

PowerLok 14mm G1 单芯弯头插头组装规范

PowerLok 14mm G1 1POS 90D Plug Assembly Manual



PL28(X)-50(X)-XX-5

键位	Key	高压互锁	线缆大小	
X 键	X	0: 无	Cable Size	
Y 键	Y	1: 有	mm2	
U 键	U		70	线缆类型
V 键	V	HVIL	95	Cable type
W 键	W	0: No	120	
		1: Yes	150	5: H+S cable

第一部分：包装清单

Part 1 : Package contents



- ① 接头端子组件 Connector terminal assembly ×1
- ② 绝缘套(上和下) Insulation sleeve (upper and lower) ×1
- ③ 屏蔽套 Shielding sleeve ×1
- ④ 铜环组件 Copper sleeve assy ×1
(由内铜环与外铜环组成 , 150mm²只有外铜环)
(Consisting of an inner copper ring and an outer copper ring, 150mm² has an outer copper ring only)
- ⑤ 金属垫圈 Metal gasket ×1
- ⑥ 密封圈 Sealing ×1
- ⑦ 后盖 Back shell ×1

第二部分：插头组装

Part 2: Plug 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

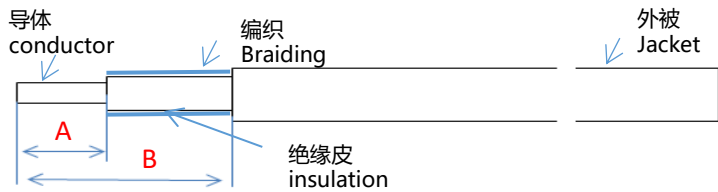


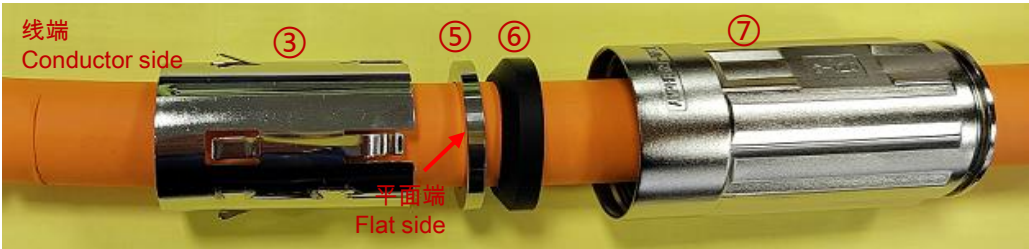
表1：剥皮尺寸

Table 1: Strip length

线材尺寸 Cable Size	Conductor A (mm)	Jacket B (mm)
70mm ²	18±0.5	31+1/-0.5
95mm ²	18±0.5	31+1/-0.5
120mm ²	18±0.5	31+1/-0.5
150mm ²	18±0.5	31+1/-0.5

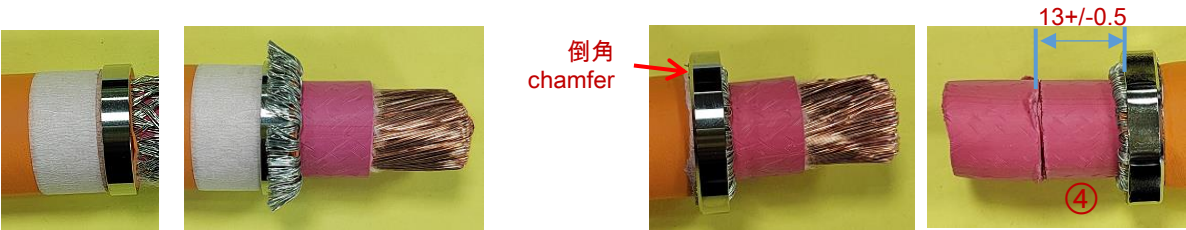
- 步骤2：取各1pcs的⑦后盖, ⑥密封圈, ⑤金属垫圈和③屏蔽套, 依次穿过线缆如下图所示

Step2: Take 1pcs of ⑦ back shell, ⑥ sealing , ⑤ metal gasket , and ③ shielding sleeve, then make them pass through the cable in turn as the picture shown below.

