

PL18X-501-95-G135单芯直头插头组装规范

PL18X-501-95-G135 1POS 180D Plug Assembly

Manual

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第一部分：产品介绍

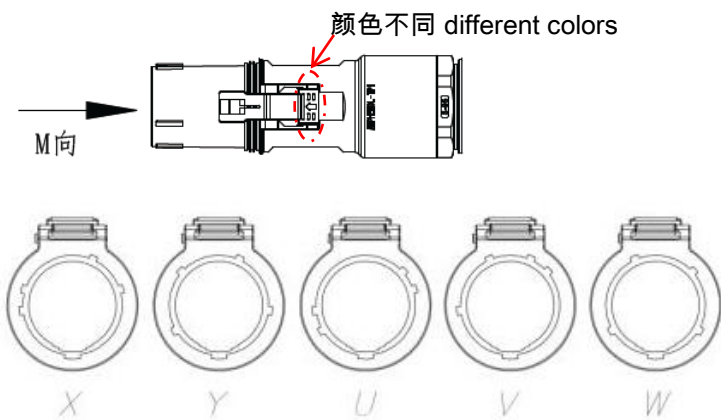
Part 1：Introduction to products

1：料号信息 Part number information

PL18(X)-501-95-G135

Key&Color		高压互锁	线缆大小	线缆类型
键位	Color		Cable Size mm2	
X 键	OR	0：无		
Y 键	BK	1：有		
U 键	YL	HVIL		
V 键	GN	0：NO	95	
W 键	RE	1：WITH	120	LV216

2：键位及颜色区分 Key and color differentiation



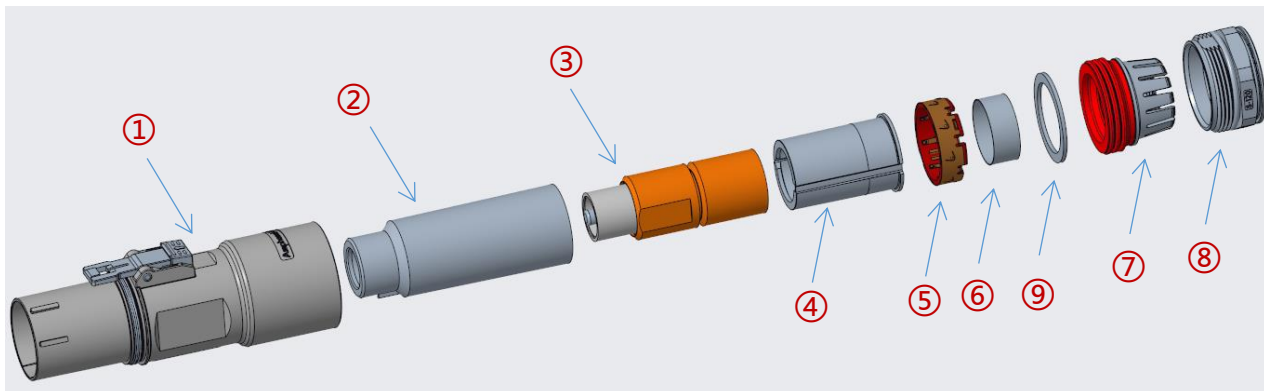
3：对配头型号 Mating receptacle: PL00(X)-501-10XX

4：主要参数 Major Spec

- 4.1 工作温度 Operating temperature: -40 °C ~+125°C
- 4.2 额定电压 Operating voltage: 1000 VDC
- 4.3 防护等级 Protection class: IP67 & IP2X
- 4.4 带自动二次锁扣 Automatic secondary lock
- 4.5 额定电流 Current rating(Connector Only):
95mm2-350A 120mm2-400A
- 4.6 详情请参照产品图 Please refer to the product drawing for details

第二部分：产品示意图

Part 2 : Exploded View



- ① 屏蔽壳组件 Shield shell Assy ×1
- ② 带高压弹片的胶壳 Plastic housing with HVIL contact spring ×1
(-500系列无高压互锁弹片 For the -500 version without HVIL, the plastic housing is without HVIL contact)
- ③ R4端子组件 R4 terminal Assy ×1
- ④ 定位套 Positioning Sleeve ×1
- ⑤ 屏蔽组件 Shielding Assy ×1
- ⑥ 屏蔽环 Shielding Ring ×1
- ⑦ 密封圈组件 Seal Ring Assy ×1
- ⑧ 螺套 screw sleeve ×1
- ⑨ 平垫圈 flat washer ×1

本文件中图例仅供参考，具体颜色与大小以实物为准。

The figure in this document is for reference only. The specific color and size are subject to actual objects.

