

# Fischer UltiMate™ Series

Technical Specifications

## Connect<sup>2</sup>

Expertise | Reliability | Innovation



**Rugged, compact, lightweight**

Connectors and cable assemblies

[www.fischerconnectors.com](http://www.fischerconnectors.com)



Dimensions



Configurations

**fischer**<sup>®</sup>  
CONNECTORS

# FISCHER CONNECTORS

Fischer Connectors is a leading company in the design, manufacturing and distribution of high-performance connectors and cable assembly solutions. Known for their quality, ruggedness and excellent sealing, our products prove to be reliable in the most demanding environments.

Innovative and flexible, Fischer Connectors is committed to provide customized solutions of uncompromising quality. Primary design and manufacturing facilities are located in Switzerland, with subsidiaries and distributors located worldwide.



## Connect<sup>2</sup> Expertise

We connect not only with customers who build devices, but with the people who use them on a daily basis, to better understand their needs.

- Engineering Expertise
- Supply Chain Expertise
- Market Expertise

## Connect<sup>2</sup> Reliability

We focus on delivering on time, on cost and on experience connectivity solutions that stand up to the toughest conditions, so you know you can rely on our service and on uncompromising quality in all environments.

- Quality Reliability
- Delivery Reliability
- Response Reliability

## Connect<sup>2</sup> Innovation

Our proven track record in first-to-market, innovative solutions is built on imagination, observation and significant investments in R&D. We help you bring new ideas to market quickly by putting our cutting-edge technology, production tools and experts at your service.

- Technology Innovation
- Product Innovation
- Solutions Innovation

## PRODUCT FEATURES

**DURABILITY**



- Sealing IP68/IP69 even unmated
- Hermetic
- Extremely robust mechanical keying
- 10,000 mating cycles

**PERFORMANCE**



- 360° EMC shielding
- Grounding contact ring
- Easy cable assembly solutions

**RUGGED**



- High shock & vibration resistance
- Operating temperature: -55°C to +135°C
- High corrosion resistance
- Blind mating

**PERSONALIZED**



- Wide range of configurations
- Miniature & ultralight design
- Color overmolding available
- Crimp and solder contacts

## CERTIFICATION & COMPLIANCE

Fischer Connectors is committed to quality throughout every phase of its operations. The company supports its customers and applies within its organization all directives and norms improving the quality, safety and environmental friendliness of its connectors, processes and systems.

**MIL-SPECS:** The Fischer UltiMate™ Series is engineered to withstand extreme operational environments, such as vibration, shock, rain, humidity, salt fog, sand/dust, or temperature; our military connectors are tested according to IEC standards.

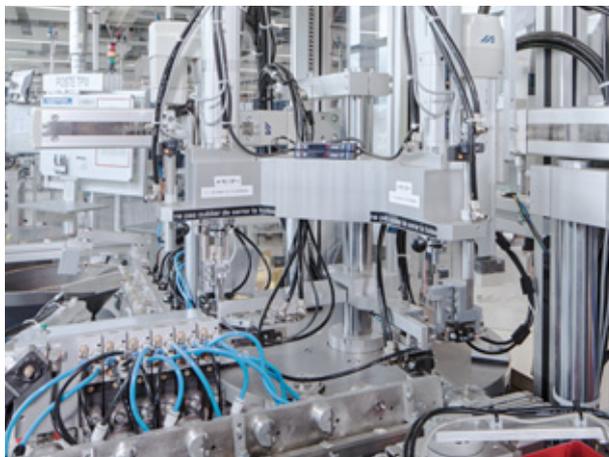
**ISO 9001**

**ISO 13485**

**ISO 14001**

**ROHS**  
compliant

**REACH**



## APPLICATIONS INTRODUCTION

The Fischer UltiMate™ Series is specially designed for a broad range of harsh environment applications. It offers rugged, compact, lightweight, sealed connectors and cable assembly solutions ideally suited to withstand a variety of severe environmental, industrial and chemical conditions.



## CABLE ASSEMBLY SOLUTIONS

Fischer Connectors' skilled technical and support teams help you build the perfect Fischer UltiMate™ cable assembly for your unique application, providing advice through design, prototype, assembly, testing, manufacturing, installation, and beyond.

Our complete solutions include:

- Overmolded cable assemblies, including thermoplastic & silicone
- Rugged & submersible cable solutions
- Heat shrinking for added protection and support to exposed wire
- Straight and right-angle overmolding



## PRODUCT RANGE

PLUGS	SHORT CABLE MOUNTED		PANEL FRONT MOUNTED	
				
RECEPTACLES	PANEL LOW PROFILE REAR-MOUNTED	PANEL REAR-MOUNTED	PANEL LOW PROFILE FRONT-MOUNTED	SHORT CABLE MOUNTED
				
	UR01	UR02	UR03	UR50

## MECHANICAL CODING

PLUGS	SIZE 07				SIZE 08							
												
RECEPTACLES	SIZE 11,13 & 18				SIZE 07				SIZE 08			
												
	SIZE 11,13 & 18				SIZE 07				SIZE 08			
												

# PART NUMBERING

## STRUCTURE

<b>Connector Design</b>	<b>Contact Block</b>
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## PARTS

