Document No: 8P1092
Rev.05

三芯2代直头组装式连接器安装说明

The Assembly Manual
For 3POS PowerLok G2 180D Plug Connector

PL183(X)-30(X)-XX-2-5

键位 Key X 键 X Y 键 Y	高压互锁 0：无 1：有 HVIL 0：NO 1：WITH	线缆大小 Cable Size mm2 50 70	G2 Connector	线缆类型 5：HS cable

第一部分：包装清单
Part 1： Package contents

★ 备注 Note：

安装过程请保留HVIL防护盖在此位置，等线束组装完毕再取出。

HVIL cap should be left in place during assembly, removed after final assembly is complete before use.

① 屏蔽壳组件 Shield shell assembly ×1

② 带高压互锁端子的绝缘筒 Insulation sleeve with HVIL contact ×1

（非HVIL版本无高压互锁端子 No HVIL contact for non-HVIL version）

③ 不带高压互锁端子的绝缘筒 Insulation sleeve without HVIL contact ×2

④ 带密封圈的R4端子组件 R4 terminal Assy with O-ring ×3

⑤ 锁块（两个）Lock housing（2PCS） ×3

⑥ 塑料卡簧 Plastic Clamp spring ×3

⑦ 螺旋弹簧 Coil spring ×3

⑧ 外铜环 Outer Copper ring ×3

⑨ 内铜环 Inside Copper ring ×3

⑩ 金属垫圈 Metal gasket ×3

⑪ 密封圈 Sealing ×3

⑫ 尾盖 End cap ×3

第二部分：插头组装
Part 2: Plug Assembly

步骤1：穿配件

Step1：Assemble the accessories

1-1 线缆准备：按生产需求从表1选择合适尺寸的线缆，并裁剪

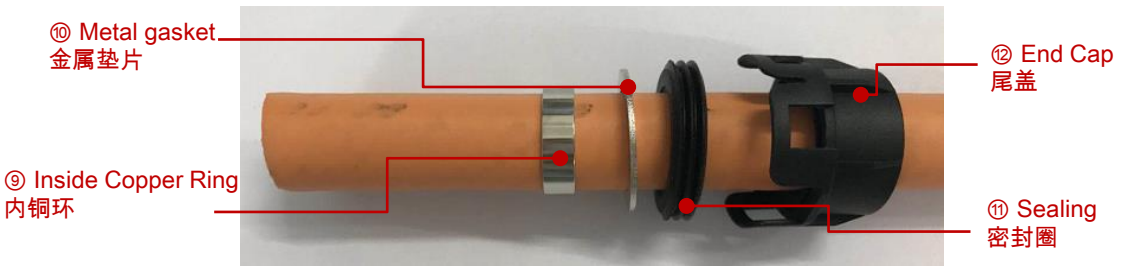
1-1 Cable preparation : take right-sized cable and cut the cable according to production plan from the table 1

表1：线材规格
Table 1：Cable size

连接器 Connector	线缆尺寸 Cable size	线缆外径 Accepted cable OD (mm)	屏蔽线缆 Shield Cable
301/300系列 301/300 Series	50mm²	14.9±0.3	HS 84096257
	70mm²	17.0±0.3	HS 84100298

1-2 取各1pcs的⑫尾盖, ⑪密封圈， ⑩金属垫圈和 ⑨内铜环, 从右边依次穿过线缆

1-2 Take each 1pcs of ⑫ end cap, ⑪ Sealing, ⑩ Metal gasket and ⑨ Inside Copper ring, and make them pass through the cable from right in sequence.



