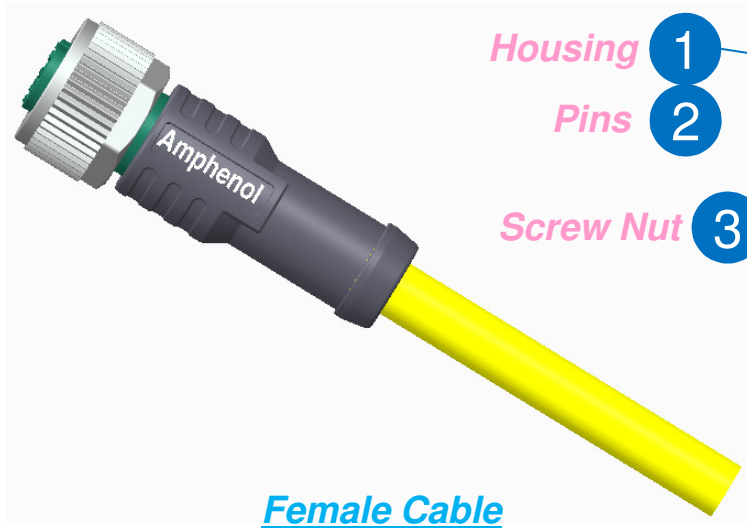


M12 Phase In

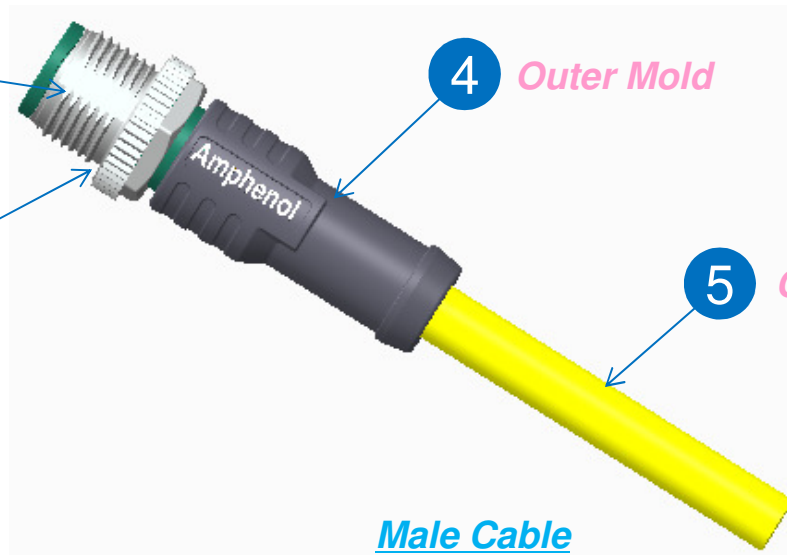
TRUSTED GLOBALLY



M12 Improvement | Cable Molding Type



Female Cable



Male Cable

SPEC:

Waterproof Rate: IP68 Mated

Operation Temperature: -25~85 °C

Rated Voltage: 3,4 Pin 250V dc. or ac. / 5 Pin 60V dc. or ac.
8,10,12Pin 30V dc. or ac.

Current Rating: 3,4,5 Pin 4A / 8Pin 2A / 10,12Pin 1.5A

Housing Material: PU+GF, HB

Outer Mold: PU, UL94V-0

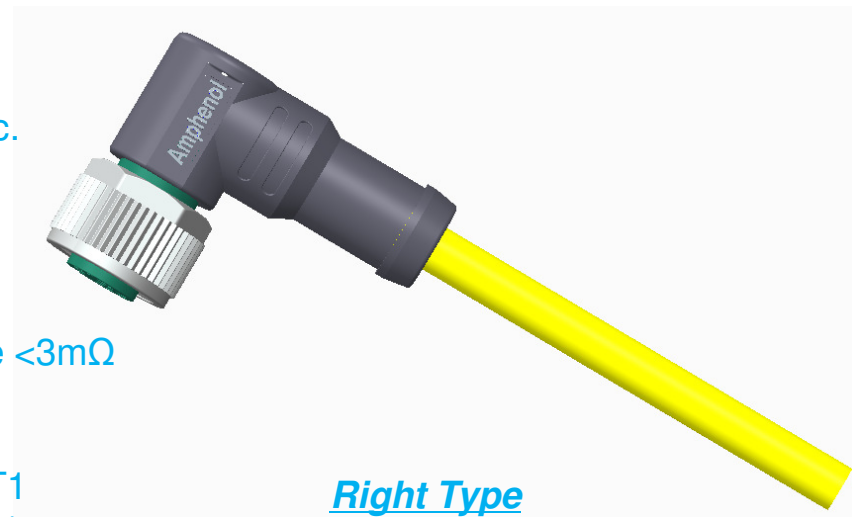
Stamp Pin: Phosphor Bronze C7025, Contact Resistance <3mΩ

Screw Nut: Zinc Alloy, Nickel Plated, Salt Spray 96h Min.

O-Ring: Viton, Green

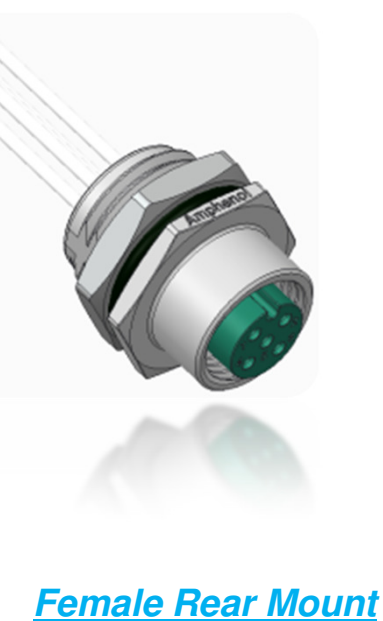
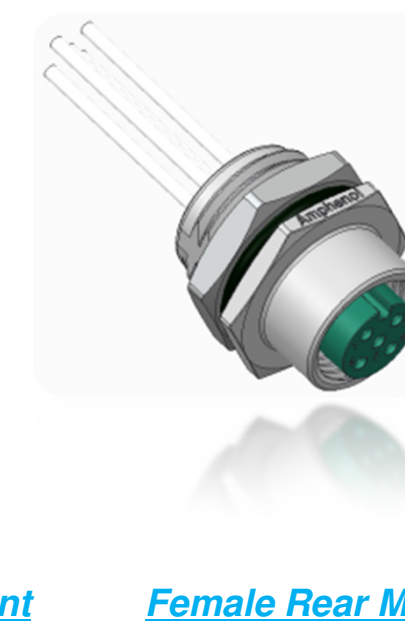
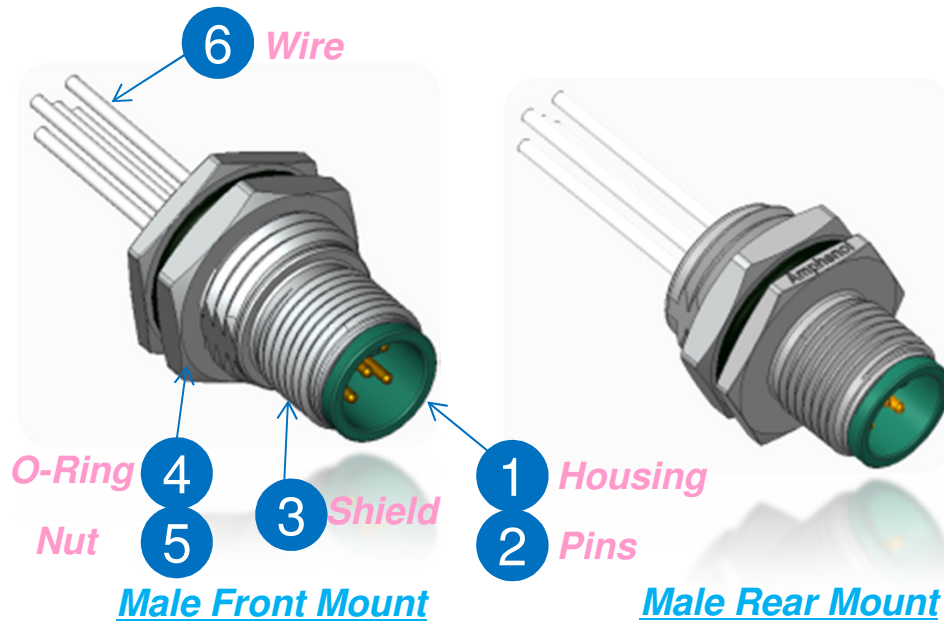
Cable: PVC: UL2517, 300V, 105°C, Yellow Jacket,VW-1,FT1

PUR: UL20549, 300V, 80°C, Black Jacket,VW-1,FT1



Right Type

M12 Improvement I Panel Type



SPEC:

Waterproof Rate: IP68 Unmated

Operation Temperature: -25~85 °C

Rated Voltage: 3,4 Pin 250V dc. or ac. / 5 Pin 60V dc. or ac.
8,10,12Pin 30V dc. or ac.