Body Style	Sealing Level	Locking System	Connector Size	Polarity	Number of Contacts	Contact Type
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## AVAILABLE CHOICES

<p><b>UltiMate Plug = UP</b></p> <p><b>Cable Mounted Plug</b></p> <ul style="list-style-type: none"> <li>Short = <b>UP01</b></li> </ul> <p><b>Panel Mounted Plug</b></p> <ul style="list-style-type: none"> <li>Front mounted = <b>UP50</b></li> </ul> <p><b>UltiMate Receptacle = UR</b></p> <p><b>Panel Mounted Receptacle</b></p> <ul style="list-style-type: none"> <li>Rear mounted low profile = <b>UR01</b></li> <li>Rear mounted = <b>UR02</b></li> <li>Front mounted low profile = <b>UR03</b></li> </ul> <p><b>Cable Mounted Receptacle</b></p> <ul style="list-style-type: none"> <li>Short = <b>UR50</b></li> </ul>	<p><b>Panel Mounted</b></p> <ul style="list-style-type: none"> <li>Vacuum sealing = <b>V</b></li> <li>Water sealing = <b>W</b></li> </ul> <p><b>Cable Mounted</b></p> <ul style="list-style-type: none"> <li>Push-pull automatic locking system = <b>L</b></li> <li>Quick release = <b>Q</b></li> </ul> <p><b>Cable Mounted Receptacle = Z</b></p>	<ul style="list-style-type: none"> <li>Size 7 = <b>07</b></li> <li>Size 8 = <b>08</b></li> <li>Size 11 = <b>11</b></li> <li>Size 13 = <b>13</b></li> <li>Size 18 = <b>18</b></li> </ul>	<ul style="list-style-type: none"> <li>Male contacts = <b>M</b></li> <li>Female contacts = <b>F</b></li> </ul>	<p><b>002 to 042</b></p> <p>Contacts available per size:</p> <ul style="list-style-type: none"> <li><b>Size 07</b> 002, 003, 004, 005, 007, 009, 010</li> <li><b>Size 08</b> 002, 003, 004, 005, 007, 009</li> <li><b>Size 11</b> 012, 016, 019</li> <li><b>Size 13</b> 027</li> <li><b>Size 18</b> 042</li> </ul>	<ul style="list-style-type: none"> <li>Solder = <b>S</b></li> <li>PCB = <b>P</b></li> <li>Crimp = <b>C</b></li> </ul>
	<p><b>Cable Mounted</b> Not applicable</p> <p><b>IP68/69 with Fischer Connectors Cable Assembly Solutions</b></p>	<p><b>Panel Mounted</b> Not applicable</p>	<p><b>Size corresponds to Interface Diameter of Plug and Receptacle in mm</b></p>	<p><b>Standard Polarity</b> Male Contacts on Plug Female Contacts on Receptacle</p> <p><b>Inverted Polarity</b> Female Contacts on Plug Male Contacts on Receptacle</p>	

## EXAMPLES

### Cable Mounted Plugs (UP01 to UP49)

<b>UP0X</b>		<b>L</b>	<b>11</b>	<b>M</b>	<b>012</b>	<b>S</b>
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### Cable Mounted Receptacles (UR50 to UR99)

<b>UR5X</b>		<b>Z</b>	<b>11</b>	<b>F</b>	<b>012</b>	<b>S</b>
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### Panel Mounted Plugs (UP50 to UP99)

<b>UP5X</b>	<b>W</b>		<b>11</b>	<b>M</b>	<b>012</b>	<b>S</b>
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### Panel Mounted Receptacles (UR01 to UR49)

<b>UR0X</b>	<b>W</b>		<b>11</b>	<b>F</b>	<b>012</b>	<b>S</b>
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# PART NUMBERING

## STRUCTURE



## PARTS



## AVAILABLE CHOICES

<ul style="list-style-type: none"> <li>▪ Standard = <b>BK*</b></li> </ul>	<ul style="list-style-type: none"> <li>▪ Code 1 (●) = 1</li> <li>▪ Code 2 (▼) = 2</li> <li>▪ Code 3 (■) = 3</li> <li>▪ Code 4 (✘) = 4</li> </ul>	<p><b>Receptacle</b></p> <p><b>O-ring at plug interface = E**</b></p> <p><b>Plug</b> Not applicable = Z</p>	<ul style="list-style-type: none"> <li>▪ PBT = 1 Size 08,11,13,18 only</li> <li>▪ PEEK = 2 Size 07 only</li> </ul>	<p><b>Panel Mounted</b></p> <ul style="list-style-type: none"> <li>▪ Grounding pin = <b>A</b> Available for UR01/UR02</li> <li>▪ None = <b>N</b> for UR03/UP50</li> </ul> <p><b>Cable Mounted</b> Not applicable = Z</p>	<ul style="list-style-type: none"> <li>▪ <b>A</b> = Aluminium</li> <li>▪ <b>B</b> = Brass***</li> </ul>
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\* Standard Housing Color is anthracite for all sizes