步骤2：剥线皮，按表2尺寸剥离线缆绝缘皮和外被

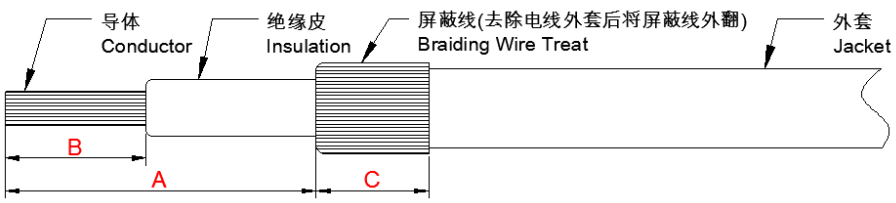
Step 2: Stripping, Strip off cable insulation and jacket as following size from the table 2

表2：剥线长度
Table 2：Strip length

连接器 Connector	线缆尺寸 Cable size	外套剥线长度 A Stripping jacket (mm)	绝缘皮剥线长 B Stripping insulation (mm)	保留屏蔽长度 C Leave over shielding(mm)
301/300系列 301/300 Series	50mm²	37±0.5	19 +1/-0.5	7±1
	70mm²	37±0.5	19 +1/-0.5	7±1

注意：剥皮完成之后，裁剪屏蔽保留C mm(看上方表2)，并将屏蔽线向后翻180°

Note : After wire stripping, cutting shielded leave over C mm(see table), and fold back the shielding braid

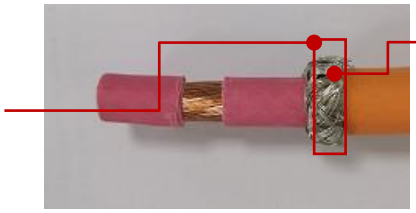


步骤3：压接铜环
Step 3: Crimping Copper ring

3-1 将 ⑨内铜环从右端移动到屏蔽线下方，屏蔽线覆盖在铜环表面

3-1 Move the ⑨ inside copper ring from the right side to the side below the shield. The shield line is covered on the surface of the copper ring

确保此处铜环前端和外被前端贴紧，
压紧后间隙最佳为0mm
Be sure to be closely in here, the best clearance is 0mm after crimping

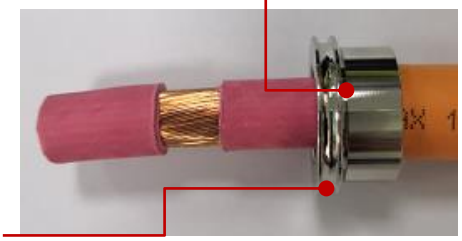


⑨ Inside Copper Ring
内铜环

3-2 取1pcs ⑧外铜环，铜环从左端安装到屏蔽线上，铜环从屏蔽线的左端开始完全覆盖,并压接在其上(规格参照表3)

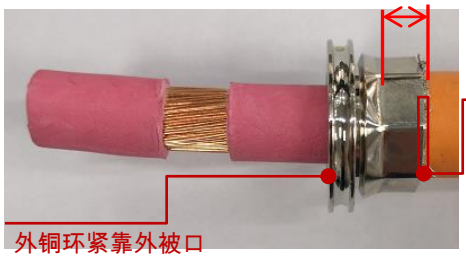
3-2 Take 1pcs ⑧ Outer Copper ring, load it to the cable end on the left, copper ring cover the shielded fully from the shielded left end, then crimp(refer to table 3)

⑧ Outer Copper Ring
外铜环



紧靠外被口 Close to the outer Jacket

5+/-1



外铜环紧靠外被口
Outer Copper Ring Close to the outer Jacket

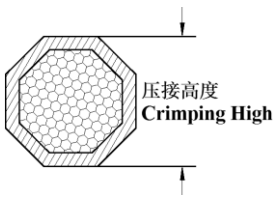
压接之前，确保此处外铜环后端和内铜环后端平齐
Make sure the ends are level with each other before crimping

表3：铜环与线缆屏蔽编织层压接规格&拉拔力要求

Table 3： Copper Ring and Cable braids Crimping spec & retention force requirement

