet is positioned at the center line of float.

- An offset weight is installed in the float to bias or tilt the float installed on the sensor tube. So the float remains in contact with the sensor tube at all times and guarantees permanent potential equalization of the float. The offset is required for installations that must conform to hazardous location standards.

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2. O-rings

Drawing	Name & part number	Description	Series & design
	O-ring for threaded flange M18×1.5-6g Part no. 401 133	Material: Fluoroelastomer Durometer: 75 ± 5 Shore A Operating temperature: -40...+204 °C (-40...+400 °F)	E-Series EH, ET (rod) G-Series GH, GT GB-Series GB R-Series RH R-Series V RH5 T-Series TH (standard), TH (SIL)
	O-ring for threaded flange ¾"-16 UNF-3A Part no. 560 315	Material: Fluoroelastomer Durometer: 75 ± 5 Shore A Operating temperature: -40...+204 °C (-40...+400 °F)	E-Series EH, ET (rod) G-Series GH, GT GB-Series GB R-Series RH R-Series V RH5 T-Series TH (standard), TH (SIL)
	O-ring for pressure fit flange Ø 26.9 mm Part no. 560 705	Material: Nitrile rubber Operating temperature: -53...+107 °C (-65...+225 °F)	R-Series RD4
	O-ring for pressure fit flange Ø 18 mm Part no. 560 853	Material: Fluoroelastomer Durometer: 75 Shore A Operating temperature: -40...+200 °C (-40...+392 °F)	GB-Series GB
	O-ring for threaded flange M22×1.5-6g Part no. 561 337	Material: FPM Durometer: 75 Shore A Operating temperature: -20...+200 °C (-6...+392 °F)	R-Series RH R-Series V RH5
	O-ring for pressure fit flange Ø 21 mm Part no. 561 438	Material: FKM Durometer: 75 Shore A Operating temperature: -18...+200 °C (-0.4...+392 °F)	GB-Series GB

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3. Back-up rings

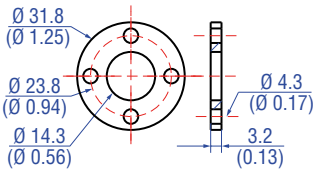
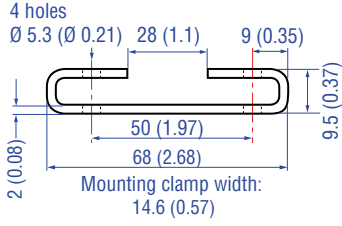
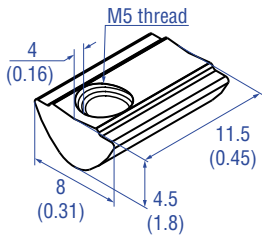


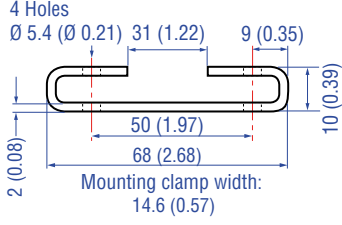
Drawing	Name & part number	Description	Series & design
	Back-up ring for pressure fit flange Ø 26.9 mm Part no. 560 629	Material: Polymyte Durometer: 90 Shore A	R-Series RD4
	Back-up ring for pressure fit flange Ø 18 mm Part no. 561 115	Material: PTFE + 60 % bronze	GB-Series GB
	Back-up ring for pressure fit flange Ø 21 mm Part no. 561 439	Material: PTFE	GB-Series GB

4. Mounting accessories

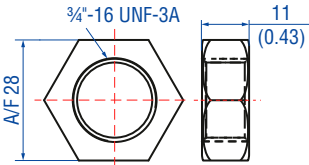
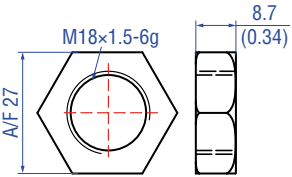
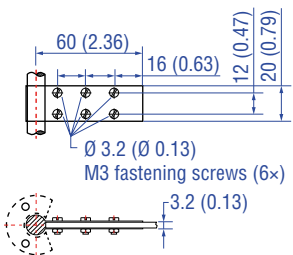
4.1 General accessories

Photo/Drawing	Name & part number	Description	Series & design
	Rod end with M6 thread Part no. 254 210	Material: Galvanized steel	E-Series ER
	Rod end with 1/4"-28 UNF thread Part no. 254 235	Material: Galvanized steel	E-Series ER

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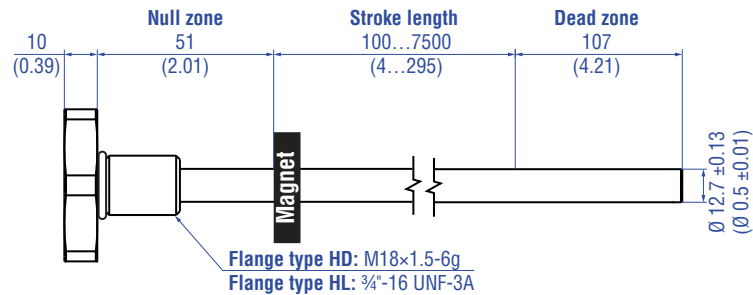
Photo/Drawing	Name & part number	Description	Series & design
	Magnet spacer Part no. 400 633	Material: Aluminum Weight: Approx. 5 g Surface pressure: Max. 20 N/mm ² Fastening torque for M4 screws: 1 Nm	E-Series EH, EE, ET (rod) G-Series GH, GT, GTE GB-Series GB R-Series RH, RD4, RT4 R-Series V RH5 T-Series TH (standard), TH (SIL)
	Mounting clamp Part no. 400 802	Material: Stainless steel (AISI 304)	E-Series ET (profile) G-Series GP R-Series RP HFP R-Series V RP5
	T-nut Part no. 401 602	Fastening torque for M5 screw: 4.5 Nm	G-Series GP R-Series RP R-Series V RP5
	Threaded flange 3/4"-16 UNF-3A Part no. 402 641	Material: Stainless steel 1.4305 (AISI 303)	R-Series RF
	Threaded flange M18x1.5-6g Part no. 402 704	Material: Stainless steel 1.4305 (AISI 303)	R-Series RF
	Mounting clamp Part no. 403 508	Material: Stainless steel 1.4301/1.4305 (AISI 304/303)	E-Series EP, EP2, EL, ER

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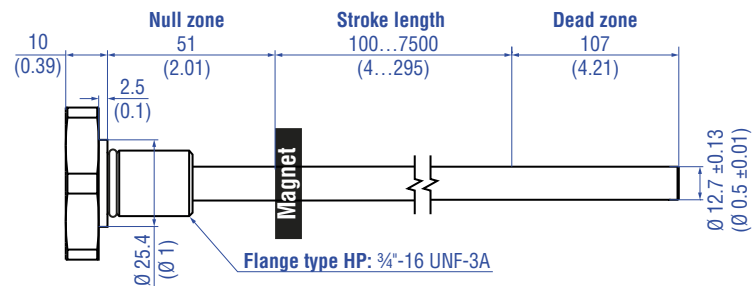
Photo/Drawing	Name & part number	Description	Series & design
 <p>Technical drawing of a hex jam nut. The drawing shows a top view and a side view. The top view is a hexagon with a central hole. The side view shows the nut's profile. Dimensions are: outer diameter 28 mm (1.10 in.), inner diameter 16 mm (0.63 in.), and height 11 mm (0.43 in.). The thread specification is 3/4"-16 UNF-3A.</p>	<p>Hex jam nut 3/4"-16 UNF-3A Part no. 500 015</p>	<p>Material: Steel, zinc plated</p>	<p>E-Series</p> <p>EH, ET (rod)</p> <p>G-Series</p> <p>GH, GT</p> <p>GB-Series</p> <p>GB</p> <p>R-Series</p> <p>RH, RD4, RT4, RF</p> <p>R-Series V</p> <p>RH5</p> <p>T-Series</p> <p>TH (standard), TH (SIL)</p>
 <p>Technical drawing of a hex jam nut. The drawing shows a top view and a side view. The top view is a hexagon with a central hole. The side view shows the nut's profile. Dimensions are: outer diameter 27 mm (1.06 in.), inner diameter 16 mm (0.63 in.), and height 8.7 mm (0.34 in.). The thread specification is M18x1.5-6g.</p>	<p>Hex jam nut M18x1.5-6g Part no. 500 018</p>	<p>Material: Steel, zinc plated</p>	<p>E-Series</p> <p>EH, ET (rod)</p> <p>G-Series</p> <p>GH, GT</p> <p>GB-Series</p> <p>GB</p> <p>R-Series</p> <p>RH, RD4, RT4, RF</p> <p>R-Series V</p> <p>RH5</p> <p>T-Series</p> <p>TH (standard), TH (SIL)</p>
 <p>Technical drawing of a fixing clip. The drawing shows a top view and a side view. The top view shows a rectangular clip with six holes. The side view shows the clip's profile. Dimensions are: total length 60 mm (2.36 in.), hole spacing 16 mm (0.63 in.), hole diameter 3.2 mm (0.13 in.), and clip height 12 mm (0.47 in.) and 20 mm (0.79 in.). The clip is secured with six M3 fastening screws.</p>	<p>Fixing clip Part no. 561 481</p>	<p>Application: Used to secure sensor rods (Ø 10 mm (Ø 0.39 in.)) when using an U-magnet or block magnet Material: Brass, non-magnetic</p>	<p>E-Series</p> <p>EH, ET (rod), EE</p> <p>G-Series</p> <p>GH, GT, GTE</p> <p>GB-Series</p> <p>GB</p> <p>R-Series</p> <p>RH, RD4, RT4</p> <p>R-Series V</p> <p>RH5</p> <p>T-Series</p> <p>TH (standard), TH (SIL)</p>

4.2 Optional pressure rods for R-Series RF

HD (with threaded flange M18×1.5-6g)/HL (with threaded flange ¾"-16 UNF-3A) optional sensor rod



HP (with threaded flange ¾"-16 UNF-3A with raised-face) optional sensor rod



Controlling design dimensions are in millimeters and measurements in () are in inches

TECHNICAL DATA

Operating conditions

Operating pressure 350 bar (5076 psi)/700 bar (10153 psi) peak (at 10×1 min) for sensor rod

Design / Material

Sensor flange Stainless steel 1.4305 (AISI 303)

Sensor rod Stainless steel 1.4301 (AISI 304)

Stroke length 100...7500 mm (4...295 in.)



ORDER CODE

1	2	3	4	5	6	7
H						
a		b				

a		Design
H	D	Threaded flange M18×1.5-6g
H	L	Threaded flange ¾"-16 UNF-3A
H	P	Threaded flange ¾"-16 UNF-3A with raised-face

b		Stroke length
X	X	X X M 0100...7500 mm
Standard stroke length (mm)		Ordering steps
100 ... 1000 mm		50 mm
1000 ... 5000 mm		100 mm
5000 ... 7500 mm		250 mm
X	X	X X U 001.0...295.0 in.
Standard stroke length (in.)		Ordering steps
4 ... 40 in.		2 in.
40 ... 197 in.		4 in.
197 ... 295 in.		10 in.

DELIVERY

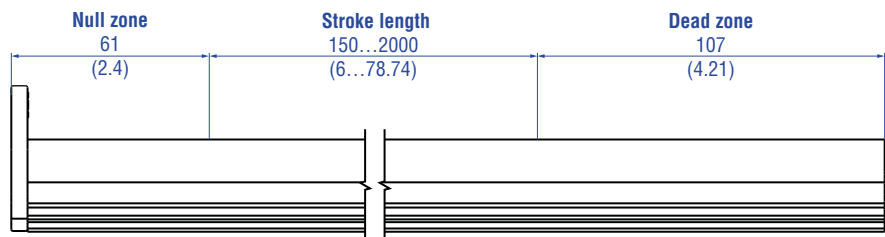
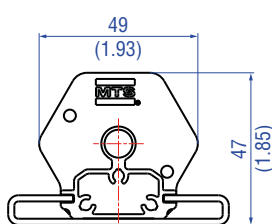
-  RF pressure rod
-  O-ring

4.3 Optional profile for R-Series RF

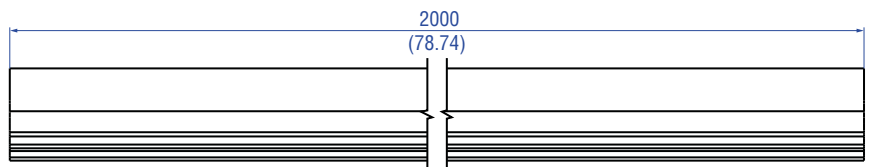
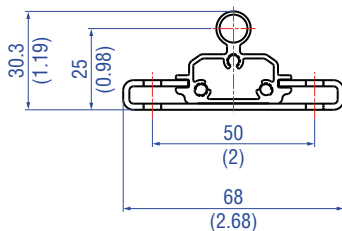
The HFP consists of a basic profile. Depending on the required stroke length, different extension profiles can be added to this profile. The profiles are put together on site and sealed with an end cap. The HFP can be used with the following magnets:

- U-magnet OD33 (part no. 251 416-2), see chapter 1.2 on page 6
- U-magnet (part no. 252 185), see chapter 1.2 on page 6
- Block magnet K (part no. 251 298-2), see chapter 1.4 on page 9
- Block magnet L (part no. 403 448), see chapter 1.4 on page 9

HFP base profile



HFP extension profile (0...9 pieces, depending on ordered stroke length)



Controlling design dimensions are in millimeters and measurements in () are in inches

TECHNICAL DATA

Operating conditions

Ingress protection IP30

Design / Material

Sensor profile Aluminum

Stroke length HFP base profile: 150...2000 mm (6...78.74 in.)
HFP extension profile: 2000 mm (78.74 in.)