Standard guide mark is white

Standard keying code 1

Visual coding on plug and receptacle  
● ▼ ■ ✘

\*\* Size 07, 08, 13, 18 = EPDM O-ring  
Size 11= FVMQ O-ring

\*\*\* Standard Housing Material is Brass

## EXAMPLES

### Cable Mounted Plugs (UP01 to UP49)



### Cable Mounted Receptacles (UR50 to UR99)



### Panel Mounted Plugs (UP50 to UP99)

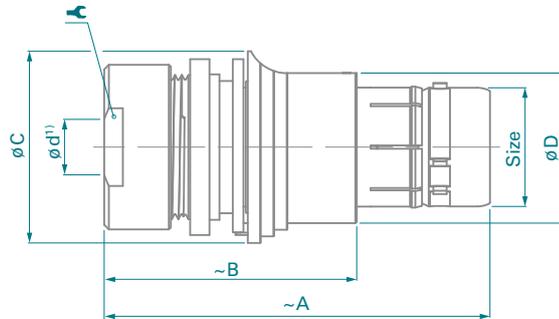


### Panel Mounted Receptacles (UR01 to UR49)



## TECHNICAL DIMENSIONS

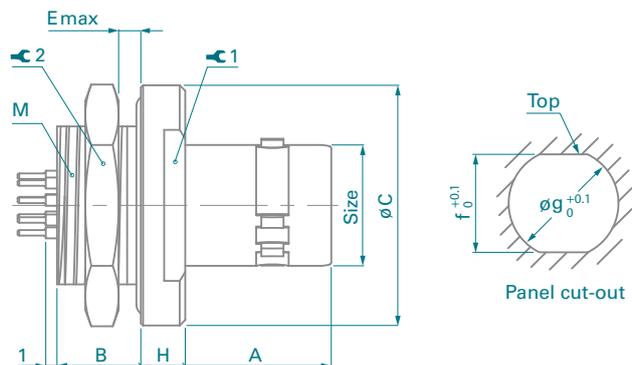
### UP01 SHORT CABLE PLUG



Size	A	B	$\phi C$	$\phi D$	$\phi d_{max}$		Torque
07	28.0	18.0	12.0	9.0	4.5	8	1.5 Nm
08	39.0	25.0	15.0	10.5	4.5	10	2.5 Nm
11	39.5	26.0	18.5	13.7	7.1	12	3.0 Nm
13	50.0	34.0	21.7	16.0	8.7	17	3.5 Nm
18	58.0	38.0	29.0	22.7	13.7	22	6.0 Nm

1) Max. cable diameter below shield.

### UP50 FRONT MOUNTED PANEL PLUG

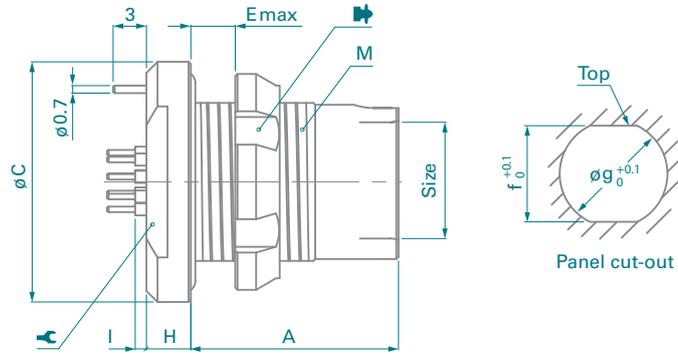


Size	A	B	$\phi C$	E	f	$\phi g$	H	M			Torque
07	10.0	5.2	13.0	2.5	8.0	9.1	3.0	9x0.5	9	11	1.3 Nm
11	13.2	7.6	21.8	4.5	14.5	16.1	4.0	16x1	17	19	4.5 Nm

All dimensions shown are in millimeters and are for reference only. They are subject to change without prior notice.

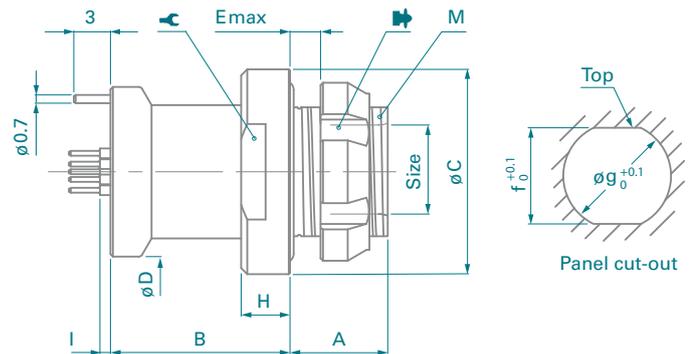
# TECHNICAL DIMENSIONS

## UR01 REAR MOUNTED LOW PROFILE PANEL RECEPTACLE\*



Size	A	$\phi C$	E	f	$\phi g$	H	I	M			Torque
07	14.2	14.0	4.5	9.2	10.1	3.0	0.7	10x0.5	11	TC00.007	1.5 Nm
08	18.7	16.9	5.0	10.9	12.1	4.0	1.0	12x1	15	TF00.001	2.5 Nm
11	18.7	21.8	7.0	14.5	16.1	4.0	1.0	16x1	17	TK00.002	4.5 Nm
13	22.5	23.8	5.5	16.5	18.1	4.0	1.0	18x1	20	TP00.011	6.0 Nm
18	29.3	31.8	7.5	23.2	25.1	4.0	1.0	25x1	27	TQ00.005	10.0 Nm