连接器 Connector	线缆尺寸 Cable size	线缆外径 (1) Accepted cable OD (mm)	压接高度(2) Crimping height (mm)	参考抗拉拔力 (2) Retention Force
301/300系列 301/300 Series	50mm²	14.9±0.3	18.0±0.25	150N
	70mm²	17.0±0.3	20.3±0.25	150N

压接工具：油压机
Crimping tool : Hydraulic press
50mm²压模：195195150D50
50mm²Die： 195195150D50
70mm²Die: 220220150D70
70mm²压模： 220220150D70



(1) 建议使用安费诺H+S线材（H+S线材型号详见步骤1-1），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.(See section 1-1 for details of H+S cable part numbers.) 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

Customers need to reconfirm cross section on crimping area and pull out force test to confirm the quality of crimp process

步骤4：取1pcs的 ④ R4 端子组件 自左端穿上线缆，并压接在其上(规格参照表4)

Step 4: Take a ④ R4 terminal Assy, load it to the cable end on the left, then crimp(refer to table 4)

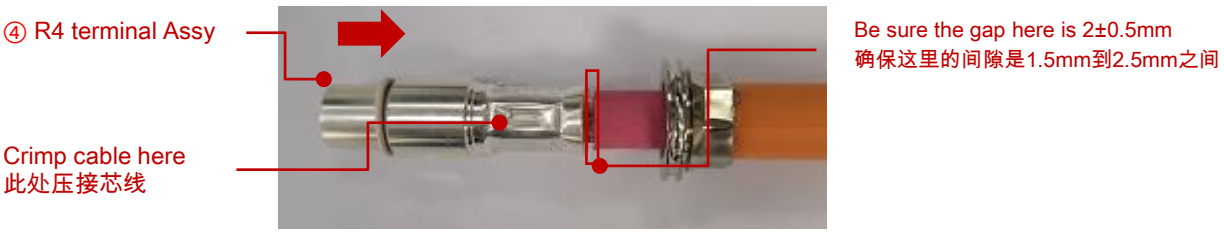


表4：端子与线缆压接压接规格&拉拔力要求

Table 4：Contact and Conductor Crimping spec & retention force requirement

连接器 Connector	线缆尺寸 Cable size	线缆外径 (1) Accepted cable OD (mm)	压接高度 (2) Crimping height (mm)	参考抗拉拔力 (2) Retention Force
301/300系列 301/300 Series	50mm²	14.9±0.3	11.34 ±0.25	2800N
	70mm²	17.0±0.3	13.18 ±0.25	3400N

压接工具：油压机

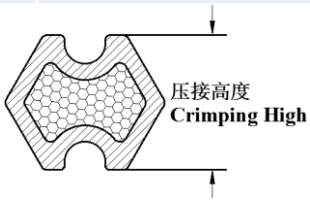
Crimping tool : Hydraulic press

50mm²压模：L113130150D50

50mm²Die： L113130150D50

70mm²压模：L132153150D70

70mm²Die: L132153150D70



(3) 横截面

(3) Cross section

(1) 建议使用安费诺H+S线材（H+S线材型号详见步骤1-1），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 (See section 1-1 for details of H+S cable part numbers) 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

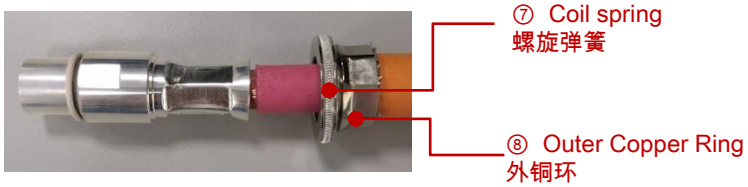
Customers need to reconfirm cross section on crimping area and pull out force test to confirm the quality of crimp process

(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 only reference tooling geometry (ex. hex and indent dimensions),customer will take liability for sourcing tools or dies

