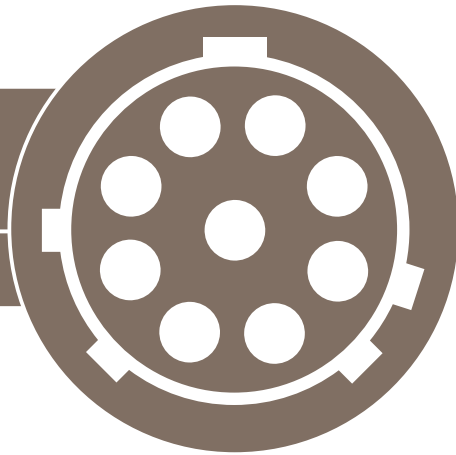


H

CHAPTER



FISCHER ULTIMATE™ SERIES

RUGGED | COMPACT | LIGHTWEIGHT

KEY FEATURES

- IP68 up to -120 m / IP69 / Hermetic
- 360° EMC shielding
- High corrosion resistance
- Up to 10,000 mating cycles

- ULTIMATE table of contents H-2
- ULTIMATE 80 table of contents H-33



ULTIMATE



PLUGS



CABLE MOUNTED

- Body styles (UP01-L; UP01-Q)..... H-4
- Technical dimensions H-5



PANEL FRONT MOUNTED

- Body styles (UP50)..... H-6
- Technical dimensions H-7

RECEPTACLES



CABLE MOUNTED

- Body styles (UR50)..... H-8
- Technical dimensions H-9



PANEL REAR MOUNTED

- Body styles (UR01; UR02)..... H-10
- Technical dimensions H-11



PANEL FRONT MOUNTED

- Body styles (UR03)..... H-10
- Technical dimensions H-12

FOR ALL ULTIMATE

- Size selection H-3
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- Options - Mechanical coding H-19
- PCB hole layout H-20
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This catalog covers our standard connector solutions. For specific requests, including hybrid or custom connectors, please contact your local sales representative.

AVAILABLE SIZES

**CONNECTOR SIZE
VERSUS
CABLE DIAMETER**



Size	Min cable ø	Max cable ø	Number of contacts
07	1.9	4.9	2-10
08	2.5	7.5	2-9
11	3.9	8.9	8-19
13	6.9	12.9	5-27
15	6.9	11.8	2-27
18	6.9	13.9	42

Min and max cable ø compatible with bend relief (accessory).
 Images of available sizes are on 1:1 scale when printed full size on A4 paper.

PLUGS

CABLE MOUNTED



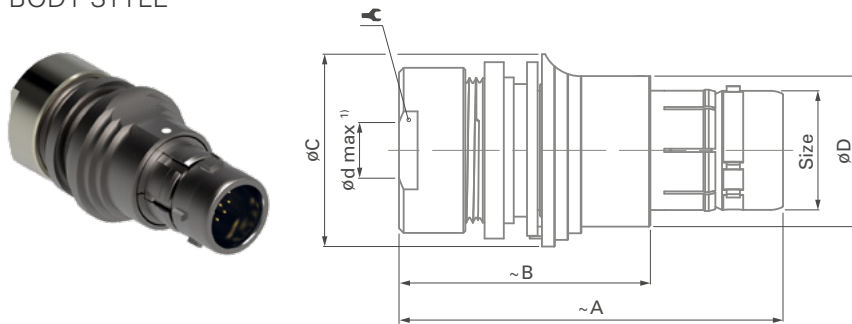
Body style		UP01	References to detailed information
Protection	Sealed up to IP68	●	Sealing categories, page A-6
	Hermetic		
Locking system	Friction		Locking systems, page A-5
	Push-pull	●	
	Quick-release	●	
	Lanyard		
	Tamperproof		
Termination	Crimp contact	●	Electrical & contact configurations, pages H-13 to H-18
	Solder contact	●	
Housing material	Brass	●	Part numbering, page H-26
	Aluminum	●	
Housing material	Anthracite	●	Part numbering, page H-26
	Black		
Design	Shortened body	●	Body styles, chapter H
	Straight	●	
	Right-angle	●	
Cabling	Cable clamp sets		
	Overmoldable	●	
	Heat shrinkable	●	
Accessories	Cable bend reliefs	●	Accessories, page H-27
	Protective sleeves		
	Sealing caps	●	
Size	07	●	Technical dimensions, page H-5 For more information visit our website www.fischerconnectors.com/technical
	08	●	
	11	●	
	13	●	
	15	●	
	18	●	

PLUGS

CABLE MOUNTED

UP01

BODY STYLE



Size	A	B	øC	øD	ød 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	14	3.0 Nm
13	50.0	34.0	21.7	16.0	8.7	17	3.5 Nm
15	50.2	33.6	23.7	18.0	10.8	19	4.0 Nm
18	58.0	38.0	29.0	22.7	13.7	22	6.0 Nm

¹⁾ Max. cable diameter below shield.

PLUGS

PANEL FRONT MOUNTED



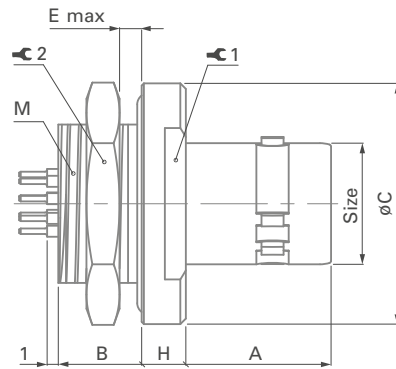
Body style		UP50	References to detailed information
Protection	Sealed up to IP68	●	Sealing categories, page A-6
	Hermetic		
Locking system	Friction	●	Locking systems, page A-5
	Push-pull		
	Quick-release		
	Lanyard		
	Tamperproof		
Termination	Crimp contact	●	Electrical & contact configurations, pages H-13 and H-15
	Solder contact	●	
Housing material	Brass	●	Part numbering, page H-26
	Aluminum	●	
Housing color	Anthracite	●	Part numbering, page H-26
	Black		
Design	Shortened body		Body styles, chapter H
	Straight	●	
	Right-angle		
Assembly	Front-mounting	●	
	Rear-mounting		
Accessories	Cable bend reliefs		Accessories, page H-27
	Protective sleeves		
	Sealing caps	●	
Size	07	●	Technical dimensions, page H-7 For more information visit our website www.fischerconnectors.com/technical
	11	●	

PLUGS

PANEL FRONT MOUNTED

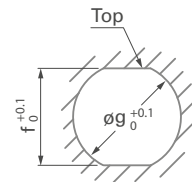
UP50

BODY STYLE



Size	A	B	øC	E max	H	M	1	2	Torque
07	10.0	5.2	13.0	2.5	3.0	M9x0.5	9	11	1.3 Nm
11	13.2	7.6	21.8	4.5	4.0	M16x1	17	19	4.5 Nm

Size	f	øg
07	8.0	9.1
11	14.5	16.1



PANEL CUT-OUT

RECEPTACLES

CABLE MOUNTED



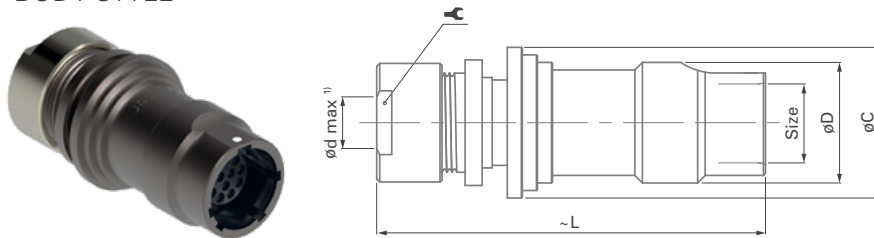
Body style		UR50	References to detailed information
Protection	Sealed up to IP68	●	Sealing categories, page A-6
	Hermetic		
Termination	Crimp contact	●	Electrical & contact configurations, pages H-13 to H-16
	Solder contact	●	
Housing material	Brass	●	Part numbering, page H-26
	Aluminum	●	
Housing color	Anthracite	●	Part numbering, page H-26
	Black		
Design	Shortened body		Body styles, chapter H
	Straight	●	
	Right-angle	●	
Cabling	Cable clamp sets		
	Overmoldable	●	
	Heat shrinkable	●	
Accessories	Cable bend reliefs	●	Accessories, page H-27
	Protective sleeves		
	Sealing caps	●	
Size	07	●	Technical dimensions, page H-9 For more information visit our website www.fischerconnectors.com/technical
	08	●	
	11	●	
	13	●	


RECEPTACLES

CABLE MOUNTED

UR50

BODY STYLE



Size	øC	øD	ød max ¹⁾	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	14	3.0 Nm
13	21.7	17.9	8.7	50	17	3.5 Nm

¹⁾ Max. cable diameter below shield.

