

UL 309 PLUGS

60 Ampere, 4 Wire With Pilot (UL 1686 figure C2.20)

Installation Instructions

GENERAL INFORMATION

NOTICE: For installation by a qualified electrician in accordance with national and local electrical codes and the following instructions.
CAUTION: RISK OF ELECTRIC SHOCK. Disconnect power before installing.
CAUTION: Use stranded copper conductors only.

RATING CONFIGURATIONS : 3P + GROUND 60A 380/415 3 Ø 6 O'CLOCK :

3P + GROUND 60A 250V 3 Ø 9 O'CLOCK .

Devices with one pilot contact using Appliance Wiring Material (AWM) are identified as follows:

- The intended Appliance Wiring Material (AWM) style number(s):2586;
- Temperature and voltage rating of the Appliance Wiring Material (AWM):105°C, 600 or 1000 Volts;
- Conductor size or sizes:
L1&L2&L3 Contacts: 8 AWG(8.37mm²) ~ 6 AWG(13.3mm²)
Ground Contact : 8 AWG(8.37mm²) ~ 6 AWG(13.3mm²)
Pilot contact: 16AWG(1.31mm²)-8AWG(8.37mm²)
- Total number of conductors: 5;
- The range of matching outer diameter of cable:
OD: 21.0-25.0mm

NOTICE: It is recommended that users use Flexible cords that comply with UL 62, for example: Type S, or Type W, a wire diameter range: 8AWG-6AWG.

- For 60Hz applications only, always use wire with insulation rated for 75°C or higher.
- Environmental rating: IP44.
- Plugs are without hp ratings and shall not be used on a motor load circuit.
- The pilot contact is rated B480, Standard duty.
- The pilot rating of Code B, 0.6 A Standard duty.

STANDARD ELECTROMAGNET LOADS

For this test, refer to Table 17 of UL1682, select Standard duty (Codes B).

COMPATIBILITY LIST

A compatibility list for mating parts is recommended as follows:

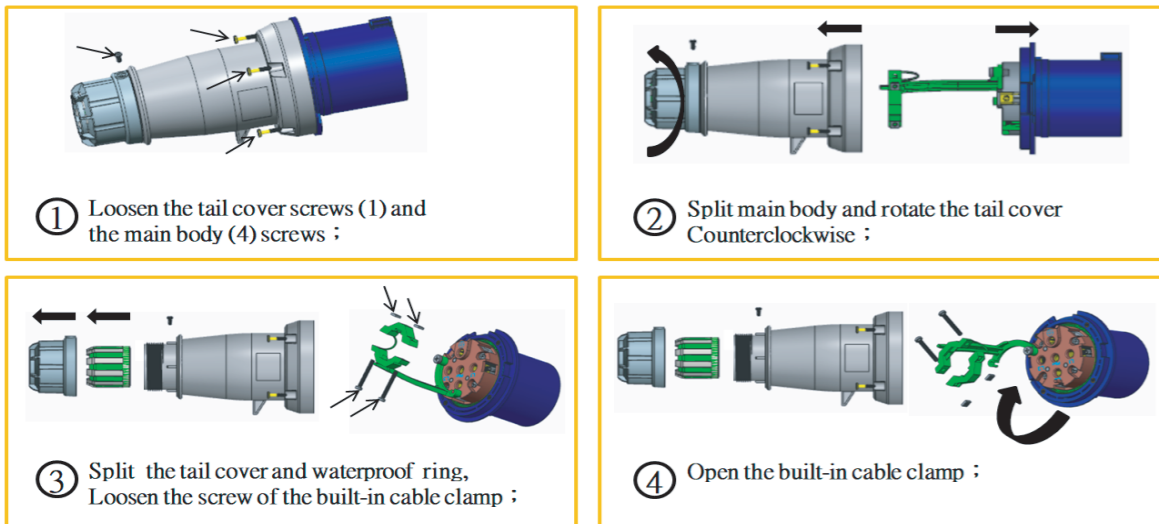
No. of Wires	Voltage AC	Clock position of Ground Contact	Model Name	UL-Certified File No.
3P+G	380-415	6	AH460R6W	E197042
	250	9	AH460R9W	