第三部分：接头组装

Part 3: Connector Assembly

安装步骤 Assembly Instruction

- 步骤1：选取合适线缆(参考手册最后的附录)，按照表1尺寸剥离绝缘皮和外皮。

Step1：Select the right cable(refer to the appendix), prepare the cable according to the sketch and Table 1 below.

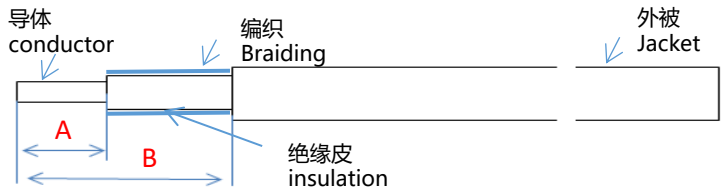
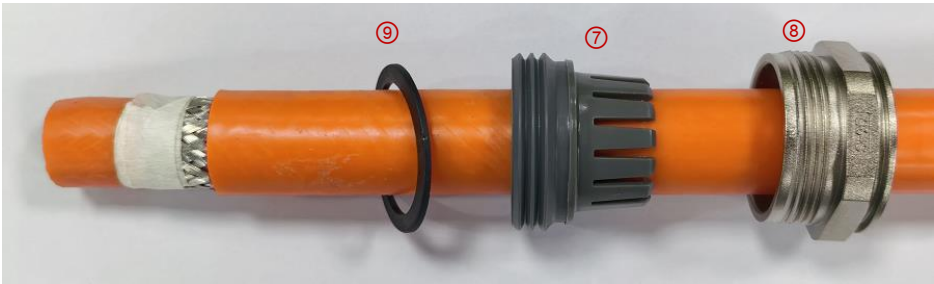


表1：剥皮尺寸
Table 1: Strip length

线材尺寸 Cable Size	Conductor A (mm)	Jacket B (mm)
95mm ² (LV216)	20±0.5	33+1/-0.5
120mm ² (LV216)	20±0.5	33+1/-0.5

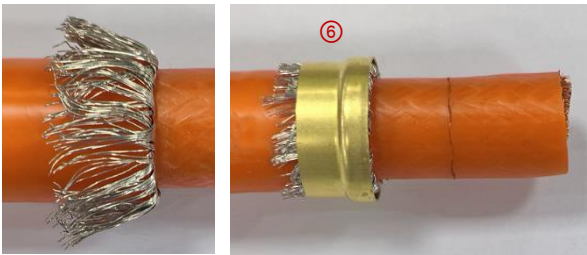
- 步骤2：取各1pcs的⑧螺套，⑦密封圈组件，⑨平垫圈，依次穿过线缆如下图所示。

Step2: Take 1pcs of ⑧ screw sleeve, ⑦ sealing ring Assy and ⑨ flat washer then make them pass through the cable in turn as the picture shown below.

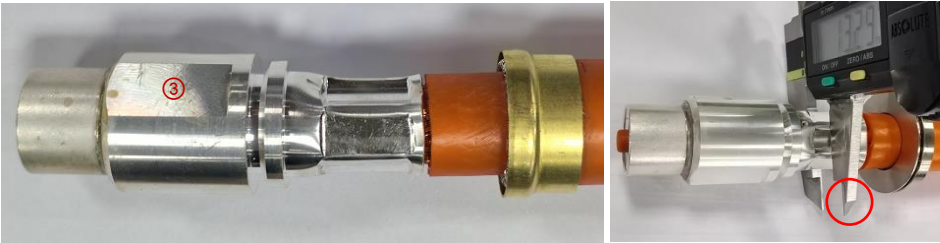


- 步骤3：将编织打散均匀反折在外被上，取1pcs的⑥屏蔽环穿入线缆，后端与外被口大致平齐。

Step3：Break the braid evenly and fold it on the outer jacket, Take 1 piece of ⑥ shielding ring and push it to the jacket end, Keep the rear end is approximately flush with the outer jacket.



步骤4：剥开内绝缘皮，取1pcs的③R4 端子组件穿上芯线，并压接在其上。
Step4：Peel off the inner insulation, Take 1pcs of ③ R4 terminal Assy and crimp it with the cable conductor, as the picture shown below.