## UR02 REAR MOUNTED PANEL RECEPTACLE\*

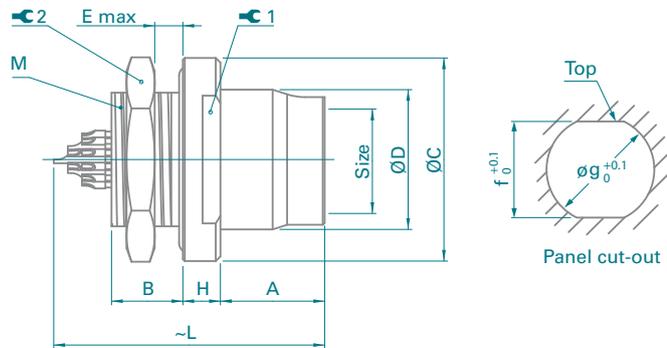


Size	A	B	$\phi C$	$\phi D$	E	f	$\phi g$	H	I	M			Torque
07	6.5	10.7	14.0	13.0	3.5	8.0	9.1	3.5	0.7	9x0.5	11	TC00.000	1.3 Nm
08	8.0	14.7	16.9	14.0	4.0	10.9	12.1	4.0	1.0	12x1	15	TF00.001	2.5 Nm
11	8.0	14.7	21.8	18.8	4.0	14.5	16.1	4.0	1.0	16x1	17	TK00.002	4.5 Nm
13	10.5	16.0	23.8	20.0	5.0	16.5	18.1	4.0	1.0	18x1	20	TP00.011	6.0 Nm
18	11.0	22.3	31.8	26.0	5.0	23.2	25.1	4.0	1.0	25x1	27	TQ00.005	10.0 Nm

\* Standard version with PCB contacts and grounding pin.  
For solder contact version, special solder ground contact pin is included.

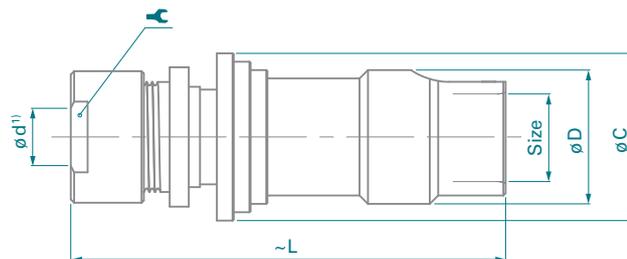
## TECHNICAL DIMENSIONS

### UR03 FRONT MOUNTED LOW PROFILE PANEL RECEPTACLE\*



Size	A	B	ØC	ØD	E	f	Øg	H	L	M	☞ 1	☞ 2	Torque
07	7.7	6.4	14.0	10.0	3.5	8.0	9.1	2.5	20	9x0.5	11	11	1.3 Nm
08	11.7	7.0	16.9	11.5	4.0	10.9	12.1	4.0	27	12x1	15	14	2.5 Nm
11	11.1	7.6	21.8	15.0	4.6	14.5	16.1	4.0	29	16x1	17	19	4.5 Nm

### UR50 SHORT CABLE RECEPTACLE



Size	ØC	ØD	Ø d <sub>max</sub>	L	☞	Torque
07	12.0	10.0	4.5	27	8	1.5 Nm
08	15.0	12.0	4.5	39	10	2.5 Nm
11	18.5	15.5	7.1	39	12	3.0 Nm
13	21.7	17.9	8.7	50	17	3.5 Nm

1) Max. cable diameter below shield.