Current Rating: 3,4,5 Pin 4A / 8Pin 2A / 10,12Pin 1.5A

Housing Material: Nylon +GF, UL94V-0,f1

Stamp Pin: Phosphor Bronze C7025, Contact Resistance <3mΩ

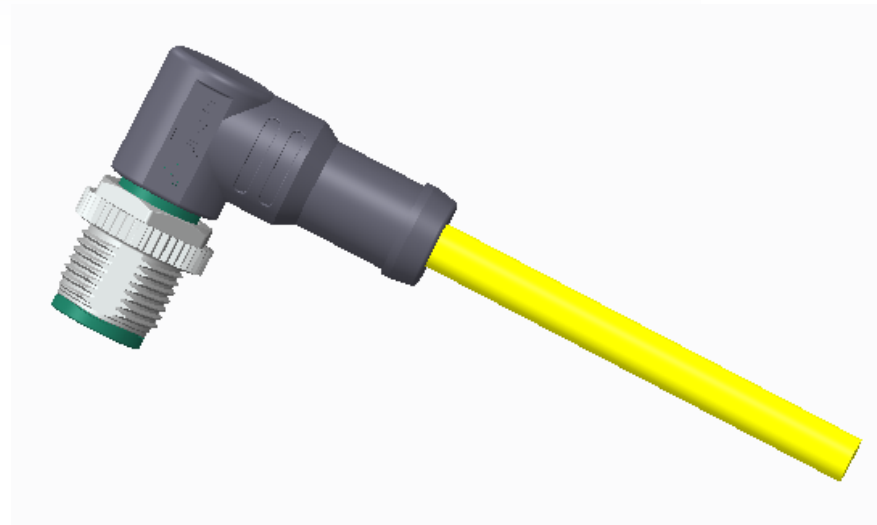
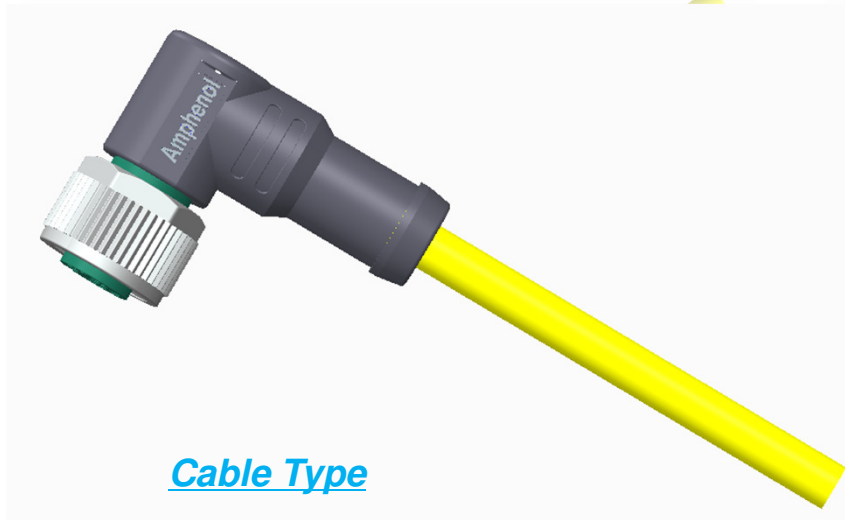
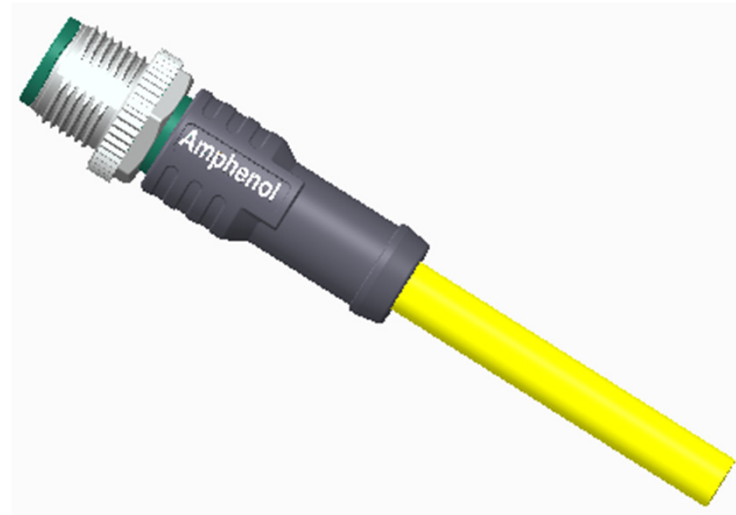
Shield: Zine Alloy, Nickel Plated, Salt Spray 96h Min.