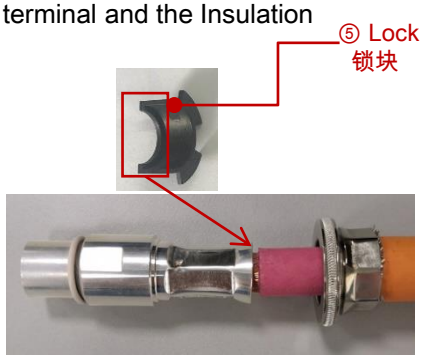
步骤5：取1pcs的⑦螺旋弹簧安装在⑧外铜环上

Step 5: Take 1pcs ⑦ Coil spring and install on ⑧ Outer Copper ring



步骤6：取2pcs的⑤锁块，将2pcs ⑤锁块前端的台阶放置入端子和内皮之间的间隙

Step 6: Take 2pcs ⑤ lock housing, Place the front step of the 2pcs ⑤ lock housing into the space between the terminal and the Insulation



步骤7：取出② ③绝缘筒，插入 ④ R4 组件中, 并使其触底

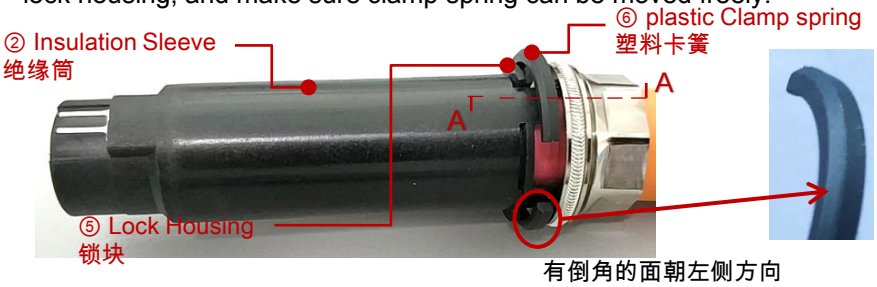
Step 7: Take a ② ③ Insulation sleeve ,plug it to ④ R4 Assy , and make it contact the bottom .

同一方向
keep in the same direction

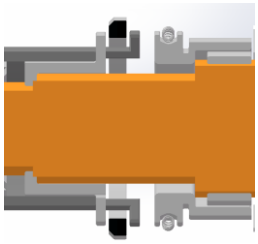
Make sure R4 end visible & reach the insulation cap edge open.
确保R4尾端可见 & 尾端位置与绝缘筒前端边缘平齐

步骤8：取出 ⑥塑料卡簧安装到② ③绝缘筒和 ⑤锁块之间的间隙，并确认卡簧活动顺畅

Step 8: Take a ⑥ plastic Clamp spring, install into the space between the ② ③ Insulation sleeve and the ⑤ lock housing, and make sure clamp spring can be moved freely.



有倒角的面朝左侧方向
The chamfer faces left



A-A

步骤9：取出①屏蔽壳组件（样品参照下面的图片）

Step 9: Take each 1pcs of ① Shield shell assembly (sample refer to picture below)

防触摸 Pin
Inner Pin

连接器标示
Key mark on connector

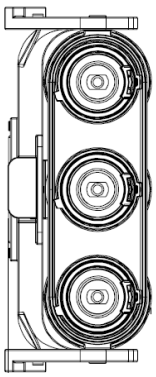
① Shield Shell Assembly
屏蔽壳组件

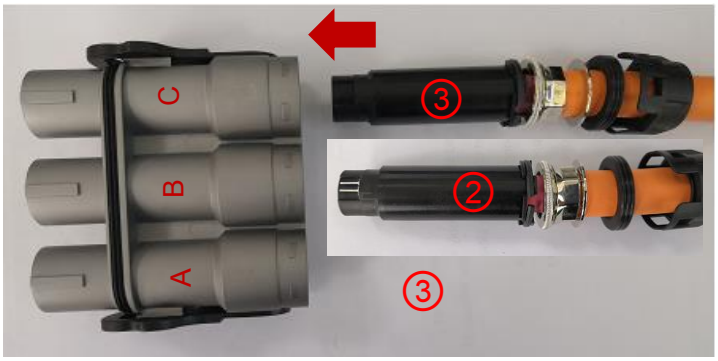
Key mark on connector 连接器标示	X	Y
Inner Pin color 防触摸Pin颜色	Orange 橙色	Black 黑色