\* Standard version with solder contacts

# CONTACT CONFIGURATIONS

Size	Pin Layout	Number of Contacts	Contact Diameter [mm]	Wire Size <sup>2)</sup>		PCB Contacts	Current Rating [A]	Rated Voltage r.m.s [V]	Test Voltage [kV] in mated position			
				Solder Contacts <sup>1)</sup>	Crimp Contacts				Pin Diameter [mm]	IEC 60512-4-1 Test 4a		
						3)	4)	AC r.m.s.		DC		
								Contact to Body		Contact to Contact	Contact to Body	Contact to Contact
07		2	0.9	max $\phi$ 0.79mm AWG21 [1] AWG22 [7/30]	-	0.63	9.2	$\leq$ 250	1.3	1.7	1.8	2.4
		3	0.9	max $\phi$ 0.79mm AWG21 [1] AWG22 [7/30]	-	0.63	8.2	$\leq$ 250	1.3	1.3	1.8	1.6
		4	0.7	max $\phi$ 0.79mm AWG21 [1] AWG22 [7/30]	-	0.50	5.5	$\leq$ 200	1.2	1.2	1.7	1.8
		5	0.7	max $\phi$ 0.79mm AWG21 [1] AWG22 [7/30]	-	0.50	5.2	$\leq$ 160	0.8	1.0	1.3	1.8
		7	0.5	max $\phi$ 0.43mm AWG26 [1] AWG28 [19/40]	-	0.40	2.0	$\leq$ 160	0.8	1.0	1.3	1.8
		9	0.5	max $\phi$ 0.43mm AWG26 [1] AWG28 [19/40]	-	0.40	1.7	$\leq$ 160	0.8	1.1	1.2	1.8
		10	0.5	max $\phi$ 0.43mm AWG26 [1] AWG28 [19/40]	-	0.40	1.7	$\leq$ 160	0.8	0.9	1.2	1.3

1) Stranding values are in brackets.

2) For a given AWG, the diameter of some stranded conductor designs could exceptionally be larger than the hole diameter of the barrel. Testing may be required.

3) Recommended max. operating current per contact at 40°C temperature rise.

4) Recommended operating voltage at sea level.

This rated voltage is a general purpose guideline where no other electrical safety standard applies.

In cases where other standards rule a specific use of the connector, the application specific safety criteria shall be considered first.

This must be evaluated in the framework of equipment engineering.

All dimensions shown are in millimeters and are for reference only. They are subject to change without prior notice.

# CONTACT CONFIGURATIONS

Size	Pin Layout	Number of Contacts	Contact Diameter [mm]	Wire Size <sup>2)</sup>		PCB Contacts	Current Rating [A]	Rated Voltage r.m.s [V]	Test Voltage [kV] in mated position				
				Solder Contacts <sup>1)</sup>	Crimp Contacts				Pin Diameter [mm]	IEC 60512-4-1 Test 4a			
										IEC 60512-5-2-5b		IEC 60664-1	
										3)		4)	
3)	4)	Contact to Body	Contact to Contact	Contact to Body	Contact to Contact								
08		2	0.9	max $\phi$ 0.79mm AWG21 [1] AWG22 [7/30]	-	0.70	9.2	$\leq$ 250	1.3	1.7	1.8	2.4	
		3	0.9	max $\phi$ 0.79mm AWG21 [1] AWG22 [7/30]	-	0.70	8.2	$\leq$ 250	1.3	1.3	1.8	1.6	
		4	0.7	max $\phi$ 0.79mm AWG21 [1] AWG22 [7/30]	max $\phi$ 0.62mm min $\phi$ 0.38mm AWG24-28	0.50	5.5	$\leq$ 200	1.2	1.2	1.7	1.8	
		5	0.7	max $\phi$ 0.79mm AWG21 [1] AWG22 [7/30]	max $\phi$ 0.62mm min $\phi$ 0.38mm AWG24-28	0.50	5.2	$\leq$ 160	0.8	1.0	1.3	1.8	
		7	0.5	max $\phi$ 0.43mm AWG26 [1] AWG28 [19/40]	-	0.40	2.0	$\leq$ 160	0.8	1.0	1.3	1.8	
		9	0.5	max $\phi$ 0.43mm AWG26 [1] AWG28 [19/40]	-	0.40	1.7	$\leq$ 160	0.8	1.1	1.2	1.8	
11		12	0.7	max $\phi$ 0.79mm AWG21 [1] AWG22 [7/30]	max $\phi$ 0.62mm min $\phi$ 0.38mm AWG24-28	0.50	4.2	$\leq$ 250	1.6	1.6	2.6	2.3	
		16	0.5	max $\phi$ 0.43mm AWG26 [1] AWG28 [19/40]	-	0.40	2.7	$\leq$ 250	1.2	0.9	2.0	1.5	
		19	0.5	max $\phi$ 0.43mm AWG26 [1] AWG28 [19/40]	-	0.40	2.5	$\leq$ 250	1.2	0.9	2.0	1.5	
				6)	7)								
13 <sup>5)</sup>		27	0.5	max $\phi$ 0.43mm AWG26 [1] AWG28 [19/40]	max $\phi$ 0.43mm min $\phi$ 0.20mm AWG28-32	0.40	2.0	$\leq$ 200	1.2	0.5	1.8	0.5	
18 <sup>5)</sup>		42	0.7	-	max $\phi$ 0.62mm min $\phi$ 0.38mm AWG24-28	0.50	3.0	$\leq$ 250	1.5	1.5	2.4	2.5	

1) Stranding values are in brackets.

2) For a given AWG, the diameter of some stranded conductor designs could exceptionally be larger than the hole diameter of the barrel. Testing may be required.

3) Recommended max. operating current per contact at 40°C temperature rise.

