

PowerLok™ 10.0 二/三芯定制直头插头组装规范

PowerLok™ 10.0 2/3 POS customized 180D Plug Assembly Manual



PL182(X)-30(1)-XX-5V



PL183(X)-30(1)-XX-5V

第一部分：包装清单

Part 1 : Package contents



- ① 屏蔽壳组件 Shield shell assembly ×1
- ② 带高压弹片的绝缘筒 Insulation sleeve with HVIL contact spring ×2
(300系列无高压互锁端子 insulation sleeve only in 300 series)
- ③ R4端子组件 R4 terminal Assy ×2
- ④ 定位套 Position sleeve ×2
- ⑤ 内铜套 Inner metal gasket ×2
- ⑥ 外铜套 Outer metal gasket ×2
- ⑦ 密封圈 Sealing ×2
- ⑧ 尾盖 End cap ×2

注意：图示为二芯配件，三芯的配件①屏蔽壳组件不同，其余配件②到⑧相同但数量为 X3。

Note: Picture above shows all parts of 2pos connector. Parts of 3POS connector are: The shield shell assembly are different, The remaining parts ② to ⑧ are the same but the quantity is X3.

安装步骤 Assembly Instruction

步骤1：取出连接器，如上页图示拆开零件

Step1：Take out the connector and take it apart as the picture shown on the previous page.

步骤2：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

Step2：Select the right cable(refer to the appendix), prepare the cable according to the sketch and Table 1 below

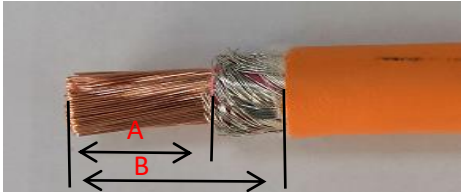
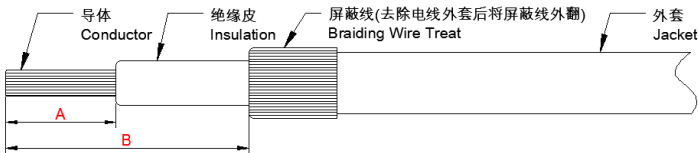


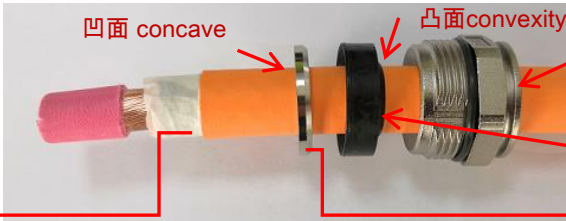
表1：剥皮尺寸
Table 1: Strip length

线材尺寸 Cable Size	A (mm)	B (mm)
35mm²	18±1	27 ±1
50mm²	18±1	27 ±1
70mm²	18±1	27 ±1

步骤3：取各1pcs的⑧尾盖, ⑦密封圈 Sealing和⑥外铜套, 依次穿过线缆，二芯的需二套产品，三芯的需三套。

Step3：Take 1pcs of ⑧ end cap, ⑦ Sealing and ⑥ Outer metal gasket and make them through the cable in the right order as the picture shown below, Two pos needs two sets of products, three pos needs three sets.

屏蔽包上美纹纸避免尾盖内密封胶圈损伤
The braiding is covered with paper to avoid damage to the sealing ring inside the end cap

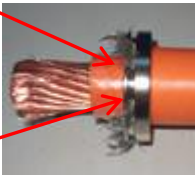


步骤4：取1pcs的⑤内铜套穿过线缆，与⑥外铜套按压在一起，并剪去突出的线头，用治具将编织压紧，确认尺寸正确。

Step4：Take 1pcs of ⑤ Inner metal gasket and make it through the cable, and clip the braid between ⑤ Inner metal gasket and ⑥ Outer metal then cut off any excessive braiding, Tighten the braiding with the fixture to make sure the correct size.

⑤内铜套
Inner metal gasket

齐此处剪齐
Cut it straight here



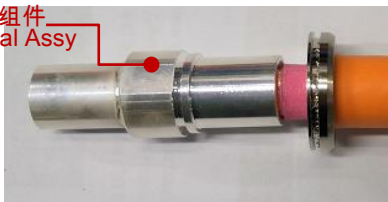
大于8mm
More than 8 mm



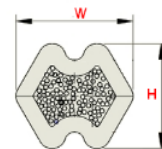
步骤5：取1pcs的③R4端子组件穿上线缆，并压接在其芯线上(规格参照手册最后的附录,附录数据仅供参考)

Step5：Take 1pcs of ③R4 terminal Assy and crimp it with the cable conductor, as the picture shown below.(please refer to the appendix at the end of this manual for more crimping information)

③R4端子组件
R4 terminal Assy



此处压接线束
Crimp cable here



横截面
Cross section

端子压接高宽度尺寸，“W”为压接宽度，“H”为压接高度（相应线径的压接高宽度尺寸及拉力标准参考手册后的附录）
Terminal crimping quality depends on 2 parameters: "W" crimping width and "H" crimping height.(Please refer to the appendix at the end of this manual for details)

