单芯2代10mm直头组装式连接器装配作业指导书

The Assembly Work Instruction For 1POS PowerLok 10mm G2 180D Plug Connector

PL18(X)-30(X)-XX-2-5

键位	Key
X 键	X
Y 键	Y
U 键	U
V 键	V
W 键	W
T 键	T

高压互锁
0：无
1：有

HVIL
0：NO
1：WITH

线缆大小

Cable Size
mm2

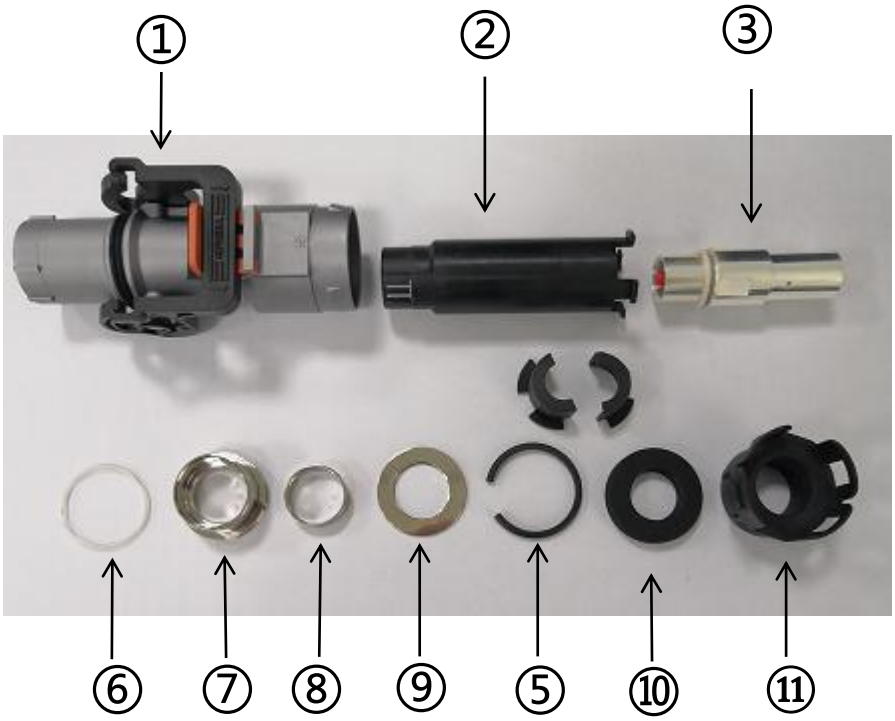
50
70

G2 Connector

线缆类型

5：HS cable

第一部分：包装清单
Part 1： Package contents



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 ×1
（300系列无高压互锁端子 insulation sleeve only in 300 series）

③ 带密封圈的R4端子组件 R4 terminal Assy with O-ring ×1

④ 锁块（两个）Lock housing（2PCS） ×1

⑤ 塑料卡簧Plastic Clamp spring ×1

⑥ 螺旋弹簧Coil spring ×1

⑦ 外铜环Outer Copper ring ×1

⑧ 内铜环Inside Copper ring ×1

⑨ 金属垫圈 Metal gasket ×1

⑩ 密封圈Sealing ×1

⑪ 尾盖End cap ×1

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

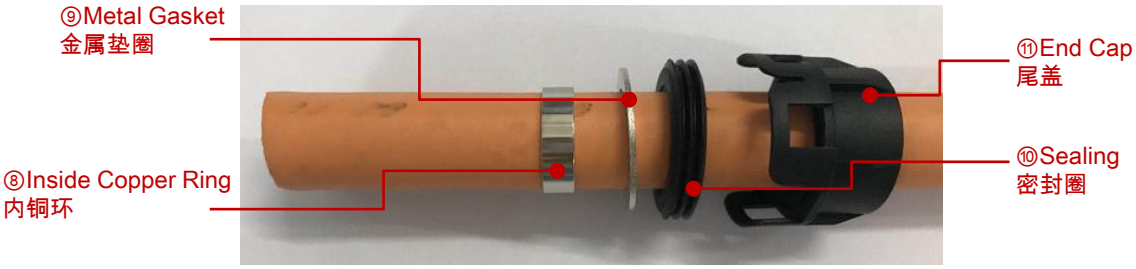
表1：线材规格

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
300/301 系列 300/301 Series	50mm²	14.9±0.3	HS 84096257
	70mm²	17.0±0.3	HS 84100298

1-2 取各1pcs的⑪尾盖, ⑩密封圈，⑨金属垫圈和⑧内铜环, 从右边依次穿过线缆

1-2 Take each 1pcs of ⑪ end cap, ⑩ Sealing, ⑨Metal gasket and ⑧ 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