O-Ring: Viton, Green

Wire Harness: UL1061 20~24AWG, Standard 22AWG, 300V, 80°C, VW-1, FT1

Standard Cable Length: 150, 300, 500, 1000, 1500mm

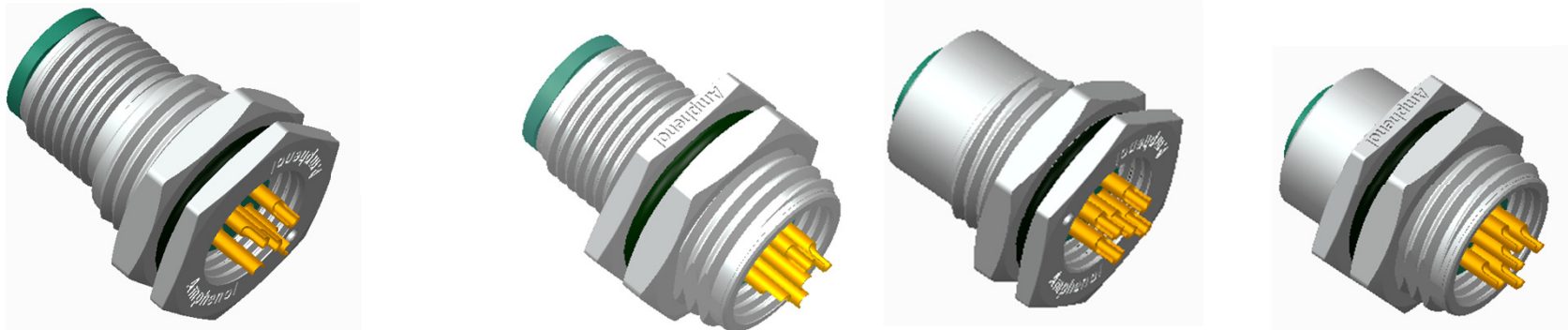
M12 Improvement | New M12 Type



M12 Improvement | New M12 Type

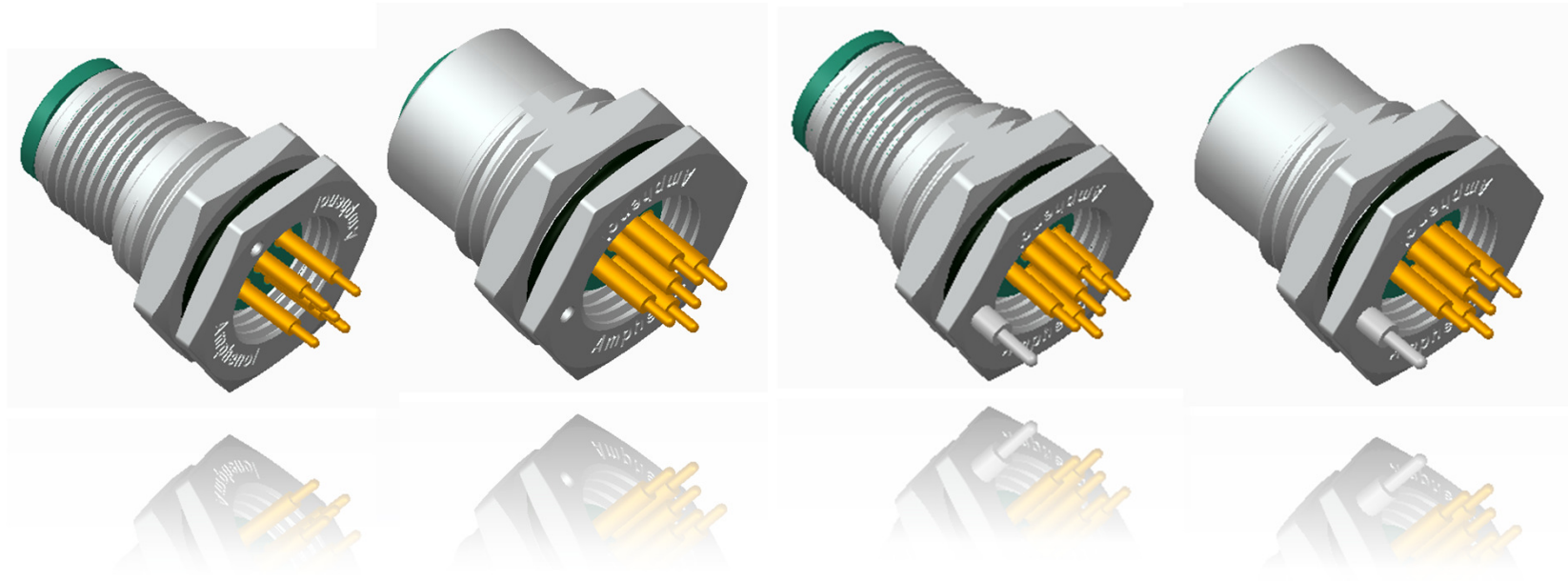


Panel + Wire



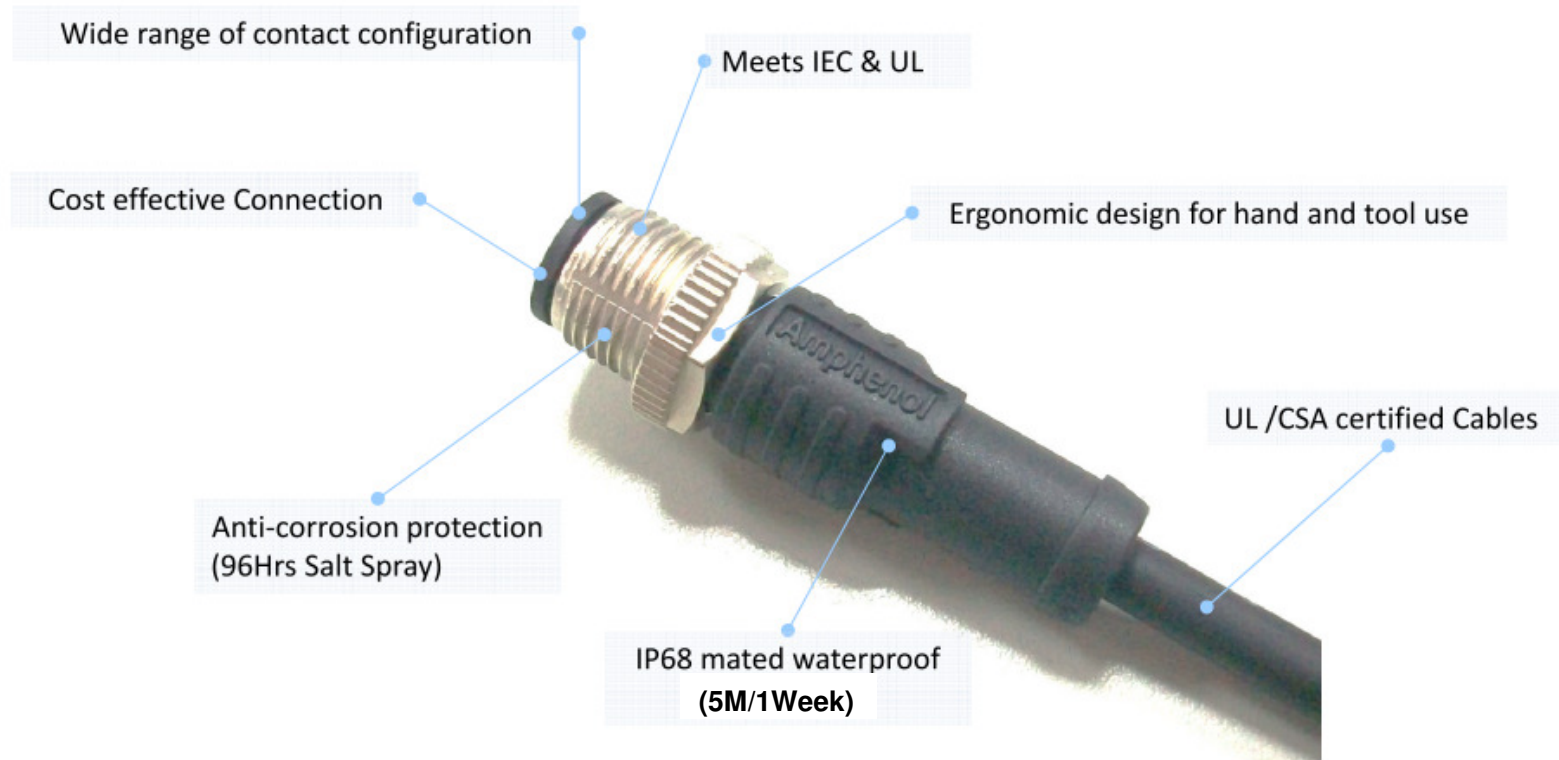
Panel Solder

M12 Improvement | New M12 Type



[Panel PCB](#)

Amphenol LTW | M12 Cable Conn. Features to Promote



ALTW M12 | Cable Conn. Features in detail

Broad Contact Configurations: with Stamped Contacts:

- A-code (3,4 & 5 Pins)
- A-code (6, 8 Pins)
- B-code (5 Pins)
- D-code (4 Pins)

CNC (machined Contacts):

- A-code (10, 12 Pins)

Others:

- Right Angle
- Shielded version

Cost Effective Connection:

- Stamped Contacts
- Crimp Termination
- Selective Gold Plated

Anti-corrosion Protection:

- Die Cast Nut - 96hrs Salt spray
- Plastic Nut

Meets IEC & UL:

- Design according to IEC 61076-2-101 (M12 Conn. w/ Screw locking) & IEC 60947-5-2 (Control circuit devices and switching elements – Proximity switches)

- **PU Material ,HB Flame Rated**
- UL 1977 compliant

Ergonomic design

- easy to grip Nut grooves for manual hand rotation
- tool accessible for tighter locking needs
- vibration proof / anti-rotation design

UL certified Cables:

- PVC (Yellow) – UL2517
- PU (Black) – UL20549

Waterproof Rated to IP67 / IP68 when mated and locked (5M/1Week)

Single Over Mold Thermoplastic **Polyether-PU** material:

- outstanding hydrolysis resistance
- low temperature flexibility
- high resistance to micro-organisms
- Halogen Free
- Flame Retardant
- UL94V-0



*Molded Female
Cable Connector*



*Molded Male
Cable Connector*

Electrical Specifications	3~4 Contacts	5 Contacts	6/8 Contacts	10/12 Contacts
Rated Voltage (AC / DC)	250V	60V	30V	
Rated Current @40° C	4A		2A	1.5A
Contact Resistance	≤3mΩ			
Insulation Resistance	≥100MΩ			
Mechanical Specifications				
Mating Cycles	100			
Vibration @ ≤1μs disturbance	10~500Hz, 5g			
Recommended Torque	0.4~0.6Nm (4~6Kgf.cm)			
Environmental Specifications (5M/1Week)				
Protection Class (Waterproof)	IP67 / IP68 (5M / 24Hrs) – in mated and locked condition			
Temperature Range	-25°C ~ +85°C, depending on Cable Quality			
Materials				
Contact Material	Phosphor Bronze			
Contact Surface Finish	Gold (Au) Plated / Nickel (Ni) Plated			
Housing Material	PA66			
Coupling Nut	Zinc Die Cast / Nickel Plated			
Over Mold	PUR			
O-ring	Viton			

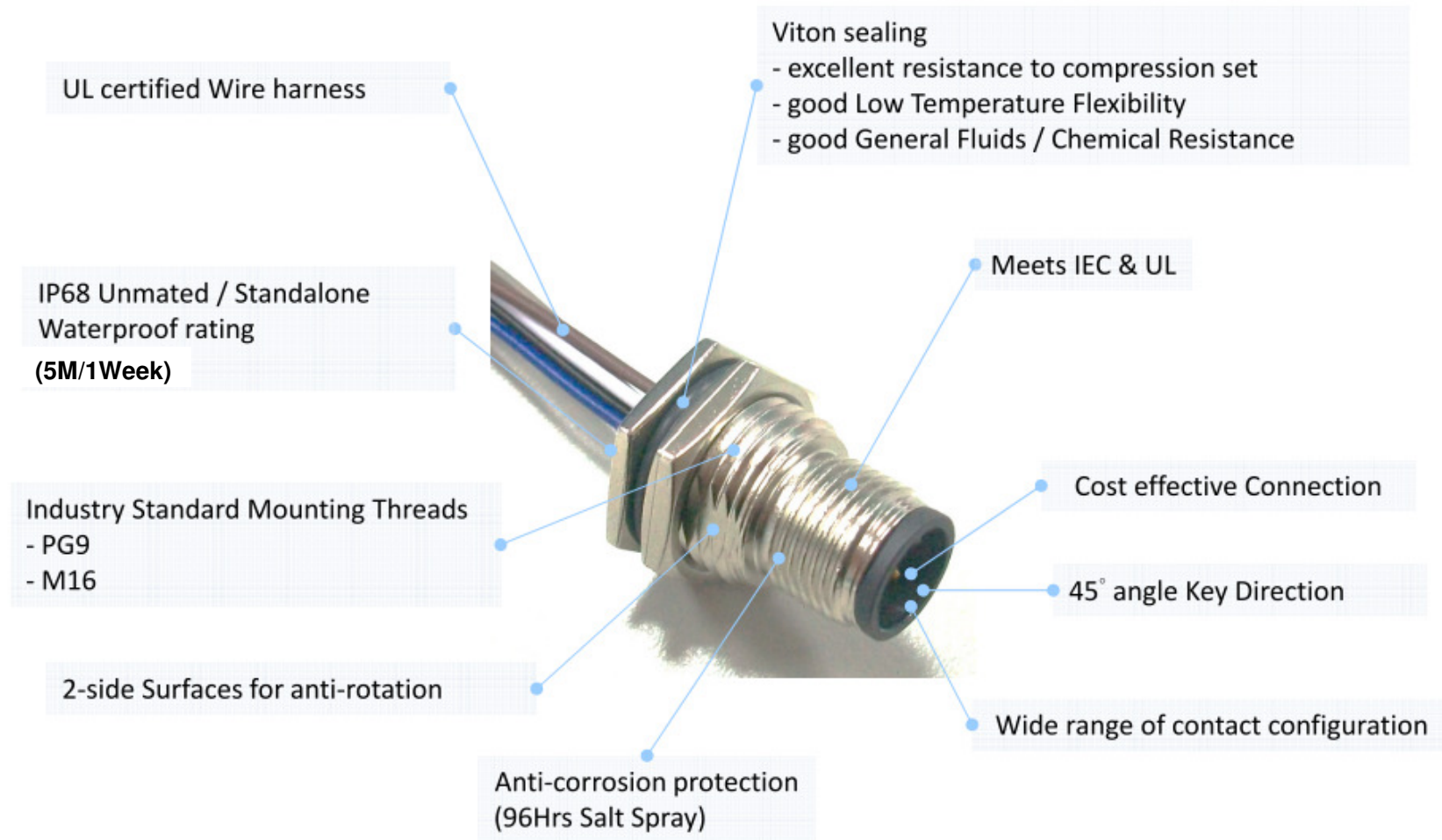
*Molded Female
Cable Connector*



*Molded Male
Cable Connector*

Cable Specifications				
Conductor Structure	3~4 Contacts	5 Contacts	6/8 Contacts	10/12 Contacts
Wire Gauge (AWG)	22	22	24	26
Conductor Cross Section	0.34 mm ²		0.25mm ²	0.14mm ²
Conductor Structure	41*0.10 mm		-	19*0.10MM
Core Insulation Diameter	1.30 mm		-	1.00 mm
Conductor Resistance @ 20°C	< 59.40 Ω/km		-	< 150 Ω /km
General information				
UL AWM Style	2517		20549	
Insulation material	PVC		PP	
Cable Jacket Color	Yellow		Black	
Cable Jacket material	PVC		PUR	
Rated Temperature	105°C		80°C	
Rated Voltage	300V			
Flame Rating	FT1, VW-1			

ALTW M12 | Receptacle Conn. with Wire harness Features in detail



ALTW M12 | Receptacle Conn. with Wire harness Features in detail

Viton sealing

- Excellent resistance to compression set
- Good Low Temperature Flexibility
- Good General Fluids / Chemical Resistance

UL certified Wire harness

- UL1061, PVC, 80°C
- 150, 300, 500, 1M & 1.5M standard lengths

Meets IEC & UL:

- Design according to IEC 61076-2-101 (M12 Conn. w/ Screw locking) & IEC 609547-5-2 (Control circuit devices and switching elements – Proximity switches)
- UL 94V-0 Flame Rated , f1 , Halogen free Conn. housing material
- UL 1977 compliant

IP68 Unmated / Standalone

- Waterproof rated (5M/1Week)
- UL94V-0 epoxy potting

Cost Effective Connection:

- Stamped Contacts
- Crimp Termination
- Selective Gold Plated

Industry Standard Mounting Threads

- PG9
- M16

45° angle Key Direction

Contact Configurations: With Stamped Contacts:

- A-code (3,4 & 5Pins)
- A-code (6, 8Pins)
- B-code (5Pins)
- D-code (4Pins)

2-side Surfaces for anti-rotation

- Anti-corrosion Protection:
Die Cast - 96hrs Salt spray

CNC (machined Contacts):

- A-code (10~12 Pins) – also available in Solder/Dip (PCB)





