

**TTAF**<sup>®</sup> | M CONNECTOR  
SERIES | 2023 v1



TODAY, TOMORROW AND FOREVER...



## Quality & Engineering

TTAF is a leading cable assembly manufacturer and interconnect solutions supplier, gaining trust of domestic and international clients by means of the solutions provided for special interconnect product requirements.

TTAF manufactures straight, right angle or customer specific molded backshells for different connectivity situations and provides flexible solutions in terms of MOQ's and cable lengths, enabling low quantity-high mix options depending on the industry requirements. Having a background of 20 years experience at connector business, TTAF can help customers with all interconnect needs of a system. In case of a special requirement; TTAF offers non-standard solutions, design, engineering, tooling & prototyping capabilities in order to support the customers.





## M5, M8 & M12 Connector Series

TTAF developed a modular system with M5, M8 & M12 connector series which brings completely flexible solutions. This system enables production of connectors with different heights and pin configurations. M5/M8/M12 connectors comply with Lead-free processing requirements.

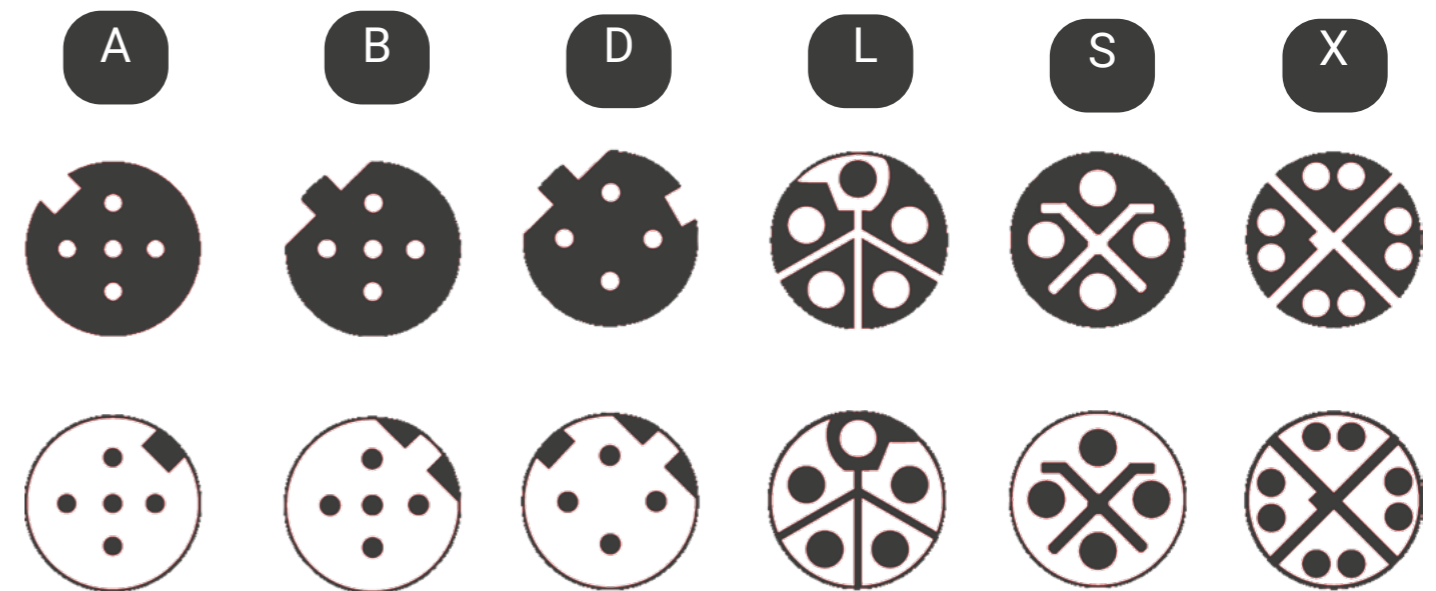
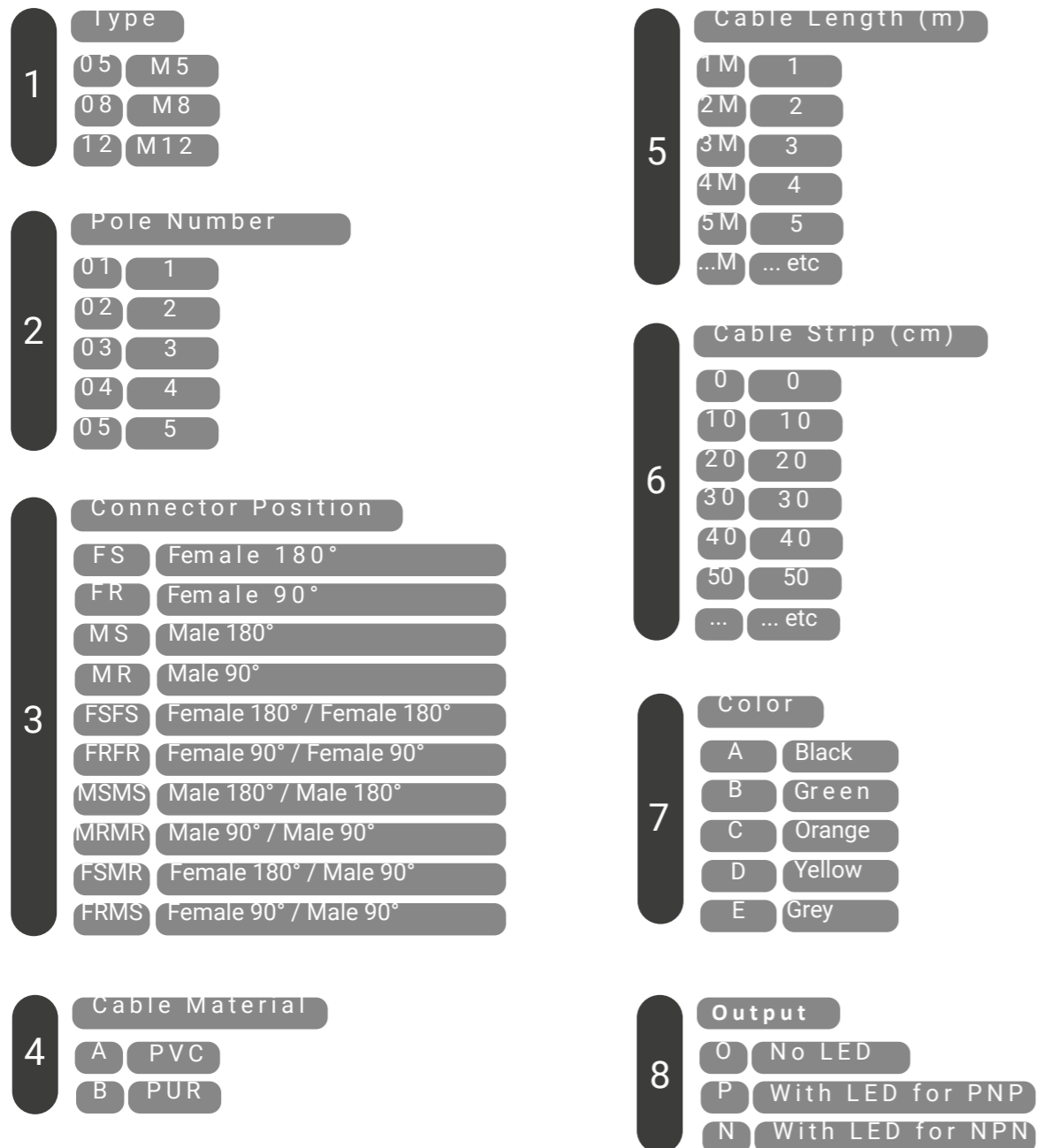
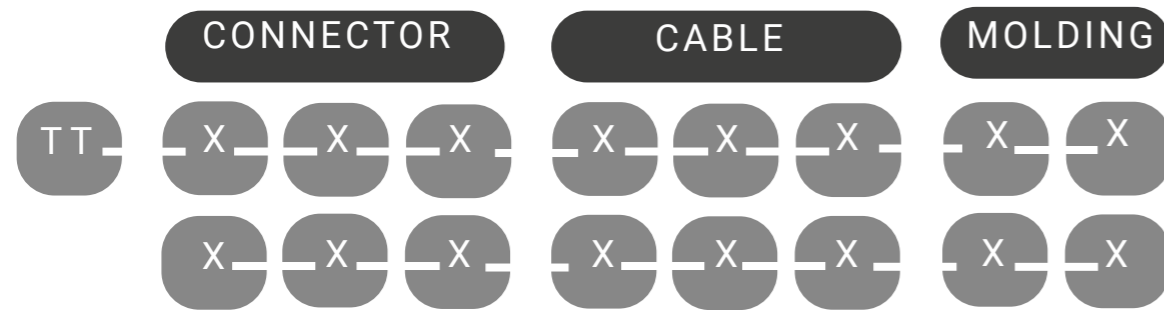
Besides connector series, TTAF provides cable assembly solutions for sensor/actuator or other automation system devices. TTAF product range includes assembled and overmolded patchcords and pigtailed.