ORDER CODE

1	2	3	4	5	6	7	8	9
H	F	P						
a			d					

a	Design		
H	F	P	Profile

b	Stroke length					
X	X	X	X	X	M	00150...20000 mm
Standard stroke length (mm)		Ordering steps				
150 ... 1000 mm		50 mm				
1000 ... 5000 mm		100 mm				
5000 ... 10000 mm		250 mm				
10000 ... 15000 mm		500 mm				
15000 ... 20000 mm		1000 mm				

X	X	X	X	X	U	0006.0...0787.0 in.
Standard stroke length (in.)		Ordering steps				
6 ... 40 in.		2 in.				
40 ... 197 in.		4 in.				
197 ... 393 in.		10 in.				
393 ... 590 in.		19 in.				
590 ... 787 in.		39 in.				

DELIVERY



- 1 × base profile
- Number of extension profiles depending on the stroke length ordered
- 5 × mounting clamps for each base profile or extension profile
- 4 × connecting pins and 1 × seal for each extension profile
- 1 × end cap

Accessories have to be ordered separately.

5. Connectors

5.1 Overview

E-Series	G-Series
Analog – D34 <i>with 1 × M12 male connector</i>	Analog – D60 <i>with 1 × M16 male connector</i>
Mating connector	Mating connector
M12 A-coded female connector (4 pin/5 pin), straight Part no. 370 677	M16 female connector (6 pin), straight Part no. 370 423
M12 A-coded female connector (5 pin), angled Part no. 370 678	M16 female connector (6 pin), angled Part no. 370 460
CANbus – D34 <i>with 1 × M12 male connector</i>	Start/Stop – D60 <i>with 1 × M16 male connector</i>
Mating connector	Mating connector
M12 A-coded female connector (4 pin/5 pin), straight Part no. 370 677	M16 female connector (6 pin), straight Part no. 370 423
M12 A-coded female connector (5 pin), angled Part no. 370 678	M16 female connector (6 pin), angled Part no. 370 460
IO-Link – D44 <i>with 1 × M12 male connector</i>	GB-Series
Mating connector	Analog – D34 <i>with 1 × M12 male connector</i>
M12 A-coded female connector (4 pin/5 pin), straight Part no. 370 677	Mating connector
M12 A-coded female connector (5 pin), angled Part no. 370 678	M12 A-coded female connector (4 pin/5 pin), straight Part no. 370 677
Start/Stop – D84 <i>with 1 × M12 male connector</i>	M12 A-coded female connector (5 pin), angled Part no. 370 678
Mating connector	Analog – D60 <i>with 1 × M16 male connector</i>
M12 A-coded female connector (8 pin), straight Part no. 370 694	Mating connector
M12 A-coded female connector (8 pin), angled Part no. 370 699	M16 female connector (6 pin), straight Part no. 370 423
SSI – D84 <i>with 1 × M12 male connector</i>	M16 female connector (6 pin), angled Part no. 370 460
Mating connector	SSI – D70 <i>with 1 × M16 male connector</i>
M12 A-coded female connector (8 pin), straight Part no. 370 694	Mating connector
M12 A-coded female connector (8 pin), angled Part no. 370 699	M16 female connector (7 pin), straight Part no. 370 624
	M16 female connector (7 pin), angled Part no. 560 779
	SSI – D84 <i>with 1 × M12 male connector</i>
	Mating connector
	M12 A-coded female connector (8 pin), straight Part no. 370 694
	M12 A-coded female connector (8 pin), angled Part no. 370 699

Continued on the next page →

R-Series	
Analog – D60 <i>with 1 × M16 male connector</i>	
Mating connector	
M16 female connector (6 pin), straight Part no. 370 423	
M16 female connector (6 pin), angled Part no. 370 460	
CANbus – D54 <i>with 1 × M8 male connector, 1 × M12 female connector & 1 × M12 male connector</i>	
Function	Mating connector
Power	M8 female connector (4 pin), straight Part no. 370 504
Signal	M12 A-coded male connector (5 pin), straight Part no. 561 665
Signal	M12 A-coded female connector (4 pin/5 pin), straight Part no. 370 677
Signal	M12 A-coded female connector (5 pin), angled Part no. 370 678
CANbus – D60 <i>with 1 × M16 male connector</i>	
Mating connector	
M16 female connector (6 pin), straight Part no. 370 423	
M16 female connector (6 pin), angled Part no. 370 460	
CANbus – D62 <i>with 2 × M16 male connector</i>	
Mating connector	
M16 female connector (6 pin), straight Part no. 370 423	
M16 female connector (6 pin), angled Part no. 370 460	
EtherCAT® – D56 <i>with 1 × M8 male connector & 2 × M12 female connector</i>	
Function	Mating connector
Power	M8 female connector (4 pin), straight Part no. 370 504
Signal	M12 D-coded male connector (4 pin), straight Part no. 370 523
EtherNet/IP™ – D56 <i>with 1 × M8 male connector & 2 × M12 female connector</i>	
Function	Mating connector
Power	M8 female connector (4 pin), straight Part no. 370 504
Signal	M12 D-coded male connector (4 pin), straight Part no. 370 523

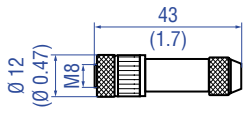
R-Series	
POWERLINK – D56 <i>with 1 × M8 male connector & 1 × M12 female connector</i>	
Function	Mating connector
Power	M8 female connector (4 pin), straight Part no. 370 504
Signal	M12 D-coded male connector (4 pin), straight Part no. 370 523
PROFIBUS – D53 <i>with 1 × M8 male connector, 1 × M12 female connector & 1 × M12 male connector</i>	
Function	Mating connector
Power	M8 female connector (4 pin), straight Part no. 370 504
Signal	M12 B-coded male connector (5 pin), straight Part no. 560 884
Signal	M12 B-coded male connector (5 pin), angled Part no. 370 515
Signal	M12 B-coded female connector (5 pin), straight Part no. 560 885
Signal	M12 B-coded female connector (5 pin), angled Part no. 370 514
PROFIBUS – D63 <i>with 1 × M16 female connector & 1 × M16 male connector</i>	
Mating connector	
M16 male connector (6 pin), straight Part no. 370 427	
M16 male connector (6 pin), angled Part no. 370 621	
M16 female connector (6 pin), straight Part no. 370 423	
M16 female connector (6 pin), angled Part no. 370 460	
PROFINET – D58 <i>with 1 × M12 female connector & 2 × M12 male connector</i>	
Function	Mating connector
Power	M12 A-coded female connector (4 pin/5 pin), straight Part no. 370 677
Signal	M12 D-coded male connector (4 pin), straight Part no. 370 523
SSI – D70 <i>with 1 × M16 male connector</i>	
Mating connector	
M16 female connector (7 pin), straight Part no. 370 624	
M16 female connector (7 pin), angled Part no. 560 779	

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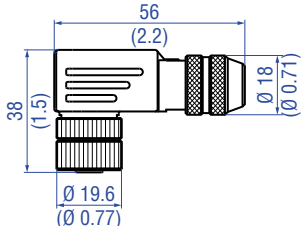
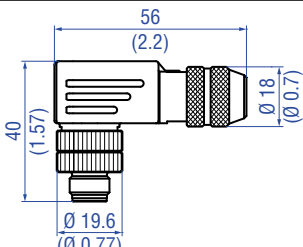
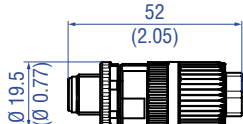
R-Series V	
Analog – D60 <i>with 1 × M16 male connector</i>	
Mating connector	
M16 female connector (7 pin), straight Part no. 370 624	
M16 female connector (7 pin), angled Part no. 560 779	
EtherCAT® – D56 <i>with 1 × M8 male connector & 2 × M12 female connector</i>	
Function	Mating connector
Power	M8 female connector (4 pin), straight Part no. 370 504
Signal	M12 D-coded male connector (4 pin), straight Part no. 370 523
EtherCAT® – D58 <i>with 1 × M12 female connector & 2 × M12 male connector</i>	
Function	Mating connector
Power	M12 A-coded female connector (4 pin/5 pin), straight Part no. 370 677
Signal	M12 D-coded male connector (4 pin), straight Part no. 370 523
EtherNet/IP™ – D56 <i>with 1 × M8 male connector & 2 × M12 female connector</i>	
Function	Mating connector
Power	M8 female connector (4 pin), straight Part no. 370 504
Signal	M12 D-coded male connector (4 pin), straight Part no. 370 523
EtherNet/IP™ – D58 <i>with 1 × M12 female connector & 2 × M12 male connector</i>	
Function	Mating connector
Signal	M12 D-coded male connector (4 pin), straight Part no. 370 523
Power	M12 A-coded female connector (4 pin/5 pin), straight Part no. 370 677

R-Series V	
POWERLINK – D56 <i>with 1 × M8 male connector & 2 × M12 female connector</i>	
Function	Mating connector
Power	M8 female connector (4 pin), straight Part no. 370 504
Signal	M12 D-coded male connector (4 pin), straight Part no. 370 523
PROFINET – D58 <i>with 1 × M12 female connector & 2 × M12 male connector</i>	
Function	Mating connector
Signal	M12 D-coded male connector (4 pin), straight Part no. 370 523
Power	M12 A-coded female connector (4 pin/5 pin), straight Part no. 370 677
SSI – D70 <i>with 1 × M16 male connector</i>	
Mating connector	
M16 female connector (7 pin), straight Part no. 370 624	
M16 female connector (7 pin), angled Part no. 560 779	

5.2 M8 connector

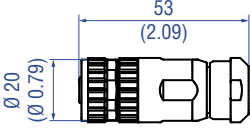
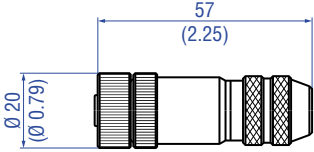
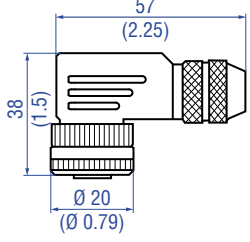
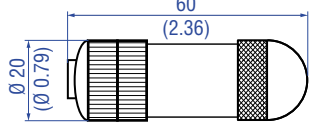
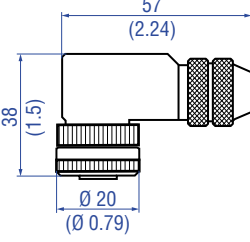
Drawing	Name & part number	Description	Series & output	
	M8 female connector (4 pin), straight Part no. 370 504	Material: CuZn nickel plated Termination: Solder Cable Ø: 3.5...5 mm (0.14...0.28 in.) Wire: 0.25 mm ² Operating temperature: -40...+85 °C (-40...+185 °F) Ingress protection: IP67 (correctly fitted) Fastening torque: 0.5 Nm	R-Series	
			CANbus	D54
			EtherCAT®	D56
			EtherNet/IP™	D56
			POWERLINK	D56
			PROFIBUS	D53
			R-Series V	
			EtherCAT®	D56
			EtherNet/IP™	D56
			POWERLINK	D56

5.3 M12 connectors

Drawing	Name & part number	Description	Series & output	
	M12 B-coded female connector (5 pin), angled Part no. 370 514	Material: Zinc nickel plated Termination: Screw Contact insert: Silver plated Cable Ø: 6...8 mm (0.24...0.31 in.) Wire: 0.75 mm ² (18 AWG) Operating temperature: -40...+85 °C (-40...+185 °F) Ingress protection: IP67 (correctly fitted) Fastening torque: 0.4 Nm	R-Series	
			PROFIBUS	D53
	M12 B-coded male connector (5 pin), angled Part no. 370 515	Material: Zinc nickel plated Termination: Screw Contact insert: Silver plated Cable Ø: 6...8 mm (0.24...0.31 in.) Wire: 0.75 mm ² (18 AWG) Operating temperature: -40...+85 °C (-40...+185 °F) Ingress protection: IP67 (correctly fitted) Fastening torque: 0.4 Nm	R-Series	
			PROFIBUS	D53
	M12 D-coded male connector (4 pin), straight Part no. 370 523	Material: Zinc nickel-plated Termination: Insulation-displacement Cable Ø: 5.5...7.2 mm (0.2...0.28 in.) Wire: 24 AWG – 22 AWG Operating temperature: -25...+85 °C (-13...+185 °F) Ingress protection: IP65 / IP67 (correctly fitted) Fastening torque: 0.6 Nm	R-Series	
			EtherCAT®	D56
			EtherNet/IP™	D56
			POWERLINK	D56
			PROFINET	D58
			R-Series V	
			EtherCAT®	D56, D58
			EtherNet/IP™	D56, D58
POWERLINK	D56			
PROFINET	D58			

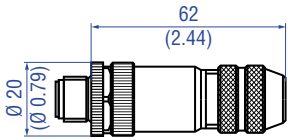
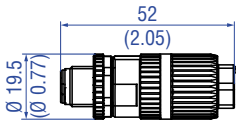
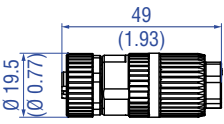
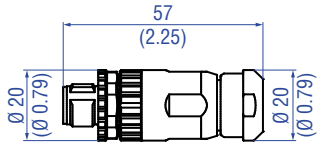
NOTICE

Follow the manufacturer's mounting instructions.

