

安装说明书

Installation Instructions

AC03-PF/AC03-WM
AC03-PF/AC03-WM



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1.警告 Warning

1.1 在自行安装时，如果所有的零件和工具不是 QC 所规定的，或者忽略了准备和安装操作，我们将不保证产品安全性和技术参数一致性。

During yourself installation, if the used part and tool are not ruled by QC or if you ignore the preparation and operation, we won't insure the safety and compatible of the product technology yourself installation.

1.2 为防止电击，在拆装时 PV 连接器必须断开电源。

For protecting against electric shock, please cut off the power when installing PV connector.

1.3 终端产品必须提供防电击功能。

The final products must be supplied with the function electric shock proof.

1.4 切勿在带电的情况下断开连接。

Do not disconnect under load.

1.5 建议不要使用无镀锡电缆，因为电缆铜线被氧化后，压接部位的接触电阻可能会超过允许值。

H07RN cables without tinned are not recommended. Because the contact resistance of crimping place will probably exceed the permitted value since the copper wires are oxidized.

1.6 插合部件防水等级 IP68。它们不能长久置于水下使用。

Waterproof degree for inserted parts is IP68.

1.7 产品不得在含有烃、酚、酮、氨合物等与 PC 料有腐蚀的环境中使用。（如有疑问，可咨询沙比克对 PC 料使用环境的说明。）

Products can not be used in the environment includes hydrocarbon, phenol, ketone, ammoniate, etc that has corrosion of PC.(More information, please consult the PC usage environment illustration from SABIC.)

1.8 光伏连接系统不能替代国家标准的插头和插座系统。

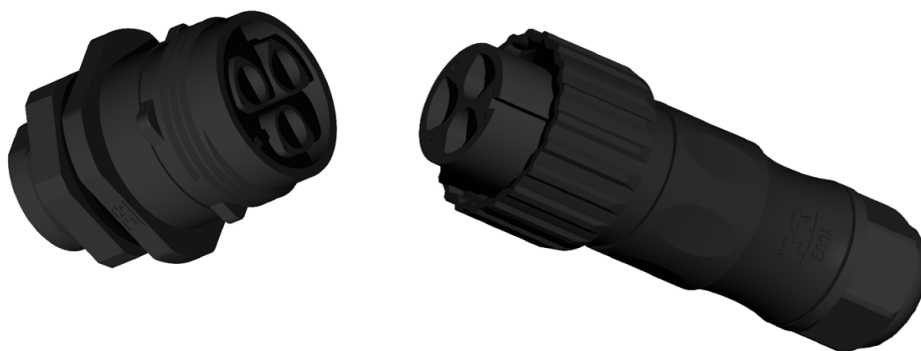
The photovoltaic connection system cannot replace the national standard plug and socket system.

2.技术参数 Product Specifications

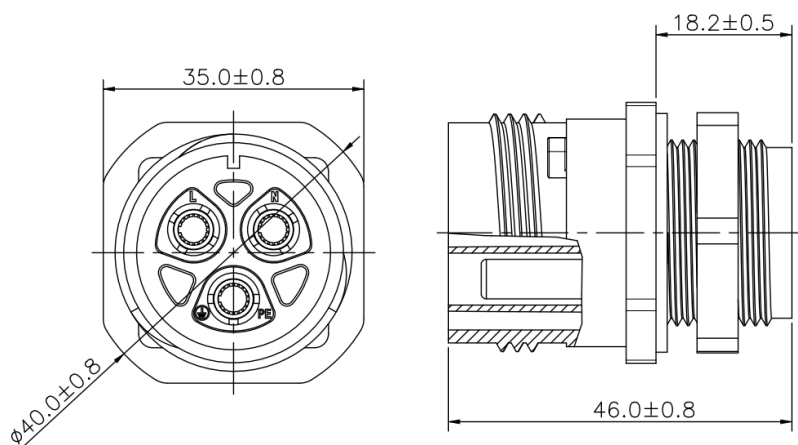
技术参数 Product Specifications	
产品型号 Type name or model no	AC03-PF-xy/AC03-WM-xy(x=20A or 32A or 38A)
额定电压 Rated voltage	300VAC
额定冲击电压 Rated impulse voltage	4kV
额定绝缘电压 Rated insulation voltage	3kV
额定电流 Rated current	20A for 3×2,5mm ² ; 32A for 3×4,0mm ² ; 38A for 3×6,0mm ²
标准 Standard	2 PfG 1915/03.15
连接器设计 Design of the connector	公连接器的自由连接器；母连接器固定连接器 Free connector for male connector; Fixed connector for female connector
污染等级 Pollution degree	2
过电压类别 Over voltage category	III
温度范围 Temperature Range	-40°C~ +85°C
上限温度 Upper limit Temperature	105° C
极数 Number of poles	3
导体截面积 Wire cross section area or cross section range	3×2,5mm ² ; 3×4,0mm ² ; 3×6,0mm ²
防护等级 Degree of protection	IP65/IP68 (1m, 1h)
附加特性 Additional characteristics	带接地触点的光伏安装连接器 PV-installation couplers with earthing contact
防火等级 Flammability Class	UL94-V0
接触电阻 Resistance of Connector	≤ 3mΩ