In order to meet all industry requirements, TTAF can manufacture cable assemblies with different overmolding materials. As a price competitive and economic solution PVC or as a harsh environment solution PUR can be used.

PUR	PVC
<ul style="list-style-type: none"> <li>+ Highly resistant against abrasion.</li> <li>+ Resistant to oil, lubricants and chemicals.</li> <li>+ Halogen-free, hidrolisis and UV resistant</li> <li>+ Flame retardant</li> <li>+ UL/CSA Approved</li> </ul>	<ul style="list-style-type: none"> <li>+ Suitable for medium mechanical load</li> <li>+ Easy to dismantle</li> <li>+ Limited resistance against abrasion and oil.</li> <li>+ Competitive and economic solution.</li> </ul>



# Coding System





# Electrical and Mechanical Specifications

	STANDARD	M5	M8	M12
Pin Number		4	2,3,4	2,3,4,5
Technical Data				
Temperature Category	DIN EN 60068-1 test b	55/125/56	55/125/56	55/125/56
Temperature Range		-55/125°C	-55/125°C	-55/125°C
Current Rating For Each Contact	IEC 60512 test 5b	According to ambient temp. 20°C 5.7 A 40°C 4.8 A 70°C 2.6 A	According to ambient temp. 20°C 5.7 A 40°C 4.8 A 70°C 2.6 A	According to ambient temp. 20°C 5.7 A 40°C 4.8 A 70°C 2.6 A
Dialectic Strength	IEC 60512 test 4a	4 Pin; Contact-Contact 1400V	2 Pin; Contact-Contact 1400V 3 Pin; Contact-Contact 1000V 4 Pin; Contact-Contact 650V	2 Pin; Contact-Contact 2000V 3 Pin; Contact-Contact 1750V 4 Pin; Contact-Contact 1400V 5 Pin; Contact-Contact 1000V
Contact Disturbance	IEC 60512 test 2a	<10mΩ	<10mΩ	<10mΩ
Insulation Resistance	IEC 60512 test 3a	<10 <sup>12</sup> Ω	<10 <sup>12</sup> Ω	<10 <sup>12</sup> Ω
Vibration	IEC 60512 test 6d	10-500 Hz 5g	10-500 Hz 5g	10-500 Hz 5g
Contact Disturbance (during vibration test)	IEC 60512 test 2e	<1 μs	<1 μs	<1 μs
Shock	IEC 60512 test 6c	50 g 11 ms	50 g 11 ms	50 g 11 ms
Contact Disturbance (during shock test)	IEC 60512 test 2e	<1 μs	<1 μs	<1 μs
Mechanical Operations (mating cycle)	IEC 60512 test 9a	> 100 Mating Loops	> 100 Mating Loops	> 100 Mating Loops
Insertion and Withdrawal	IEC 60512 test 13b	max. 23 N	max. 23 N	max. 23 N
Gauge Retention Force	IEC 60512 test 16e	> 0.2 N	> 0.2 N	> 0.2 N



	STANDARD	M5	M8	M12
Pin Number		4	2,3,4	2,3,4,5
Connection		Screw Locking M5x1 (Max. Compression Force 0.2 Nm)	Screw Locking M8x1 (Max. Compression Force 0.4 Nm)	Screw Locking M12x1 (Max. Compression Force 0.6 Nm)
Insulation Material		PUR,PVC	PUR,PVC	PUR,PVC
Insulation Diameter		4 pins PUR 3.5 mm PVC 2.5 mm	2 pins 3 pins 4 pins PUR 3.5mm 4.1mm 4.4 mm PVC 4 mm 4.4 mm 4.7 mm	2 pins 3 pins PUR 3.8 mm 4mm PVC 4.5 mm 4.8mm 4 pins 5 pins PUR 3.8 mm 4mm PVC 4.5 mm 4.8mm
Conductor Cross-Section		0.25 mm <sup>2</sup>	0.25 mm <sup>2</sup>	0.34 mm <sup>2</sup> 0.25 mm <sup>2</sup> + 0.34 mm <sup>2</sup>
Bending Radius		10 x Cover Diameter -25 .... + 80°C (PUR) -5 .... + 70°C (PVC)	10 x Cover Diameter -25 .... + 80°C (PUR) -5 .... + 70°C (PVC)	10 x Cover Diameter 15 x Cover Diameter -25 .... + 80°C (PUR) -25 .... + 75°C (PUR) -5 .... + 70°C (PVC)
Finished, Mating Spot		Gold Plated	Gold Plated	Gold Plated
Screw Material		Zinc Casting	Zinc Casting	Zinc Casting
Screw Plating		4-6 μm Ni	4-6 μm Ni	4-6 μm Ni
Current rating for each contact	IEC 61076-2-101	Max. 4 A	Max. 4 A	Max. 4 A
Dialectic Power	IEC 61076-2-101	Max. 1.5 kV (depends on type)	Max. 1.5 kV (depends on type)	Max. 1.5 kV (depends on type)
Protection Class	IEC 60529	IP67	IP67	IP67



“Unite and empower with seamless connections.”





# M5 Cable Solutions

TTAF M5 cable solutions fit with PCB counterpart and the threaded panel flange offered in addition. TTAF provides assembled and overmolded patchcord or pigtail M5 cable assembly solutions.

Number of contacts: **4.**

Cable: **PVC/PUR.**

Cable Length: **Various lengths based on customer requirement.**



M5 / Straight Female Pigtail



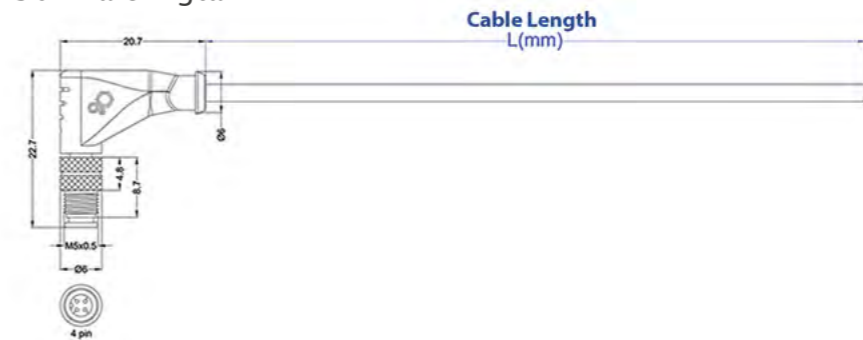
M5 / 90° Female Pigtail



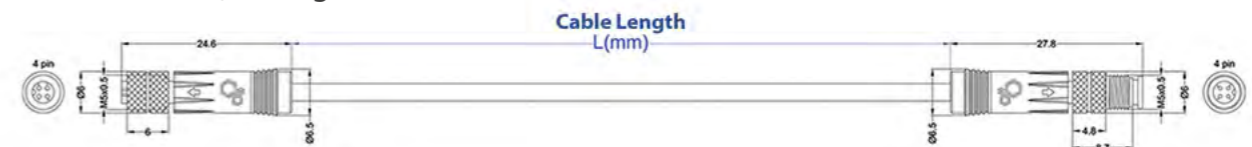
M5 / Straight Male Pigtail



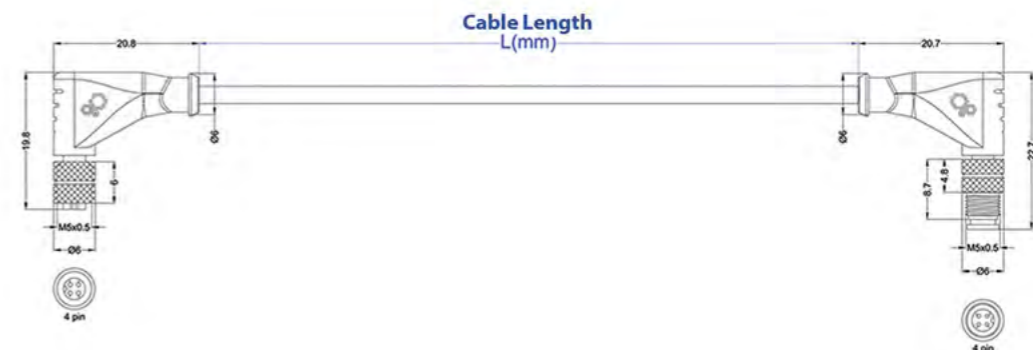
M5 / 90° Male Pigtail



M5 / Straight Female Flat Male

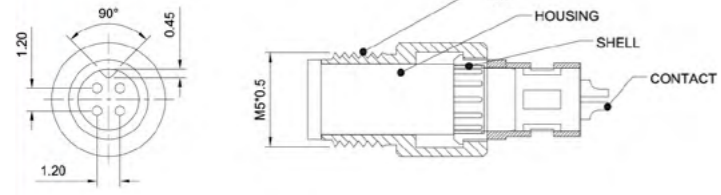


M5 / 90° Female 90° Male





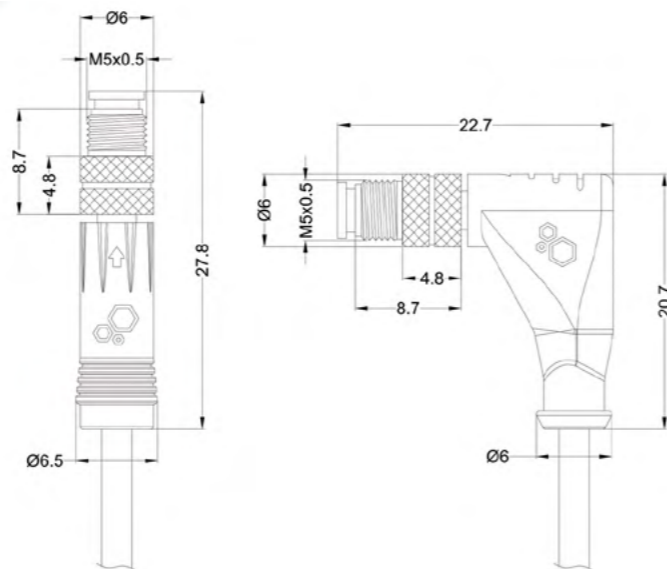
# M5 Male



● Contact Configuration:



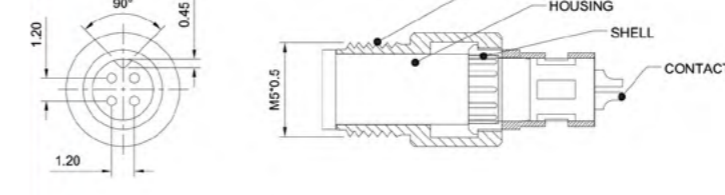
- 1 - Brown
- 2 - White
- 3 - Blue
- 4 - Black



- Product Description:  
M5 Male connector with cable, straight/right angle, shield connected to the nut.
- Standard:  
IEC 61076-2-101/IEC 60974-5-2
- Number of Contacts:  
4 Poles
- Material:  
Housing: TPU; Color:Black  
Contact: Brass  
Nut: Brass  
O-Ring: NBR;Color:Black  
Shell: Brass
- Finish:  
Contact: Gold Flash Micro Inches Min.  
Nut: Nickel Plated 60u"~100"  
Shell: Tin Plated 60u"~100"
- Electric specifications:  
Rated Current: 1A Max.  
Voltage: 60V  
IP Rating: IP67
- Environmental Conditions:  
Protection Class: IP67 (IEC 60529)  
Temperature Range: -20° to +85°C



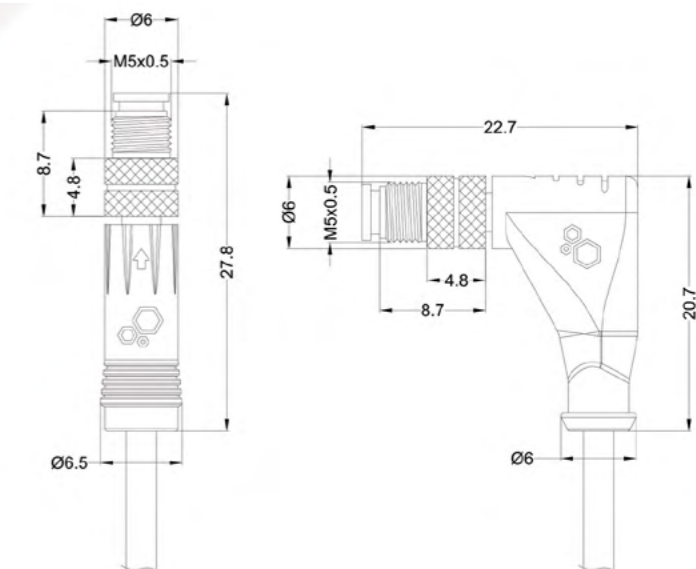
# M5 Female



● Contact Configuration:



- 1 - Brown
- 2 - White
- 3 - Blue
- 4 - Black

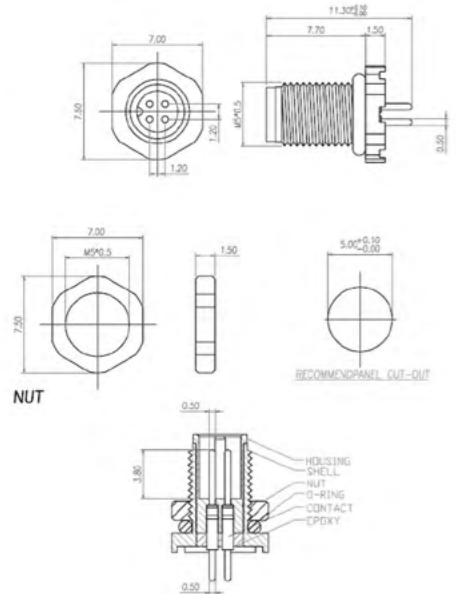


- Product Description:  
M5 Male connector with cable, straight/right angle, shield connected to the nut.
- Standard:  
IEC 61076-2-101/IEC 60974-5-2
- Number of Contacts:  
4 Poles
- Material:  
Housing: TPU; Color:Black  
Contact: Brass  
Nut: Brass  
O-Ring: NBR;Color:Black  
Shell: Brass
- Finish:  
Contact: Gold Flash Micro Inches Min.  
Nut: Nickel Plated 60u"~100"  
Shell: Tin Plated 60u"~100"
- Electric specifications:  
Rated Current: 1A Max.  
Voltage: 60V  
IP Rating: IP67
- Environmental Conditions:  
Protection Class: IP67 (IEC 60529)  
Temperature Range: -20° to +85°C





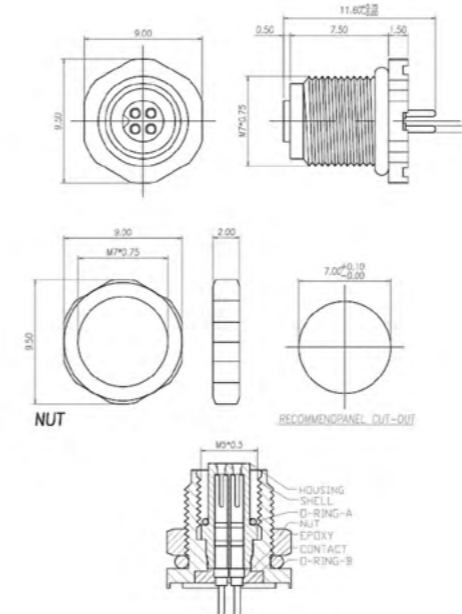
## M5 Male / Panel Type Circular Connectors



- **Standard:**  
5M4P-B-A-FL-5X0.5-C-D-GF-B-N
- **Number of Contacts:**
- **Material:**  
Housing: PBT UL94V-0; Color:Black  
Contact: Brass  
Nut: Brass  
Shell:Brass  
O-Ring: NBR;Color:Black  
Epoxy Base: EF400A & EF004B. Color: Black
- **Finish:**  
Contact: Gold Flash Micro Inches Min.  
Nut: Nickel Plated  
Shell: Nickel Plated
- **Electric specifications:**  
Rated Current: 1A  
Voltage: 60V  
IP Rating: IP67
- **Environmental Conditions:**  
Operation Temperature: -200°C~850°C



## M5 Female / Panel Type Circular Connectors



- **Standard:**  
5F4P-B-A-FL-7X0.75-C-D-GF-B-N
- **Number of Contacts:**
- **Material:**  
Housing: PBT UL94V-0; Color:Black  
Contact: Phosphor Bronze  
Nut: Brass  
Shell: Brass  
O-Ring: NBR;Color:Black  
Epoxy Base: EF400A & EF004B. Color: Black
- **Finish:**  
Contact: Gold Flash Micro Inches Min.  
Nut: Nickel Plated  
Shell: Nickel Plated
- **Electric specifications:**  
Rated Current: 1A  
Voltage: 60V  
IP Rating: IP67
- **Environmental Conditions:**  
Operation Temperature: -200°C~850°C



# M8 Cable Solutions

TTAF M8 cable solutions fit with PCB counterpart and the threaded panel flange offered in addition. TTAF provides assembled and overmolded patchcord or pigtail M8 cable assembly solutions.