Drawing	Name & part number	Description	Series & output	
	M12 A-coded female connector (4 pin/5 pin), straight Part no. 370 677	Material: GD-Zn, Ni Termination: Screw Contact insert: CuZn Cable Ø: 4...8 mm (0.16...0.31 in.) Wire: 1.5 mm ² Operating temperature: -30...+85 °C (-22...+185 °F) Ingress protection: IP67 (correctly fitted) Fastening torque: 0.6 Nm	E-Series	
			Analog	D34
			CANbus	D34
			IO-Link	D44
			GB-Series	
			Analog	D34
			R-Series	
			CANbus	D54
			PROFINET	D58
			R-Series V	
EtherCAT®	D58			
EtherNet/IP™	D58			
PROFINET	D58			
	M12 B-coded female connector (5 pin), straight Part no. 370 766	Material: CuZn Termination: Screw Contact insert: Au Cable Ø: 6...8 mm (0.24...0.31 in.) Wire: 0.75 mm ² Operating temperature: -40...+85 °C (-40...+185 °F) Ingress protection: IP67 (correctly fitted) Fastening torque: 0.5 Nm	R-Series	
			PROFIBUS	D53
	M12 A-coded female connector (5 pin), angled Part no. 370 678	Material: GD-Zn, Ni Termination: Screw; max. 0.75 mm ² Contact insert: CuZn Cable Ø: 5...8 mm (0.2...0.31 in.) Wire: 0.75 mm ² (18 AWG) Operating temperature: -25...+85 °C (-13...+185 °F) Ingress protection: IP67 (correctly fitted) Fastening torque: 0.4 Nm	E-Series	
			Analog	D34
			CANbus	D34
			IO-Link	D44
			GB-Series	
			Analog	D34
R-Series				
CANbus	D54			
	M12 A-coded female connector (8 pin), straight Part no. 370 694	Housing: GD-ZnAL Termination: Screw Contact insert: CuZn Cable Ø: 4...9 mm (0.16...0.35 in.) Wire: 0.75 mm ² Operating temperature: -25...+90 °C (-13...+194 °F) Ingress protection: IP67 (correctly fitted) Fastening torque: 0.6 Nm	E-Series	
			Start/Stop	D84
			SSI	D84
			GB-Series	
SSI	D84			
	M12 A-coded female connector (8 pin), angled Part no. 370 699	Housing: GD-ZnAL Termination: Screw Contact insert: CuZn Cable Ø: 6...8 mm (0.24...0.31 in.) Wire: 0.5 mm ² Operating temperature: -25...+85 °C (-13...+185 °F) Ingress protection: IP67 (correctly fitted) Fastening torque: 0.6 Nm	E-Series	
			Start/Stop	D84
			SSI	D84
			GB-Series	
			SSI	D84

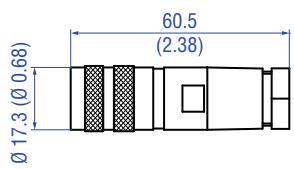
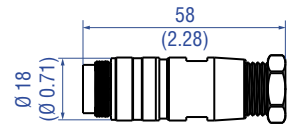
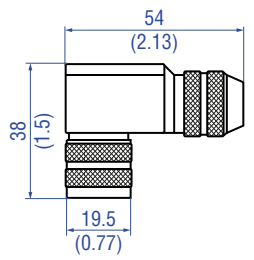
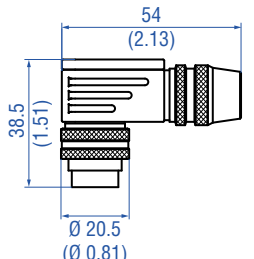
NOTICE

Follow the manufacturer's mounting instructions.

Drawing	Name & part number	Description	Series & output
	M12 B-coded male connector (5 pin), straight Part no. 370 809	Material: CuZn Termination: Screw Contact insert: Au Cable Ø: 6...8 mm (0.24...0.31 in.) Wire: 0.75 mm ² Operating temperature: -40...+85 °C (-40...+185 °F) Ingress protection: IP67 (correctly fitted) Fastening torque: 0.5 Nm	R-Series PROFIBUS D53
	M12 B-coded male connector (5 pin), straight Part no. 560 884	Material: Zinc nickel plated Termination: Insulation-displacement Contact insert: Silver plated Cable Ø: 7...8.8 mm (0.28...0.35 in.) Wire: 0.34 mm ² (22 AWG) Operating temperature: -40...+85 °C (-40...+185 °F) Ingress protection: IP65/IP67 (correctly fitted) Number of contacts: 3 pin Fastening torque: 0.6 Nm	R-Series PROFIBUS D53
	M12 B-coded female connector (5 pin), straight Part no. 560 885	Material: Zinc nickel plated Termination: Insulation-displacement Contact insert: Silver plated Cable Ø: 7...8.8 mm (0.28...0.35 in.) Wire: 0.34 mm ² (22 AWG) Operating temperature: -40...+85 °C (-40...+185 °F) Ingress protection: IP65/IP67 (correctly fitted) Number of contacts: 3 pin Fastening torque: 0.6 Nm	R-Series PROFIBUS D53
	M12 A-coded male connector (5 pin), straight Part no. 561 665	Housing: GD-Zn, Ni Termination: Screw Contact insert: CuZn Cable Ø: 4...8 mm (0.16...0.31 in.) Wire: 1.5 mm ² Operating temperature: -30...+85 °C (-22...+185 °F) Ingress protection: IP67 (correctly fitted) Fastening torque: 0.6 Nm	E-Series CANbus D34 R-Series CANbus D54

NOTICE
 Follow the manufacturer's mounting instructions.

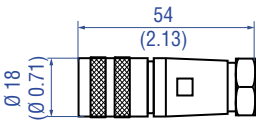
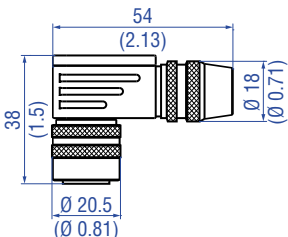
5.4 M16 connectors

Drawing	Name & part number	Description	Series & output
	M16 female connector (6 pin), straight Part no. 370 423	Material: Zinc nickel plated Termination: Solder Cable Ø: 6...8 mm (0.24...0.31 in.) Operating temperature: -40...+100 °C (-40...+212 °F) Ingress protection: IP65/IP67 (correctly fitted) Fastening torque: 0.6 Nm	G-Series Analog D60 Start/Stop D60
			GB-Series Analog D60 R-Series Analog D60 CANbus D60, D62 PROFIBUS D63 R-Series V Analog D60
	M16 male connector (6 pin), straight Part no. 370 427	Material: Zinc nickel plated Termination: Solder Contact insert: Silver plated Cable clamp: PG9 Cable Ø: 6...8 mm (0.24...0.31 in.) Operating temperature: -40...+100 °C (-40...+212 °F) Ingress protection: IP65/IP67 (correctly fitted)	R-Series PROFIBUS D63
	M16 female connector (6 pin), angled Part no. 370 460	Material: Zinc nickel plated Termination: Solder Cable Ø: 6...8 mm (0.24...0.31 in.) Wire: 0.75 mm² (20 AWG) Operating temperature: -40...+95 °C (-40...+203 °F) Ingress protection: IP67 (correctly fitted) Fastening torque: 0.6 Nm	G-Series Analog D60 Start/Stop D60
			GB-Series Analog D60 R-Series Analog D60 CANbus D60, D62 PROFIBUS D63 R-Series V Analog D60
	M16 male connector (6 pin), angled Part no. 370 621	Material: Brass nickel plated Termination: Solder Contact insert: Silver plated Cable Ø: 6...8 mm (0.24...0.31 in.) Operating temperature: -30...+95 °C (-22...+203 °F) Ingress protection: IP67 (correctly fitted)	R-Series PROFIBUS D63

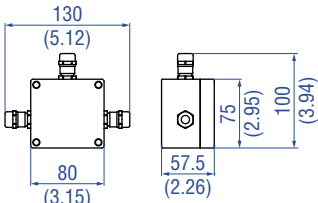
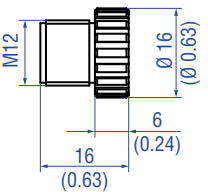
NOTICE

Follow the manufacturer's mounting instructions.

Controlling design dimensions are in millimeters and measurements in () are in inches

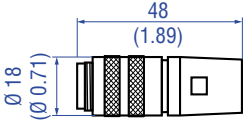
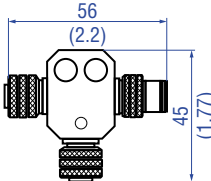
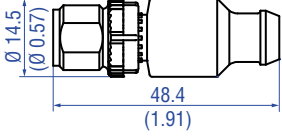
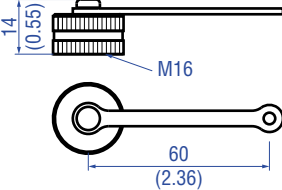
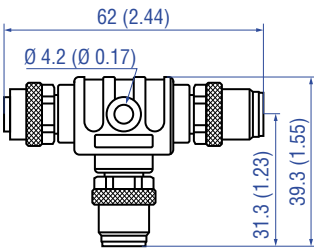
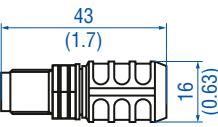
Drawing	Name & part number	Description	Series & output
	M16 female connector (7 pin), straight Part no. 370 624	Material: Zinc nickel plated Termination: Solder Contact insert: Silver plated Cable clamp: PG9 Cable Ø: 6...8 mm (0.24...0.31 in.) Operating temperature: -40...+100 °C (-40...+212 °F) Ingress protection: IP65/IP67 (correctly fitted) Fastening torque: 0.7 Nm	GB-Series SSI D70
			R-Series SSI D70
	M16 female connector (7 pin), angled Part no. 560 779	Material: Zinc nickel plated Termination: Solder Contact insert: Silver plated Cable Ø: 6...8 mm (0.24...0.31 in.) Wire: 0.75 mm² (20 AWG) Operating temperature: -40...+95 °C (-40...+203 °F) Ingress protection: IP67 (correctly fitted) Fastening torque: 0.5 Nm	GB-Series SSI D70
			R-Series SSI D70
			R-Series V SSI D70

5.5 Connection accessories

Drawing	Name & part number	Description	Series & output
	PROFIBUS filter box, M16 (6 pin) Part no. 252 916	EMC conformal feeding of +24 VDC operating voltage into the Profibus-DP hybrid cable.	R-Series PROFIBUS D63
	M12 connector end cap Part no. 370 537	Female connectors M12 should be covered by this protective cap Material: Brass nickel-plated Ingress protection: IP67 (correctly fitted) Fastening torque: 0.39...0.49 Nm	R-Series CANbus D54
			EtherCAT® D56
			EtherNet/IP™ D56
			POWERLINK D56
			PROFIBUS D53
			PROFINET D58
			R-Series V EtherCAT® D56, D58
			EtherNet/IP™ D56, D58
POWERLINK D56			
PROFINET D58			

NOTICE

Follow the manufacturer's mounting instructions.