INSTALLATION

- Choose wires with the correct color and polarity direction to match the equipment for wiring.
- Disassemble the equipment Please refer to Figure 1
- As shown in Figure 1-1, loosen the tail cover screw (1 piece) and the main body screw (4 pieces)
- As shown in Figure 1-2, disassemble the main body and rotate the tailgate counterclockwise;
- As shown in Figure 1-3, remove the tail cover and waterproof ring, and unscrew the screws of the built-in cable clamp;
- As shown in Figure 1-4, open the built-in cable clamp;

Fig.1 Dismantling equipment flowchart

Remove the device . refer to the diagram



3. Wiring instructions refer to Figure 2

- As shown in Figure 2-1, thread the wires through the tail cover, followed by the waterproof ring and the lower body;
 - As shown in Figure 2-2, strip off the 2.17 "(55 mm) wire sheath and 0.59" (15 mm) conductor insulation layer.
 - Twist the wiring harnesses on each wire together without soldering the conductors.
 - Loosen the terminal screw and fully insert the wire into the correct position, as shown in Figure 2-2.
 - Be extra careful not to have loose wiring harnesses. Insulation shall not enter the terminals of the junction box.
 - The Pilot terminal uses a hex screwdriver (not provided), tighten the screw until tightened, with a torque of 0.37 pound feet (0.5N-m); Use a 3.0mm hex screwdriver (not provided) for the D-type terminal, tighten the screw until it is tight, with a torque of 1.99 pound feet (2.7 N-m). Close the wire clamp, clamp the wire and tighten the clamp screw with a torque of (1.37N-m) to secure the wire.
 - Assemble the main body and tighten the screws (0.884 pounds feet), assemble the cable clamp, tighten the tail cover clockwise (approximately 5.16 pounds feet) to ensure proper rope stress relief, and finally tighten the screws to secure at 0.442 pounds A torque of 0.6 N-m in feet.
- Attention: Do not twist the insulation wire of the locking screw randomly.

CAUTION: 1.The cord grip fingers must engage on the outer jacket of the cord and not on the individual conductors.
2. The length of the clamp screw locked in should be consistent.

Fig.2 Wiring assembly process diagram

Wiring instruction for industry plugs

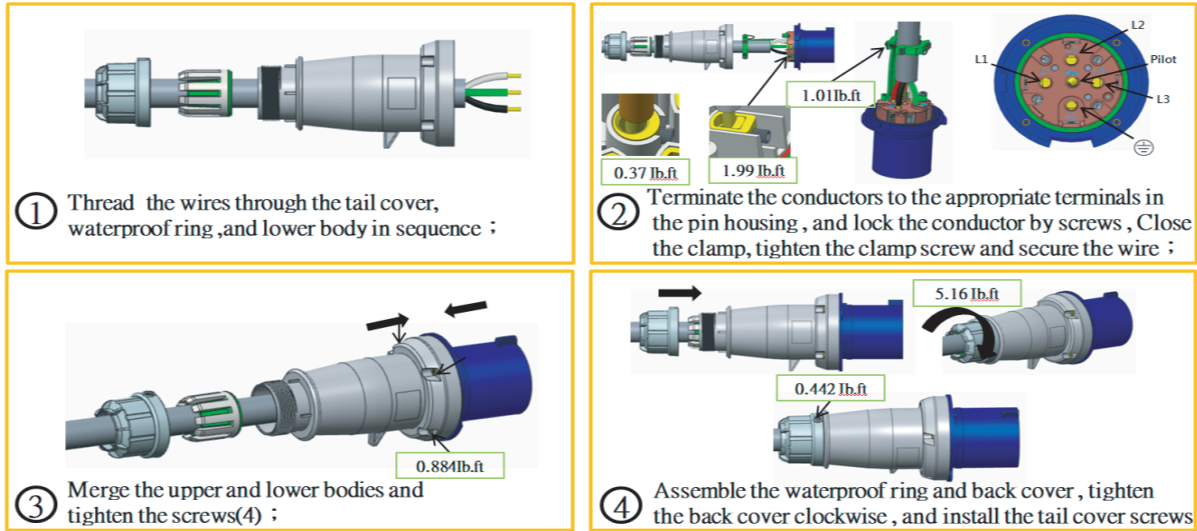
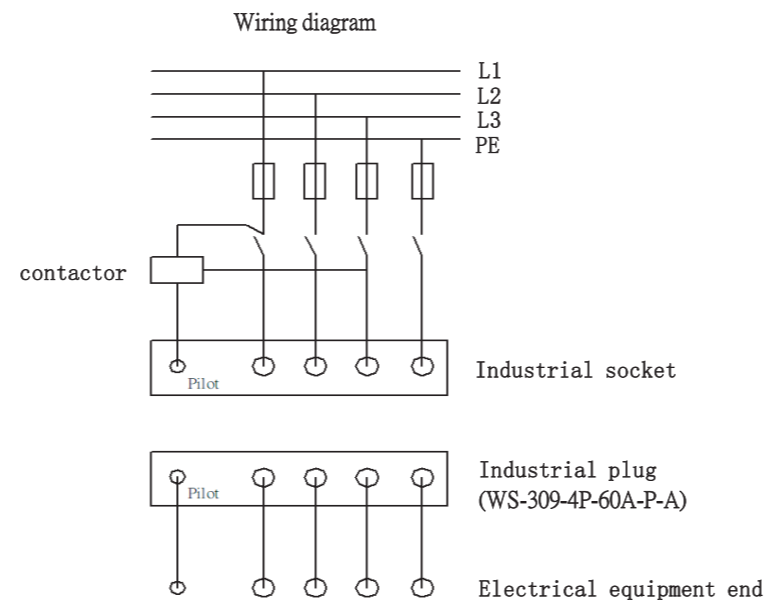