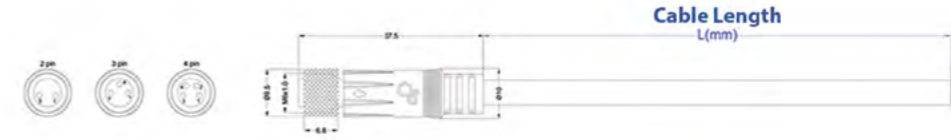
Number of contacts: **2,3,4.**

Cable: **PVC/PUR (UL).**

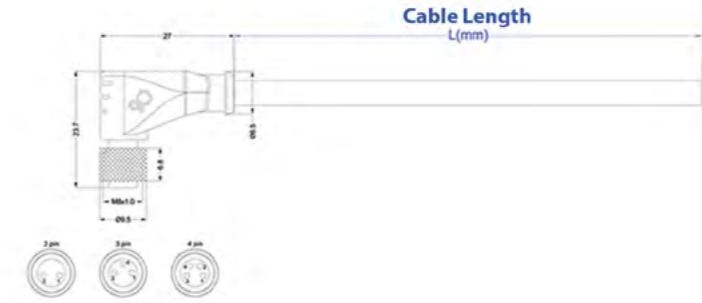
Cable Length: **Various lengths based on customer requirement.**



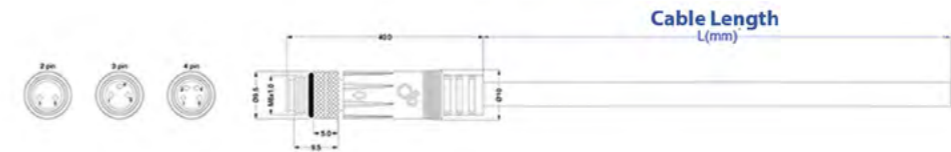
### M8 / Straight Female Pigtail



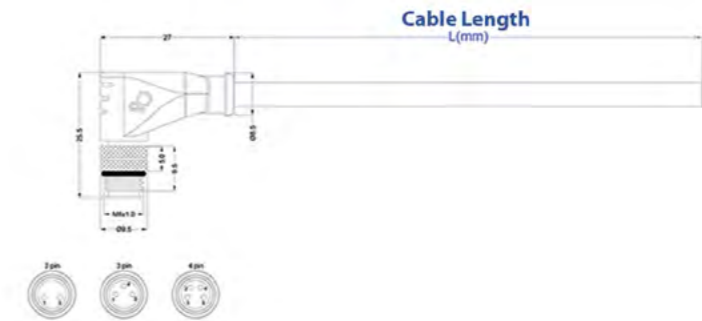
### M8 / 90° Female Pigtail



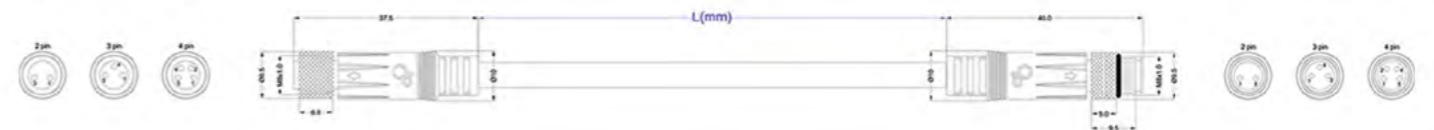
### M8 / Straight Male Pigtail



### M8 / 90° Male Pigtail



### M8 / Straight Female Flat Male



### M8 / 90° Female 90° Male

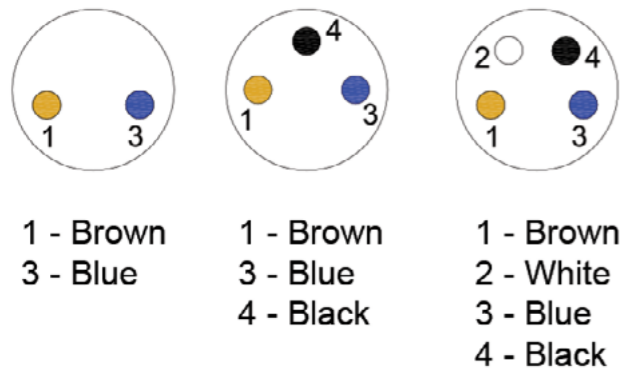




# M8 Male



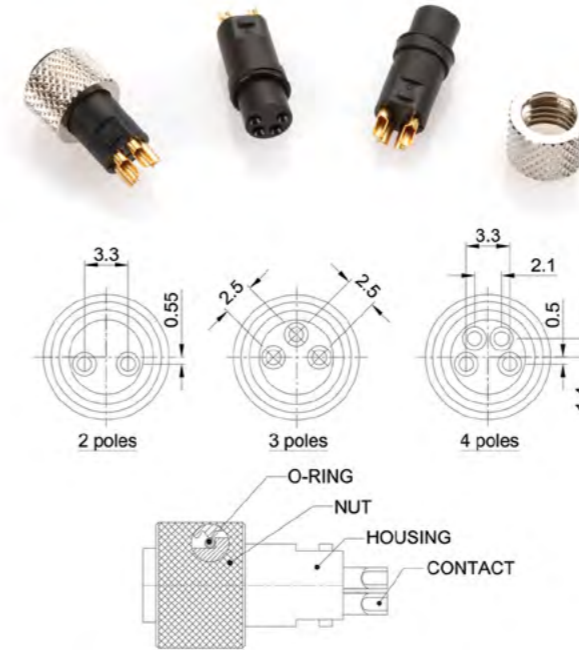
● Contact Configuration:



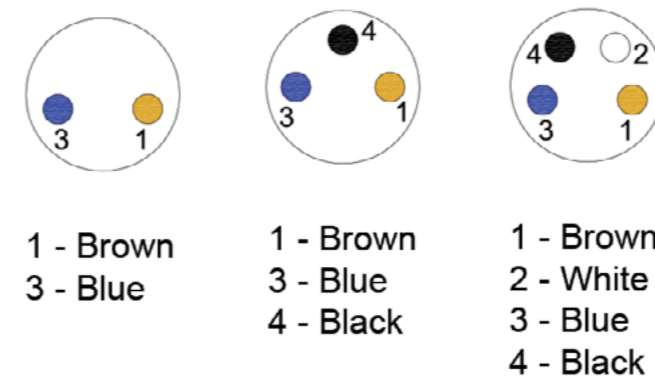
- **Product Description:**  
M8 Male connector with cable, straight/right angle, shield connected to the nut.
- **Standard:**  
IEC 61076-2-101/IEC 60947-5-2
- **Number of Contacts:**  
2,3,4 Poles
- **Material:**  
Housing: PBT UL94V-0; Color:Black  
Contact: Brass  
Nut: Copper Alloy  
O-Ring: NBR;Color:Black  
Shell: Brass
- **Finish:**  
Contact: 1u" Gold Plated  
Nut: Nickel Plated 60u"~100"  
Shell: Nickel Plated 60u"~100"
- **Electric specifications:**  
Rated Current: 5A Max.  
Voltage: 125V  
IP Rating: IP67
- **Environmental Conditions:**  
Protection Class: IP67 (IEC 60529)  
Temperature Range: -40° to +85°C



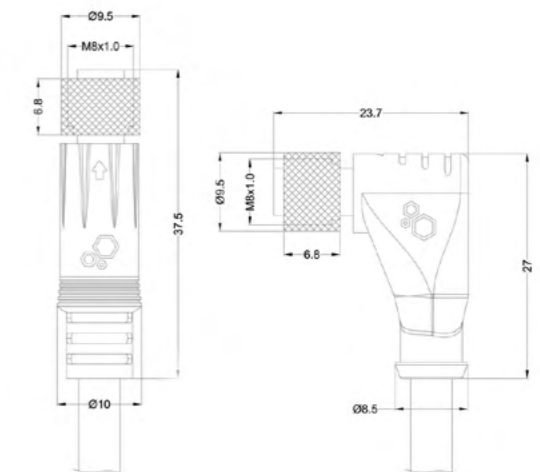
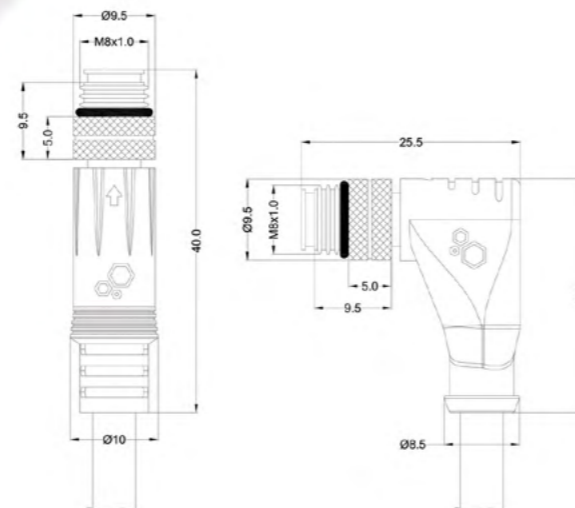
# M8 Female



● Contact Configuration:

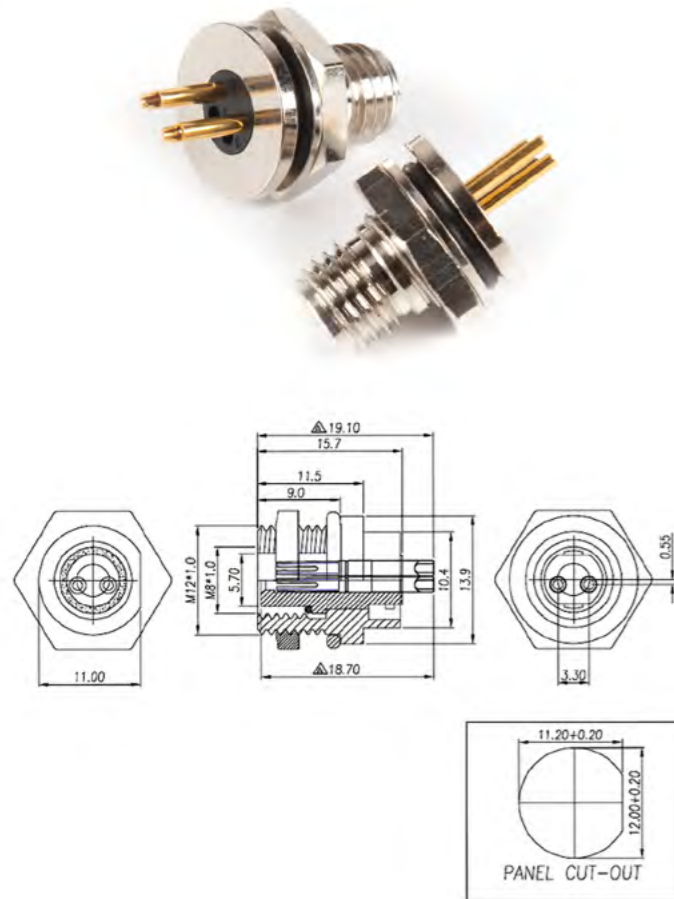


- **Product Description:**  
M8 Male connector with cable, straight/right angle, shield connected to the nut.
- **Standard:**  
IEC 61076-2-101/IEC 60947-5-2
- **Number of Contacts:**  
2,3,4 Poles
- **Material:**  
Housing: PBT UL94V-0; Color:Black  
Contact: Phosphor Bronze  
Nut: Brass  
O-Ring: NBR;Color:Black
- **Finish:**  
Contact: 1u" Gold Plated  
Solder Area: Gold Flash  
Under Plate: Nickel  
Nut: Nickel Plated 60"u~100u"
- **Electric specifications:**  
Rated Current: 5A Max.  
Voltage: 125V  
IP Rating: IP67
- **Environmental Conditions:**  
Protection Class: IP67 (IEC 60529)  
Temperature Range: -20° to +85°C





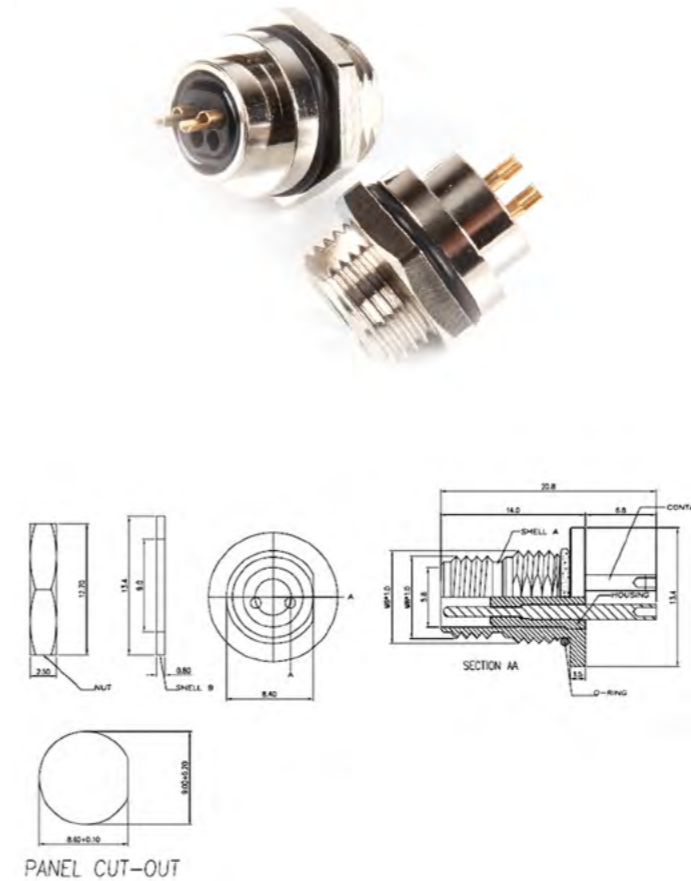
## M8 Male / Panel Type Circular Connectors



- **Standard:**  
8M2P-B-E-FL-9X1.0-S-S-G10-B-N
- **Number of Contacts:**
- **Material:**  
Housing: PBT UL94V-0; Color:Black  
Contact: Brass  
Nut: Brass  
O-Ring: NBR;Color:Black
- **Finish:**  
Contact: Contact Area: 10 Micro Inches Min. Gold Plating  
Under Plate: Nickel  
Nut: Nickel Plated 60u"~100u" Over All
- **Electric specifications:**  
Rated Current: 5A  
Voltage: 125V  
IP Rating: IPX7
- **Environmental Conditions:**  
Operation Temperature: -200°C~850°C



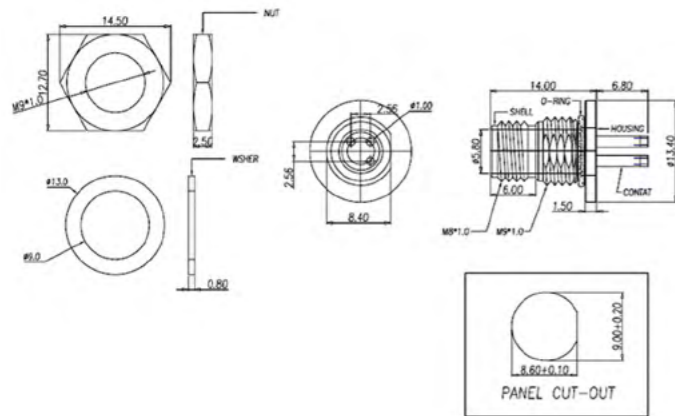
## M8 Female / Panel Type Circular Connectors



- **Standard:**  
8F2P-B-E-FL-12X1.0-S-S-G10-B-N-1
- **Number of Contacts:**
- **Material:**  
Housing: PBT UL94V-0; Color:Black  
Contact: Brass  
Shell A: Brass  
Shell B: Brass  
Nut: Brass  
O-Ring:Epdm; Color:Black
- **Finish:**  
Contact: 10 Micro Inches Min. Gold Plated  
Under Plate : Nickel  
Shell A: Nickel Plated 60u"~100" Over All  
Shell B: Nickel Plated 60u"~100" Over All  
Nut: Nickel Plated 60u"~100" Over All
- **Electric specifications:**  
Rated Current: 5A  
Voltage: 125V  
IP Rating: IPX7
- **Environmental Conditions:**  
Operation Temperature: -200°C~850°C



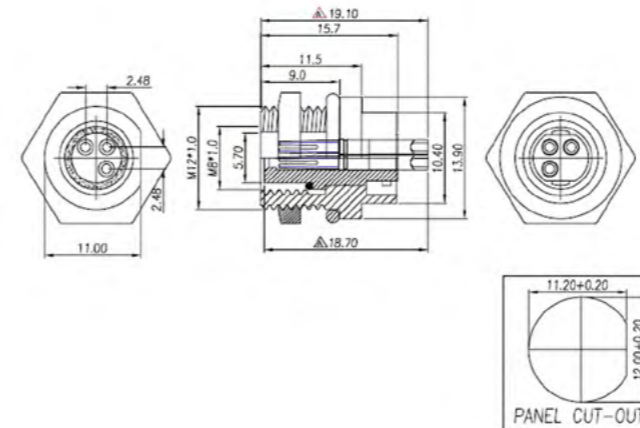
## M8 Male / Panel Type Circular Connectors



- **Standard:**  
8M3P-B-E-FL-9X1.0-S-S-G10-B-N
- **Number of Contacts:**
- **Material:**  
Housing: PBT UL94V-0; Color:Black  
Contact: Brass  
Shell: Brass  
Washer: Brass  
Nut: Brass  
O-Ring: Epdm;Color:Black
- **Finish:**  
Contact A: 10 Micro Inches MIN. Gold Plated.  
Under Plate: Nickel  
Shell: Nickel Plated 60u"~100u"Over All  
Washer: Nickel Plated 60u"~100u"Over All  
Nut: Nickel Plated 60u"~100u"Over All
- **Electric Specifications:**  
Rated Current: 5A  
Voltage: 125V  
IP Rating: IPX7
- **Environmental Conditions:**  
Operation Temperature: -200°C~850°C



## M8 Female / Panel Type Circular Connectors



- **Standard:**  
8F3P-B-E-FL-12X1.0-S-S-G10-B-N-1
- **Number of Contacts:**
- **Material:**  
Insulation: Thermoplastic UL94V-0  
Contact: Brass  
Shell: Brass  
Nut: Brass  
O-Ring: NBR (Black)
- **Plating:**  
Contact: Gold 10u" On Contact  
Goldflash on Solder Area  
Shell: Nickel 60u"  
Nut: Nickel 60u"





# M12 Cable Solutions

TTAF M12 cable solutions fit with PCB counterpart and the threaded panel flange offered in addition. TTAF provides assembled and overmolded patchcord or pigtail M12 cable assembly solutions.