RECEPTACLES

PANEL MOUNTED



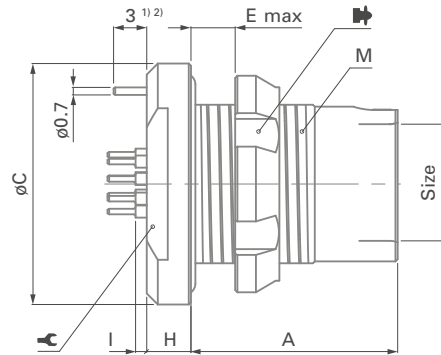
Body style		UR01	UR02	UR03	References to detailed information
Protection	Sealed up to IP68	●	●	●	Sealing categories, page A-6
	Hermetic	●	●	●	
Termination	Crimp contact	●			Electrical & contact configurations, page H-13 to H-18
	Solder contact	●	●	●	
	PCB contact	●	●	●	
Housing material	Brass	●	●	●	Part numbering, page H-26
	Aluminum	●	●	●	
Housing color	Anthracite	●	●	●	Part numbering, page H-26
	Black				
Design	Right-angle				Body styles, chapter H
	Flush		●		
	Front-projecting	●		●	
	Bulkhead feedthrough				
Assembly	Front-mounting			●	
	Rear-mounting	●	●		
Accessories	Sealing caps	●	●	●	Accessories, page H-27
	Spacers				
	Color-coded washers				
	Grounding washers				
	Locking washers				
Size	07	●	●	●	Technical dimensions, page H-11 and H-12 For more information visit our website www.fischerconnectors.com/technical
	08	●	●	●	
	11	●	●	●	
	13	●	●		
	15	●	●		
	18	●	●		

RECEPTACLES

PANEL REAR MOUNTED*

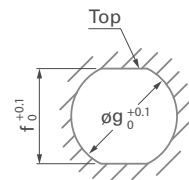
UR01

BODY STYLE



Size	A	øC	E max	H	I	M	↶	↷	Torque
07	14.2	14.0	4.5	3.0	0.7	M10x0.5	11	TC00.007	1.5 Nm
08	18.7	16.9	5.0	4.0	1.0	M12x1	15	TF00.001	2.5 Nm
11	18.7	21.8	7.0	4.0	1.0	M16x1	17	TK00.002	4.5 Nm
13	22.5	23.8	5.5	4.0	1.0	M18x1	20	TP00.011	6.0 Nm
15	27.7	25.8	9.0	4.0	1.0	M20x1	20	TP00.013	6.5 Nm
18	29.3	31.8	7.5	4.0	1.0	M25x1	27	TQ00.005	10.0 Nm

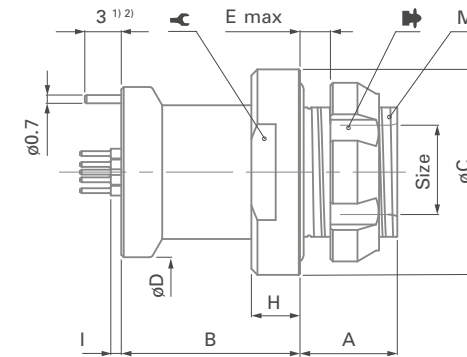
Size	f	øg
07	9.2	10.1
08	10.9	12.1
11	14.5	16.1
13	16.5	18.1
15	18.5	20.1
18	23.2	25.1



PANEL CUT-OUT

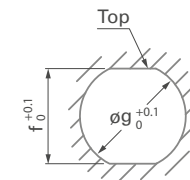
UR02

BODY STYLE



Size	A	B	øC	øD	E max	H	I	M	↶	↷	Torque
07	6.5	10.7	14.0	13.0	3.5	3.5	0.7	M9x0.5	11	TC00.000	1.3 Nm
08	8.0	14.7	16.9	14.0	4.0	4.0	1.0	M12x1	15	TF00.001	2.5 Nm
11	8.0	14.7	21.8	18.8	4.0	4.0	1.0	M16x1	17	TK00.002	4.5 Nm
13	10.5	16.0	23.8	20.0	5.0	4.0	1.0	M18x1	20	TP00.011	6.0 Nm
15	10.5	21.2	25.8	22.0	5.0	4.0	1.0	M20x1	20	TP00.013	6.5 Nm
18	11.0	22.3	31.8	26.0	5.0	4.0	1.0	M25x1	27	TQ00.005	10.0 Nm

Size	f	øg
07	8.0	9.1
08	10.9	12.1
11	14.5	16.1
13	16.5	18.1
15	18.5	20.1
18	23.2	25.1



PANEL CUT-OUT

* Standard version with PCB contacts and grounding pin. For solder contact version, a special solder ground contact pin is included for AWG22[7/30].

¹ Solder & PCB ground pins are always equal or larger than the largest contact of corresponding contact bloc layout (except Size 13 config. 203 AWG12 [7/20])

² 3.6 mm for Size 15

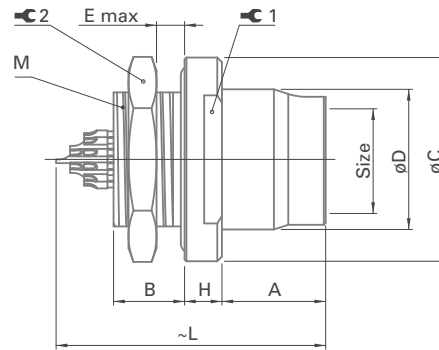
All dimensions and images shown are in millimeters and are for reference only.

RECEPTACLES

PANEL FRONT MOUNTED*

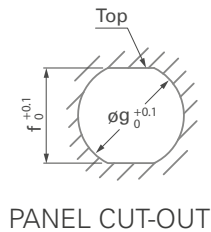
UR03

BODY STYLE



Size	A	B	øC	øD	E max	H	L	M	1	2	Torque
07	7.7	6.4	14.0	10.0	3.5	2.5	20	M9x0.5	11	11	1.3 Nm
08	11.7	7.0	16.9	11.5	4.0	4.0	27	M12x1	15	14	2.5 Nm
11	11.1	7.6	21.8	15.0	4.6	4.0	29	M16x1	17	19	4.5 Nm

Size	f	øg
07	8.0	9.1
08	10.9	12.1
11	14.5	16.1



* Standard version with solder contacts.

SIZE 07

Size	Pin layout	Layout reference	Number of contacts	Contact diameter [mm]	Wire size ³⁾		PCB contacts [mm]		Current rating [A]	Rated voltage r.m.s [V]	Test voltage [kV] in mated position			
					Solder contacts ¹⁾	Crimp contacts ²⁾	Pin ø	Ground pin ø	IEC 60512-5-2-5b ⁴⁾	IEC 60664-1 ⁵⁾	IEC 60512-4-1 Test 4a			
											AC r.m.s.		DC	
											Contact to body	Contact to contact	Contact to body	Contact to contact
07		002	2	0.9	max ø0.79 mm AWG21 [1] AWG22 [7/30]	⁶⁾ max ø0.83 mm min ø0.48 mm AWG22-26	0.63	0.7	9.2	≤ 250	1.3	1.7	1.8	2.4
		003	3	0.9	max ø0.79 mm AWG21 [1] AWG22 [7/30]	-	0.63	0.7	8.2	≤ 250	1.3	1.3	1.8	1.6
		004	4	0.7	max ø0.79 mm AWG21 [1] AWG22 [7/30]	max ø0.62 mm min ø0.38 mm AWG24-28	0.50	0.7	5.5	≤ 200	1.2	1.2	1.7	1.8
		005	5	0.7	max ø0.79 mm AWG21 [1] AWG22 [7/30]	max ø0.62 mm min ø0.38 mm AWG24-28	0.50	0.7	5.2	≤ 160	0.8	1.0	1.3	1.8
		007	7	0.5	max ø0.43 mm AWG26 [1] AWG28 [19/40]	max ø0.43 mm min ø0.20 mm AWG28-32	0.40	0.7	4.0	≤ 160	0.8	1.0	1.3	1.8
		009	9	0.5	max ø0.43 mm AWG26 [1] AWG28 [19/40]	-	0.40	0.7	3.1	≤ 160	0.8	1.1	1.2	1.8
		010	10	0.5	max ø0.43 mm AWG26 [1] AWG28 [19/40]	-	0.40	0.7	3.1	≤ 160	0.8	0.9	1.2	1.3

¹⁾ Stranding values are in brackets.

²⁾ See dedicated crimping instructions document for further information.

³⁾ For a given AWG, the diameter of some stranded cable designs could be larger than the hole diameter of the barrel. Testing may be required.

⁴⁾ Current per contact at 40 °C temperature rise measured on the basic curve according to IEC 60512-5-2-5b. For maximum operating current, a reduction factor must be used and limitations due to the size of the wires and the permissible upper temperature limit of the materials employed must be taken into account. See page A12 for details.







⁵⁾ Recommended operating voltage at sea level. This rated voltage is a general 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.

⁶⁾ Standard polarity only.

All dimensions and images shown are in millimeters and are for reference only.