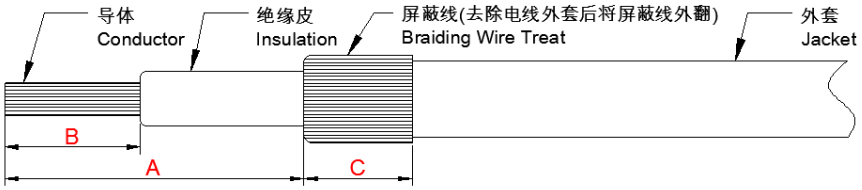
表2：剥线长度

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)
300/301系列 300/301 Series	50mm²	38±0.5	19 +1/-0.5	7±1
	70mm²	38±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 Cmm(see table 2) and fold back the shielding braid

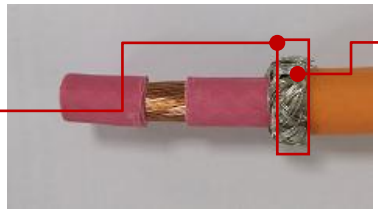


步骤3：压接铜环
Step 3: Crimping Copper Ring

3-1 将 ⑧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 ⑧ 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

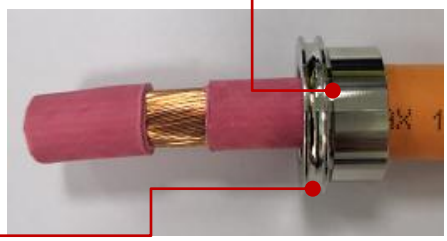


⑧ Inside Copper Ring
内铜环

3-2 取1pcs ⑦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)

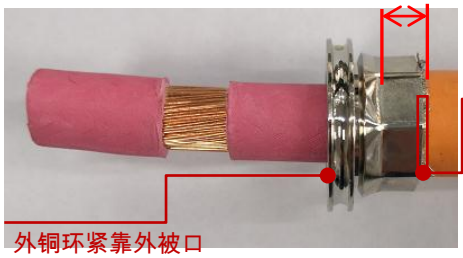
3-2 Take 1pcs ⑦ Outer Copper ring, load it to the cable end on the left, copper ring cover the shielded fully from the shielded left end, then crimp(refer to table 3)

⑦ 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

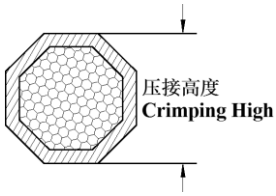
压接之前，确保此处外铜环后端和内铜环后端平齐
Make sure the ends are level with each other before crimping

表3：铜环与线缆屏蔽编织层压接规格&拉拔力要求

Table3：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
300/301 系列 300/301 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 ③ R4 holder 自左端穿上线缆，并压接在其上(规格参照表4)

Step 4: Take a ③ R4 holder, load it to the cable end on the left, then crimp(refer to table 4)

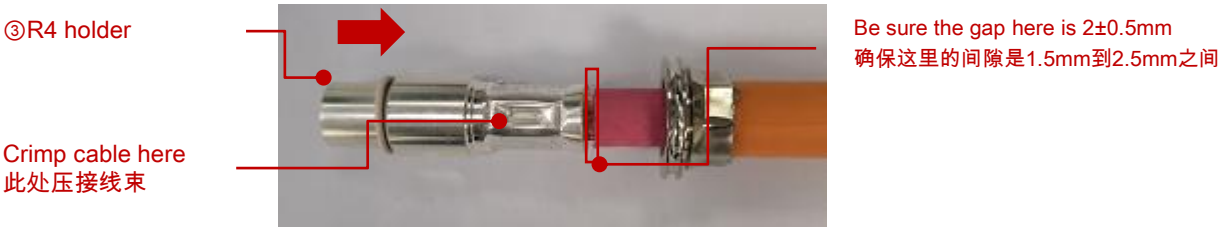


表4：端子与线缆压接压接规格&拉拔力要求

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
300/301 系列 300/301 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

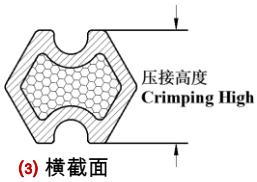
Crimping tool : Hydraulic press

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

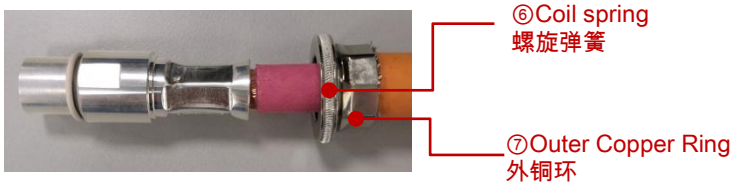
Customers need to reconfirm cross section on crimping area and pull out force test to confirm the quality of crimp process