Male Front Fasten
Enclosure Rear Mounting



Male Rear Fasten
Enclosure Front Mounting



Female Front Fasten
Enclosure Rear Mounting



Female Rear Fasten
Enclosure Front Mounting

Electrical Specifications	3~4 Contacts	5 Contacts	6/8 Contacts	10/12 Contacts
Rated Voltage (AC / DC)	250V	60V	30V	
Rated Current @40° C	4A		2A	1.5A
Contact Resistance	≤3mΩ			
Mechanical Specifications				
Mating Cycles	>100			
Vibration @ ≤1μs disturbance	10~500Hz, 5g			
Recommended Torque	0.4~0.6Nm (4~6Kgf.cm)			
Fastening Thread	PG9			
Environmental Specifications				
Protection Class (Waterproof)	IP68(5M/1Week) – in mated and locked condition			
Temperature Range	-25°C ~ +85°C, depending on Wire Quality			
Materials				
Contact Material	Phosphor Bronze			
Contact Surface Finish	Gold (Au) Plated (Selective) / Nickel (Ni) Plated			
Housing Material	Nylon			
Shell Body	Zinc Die Cast / Nickel Plated			
O-ring	Viton			



Male Front Fasten
Enclosure Rear Mounting



Male Rear Fasten
Enclosure Front Mounting



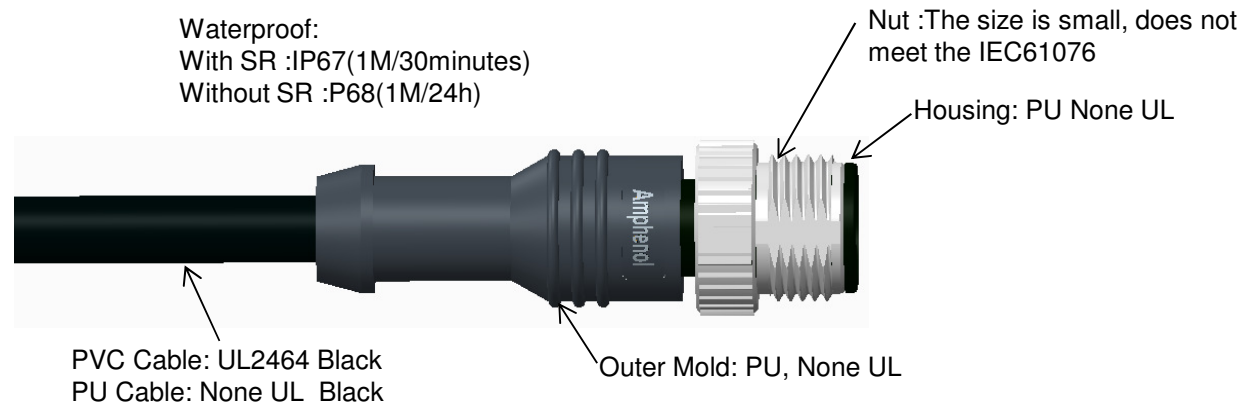
Female Front Fasten
Enclosure Rear Mounting



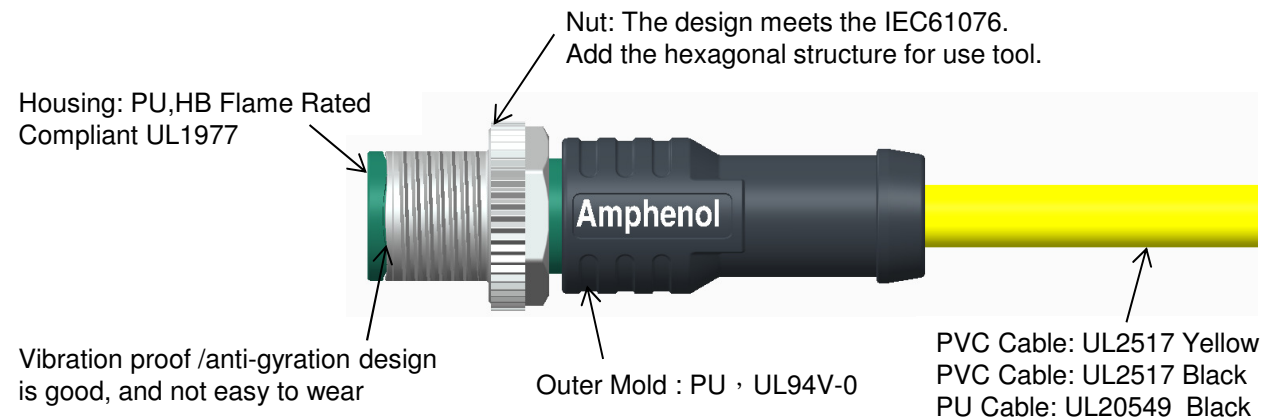
Female Rear Fasten
Enclosure Front Mounting

Wire Specifications	
UL AWM Style	1061
Wire Gauge (AWG)	22
Conductor Cross Section	0.34 mm ²
Conductor Structure	17*0.16 mm
Core Insulation Diameter	1.30 mm
Conductor Resistance @ 20°C	< 54.90 Ω/km
Insulation material	PVC
Rated Temperature	80°C
Rated Voltage	300V
Flame Rating	FT1, VW-1

Old Product



New Product

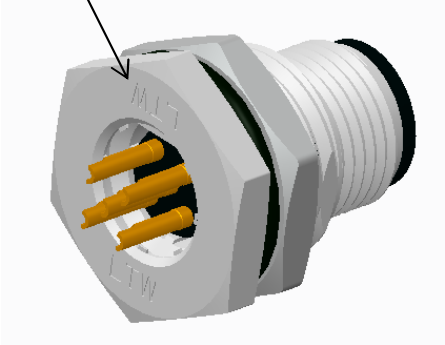


Waterproof: IP68(5M/1Week)
Compliant UL1977

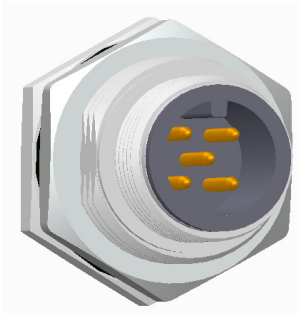
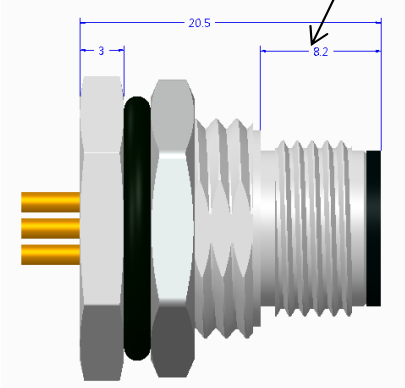
Old Product

Logo : "LTW"

Waterproof : IP68(1M/24H)

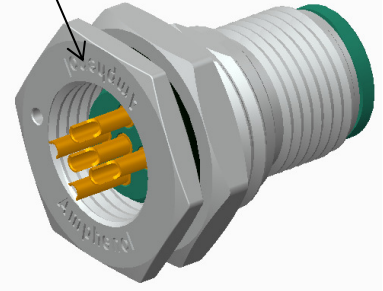


Shell : The size is small, does not meet the IEC61076



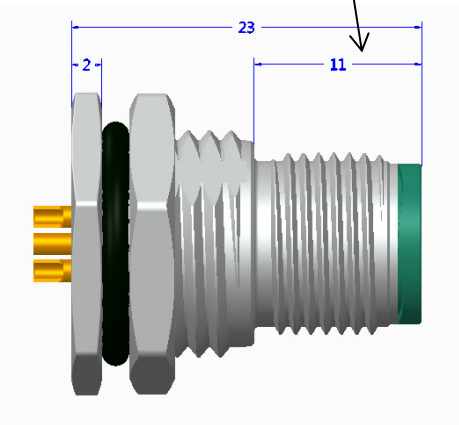
New Product

Logo : "Amphenol"
Shell add the ground hole

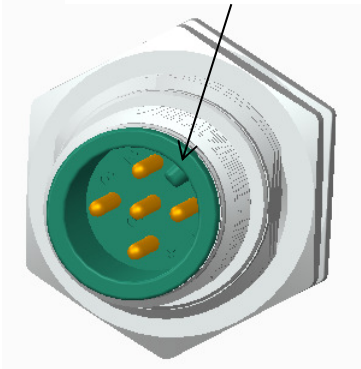


Waterproof : IP68(5M/1W)

