

CONNECTOR ASSEMBLY INSTRUCTIONS

ePower-Lite | Mini | Mini X

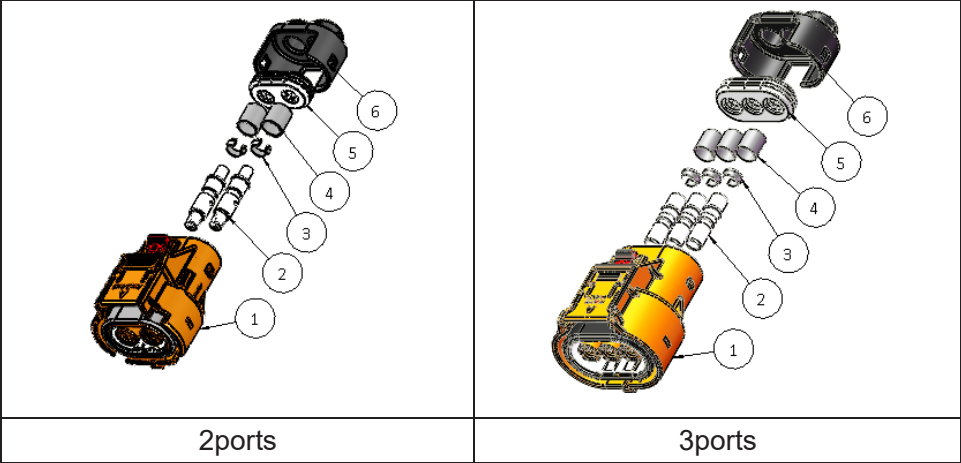


HISTORY OF CHANGES

Rev	Change	Originator	Date
H	Update the file template and the crimp tool	Lymuda Xiao	2023/10/11
I	Updated the shielding processing method	Lymuda Xiao	2024/06/17

2ports & 3ports 3.6mm ePower-lite plug

Part 1: Package contents and minimum pull-out force.



1.Plug Housing Assembly (1x)	4.Heat-shrink Tube (see picture)
2.Socket Contact (see picture)	5.Grommet (1x)
3.Collar (see picture)	6.Cable cover (1x)

Minimum pull-out force:

Cable size	Min. pull-out force(N)
2.5mm ²	210
4.0mm ²	265
6.0mm ²	320
10.0mm ²	450



Attention: For cable specification, see 2D customer drawing. if use different cable specification please contact Amphenol to confirm.

Part 2: Cable assembly for plug

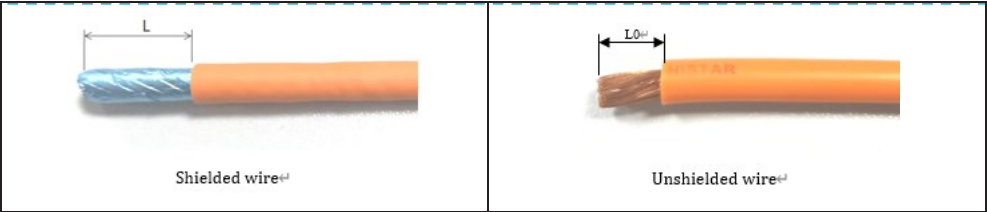
Step 1: Pre-assemble.

- Go through the Cable cover & Grommet.

Step 2: Wire cutting stripping

- Cut the cable outer jacket:

Dim. item	2ports	3ports
L	15.0±0.5mm	16.0±0.5mm
L0	8.0±0.5mm	8.0±0.5mm



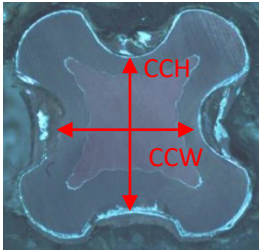
- Strip out Al-malar, twist the braid together, and strip out insulation as below dimension. **Please skip this step for unshielded wire.**



Step 3: Crimp contact and install heat-shrink tube, collar.

- Crimp the contact.

Key process parameters



DMC P/N:
WA27-300BT-EP-ENV

Crimp data	CCH (conductor crimp height)	CCW (conductor crimp width)
Crimp type	Four-indent crimping	
2.5 mm ²	2.1±0.05mm	2.1±0.05mm
4.0 mm ²	2.3±0.05mm	2.3±0.05mm
6.0 mm ²	2.6±0.08mm	2.6±0.08mm
10.0 mm ²	3.2±0.1mm	3.2±0.1mm



Attention: Different crimp type and dimension can be used after test(USCAR 21) with the test result is acceptable .

- Install heat-shrink tube to the area where crimping contact and wire.



Recommend hairdryer as picture and heat-shrink tube spec:

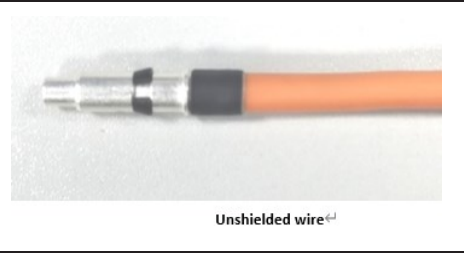
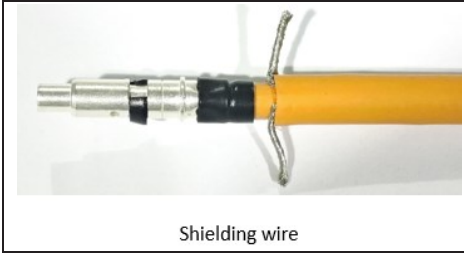
- With hot melt adhesive.
- Excellent sealing and insulation properties.
- Shrink ratio: 4:1.
- Operating temperature: -55~125℃ .



Attention: Don't let the shrink tubing cover the braid wire, Please skip the attention for unshielded wire .



- Install collar. Bevel of collar facing to the left.

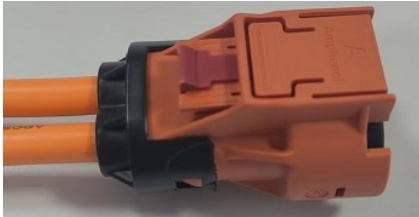
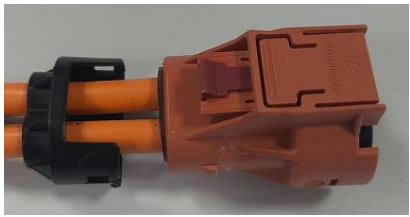
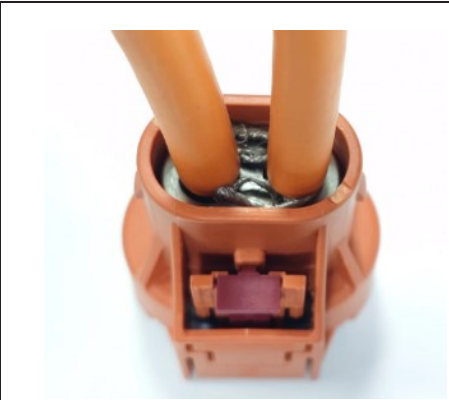


Step 4: Plug assemble.

- Inert the cable after crimp into the housing. The collar snapped into the shoulder of the hole.
- The braid wire should be contacted with the shielding surface. Please skip the step for unshielded wire.
- Install the grommet and the cable cover.



Attention: The shielding braid adjoin the inside of plastic housing or come out of plastic housing is not allowed (may cause "leakage"). Please skip the attention for unshielded wire.



Step 5: Test for plug.

It is better to have some test for plug after cable assembly.

Reference test conditions (this data is just for reference)

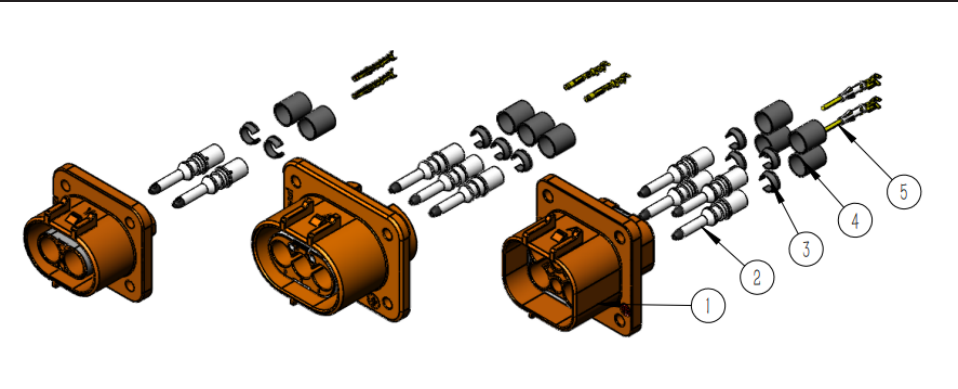
- ✧ IR: 1000V DC, 60S, 500MΩ min.
- ✧ DWV: 3000V AC (50~60Hz), 60S, leakage current≤5mA.

HISTORY OF CHANGES

Rev	Change	Originator	Date
E	Update the file template and the crimp tool	Lymuda Xiao	2023/12/15
F	Update the HVIL and the crimp tool	Lymuda Xiao	2024/6/11

2, 3 & 4ports 3.6mm ePower-lite receptacle

Part 1: Package contents and minimum pull-out force.