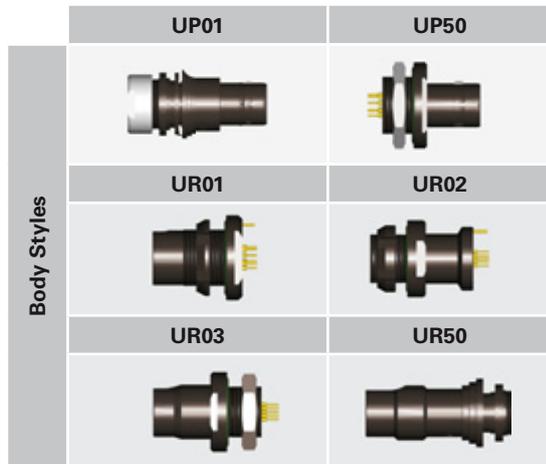
4) Recommended operating voltage at sea level. This rated voltage is a general purpose guideline where no other electrical safety standard applies. In cases where other standards rule a specific use of the connector, the application specific safety criteria shall be considered first. This must be evaluated in the framework of equipment engineering.

5) Standard polarity only.

6) Not valid for UP01

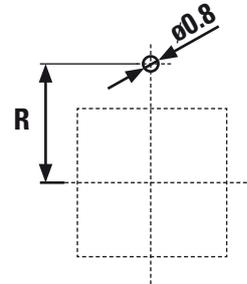
7) Not valid for UR50

# LAYOUT AND PIN NUMBERING



Position of optional ground pin

Size	R	
	UR01	UR02
07	5.5	
08	6.0	
11	8.4	
13	9.0	
18	12.0	



PIN LAYOUT / PCB HOLE PATTERN<sup>1)</sup> - View from F

Size	Polarity <sup>2)</sup>	Number of Contacts						
		2	3	4	5	7	9	10
07	Standard							
	Inverted							

Size	Polarity <sup>2)</sup>	Number of Contacts					
		2	3	4	5	7	9
08	Standard						
	Inverted						

1) Recommended PCB hole dimensions may be adjusted to application.  
 2) Standard polarity: Male contacts on Plug / Female contacts on Receptacle.  
 Inverted polarity: Female contacts on Plug / Male contacts on Receptacle.

All dimensions shown are in millimeters and are for reference only. They are subject to change without prior notice.

# LAYOUT AND PIN NUMBERING

## PIN LAYOUT / PCB HOLE PATTERN<sup>1)</sup> - View from F

Size	Polarity <sup>2)</sup>	Number of Contacts		
		12	16	19
11	Standard			
	Inverted			

Size	Polarity <sup>2)</sup>	Number of Contacts
		27
13	Standard	
	Inverted	

Size	Polarity <sup>2)</sup>	Number of Contacts
		42
18	Standard	
	Inverted	

1) Recommended PCB hole dimensions may be adjusted to application.

2) Standard polarity: Male contacts on Plug / Female contacts on Receptacle.  
Inverted polarity: Female contacts on Plug / Male contacts on Receptacle.

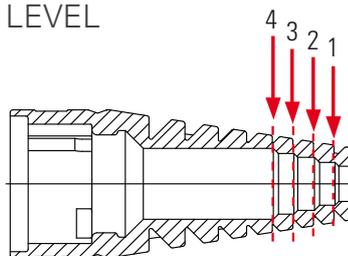
# FISCHER ULTIMATE™ BEND RELIEF

Top performance, no hassle

- No tool required: 5 steps to complete self-assembly
- Clean cut: perfectly adjust the bend relief to your cable diameter with a simple blade
- Long lasting:
  - Resists 10,000 constraints at a 90° angle
  - Operating temperature -55°C to +135°C
  - UV resistant



LEVEL



CUTTING DIAMETERS

Size	Uncut	Level 1	Level 2	Level 3	Level 4	Part Number
07	ø1.9	ø2.9	ø3.9	ø4.9	-	UB07 A1BK
08	ø2.5	ø3.7	ø5.7	ø7.5	-	UB08 A1BK
11	ø3.9	ø5.4	ø6.9	ø8.9	-	UB11 A1BK
13	ø6.9	ø8.9	ø10.9	ø12.9	-	UB13 A1BK
18	ø6.9	ø8.4	ø10.4	ø11.9	ø13.9	UB18 A1BK

All dimensions shown are in millimeters and are for reference only. They are subject to change without prior notice.

