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PowerLok™ 4.0 三芯插头组装规范
PowerLok™ 4.0 3POS Plug Assembly Manual

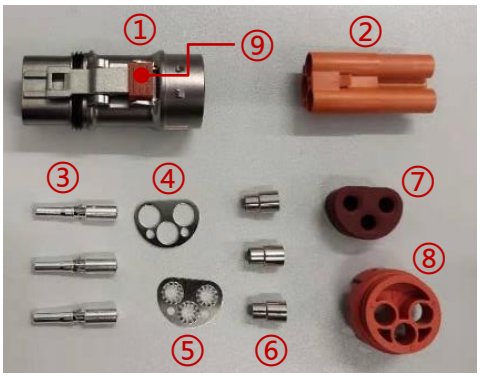
PL 183 X - 41 - 4

Product Type 产品类型		Plug Type 插头类型		Key & Color (1) 键位 & 颜色		Series 系列		Cable Size 线材尺寸	
PL	PowerLok™ 4.0	183	3POS plug connector, Straight, Shielding 三芯插头连接器，直头，屏蔽线	X	Key "X" Orange X 键位 橙色	40	40 Series without HVIL 40 系列 不带高压互锁	2.5	2.5mm²
				Y	Key "Y" Black Y 键位 黑色			4	4mm²
				U	Key "U" Yellow U 键位 黄色	41	41 Series With HVIL 带高压互锁的41系列	6	6mm²

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

安装步骤 Assembly Instruction

步骤1：取出连接器, 如图示零件
Step1：Unpack all components as shown below



① 连接器组件 Connector Component ×1
② 胶芯 Plastic Shell ×1
③ 端子 Terminal ×3
④ 金属垫片 Gasket ×1
⑤ 金属屏蔽片 Shielding Sheet ×1
⑥ 铜套 Copper Sleeve ×3
⑦ 密封圈 Seal Ring ×1
⑧ 后盖 Back Cover×1
⑨ CPA

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 ,并剪掉多余屏蔽线
Step2：Select the right cable(refer to the appendix), prepare the cable according to the sketch and Table 1 below, cut off excessive braiding wire as shown below

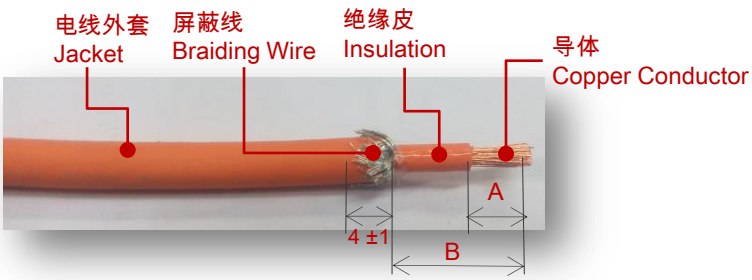
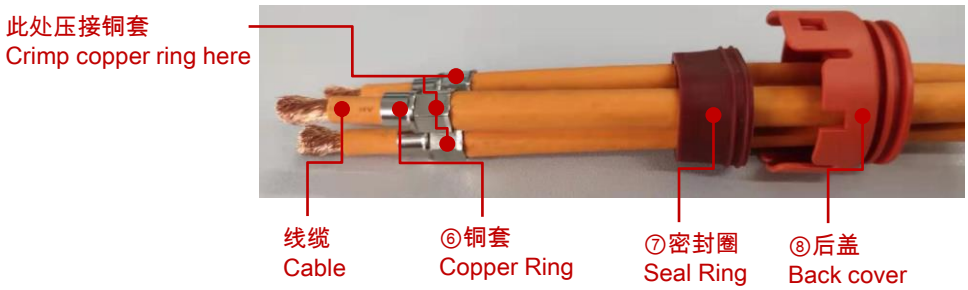


表1：剥皮尺寸
Table 1: Strip length

线缆规格 Cable Size	直径 OD (mm)	绝缘皮剥线长度 Strip length "A" (mm)	外被剥线长度 Jacket strip length "B"(mm)
2.5mm² or 14AWG	5.2±0.2	9±0.5	24±1
4mm² or 12AWG	5.8±0.2	9±0.5	24±1
6mm2 or 10AWG	6.7±0.3	9±0.5	26±1

步骤3：3-1 拿取⑧后盖，⑦密封圈, ⑥铜套,自左端依次穿过已剥好的线缆
3-2 采用专用六角刀具将三个铜套依次压接在屏蔽线上, 压紧后铜套的抗拉拔力不少于50N

Step3：3-1 Take ⑧back cover ⑦seal ring ⑥copper sleeve, insert cables through their holes from right in sequence
3-2 Crimp ⑥copper sleeves with the hexagonal crimping tool and the minimum retention force is 50N

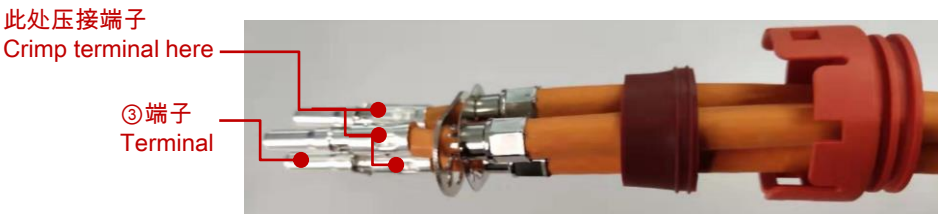


步骤4：采取⑤金属屏蔽片, ④金属垫片，自左端依次穿过线缆

Step4：Take ⑤shielding sheet and ④gasket, have cables insert through them from the right in sequence

步骤5：自左端穿上③端子, 用专用压接刀具将其压接在线缆导体上, 压接后线缆抗拉拔力不小于如下表格数值

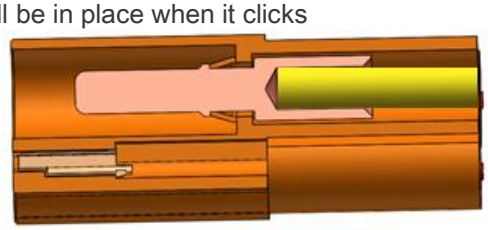
Step5：Insert cable conductor into ③terminal then crimp it with the specific crimping tool, the retention force should respect the values in the table below



线缆规格 Cable size	保持力 Min retention force
2.5mm² or 14AWG	220N
4mm² or 12AWG	300N
6mm² or 10AWG	350N

步骤6：拿出胶芯, 将端子推进胶壳底部，至听到一声“啪”，方可插到位

Step6：Push terminals to bottom of the plastic shell. It will be in place when it clicks



步骤7：将胶壳装进①连接器组件里，扣上⑧后盖，完成组装。

Step7：Push the parts to the bottom of ①connector component and buckle up ⑧back cover to finish the assembly

步骤8：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

Step8：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

8-1 绝缘电阻测试

8-1 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

8-2 耐压测试

8-2 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

8-3 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。

8-3 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

线缆参考规范
Reference specification for cable

线缆类型 Cable Type	电线尺寸 Cable Size	导体结构(mm) Conductor	导体外径(mm) Conductor OD	电线外径(mm) Wire OD
屏蔽线 Shielding cable	2.5mm²	217*0.12	2.1	5.20±0.2
	4.0mm²	350*0.12	2.9	5.80±0.2
	6.0mm²	525*0.12	3.6	6.70±0.2

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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