Drawing	Name & part number	Description	Series & output
	Active M16 male bus terminator (6 pin) Part no. 370 620	Material: Zinc nickel plated Contact insert: Silver plated Operating temperature: -40...+75 °C (-40...+167 °F) Ingress protection: IP67 (correctly fitted)	R-Series PROFIBUS D63
	M12 A-coded T connector (5 pin) Part no. 370 691	Selfcuring coupling nut 2 × female connector 1 × male connector Feature: Shielded Ingress protection: IP67 (correctly fitted)	E-Series CANbus D34 R-Series CANbus D54
	Passive M12 A-coded male bus terminator (5 pin) Part no. 370 700	Material: PUR Termination: Screw Contact insert: Au Operating temperature: -25...+85 °C (-13...+121 °F) Ingress protection: IP68 (correctly fitted)	E-Series CANbus D34 R-Series CANbus D54
	M16 connector end cap Part no. 403 290	Material: Brass, nickel plated	G-Series Analog D60 Start/Stop D60 GB-Series SSI D70 R-Series Analog D60 CANbus D60, D62 PROFIBUS D63 SSI D70
	M12 B-coded T connector (5 pin) Part no. 560 887	Material: Zinc nickel plated Termination: Solder Contact insert: Silver plated Installation: Field installable Operating temperature: -30...+90 °C (-22...+130 °F) Ingress protection: IP67 (correctly fitted)	R-Series PROFIBUS D53
	Active M12 B-coded male bus terminator (5 pin) Part no. 560 888	Housing: PUR Termination: Screw Contact insert: Silver plated Operating temperature: -40...+75 °C (-40...+167 °F) Ingress protection: IP67 (correctly fitted)	R-Series PROFIBUS D53

NOTICE

Follow the manufacturer's mounting instructions.

Controlling design dimensions are in millimeters and measurements in () are in inches

6. Cables

A wide range of cable variations is available for MTS sensors. In addition to the listed cables with pig-tail for self-use, it is also possible to customize the cables for the listed outputs individually with the cable configurator (chapter 7). Some sensor models can feature a cable output to be configured instead of a conventional connector output when ordering. For direct mounting of the cable to the sensor, this list contains the letter of the cable output designation in the order code. More information can be found in the corresponding data sheets or operation manuals of the respective sensor.

6.1 Pigtailed cables

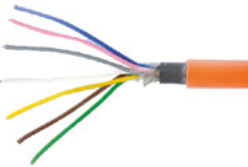

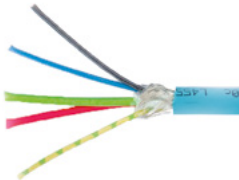
Photo	Name & part number	Description	Series & output	
	TMPU cable Part no. 530 029	Material: TMPU jacket; orange Features: Flexible, additional EMC protection Cable Ø: 6.5 mm (0.26 in.) Cross section: 6 × 0.14 mm ² Bending radius: 10 × D (fixed installation) Operating temperature: -20...+70 °C (-4...+158 °F)	E-Series	
			CANbus	D34
			SSI	D84
			GB-Series	
			SSI	D70, D84
			R-Series	
			CANbus	D54, D60, D62, PXX
SSI	D70, PXX			
	R-Series V			
SSI	D70			
	PVC cable Part no. 530 032	Material: PVC jacket; gray Features: Twisted pair, shielded, flexible Cable Ø: 6 mm (0.23 in.) Cross section: 3 × 2 × 0.14 mm ² Bending radius: 10 × D (fixed installation) Operating temperature: -40...+105 °C (-40...+221 °F)	E-Series	
			Analog	D34
			Start/Stop	D84
			SSI	D84
			G-Series	
			Analog	D60, RXX
			Start/Stop	D60, RXX
			GB-Series	
			Analog	D34, D60
			SSI	D70, D84
			R-Series	
			Analog	D60, RXX
SSI	D70, RXX			
	R-Series V			
Analog	D60			
SSI	D70, RXX			
	PVC cable Part no. 530 040	Material: PVC jacket; petrol Features: Hybrid cable (PROFIBUS and power supply feed in), flexible Cable Ø: 8 mm (0.31 in.) Cross section: 1 × 2 × 0.65 mm ² 3 × 1 × 0.75 mm ² Bending radius: 5 × D (fixed installation) Operating temperature: -30...+80 °C (-22...+176 °F)	R-Series	
			PROFIBUS	D63

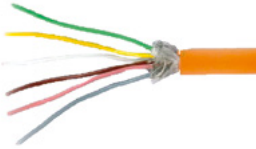


Photo	Name & part number	Description	Series & output	
	PUR cable Part no. 530 052	Material: PUR jacket; orange Features: Twisted pair, shielded, highly flexible, halogen free, suitable for drag chains, mostly oil & flame resistant Cable Ø: 6.4 mm (0.25 in.) Cross section: 3 × 2 × 0.25 mm ² Bending radius: 5 × D (fixed installation) Operating temperature: -30...+80 °C (-22...+176 °F)	E-Series	
			Analog	D34
			CANbus	D34
			Start/Stop	D84
			SSI	D84
			G-Series	
			Analog	D60, HXX
			Start/Stop	D60, HXX
			GB-Series	
			Analog	D34, D60, HXX
			SSI	D70, D84, HXX
			R-Series	
			Analog	D60
			CAN	D60, D62
SSI	D70, HXX			
R-Series V				
Analog	D60			
SSI	D70, HXX			
	PVC cable Part no. 530 108	Material: PVC jacket; gray Features: Shielded, flexible, mostly flame resistant Cable Ø: 4.9 mm (0.19 in.) Cross section: 3 × 0.34 mm ² Bending radius: 10 × D Operating temperature: -30...+80 °C (-22...+176 °F)	R-Series	
			CANbus	D54
			EtherCAT®	D56
			EtherNet/IP™	D56
			PROFIBUS	D53, AXX
			PROFINET	D58
			POWERLINK	D56
			R-Series V	
			EtherCAT®	D56, D58
			EtherNet/IP™	D56, D58
			POWERLINK	D56
PROFINET	D58			
	PUR cable Part no. 530 109	Material: PUR jacket; violet Features: Highly flexible, halogen free, suitable for drag chains, mostly oil & flame resistant Cable Ø: 8 mm (0.31 in.) Cross section: 1 × 2 × 0.25 mm ² Bending radius: 65 mm Operating temperature: -30...+70 °C (-22...+158 °F)	R-Series	
			PROFIBUS	D53, AXX




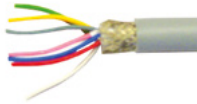
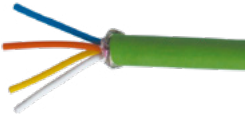

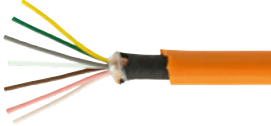









Photo	Name & part number	Description	Series & output	
	Teflon® cable Part no. 530 112	Material: Teflon® jacket; black Features: Twisted pair, shielded, flexible, high thermal resistance, mostly oil & acid resistant Cable Ø: 7.6 mm (0.3 in.) Cross section: 4 × 2 × 0.25 mm ² Bending radius: 8 – 10 × D (fixed installation) Operating temperature: -100...+180 °C (-148...+356 °F)	E-Series	
			Analog	D34
			Start/Stop	D84
			CANbus	D34
			SSI	D84
			G-Series	
			Analog	D60, TXX
			Start/Stop	D60, TXX
			GB-Series	
			Analog	D34, D60, TXX
			SSI	D70, D84, TXX
			R-Series	
			Analog	D60, TXX
			CANbus	D54, D60, D62, TXX
SSI	D70, TXX			
R-Series V				
Analog	D60			
SSI	D70, TXX			
	Silicone cable Part no. 530 113	Material: Silicone jacket; red Features: Twisted pair, shielded, highly flexible, halogen free, high thermal resistance Cable Ø: 7.2 mm (0.28 in.) Cross section: 3 × 2 × 0.25 mm ² Bending radius: 5 × D (fixed installation) Operating temperature: -50...+180 °C (-58...+356 °F)	GB-Series	
			Analog	D34, D60, VXX
			SSI	D70, D84, VXX
			R-Series	
			SSI	D70, VXX
			R-Series V	
SSI	D70			
	PUR cable Part no. 530 114	Material: PUR jacket; black Features: Highly flexible, mostly oil & flame resistant Cable Ø: 5.9 mm (0.23 in.) Cross section: 3 × 2 × 0.14 mm ² Bending radius: 4 × D (fixed installation) Operating temperature: -40...+80 °C (-40...+176 °F)	G-Series	
			Analog	D60, SXX

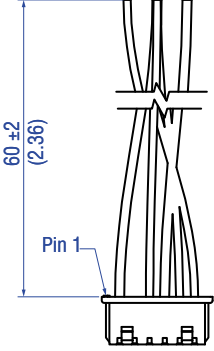
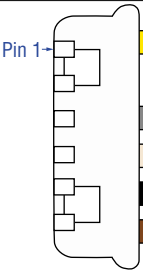





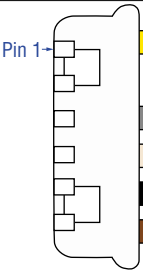




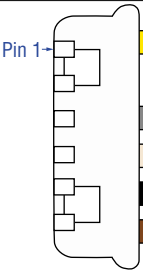






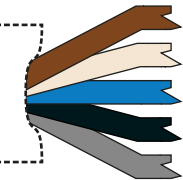

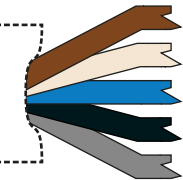

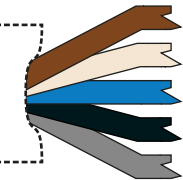


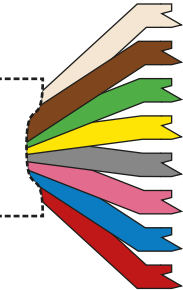

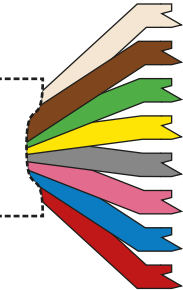

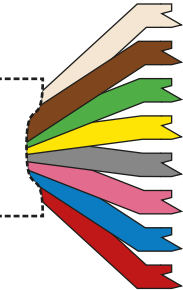

Photo	Name & part number	Description	Series & output	
	PUR cable Part no. 530 116	Material: PUR jacket; gray Features: Shielded, highly flexible, longitudinally watertight, halogen free Cable Ø: 8 mm (0.31 in.) Cross section: 8 × 0.25 mm ² Bending radius: 10 × D Operating temperature: -30...+90 °C (-22...+194 °F)	E-Series	
			Analog	D34
			Start/Stop	D84
			CANbus	D34
			SSI	D84
			G-Series	
			Analog	D60, WXX
			Start/Stop	D60, WXX
			GB-Series	
			Analog	D34, D60
			SSI	D70, D84
			R-Series	
			Analog	D60, WXX
			CANbus	D54, D60, D62
SSI	D70, WXX			
R-Series V				
SSI	D70			
	PUR cable Part no. 530 125	Material: PUR jacket; green Features: Cat 5, highly flexible, halogen free, suitable for drag chains, mostly oil & flame resistant Cable Ø: 6.5 mm (0.26 in.) Cross section: 2 × 2 × 0.35 mm ² (22 AWG) Operating temperature: -20...+60 °C (-4...+140 °F)	R-Series	
			EtherCAT®	D56
			EtherNet/IP™	D56
			POWERLINK	D56
			PROFINET	D58
			R-Series V	
			EtherCAT®	D56, D58
			EtherNet/IP™	D56, D58
			POWERLINK	D56
			PROFINET	D58
	PUR cable Part no. 530 154	Material: PUR jacket; purple Features: Flexible, halogen free, mostly oil resistant Cable Ø: 7.4 mm (0.29 in.) Cross section: 2 × 2 × 0.34 mm ² Bending radius: 10 × D Operation temperature: -40...+80 °C (-40...+176 °F)	R-Series	
			CANbus	D54, D60, D62
	PUR cable Part no. 530 175	Material: PUR jacket; orange Features: Flexible, additional EMC protection Cable Ø: 6.5 mm (0.26 in.) Cross section: 6 × 0.14 mm ² Bending radius: 10 × D (fixed installation) Operating temperature: -30...+90 °C (-22...+194 °F)	R-Series V	
			SSI	D70, PXX












































