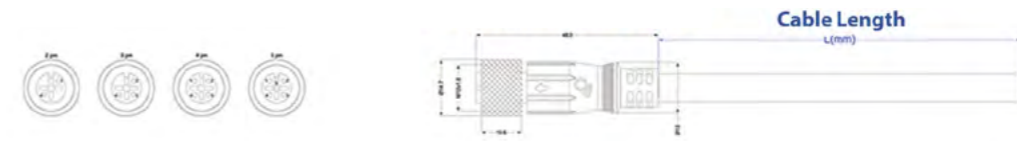
Number of contacts: **2,3,4,5**

Led: **3 Led optional**

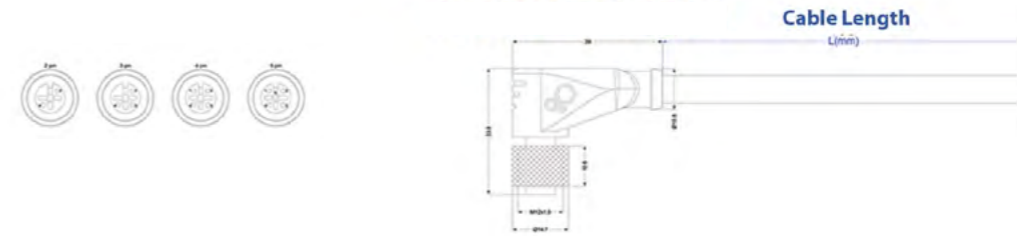
Cable: **PVC/PUR (UL)**

Cable Length: **Various lengths based on customer requirement.**

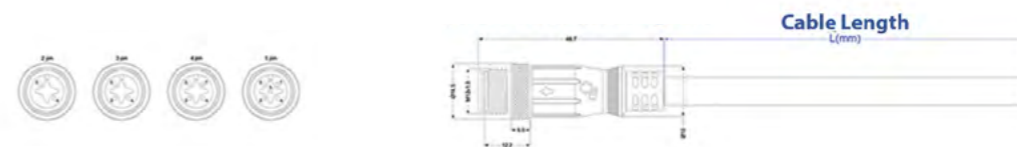
M12 / Straight Female Pigtail



M12 / 90° Female Pigtail



M12 / Straight Male Pigtail



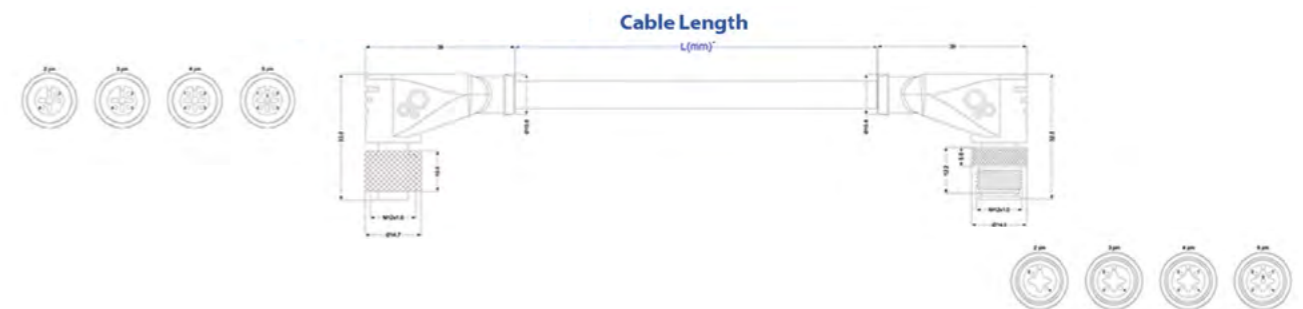
M12 / 90° Male Pigtail



M12 / Straight Female Flat Male

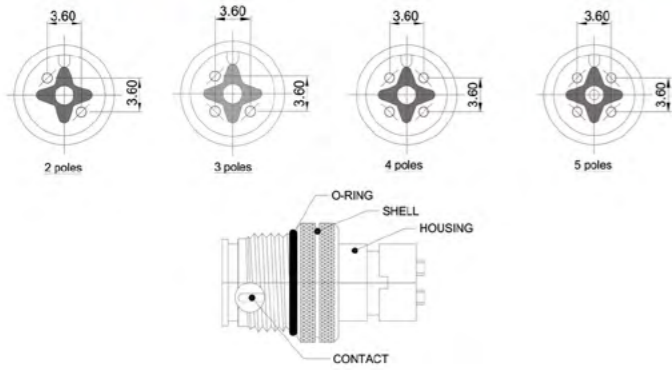


M12 / 90° Female 90° Male





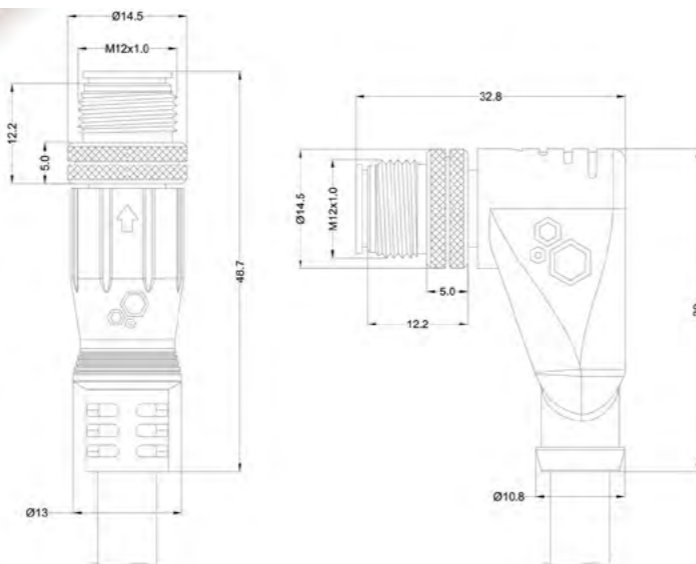
# M12 Male



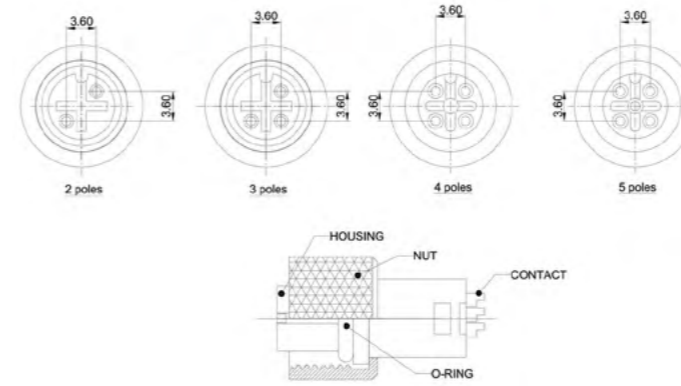
● **Contact Configuration:**



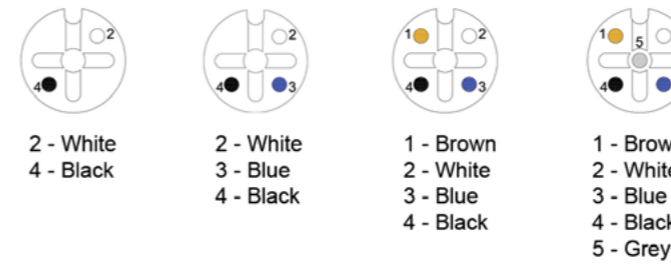
- **Product Description:**  
M12 Male connector with cable, straight/right angle, shield connected to the nut.
- **Standard:**  
IEC 61076-2-101/IEC 60947-5-2
- **Number of Contacts:**  
2,3,4,5 Poles
- **Material:**  
Housing: PBT UL94V-0; Color:Black  
Contact: Brass  
Nut: Brass  
O-Ring: EPDM;Color:Black  
Shell: Brass
- **Finish:**  
Contact: 1u" Gold Plated  
Nut: Nickel  
Shell: Nickel Plated 60u"~100"
- **Electric specifications:**  
Rated Current: 5A Max.  
Voltage: 125V  
IP Rating: IP67
- **Environmental Conditions:**  
Protection Class: IP67 (IEC 60529)  
Temperature Range: -40° to +85°C