(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

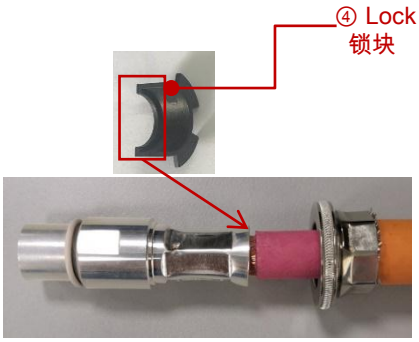
步骤5：取1pcs的⑥螺旋弹簧安装在⑦外铜环上

Step 5: Take 1pcs ⑥Coil spring is installed on ⑦ Outer Copper Ring



步骤6：取2pcs的④锁块，将2pcs④锁块前端的台阶放置入端子和内皮之间的间隙

Step 6: Take 2pcs ④ lock housing, Place the front step of the 2pcs ④ lock housing into the space between the terminal and the Insulation



步骤7：取出②绝缘筒，按图示方向插入③ R4 holder中，并使其触底

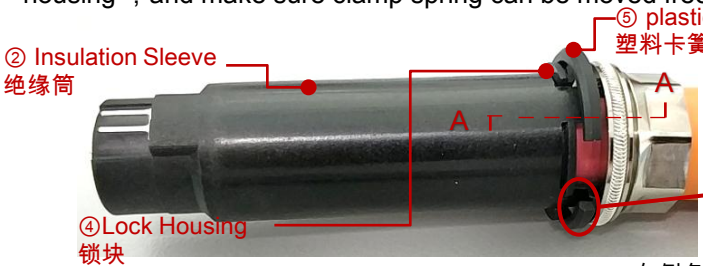
Step 7: Take a ② Insulation sleeve ,plug it to ③ R4 holder in direction as show in photo , and make it contact the bottom

同一方向
keep in the same direction

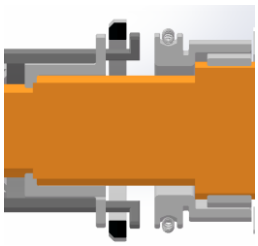
Make sure R4 end visible & reach the insulation cap edge open.
确保R4尾端可见 & 尾端位置与绝缘筒前端边缘平齐

步骤8：取出⑤塑料卡簧安装到②绝缘筒和④锁块之间的间隙，并确认卡簧活动顺畅

Step 8: Take a ⑤ plastic Clamp spring, install into the space between the ② Insulation sleeve and the ④ lock housing ，and make sure clamp spring can be moved freely.



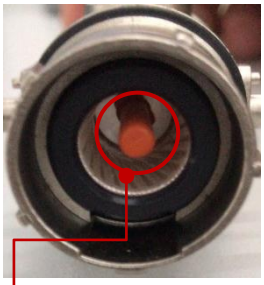
有倒角的面朝左侧方向
The chamfer faces left



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)



① Shield Shell Assembly
屏蔽壳组件

Key mark on connector 连接器标示	X	Y	U	V	W	T
Inner Pin color 防触摸Pin颜色	Orange 橙色	Black 黑色	Yellow 黄色	Green 绿色	Red 红色	Blue 蓝色

步骤10： ②绝缘筒按图示方向插入到①屏蔽壳组件，并使其触底，注意确认HVIL位置以及卡簧是否到位。

Step 10: Plug the ② Insulation sleeve into ①Shield shell assembly as shown in photo , and make it reach the bottom, take care to ensure HVIL in right place and pull back wire to ensure clamp spring in position .

① Shield Shell Assembly
屏蔽壳组件

② Insulation Sleeve
绝缘筒

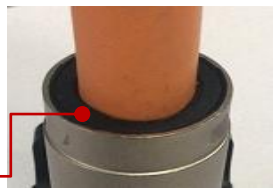
端子不能损伤变形
HVIL terminal cannot be damaged or deformed

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.

步骤11:将⑨金属垫圈和⑩密封圈推入屏蔽壳组件内部的底部，接着将⑪尾盖扣住屏蔽壳组件，完成此端线束的组装

Step 11: push the ⑨ metal gasket and ⑩ sealing to the bottom of Shield shell assembly. The ⑪ end cap is then fastened to the Shield shell assembly，one end assembly done

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



⑩Sealing
密封圈

⑪End Cap
尾盖

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/time 测试电压/时间	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 VDC	5S	> 500 MΩ
Cable(power) 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

12-2 Dielectric Withstand Voltage

12-2 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(power) to shell 电缆芯线到壳体	5000 VDC	10S	< 5mA
Cable(power) 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

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.

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