Fig.3 Wiring specification parameters

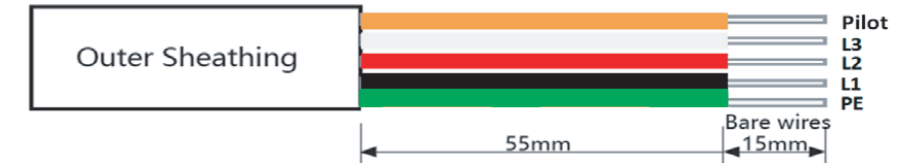
Acceptable conductor specifications			
WS-309-4P-60A-P-A	Wire specifications		
	It is recommended that users use Flexible cords that comply with UL 62 Type S or Type W with a wire diameter range of 8AWG-6AWG.		
	⊕	8AWG-6AWG	The range of matching outer diameter of cable is 21.0-25.0mm.
	L1	8AWG-6AWG	
	L2	8AWG-6AWG	
	L3	8AWG-6AWG	
Pilot	16AWG-8AWG		

Comparison table for wiring color and polarity			
Terminal	Core wire	Terminal	Core wire
⊕	Green	L3	White
L1	Black	Pilot	Orange
L2	Red		

Fig.4 Wiring diagram



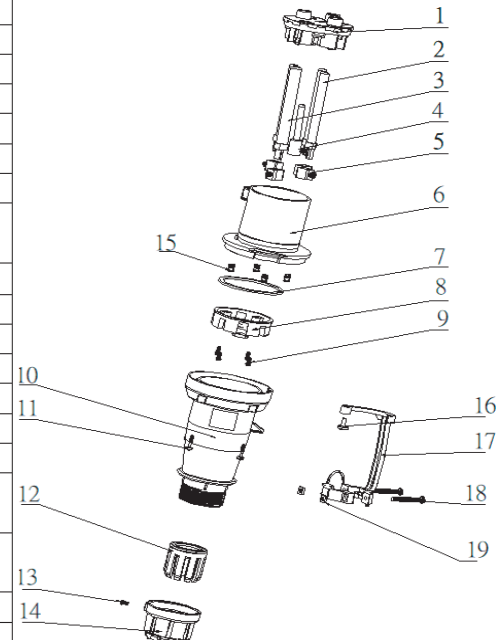
Stripping size&torque parameters



Torque reference table		
project	unit	numerical value (IP44)
Stripping cable sheath length	inch/mm	2.17/55
Stripping wire length	inch/mm	0.59/15
D-type terminal	lb. ft/N-m	1.99/2.7
Pilot terminal screw torque	lb. ft/N-m	0.37/0.5
Main body screw torque	lb. ft/N-m	0.884/1.2
Tail cover torque	lb. ft/N-m	5.16/7
Tail cover screw torque	lb. ft/N-m	0.442/0.6
Wire clamp screw torque	lb. ft/N-m	1.01/1.37