3.产品信息 Product Information

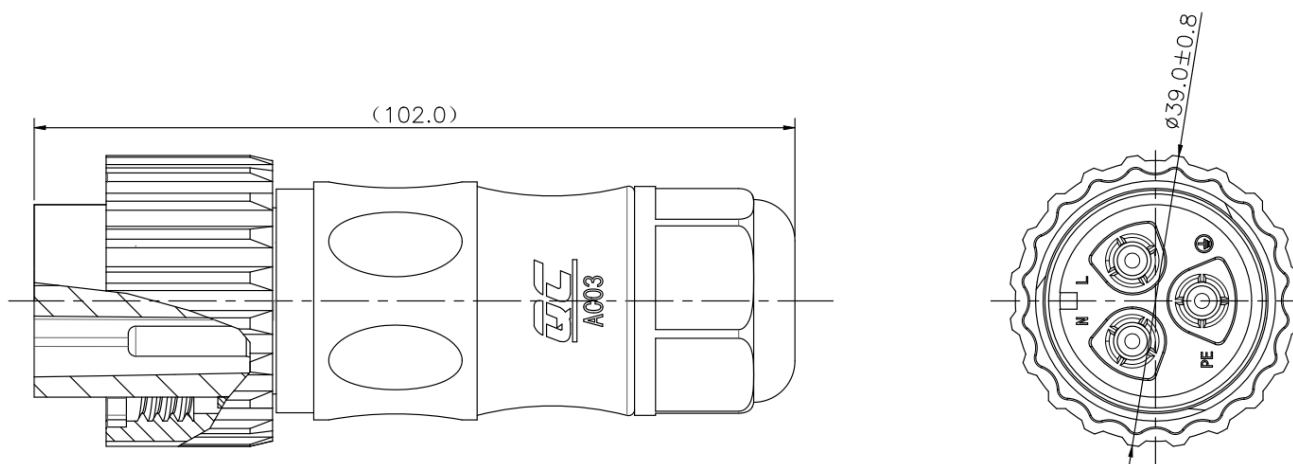
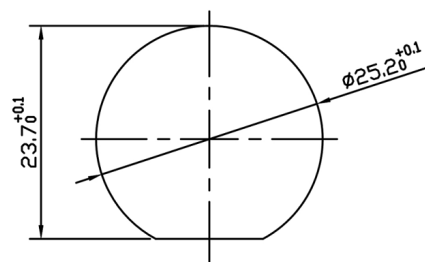
3.1 产品图片 Picture



3.2 产品图纸 Drawing



推荐安装开孔尺寸
socket installation size drawing



4. 组装工艺流程 Manual installation process

4.1 工具要求 Requirements for tools

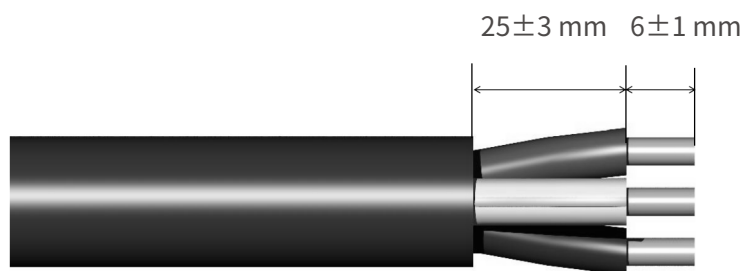
	
<p>4.1.1 剥线钳 Wire stripper</p>	<p>4.1.2 内六角扳手 Socket head wrench</p>
	
<p>4.1.3 铆接钳 Rivet Plier</p>	<p>4.1.4 开口大于 30mm 的活动扳手 Monkey wrench wider than 30mm</p>

4.2 母插装配说明 Instruction of Female receptacle assembly

4.2.1 剥线 Stripping

按要求切线、剥线，剥线长度为 $6 \pm 1\text{mm}$ 。

Please cut and strip the wire according to the requirements, and the applicable stripping length is $6 \pm 1\text{mm}$.