SIZE 08

Size	Pin layout	Layout reference	Number of contacts	Contact diameter [mm]	Wire size ³⁾		PCB contacts [mm]		Current rating [A]	Rated voltage r.m.s [V]	Test voltage [kV] in mated position			
					Solder contacts ¹⁾	Crimp contacts ²⁾	Pin ø	Ground pin ø			IEC 60512-4-1 Test 4a			
									AC r.m.s.		DC			
									Contact to body	Contact to contact	Contact to body	Contact to contact		
08		002	2	0.9	max ø0.79 mm AWG21 [1] AWG22 [7/30]	-	0.70	0.7	9.2	≤ 250	1.3	1.7	1.8	2.4
		003	3	0.9	max ø0.79 mm AWG21 [1] AWG22 [7/30]	-	0.70	0.7	8.2	≤ 250	1.3	1.3	1.8	1.6
		004	4	0.7	max ø0.79 mm AWG21 [1] AWG22 [7/30]	max ø0.62 mm min ø0.38 mm AWG24-28	0.50	0.7	5.5	≤ 200	1.2	1.2	1.7	1.8
		005	5	0.7	max ø0.79 mm AWG21 [1] AWG22 [7/30]	max ø0.62 mm min ø0.38 mm AWG24-28	0.50	0.7	5.2	≤ 160	0.8	1.0	1.3	1.8
		007	7	0.5	max ø0.43 mm AWG26 [1] AWG28 [19/40]	-	0.40	0.7	4.0	≤ 160	0.8	1.0	1.3	1.8
		009	9	0.5	max ø0.43 mm AWG26 [1] AWG28 [19/40]	-	0.40	0.7	3.1	≤ 160	0.8	1.1	1.2	1.8

¹⁾ Stranding values are in brackets.

²⁾ See dedicated crimping instructions document for further information.





³⁾ For a given AWG, the diameter of some stranded cable designs could be larger than the hole diameter of the barrel. Testing may be required.

⁴⁾ Current per contact at 40 °C temperature rise measured on the basic curve according to IEC 60512-5-2-5b. For maximum operating current, a reduction factor must be used and limitations due to the size of the wires and the permissible upper temperature limit of the materials employed must be taken into account. See page A12 for details.

⁵⁾ Recommended operating voltage at sea level. This rated voltage is a general 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.

SIZE 11

Size	Pin layout	Layout reference	Number of contacts	Contact diameter [mm]	Wire size ³⁾		PCB contacts [mm]		Current rating [A]	Rated voltage r.m.s [V]	Test voltage [kV] in mated position			
					Solder contacts ¹⁾	Crimp contacts ²⁾	Pin ø	Ground pin ø			IEC 60512-4-1 Test 4a			
									IEC 60512-5-2-5b ⁴⁾	IEC 60664-1 ⁵⁾	AC r.m.s.		DC	
											Contact to body	Contact to contact	Contact to body	Contact to contact
11		008	8	0.7	max ø0.79 mm AWG21 [1] AWG22 [7/30]	max ø0.62 mm min ø0.38 mm AWG24-28	0.50	0.7	4.2	≤ 250	1.7	1.8	3.1	2.6
		012	12	0.7	max ø0.79 mm AWG21 [1] AWG22 [7/30]	^{6) 7)} max ø0.62 mm min ø0.38 mm AWG24-28	0.50	0.7	4.2	≤ 250	1.6	1.6	2.6	2.3
		016	16	0.5	max ø0.43 mm AWG26 [1] AWG28 [19/40]	-	0.40 ⁶⁾	0.7	2.7	≤ 250	1.2	0.9	2.0	1.5
		019	19	0.5	max ø0.43 mm AWG26 [1] AWG28 [19/40]	-	0.40 ⁶⁾	0.7	2.5	≤ 250	1.2	0.9	2.0	1.5

¹⁾ Stranding values are in brackets.

²⁾ See dedicated wire gauge crimping instructions document for further information.

³⁾ For a given AWG, the diameter of some stranded cable designs could be larger than the hole diameter of the barrel. Testing may be required.

⁴⁾ Current per contact at 40 °C temperature rise measured on the basic curve according to IEC 60512-5-2-5b. For maximum operating current, a reduction factor must be used and limitations due to the size of the wires and the permissible upper temperature limit of the materials employed must be taken into account. See page A12 for details.

⁵⁾ Recommended operating voltage at sea level. This rated voltage is a general 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.

⁶⁾ Not valid for UP50.

⁷⁾ UR0x: standard polarity only.

SIZE 13

Size	Pin layout	Layout reference	Number of contacts	Contact diameter [mm]	Wire size ³⁾		PCB contacts [mm]		Current rating [A]	Rated voltage r.m.s [V]	Test voltage [kV] in mated position			
					Solder contacts ¹⁾	Crimp contacts ²⁾	Pin Ø	Ground pin Ø			IEC 60512-4-1 Test 4a			
									IEC 60512-5-2-5b ⁴⁾	IEC 60664-1 ⁵⁾	AC r.m.s.		DC	
											Contact to body	Contact to contact	Contact to body	Contact to contact
13		203 ⁹⁾	2 ⁸⁾	2.3	max ø3.28 mm AWG9 [19/22]	-	1.8	1.8	26	≤ 320	2.2	1.7	3.7	2.4
			3	0.7	max ø0.79 mm AWG21 [1] AWG22 [7/30]	-	0.5		1	≤ 320	2.1		3.7	
		303	3 ⁸⁾	1.6	max ø1.86 mm AWG13 [1] AWG14 [7/22]	-	1.5	1.5	16	≤ 320	2.6	1.6	3.6	2.4
			3	0.7	max ø0.79 mm AWG21 [1] AWG22 [7/30]	-	0.5		1	≤ 320	2.6		3.6	
		027	27	0.5	⁶⁾ max ø0.43 mm AWG26 [1] AWG28 [19/40]	⁷⁾ max ø0.43 mm min ø0.20 mm AWG28-32	0.40 ⁶⁾	0.7	2.0	≤ 200	1.2	0.5	1.8	0.5

¹⁾ Stranding values are in brackets.

²⁾ See dedicated wire gauge crimping instructions document for further information.

³⁾ 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.

⁴⁾ Current per contact at 40 °C temperature rise measured on the basic curve according to IEC 60512-5-2-5b. For the max. operating current a reduction factor must be used and limitations due to the size of the wires and the permissible upper temperature limit of the materials employed must be taken into account. See page A12 for details.

⁵⁾ 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.

⁶⁾ UR0x: standard polarity only.

⁷⁾ Only valid for UP01, UR50.

⁸⁾ Contact block with male contacts comes standard with advanced power contacts.

⁹⁾ UR0x: only available in "V" (Vacuum sealing) version, not in "W" (Water sealing) nor in "N" (Non sealing) versions.

SIZE 15

Size	Pin layout	Layout reference	Number of contacts	Contact diameter [mm]	Wire size ²⁾		PCB contacts [mm]		Current rating [A]	Rated voltage r.m.s [V]	Test voltage [kV] in mated position			
					Solder contacts ¹⁾	Crimp contacts ²⁾	Pin ø	Ground pin ø			IEC 60512-4-1 Test 4a			
									AC r.m.s.		DC			
									Contact to body	Contact to contact	Contact to body	Contact to contact		
15		002 ⁹⁾	2	3.0	max ø3.13 mm AWG9 [1] AWG10 [105/30]	-	2.5	2.5	30	≤ 400	1.2	1.6	2.3	3.0
		004 ⁹⁾	4	2.0	max ø2.03 mm AWG13 [1] AWG14 [7/22]	-	1.5	2.5	20	≤ 320	1.8	1.8	2.6	2.6
		204H ⁸⁾	4 ⁵⁾	1.3	max ø1.18 mm AWG17 [1] AWG18 [16/30]	-	-	-	-	≤ 320				
			2 ⁵⁾	coax	-	7)	-	-	7)	7)	7)	-	7)	-
		008	8	1.3	max ø1.18 mm AWG17 [1] AWG18 [16/30]	-	1.0	1.0	10	≤ 320	1.7	2.0	2.5	2.8
		412 ⁶⁾	4	1.6	max ø1.86 mm AWG13 [1] AWG14 [7/22]	-	1.5	2.5	14	≤ 250	1.6	1.3	2.8	2.1
			12	0.7	max ø0.79 mm AWG21 [1] AWG22 [7/30]	-	0.5		1.0		1.0	1.2	1.5	2.0
	027	27	0.7	max ø0.79 mm AWG21 [1] AWG22 [7/30]	-	0.5	1.0	3.0	≤ 250	1.2	1.5	1.5	2.0	

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⁾ Current per contact at 40 °C temperature rise measured on the basic curve according to IEC 60512-5-2-5b. For the max. operating current a reduction factor must be used and limitations due to the size of the wires and the permissible upper temperature limit of the materials employed must be taken into account. See page A12 for details.

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⁾ Contacts dia. 1.6 are positioned to make contact first and break last.


⁷⁾ Please refer to www.fischerconnectors.com/technical for technical specification of coax insert.

⁸⁾ Max 500 mating cycles due to coax insert characteristics.

⁹⁾ UR0x: only available in "V" (Vacuum sealing) version, not in "W" (Water sealing) nor in "N" (Non sealing) versions.

All dimensions and images shown are in millimeters and are for reference only.