6.2 Cable sets


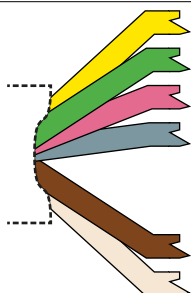
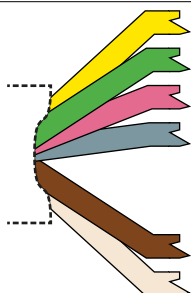

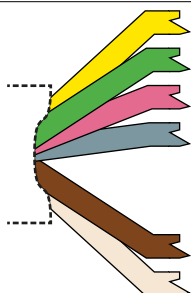


Photo/ Drawing	Name & part number	Description	Series & output		
	Cable with M16 male connector (6 pin), straight – M12 A-coded female connector (5 pin), straight Part no. 254 206	For E-Series with analog output (V01, V03, A01, A02) Cable length: 300 mm (11.81 in.)	E-Series		
			Analog	D34	
Wiring					
M16 male connector (6 pin)		Pin	Pin	M12 A-coded female connector (5 pin)	
		5	↔	1	
		1	↔	2	
		6	↔	3	
		3	↔	4	
		2	↔	5	
		4	↔		
	Cable with M16 male connector (6 pin), straight – M12 A-coded female connector (8 pin), straight Part no. 254 207	For E-Series with Start/Stop output Cable length: 300 mm (11.81 in.)	E-Series		
			Start/Stop	D84	
Wiring					
M16 male connector (6 pin)		Pin	Pin	M12 A-coded female connector (8 pin)	
		3	↔	1	
		4	↔	2	
		2	↔	3	
		1	↔	4	
		–	↔	5	
		–	↔	6	
		5	↔	7	
		6	↔	8	
	Cable with M16 male connector (6 pin), straight – M12 A-coded female connector (5 pin), straight Part no. 254 270	For E-Series with analog output (A11) Cable length: 300 mm (11.81 in.)	E-Series		
			Analog	D34	
Wiring					
M16 male connector (6 pin)		Pin	Pin	M12 A-coded female connector (5 pin)	
		5	↔	1	
		1	↔	2	
		3	↔		
		6	↔	3	
		–	↔	4	
		2	↔	5	
		4	↔		


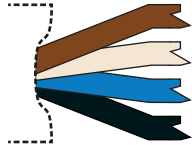

Photo/Drawing	Name & part number	Description	Series & output																																
	<p>Cable with PicoBlade™ male connector (5 pin), straight – M12 A-coded male connector (5 pin) with flange Part no. 254 256</p>	<p>Operating temperature: -40...+80 °C (-40...+176 °F)</p>	<table border="1"> <thead> <tr> <th colspan="2">E-Series</th> </tr> </thead> <tbody> <tr> <td>Analog</td> <td>M11, M31, M61</td> </tr> </tbody> </table> <p>Wiring</p> <table border="1"> <thead> <tr> <th>PicoBlade™ male connector (6 pin)</th> <th>Pin</th> <th>Pin</th> <th>M12 A-coded male connector (5 pin)</th> </tr> </thead> <tbody> <tr> <td></td> <td>1</td> <td>↔</td> <td>4</td> </tr> <tr> <td></td> <td>-</td> <td>↔</td> <td>-</td> </tr> <tr> <td></td> <td>3</td> <td>↔</td> <td>2</td> </tr> <tr> <td></td> <td>4</td> <td>↔</td> <td>3</td> </tr> <tr> <td></td> <td>5</td> <td>↔</td> <td>5</td> </tr> <tr> <td></td> <td>6</td> <td>↔</td> <td>1</td> </tr> </tbody> </table>	E-Series		Analog	M11, M31, M61	PicoBlade™ male connector (6 pin)	Pin	Pin	M12 A-coded male connector (5 pin)		1	↔	4		-	↔	-		3	↔	2		4	↔	3		5	↔	5		6	↔	1
E-Series																																			
Analog	M11, M31, M61																																		
PicoBlade™ male connector (6 pin)	Pin	Pin	M12 A-coded male connector (5 pin)																																
	1	↔	4																																
	-	↔	-																																
	3	↔	2																																
	4	↔	3																																
	5	↔	5																																
	6	↔	1																																
	<p>Cable with PicoBlade™ male connector (6 pin), straight – M12 A-coded male connector (5 pin) with flange Part no. 254 560</p>	<p>See technical bulletin “Connector system M12 for Sensor E-Series Embedded™” (document part no.: 551758) for further information</p>	<table border="1"> <thead> <tr> <th colspan="2">E-Series</th> </tr> </thead> <tbody> <tr> <td>Analog</td> <td>M11, M31, M61</td> </tr> </tbody> </table> <p>Wiring</p> <table border="1"> <thead> <tr> <th>PicoBlade™ male connector (6 pin)</th> <th>Pin</th> <th>Pin</th> <th>M12 A-coded male connector (5 pin)</th> </tr> </thead> <tbody> <tr> <td></td> <td>1</td> <td>↔</td> <td>4</td> </tr> <tr> <td></td> <td>-</td> <td>↔</td> <td>-</td> </tr> <tr> <td></td> <td>3</td> <td>↔</td> <td>2</td> </tr> <tr> <td></td> <td>4</td> <td>↔</td> <td>3</td> </tr> <tr> <td></td> <td>5</td> <td>↔</td> <td>5</td> </tr> <tr> <td></td> <td>6</td> <td>↔</td> <td>1</td> </tr> </tbody> </table>	E-Series		Analog	M11, M31, M61	PicoBlade™ male connector (6 pin)	Pin	Pin	M12 A-coded male connector (5 pin)		1	↔	4		-	↔	-		3	↔	2		4	↔	3		5	↔	5		6	↔	1
E-Series																																			
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	4	↔	3																																
	5	↔	5																																
	6	↔	1																																
	<p>Extension cable, PicoBlade™ male connector (5 pin), straight – PicoBlade™ female connector (5 pin), straight 140 mm Part no. 254 642-1 340 mm Part no. 254 642-2 640 mm Part no. 254 642-3</p>	<p>Operating temperature: -40...+80 °C (-40...+176 °F)</p>	<table border="1"> <thead> <tr> <th colspan="2">E-Series</th> </tr> </thead> <tbody> <tr> <td>Analog</td> <td>M11, M31, M61</td> </tr> </tbody> </table> <p>Wiring</p> <table border="1"> <thead> <tr> <th>PicoBlade™ male connector (6 pin)</th> <th>Pin</th> <th>Pin</th> <th>PicoBlade™ female connector (6 pin)</th> </tr> </thead> <tbody> <tr> <td></td> <td>1</td> <td>↔</td> <td>1</td> </tr> <tr> <td></td> <td>2</td> <td>↔</td> <td>2</td> </tr> <tr> <td></td> <td>3</td> <td>↔</td> <td>3</td> </tr> <tr> <td></td> <td>4</td> <td>↔</td> <td>4</td> </tr> <tr> <td></td> <td>5</td> <td>↔</td> <td>5</td> </tr> <tr> <td></td> <td>6</td> <td>↔</td> <td>6</td> </tr> </tbody> </table>	E-Series		Analog	M11, M31, M61	PicoBlade™ male connector (6 pin)	Pin	Pin	PicoBlade™ female connector (6 pin)		1	↔	1		2	↔	2		3	↔	3		4	↔	4		5	↔	5		6	↔	6
E-Series																																			
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	2	↔	2																																
	3	↔	3																																
	4	↔	4																																
	5	↔	5																																
	6	↔	6																																

Controlling design dimensions are in millimeters and measurements in () are in inches

Photo/Drawing	Name & part number	Description	Series & output																					
	Extension cable, PicoBlade™ male connector (5 pin), straight – pigtail Part no. 254 266	Operating temperature: -40...+80 °C (-40...+176 °F)	E-Series Analog M11, M31, M61																					
		Wiring <table border="1"> <thead> <tr> <th>PicoBlade™ male connector (6 pin)</th> <th>Pin</th> <th>Color</th> <th>Wires</th> </tr> </thead> <tbody> <tr> <td rowspan="6">  </td> <td>1</td> <td>↔ YE</td> <td></td> </tr> <tr> <td>-</td> <td>↔ -</td> <td></td> </tr> <tr> <td>3</td> <td>↔ GY</td> <td></td> </tr> <tr> <td>4</td> <td>↔ WH</td> <td></td> </tr> <tr> <td>5</td> <td>↔ BK</td> <td></td> </tr> <tr> <td>6</td> <td>↔ BN</td> <td></td> </tr> </tbody> </table>		PicoBlade™ male connector (6 pin)	Pin	Color	Wires		1	↔ YE		-	↔ -		3	↔ GY		4	↔ WH		5	↔ BK		6
PicoBlade™ male connector (6 pin)	Pin	Color	Wires																					
	1	↔ YE																						
	-	↔ -																						
	3	↔ GY																						
	4	↔ WH																						
	5	↔ BK																						
	6	↔ BN																						
	Cable with M12 A-coded female connector (5 pin), straight – pigtail Part no. 370 673	Material: PUR jacket; black Features: Shielded Cable length: 5 m (16.4 ft) Ingress protection: IP67 (correctly fitted) Operating temperature: -25...+80 °C (-13...+176 °F)	E-Series Analog D34 IO-Link D44																					
		Wiring <table border="1"> <thead> <tr> <th>Wires</th> <th>Color</th> <th>Pin</th> <th>M12 A-coded female connector (5 pin)</th> </tr> </thead> <tbody> <tr> <td rowspan="5">  </td> <td>BN</td> <td>↔ 1</td> <td rowspan="5">  </td> </tr> <tr> <td>WH</td> <td>↔ 2</td> </tr> <tr> <td>BU</td> <td>↔ 3</td> </tr> <tr> <td>BK</td> <td>↔ 4</td> </tr> <tr> <td>GY</td> <td>↔ 5</td> </tr> </tbody> </table>		Wires	Color	Pin	M12 A-coded female connector (5 pin)		BN	↔ 1		WH	↔ 2	BU	↔ 3	BK	↔ 4	GY	↔ 5					
Wires	Color	Pin	M12 A-coded female connector (5 pin)																					
	BN	↔ 1																						
	WH	↔ 2																						
	BU	↔ 3																						
	BK	↔ 4																						
	GY	↔ 5																						
	Cable with M12 A-coded female connector (8 pin), straight – pigtail Part no. 370 674 <i>Consider cable 370 789.</i> <i>The additional feature "twisted pair" minimizes interference from external sources.</i>	Material: PUR jacket; black Features: Shielded Cable length: 5 m (16.4 ft) Ingress protection: IP67/IP69K (correctly fitted) Operating temperature: -25...+80 °C (-13...+176 °F)	E-Series SSI D84 Start/Stop D84																					
		Wiring <table border="1"> <thead> <tr> <th>Wires</th> <th>Color</th> <th>Pin</th> <th>M12 A-coded female connector (8 pin)</th> </tr> </thead> <tbody> <tr> <td rowspan="8">  </td> <td>WH</td> <td>↔ 1</td> <td rowspan="8">  </td> </tr> <tr> <td>BN</td> <td>↔ 2</td> </tr> <tr> <td>GN</td> <td>↔ 3</td> </tr> <tr> <td>YE</td> <td>↔ 4</td> </tr> <tr> <td>GY</td> <td>↔ 5</td> </tr> <tr> <td>PK</td> <td>↔ 6</td> </tr> <tr> <td>BU</td> <td>↔ 7</td> </tr> <tr> <td>RD</td> <td>↔ 8</td> </tr> </tbody> </table>		Wires	Color	Pin	M12 A-coded female connector (8 pin)		WH	↔ 1		BN	↔ 2	GN	↔ 3	YE	↔ 4	GY	↔ 5	PK	↔ 6	BU	↔ 7	RD
Wires	Color	Pin	M12 A-coded female connector (8 pin)																					
	WH	↔ 1																						
	BN	↔ 2																						
	GN	↔ 3																						
	YE	↔ 4																						
	GY	↔ 5																						
	PK	↔ 6																						
	BU	↔ 7																						
	RD	↔ 8																						