注意：不要切断和损坏线缆绝缘塑料下的铜丝线芯。

Note: Please pay attention and do NOT cut off and damage the copper wire core under the cable insulating plastic.

4.2.2 铆接插套 Crimping socket

需根据不同规格线缆，先调节钳口到相应的档位，调节旋钮高度使得金属端子的最外侧边缘与铆接口齐平。如下图。

Adjust the jaw to the corresponding gear according to different specifications of cables, and adjust the height of the knob so that the outermost edge of the metal terminal is flush with the riveting interface. See Below.

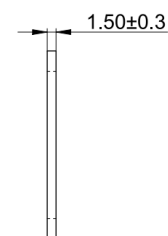
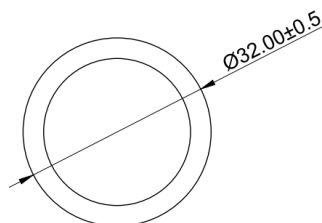


档位 Gear	线缆规格 Cable spec
3	2.5mm ² /14AWG
4	4.0mm ² /12AWG
6	6.0mm ² /10AWG

4.2.3 安装母插 Install female

母插与安装板孔对齐，穿过安装板，再将螺母锁紧即可，扭矩 $4.0 \pm 0.5 \text{ N} \cdot \text{m}$ 。

Align the female insert with the mounting plate hole, pass through the mounting plate, and then lock the nut, torque $4.0 \pm 0.5 \text{ N} \cdot \text{m}$.



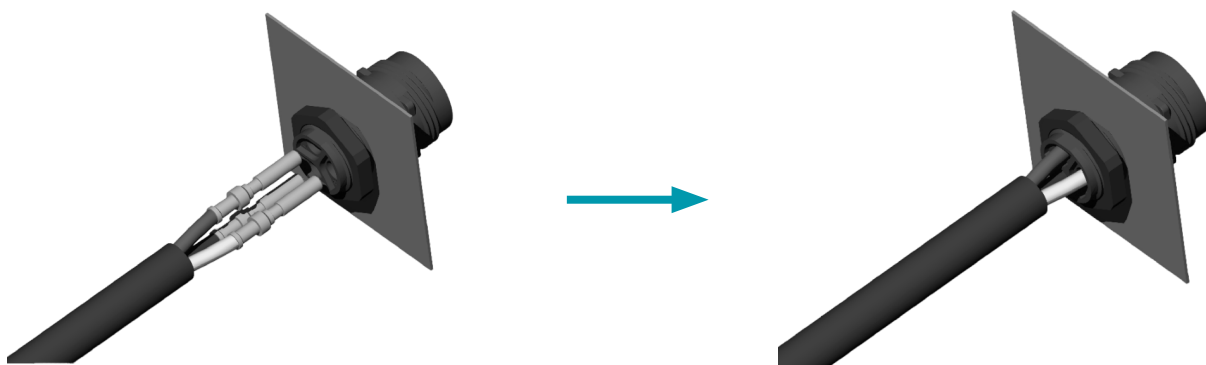
注意：垫片应该在安装板的外侧

Note: The gasket should be on the outside of the mounting plate

4.2.4 插入 Pushing

将铆接好的金属端子插入母插本体中，直至其啮合。轻轻拉动线缆，检查金属件是否啮合牢固，注意三根线应分别对应为 L, N, PE，不可接错。

Insert the riveted metal terminal into the female housing until it engages. Gently pull the cable to check whether the metal terminals are firmly engaged, Note that the three wires should correspond to L, N, PE, and cannot be connected incorrectly.