Shell: The design meets the IEC61076, longer than old 2.5mm



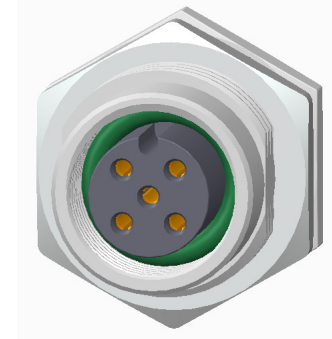
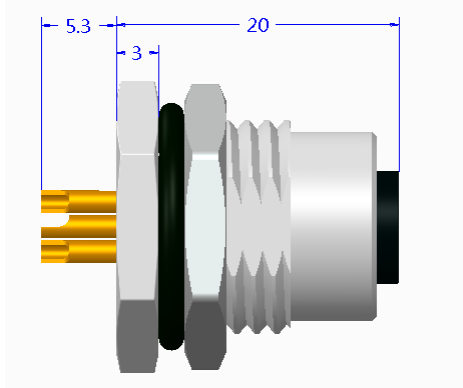
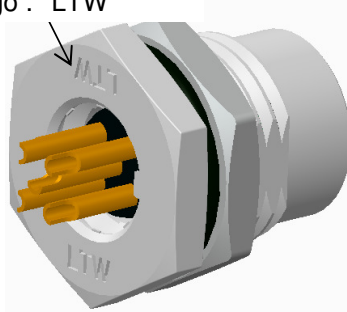
45° angel key direction



Old Product

Waterproof : IP68(1M/24H)

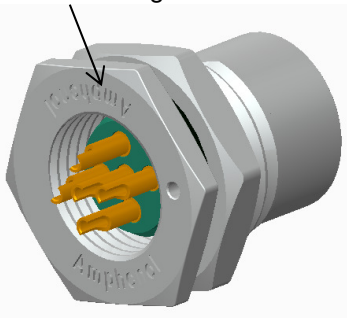
Logo : "LTW"



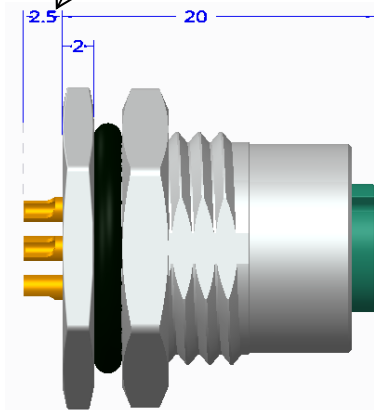
New Product

Waterproof : IP68(5M/1W)

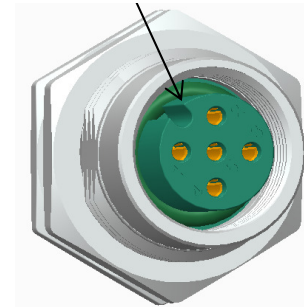
Logo : "Amphenol"
Shell add the ground hole



Pin size change to 2.5mm.

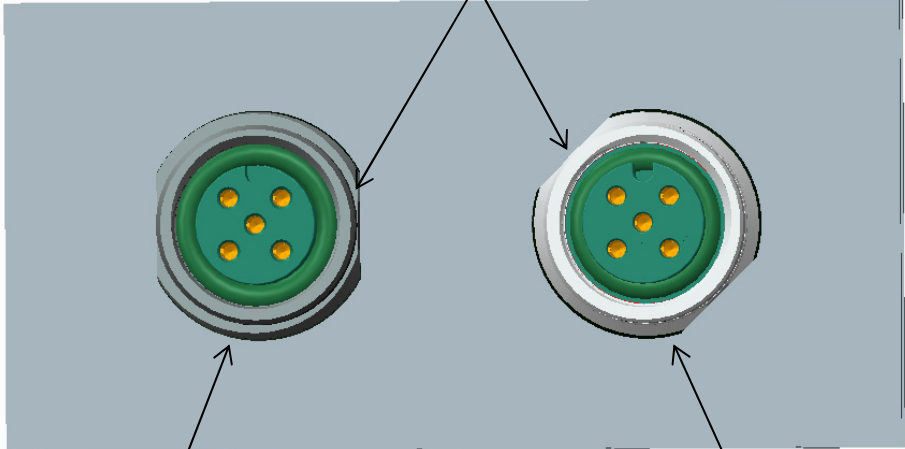


45° angel key direction



Panel PCB

The direction of panel cut-out is different.



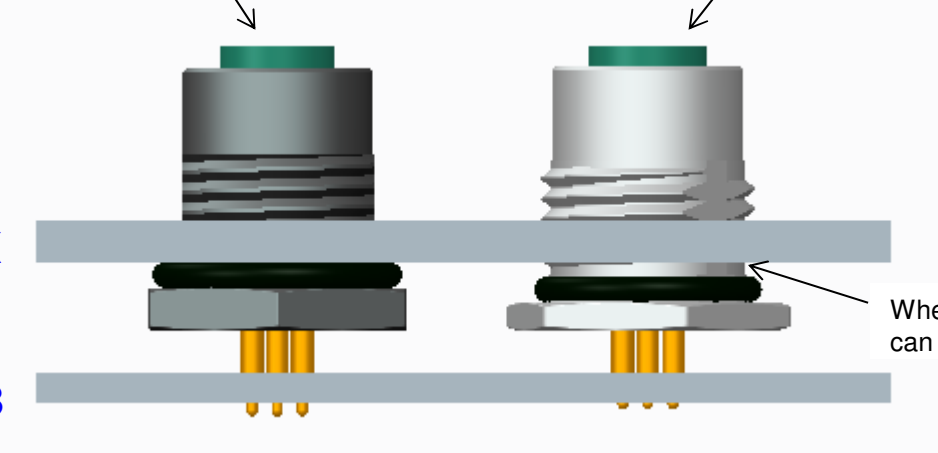
Old Product

New Product

The new product and old product can not be used simultaneously on the same customer's product. When used at the same time, the new product can not waterproof.

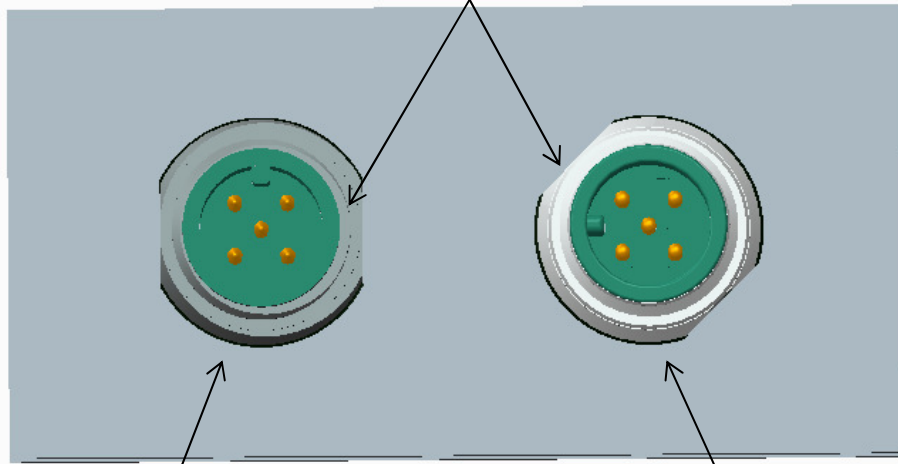
BOX

PCB



When used at the same time, the new product can not waterproof.