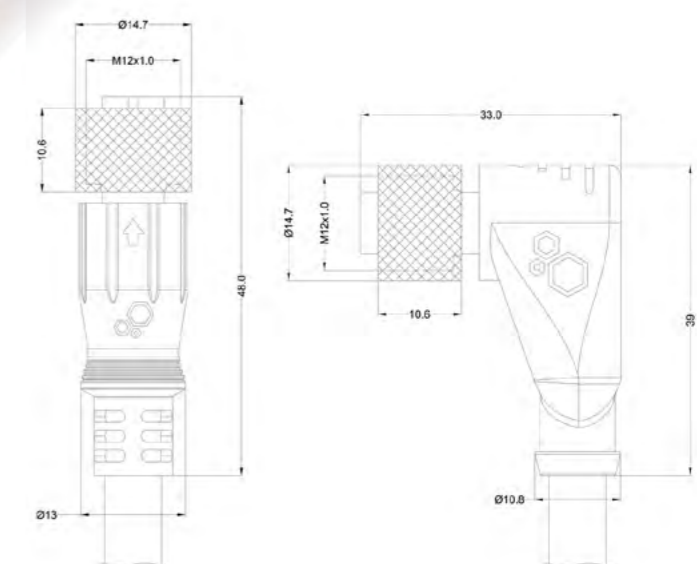
# M12 Female



● **Contact Configuration:**



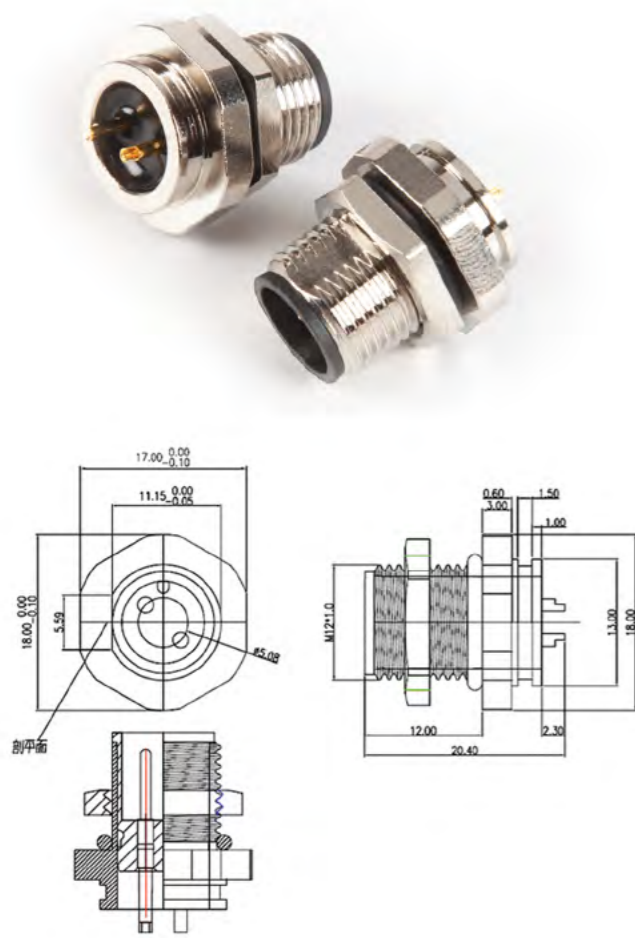
- **Product Description:**  
M12 Female connector with cable, straight/right angle, shield connected to the nut.
- **Standard:**  
IEC 61076-2-101/IEC 60947-5-2
- **Number of Contacts:**  
2,3,4,5 Poles
- **Material:**  
Housing: PBT UL94V-0; Color:Black  
Contact: Brass  
Nut: Brass  
O-Ring: EPDM;Color:Black
- **Finish:**  
Contact: 1u" Gold Plated  
Nut: Nickel  
Shell: Nickel Plated 60u"~100"
- **Electric specifications:**  
Rated Current: 5A Max.  
Voltage: 125V  
IP Rating: IP67
- **Environmental Conditions:**  
Protection Class: IP67 (IEC 60529)  
Temperature Range: -20° to +85°C







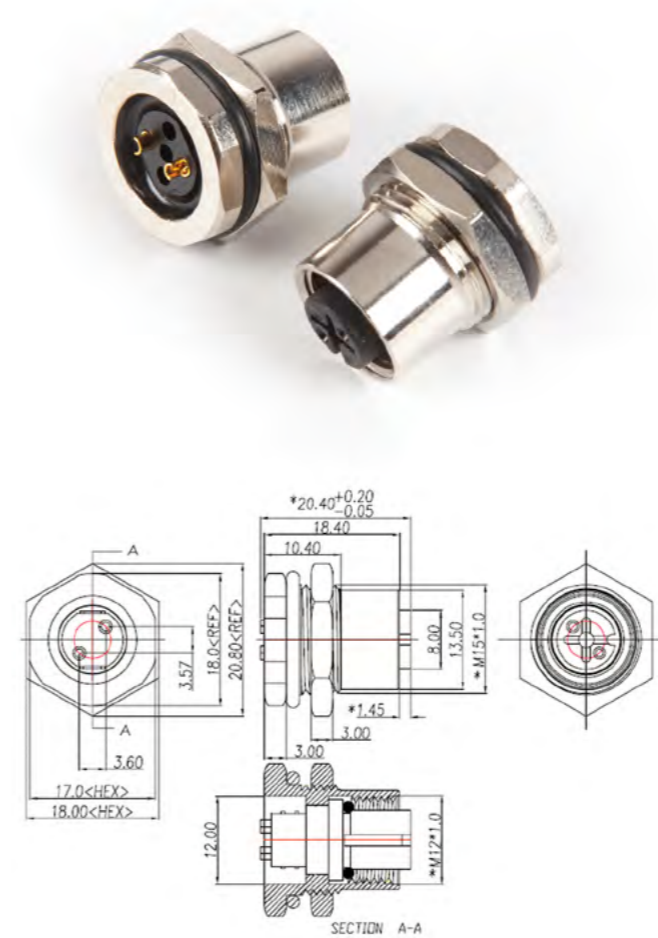
## M12 Male / Panel Type Circular Connectors



- **Standard:**  
12F2P-B-A-FL-15X1.0-C-S-G10-B-N



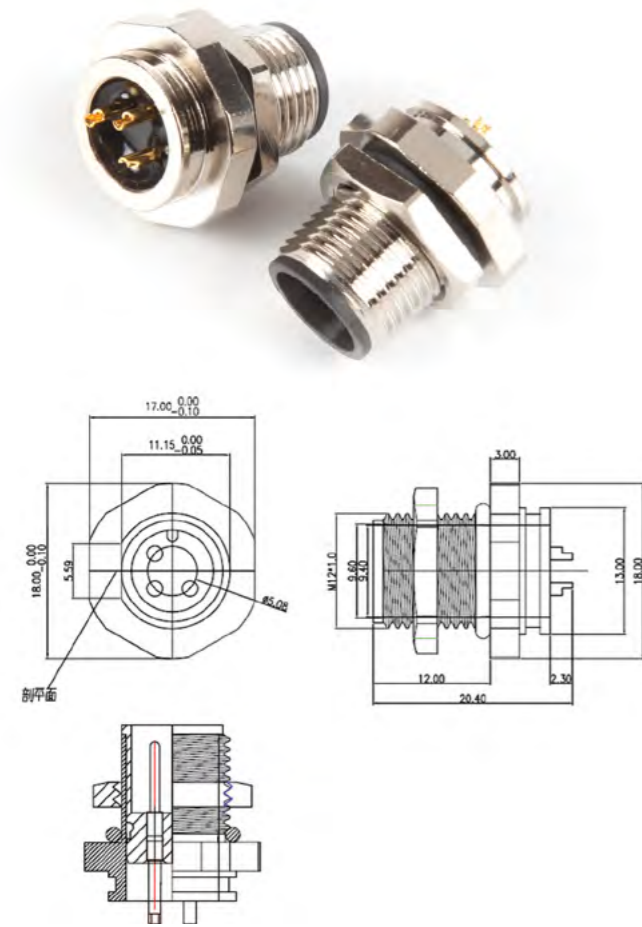
## M12 Female / Panel Type Circular Connectors



- **Standard:**  
12M2P-B-A-FL-12X1.0-S-S-G10-B-N
- **Material:**  
Shell: Brass (C3604)  
Contact: Brass (C3604)  
Housing: PBT+15GF (Black)  
Nut: Brass (C3604)  
O-Ring: NBR (Black)
- **Finish:**  
Shell: NI 100u"  
Contact: Gold 10u"  
NUT: NI 100u"