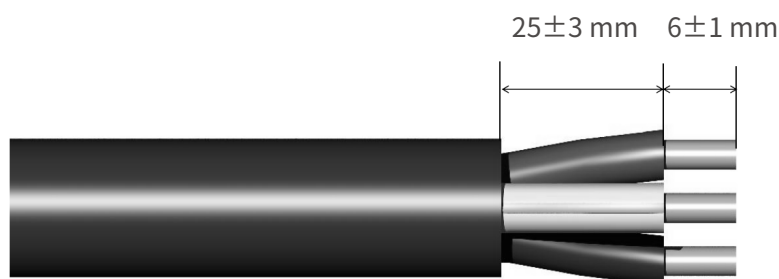


4.3 公插装配说明 Instruction of Male receptacle assembly

4.3.1 剥线 Stripping

按要求切线、剥线，剥线长度为 $6 \pm 1\text{mm}$ 。

Please cut and strip the wire according to the requirements, and the applicable stripping length is $6 \pm 1\text{mm}$.



注意：不要切断和损坏线缆绝缘塑料下的铜丝线芯。

Note: Please pay attention and do NOT cut off and damage the copper wire core under the cable insulating plastic.

4.3.2 接线、锁紧 Wiring and locking

①将电缆依次穿过螺帽、内爪、堵头、套筒；

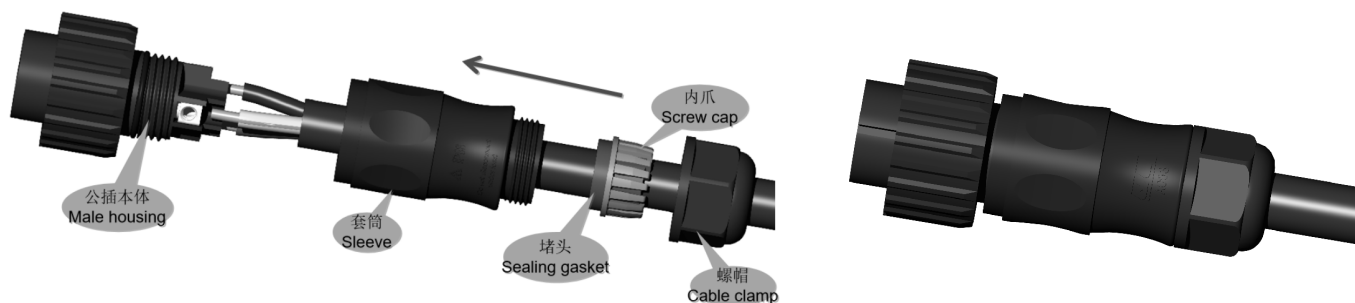
Pass the cable through the nut, screw cap, sealing gasket and sleeve in turn;

②剥线并将电缆固定在金属 Pin 上，螺钉压紧导线，再反向轻拉线缆（10N 左右的力）验证压接效果。螺钉扭矩为 $0.8 \pm 0.1\text{N} \cdot \text{m}$ 。注意不能损伤线芯和铜端子，注意三根线应分别对应为 L, N, PE，不可接错；

Cable stripping and the Copper wire is fixed on the metal Pin, tighten all screws firmly, and then give a reverse pull force lightly (about 10N) by manual to test the crimping result, with the screw twisting torque of $0.8 \pm 0.1\text{N} \cdot \text{m}$. Please pay attention to pins and pin-holder during crimping and avoid any damage of them, Note that the three wires should correspond to L, N, PE, and cannot be connected incorrectly.

③将公插与套筒拧紧，最后将螺帽拧紧即可。

Tighten the male insert and the sleeve, and finally tighten the Cable clamp.



5. 连接器对插及解锁 Connecting and disconnecting

5.1 连接器对插 Connecting

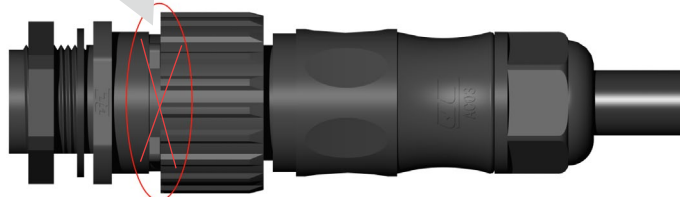
①公插和母插连接时，将公插上的槽与母插上的凸筋对齐；



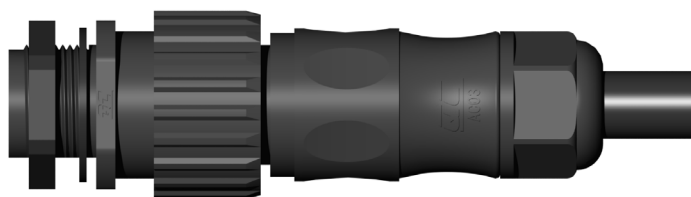
②公插和母插通过螺纹连接，拧动连接帽，会听到连续的“哒哒哒”的声音，直至连接帽的端面与母插的定位线相平齐，即为对插到位（为防止出现防水不可靠的情况，务必按照要求将公母插对插到位）；