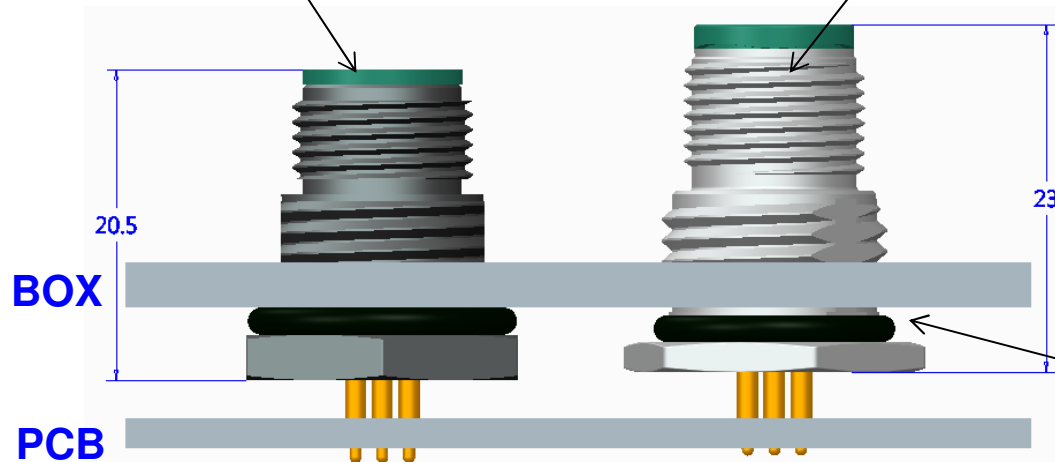
The direction of panel cut-out is different.



The new product and old product can not be used simultaneously on the same customer's product. When used at the same time, the new product can not waterproof.

Old Product

New Product



When used at the same time, the new product can not waterproof.

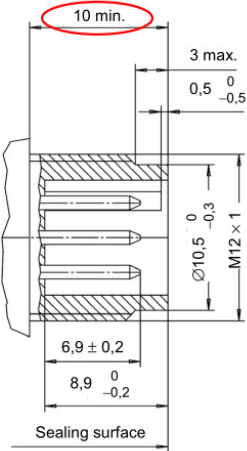
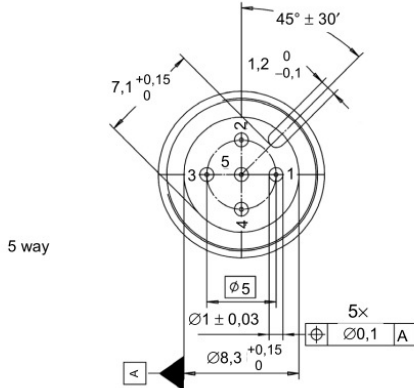
M12 Improvement | New Look



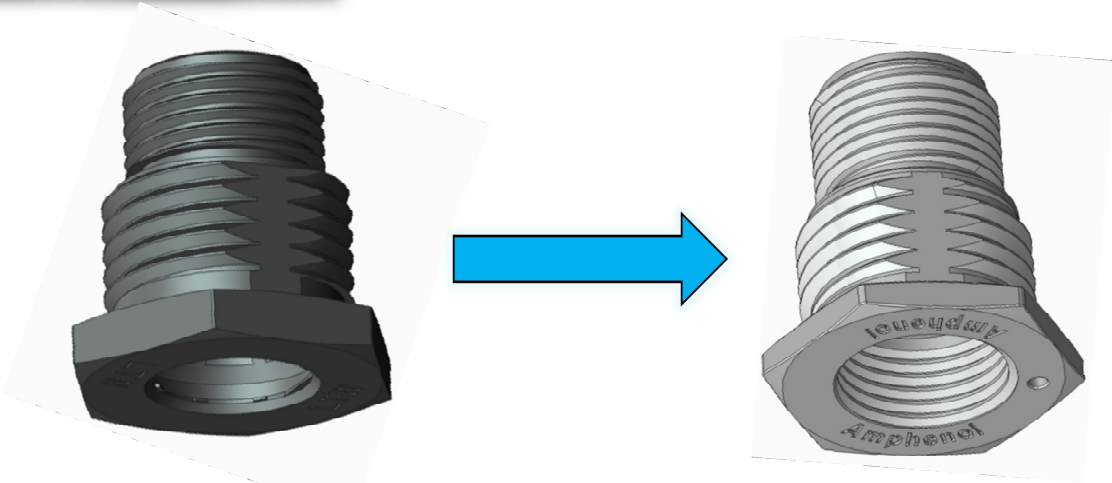
New M12 with Stamped Contacts



M12 Improvement I 產品尺寸

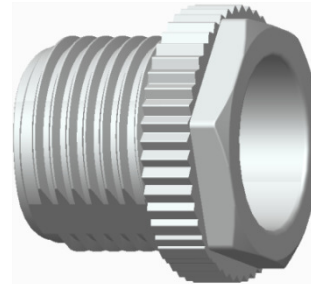
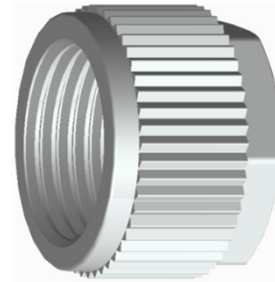


IEC 1156/08



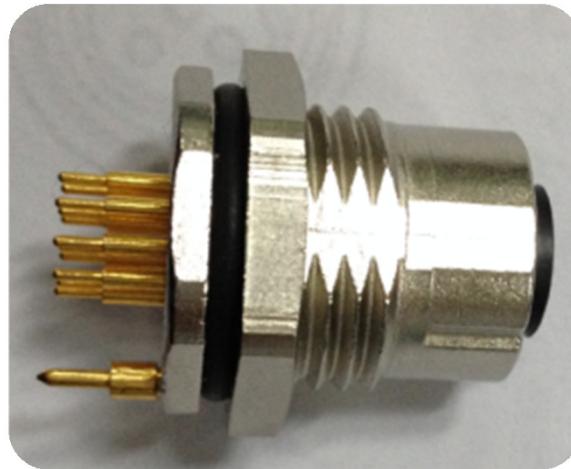
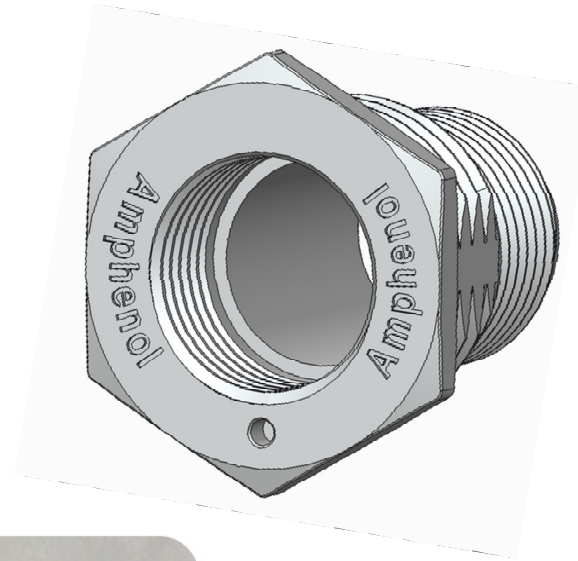
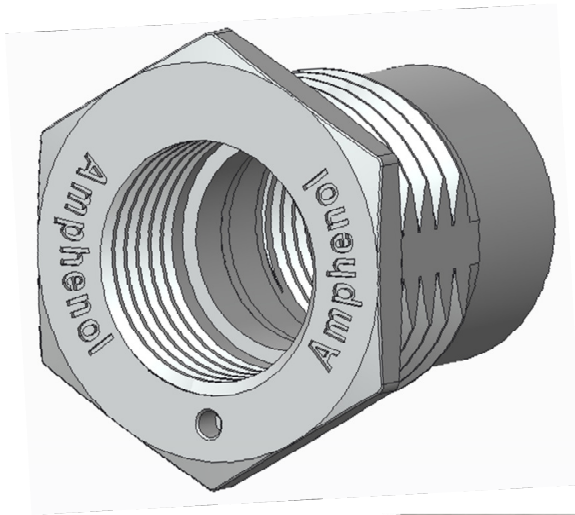
- 變更公頭長度，增加2mm，滿足 IEC61076-2 的尺寸規範
- 六角板厚由3mm變為2mm，與競爭對手相一致
- 變更logo和形式