	
2,3,4ports	
1.Rec. Housing Assembly (1x)	4.Heat-shrink Tube (see picture)
2.Pin Contact (see picture)	5.HVIL Contact (2x)
3.Collar (see picture)	

Minimum pull-out force:

Item	Cable size	Min. pull-out force(N)
Pin Contact	2.5mm ²	210
	4.0mm ²	270
	6.0mm ²	320
	10.0mm ²	500
2 & 3ports HVIL Contact	22AWG	40
	20AWG	60
4ports HVIL Contact	18AWG	90
	16AWG	135



Attention: For cable specification, see 2D customer drawing. if use different cable specification please contact Amphenol to confirm.

Part 2: Cable assembly for Receptacle

Step 1: Wire cutting stripping.

- Cut the cable outer jacket.

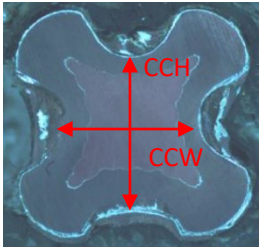


Step 2: Crimp contact and install heat-shrink tube, collar.

- Crimp the contact.



Key process parameters



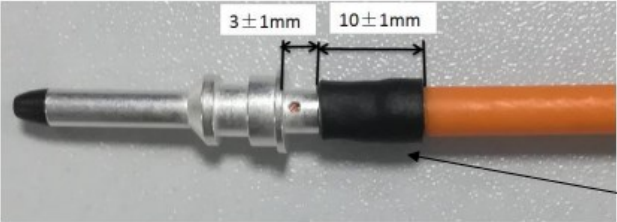
DMC P/N:
WA27-300BT-EP-ENV

Crimp data	CCH (conductor crimp height)	CCW (conductor crimp width)
Crimp type	Four-indent crimping	
2.5 mm ²	2.1 ± 0.05mm	2.1 ± 0.05mm
4.0 mm ²	2.3 ± 0.05mm	2.3 ± 0.05mm
6.0 mm ²	2.6 ± 0.08mm	2.6 ± 0.08mm
10.0 mm ²	3.2 ± 0.1mm	3.2 ± 0.1mm



Attention: Different crimp type and dimension can be used after test(USCAR 21) with the test result is acceptable .

- Install heat-shrink tube to the area where crimping contact and wire.



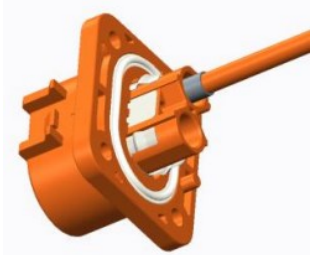
Amphenol P/N: CH54F-003-09A-1
安费诺料号: CH54F-003-09A-1

- Recommend hairdryer as picture and heat-shrink tube spec:

- With hot melt adhesive.
- Excellent sealing and insulation properties.
- Shrink ratio: 4:1.
- Operating temperature: -55~125℃ .
- Install collar. Bevel of collar facing to the left.



Step 3: Insert the contact with cable assembled into the plug shell, the collar snapped into the shoulder of the hole, as show below 2ports.

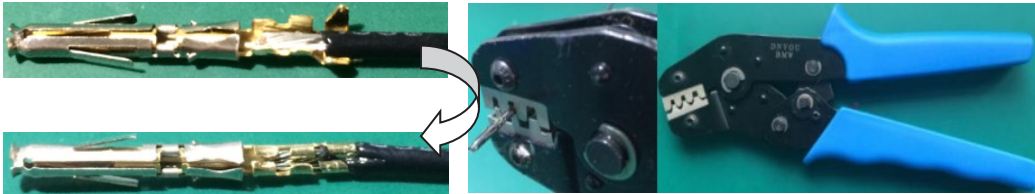


4 ± 0.5mm



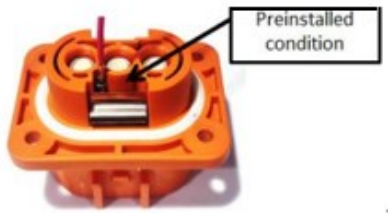
Step 4: Assemble steps for HVIL.

- wire cutting and stripping the jacket.
- Insert conductor into hole of HVIL contact and crimping use right crimping tool. Recommended Crimping tool(FX1-0002-001) as below:

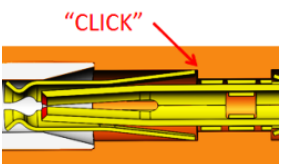


Step 5: Receptacle connectors assemble.

- Insert the HVIL contact with cable assembly into the plug shell assembly to the preinstalled condition.



- Use flat pliers to hold the position shown on the left, insert gently down. And then hold the cable as shown on the right, insert gently down again, repeat several times. When hear "click" or have a feeling, the assembly is in place. Verify that the terminal is inserted into the correct position by pulling back with 5~10N force.



Step 6: Test for receptacle.

It is better to have some test for receptacle after cable assembly.

Reference test conditions (this data is just for reference)

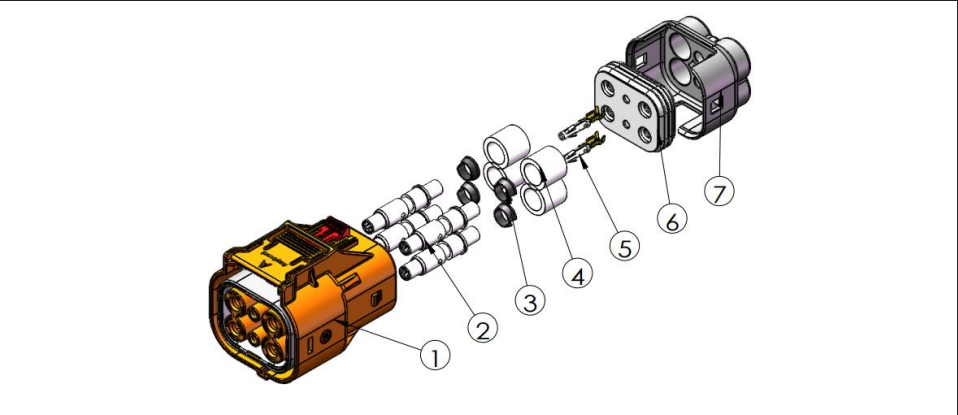
- ✧ IR: 1000V DC, 60S, 500MΩ min.
- ✧ DWV: 3000V AC (50~60Hz), 60S, leakage current ≤ 5mA.

HISTORY OF CHANGES

Rev	Change	Originator	Date
C	Update the file template and the crimp tool	Lymuda Xiao	2023/12/15
D	Update the picture	Lymuda Xiao	2025/7/24

4ports 3.6mm ePower-lite plug

Part 1: Package contents and minimum pull-out force.



4ports	
1.Plug Housing Assembly (1x)	5.HVIL Contact (2x)
2.Socket Contact (4x)	6.Grommet (1x)
3.Collar (4x)	7.Cable cover (1x)
4. Heat-shrink Tube (4x)	

Minimum pull-out force:

Item	Cable size	Min. pull-out force(N)
Socket Contact	2.5mm ²	210
	4.0mm ²	270
	6.0mm ²	320
	10.0mm ²	500
HVIL Contact	18AWG	90
	16AWG	135



Attention: For cable specification, see 2D customer drawing. if use different cable specification please contact Amphenol to confirm.

Part 2: Cable assembly for plug

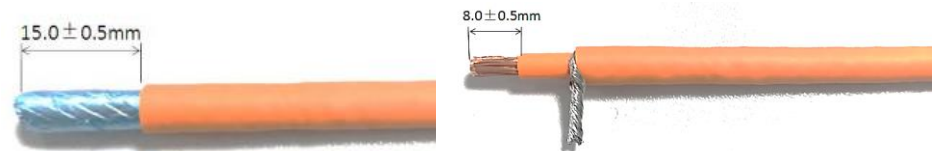
Step 1: Pre-assemble.

- Go through the Cable cover & Grommet.



Step 2: Wire cutting stripping.

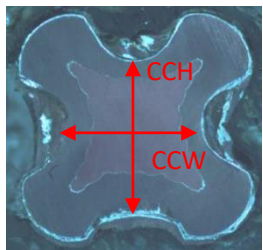
- Cut the cable outer jacket:
- Strip out Al-malar, twist the braid together, and strip out insulation as below dimension.



Step 3: Crimp contact and install heat-shrink tube, collar.

- Crimp the contact.

Key process parameters



DMC P/N:
WA27-300BT-EP-ENV

Crimp data	CCH (conductor crimp height)	CCW (conductor crimp width)
Crimp type	Four-indent crimping	
2.5 mm ²	2.1±0.05mm	2.1±0.05mm
4.0 mm ²	2.3±0.05mm	2.3±0.05mm
6.0 mm ²	2.6±0.08mm	2.6±0.08mm
10.0 mm ²	3.2±0.1mm	3.2±0.1mm



Attention: Different crimp type and dimension can be used after test(USCAR 21) with the test result is acceptable .