未对插到位
In wrong position

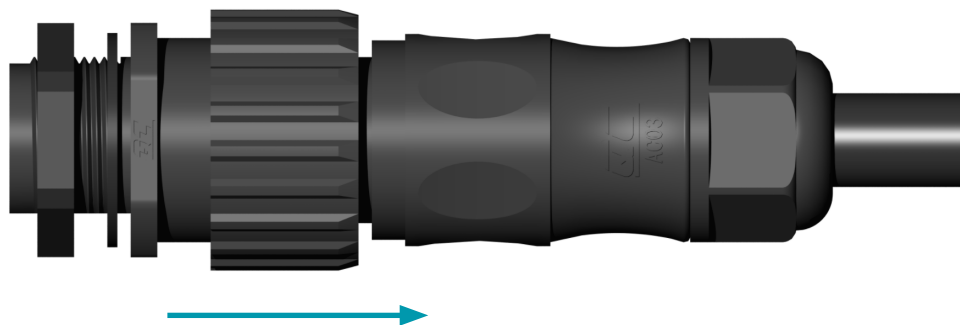


错误的接合示意图 In wrong place



正确的接合示意图 in right place

5.2 连接器解锁 Disconnectin



无需使用工具，先将连接帽完全拧松，再稍用力拉公插，即可完成公母插的分离。

Without using tools, loosen the connecting cap completely, and then pull the male plug slightly to complete the separation of male and female plug

注意：切勿在负载下断开连接

Note: Do not disconnect under load.

5.3 连接器拆卸 Removal of connector

若公插端线缆需拆卸，按下列步骤进行

If the connectors need to be disassembled for rewiring, please comply with the following steps

①依次松开螺帽、内爪、堵头、套筒；

Loosen the nut, screw cap, sealing gasket and sleeve in turn

②将电缆从 Pin 上拆下；

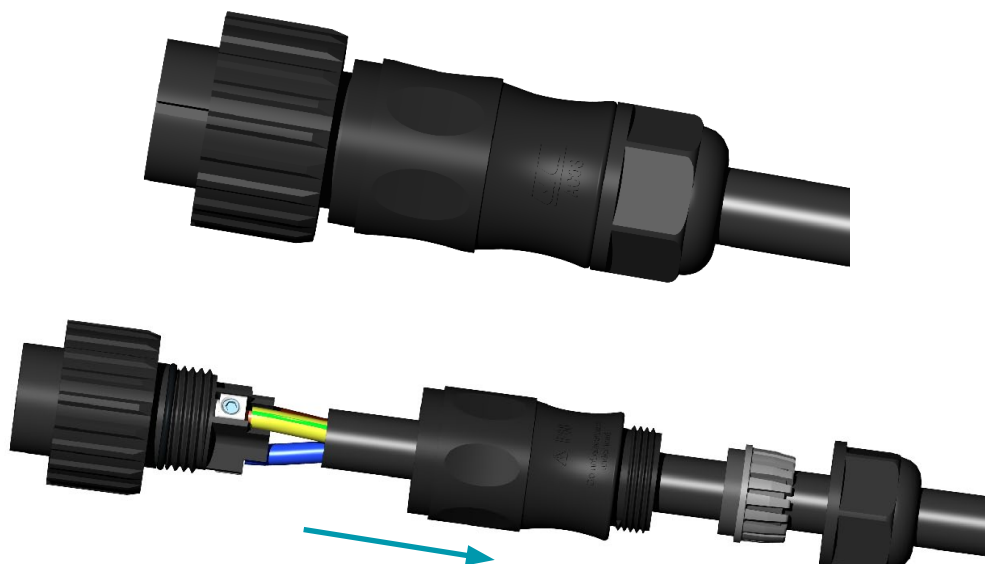
Remove the cable from the Pin

③将电缆裸露的铜丝剪掉，重新剥线并安装在本体 Pin 上；

Cut off the exposed copper wire of the cable, strip it again and install it on the new body Pin

④依次再将零部件重新拧紧即可。

Then tighten the parts in turn.