Photo/Drawing	Name & part number	Description	Series & output																													
	Cable with M12 A-coded female connector (5 pin), angled – pigtail Part no. 370 675	Material: PUR jacket Features: Shielded Cable length: 5 m (16.4 ft) Ingress protection: IP67 (correctly fitted) Operating temperature: -25...+80 °C (-13...+176 °F)	E-Series																													
			Analog D34 CAN D34 IO-Link D44																													
Wiring																																
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Wires	Color	Pin	M12 A-coded female connector (5 pin)																													
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	WH	↔ 2																														
	BU	↔ 3																														
	BK	↔ 4																														
	GY	↔ 5																														
	Cable with M12 A-coded female connector (8 pin), angled – pigtail Part no. 370 676 <i>Consider cable 370 821. The additional feature “twisted pair” minimizes interference from external sources.</i>	Cable: Shielded Cable length: 5 m (16.4 ft) Ingress protection: IP67 (correctly fitted)	E-Series																													
			SSI D84 Start/Stop D84																													
Wiring																																
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Wires	Color	Pin	M12 A-coded female connector (8 pin)																													
	WH	↔ 1																														
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	GN	↔ 3																														
	YE	↔ 4																														
	GY	↔ 5																														
	PK	↔ 6																														
	BU	↔ 7																														
	RD	↔ 8																														
	Cable with M12 A-coded female connector (8 pin), straight – pigtail Part no. 370 789	Material: PUR jacket; orange Features: Twisted pair, shielded Cable length: 5 m (16.4 ft) Ingress protection: IP67/IP69K (correctly fitted) Operating temperature: -25...+80 °C (-13...+176 °F)	E-Series																													
			SSI D84 Start/Stop D84																													
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Wires	Color	Pin	M12 A-coded female connector (8 pin)																													
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	-	↔ 5																														
	-	↔ 6																														
	BN	↔ 7																														
	WH	↔ 8																														

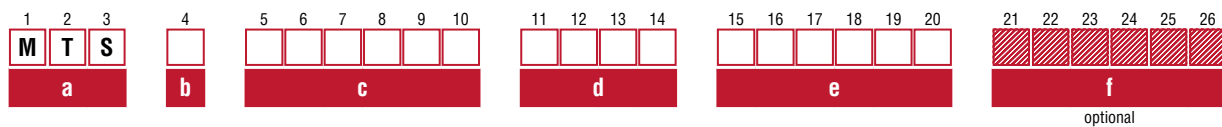
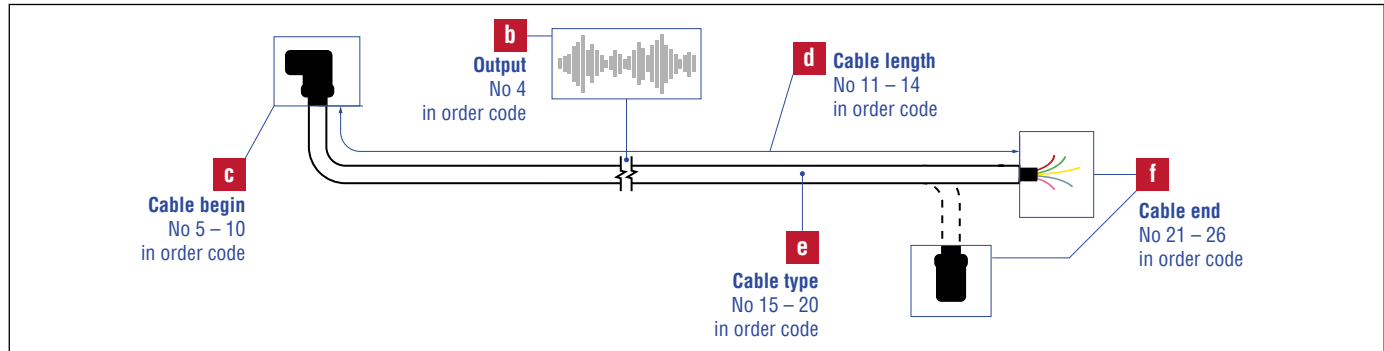
Photo/Drawing	Name & part number	Description	Series & output																														
	Cable with M12 A-coded female connector (8 pin), angled – pigtail Part no. 370 821	Material: PUR jacket; orange Features: Twisted pair, shielded Cable length: 5 m (16.4 ft) Ingress protection: IP67/IP69K (correctly fitted) Operating temperature: -25...+80 °C (-13...+176 °F)	E-Series																														
			SSI D84 Start/Stop D84																														
Wiring																																	
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Wires	Color	Pin	M12 A-coded female connector (8 pin)																														
	YE	↔	1																														
	GN	↔	2																														
	PK	↔	3																														
	GY	↔	4																														
	-	↔	5																														
	-	↔	6																														
	BN	↔	7																														
	WH	↔	8																														
	Cable with M12 D-coded male connector (4 pin), straight – M12 D-coded, male connector (4 pin), straight Part no. 530 064	Material: PUR jacket; green Features: Cat 5e Cable length: 5 m (16.4 ft) Cable Ø: 6.5 mm (0.26 in.) Ingress protection: IP65, IP67, IP68 (correctly fitted) Operating temperature: -30...+70 °C (-22...+158 °F)	R-Series																														
			EtherCAT® D56 EtherNet/IP™ D56 POWERLINK D56 PROFINET D58																														
R-Series V																																	
EtherCAT® D56, D58 EtherNet/IP™ D56, D58 POWERLINK D56 PROFINET D58																																	
	Cable with M12 D-coded male connector (4 pin), straight – RJ45 male connector, straight Part no. 530 065	Material: PUR jacket; green Features: Cat 5e Cable length: 5 m (16.4 ft) Cable Ø: 6.5 mm (0.26 in.) Ingress protection M12 connector: IP67 (correctly fitted) Ingress protection RJ45 connector: IP20 (correctly fitted) Operating temperature: -30...+70 °C (-22...+158 °F)	R-Series																														
			EtherCAT® D56 EtherNet/IP™ D56 POWERLINK D56 PROFINET D58																														
R-Series V																																	
EtherCAT® D56, D58 EtherNet/IP™ D56, D58 POWERLINK D56 PROFINET D58																																	

Photo/ Drawing	Name & part number	Description	Series & output
	Cable with M8 female connector (4 pin), straight – pigtail Part no. 530 066 (5 m (16.4 ft.)) Part no. 530 096 (10 m (32.8 ft.)) Part no. 530 093 (15 m (49.2 ft.))	Material: PUR jacket; gray Features: Shielded Cable Ø: 8 mm (0.3 in.) Operating temperature: -40...+90 °C (-40...+194 °F)	R-Series
			EtherCAT® D56
			EtherNet/IP™ D56
			POWERLINK D56
			PROFIBUS D53, AXX
			R-Series V
			EtherCAT® D56
			EtherNet/IP™ D56
			POWERLINK D56
			Wiring
Wires	Color	Pin	M8 female connector (4 pin)
	BN	↔ 1	
	WH	↔ 2	
	BU	↔ 3	
	BK	↔ 4	

7. Cable configurator

7.1 Structure

The cables can individually be modified by using the cable configurator. Depending on the structure shown, the output, cable start, cable length, cable type and cable end must be selected. The following pages list the outputs, the corresponding device plugs and sockets as well as cable types.



a Company name			
M	T	S	MTS Sensors

b Output	
X	<ul style="list-style-type: none"> Analog Start/Stop CANbus SSI EtherCAT®, EtherNet/IP™, POWERLINK, PROFINET PROFIBUS Power supply (CANbus, EtherCAT®, EtherNet/IP™, POWERLINK, PROFIBUS, PROFINET)

c Cable begin see chapter 5 for detailed information	
X	<ul style="list-style-type: none"> M8/M12/M16 Male/female Straight/angled

d Cable length	
X	X X X X 0030...9990 cm*

e Cable type see chapter 6 for detailed information	
X	<ul style="list-style-type: none"> PUR cable PVC cable TMPU cable Teflon® cable Silicone cable

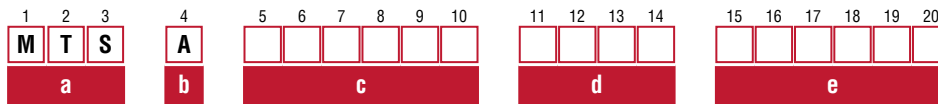
Optional – instead of pigtail cable end

f Cable end see chapter 5 for detailed information	
Choose this option, if the cable end should have a connector instead of a pig tail.	
X	<ul style="list-style-type: none"> M12/M16 connector Male/female Straight/angled

* / Length tolerance: -0/+1 % (minimum -0/+10 cm)

7.2 Analog

Example: 100 cm PUR cable (530 052) with M16 straight female connector (370 423) and open cable end for R-Series Analog (D60):
MTS-A-370423-0100-530052



a	Company name
M T S	MTS Sensors

d	Cable length
X X X X	0030...9990 cm*

b	Output
A	Analog

e	Cable type	see chapter 6 for detailed information
---	------------	--

5	3	0	0	3	2	PVC cable
5	3	0	0	5	2	PUR cable
5	3	0	1	1	2	Teflon® cable
5	3	0	1	1	6	PUR cable

c	Cable begin
M12 connector (D34) see chapter 5.3 for detailed information	

3	7	0	6	7	7	Straight	Female	E-Series	D34
								GB-Series	D34
3	7	0	6	7	8	Angled	Female	E-Series	D34
								GB-Series	D34

M16 connector (D60) see chapter 5.4 for detailed information	
--	--

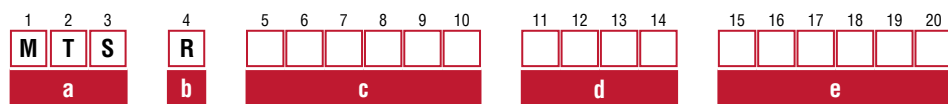
3	7	0	4	2	3	Straight	Female	G-Series	D60
								GB-Series	D60
								R-Series	D60
								R-Series V	D60
3	7	0	4	6	0	Angled	Female	G-Series	D60
								GB-Series	D60
								R-Series	D60
								R-Series V	D60

Wiring					
Cable 530 032	Cable 530 052	Cable 530 112	Cable 530 116	M12 female connector	M16 female connector
Color	Color	Color	Color	Pin	Pin
GY	GY	GY	GY	2	1
PK	PK	PK	PK	5	2
YE	YE	YE	YE	4	3
GN	GN	GN	GN	Not connected	4
BN	BN	BN	BN	1	5
WH	WH	WH	WH	3	6
		BU	BU	Not connected	Not connected
		RD	RD	Not connected	Not connected

* / Length tolerance: -0/+1 % (minimum -0/+10 cm)

7.3 Start/Stop

Example: 100 cm PUR cable (530 052) with M12 straight female connector (370 694) and open cable end for E-Series Start/Stop (D84):
MTS-R-370694-0100-530052



a	Company name
M T S	MTS Sensors

b	Output
R	Start/Stop

c	Cable begin
M12 connector (D84) <i>see chapter 5.3 for detailed information</i>	
3 7 0 6 9 4	Straight Female E-Series D84
3 7 0 6 9 9	Angled Female E-Series D84
M16 connector (D60) <i>see chapter 5.4 for detailed information</i>	
3 7 0 4 2 3	Straight Female G-Series D60
3 7 0 4 6 0	Angled Female G-Series D60

d	Cable length
X X X X	0030...9990 cm*

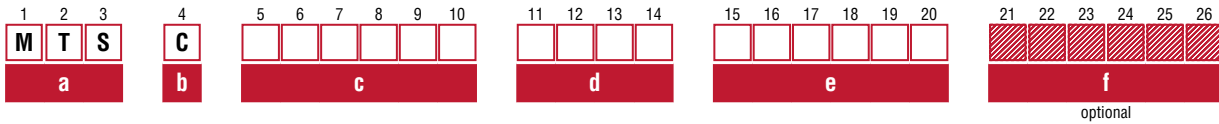
e	Cable type	<i>see chapter 6 for detailed information</i>
5 3 0 0 3 2	PVC cable	
5 3 0 0 5 2	PUR cable	
5 3 0 1 1 2	Teflon® cable	
5 3 0 1 1 6	PUR cable	

Wiring					
Cable 530 032	Cable 530 052	Cable 530 112	Cable 530 116	M12 female connector	M16 female connector
Color	Color	Color	Color	Pin	Pin
GY	GY	GY	GY	4	1
PK	PK	PK	PK	3	2
YE	YE	YE	YE	1	3
GN	GN	GN	GN	2	4
BN	BN	BN	BN	7	5
WH	WH	WH	WH	8	6
		BU	BU	Not connected	Not connected
		RD	RD	Not connected	Not connected

* / Length tolerance: -0/+1 % (minimum -0/+10 cm)

7.4 CANbus

Example: 100 cm TMPU cable (530 029) with M12 straight female connector (370 423) and open cable end for R-Series CANbus (D60):
MTS-C-370423-0100-530029



a	Company name
M T S	MTS Sensors

b	Output
C	CANbus

c	Cable begin
M12 connector (D34/D54) <i>see chapter 5.3 for detailed information</i>	
3 7 0 6 7 7	Straight Female R-Series D54
3 7 0 6 7 8	Angled Female R-Series D54
M16 connector (D60/D62) <i>see chapter 5.4 for detailed information</i>	
3 7 0 4 2 3	Straight Female R-Series D60, D62
3 7 0 4 6 0	Angled Female R-Series D60, D62

d	Cable length
X X X X	0030...9990 cm*

e	Cable type <i>see chapter 6 for detailed information</i>
5 3 0 0 2 9	TMPU cable
5 3 0 0 5 2	PUR cable
5 3 0 1 1 2	Teflon® cable
5 3 0 1 1 6	PUR cable

