

PowerLok™ G91 两芯插头组装规范

PowerLok™ G91 2POS Plug Assembly Manual



| Product Type 产品类型 | | Plug Type 插头类型 | | Key & Color ⁽¹⁾ 键位 & 颜色 | | Series 系列 | |
|----------------------|---------------|-------------------|---|---------------------------------------|---------------------------|--------------|--|
| PL | PowerLok™ 4.0 | 182 | 2POS plug connector, Straight ,Shielding 二芯插头连接器， 直头，屏蔽款 | X | Key "X" Orange X 键位 橙色 | 60 | 60Series without HVIL 60系列 不带高压互锁 |
| | | | | Y | Key "Y" Black Y 键位 黑色 | | |
| | | | | U | Key "U" Yellow U 键位 黄色 | 61 | 61 Series With HVIL 带高压互锁 的61系列 |

(1) 颜色是指插头上CPA的颜色。Color refers to the color of the CPA on the plug.

线缆安装步骤

Assembly Instruction

步骤1：取出连接器，如图所示零件

Step1：Unpack all components as shown below



- ① 连接器组件 Connector Component ×1
- ② 端子 Terminal ×2
- ③ 屏蔽垫圈 Shielding Gasket ×1
- ④ 铜套 Copper Sleeve×2
- ⑤ 密封圈 Seal×1
- ⑥ 尾盖 End Cap ×1

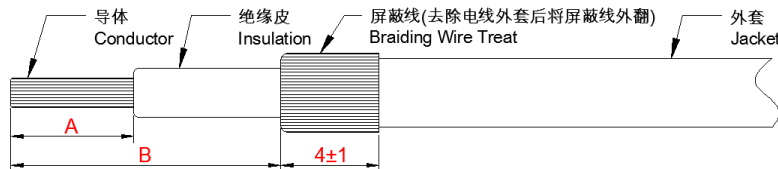
步骤2：选择符合如下尺寸要求的屏蔽线缆

Step2：Select the right cable according to your connector and the cable specification below

| 线缆规格 Cable Size | 绝缘皮剥线长度 Insulation strip length "A"(mm) | 外被剥线长度 Jacket strip length "B"(mm) |
|--------------------|--|---------------------------------------|
| 6mm ² | 8±0.5 | 26±1 |

步骤3：按步骤2剥线尺寸剥开电线外套、屏蔽层及绝缘皮，翻折屏蔽线，并剪掉多余屏蔽线

Step3：Refer to value(A&B) in step 2, strip jacket, insulation, then fold back the braid and trim off any excess



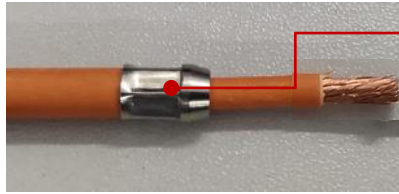
步骤4：将⑥尾盖⑤密封圈④铜套③屏蔽垫片依次套入线材中，④铜套需套到底，套上铜套后屏蔽线不能露出

Step4：Make ⑥End Cap⑤Seal④Copper Sleeve③ Shielding Gasket through the 2 cables and bring ④ copper sleeve to the right as far as possible, and the braid is not supposed to be seen



步骤5：用六角刀具把③铜套压紧，压紧后铜套的保持力不少于50N

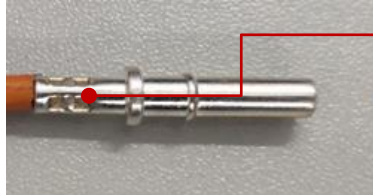
Step5：Crimp ③copper sleeve with hexagonal crimping tool, minimum retention force is 50N after crimping



此处压接铜套
Crimp Copper Sleeve here

步骤6：套上②端子，采用四点压接模或六边压接模压接端子，压紧后端子保持力不小于下表中数值

Step6：Insert the cable conductor into ②terminal and use four point or hexagon crimping tool to crimp, the retention force should respect the values written below



此处压接端子
Crimp terminal here

| 线缆规格 Cable Size | 保持力 Min retention force |
|--------------------|----------------------------|
| 6mm ² | 450N |

说明：压接形状不作要求，客户负责采购压接工具或刀模，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，压缩比要求为 80~90%。

Note: Crimping shape is not required, customer will take liability for sourcing tools or dies, Customers need to check conduct pull-out force and Metallographic analysis of crimping section to confirm the quality of crimp process, Terminal crimping must meet the compression ratio requirements: 80~90%

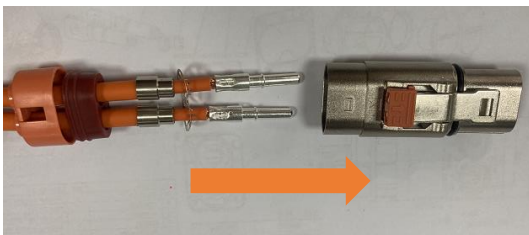
步骤7：将屏蔽垫片③卡入铜环台阶处

Step7：Make ③shielding gasket stuck in the copper ring step as blew



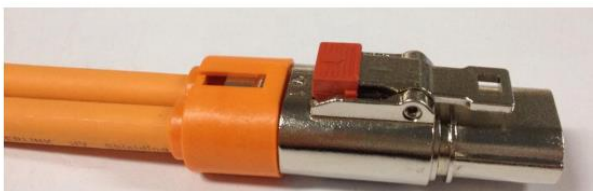
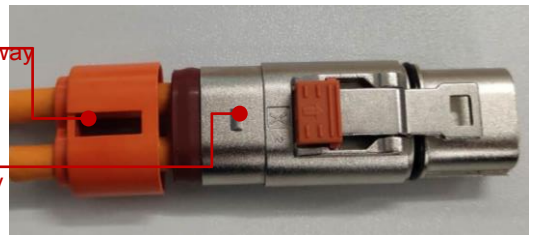
步骤8：将端子部件装入①连接器组件，注意扣盖开槽与壳体上凸起大小相对应。将尾盖推入，完成组装。

Step7：Push parts in step 7 into ①connector component and make sure keyway on ②back cover matches the key on shell. Harness well-finished as the picture shown below



扣盖大槽
Master Keyway

铁壳大键
Master Key



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/时间 Test Voltage/Time | 绝缘电阻 Insulation Resistance |
|---------------------------------|------------------------------|-------------------------------|
| 电缆到壳体 Cable(power) to shell | 1000 VDC / 5S | > 500 MΩ |
| 电缆到高压互锁 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/时间 Test Voltage/Time | 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 |
| 高压互锁到壳体 HVIL to shell | 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

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 | 2023/02/01 |



Amphenol Technical Products International provides the above product specifications for the standard PowerLok™4.0 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.

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