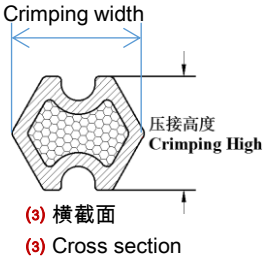


在压接区域中部测量
Measure in the middle of the crimp area
取最小值
Take the minimum value

表2：端子与线缆压接压接规格&拉拔力要求
Table 2：Contact and Conductor Crimping spec & retention force requirement

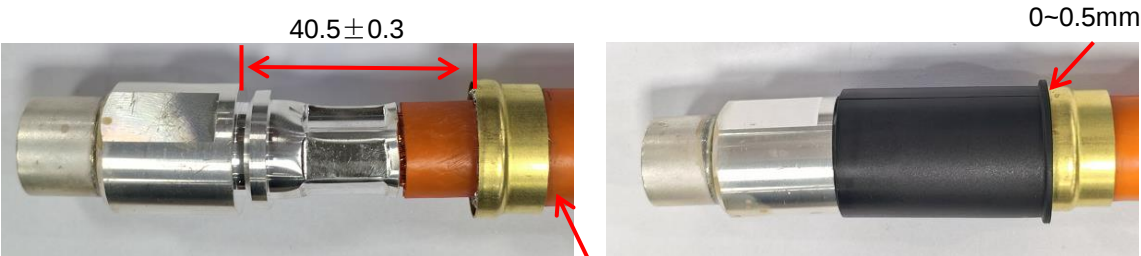
连接器 Connector	线缆尺寸 Cable size	压接宽度 (a) Crimping width (mm)	压接高度 (a) Crimping height (mm)	参考抗拉拔力 (a) Retention Force
500/501 系列 500/501 Series	95mm²	17.0+/-0.3	13.3+/-0.3	4200N
500/501 系列 500/501 Series	120mm²	19.2+/-0.3	15.2+/-0.3	5000N

压接工具：油压机
Crimping tool：Hydraulic press
95mm²压模：L132173140D95
95mm²Die：L132173140D95
120mm²模：L150195150D120
120mm²Die：L150195150D120



- (1) 建议使用 LV216 线材（参考手册最后的附录），如果客户选用其它电缆，请联系安费诺业务，协商订制零配件。
Recommend to use LV216 cable.（refer to the appendix）If you need to use customized cable, Please contact local sales for product extensions.
- (2) 压接高度和拉拔力需要配合压接截面的金相分析，客户才能判断压接质量合格。
Customers need to check cross section on crimping area and conduct pull-out force test to confirm the quality of crimp process.
- (3) 横截面仅供参考(其他举例：六边形横截形状)，客户负责采购压接工具或刀模。
Cross section and tooling geometry (ex. hexagon) is only for reference; customer should take liability for sourcing tools or dies.

步骤5：调整屏蔽环位置，使图示尺寸符合要求，将多余的屏蔽齐其后端剪齐。
Step5：Adjust the position of the shielding ring to make the dimensions shown in the figure meet the requirements, and cut the excess shielding to the rear end of ring.

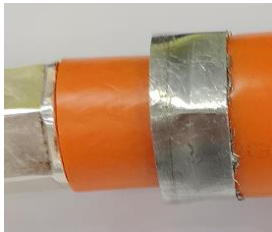
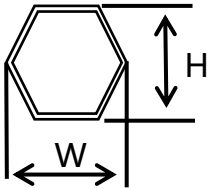


齐此处剪除
Cut off here

后工序装配参考
Reference for subsequent assembly

步骤6：调试好六边压接机器，将屏蔽环压接在外被上，压接高宽度及拉力要求见下表，压接过程避免屏蔽环移位。

Step6：Adjust the hexagonal crimping machine properly and crimp the shielding ring onto the outer jacket. The requirements for the crimping height, width and tensile force are shown in the table below, To avoid the shielding ring slide in the crimp process.



压一半的位置
Crimp half of the ring

120mm2 Product

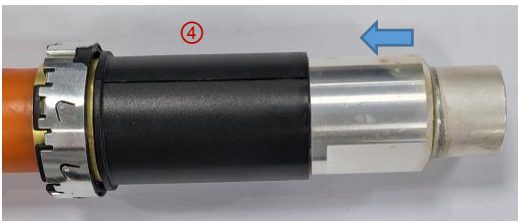
表3：铜环压接规格&拉拔力要求

Table3：Copper Ring Crimping spec & retention force requirements

线材尺寸 Cable Size	压接模具 Crimp die	压接高度 Crimping height H(mm)	参考抗拉拔力 Retention Force
95mm2	BZW-6C	20.7±0.15	150N
120mm2	BZW-6C	23.0±0.15	150N

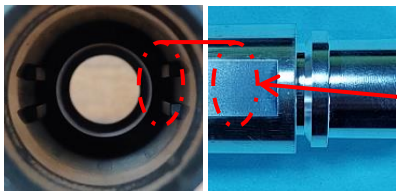
步骤7：将屏蔽组件如图示装到屏蔽环上面，组装④ 定位套到R4 组件的脖颈处的沟槽。

Step7：Assemble the shielding Assy onto the shielding ring as shown in the figure, Take ④ positioning sleeve and assemble it to the neck groove of R4 Assy.