Product explosion diagram

WS-309-4P-60A-P-A(60-4PIN male)IP44 BOM			
19.	WS-309-63A-P-A built-in wire clamp nut	SUS304	2PCS
18.	WS-309-63A-P-A built-in wire clamp screw	SWRCH22A galvanized nickel alloy	2PCS
17.	WS-309-63A-P-A built-in wire clamp	PP Transparent halogen-free	1PCS
16.	WS-309-63A-P-A built-in wire clamp fixing screw	SWRCH22A galvanized nickel alloy	1PCS
15.	WS-309-63A-P-A embedded nut M3.5	C3602 copper natural color	4PCS
14.	WS-309-63A-P-A Tail Cover	PA66-C200	1PCS
13.	WS-309-63A-P-A lock tail cover screw M3.5 * 6.5	SWRCH18A galvanized nickel alloy	1PCS
12.	WS-309-4P-63A-P-A clamp (17.5~20.9mm)	TPE HORN-A PP-Yungsox 1120	1PCS
11.	WS-309-63A-P-A lock body screw M3.5 * 15.5	1022A galvanized nickel alloy	4PCS
10.	WS-309-4P-63A-P-A Main Body - Lower	PA66-C200	1PCS
09.	WS-309-63A-P-A lock inner sleeve screw M3.5 * 15	SWRCH18A galvanized nickel alloy	4PCS
08.	WS-309-4P-63A-P-A inner sleeve back cover	PA6-RG301	1PCS
07.	WS-309-63A-P-A main waterproof ring	silicon rubber TY2961	1PCS
06.	WS-309-63A-P-A Main Body - Upper (Blue)	PA6-C100 blue	9H
05.	WS-309-63A-P-A main body - upper (red)	PA6-C1(W) red	6H
04.	WS-309-63A-P-A D-type wire harness terminal& headless locking screw assembly	SUS 316 natural color Zinc alloy nickel plated	4PCS
03.	WS-309-63A-P-A Pilot Terminal& Headless Lock Wire Screw	SUS 316 natural color C3602 nickel plating	1PCS
02.	WS-309-63A-P-A Ground Terminal	C3602 nickel plating	1PCS
01.	WS-309-63A-P-A neutral wire terminal	C3602 nickel plating	3PCS
01.	WS-309-4P-63A-P-A inner sleeve	PA6-RG301	1PCS
NO.	品名	材質	用量 备注



309 PLUGS & CONNECTORS from China guarantees that the product will have no material or process defects for one year from the date of purchase. 309 PLUGS & CONNECTORS will repair or replace the product within 60 days. This warranty does not cover wear or damage caused by accident, misuse, abuse, or negligence. Except as provided above, the seller does not provide Offersa guarantees and explicitly excludes accidental or consequential damages. This guarantee is only valid in China.

UL 309插头 60A, 4芯线带Pilot (UL 1686 figure C2.20) 安装说明

一般信息

注意：由合格的电工按照国家或地方电气规范以及以下说明进行安装。
警告：有触电的危险。安装前断开电源。
警告：只能使用符合铜导线。

额定配置：3P + GROUND 60A 380/415 3 Ø 6 O'CLOCK；

3P + GROUND 60A 250V 3 Ø 9 O'CLOCK。

使用电器布线材料(AWM)的带有一个导频触点的设备标识如下：

a)预期的电器布线材料(AWM)样式编号:2586;

b)电器布线材料(AWM)的额定温度和电压:105°C, 600或1000V;

c)导体尺寸:

L1&L2&L3触点:8 AWG(8.37mm)~ 6 AWG(13.3mm)

接地触点:8AWG(8.37mm)~ 6AWG (13.3mm)

Pilot触点: 16AWG(1.31mm)~8AWG(8.37mm)

d)总导线数: 5;

e)电缆匹配外径的范围:

OD: 21.0-25.0mm

注意：建议用户使用符合UL 62的软线，比如：Type S, 或 Type W, 线径范围为8AWG-6AWG。

1. 仅适用于60Hz的应用，总是使用绝缘等级为75°C或更高的电线。

2. 环境等级: IP44。

3. 插头没有额定功率，不得用于电机负载电路。

4. 该pilot 端子的连接额定值为 B480，标准负载。

5. 该pilot端子的额定值为 B级，0.6 A 标准负载。

标准电磁负载

此测试参考UL1682表17,选择Standard duty (Codes B)。

兼容性清單

互配零件信息推薦如下：

No. of Wires	Voltage AC	Clock position of Ground Contact	Model Name	UL-Certified File No.
3P+G	380-415	6	AH460R6W	E197042
	250	9	AH460R9W	

安装

1.选择导线颜色和极性方向正确的电线與設備匹配接線。

2.拆卸设备, 请参照 图示1

a.如图示1-1,松开尾盖螺钉(1顆) 主体螺钉(4顆)

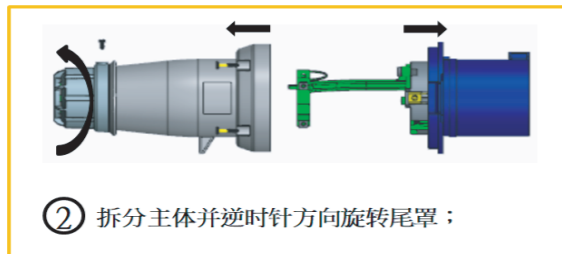
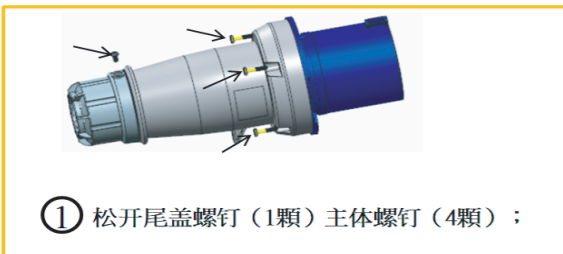
b.如图示1-2,拆分主体并逆时针方向旋转尾罩；

c.如图示1-3,拆开尾罩和防水圈，打開内置線夾的螺钉；

d.如图示1-4，打开内置線夾；

图示1 拆卸设备流程图

工业插头拆卸說明



3.接线说明 参照图示2

a.如图示2-1，将电线穿过尾盖，依次为防水圈和下部；

b.如图2-2所示，剥去2.17"(55 mm)的电线护套和0.59"(15 mm)的导体绝缘层。

c.将每根导线上的线束绞合在一起,不要锡导体。

d.松开端子螺钉并将导线完全插入正确位置,如圖2-2所示的终端。

e.要格外小心，不要有松动的线束。绝缘不得进入接线盒端子。

f.Pilot端子使用六角螺絲刀(未提供)，擰緊螺絲直到緊固，0.37磅英尺(0.5N·m)的力矩；D型端子使用3.0mm六角螺絲刀(未提供)，擰緊螺絲直到緊固，1.99磅英尺(2.7 N·m)的力矩。关闭線夾，夾住線材并(1.37N·m)的力矩擰緊線夾螺絲固定电线。

g. 组装下主体并植螺絲(0.884磅·英尺)，组装線夾，順時針擰緊尾蓋(約5.16磅·英尺)，以確保適當的繩索應力消除。最後植螺絲固定，0.442磅·英尺(0.6 N·m)的力矩。