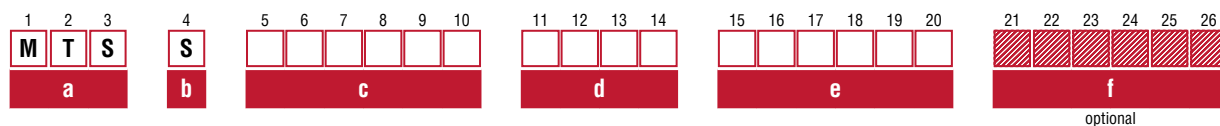
Optional – instead of pigtail cable end	
f	Cable end
<i>Choose this option, if the cable end should have a connector instead of a pig tail.</i>	
M16 connector (D62) <i>see chapter 5.4 for detailed information</i>	
3 7 0 4 2 3	Straight Female R-Series D62
3 7 0 4 6 0	Angled Female R-Series D62

Wiring					
Cable 530 029	Cable 530 052	Cable 530 112	Cable 530 116	M12 female connector	M16 female connector
Color	Color	Color	Color	Pin	Pin
GY	GY	GY	GY	5	1
PK	PK	PK	PK	4	2
YE	YE	YE	YE	Not connected	Not connected
GN	GN	GN	GN	Not connected	Not connected
BN	BN	BN	BN	2	5
WH	WH	WH	WH	3	6
BU		BU	BU	Not connected	Not connected
		RD	RD	Not connected	Not connected

*/ Length tolerance: -0/+1 % (minimum -0/+10 cm)

7.5 SSI

Example: 100 cm TMPU cable (530 029) with M16 straight female connector (370 624) and open cable end for R-Series SSI (D70):
MTS-S-370624-0100-530029



a	Company name
M T S	MTS Sensors

b	Output
S	SSI

c	Cable begin
M12 connector (D84) <i>see chapter 5.3 for detailed information</i>	
3 7 0 6 9 4	Straight Female E-Series D84 GB-Series D84
3 7 0 6 9 9	Angled Female E-Series D84 GB-Series D84

M16 connector (D70) <i>see chapter 5.4 for detailed information</i>	
3 7 0 6 2 4	Straight Female R-Series D70 R-Series V D70
5 6 0 7 7 9	Angled Female R-Series D70 R-Series V D70

d	Cable length
X X X X	0030...9990 cm*

e	Cable type <i>see chapter 6 for detailed information</i>
5 3 0 0 2 9	TMPU cable
5 3 0 0 3 2	PVC cable
5 3 0 0 5 2	PUR cable
5 3 0 1 1 2	Teflon® cable
5 3 0 1 1 6	PUR cable
5 3 0 1 7 5	PUR cable

Optional – instead of pigtail cable end

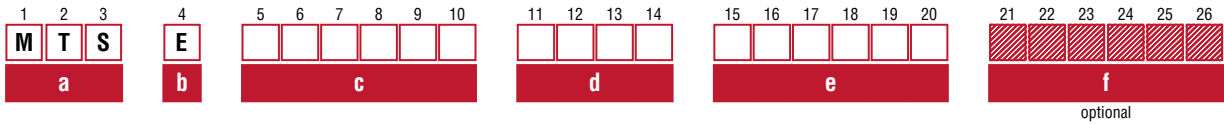
f	Cable end
<i>Choose this option, if the cable end should have a connector instead of a pig tail.</i>	
M16 connector (D70) <i>see chapter 5.4 for detailed information</i>	
3 7 0 6 2 5	Straight Male R-Series D70

Wiring							
Cable 530 029	Cable 530 032	Cable 530 052	Cable 530 112	Cable 530 116	Cable 530 175	M12 female connector	M16 female/male connector
Color	Color	Color	Color	Color	Color	Pin	Pin
GY	GY	GY	GY	GY	GY	4	1
PK	PK	PK	PK	PK	PK	3	2
YE	YE	YE	YE	YE	YE	1	3
GN	GN	GN	GN	GN	GN	2	4
BN	BN	BN	BN	BN	BN	7	5
WH	WH	WH	WH	WH	WH	8	6
BU			BU	BU		Not connected	Not connected
			RD	RD		Not connected	Not connected

* / Length tolerance: -0/+1 % (minimum -0/+10 cm)

7.6 EtherCAT®/EtherNet/IP™/POWERLINK/PROFINET

Example: 100 cm PUR cable (530 125) with M12 straight male connector (370 523) and open cable end for R-Series PROFINET (D58):
MTS-E-370523-0100-530125



a	Company name
M T S	MTS Sensors

b	Output
E	EtherCAT®/EtherNet/IP™/POWERLINK/PROFINET

c	Cable begin
M12 connector (D56/D58) see chapter 5.3 for detailed information	
3 7 0 5 2 3	Straight Male R-Series EtherCAT® D56 R-Series EtherNet/IP™ D56 R-Series PROFINET D58 R-Series POWERLINK D56 R-Series V EtherCAT® D56 R-Series V EtherCAT® D58 R-Series V EtherNet/IP™ D56 R-Series V EtherNet/IP™ D58 R-Series V POWERLINK D56 R-Series V PROFINET D58

d	Cable length
X X X X	0030...9990 cm*

Wiring	
Cable 530 125	M12 male connector
Color	Pin
YE	1
WH	2
OG	3
BU	4

e	Cable type see chapter 6 for detailed information
5 3 0 1 2 5	PUR cable

Optional – instead of pigtail cable end

f	Cable end
<i>Choose this option, if the cable end should have a connector instead of a pig tail.</i>	

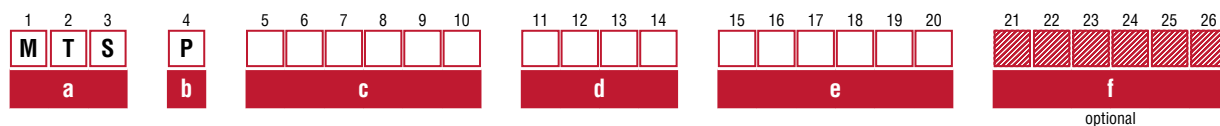
M12 connector (D56/D58) see chapter 5.3 for detailed information	
3 7 0 5 2 3	Straight Male R-Series EtherCAT® D56 R-Series EtherNet/IP™ D56 R-Series POWERLINK D56 R-Series PROFINET D58 R-Series V EtherCAT® D56 R-Series V EtherCAT® D58 R-Series V EtherNet/IP™ D56 R-Series V EtherNet/IP™ D58 R-Series V POWERLINK D56 R-Series V PROFINET D58

RJ45 connector (D56/D58)	
3 7 0 6 4 9	Straight Male R-Series EtherCAT® D56 R-Series EtherNet/IP™ D56 R-Series POWERLINK D56 R-Series PROFINET D58 R-Series V EtherCAT® D56 R-Series V EtherCAT® D58 R-Series V EtherNet/IP™ D56 R-Series V EtherNet/IP™ D58 R-Series V POWERLINK D56 R-Series V PROFINET D58

* / Length tolerance: -0/+1 % (minimum -0/+10 cm)

7.7 PROFIBUS

Example: 100 cm PVC cable (530 040) with M16 straight male connector (370 427) and open cable end for R-Series PROFIBUS (D63):
MTS-P-370427-0100-530040



a	Company name
M T S	MTS Sensors

b	Output
P	PROFIBUS

c	Cable begin
M12 connector (D53) <i>see chapter 5.3 for detailed information</i>	
5 6 0 8 8 4	Straight Male R-Series PROFIBUS D53
3 7 0 5 1 5	Angled Male R-Series PROFIBUS D53
5 6 0 8 8 5	Straight Female R-Series PROFIBUS D53
3 7 0 5 1 4	Angled Female R-Series PROFIBUS D53
M16 connector (D63) <i>see chapter 5.4 for detailed information</i>	
3 7 0 4 2 7	Straight Male R-Series PROFIBUS D63
3 7 0 6 2 1	Angled Male R-Series PROFIBUS D63
3 7 0 4 2 3	Straight Female R-Series PROFIBUS D63
3 7 0 4 6 0	Angled Female R-Series PROFIBUS D63

d	Cable length
X X X X	0030...9990 cm*

e	Cable type <i>see chapter 6 for detailed information</i>
for M12 connectors	
5 3 0 1 0 9	PUR cable
for M16 connectors	
5 3 0 0 4 0	PVC cable

Optional – instead of pigtail cable end

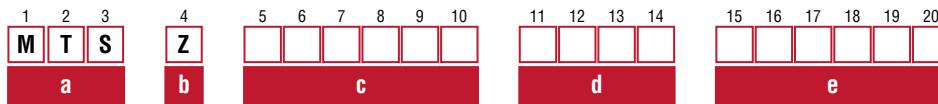
f	Cable end
<i>Choose this option, if the cable end should have a connector instead of a pig tail.</i>	
M12 connector (D53) <i>see chapter 5.3 for detailed information</i>	
5 6 0 8 8 4	Straight Male R-Series PROFIBUS D53
5 6 0 8 8 5	Straight Female R-Series PROFIBUS D53

Wiring			
Cable 530 040	Cable 530 109	M12 female/male connector	M16 female/male connector
Color	Color	Pin	Pin
● GN	● GN	2	1
● RD	● RD	4	2
● BK		Not connected	5
● BU		Not connected	6
● YE		Not connected	Not connected

* / Length tolerance: -0/+1 % (minimum -0/+10 cm)

7.8 Power supply for CANbus/EtherCAT®/EtherNet/IP™/POWERLINK/PROFIBUS/PROFINET

Example: 100 cm PVC cable (530 108) with M8 straight female connector (370 504) and open cable end for power supply of R-Series POWERLINK (D56): MTS-Z-370504-0100-530108



a	Company name
M T S	MTS Sensors

b	Output
Z	Power supply

c	Cable begin																		
M8 connector (D53/D54/AXX/D56/D58) <i>see chapter 5.2 for detailed information</i>																			
3 7 0 5 0 4	<table border="0"> <tr> <td>Straight Female R-Series CANbus</td> <td>D54</td> </tr> <tr> <td>R-Series EtherCAT®</td> <td>D56</td> </tr> <tr> <td>R-Series EtherNet/IP™</td> <td>D56</td> </tr> <tr> <td>R-Series POWERLINK</td> <td>D56</td> </tr> <tr> <td>R-Series PROFIBUS</td> <td>D53</td> </tr> <tr> <td>R-Series PROFIBUS</td> <td>AXX</td> </tr> <tr> <td>R-Series V EtherCAT®</td> <td>D56</td> </tr> <tr> <td>R-Series V EtherNet/IP™</td> <td>D56</td> </tr> <tr> <td>R-Series V POWERLINK</td> <td>D56</td> </tr> </table>	Straight Female R-Series CANbus	D54	R-Series EtherCAT®	D56	R-Series EtherNet/IP™	D56	R-Series POWERLINK	D56	R-Series PROFIBUS	D53	R-Series PROFIBUS	AXX	R-Series V EtherCAT®	D56	R-Series V EtherNet/IP™	D56	R-Series V POWERLINK	D56
Straight Female R-Series CANbus	D54																		
R-Series EtherCAT®	D56																		
R-Series EtherNet/IP™	D56																		
R-Series POWERLINK	D56																		
R-Series PROFIBUS	D53																		
R-Series PROFIBUS	AXX																		
R-Series V EtherCAT®	D56																		
R-Series V EtherNet/IP™	D56																		
R-Series V POWERLINK	D56																		
M12 connector (D58) <i>see chapter 5.3 for detailed information</i>																			
3 7 0 6 7 7	<table border="0"> <tr> <td>Straight Female R-Series PROFINET</td> <td>D58</td> </tr> <tr> <td>R-Series V EtherNet/IP™</td> <td>D58</td> </tr> <tr> <td>R-Series V EtherCAT®</td> <td>D58</td> </tr> <tr> <td>R-Series V PROFINET</td> <td>D58</td> </tr> </table>	Straight Female R-Series PROFINET	D58	R-Series V EtherNet/IP™	D58	R-Series V EtherCAT®	D58	R-Series V PROFINET	D58										
Straight Female R-Series PROFINET	D58																		
R-Series V EtherNet/IP™	D58																		
R-Series V EtherCAT®	D58																		
R-Series V PROFINET	D58																		

d	Cable length
X X X X	0030...9990 cm*

e	Cable type <i>see chapter 6 for detailed information</i>
5 3 0 1 0 8	PVC cable

Wiring		
Cable 530 108	M8 female connector	M12 female connector
Color	Pin	Pin
● BN	1	1
	2	2
○ WH	3	3
	4	6
● GN	Not connected	Not connected