步骤8：插入R4 端子组件到②胶壳上，转动使其触底。

Step8：Bring ② plastic housing through R4 terminal Assy and rotate ② plastic housing until it arrives at a stop position.



此两位置对
齐
The two
positions are
aligned



步骤9：将密封圈组件前移紧靠屏蔽组件，按住其尾部将线束按图示方向插入①屏蔽壳组件，直至端面平齐，再将螺套推到底旋入外壳。

Step9 : Move the sealing ring assembly forward close to the shielding Assy, press its tail and insert the wire harness into the shielding shell assembly in the direction shown until the end face is level, and then push the screw sleeve to the end and screw it into the shell.



步骤10：把连接头前端固定，以26~28N•m拧紧螺套。

Step10 : Fix the front end of the connector shell, tighten screw sleeve with torque 26~28N•m.



步骤11：在线缆组装好后需要做绝缘电阻和耐压测试，建议客户参考下面的测试参数

Step 11: Insulation resistance and Hi-pot test is needed after the cable is assembled. It is recommended that the customer refer to the following test parameters.

11-1 绝缘电阻测试

11-1 Insulation Resistance

Positions 位置	Test voltage/time 测试电压/时间	测试时间 (推荐) Test Time (recommended)	Insulation resistance 绝缘电阻
Cable (conductor) to shell 电缆芯线到壳体	1000 VDC	5S	> 500 MΩ
Cable (conductor) to HVIL 电缆芯线到高压互锁	1000 VDC	5S	> 500 MΩ
HVIL to shell 高压互锁到壳体	1000 VDC	1S	> 100 MΩ

11-2 Dielectric Withstand Voltage

11-2 耐压测试

Positions 位置	Test voltage 测试电压	测试时间 (推荐) Test Time (recommended)	Leakage Current 漏电流
Cable (conductor) to shell 电缆芯线到壳体	5000 VDC	10S	< 5mA
Cable (conductor) to HVIL 电缆芯线到高压互锁	5000 VDC	10S	< 5mA
HVIL to shell 高压互锁到壳体	500 VDC	1S	< 5mA

11-3 测试说明:

警告:建议的电气测试及其参数应根据终端应用要求进行审查，以确保安全性并防止损坏其他部件。提供的参数是基于PowerLok连接器和其峰值1000VDC额定。提供的测试参数可能超出电缆组件或设备上使用的其他部件/材料的限制。

11-3 Test note:

caution: Recommended electrical tests and their parameters should be reviewed against end application requirements to ensure safety and to prevent damage to other components. Parameters provided are based on the PowerLok connectors and their peak 1000VDC rating. Test parameters provided may exceed the limit of other components/materials used on the cable assembly or device.

附录APPENDIX

线材规格
Cable Specs

线缆类型 Cable Type	线缆尺寸 Cable size	导体结构(mm) Conductor	线缆外径 Accepted cable OD (mm)	线缆型号 Cable type
屏蔽线 Shielding cable	95mm ²	2850*0.21Max	20.5+/-0.4	FHLR2GCB2G
屏蔽线 Shielding cable	120mm ²	3648*0.21Max	22.6+/-0.4	FHLR2GCB2G

接头装配说明
Connector Installation instructions

- 1：接头对插与拔出方法参照 8P1249：G1 PowerLok 单芯插头安装规范。
For details about how to insert and remove the connector, see the 8P1249：PowerLok G1 One POS Plug General Installation instructions.
- 2：线束固定要求参照8P1249：G1 PowerLok 单芯插头安装规范。
Refer to the 8P1249: PowerLok G1 One POS Plug General Installation instructions for securing cable harnesses.

参考文件
Reference Documents

- 1：IPC/WHMA-A-620D 线缆及线束组件的要求与验收。
IPC/WHMA-A-620D Requirements and Acceptance for cable and wire harness Assemblies.
- 2：端子拉力标准参照 IEC-60512-16-4。
Terminal tensile strength test refer to IEC-60512-16-4.
- 3：端子金相分析参照 SAE/USCAR-21 Rev 4。
The cross-section analysis is referred to SAE/USCAR-21 Rev 4.

版本记录 Revision history

序号 Number	版本 Rev	变更内容 Content of change	日期 Date
1	01	新出 New issue	2024/11/06
2	02	产品版本升级为03，安装说明相应更新 The product version updated to 03 and the installation instructions updated accordingly	2025/06/10



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