- Install heat-shrink tube to the area where crimping contact and wire.
- Recommend hairdryer as picture and heat-shrink tube spec:
 - With hot melt adhesive.
 - Excellent sealing and insulation properties.
 - Shrink ratio: 4:1.
 - Operating temperature: -55~125℃ .



Attention: Don't let the shrink tubing cover the braid wire.



Shielded wire



- Install collar. Bevel of collar facing to the left.



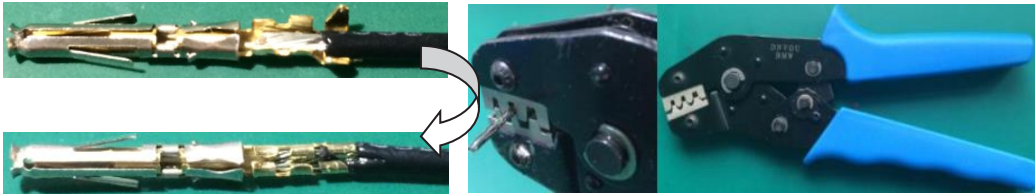
Shielded wire

Step 4: Assemble steps for HVIL.

- HVIL wire through the hole of grommet and cable cover.
- wire cutting and stripping the jacket.



- Insert conductor into hole of socket and crimping use right crimping tool. Recommended Crimping tool (FX1-0002-001) as below:

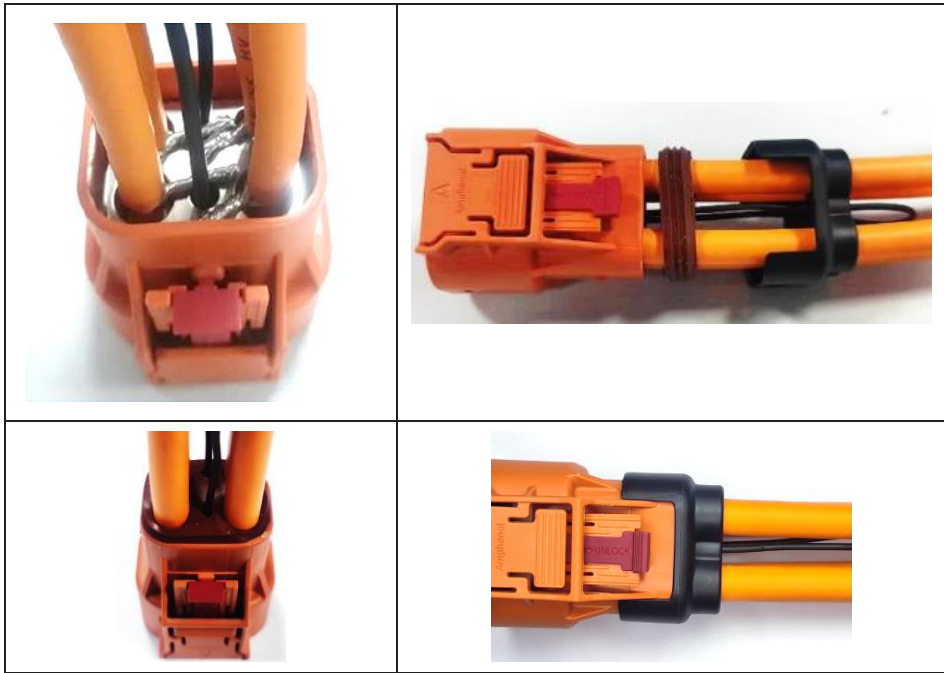


Step 5: Plug connector assemble.

- Inert the socket and HVIL contact cable assembled after crimp into the housing. The collar snapped into the shoulder of the hole.
- The braid wire should be contacted with the shielding surface.
- Install the grommet and the cable cover.



Attention: The shielding braid adjoin the inside of plastic housing or come out of plastic housing is not allowed (may cause "leakage").



Step 5: Test for plug.

It is better to have some test for plug after cable assembly.

Reference test conditions (this data is just for reference)

- ✧ IR: 1000V DC, 60S, 500MΩ min.
- ✧ DWV: 3000V AC (50~60Hz), 60S, leakage current≤5mA.

ePower-lite 5.7mm两芯插头连接器

装配作业指导书

The Cable Assembly Work Instruction
For ePower-lite 5.7mm 2 ports Connector

Part Number	Picture
C10-738986-2XS1 C10-738986-2XS2	
C10-738985-2XP1 C10-738985-2XP2	
C10-738985-2XP3	

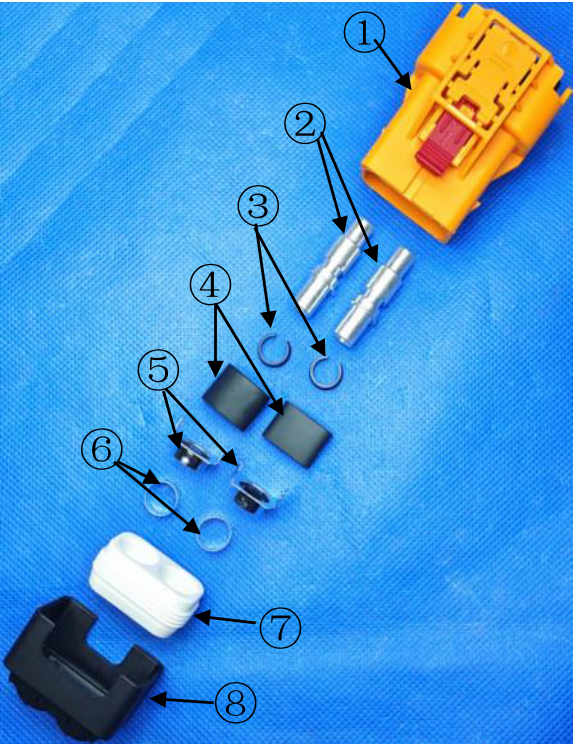
Revision	Description	Issue Date
A	Initial release	2016/3/10
B	Change the assembly method of shielding	2019/5/6
C	Update picture detail	2020/5/13
D	Added busbar type receptacle assembly	2023/3/9
E	Added crimping parameters for HVIL terminals	2023/7/7
F	Cancel the control of the crimping dimension “s”	2025/4/24
G	Update plug connector picture	2026/7/22

第一部分：插头组装

Part 1: Plug assembly

1. 包装清单 Package contents:

- ①：插头壳体组件 Housing shell assembly 1PCS
②：插头端子组件 Contact assembly 2PCS
③：卡扣 Collar 2PCS
④：热缩套管 Heat shrink tubing 2PCS
⑤：尾部屏蔽件 Rear shield cage 2PCS
⑥：尾部屏蔽环 Rear shield ring 2PCS
⑦：尾部密封件 Rear grommet 1PCS
⑧：尾部连接盖 Rear cover 1PCS



2. 推荐屏蔽线缆规格Recommended shielded wire specification

线缆规格 Wire size	线缆绝缘外径 Insulation Diameter(mm)	屏蔽丝径 Shield wire Diameter(mm)	线缆护套外径 Cable Jacket Diameter(mm)	推荐压接后线缆 最小拔出力 Recommended Min. Cable Pullout force(N)
16mm ²	8.1±0.2mm	0.12	11.2±0.3mm	1500
25mm ²	10.2±0.2mm	0.12	13.9±0.3mm	1900

3. 组装步骤 Assemble steps:

步骤1:去除屏蔽线护套

Step 1: Shielded wire stripping the jacket



Item 类型	裁剪长度 Cutting length
L1	21±0.5mm

步骤2: 装入尾部屏蔽环(零件 6)。

Step 2: Assembly the rear shield ring(Part 6).



步骤3:裁剪屏蔽丝。

Step 3: Cutting Shield wire.



Item 类型	裁剪长度 Cutting length
L2	9±0.5mm

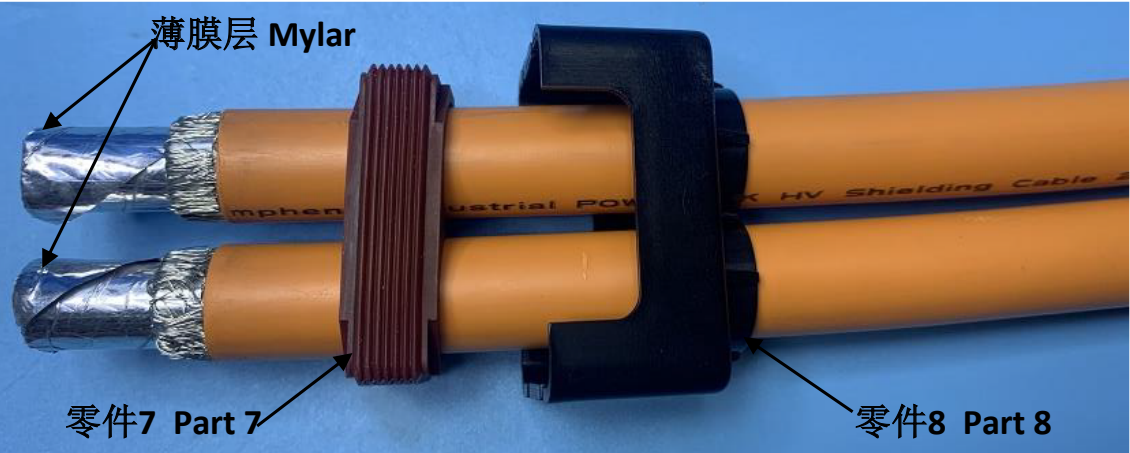
步骤4: 屏蔽线后翻并覆盖在屏蔽环表面。

Step 4: Fold back shielding wires onto the rear shield ring.