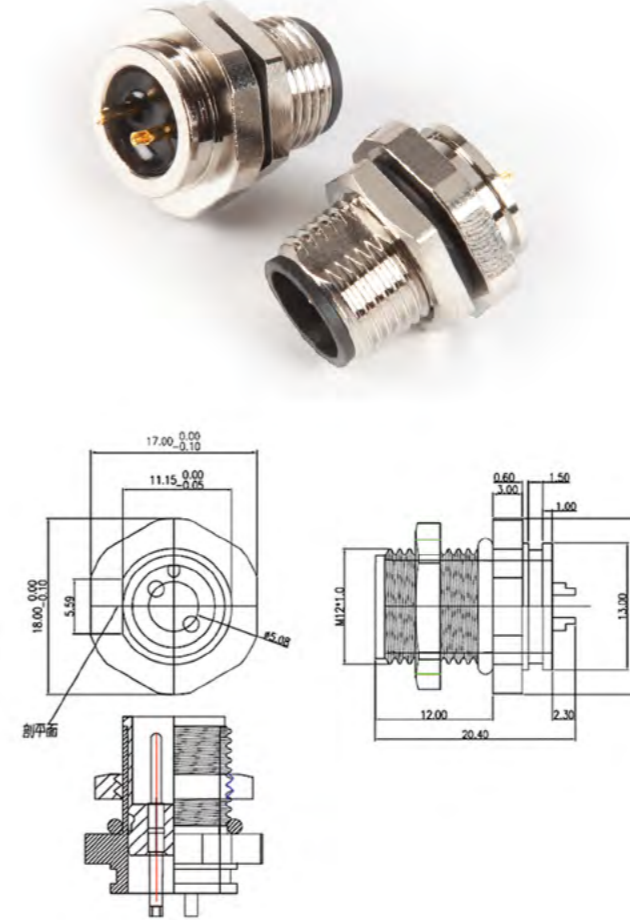
## M12 Male / Panel Type Circular Connectors



- **Standard:**  
12F2P-B-A-FL-15X1.0-C-S-G10-B-N



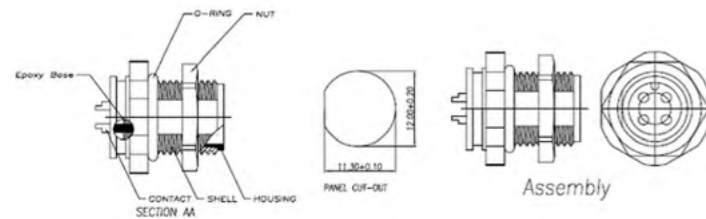
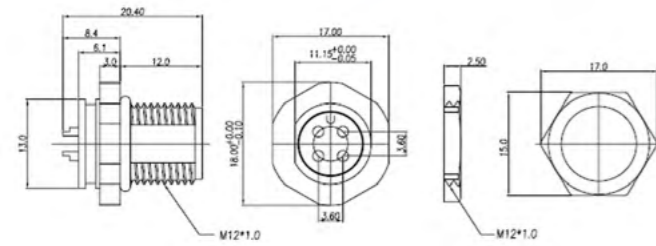
## M12 Female / Panel Type Circular Connectors



- **Standard:**  
12M2P-B-A-FL-12X1.0-S-S-G10-B-N
- **Material:**  
Housing: PBT +15GF (Black)  
Contact: Brass (C3604)  
Nut: Brass(C3604)  
Shell: Brass (C3604)  
O-Ring: NBR;Black
- **Finish:**  
Shell: NI 100u"  
Contact: Gold 10u"  
NUT: NI 100u"



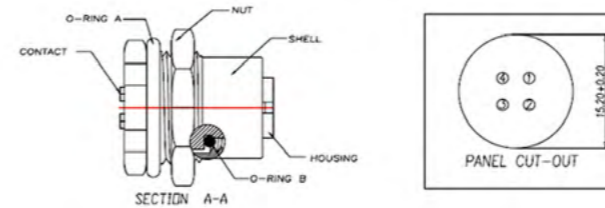
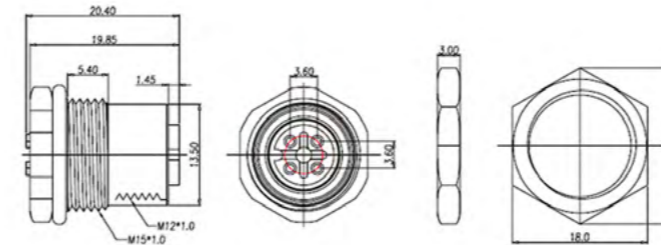
## M12 Male / Panel Type Circular Connectors



- **Standard:**  
12M4P-B-A-FL-15X1.0-C-S-G10-B-N
- **Material:**  
Housing: PBT UL94V-0; Color:Black  
Contact: Copper Alloy  
Nut: Copper Alloy  
Shell: Copper Alloy  
O-Ring: EPDM;Color:Black  
Epoxy Base: EF400A & EF004B. Color: Black
- **Finish:**  
Contact: 10 Micro Inches Min. Gold Plating Over Nickel  
Nut: Nickel Plated 60u"~100u"Over all  
Shell: Nickel Plated 60u"~100u"Over all
- **Electric specifications:**  
Rated Current: 5A  
Voltage: 125V  
IP Rating: IPX7
- **Environmental Conditions:**  
Operation Temperature: -400°C~850°C



## M12 Female / Panel Type Circular Connectors



- **Standard:**  
12F4P-B-A-FL-15X1.0-C-S-G10-B-N
- **Material:**  
Housing: PBT UL94V-0; Color:Black  
Contact: Brass  
Nut: Brass  
Shell: Brass  
O-Ring A: NBR;Color:Black  
O-Ring B: NBR;Color:Black
- **Finish:**  
Contact A: 10 Micro Inches MIN. Gold Plated Under Plate:Nickel.  
Shell: Nickel Plated 60u"~100u"Over All.
- **Electric specifications:**  
Rated Current: 5A  
Voltage: 125V  
IP Rating: IPX8
- **Environmental Conditions:**  
Operation Temperature: -400°C~850°C

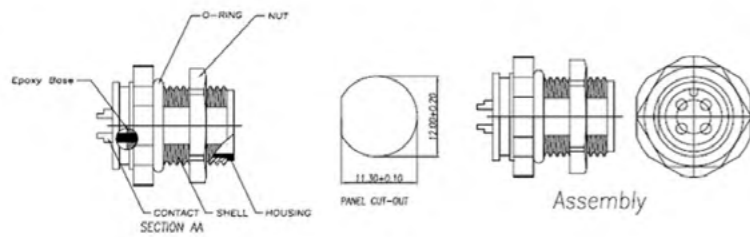
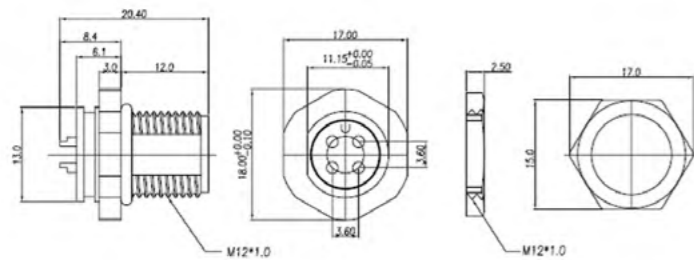


## M12 Male / Panel Type Circular Connectors



**Standard:**  
12M5P-B-A-FL-12X1.0-S-S-G10-B-N

- **Material:**  
Housing: PBT UL94V-0; Color:Black  
Contact: Copper Alloy  
Nut: Copper Alloy  
Shell: Copper Alloy  
O-Ring: EPDM;Color:Black  
Epoxy Base: EF400A & EF004B. Color: Black
- **Finish:**  
Contact: 10 Micro Inches Min. Gold Plating Over Nickel  
Nut: Nickel Plated 60u"~100u"Over all  
Shell: Nickel Plated 60u"~100u"Over all
- **Electric specifications:**  
Rated Current: 5A  
Voltage: 125V  
IP Rating: IPX7
- **Environmental Conditions:**  
Operation Temperature: -400°C~850°C

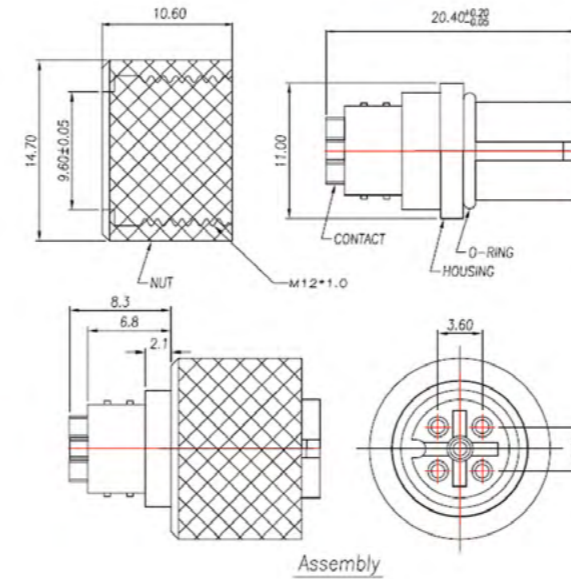


## M12 Female / Panel Type Circular Connectors



**Standard:**  
12F5P-B-A-FL-15X1.0-C-S-G10-B-N

- **Material:**  
Housing: PBT+15GF (Black)  
Contact: Brass (3604)  
Nut: Brass (3604)  
Shell: Brass (3604)  
O-Ring: NBR;Color:Black
- **Finish:**  
Contact A: 10 Micro Inches MIN. Gold Plated Under Plate:Nickel.  
Shell: Nickel Plated 60u"~100u"Over All.



TODAY, TOMORROW  
AND  
FOREVER...