(1) 建议使用附录中的线材，如果要使用客户定制线材，请联系当地销售，让他们提供延伸的产品

Cables written in the appendix are highly recommended for crimping, please contact our local sales for help if you want to use other cables out of this table

(2) 客户需要重新确认压接区域横截面和拉力测试，这两项达到压接的质量标准

A good crimping process is determined by 3 factors: W、H and tensile test result, please confirm these 3 targets specified are met after crimping

(3) 横截面仅供参考（其他举例：等边六变形的横截形状），客户负责采购压接工具或刀模

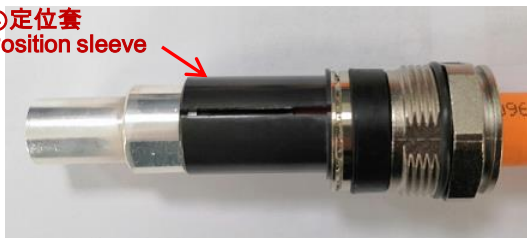
Cross section shape is only for reference(other possibilities: hexagonal section), all crimping tools needed are supposed to be prepared by customers

步骤6：组装④定位套到R4 holder脖颈处的沟槽

Step6：Take 1 pcs of ④ Position sleeve and buckle up to the neck groove of R4 holder

④定位套

Position sleeve



步骤7：插入R4 holder到②绝缘筒上，转动使其触底

Step7：Bring ② insulation sleeve through R4 holder and rotate ② insulation sleeve until it arrives at a stop position

②绝缘筒

Insulation sleeve



确保R4尾盖可见
Make sure R4 end visible



步骤8：将半成品如下图所示插入①屏蔽壳组件，注意方向正确，防止损伤HVIL端子，插到底后翻转接头，打开摇杆，固定外壳与电缆，以10~12N·m拧紧尾盖,依次完成此端线束组装。

Step8：Insert the semi-finished product into ① Shield shell assembly as shown below, pay attention to the correct direction to prevent damage to the HVIL terminal, after insert it into the end, turn over the connector, open the press latch, fix the housing and cable, tighten the end cap with 10~12N·m, and complete assembly of the wire harness at this end in turn.



步骤9：建议客户参考下面的测试参数,对线束进行绝缘电阻测试和耐压测试
Step9：Insulation resistance and dielectric withstand voltage tests are obligated to be done according to below test parameters to guarantee the good electric performance of the whole harness

9-1 绝缘电阻测试
9-1 Insulation Resistance Test

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

9-2 耐压测试
9-2 Dielectric Withstand Voltage Test

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

9-3 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。

9-3 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

线缆压接的参考规范
Reference specification for cable crimping

线缆类型 Cable Type	电线尺寸 Cable Size	导体结构 (mm) Conductor	导体外径 (mm) Conduct or OD	电线外径(mm) Wire OD	压接高度 H(mm) Crimping height	压接宽度 W(mm) Crimping Width	参考保持力 Retention Force	刀模编号 Crimping Tool No.
屏蔽线 Shielding cable	35mm²	273*0.41	7.9	12.7±0.3	9.5±0.2	11.0±0.2	2300N	L095109150D35
	50mm²	385*0.41	9.4	14.9±0.3	12.2±0.2	13.3±0.2	2800N	L119135150D50
	70mm²	360*0.51	11.6	17.0±0.3	13.26±0.2	15.0±0.2	3400N	L132153150D70



Amphenol Technical Products International provides the above product specifications for the standard PowerLok™ series of connectors to assist users in identifying the correct product for the system to which the connectors may be applied. Specifications are subject to change without notice. Contact your nearest Amphenol Corporation Sales Office for the latest specifications. All statements, information and data given herein are believed to be accurate and reliable but are presented without guarantee, warranty, or responsibility of any kind, expressed or implied. Statements of suggestions concerning possible use of our products are made without representation or warranty that any such use is free of patent infringement and are not recommendations to infringe any patent. Specifications are typical and may not apply to all connectors. Note that these specifications are derived from relevant global standards used in the automotive and industrial transportation markets, but they are not a substitute for system level design validation testing, which is the sole responsibility of the system designer and/or end user.

Asia Pacific

ChangZhou, China
Tel: +86 519-8981 9713
Add: No.11 Fengxiang Road, New District, Changzhou, Jiangsu
P.C: 213001

Asia Pacific

GuangZhou, China
Tel: +86 20-3210 6099
Add: 9th Floor, No. 10, the 4th Street, Kehui Jingu, Luogang District, Guangzhou, Guangdong
P.C: 510663

North America

Winnipeg, Canada
Tel: +1 204 697 2222
Add: 2110 Notre Dame Avenue

Europe

Milano, Italy
Tel: +39 02 932541
Add: Via Barbaiana 5, 20020 Lainate(MI)

Email: info@Amphenol-GEC.com