步骤5: 依次装入尾部连接盖（零件8）和尾部密封件（零件7）。

Step 5: Install the Rear Cover（Part 8）and the Rear Grommet(Part 7) in sequence.



步骤6: 去除薄膜层，去除绝缘。

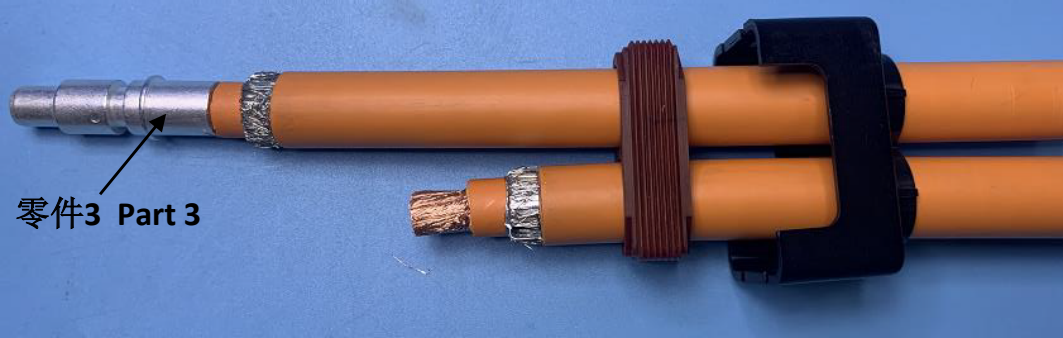
Step 6: Remove film layer, Stripping insulation.



Item 类型	裁剪长度 Cutting length
L3	10.5±0.5mm

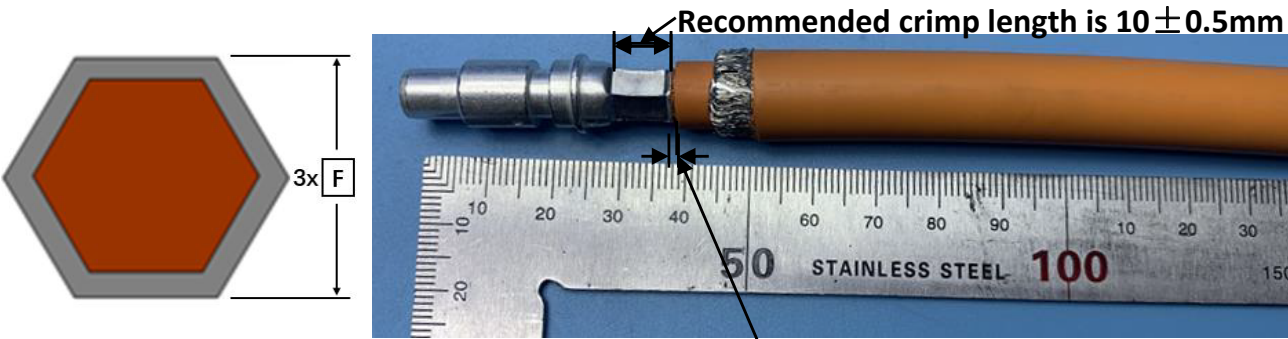
步骤7: 将其中一条线拉出装入插头端子组件（零件3）。

Step 7: Pull one of wire to make a misplacement with another wire, then assemble contact assembly (part 3).



步骤8: 压接插头端子组件（零件3）

Step 8: Crimp Plug contact assembly(Part 3). 推荐压接长度10±0.5mm



线材尺寸 Cable size	推荐压接平面距离F Recommended crimp dist across Flats F	推荐压接后端子 最小拔出力 Recommended Min. Pullout force
16 mm2	6.5±0.1mm	1500N
25 mm2	7.5±0.1mm	1900N

Notes: The recommended crimp sizes are only for reference. The customer should adjust them according to cable specification and crimp tool and test results including temperature rise and metallographic analysis and pullout force.

备注：推荐的压接尺寸仅供参考，客人应根据所使用的线缆规格，压接工具，压接验证测试结果包含温升测试和金相分析以及拉力测试等调整压接尺寸

Recommended crimping tool: Manual hydraulic crimping

推荐压接工具：手动液压压接钳

Die: 25mm2 die for 25mm2 cable

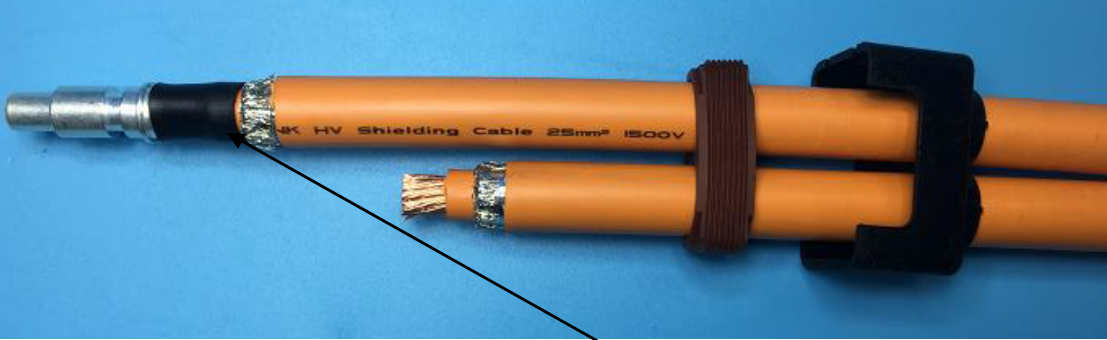
Die: 16mm2 die for 16mm2 cable



压模：应用25 mm2线材时使用25 mm2压模
压模：应用16 mm2线材时使用16 mm2压模

步骤9: 将热缩管装在端子与线压接的地方

Step 9: Install heat shrink tubing to the area where crimping contact and wire



Amphenol P/N: CH53X-005-09A（Part 4）
安费诺料号：CH53X-005-09A（零件4）

工具 Tooling:
如图所示热风枪Heat gun as picture show.
热缩管规格推荐 Recommend Heat Shrink Tubing spec.:

- ◆ 不带有热熔胶
Without hot melt adhesive
- ◆ 良好的密封性和绝缘性能
Excellent sealing and insulation properties
- ◆ 收缩比：2:1
Shrink ratio: 2:1
- ◆ 工作温度：-55~125℃
Operating temperature: -55~125℃

注意 Notes:
不能让热缩管覆盖住屏蔽线
Don't let the shrink tubing cover the braid wire



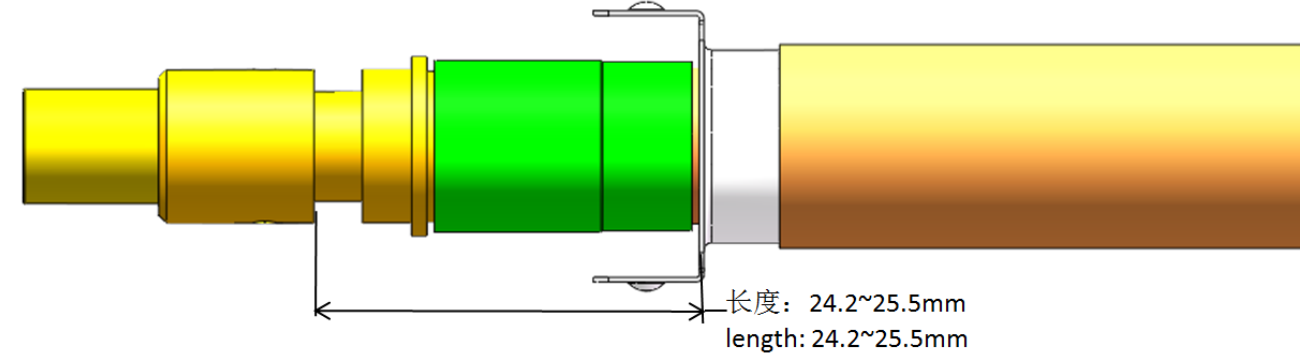
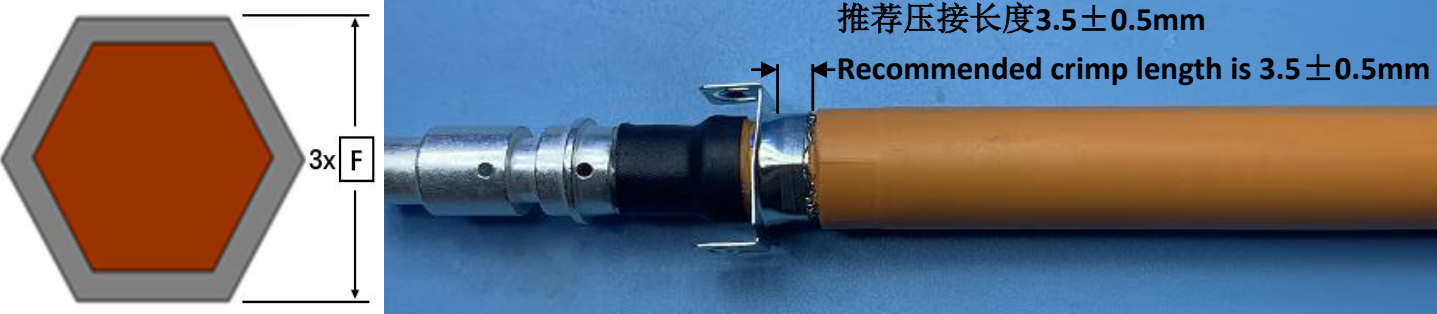
步骤10: 重复步骤7和8与9组装另外一个端子组件

Step 10: Repeat steps 7 and 8 and 9 to assemble another contact assembly.