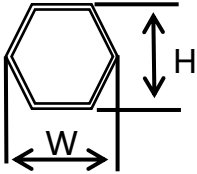


- 步骤3：将④ 铜环组件的内铜环（150mm2没有）穿入线缆紧贴外被口，再将编织均匀打散反折剪留5mm，再套入外铜环，将内外铜环对齐，确认方向尺寸正确，调试好机器，将其压接好。

Step3：Insert the inner copper ring (150mm2 not available) of the ④ copper ring assembly into the cable close to the jacket, then break the braid evenly, fold and cut it to 5mm, and then insert the outer copper ring, align the inner and outer copper rings, confirm the correct direction and dimension, adjust the machine, and crimp it.



刀片型号 The blade model	压接高度 Crimping height (mm)	参考抗拉拔力 Retention Force
TY-087	26.5±0.25	150N



步骤4：取1pcs的① 接头端子组件穿上线缆，并压接在其上(规格参照表2)
Step4：Take 1pcs of ① connector terminal assy and crimp it with the cable conductor, as the picture shown below. (please refer to table2)



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	70mm²	15.4+/-0.5	13.2+/-0.3	3400N
	95mm²	17.0+/-0.5	13.3+/-0.3	4200N
	120mm²	19.2+/-0.5	15.2+/-0.3	5000N
	150mm²	21.0+/-0.5	19.8 ±0.3	6000N

压接工具：油压机

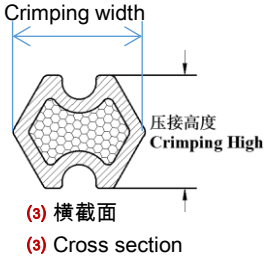
Crimping tool：Hydraulic press

70mm²压模：L132153150D70 95mm²压模：L132173140D95

70mm²Die：L132153150D70 95mm²Die：L132173140D95

120mm²压模：L150195150D120 150mm²压模：TY-060

120mm²Die：L150195150D120 150mm²Die：TY-060



- (1) 建议使用H+S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 H+S cable. (refer to the appendix) If you need to use customized cable, Please contact local sales for product extentions
- (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，芯线压缩比要求为 80~90%。
Customers need to check cross section on crimping area and conduct pull-out force test to confirm the quality of crimp process ,
Terminal crimping must meet the conductor compression ratio requirements: 80~90%
- (3) 横截面仅供参考(其他举例：六边形的横截形状)，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：组装② 绝缘筒到接头端子组件的脖颈处的沟槽。

Step5：Take ② Insulation sleeve and assemble it to the neck groove of connector terminal assy.



步骤6：将线材上配件推到底，确认③屏蔽套与④铜环组件接触良好处于大致居中位置，

Step6：Push the accessories of the wire to the bottom, and make sure the ③ shielding sleeve and ④ copper ring assembly are in good contact and in the center position roughly.



步骤7：把连接头前端固定，以26~28N•m拧紧后盖。

Step7：Fix the front end of the connector shell, tighten back shell with torque 26~28N•m.



步骤8：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 8: 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.

8-1 绝缘电阻测试

8-1 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

8-2 Dielectric Withstand Voltage

8-2 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

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	70mm²	360*0.51	17.0+/-0.3	H+S 84100298
屏蔽线 Shielding cable	95mm²	480*0.51	19.9+/-0.4	H+S 84100299
屏蔽线 Shielding cable	120mm²	589*0.51	22.6+/-0.4	H+S 84103410
屏蔽线 Shielding cable	150mm²	741*0.51	24.9+/-0.5	H+S 84000254

版本记录 Revision history

序号 Number	版本 Rev	变更内容 Content of change	日期 Date
1	00	新出 New issue	2021/06/15
2	01	更改压接刀模由六边压接机为六边带点模 Change the crimping die from Hexagonal crimp machine to Hexagon and indent die	2022/07/07
3	02	增加屏蔽环压接治具编号与屏蔽处理方式按实际更新 Add shield ring crimping blade model and update shield processing method according to the actual	2024/03/29



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