SIZE 18

Size	Pin layout	Layout reference	Number of contacts	Contact diameter [mm]	Wire size ³⁾		PCB contacts [mm]		Current rating [A]	Rated voltage r.m.s [V]	Test voltage [kV] in mated position			
					Solder contacts ¹⁾	Crimp contacts ²⁾	Pin Ø	Ground pin Ø			IEC 60512-4-1 Test 4a			
									AC r.m.s.		DC			
									Contact to body	Contact to contact	Contact to body	Contact to contact		
18		042	42 ⁶⁾	0.7	-	max Ø0.62 mm min Ø0.38 mm AWG24-28	0.50	0.70	IEC 60512-5-2-5b ⁴⁾ 3.0	IEC 60664-1 ⁵⁾ ≤ 250	1.5	1.5	2.4	2.5

¹⁾ Stranding values are in brackets.

²⁾ See dedicated wire gauge crimping instructions document for further information.

³⁾ For a given AWG, the diameter of some stranded cable designs could be larger than the hole diameter of the barrel. Testing may be required.

⁴⁾ Current per contact at 40 °C temperature rise measured on the basic curve according to IEC 60512-5-2-5b. For maximum operating current, a reduction factor must be used and limitations due to the size of the wires and the permissible upper temperature limit of the materials employed must be taken into account. See page A12 for details.

⁵⁾ Recommended operating voltage at sea level. This rated voltage is a general 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.

⁶⁾ Standard polarity only.

MECHANICAL CODING

PLUGS	Size	Code 1	Code 2	Code 3	Code 4
	07				
	08				
	11				
	13				
	15				
	18				
Visual coding	●	▼	■	✕	

RECEPTACLES	Size	Code 1	Code 2	Code 3	Code 4
	07				
	08				
	11				
	13				
	15				
	18				
Visual coding	●	▼	■	✕	

All dimensions and images shown are in millimeters and are for reference only.

POLARITY

BODY STYLES

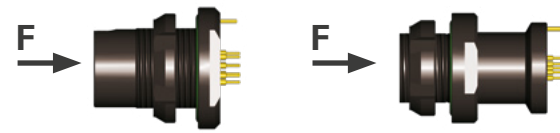
UP01

UP50



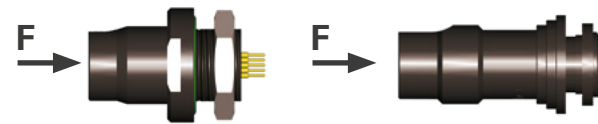
UR01

UR02



UR03

UR50



POLARITY

Standard polarity: male contacts on plug / female contacts on receptacle

Inverted polarity: female contacts on plug / male contacts on receptacle.

WARNING: for high-current applications, make sure to choose the correct polarity (female contacts on device that is supplying the power)

PCB / PIN LAYOUT

View from F¹⁾

Size	Polarity	Number of contacts (layout reference)						
		2 (002)	3 (003)	4 (004)	5 (005)	7 (007)	9 (009)	10 (010)
07	Standard							
	Inverted							

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

^{a)} For optional ground pin.

PCB / PIN LAYOUT

View from F¹⁾

Size	Polarity	Number of contacts (layout reference)					
		2 (002)	3 (003)	4 (004)	5 (005)	7 (007)	9 (009)
08	Standard						
	Inverted						

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

^{a)} For optional ground pin.

PCB / PIN LAYOUT

View from F¹⁾

Size	Polarity	Number of contacts (layout reference)			
		8 (008)	12 (012)	16 (016)	19 (019)
11	Standard				
	Inverted				

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

^{a)} For optional ground pin.

PCB / PIN LAYOUT

View from F¹⁾

Size	Polarity	Number of contacts (layout reference)		
		2+3 (203)	3+3 (303)	27 (027)
13	Standard			
	Inverted			

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

^{a)} For optional ground pin.

PCB / PIN LAYOUT

View from F¹⁾²⁾

Size	Polarity	Number of contacts (layout reference)				
		2 (002)	4 (004)	8 (008)	4+12 (412)	27 (027)
15	Standard					
	Inverted					

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

²⁾ N/A for pin layout 204H.

³⁾ For optional ground pin.

PCB / PIN LAYOUT

View from F¹⁾

Size	Polarity	Number of contacts (layout reference)
		42 (042)
18	Standard	
	Inverted	

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

^{a)} For optional ground pin.

All dimensions and images shown are in millimeters and are for reference only.

PLUGS & RECEPTACLES

Example:

Connector Design				Contact Block			Housing		Standard options			
UP01		L	07	M	010	S	BK	1	Z	2	Z	B
UR01	W		11	F	012	S	BK	2	E	1	A	A

Body style

UltiMate Plug = UP

- UP01 = Cable mounted
- UP50 = Panel mounted

UltiMate Receptacle = UR

- UR01 = Panel rear mounted low profile
- UR02 = Panel rear mounted
- UR03 = Panel front mounted low profile
- UR50 = Cable mounted

Sealing level

Panel mounted:

- V = Vacuum sealing ¹⁾
- W (IP68/69) = Water sealing
- N = Non sealing ²⁾

Cable mounted:

- Not applicable = Nothing

Locking system

Cable mounted plug:

- L = Push-pull locking
- Q = Quick release

Cable mounted receptacle:

- Z = Not applicable

Panel mounted:

- No locking = Nothing

Connector size

- 07 = Size 07
- 08 = Size 08
- 11 = Size 11
- 13 = Size 13
- 15 = Size 15
- 18 = Size 18

Housing Material

- A = ALUMINUM
- B = BRASS (Standard)

Grounding

Panel mounted:

- A = Grounding pin (for UR01/UR02)
- N = None (for UR03/UP50)

Cable mounted:

- Z = Not applicable

Insulator Material

- 1 = PBT. Size 08/11/13/18
- 2 = PEEK. Size 07/15

O-ring material

- Receptacle:**
O-ring at plug interface
- E = FVMQ (Fluorosilicone)

- Plug:**
- Z = Not applicable

Keying code

- Code 1 = ●
- Code 2 = ▼

Standard keying = Code 1

- Code 3 = ■
- Code 4 = ✕

Standard guide mark = White

Housing color

- BK = Standard (Anthracite)

Contact Type

- S = Solder
- P = PCB
- C = Crimp
- H = Hybrid

Layout references

- Size 07: 002, 003, 004, 005, 007, 009, 010
- Size 08: 002, 003, 004, 005, 007, 009
- Size 11: 008, 012, 016, 019
- Size 13: 203, 303, 027
- Size 15: 002, 004, 204, 008, 412, 027
- Size 18: 042

Polarity of contacts

- M = Male contacts
- F = Female contacts

Standard polarity:

Male contacts in plug, female contacts in receptacle

¹⁾ UR0x: only available in "V" version for layout references Size 13: 203 and Size 15: 002, 004 (no "W" nor "N" versions).

²⁾ Only option for pin layout 204H or with Crimp contacts.

BEND RELIEF

Top performance, no hassle

- No tool required: 5 steps to assemble
- Clean cut: perfectly adjust the bend relief to your cable diameter with a simple blade

Long lasting

- Resists 10,000 flex cycles at a 90° angle
- Operating temperature -55 °C to +135 °C
- UV resistant



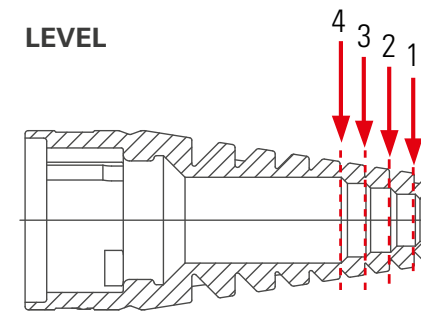
Standard color is black (BK)
Also available in grey (GY), blue (BL), yellow (YL), green (GN), violet (VT) upon request.

Please contact your Fischer Connectors sales representative.

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
15	ø6.9	ø8.6	ø10.1	ø11.8	-	UB15 A1BK
18	ø6.9	ø8.4	ø10.4	ø11.9	ø13.9	UB18 A1BK

LEVEL



All dimensions and images shown are in millimeters and are for reference only.