步骤11: 将其中一条线拉出装入尾部屏蔽件并压接（零件5）

Step11: Pull one of the wires out and load Crimp the Rear Shield (Part 5).



线材尺寸 Cable size	推荐压接平面距离F Recommended crimp dist across Flats F	推荐压接后屏蔽 最小拔出力 Recommended Min. Pull out force
16 mm2	11.5 ± 0.1mm	150N
25 mm2	11.5 ± 0.1mm	150N

Notes: The recommended crimp sizes are only for reference. The customer should adjust them according to cable specification and crimp tool and test results including contact resistance and pull out force.

推荐的压接尺寸仅供参考，客人应根据所使用的线缆规格，压接工具，压接验证测试结果包含阻抗测试和拉力测试等调整压接尺寸

压接工具：油压机

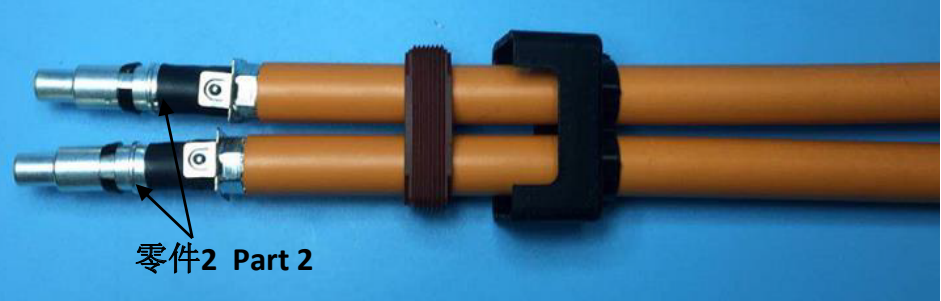
Crimping tool: Hydraulic press

步骤12: 重复步骤11压接另外一个屏蔽件

Step 12: Repeat steps 11 to assemble another Rear Shield.

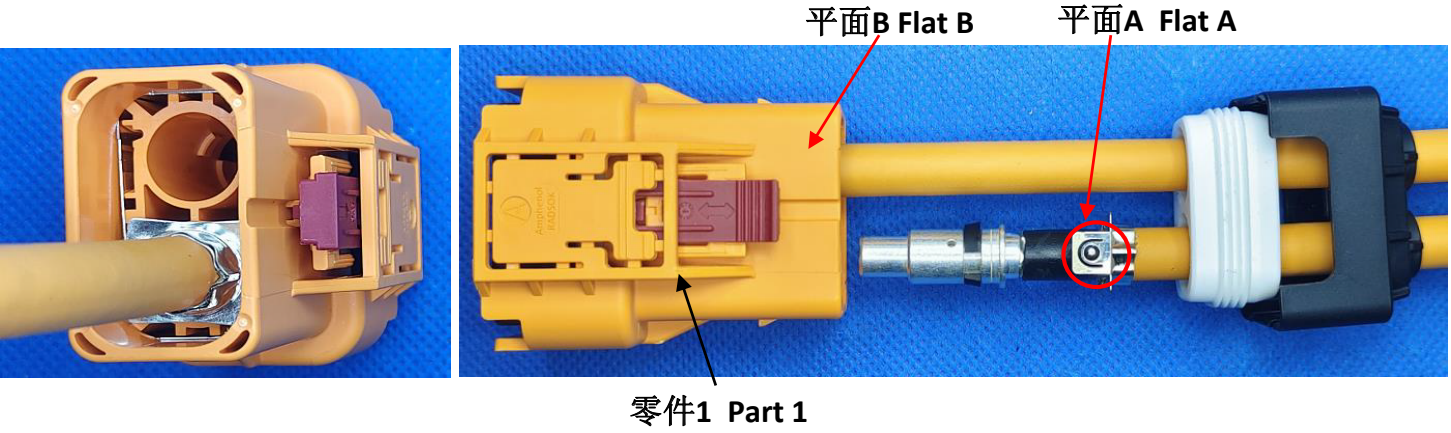
步骤13: 装入卡扣(零件2),并拉齐两条线.

Step13: Assembling Collar (Part 2) , And Straighten two cable



步骤14: 将压线后的端子先后插入插头组件（零件1）中，注意屏蔽件平面A与外壳平面B需平行

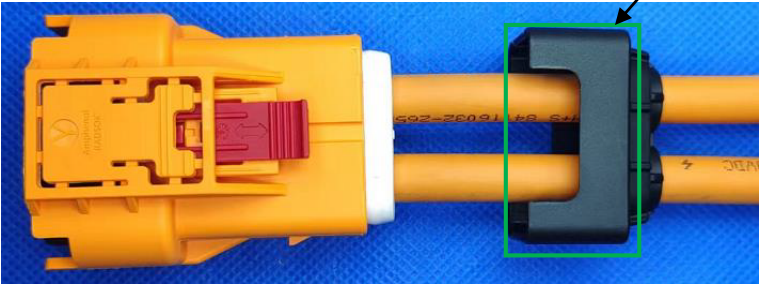
Step 14: Insert the crimped terminal into the Plug shell assembly (Part 1) one by one. Note that the plane A of the shield and the plane B of the shell are parallel.



步骤15: 装尾部密封件（零件7）。

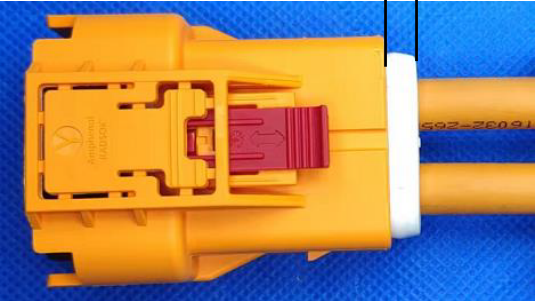
Step 15: Install the Rear Grommet (Part 7).

注意尾部连接盖的朝向，与连接器外壳需对齐。
Note the orientation of the Rear Cover, which is aligned with the Plug shell



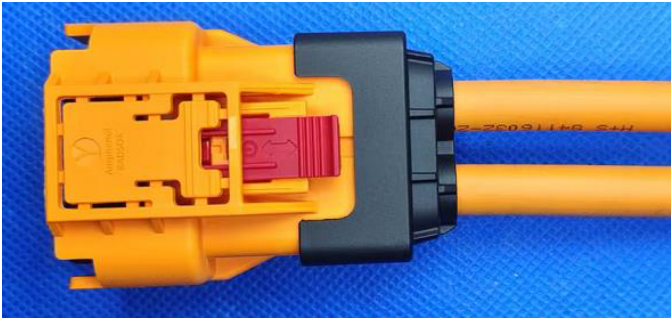
尾部密封件超出外壳 3mm REF。

The Rear Grommet beyond the housing 3mm REF.



