

Manual P/N: 8P1320
Rev.01 20250625

PL28(X)-30(1)-50-MV 组装规范

PL28(X)-30(1)-50-MV Assembly Manual



PL28(X)-30(X)-50-MV

键位		高压互锁		线缆大小	线缆类型
Key				Cable Size	
X 键	X	0: 无		mm2	
Y 键	Y	1: 有			
U 键	U				
V 键	V	HVIL			
W 键	W	0: NO			
T 键	T	1: WITH		50	LV 216

安装步骤 Assembly Instruction

- 步骤1：取出连接器，如图示拆开零件
Step1：Take out the connector and take it apart as the picture shown below



- ① 接头主体 Connector body ×1
- ② 绝缘套 Insulation Sleeve ×1
- ③ 金属套 Metal Sleeve ×1
- ④ 金属环 Metal Gasket ×1
- ⑤ 橡胶密封圈 Rubber Seal×1
- ⑥ 金属外壳 Back Shell ×1

- 步骤2：选取合适线缆(参考手册最后的附录)，按照图示尺寸剥外皮
Step2：Select the right cable(refer to the appendix), prepare the cable according to the picture.

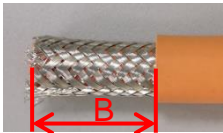


表1：剥皮尺寸
Table 1: Strip length

线材尺寸 Cable Size	A (mm)	B (mm)
50mm²	18±1	27 ±1

- 步骤2：将剥好外被的线材编织前端用美纹纸包好，再依次穿入图示配件，注意方向正确。
Step2：Wrap the front end of the braiding with masking paper, and then load the components in turn as the picture shown below, paying attention to the correct direction.



- 步骤3：将编织均匀打散反折固定，再按照图示尺寸剥芯线，
Step3：Scatter the braiding evenly, fold and fix it, Stripping the insulation according to the picture.



- 步骤4：如图示穿入金属套与接头主体，
Step4：Insert the metal sleeve and the connector body as shown.



步骤5：压接端子(规格参照手册最后的附录)，然后将绝缘筒安装在电线上

Step5：Crimp the terminal(please refer to the appendix for details at the end of this manual), then buckle the twin insulation sleeves together on the terminal crimped as the picture below



端子压接高宽度尺寸，“W”为压接宽度，“H”为压接高度（相应的压接高宽度尺寸及拉力标准参考手册后的附录）

Terminal crimping quality depends on 2 parameters: "W" crimping width and "H" crimping height.(please refer to the appendix at the end of this manual for details)

(1) 建议使用附录中的线材，如果要使用其它的线材，请联系当地销售，让他们提供延伸的产品

Cables written in the appendix are highly recommended for crimping, please contact our local sales for help if you want to use other cables out of this table

(2) 客户需要重新确认压接区域横截面和拉力测试，这两项达到压接的质量标准

A good crimping process is determined by 3 factors: W、H and tensile test result, please confirm these 3 targets specified are met after crimping

(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 shape is only for reference(other possibilities: hexagonal section), all crimping tools needed are supposed to be prepared by customers

步骤6：屏蔽处理

6-1 自右向左推动金属套盖住绝缘套

6-2 外翻屏蔽线，将其覆盖到金属套上，剪切屏蔽线，保留长度约20mm

6-3 剪切尺寸约120mm*25mm的铜箔，包裹住屏蔽线，确保尾端被包紧

Step5：Shielding braid preparation

6-1 Push the metal sleeve from right to left and cover the insulating sleeve,

6-2 flip over the shielding braid and cut it into 20mm's length, and put it on the surface of copper sleeve

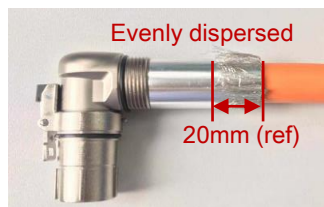
6-3 wrap the shielding braid with a piece of copper foil of 120mm*25mm, make sure the braid is fully covered by the copper foil tightly.

备注：铜箔要刮紧，尾端应反折在金属套尾部。

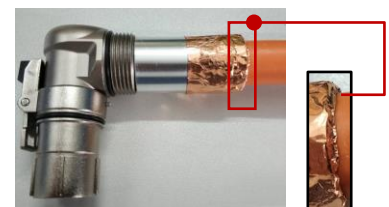
Note：The copper foil should be scraped tightly, and the end should be folded in the end of the metal sleeve.