6. 附件 Annex

6.1 耐化学品附表 Chemical resistance form

Chemical 化学制品	LEXAN(PC) 聚碳酸酯 (简称 PC)
Hydrocarbons 碳氢化合物	
Aliphatic 脂肪	Incompatible 不兼容
Aromatic 芳香剂	Incompatible 不兼容
Halogenated fully 完全卤化物	Compatible 兼容
Halogenated partly 半卤化物	Incompatible 不兼容
Alcohols 酒精	Compatible 兼容
Phenols 酚类	Incompatible 不兼容
Ketones 酮类	Incompatible 不兼容
Esters 酯类	Incompatible 不兼容
Ethers 醚	Incompatible 不兼容
Acids 酸 (LACKWERKE PETERS GmbH)	
Inorganic 无机物	Incompatible 不兼容
Organic 有机物	Compatible 兼容
Oxidizing 氧化物	Incompatible 不兼容
Alkalis 碱	Incompatible 不兼容
Automotive Fluids 车用液体 (Shin-Etsu Chemical)	
Petrol 汽油	Incompatible 不兼容
Water 水	
Hot(< 80°C) 热水	Incompatible 不兼容
Environmental 环境	
UV 紫外线	Compatible 兼容

6.2 连接器责任免除条款 The Connector liability exemption clause

有违反下列情况之一者，并导致产品出问题，造成任何损失，我公司将不承担任何责任。

There exist following case, and lead to product goes wrong, any loss caused, product manufacturers will not take any responsibility.

1. 产品运输、仓储 Product transportation and storage

1.1 产品在运输、仓储过程中，不可与“附件 2”表中有关化学品存放在一起，使产品经受这些化学品污染 Products in the process of transportation, warehouse, can not stored with "attachment 2" in the table of chemicals together that lead the product pollution with these chemicals;

1.2 产品在运输、仓储过程中，不可对产品过分承压，撞击等破坏产品行为 Products in the process of transportation, warehouse, can not pressure too much on products and such as impact damage behavior;

1.3 产品在运输、仓储过程中，常温存储，应注意避光、防水、防尘等方面防护，以免降低产品相关性能，电站现场应特别注意 Products in the process of transportation, warehouse, should room temperature storage, avoid light, should waterproof, dustproof, and should be paid attention to protection, so as not to reduce product performance, pay special attention to product when in power station;

1.4 产品正常存储时间 2 年 Product health storage for 2 years

2 产品安装、使用环境 Product installing and operating environment

2.1 产品正常工作环境温度 -40~+85°C The product health working environment temperature - 40 ~ + 85 °C

2.2 产品现场安装，需按照“快可”产品“安装使用说明书”操作 The Product installing should be in accordance with the QC Solar product installation instructions.

3 产品与化学品兼容性见“附件 - 耐化学品附表”

Products and chemical compatibility See Chemical resistance form

4 连接器在未耦合情况下，产品将不能满足任何 IP 防护等级，也不能正常使用 The connector under the condition of disconnect, the product will not be able to meet any IP protection grade, also can't normal use

4.1 产品插合后满足 IP68 防护等级要求，不能长期置于水下工作 Products meet IP68 degree of protection requirement after connects, while it can't work under water for a long time.

4.2 连接器在未对插的情况下，不可长时间放置于户外，这样可能会造成金属件腐蚀，并使连接器性能降低 Connector in the case of disconnect, should not placed in the outdoor for long time, so may be the cause of the corrosion of the metal, and lower the connector performance.

4.3 连接器在户外安装、使用过程中，如果不能及时对插，请做好连接器防护工作，防止连接器受到水、尘等的污染，影响产品使用性能 Connector in the process of outdoor installation and use, if not to connect in time, please do a good job in the connector protection, protect the connector from water, dust and other pollution, affect the product performance.

5 连接器在安装、使用过程中，不可将连接器过分碰撞，拖在水中、草丛中、地上等防止连接器使用前内部受到污染，降低产品性能

Connector in the process of installation and use should not be collision, drag in the water, grass, and the ground to prevent the pollution of inside the connector before use, reduce the product performance.


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