SOFT CAPS - LANYARD WITH POLYESTER CORD

FIGURE 1

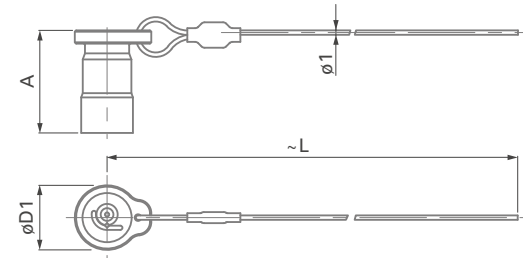
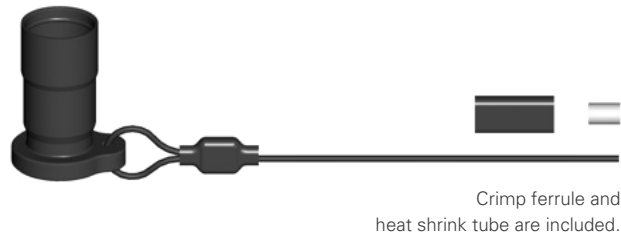


FIGURE 2

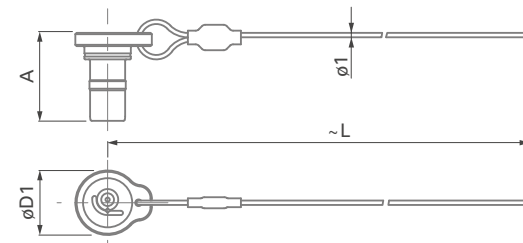
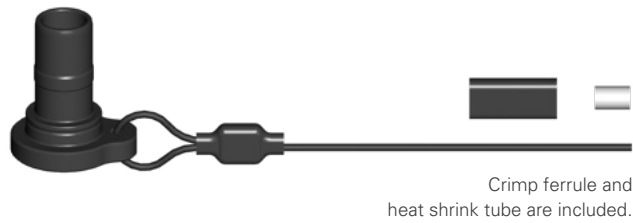
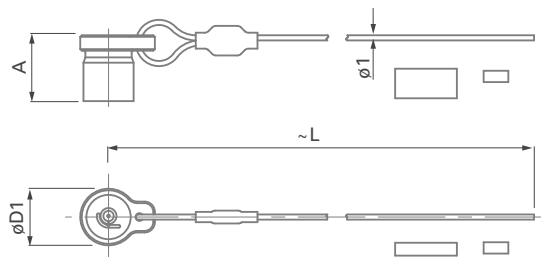
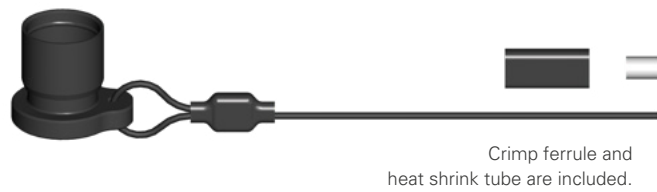
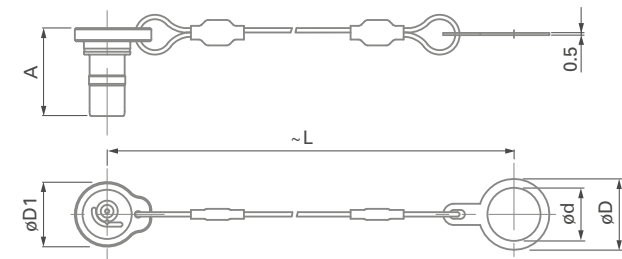


FIGURE 3



SOFT CAPS - LANYARD WITH POLYESTER CORD

FIGURE 4



Size	Plug		Receptacle				A	øD1	L	ød	øD	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
15	●						25.0	20.7	200	-	-	UCP15C 1A1 A200	1
			●	●			22.5	20.5	95	20	25	UCR15P 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.

All dimensions and images shown are in millimeters and are for reference only.

SPANNER & NUT DRIVER

**DOUBLE-ENDED
OPEN SPANNER
EXTRA THIN** 



Part number	Opening across flats	Length	Fork thickness
TX00.008	8	96	2.3
TX00.009	9	102	2.5
TX00.010	10	104	2.5
TX00.011	11	114	2.5
TX00.014	14	130	3.0

Material – Chrome Alloy Steel, Chrome plated, Fork Angles – 15° and 75°.

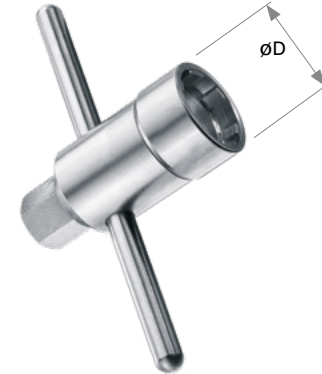
**OPEN SPANNER
EXTRA THIN** 



Part number	Opening across flats	Length	Fork thickness
TX00.015	15	145	5.2
TX00.017	17	160	5.5
TX00.019	19	175	6.0
TX00.020	20	175	6.0
TX00.022	22	196	6.5
TX00.027	27	240	7.4

Material – Chrome Vanadium Steel, Chrome plated, Fork Angle – 15°.

**NUT DRIVER WITH T-HANDLE
AND HEX DRIVE** 



Part number	Thread size	Nut outer dia.	øD	Hex drive
TC00.000	M9 x 0.5	12	15	7
TC00.007	M10 x 0.5	13	16	7
TF00.001	M12 x 1	15	18	10
TK00.002	M16 x 1	20	23	12
TP00.011	M18 x 1	23	26	12
TP00.013	M20 x 1	25	28	12

Material – Hardened Tool Steel, Nickel plated.

MATERIAL & SURFACE FINISH

Components	Material		Finish	
	Designation ISO	Standard	Designation	Standard
Spring sleeve (plug), shell (plug), Mounting nut (receptacle) ¹⁾ , bodies (all)	Aluminum 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) ²⁾	Aluminum 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 - Female	Brass ; CuZn39Pb3 Bronze ; CuSn4Zn4Pb4	CW614N ; UNS C 38500 CW456K ; ASTM B 139 UNS C 54400	1 µm Gold over Nickel MIL-DTL-45204D Type I ; ASTM B488

Insulator and sealing		International symbol	Flammability
Insulator	- Molded	PBT, PEEK ³⁾	UL 94 V-0
Inner sleeve	- Cable connectors	POM	UL 94 HB
Sealant materials	- «V» Vacuum sealed connectors	Bi-component Epoxy compound	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		Polyester	-
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		FVMQ	Fluorosilicone rubber

¹⁾ For UR01 & UR02.

²⁾ For UR03 & UP50.

³⁾ PBT for Size 08, 11, 13 and 18. PEEK for Size 07 and 15.

ENVIRONMENTAL & MECHANICAL DATA

Characteristic	Performance	Standard
Sealing performance mated and unmated ⁴⁾	IP68/IP69 2 m submersion for 24 h ¹⁾	IEC 60529
	"V" sealing level: Hermetic: Tested: <10 ⁻⁸ mbar.l/sec.	IEC 60068-2-17 Test Qk, Method 3
Sealing performance soft caps	IP68, 2 m submersion for 24 hours; IP69;	IEC 60529
Operating temperature range	-55 °C to +135 °C ²⁾	IEC 60068-2-14-Nb
Corrosion resistance ³⁾	Salt mist, 1,000 hours, 5% salt solution, 35 °C;	IEC 60068-2-11 Test Ka; MIL-STD-202 Method 101; EIA-364-26
Endurance	10,000 mating cycles ⁵⁾	IEC 60512-9-1; EIA-364-09
Vibration, random (Size 08, 11, 13, 15, 18)	37.80 Grms	MIL-STD-202 Method 214A Condition I; EIA-364-28 Condition V
Vibration (Size 07)	10 to 2,000 Hz, 1.5 mm or 15 g, 12 sweep cycles per axis, 20 minutes per 10-2,000-10 Hz sweep cycle, no discontinuity > 1 us;	MIL-STD-202 Method 204 Condition B
Shock	300g amplitude, half sine pulse of 3 ms, no discontinuity > 1 μs	MIL-STD-202 Method 213; EIA-364-27

¹⁾ 120 m/24 h or other depth/duration requirements available on request, please contact your local sales office.

²⁾ Temperature range of -40 °C to +125 °C for cable connectors overmolded with TPU material. Max. temperature of +85 °C for soft caps.

³⁾ Plug and receptacle in mated position or with cap when unmated. For Brass connectors only.

Aluminum version not recommended for Marine use. Preserved mechanical and electrical functionality. Visual aspect might be altered.

⁴⁾ Sealing performance of pin layout 204H valid only in mated condition due to coax insert.

⁵⁾ 500 mating cycles for pin layout 204H due to coax insert.

ELECTRICAL DATA ⁸⁾

Characteristic	Contact size	Typical values	Standard
Contact resistance over 10,000 mating cycles	∅0.5 mm	5.0 mΩ	IEC 60512-2-1-2a IEC 60512-2-2-2b
	∅0.7 mm	5.0 mΩ	
	∅0.9 mm	4.0 mΩ	
	∅1.6 mm	2.5 mΩ	
	∅2.3 mm	2.5 mΩ	
Shell resistance ⁶⁾		< 5.0 mΩ	IEC 60512-2-6-2f
Insulation resistance		> 10 ¹⁰ Ω	IEC 60512-3-1-3a Method C
Shielding effectiveness ⁷⁾		> 54 dB	up to 1 GHz, IEC 60512-23-3

⁶⁾ Measurement points on Figure 1.

⁷⁾ Size 08 connector pair.

⁸⁾ Please refer to www.fischerconnectors.com/technical for technical specification of coax insert.