* / Length tolerance: -0/+1 % (minimum -0/+10 cm)

8. Programming tools





Photo	Name & part number	Description	Series & output
	CANopen address programmer with straight connector Part no. 252 382-D62 CANopen address programmer with angled connector Part no. 252 382-D62A	Used for setting the node address to Temposonics® sensors with CANopen interface. The setup of the node address is normally done by the CANbus standard LMT-Service. Since some master systems do not support this standard, or the customer controller system can not handle it, this MTS service tool can be used for the direct setup of the sensor. All you need for using the programmer is a +24 VDC power supply to the sensor. The programming tool will be supplied by the Temposonics® position sensor.	R-Series CANbus
	Hand programmer for analog output Part no. 253 124	Easy teach-in-setups of stroke length and direction on desired zero / span positions. For sensors with 1 magnet.	E-Series ET Analog GB-Series Analog R-Series Analog R-Series V Analog
	Programming kit Part no. 253 134-1 (EU)	Kit includes: 1 × interface converter box, 1 × power supply 1 × cable (60 cm) with M16 female connector (6 pin), straight – D-sub female connector (9 pin), straight 1 × cable (60 cm) with 3 × terminal clamp – D-sub female connector (9 pin), straight 1 × USB cable For sensors with 1 or 2 magnets. Software is available at: www.mtssensors.com	E-Series ET Analog R-Series Analog T-Series Analog (standard)
	Programming kit Part no. 253 135-1 (EU)	Kit includes: 1 × interface converter box, 1 × power supply 1 × cable (60 cm) with M16 female connector (7 pin), straight – D-sub female connector (9 pin), straight 1 × cable (60 cm) with 6 × terminal clamp – D-sub female connector (9 pin), straight 1 × USB cable Software is available at: www.mtssensors.com	E-Series ET SSI R-Series SSI T-Series SSI






Photo	Name & part number	Description	Series & output
	Programming kit Part no. 253 145-1	Kit includes: 1 × interface converter box, 1 × power supply 1 × cable (60 cm) with M16 female connector (6 pin), straight & 2 × banana connector – D-sub female connector (9 pin), straight 1 × cable (60 cm) with 4 × terminal clamp – D-sub female connector (9 pin), straight 1 × USB cable Software is available at: www.mtssensors.com	G-Series Analog
	Programming kit Part no. 253 146-1	Kit includes: 1 × interface converter box, 1 × power supply 1 × cable (60 cm) with M16 female connector (6 pin), straight – D-sub female connector (9 pin), straight 1 × cable (60 cm) with 6 × terminal clamp – D-sub female connector (9 pin), straight 1 × USB cable Software is available at: www.mtssensors.com	G-Series Start/Stop
	Cabinet programmer for analog output Part no. 253 408	Features snap-in mounting on standard DIN rail (35 mm). This programmer can be permanently mounted in a control cabinet and includes a program/run switch. For sensors with 1 magnet.	E-Series ET Analog GB-Series Analog R-Series Analog R-Series V Analog T-Series Analog (standard)
	Hand programmer for analog output Part no. 253 853	Easy teach-in-setups of stroke length and direction on desired zero / span positions. For sensors with 1 magnet.	G-Series Analog
	Programming kit Part no. 254 555	Kit includes: 1 × interface converter box 1 × power supply 1 × cable (60 cm) with M12 female connector (5 pin), straight – D-sub female connector (9 pin), straight 1 × cable (60 cm) with M16 female connector (6 pin), straight – D-sub female connector (9 pin), straight 1 × cable (60 cm) with 3 × terminal clamp – D-sub female connector (9 pin), straight 1 × USB cable Software is available at: www.mtssensors.com	GB-Series Analog



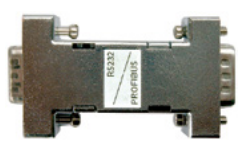
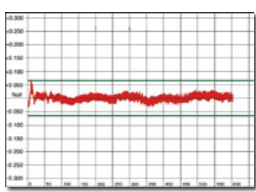

Photo	Name & part number	Description	Series & output
	Programming kit Part no. 254 590	Kit includes: 1 × interface converter box, 1 × power supply 1 × cable (60 cm) with M12 female connector (8 pin), straight – D-sub female connector (9 pin), straight 1 × cable (60 cm) with M16 female connector (7 pin), straight – D-sub female connector (9 pin), straight 1 × cable (60 cm) with 6 × terminal clamp – D-sub female connector (9 pin), straight 1 × USB cable Software is available at: www.mtssensors.com	GB-Series SSI
	PROFIBUS node address programmer Part no. 280 640	Used for setting the slave address to Temposonics® sensors with PROFIBUS-DP interface. The setup of slave address is normally done by the PROFIBUS standard service SetSlaveAddress. Since some master systems do not support this standard, or the customer controller system can not handle it, this MTS service tool can be used for the direct setup of the sensor. The programmer and the sensor will be supplied by the included power supply.	R-Series PROFIBUS
	PROFIBUS master simulator Part no. 401 727 PROFIBUS adapter cable for connection type D53 Part no. 252 383 PROFIBUS adapter cable for connection type D63 Part no. 401 726	The master simulator can be used to check the sensors functions and to change the slave address. The magnet positions can be read out and the diagnostic data as well.	R-Series PROFIBUS
	Linearity diagram Part no. 625 096	DIN A4 printout with sensor data and graphic with the linearity gradient. This gradient can be used to choose a special linear segment or for linearity correction in sections.	R-Series Analog CANbus EtherCAT® EtherNet/IP™ PROFIBUS POWERLINK PROFINET SSI R-Series V Analog EtherCAT® EtherNet/IP™ POWERLINK PROFINET SSI

Photo	Name & part number	Description	Series & output
 <p>A black rectangular industrial indicator with a multi-color LCD display showing the number '12345' in orange. The display also shows some smaller text and symbols. The device has a resistive touch panel and a multi-color graphic display.</p>	<p>IX350/AC SSI indicator Part no. IX350/AC</p>	<p>Indicator with resistive touch panel and multi-color graphic display. Visualization of plain text, symbols and units. Housing: 96 mm × 48 mm × 116 mm For additional information see: www.motrona.com</p>	<p>E-Series SSI GB-Series SSI R-Series SSI R-Series V SSI T-Series SSI</p>

9. TempoLink smart assistant for R-Series V

YOUR SMART ASSISTANT

The TempoLink smart assistant is an accessory for the R-Series V sensors family. It supports the setup of the sensor in the application as well as providing additional status information for sensor diagnostics.

ORDER CODE

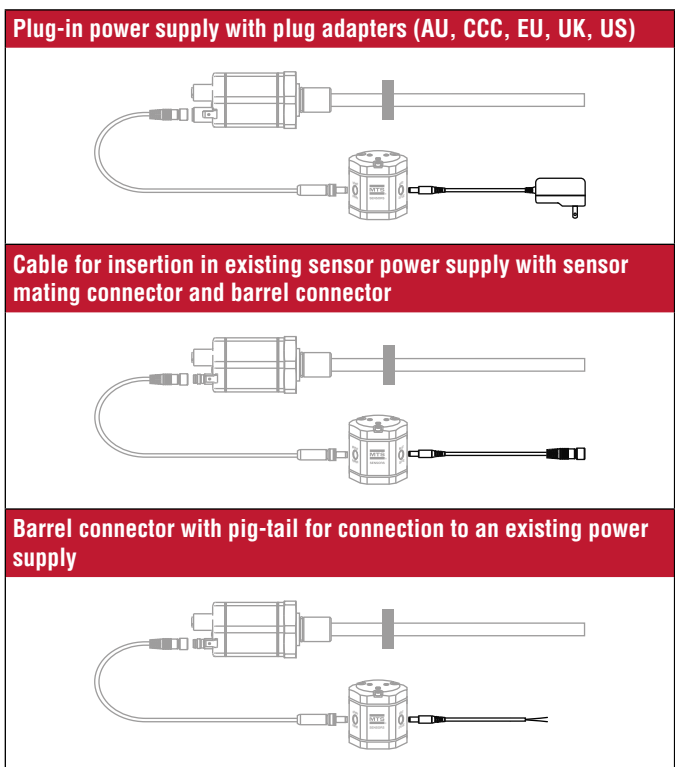
1	2	3	4	5	6	7	8
T	L		0				
a		b	c	d			

a	Type
T L	TempoLink smart assistant kit

b	Power supply
1	Plug-in power supply with plug adapters (AU, CCC, EU, UK, US)
2	Cable for insertion in existing sensor power supply with sensor mating connector and barrel connector (for connection type D56 and D58)
3	Barrel connector with pig-tail for connection to an existing power supply

c	Option
0	No options

d	Adapter cables for connection to R-Series V
E M 0 8	Cable with M8 female connector (4 pin) for connection type D56 (EtherCAT®/EtherNet/IP™/POWERLINK) (part no. 254 887-1)
E M 1 2	Cable with M12 female connector (4 pin) for connection type D58 (EtherCAT®/EtherNet/IP™/PROFINET) (part no. 254 897-1)
S D 7 0	Cable with M16 female connector (7 pin) for connection type D70 (SSI) (part no. 254 990-1)
A S 0 0	Cable with 6 × terminal clamps for connection type cable output (Analog/SSI) (part no. 255 043-1)
A D 6 0	Cable with M16 female connector (6 pin) for connection type D60 (Analog) (part no. 254 989-1)



DELIVERY


- TempoLink smart assistant kit** Adapter cables to connect TempoLink smart assistant to sensors of R-Series V can be ordered separately
- TempoLink smart assistant
- One of the three options for the power supply
- One adapter cable to connect TempoLink smart assistant to R-Series V sensor
- USB cable for optional connection of TempoLink smart assistant to a computer



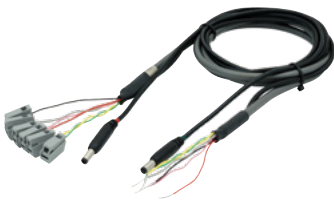

9.1 Adapter cables for connection of TempoLink smart assistant to a specific R-Series V sensor

Photo	Name & part number	Description	Series & output	
	Adapter cable for D56 M8 female connector (4 pin) – barrel Part no. 254 887-1	Material: PVC Cable length: 1.5 m	R-Series V	
			EtherCAT®	D56
			EtherNet/IP™	D56
			POWERLINK	D56
	Adapter cable for D58 M12 female connector (4 pin) – barrel Part no. 254 897-1	Material: PUR Cable length: 1.5 m	R-Series V	
			EtherCAT®	D58
			EtherNet/IP™	D58
			PROFINET	D58
	Adapter cable for D60 M16 female connector (6 pin) – barrel Part no. 254 989-1	Material: PVC Cable length: 1.5 m	R-Series V	
			Analog	D60
	Adapter cable for D70 M16 female connector (7 pin) – barrel Part no. 254 990-1	Material: PVC Cable length: 1.5 m	R-Series V	
			SSI	D70

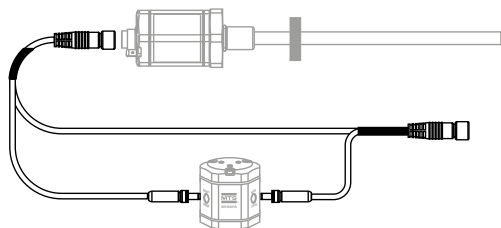
9.2 Adapter cable

Photo	Name & part number	Description	Series & output	
	Adapter cable for cable output 6 × terminal clamps – barrel Part no. 255 043-1	Material: PVC Cable length: 1.5 m	R-Series V	
			Analog	Cable output
			SSI	Cable output

9.3 Inline cables for SSI output

Photo	Name & part number	Description	Series & output	
	Inline cable for cable output (SSI) 6 × terminal clamps – pigtail with 2 barrel connectors Part no. 255 004	Material: PVC Cable length: 1.5 m	R-Series V	
			SSI	Cable output
	Inline cable for D70 M16 female connector (7 pin) – M16 connector male (7 pin) with 2 barrel connectors Part no. 254 994-1	Material: PVC Cable length: 1.5 m	R-Series V	
			SSI	D70

NOTICE



Inline cable

- The TempoLink smart assistant can be used to read out R-Series V status information during operation.
 - SSI combines power supply and data lines in one cable.
 - Inline cable allows the TempoLink smart assistant to be connected in parallel to the data transfer to the control.
- So status information can be read during operation of the R-Series V SSI sensor while the TempoLink smart assistant is connected.

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