M12 Improvement | Screw Nut



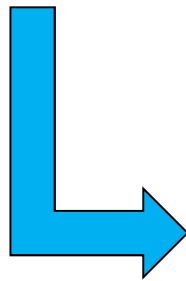
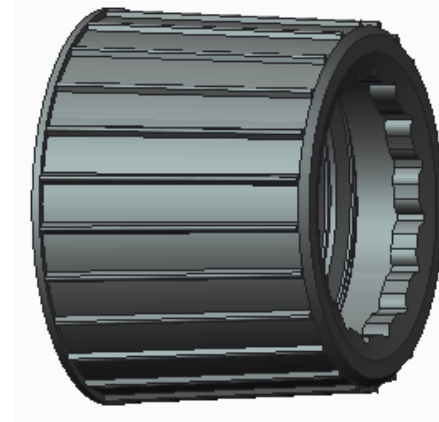
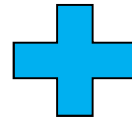
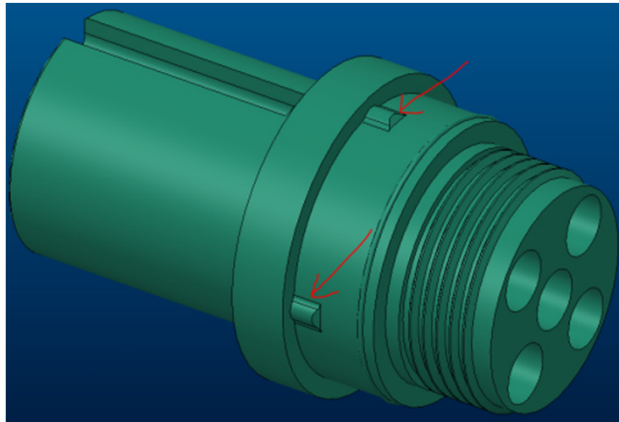
- 變更止滑紋形式
- 增加六角，可以使用扳手
- 電鍍霧面，更有質感

M12 Improvement | Screw Nut



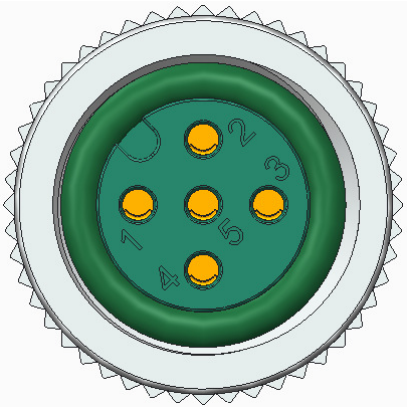
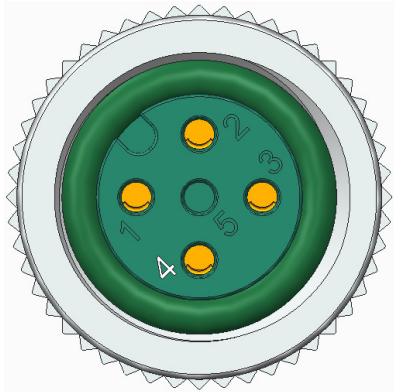
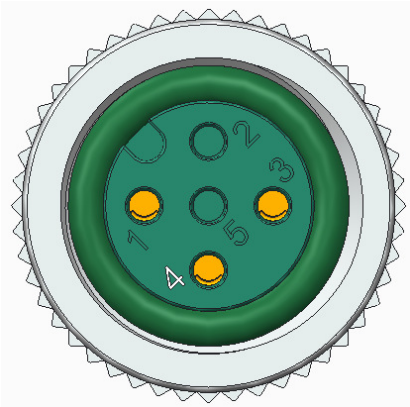
- 前鎖式板端增加接地功能，可做帶接地屏蔽設計

M12 Improvement | Screw Nut



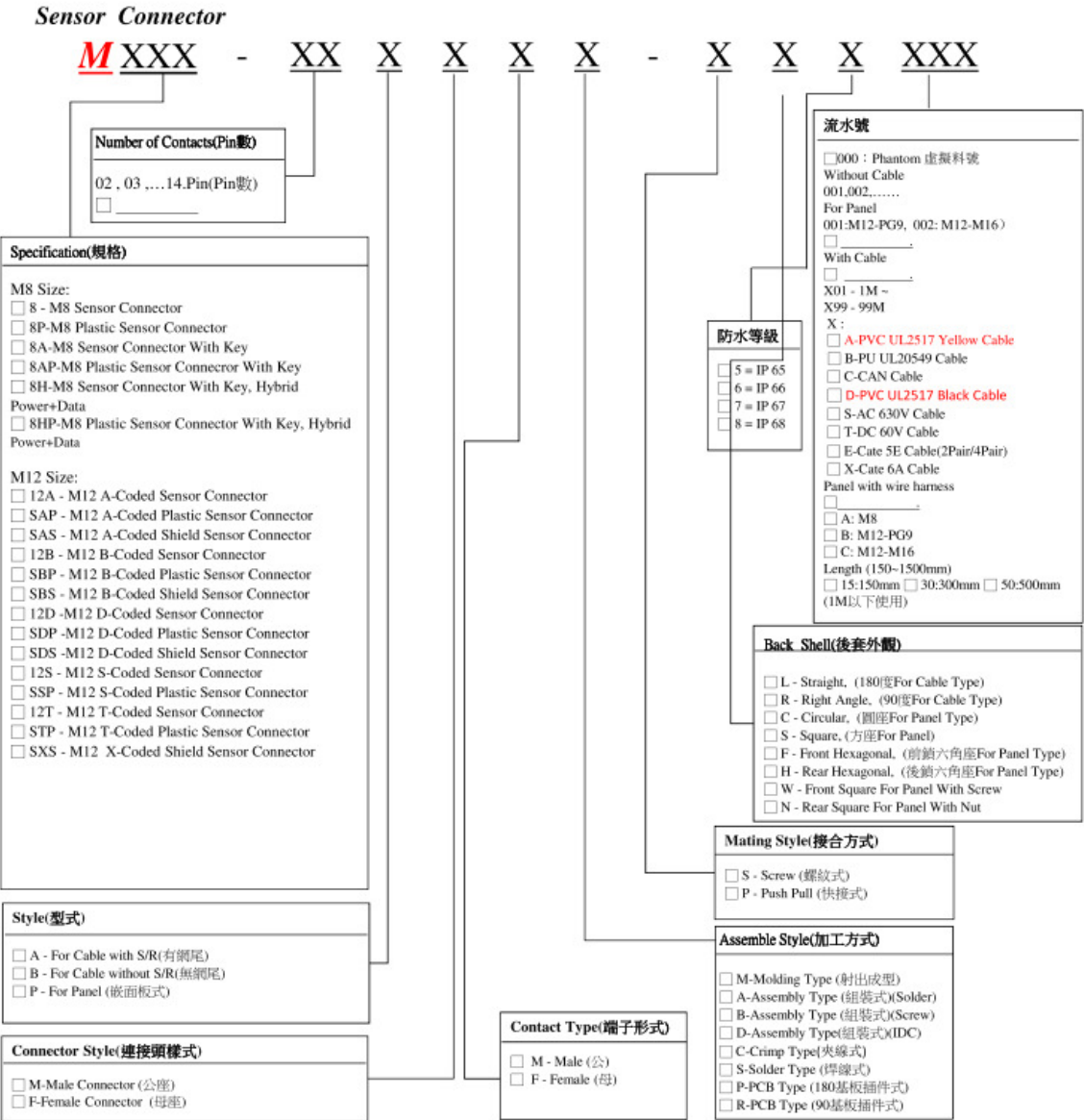
- 原先設計，膠心卡點容易磨損。新設計，止退功能做在前端，做出波浪狀，止退效果更好，且不容易磨損

M12 Improvement | Female Housing



➤ 3,4 pin母膠心可以與5pin公膠心正常對插

M12 Improvement | How To Order



Thank You!

TRUSTED GLOBALLY