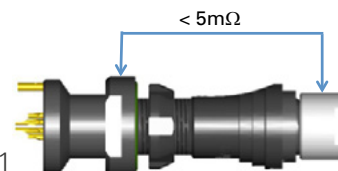


FIGURE 1

DATA TRANSMISSION

Protocol	Number of contacts required	
USB 2.0	4	yes
USB 3.0	9	application dependent ⁹⁾
Ethernet Cat 5e (1 Gbit/s)	8	yes
HDMI™	19	yes

The data transmission performance of the Fischer UltiMate™ Series has been tested for most popular protocols that are used in a variety of applications today.

⁹⁾ Test with your application to confirm acceptable functionality

ULTIMATE 80

PLUGS



PRE-CABLED SOLUTION

- Body styles (UP81)..... H-34
- Technical dimensions H-35

RECEPTACLES



PRE-CABLED SOLUTION

- Body styles (UR80)..... H-36
- Technical dimensions H-37



PANEL REAR MOUNTED

- Body styles (UR81)..... H-36
- Technical dimensions H-37

FOR ULTIMATE 80

- Electrical & contact configurations H-38
- PCB hole layout..... H-38
- Mechanical coding..... H-38
- Part numbering..... H-39
- Pre-cabled plug / receptacle configurations H-40
- Accessories H-42
- Tooling H-42
- Technical information H-43

This catalog covers our standard connector solutions. For specific requests, including hybrid or custom connectors, please contact your local sales representative.

All dimensions and images shown are in millimeters and are for reference only.

PLUGS

PRE-CABLED SOLUTION



Body style		UP81	References to detailed information
Protection	Sealed up to IP68	●	Sealing categories, page A-6
Locking system	Quick-release	●	
Termination	Crimp contact	●	Electrical & contact configurations, page H-38
Housing material	Aluminum	●	Part numbering, page H-39
Housing color	Black ¹⁾	●	Part numbering, page H-39
Design	Straight	●	Body styles, page H-33
	Right-angle		
Cabling	Overmolded	●	
Accessories	Sealing caps		Accessories, page H-42
Size	08	●	Technical dimensions, page H-35

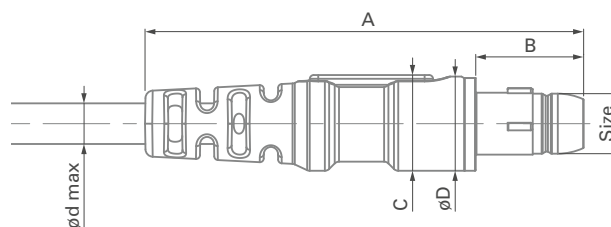
¹⁾ Due to surface treatment process, color may slightly differ from one product to another without impacting technical specifications or product properties.

PLUGS

PRE-CABLED SOLUTION

UP81



BODY STYLE



Size	A	B	C	øD	ød max
08	58.0	14.2	12.6	12.4	5.5

Note: Plug is only available pre-cabled with a standard length (1 m). For customized solutions, please contact sales.

RECEPTACLES

		PRE-CABLED SOLUTION	PANEL MOUNTED	
				
Body style		UR80	UR81	References to detailed information
Protection	Sealed up to IP68	●	●	Sealing categories, page A-6
Termination	Crimp contact	●		Electrical & contact configurations, page H-38
	Solder contact		●	
	PCB contact		●	
Housing material	Aluminum	●	●	Part numbering, page H-39
Housing color	Black ¹⁾	●	●	Part numbering, page H-39
Design	Straight	●	●	Body styles, page H-33
	Right-angle			
	Flush		●	
Assembly	Rear-mounting		●	
Cabling	Overmolded	●		
Accessories	Sealing caps	●	●	Accessories, page H-42
Size	08	●	●	Technical dimensions, page H-37

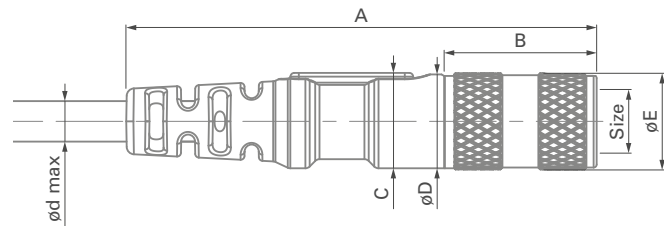
¹⁾Due to surface treatment process, color may slightly differ from one product to another without impacting technical specifications or product properties.

RECEPTACLES

PRE-CABLED SOLUTION

UR80 ¹⁾

BODY STYLE



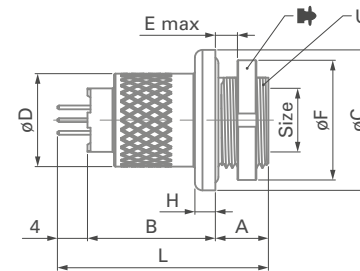
Size	A	B	C	øD	øE	ød max
08	62.2	20.2	12.6	12.4	12.8	5.5

¹⁾ Receptacle UR80 is only available pre-cabled with a standard length (1m). For customized solutions, please contact sales.

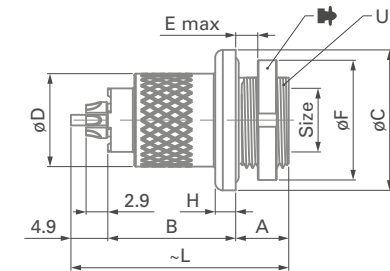
PANEL REAR MOUNTED

UR81

BODY STYLE



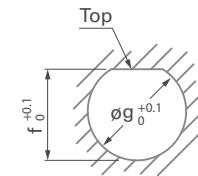
PCB



SOLDER

Size	Termination	A	B	øC	øD	U	øF	H	E max	L	⚡	Torque
08	PCB	7.0	16.9	18.6	12.3	1/2-32 UN-2A	15.9	2.8	3.2	27.9	TX00.401	2.5 Nm
	Solder	7.0	16.9	18.6	12.3	1/2-32 UN-2A	15.9	2.8	3.2	28.8	TX00.401	2.5 Nm

Size	f	øg
08	12.05	12.8



PANEL CUT-OUT

ELECTRICAL & CONTACT CONFIGURATIONS

Size	Pin layout	Layout reference	Number of contacts	Contact diameter [mm]	Wire size ³⁾		PCB contacts	Current rating [A]	Rated voltage r.m.s [V]	Test voltage [kV] in mated position						
					Solder contacts ²⁾	Crimp contacts				Pin diameter [mm]	IEC 60512-5-2-5b ⁴⁾	IEC 60664-1 ⁵⁾	IEC 60512-4-1 Test 4a			
													AC r.m.s.		DC	
													Contact to body	Contact to contact	Contact to body	Contact to contact
08		006 /105 ¹⁾	6	0.7	max ϕ 1.02 mm AWG19 [1] AWG20 [26/34]	max ϕ 0.85 mm min ϕ 0.48 mm AWG22-28	0.5	6 (3x) + 1 (3x)	\leq 200	0.8	1.3	1.5	2.3			
		007 /106 ¹⁾	7	0.7	max ϕ 1.02 mm AWG19 [1] AWG20 [26/34]	max ϕ 0.85 mm min ϕ 0.48 mm AWG22-28	0.5	6 (3x) + 1 (4x)	\leq 200	0.8	1.3	1.5	2.3			

¹⁾ First digit indicates the number of first mate last break (FMLB) contacts.

²⁾ Solder contacts option only for UR81 in replacement of the standard PCB contacts.

³⁾ For a given AWG, the diameter of some stranded cable designs could be larger than the hole diameter of the barrel. Testing may be required.

⁴⁾ Current per contact at 40 °C temperature rise measured on the basic curve according to IEC 60512-5-2-5b. For maximum operating current, a reduction factor must be used and limitations due to the size of the wires and the permissible upper temperature limit of the materials employed must be taken into account. See page A12 for details.

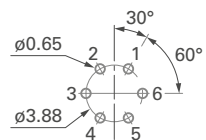
⁵⁾ Recommended operating voltage at sea level. This rated voltage is a general guideline where no other electrical safety standard applies. In cases where other standards rule a specific use of the connector, the application-specific safety criteria shall be considered first. This must be evaluated in the framework of equipment engineering.