步骤16: 装尾部连接盖（零件8）,尾盖卡扣应与主体外壳扣合。

Step 16: Install the Rear Cover(Part 8), The rear cover buckle should snap-fit with the main housing shell



步骤17: 电性能测试按图纸参数执行 。

Step 17: The electrical performance test is performed according to the drawing parameters 。

注意 Notes:

在线缆装好后需要做绝缘电阻和耐压测试

Need to do Insulation Resistance and DWV test after cable assembly

绝缘电阻测试: 1000V DC, 100MΩ Min, 60s

Insulation Resistance test: 1000V DC, 100MΩ Min, 60s

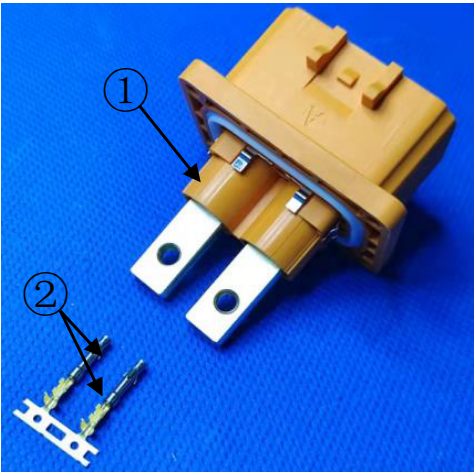
耐压测试: 3000V AC, 漏电流≤5mA, 60s

DWV test: 3000V AC, leakage current ≤5mA, 60s

第二部分：Busbar型插座组装

Part 2: Busbar type Receptacle assembly

1. C10-738985-2XP3 包装清单 Package contents:
- ①：插座壳体组件 Receptacle shell assembly 1PC
- ②：高压互锁端子 HVIL socket contact 2PCS

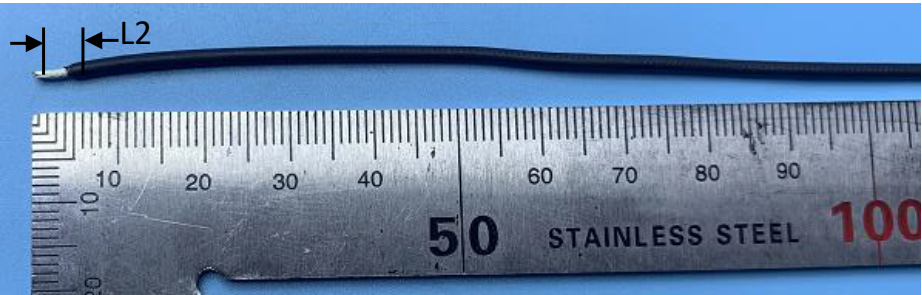


2. 推荐屏蔽线缆规格：20AWG
- Recommended shielded wire specification: 20AWG

3. 组装步骤 Assemble steps:

步骤1: HVIL 线缆的裁剪和剥皮(推荐使用20AWG线缆)

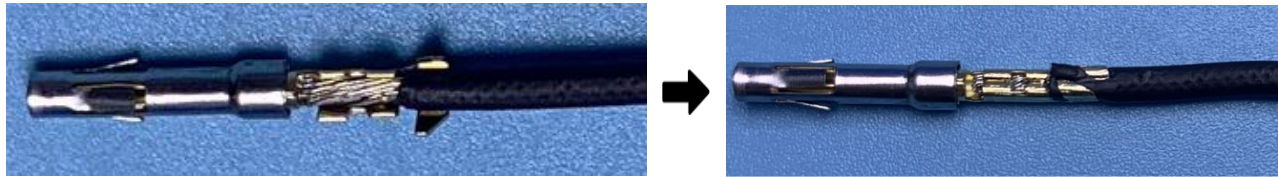
Step 1: HVIL wire cutting and stripping the jacket (Recommended use the 20AWG cable)



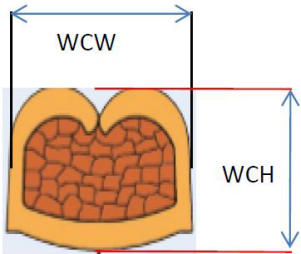
Item 类型	裁剪长度 Cutting length
L2	3.5±0.5mm

步骤2: 将线缆插入HVIL端子孔内并压接

Step 2: Insert conductor into hole of HVIL socket contact and crimping use right crimping tool



线材尺寸 Cable size	推荐压接高度WCH Recommended crimping height WCH	推荐压接宽度WCW Recommended crimping widtht WCW	推荐压接后端子 最小拔出力 Recommended Min. Pullout force
20 AWG	1.0~1.05 mm	1.8~1.9 mm	60N

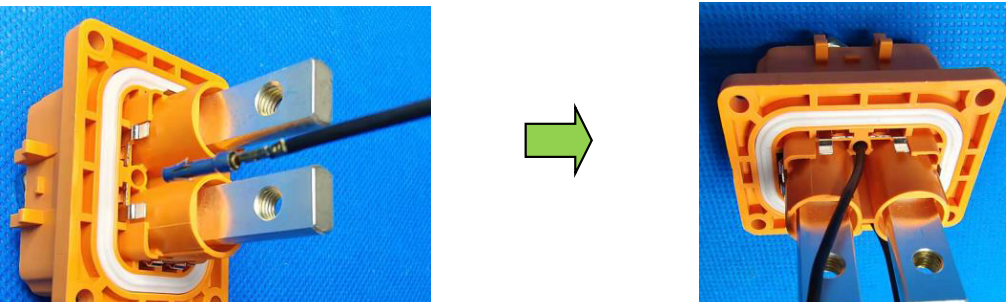


推荐如下压接工具 Recommended Crimping tool as below:



步骤3: 把压线后的HVIL端子插入插头组件中；然后用10N~15N的力反向拉HVIL线，以确认HVIL端子被正确的插入HVIL孔中并锁定。

Step 3: Insert the HVIL contact and cable assembly into the plug shell assembly; Then reverse pull the HVIL cable with a force of 10N to 15N to ensure that the HVIL terminal is properly inserted into the HVIL hole and locked.



步骤4: 电性能测试按图纸参数执行。

Step 4: The electrical performance test is performed according to the drawing parameters.

注意 Notes:

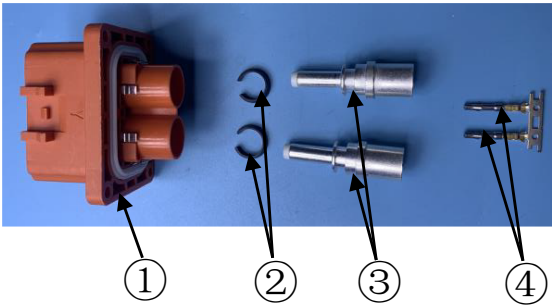
1. 在线缆装好后需要做绝缘电阻和耐压测试
Need to do Insulation Resistance and DWV test after cable assembly
2. 绝缘电阻测试: 1000V DC, 100MΩ Min, 60s
Insulation Resistance test: 1000V DC, 100MΩ Min, 60s
3. 耐压测试: 2500V AC, 漏电流≤5mA, 60s
DWV test: 2500V AC, leakage current ≤5mA, 60s

第三部分：插座组装

Part 3: Receptacle assembly

1. 包装清单 Package contents:

- ①：插座壳体组件 Receptacle shell assembly 1PC
- ②：卡扣 Collar 2PCS
- ③：端子组件 Pin contact assembly 2PCS
- ④：高压互锁端子 HVIL socket contact 2PCS



2. 推荐非屏蔽线缆规格 Recommended unshielded wire specification

线缆规格 Wire size	线缆绝缘外径 Insulation Diameter(mm)	推荐压接后线缆 最小拔出力 Recommended Min. Cable Pullout force(N)
16mm ²	8.1±0.2mm	1400
25mm ²	10.2±0.2mm	1900

3. 组装步骤 Assemble steps :

步骤1: 裁剪和剥皮

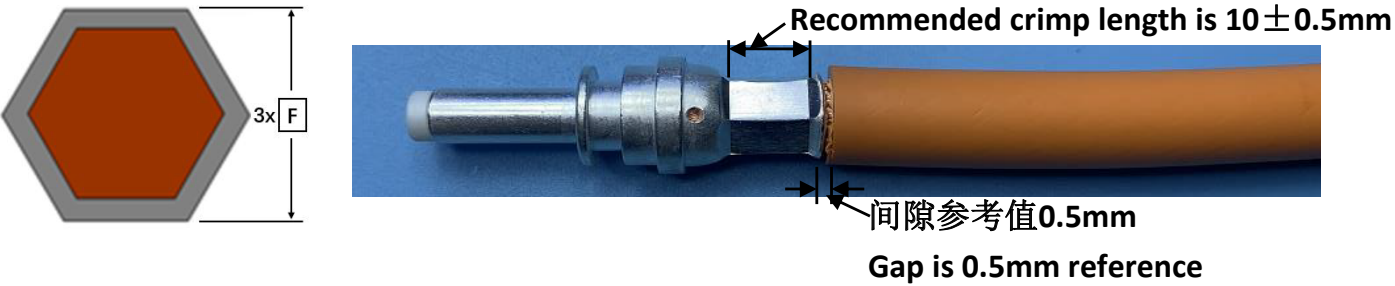
Step 1: wire cutting and stripping jacket



Item 类型	裁剪长度 Cutting length
L1	11.5 ± 0.5mm

步骤2: 压接插头端子组件（零件3）

Step 2: Crimp Pin contact assembly (Part 3).



线材尺寸 Cable size	推荐压接平面距离F Recommended crimp diest across Flats F	推荐压接后端子 最小拔出力 Recommended Min. Pullout force
16 mm2	6.5 ± 0.1mm	1500N
25 mm2	7.5 ± 0.1mm	1900N

Notes: The recommended crimp sizes are only for reference. The customer should adjust them according to cable specification and crimp tool and test results including temperature rise and metallographic analysis and pullout force.