## SOFT CAPS - LANYARD WITH THIN CORD

FIGURE 1

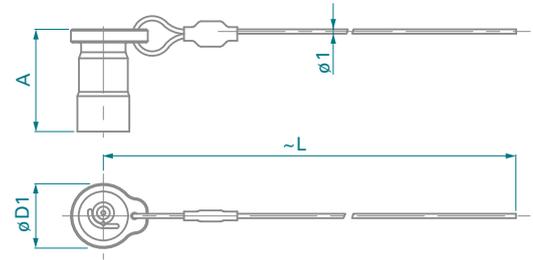
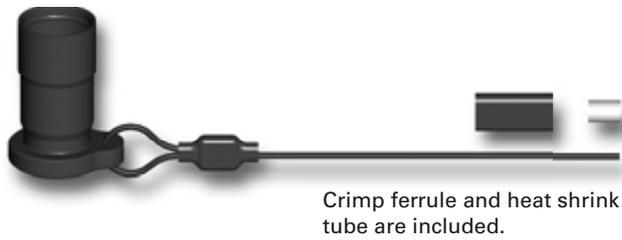


FIGURE 2

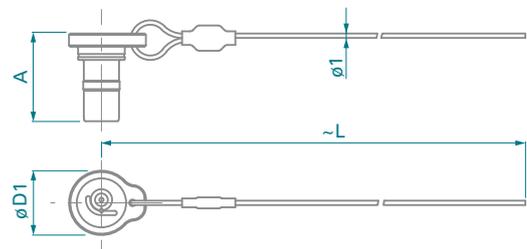
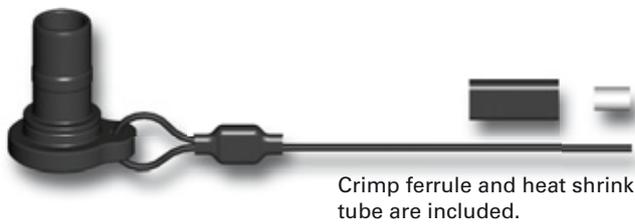


FIGURE 3

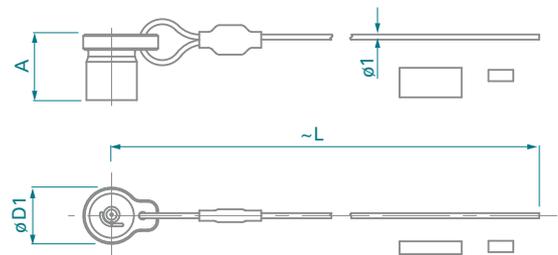
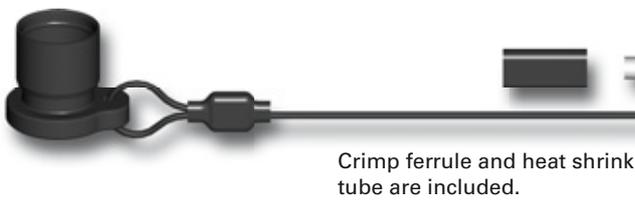
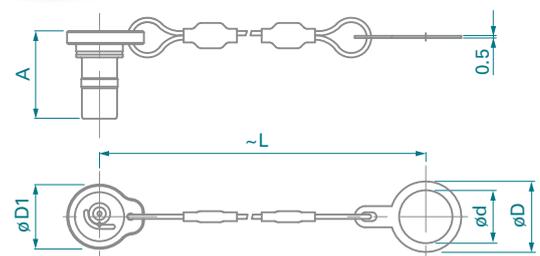


FIGURE 4



## SOFT CAPS - LANYARD WITH THIN CORD

Size	Plug		Receptacle				A	D1	L	d	D	Part number	Fig.
	UP01	UP50	UR01	UR02	UR03	UR50							
07	●						18.5	11.0	200	-	-	UCP07C 1A1 A200	1
			○	○	●	●	16.0	11.0	200	-	-	UCR07C 1A1 A200	2
		●					12.8	11.0	200	-	-	UCP07P 1A1 A200	3
			●	●			16.0	11.0	95	10	14	UCR07P 1A1 A095	4
08	●						23.2	14.6	200	-	-	UCP08C 1A1 A200	1
			○	○	●	●	19.9	14.6	200	-	-	UCR08C 1A1 A200	2
			●	●			19.9	14.6	95	12	16	UCR08P 1A1 A095	4
11	●						22.0	17.6	200	-	-	UCP11C 1A1 A200	1
			○	○	●	●	19.2	17.6	200	-	-	UCR11C 1A1 A200	2
			●	●			19.2	17.6	95	16	21	UCR11P 1A1 A095	4
13	●						25.0	20.7	200	-	-	UCP13C 1A1 A200	1
			○	○	●	●	22.5	20.7	200	-	-	UCR13C 1A1 A200	2
			●	●			22.5	20.7	95	18	23	UCR13P 1A1 A095	4
18	●						29.5	28.7	200	-	-	UCP18C 1A1 A200	1
			●	●			25.0	28.7	95	25	29	UCR18P 1A1 A095	4