PCB / PIN LAYOUT

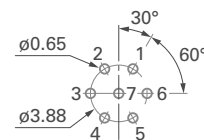
View from the front of the receptacle ¹⁾

Number of contacts (layout reference)

LAYOUT 006 (105)

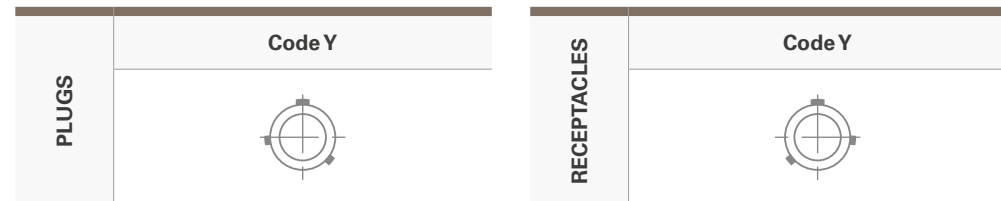


LAYOUT 007 (106)



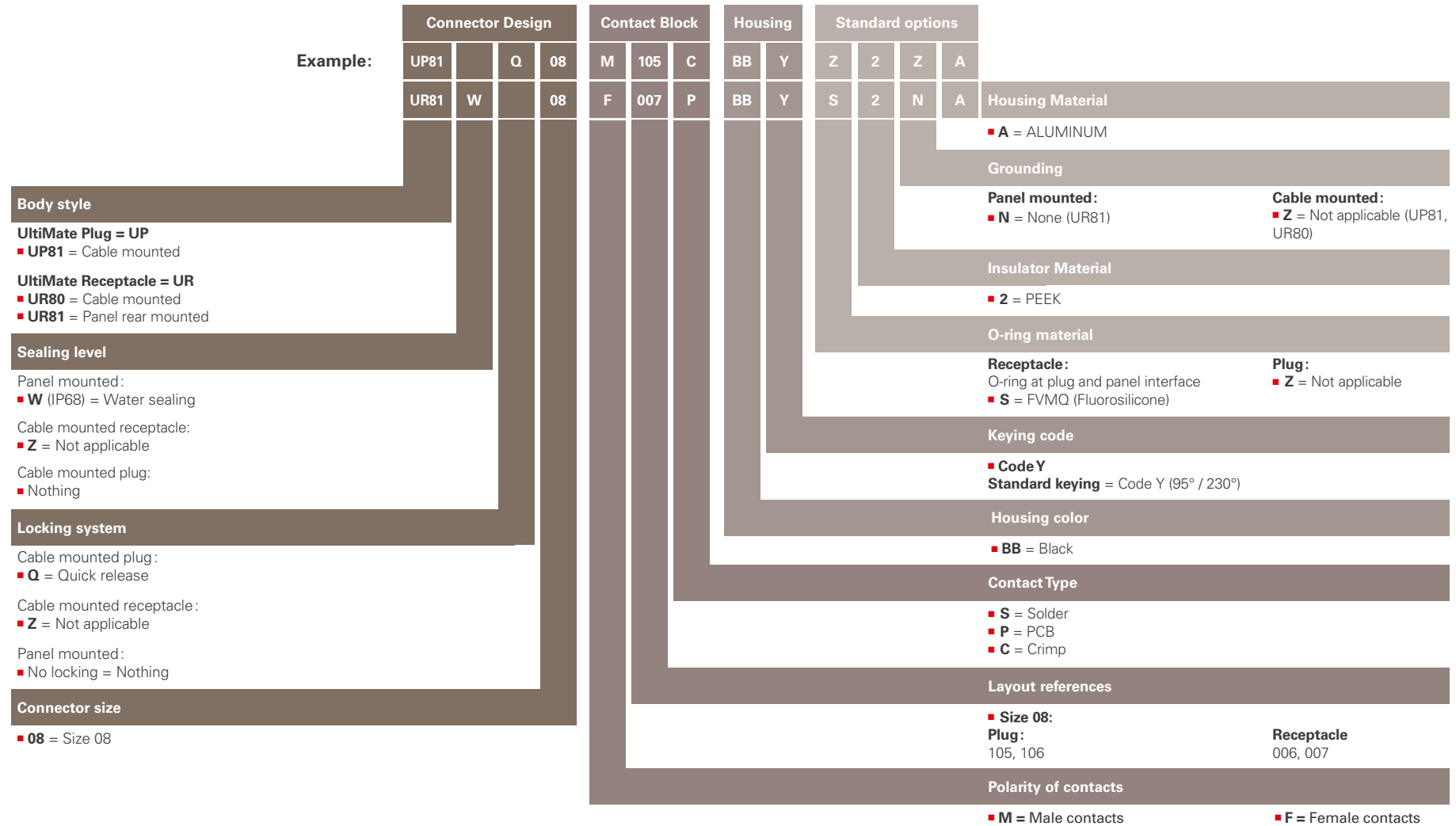
¹⁾ Recommended PCB hole dimensions may be adjusted to application.

MECHANICAL CODING ¹⁾



¹⁾ View from front of connectors. For further details see part numbering.

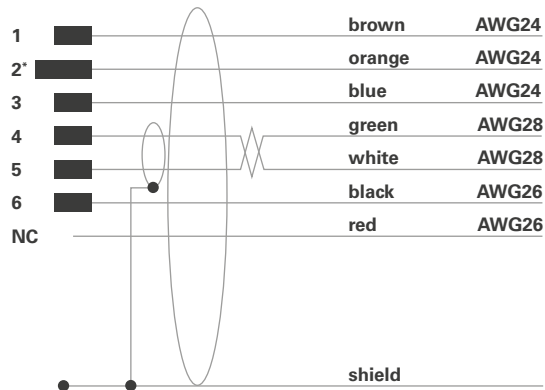
PLUGS & RECEPTACLES



CABLE SPECIFICATION FOR PRE-CABLED 6 CONTACTS

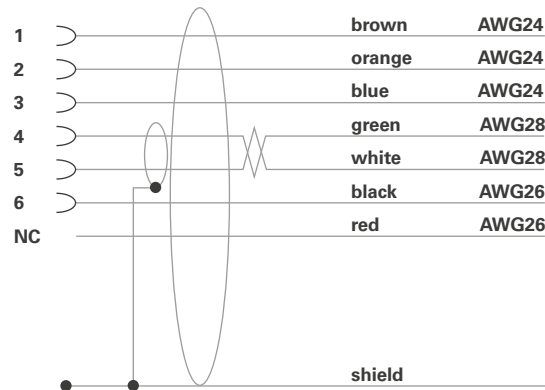
- PUR halogen free, flame retardant outer sheath, nominal thickness 0.55 mm, TAN (RAL 7002 matt) / BLACK (RAL 9005 matt)
- Working voltage: 100 V
- Weight: 45 kg/km
- Breaking strength: 400 N (Vectran central strength member)
- Recommended bending radius: 40 mm static / 60 mm dynamic
- Working temperature: -40 °C to +90 °C
- Overall diameter: nominal 5.35 mm / maximal 5.50 mm

Pre-cabled plug 6 contacts (UP81)



* First mate last break (FMLB) contact

Pre-cabled receptacle 6 contacts (UR80)



AWG24

Tinned copper conductor 7x0.20 mm / polypropylene insulation / nominal thickness 0.20 mm / nominal diameter 1.0 mm

AWG26

Tinned copper conductor 7x0.16 mm / polypropylene insulation / nominal thickness 0.21 mm / nominal diameter 0.90 mm

AWG28

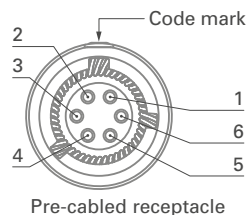
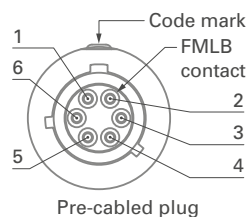
Tinned copper conductor 7x0.13 mm / polypropylene insulation / nominal thickness 0.28 mm / nominal diameter 0.95 mm / characteristic impedance 90 ±10 Ω
Tinned copper drain wire 7x0.13 mm, aluminum / polyester tape

Shield

Tinned copper braid / coverage 95% / wire diameter 0.13 mm

WIRING DIAGRAM FOR STANDARD PRE-CABLED 6 CONTACTS

View from front



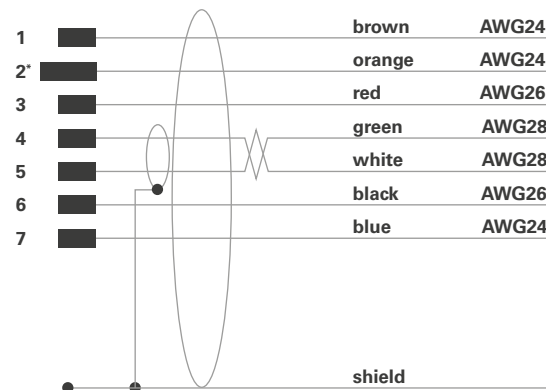
WIRE	PRE-CABLED PLUG SOLUTION
	1 m, open end
	Pin number
AWG24 brown	1
AWG24 orange	2 (FMLB)
AWG24 blue	3
AWG28 green	4
AWG28 white	5
AWG26 black	6
AWG26 red	Not connected
Part number	135976 CA S 06 UP81Q08BBYA/OE PUR TN 1.0M
	138895 CA S 06 UP81Q08BBYA/OE PUR BK 1.0M

WIRE	PRE-CABLED RECEPTACLE SOLUTION
	1 m, open end
	Pin number
AWG24 brown	1
AWG24 orange	2
AWG24 blue	3
AWG28 green	4
AWG28 white	5
AWG26 black	6
AWG26 red	Not connected
Part number	137148 CA S 06 UR80Z08BBYA/OE PUR TN 1.0M
	138897 CA S 06 UR80Z08BBYA/OE PUR BK 1.0M