备注：推荐的压接尺寸仅供参考，客人应根据所使用的线缆规格，压接工具，压接验证测试结果包含温升测试和金相分析以及拉力测试等调整压接尺寸

Recommended crimping tool: Manual hydraulic crimping

推荐压接工具：手动液压压接钳

Die: 25mm2 die for 25mm2 cab

Die: 16mm2 die for 16mm2 cable

压模：应用25 mm2线材时使用25 mm2压模

应用16 mm2线材时使用16 mm2压模

步骤3: 将热缩管装在端子与线压接的地方,然后组装卡扣。

Step 3: Install heat shrink tubing to the area where crimping contact and wire, Then assemble the Collar



Amphenol P/N: CH53X-005-09A
安费诺料号: CHT53X-005-09A

工具 Tooling: 热风枪Heat gun

热缩管规格推荐 Recommend Heat Shrink Tubing spec.:

- ◆ 带有热熔胶
With hot melt adhesive
- ◆ 良好的密封性和绝缘性能
Excellent sealing and insulation properties
- ◆ 收缩比: 2:1
Shrink ratio: 2:1
- ◆ 工作温度: -55~150℃
Operating temperature: -55~150℃



步骤4: 把压线后的端子插入插头组件中, 端子上的卡爪固定端子于孔内

Step 4: Insert the contact with cable assembled into the plug shell, the collar snapped into the shoulder of the hole

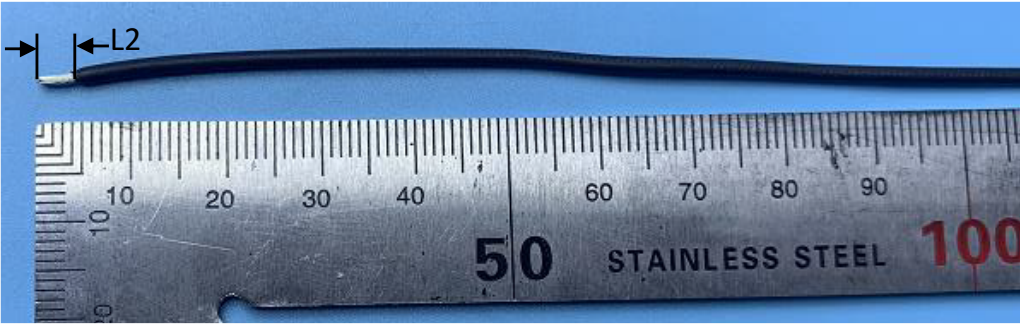
重复步骤1~4, 装另一边

Repeat step 1~4 for another port.



步骤5: HVIL 线缆的裁剪和剥皮(推荐使用20AWG线缆)

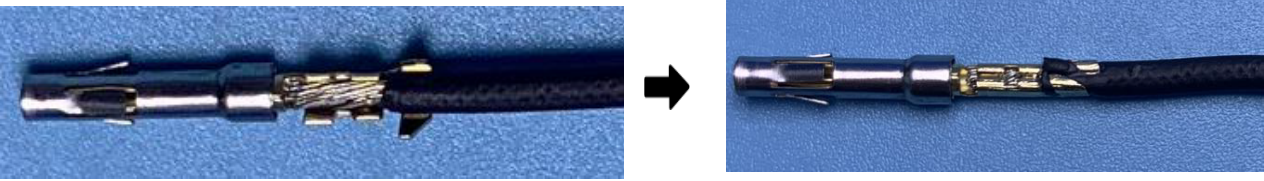
Step 5: HVIL wire cutting and stripping the jacket (Recommended use the 20AWG cable)



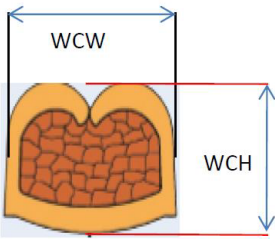
Item 类型	裁剪长度 Cutting length
L2	3.5±0.5mm

步骤6: 将线缆插入端子孔内并压接

Step 6: Insert conductor into hole of socket and crimping use right crimping tool



线材尺寸 Cable size	推荐压接高度WCH Recommended crimping height WCH	推荐压接宽度WCW Recommended crimping widtht WCW	推荐压接后端子 最小拔出力 Recommended Min. Pullout force
20 AWG	1.0~1.05 mm	1.8~1.9 mm	60N



推荐如下压接工具 Recommended Crimping tool as below:



步骤7: 把压线后的端子插入插头组件中

Step 7: Insert the HVIL contact and cable assembly into the plug shell assembly



步骤8: 重复步骤6~8, 装另一边

Step 8: Repeat step 6~8 for another port.



步骤4: 电性能测试按图纸参数执行。

Step 4: The electrical performance test is performed according to the drawing parameters。

注意 Notes:

4. 在线缆装好后需要做绝缘电阻和耐压测试

Need to do Insulation Resistance and DWV test after cable assembly

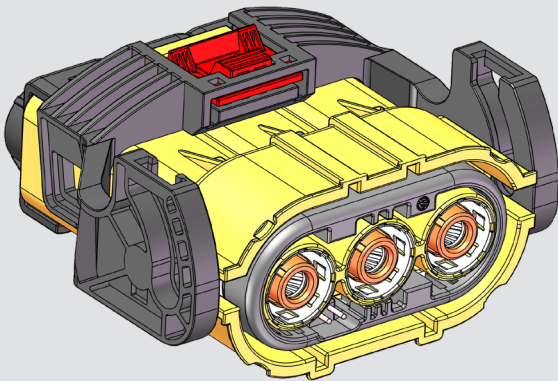
5. 绝缘电阻测试: 1000V DC, 100M Ω Min, 60s

Insulation Resistance test: 1000V DC, 100M Ω Min, 60s

6. 耐压测试: 2500V AC, 漏电流 $\leq$ 5mA, 60s

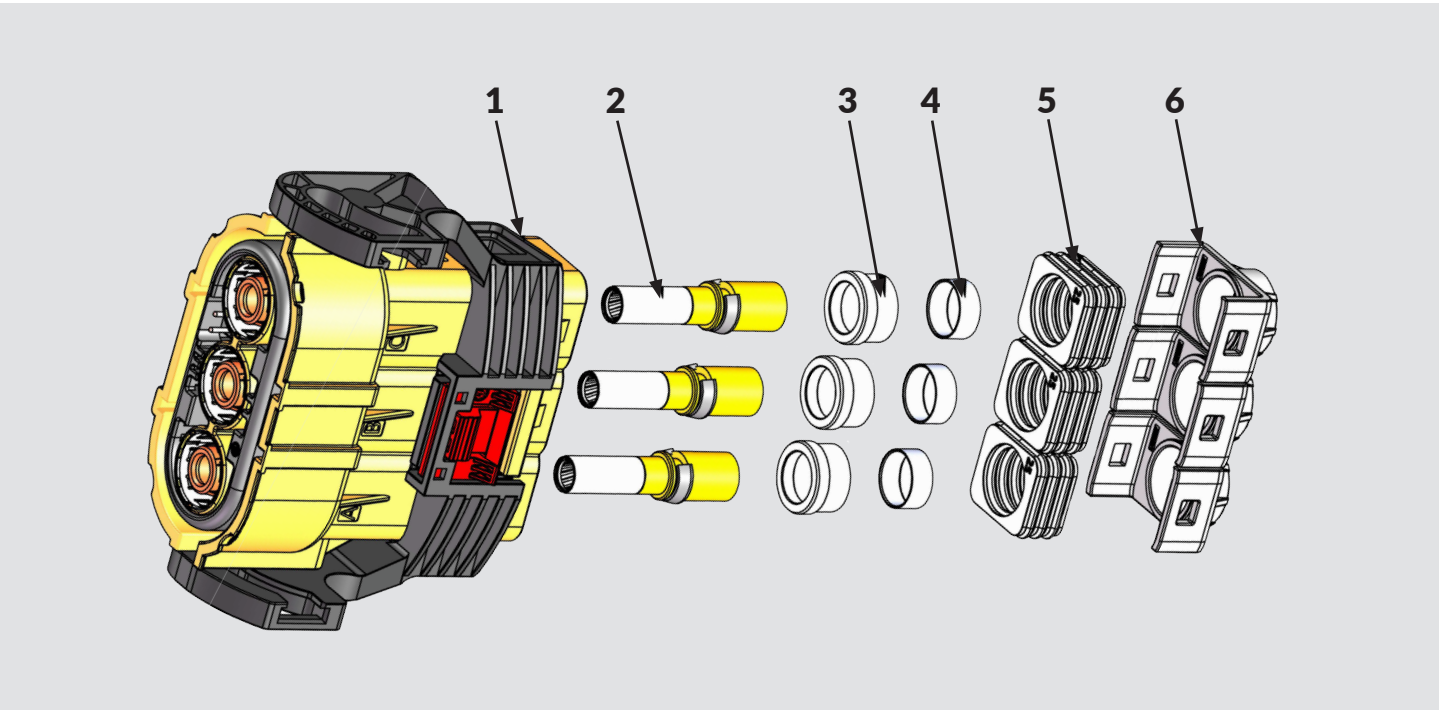
DWV test: 2500V AC, leakage current $\leq$ 5mA, 60s

ePower-Lite 5.7mm 3-Port Connector



Part Numbers:
C10-765779-3XS1
C10-765779-3XS2

Part 1: Plug Assembly



1. Package Contents
- 1: Plug Shell assembly
 - 2: Plug contact assembly
 - 3: Rear Outside Shield ring
 - 4: Rear inside Shield ring
 - 5: Rear Grommet
 - 6: Rear Cover