6-1



6-2



6-3

步骤7：组装金属外壳

Step7：Assemble the Back shell

7-1 前移金属外壳，使其与金属环和密封圈紧密接触

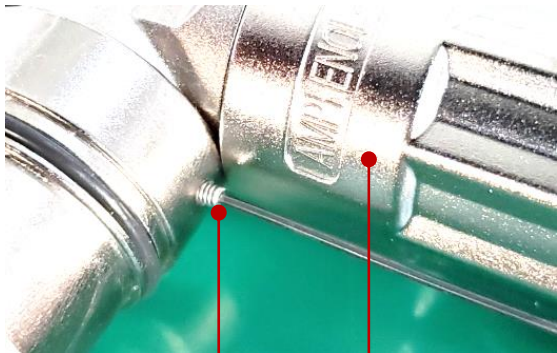
7-1 Bring the metal gaskets and the rubber seal nearer and keep them in touch with the metal sleeve



7-2 锁紧金属外壳完成组装，铁壳锁紧力矩为10~12 N.m
7-2 Screw up the shell with a torque of 10-12N.m to finish the assembly

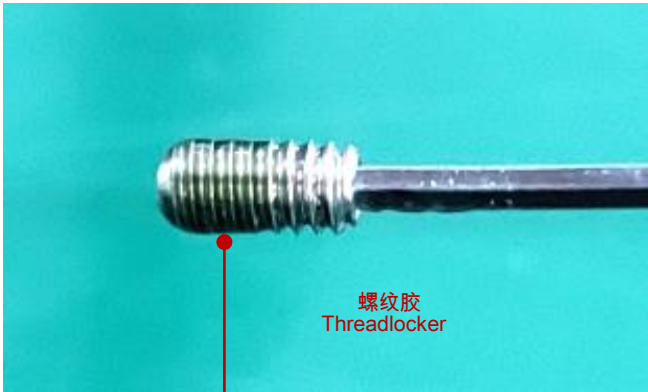


步骤8：使用0.9mm内六角扳手拧下顶丝，涂抹螺纹胶；重新拧紧顶丝，直至外壳固定
Step8：Use 0.9mm hexagon wrench to unscrew the fastening screw and apply the threadlocker; Retighten the fastening screw until the housing is fixed.

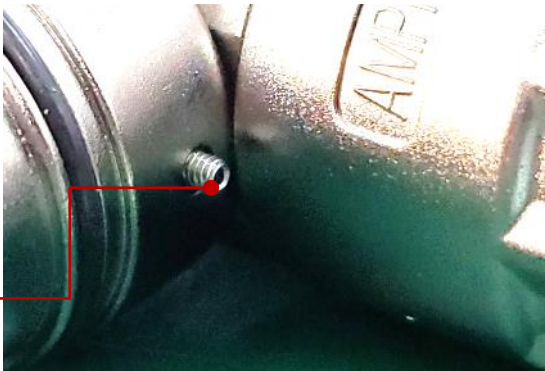


顶丝
Fastening Screw

⑥金属外壳
Back Shell



螺纹胶
Threadlocker



顶丝
Fastening Screw

(i) 建议使用低强度螺纹胶 乐泰222
It is recommended to use low strength threadlocker LOCTITE 222

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
电缆芯线到壳体 Cable(power) to shell	1000 VDC / 5S	> 500 MΩ
电缆芯线到高压互锁 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
HVIL to shell 高压互锁到壳体	500VDC / 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.

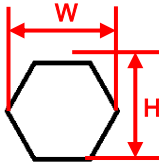
附录 APPENDIX

线缆压接的参考规范
Reference specification for cable crimping

线缆类型 Cable Type	电线尺寸 Cable Size	电线外径 (mm) Wire OD	压接高度 H(mm) Crimping height	压接宽度 W(mm) Crimping Width	参考保持力 Retention Force	刀模编号 Crimping Tool No.
LV 216	50mm²	15.5+/-0.3	11.5±0.3	12.6±0.3	2800N	BZW-6C



压接高度仅供参考，会因为机器不同而产生差异。
The crimp height is for reference only and will vary depending on the machine.



横截面
Cross section
BZW-6C

版本记录 Revision history

序号 Number	变更内容 Content of change	日期 Date
01	新出 New issue	20250625



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