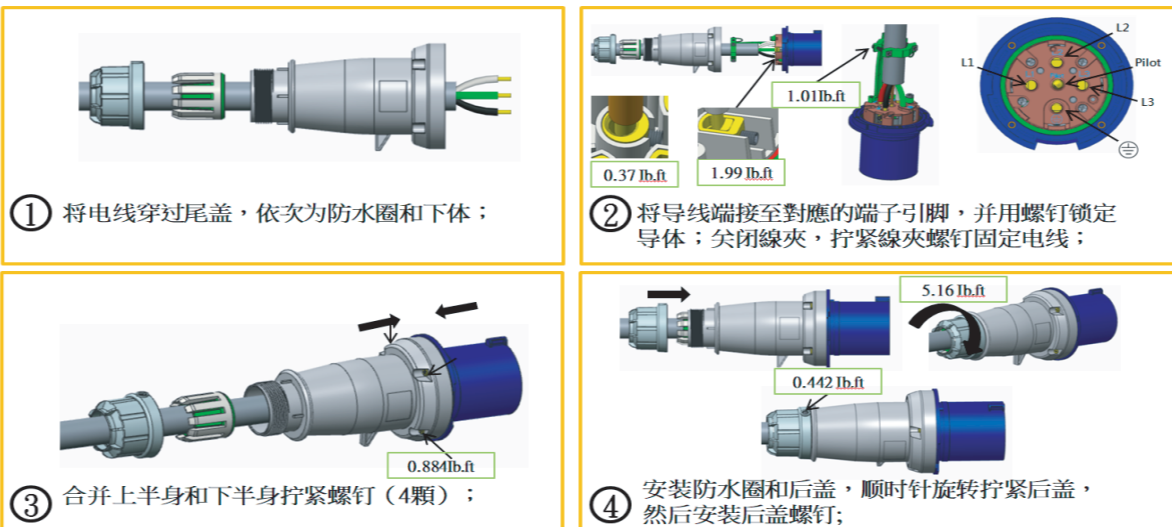
注意：植螺絲絕緣材料不要杂乱扭股。

警告：1. 电线夾住位置必須在电线的外套上，而不是单个导体上。

2. 線夾螺絲鎖進去的長度保持一致。

图示2 接线组装流程图

工业插头接线说明

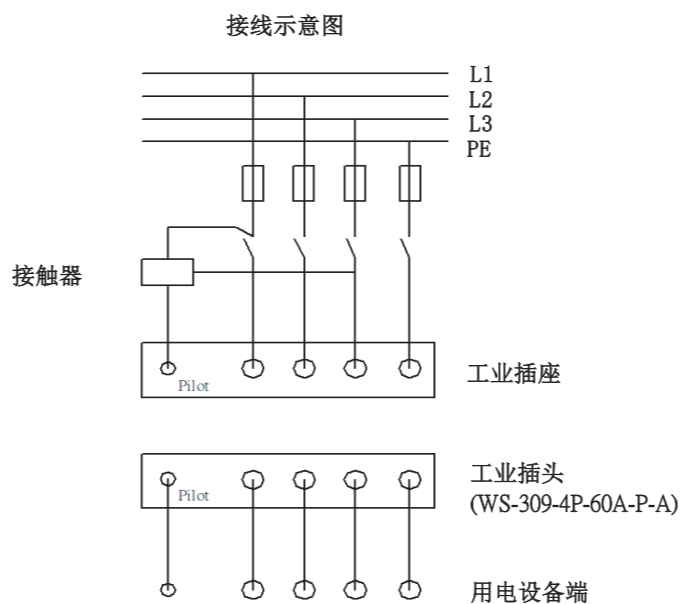


图示3 接线规格参数

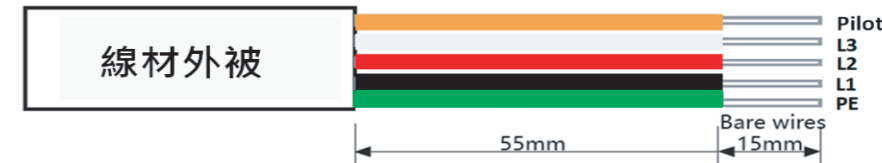
可接受的导体规格			
WS-309-4P-60A-P-A	线材规格 推荐用户采用符合UL 62的软线，规格:Type S或Type W,其线径适用范围: 8AWG-6AWG。		
	⊕	8AWG-6AWG	The range of matching outer diameter of cable is 21.0-25.0mm.
	L1	8AWG-6AWG	
	L2	8AWG-6AWG	
	L3	8AWG-6AWG	
Pilot	16AWG-8AWG		