CABLE SPECIFICATION FOR PRE-CABLED 7 CONTACTS

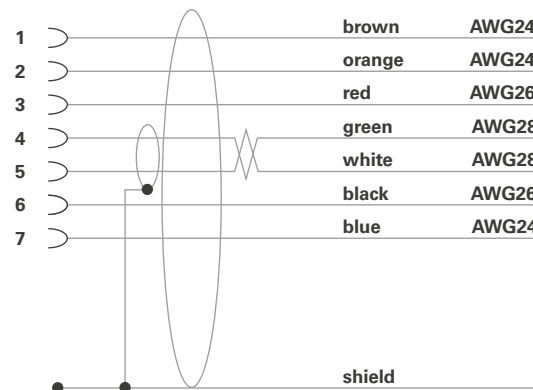
- PUR halogen free, flame retardant outer sheath, nominal thickness 0.55 mm, TAN (RAL 7002 matt) / BLACK (RAL 9005 matt)
- Working voltage: 100 V
- Weight: 45 kg/km
- Breaking strength: 400 N (Vectran central strength member)
- Recommended bending radius: 40 mm static / 60 mm dynamic
- Working temperature: -40 °C to +90 °C
- Overall diameter: nominal 5.35 mm / maximal 5.50 mm

Pre-cabled plug 7 contacts (UP81)



* First mate last break (FMLB) contact

Pre-cabled receptacle 7 contacts (UR80)



AWG24

Tinned copper conductor 7x0.20 mm / polypropylene insulation / nominal thickness 0.20 mm / nominal diameter 1.0 mm

AWG26

Tinned copper conductor 7x0.16 mm / polypropylene insulation / nominal thickness 0.21 mm / nominal diameter 0.90 mm

AWG28

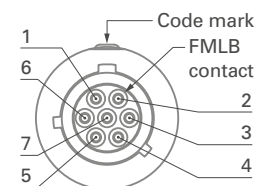
Tinned copper conductor 7x0.13 mm / polypropylene insulation / nominal thickness 0.28 mm / nominal diameter 0.95 mm / characteristic impedance $90 \pm 10 \Omega$
Tinned copper drain wire 7x0.13 mm, aluminum / polyester tape

Shield

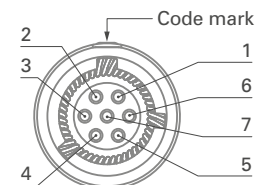
Tinned copper braid / coverage 95% / wire diameter 0.13 mm

WIRING DIAGRAM FOR STANDARD PRE-CABLED 7 CONTACTS

View from front



Pre-cabled plug

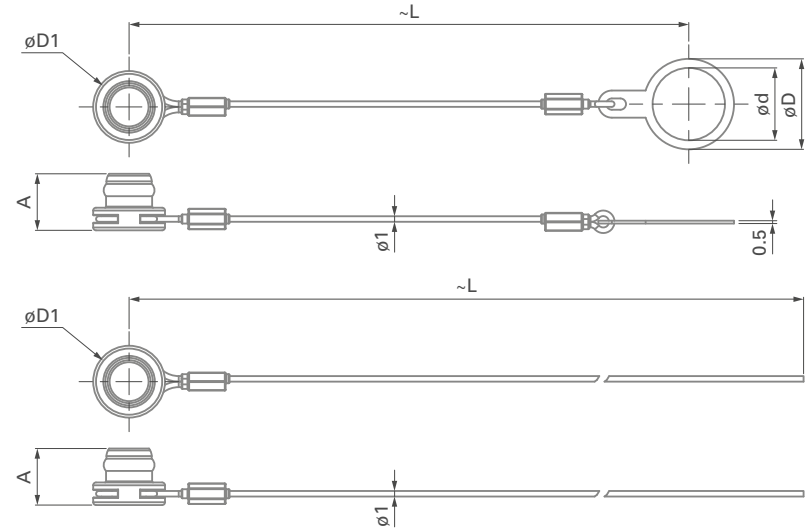


Pre-cabled receptacle

WIRE	PRE-CABLED PLUG SOLUTION	
	1 m, open end	
	Pin number	
AWG24 brown	1	
AWG24 orange	2 (FMLB)	
AWG26 red	3	
AWG28 green	4	
AWG28 white	5	
AWG26 black	6	
AWG24 blue	7	
Part number	137532 CA S 07 UP81Q08BBYA/OE PUR TN 1.0M	
	138896 CA S 07 UP81Q08BBYA/OE PUR BK 1.0M	

WIRE	PRE-CABLED RECEPTACLE SOLUTION	
	1 m, open end	
	Pin number	
AWG24 brown	1	
AWG24 orange	2	
AWG26 red	3	
AWG28 green	4	
AWG28 white	5	
AWG26 black	6	
AWG24 blue	7	
Part number	137534 CA S 07 UR80Z08BBYA/OE PUR TN 1.0M	
	138898 CA S 07 UR80Z08BBYA/OE PUR BK 1.0M	

SOFT CAPS - LANYARD WITH STAINLESS STEEL CABLE

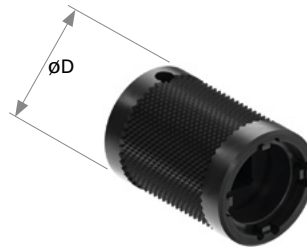


Size	Plug	Receptacle		A	$\phi D1$	L	ϕd	ϕD	Part number
	UP81	UR80 ¹⁾	UR81						
08		●		10.0	12.7	200	-	-	UCR80C 1B2 A200
			●	10.0	12.7	95	12.8	16	UCR80P 1B2 A095

¹⁾ Crimp ferrule and heat shrink tube are included.

NUT DRIVER (FOR UR81)

NUT DRIVER WITH SQUARE SOCKET* ➡



Part number	Nut thread size	Nut outer dia.	ϕD
TX00.401	1/2-32 UN	16	20

Material – PA

* For use with torque wrenches 1/4" (6.4 mm).

ENVIRONMENTAL & MECHANICAL DATA

Characteristic	Performance	Standard
Sealing performance mated and unmated	IP68 2m/24h	IEC 60529; MIL-STD-810 Method 512.6
Operating temperature range	-55 °C to +135 °C	MIL-STD-810 Method 501.6 and 502.6
Corrosion resistance	Salt mist, 500 hours ^{1) 2)} , 5% salt solution, 35 °C ;	MIL-STD-810 Method 509.6
Endurance	10.000 mating cycles (plug), 5.000 mating cycles (receptacle) ³⁾	IEC 60512-9-1
Vibration, random	7.7 Grms	MIL-STD-810 Method 514.7
Unmating force	Typical 55 ± 15 N	IEC 60512-13-1
Shock	100g half sine pulse amplitude 6 ms duration, no discontinuity > 1 µs	MIL-STD-810 Method 516.7 Condition I

¹⁾ Corrosion resistance dependent on body style. 400h for UR81 (panel rear mounted receptacle).

²⁾ Cosmetic changes may appear over time without impacting mechanical or electrical functions.

³⁾ Preserved mechanical and electrical functionality. Normal wear could appear.

ELECTRICAL DATA

Characteristic	Performance	Standard
Contact resistance (typical value)	< 10 mΩ (typical value)	MIL-STD-202 Method 307
Shell resistance (typical value)	< 10 mΩ (cabled; new condition)	MIL-STD-202 Method 307
Insulation resistance	> 10 ¹⁰ Ω	MIL-STD-883k Method 1003 MIL-STD-202 Method 302
Shielding effectiveness	360° shielded. Typical > 55 dB up to 1 GHz	MIL-STD-461F

MATERIAL & SURFACE FINISH

Components	Material		Finish	
	Designation ISO	Standard	Designation	Standard
Housing, nut	Aluminum AlMg1SiCu	EN-AW-6061	Black Nickel	SAE-AMS-QQ-N-290 SAE-AMS 2404
Locking spring (receptacles)	Stainless steel X5CrNiMo18-10	316/1.4401	0.64 µm Gold over Copper	-
Crimping ring (cable connectors)	Brass CuZn39Pb3	CW614N UNS C 38500	-	-
Contacts	- Male or Female (Crimp)	CuZn35Pb2	1 µm Gold over Nickel	MIL-DTL-45204D Type I ; ASTM B488
	- Female (Solder or PCB)	Bronze ; CuSn4Zn4Pb4		

Insulator and sealing		International symbol	Flammability
Insulator	- Molded	PEEK ¹⁾	UL 94 V-0
Sealant materials	- Cable connectors	Bi-component Epoxy compound	-
	- Panel connectors	Silicone compound	UL 94 V-0

O-rings & seals	International symbol	Chemical name
O-rings	FVMQ	Fluorosilicone rubber
Interfacial seal (plug)	FVMQ	Fluorosilicone rubber

Pre-cabled solutions	Material	Flammability
Overmolding	TPU (Estane®)	UL94 V-0
Cable jacket	PUR	UL94 V-2

Soft caps	Material	Flammability
Cap	TPV (Santoprene™)	UL 94 HB
Cable	FEP coated stainless steel	-
Fixing lug	Black Chrome plated brass (ISO CuZn37)	-
Crimp ferrule	Aluminum	-
Heat shrink tube	Polyolefin	-

¹⁾ Or any material in the PAEK family that provides equal or better overall performances.