● Recommended for optimal sealing

○ Compatible but not recommended for optimal sealing

## TECHNICAL DATA

### ENVIRONMENTAL & MECHANICAL SPECIFICATION

Characteristic	Performance and standard
<b>Sealing performance mated and unmated</b>	«W» (Water) and «V» (Vacuum) sealing level: IP68/IP69 <sup>1)</sup> ; IEC 60529 «V» sealing level: Hermetic: Tested: <10-8 mbar l/sec. ; IEC 60068-2-17 Test Qk, Method 3
<b>Sealing performance Soft Caps</b>	IP68: 2m/24h; IEC 60529
<b>Operating temperature range</b>	-50°C to +135°C <sup>2)</sup> ; IEC 60512-6-11 i+j; IEC 60068-2-14-Nb
<b>Corrosion resistance</b>	Salt mist, 1,000 hours <sup>3)</sup> , 5% salt solution, 35°C IEC 60068-2-11 Test Ka; MIL-STD-202 Method 101; EIA-364-26
<b>Endurance</b>	10,000 mating cycles IEC 60512-5-9a; EIA-364-09
<b>Vibration, random (Size 08, 11, 13, 18)</b>	37.80 Grms, MIL-STD-202 Method 214A Condition I; EIA-364-28 Condition V
<b>Vibration (Size 07)</b>	10 to 2000 Hz, 1.5 mm or 15g, 12 sweep cycles per axis, 20 minutes per 10-2000-10 Hz sweep cycle, no discontinuity > 1µs; MIL-STD-202 Method 204 Condition B
<b>Shock</b>	300g amplitude, half sine pulse of 3ms, no discontinuity > 1µs MIL-STD-202 Method 213 EIA-364-27

1) 2m submersion for 24 hours for standard connectors ; 120m/24h or other depth/duration requirements are on request, please contact your local sales office.

2) Min. mating temperature of -20°C with EPDM interface O-ring. Other materials on request.  
Temperature range of -40°C to +125°C for cable connectors overmolded with TPU material.  
Max temperature of +85°C for Soft Caps.

3) Preserved mechanical and electrical functionalities, connector in mated condition and with caps in unmated position; brass shell only.

All dimensions shown are in millimeters and are for reference only. They are subject to change without prior notice.

# TECHNICAL DATA

## ELECTRICAL DATA

Characteristic	Contact Size	Performance and Standard	
Contact Resistance over 10,000 Mating Cycles	Ø 0.5 mm	5 mΩ	IEC 60512-2-1-2a
	Ø 0.7 mm	5 mΩ	IEC 60512-2-2-2b
	Ø 0.9 mm	4 mΩ	
Shell Resistance <sup>4)</sup>		< 5 mΩ	IEC 60512-2-6-2f
Insulation Resistance		> 10 <sup>10</sup> Ω	IEC 60512-3-1-3a
Shielding Effectiveness <sup>5)</sup>		> 55 dB	up to 1 GHz, IEC 60512-23-3

4) Measurement points on figure 1

5) Size 08 connector pair.

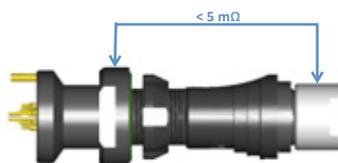


Figure 1

## MATERIAL & SURFACE TREATMENTS

Metal Parts	Material		Finish		
	Designation	ISO	Standard	Designation	Standard
Spring Sleeve (plug), Shell (plug), Mounting Nut (receptacle) <sup>6)</sup> , Bodies (all)	Aluminium	AlMgSiSn1Bi	EN-AW-6023	Anthracite Nickel	SAE-AMS-QQ-N-290 SAE-AMS 2404
	Brass	CuZn39Pb3	CW614N UNS C 38500		
Back Nut (plug & cable mounted receptacle), Mounting Nut (receptacle) <sup>7)</sup>	Aluminium	AlMgSiSn1Bi	EN-AW-6023	Nickel	SAE-AMS-QQ-N-290 SAE-AMS 2404
	Brass	CuZn39Pb3	CW614N UNS C 38500		
Ground Contact	Brass	CuZn39Pb3	CW614N UNS C 38500	Nickel	SAE-AMS-QQ-N-290 SAE-AMS 2404
Contacts	- Male, Ground Pin	Brass; CuZn39Pb3 Bronze; CuSn4Zn4Pb4	CW614N; UNS C 38500 CW456K; ASTM B 139 UNS C 54400	1µm Gold over Nickel	MIL-DTL-45204D Type I; ASTM B488
	- Female				

Insulator and Sealing		International Symbol	Flammability
Insulator	- Molded	PBT, PEEK <sup>8)</sup>	UL 94 V-0
Inner Sleeve	- Cable connectors	POM	UL 94 HB
Sealant Materials	- «V» Vacuum Sealed connectors	Bi-component epoxy	UL 94 HB
	- «W» Water Sealed connectors	Silicon compound	UL 94 V-0
Bend Relief	- Cable connectors	Santoprene™ TPV 101-64	UL 94 HB

Soft Caps		Material	Flammability
Cap		TPV (Santoprene™)	UL 94 HB
Cord		Nylon	-
Fixing lug		Black Chrome plated brass (ISO CuZn37)	-
Crimp ferrule		Nickel plated copper	-

O-rings		International Symbol	Chemical Name
General		FPM (Viton)	Fluoro Elastomer
Interface for size 07, 08, 13, 18		EPDM	Ethylene Propylene - Diene Elastomer
Interface for size 11		FVMQ	Fluorosilicone Rubber

6) for UR01 & UR02

7) for UR03 & UP50

8) PBT for Size 08, 11, 13 and 18 only. PEEK for Size 07 only



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