接线颜色&极性对照表			
端子	导线	端子	导线
⊕	绿色	L3	白色
L1	黑色	Pilot	橙色
L2	红色		

图示4 接线示意图



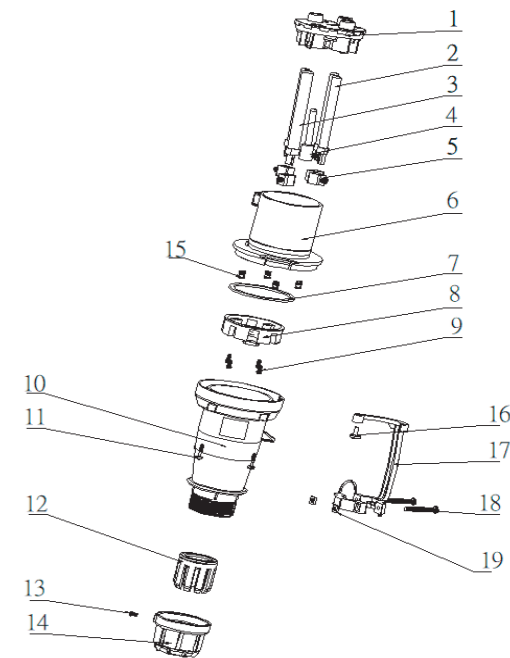
剥线尺寸&扭矩参数



扭矩参考表		
项目	单位	数值(IP44)
剥电纜护套長度	英寸/毫米	2.17/55
剥导线長度	英寸/毫米	0.59/15
D型端子	lb. ft/N·m	1.99/2.7
Pilot端子螺絲扭矩	lb. ft/N·m	0.37/0.5
主体螺絲扭矩	lb. ft/N·m	0.884/1.2
尾盖扭矩	lb. ft/N·m	5.16/7
尾盖螺絲扭矩	lb. ft/N·m	0.442/0.6
線夾螺絲扭矩	lb. ft/N·m	1.01/1.37

产品爆炸图

WS-309-4P-60A-P-A(60-4PIN公)IP44 BOM				
19.	WS-309-63A-P-A	内置線夾螺母	SUS304	2PCS
18.	WS-309-63A-P-A	内置線夾螺絲	SWRCH22A鋅鎳合金	2PCS
17.	WS-309-63A-P-A	内置線夾	PP 透明 無鹵	1PCS
16.	WS-309-63A-P-A	内置線夾固定螺絲	SWRCH22A鋅鎳合金	1PCS
15.	WS-309-63A-P-A	嵌入螺母M3.5	C3602 銅本色	4PCS
14.	WS-309-63A-P-A	尾盖	PA66-C200	1PCS
13.	WS-309-63A-P-A	锁尾盖螺絲 M3.5*6.5	SWRCH18A鋅鎳合金	1PCS
12.	WS-309-4P-63A-P-A	線夾(17.5~20.9mm)	TPE HORN-A PP-Yungsox 1120	1PCS
11.	WS-309-63A-P-A	锁主體螺絲 M3.5*15.5	I022A鍍鋅鎳合金	4PCS
10.	WS-309-4P-63A-P-A	主体-下	PA66-C200	1PCS
09.	WS-309-63A-P-A	锁內套螺絲 M3.5*15	SWRCH18A鋅鎳合金	4PCS
08.	WS-309-4P-63A-P-A	内套后盖	PA6-RG301	1PCS
07.	WS-309-63A-P-A	主體防水圈	硅橡胶TY2961	1PCS
06.	WS-309-63A-P-A	主体-上(藍色)	PA6-C100藍色	9H
	WS-309-63A-P-A	主体-上(紅色)	PA6-C1(W) 紅色	1PCS 6H
05.	WS-309-63A-P-A	D型束線端子&無頭鎖線螺絲組件	SUS 316 本色 鋅鎳合金鍍鎳	4PCS
04.	WS-309-63A-P-A	導向端子(Pilot)&無頭鎖線螺絲	SUS 316 本色 C3602鍍鎳	1PCS
03.	WS-309-63A-P-A	地線端子	C3602鍍鎳	1PCS
02.	WS-309-63A-P-A	零火線端子	C3602鍍鎳	3PCS
01.	WS-309-4P-63A-P-A	内套	PA6-RG301	1PCS
NO.	品名	材質	用量	备注



中国的309插头和连接器，保证该产品从购买之日起一年内不存在材料和工艺缺陷，在60天内可进行修理或更换产品，本保修不包括因意外、误用、滥用或疏忽造成的磨损或损坏。除上述规定外，卖方不提供Otras担保，并明确排除意外或后果性损坏，这一保证仅在中国有效。