步骤10： ② ③绝缘筒插入到①屏蔽壳组件，并使其触底,带高压互锁绝缘筒②装入位置B，不带高压互锁的绝缘筒③装入位置A 与C，注意确认HVIL位置以及卡簧是否到位。

Step 10: Plug the ② ③ Insulation sleeve into ①Shield shell assembly , and make it reach the bottom. Insulation sleeve with HVIL ② is in the position B，and Insulation sleeve without HVIL ③ is in the position A and C. take care to ensure HVIL in right place and pull back wire to ensure clamp spring is in position.

HVIL端子不能损伤变形，请注意插入方向
HVIL terminal cannot be damaged or deformed
Take care of sleeve plug direction





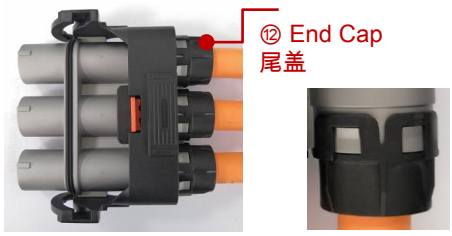
装到底后轻摇线材使卡簧到位
再后拉线材应不松脱
After installation, gently shake the wire to ensure the spring in place, pull back wire should not be pulled out.

依次将装好③与②绝缘筒的线材装入到①屏蔽壳组件
Assemble wire assy with insulation sleeve ② or ③ into ①Shield shell assembly PinC, PinB and PinA in sequence. .

步骤11：将 ⑩金属垫圈和⑪密封圈推入屏蔽壳组件内部的底部，接着将⑫尾盖扣住①屏蔽壳组件，完成此端线束的组装

Step 11: Push the ⑩ metal gasket and ⑪ sealing to the bottom of Shield shell assembly，and then make the ⑫ end cap fasten the ① shield shell assembly to finish the assembly.

操作到位的效果图
The effect of operation in place



步骤12：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 12: Need to do the Insulation Resistance and DWV test after cable assembly， It is recommended that the customer refer to the following test parameters

12-1 绝缘电阻测试

12-1 Insulation Resistance .

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

12-2 Dielectric Withstand Voltage

12-2 耐压测试

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

12-3 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。

12-3 Test note:

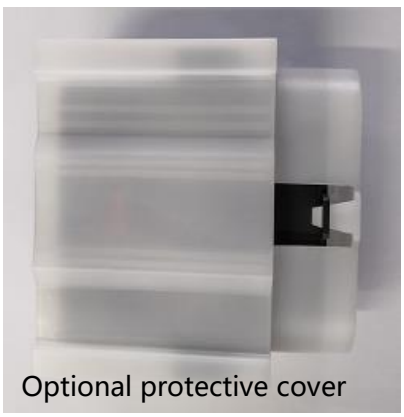
caution: Recommended electrical tests and their parameters should be reviewed against end application requirements to ensure safety and to prevent damage to other components. Parameters provided are based on the PowerLok connectors and their peak 1000VDC rating. Test parameters provided may exceed the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

步骤13：补充说明

Step 13: Other notes

13-1：在连接器搬运和高压线束搬运过程中，推荐使用插头防尘盖，和插头防护盖。 避免搬运过程中碰伤 损坏。 要求详见 安装指引 8P1129。.

13-1: In the process of connector handling and high-voltage harness handling, it is recommended to use plug dust cover and plug protective cover. Avoid bumping and damage during handling. See installation guideline 8P1129 for detail requirements.



Optional protective cover

Plug dust cover

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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