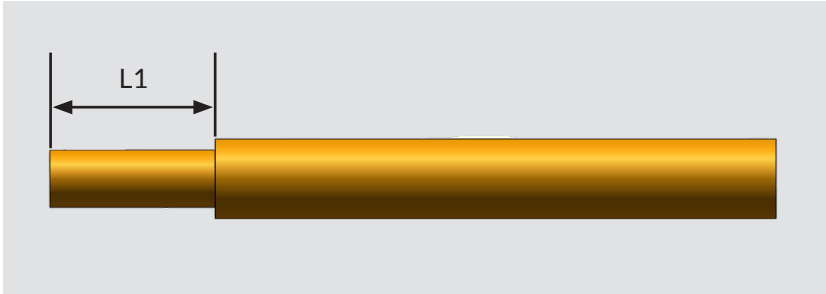
2. Recommended shielded wire specification

Wire Size	Insulation Diameter (mm)	Shield Wire Diameter (mm)	Cable Jacket Diameter (mm)	Recommended Min. Cable Pullout Force (N)
16 mm ²	8.1±0.2	0.12REF	11.2±0.3	1500
25 mm ²	10.2±0.2	0.12REF	13.9±0.3	1900

Revision	Description	Issue Date
A	Initial release	2021/08/16

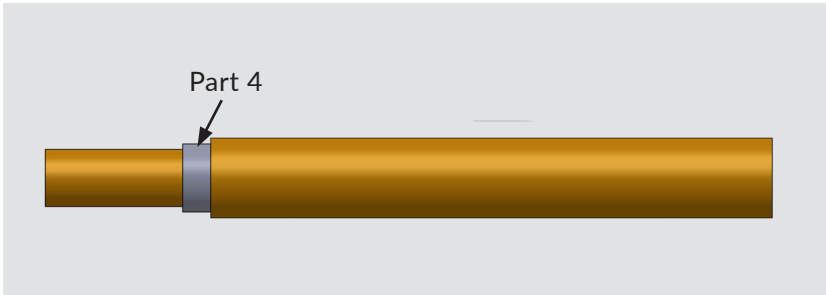
Part 2: Plug Assembly

Step 1: Shielded wire stripping the jacket.

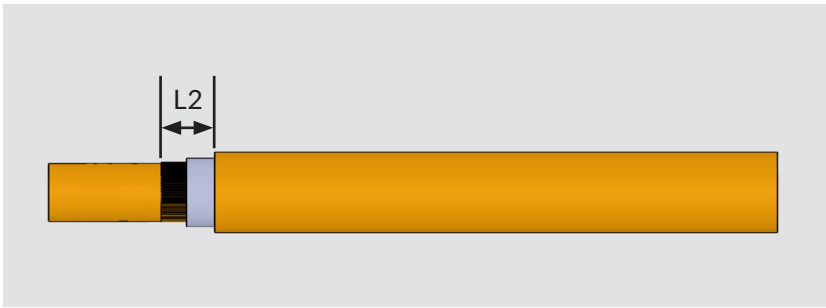


Item	Cutting Length
L1	29.5±0.5mm

Step 2: Mount the rear inside shield ring (Part 4).

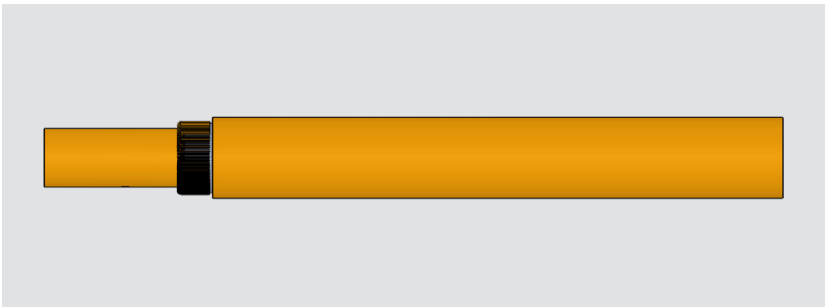


Step 3: Cutting shield wire.

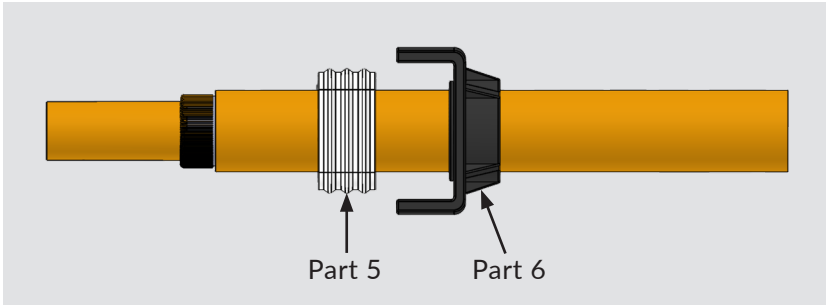


Item	Cutting Retention Length
L2	9.5±0.5mm

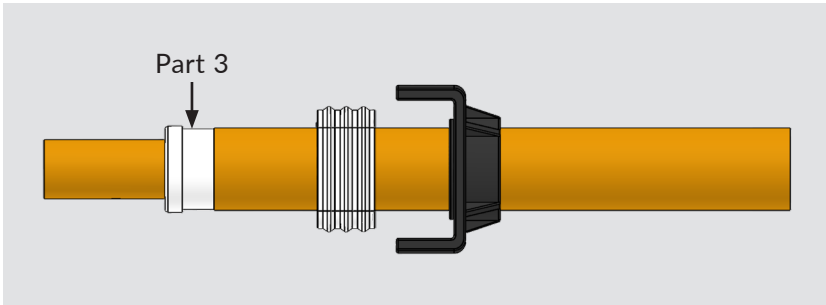
Step 4: Shielding wire turned back.



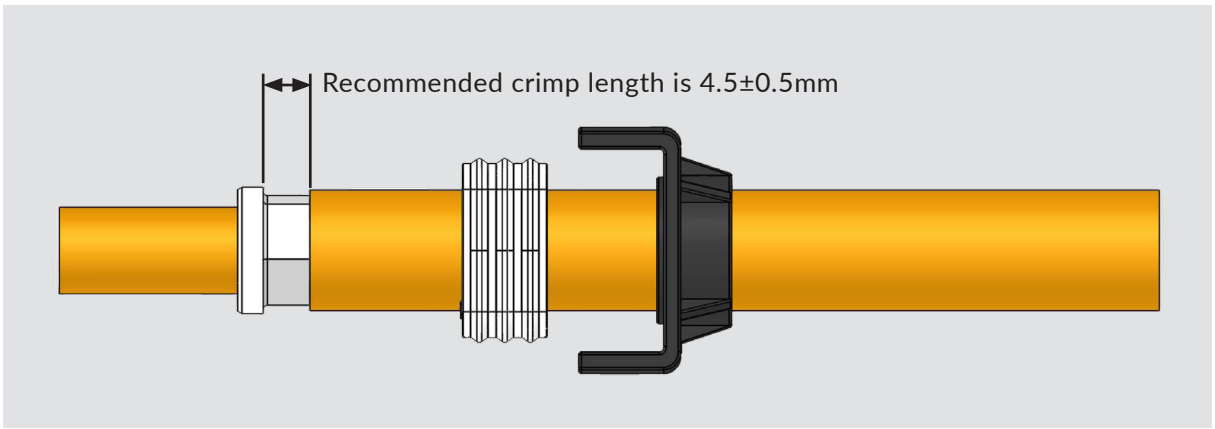
Step 5: Install the Rear Cover (Part 6) and the Rear Grommet (Part 5) in sequence.



Step 6: Mount the Rear Cover (Part 3).



Step 7: Crimping the rear shield outside ring.

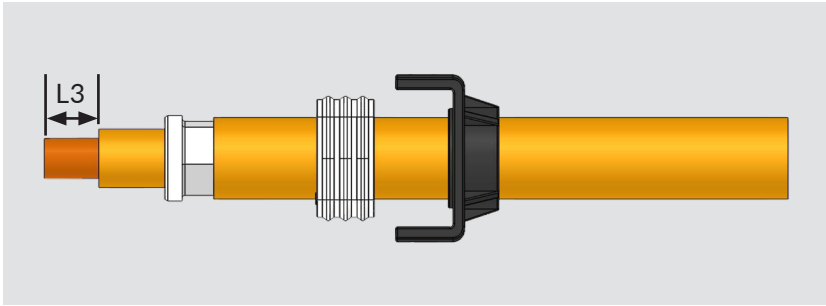


Cable Size	Recommended crimp length of Side S	Recommended crimp dist across Flats F	Recommended Min. Pull out force
16mm ²	6.0	11.0±0.1mm	150N
25mm ²	6.0	11.0±0.1mm	150N

Notes: The recommended crimp sizes are only for reference. The customer should adjust them according to cable specification and crimp tool and test results including temperature rise and metallographic analysis and pullout force.

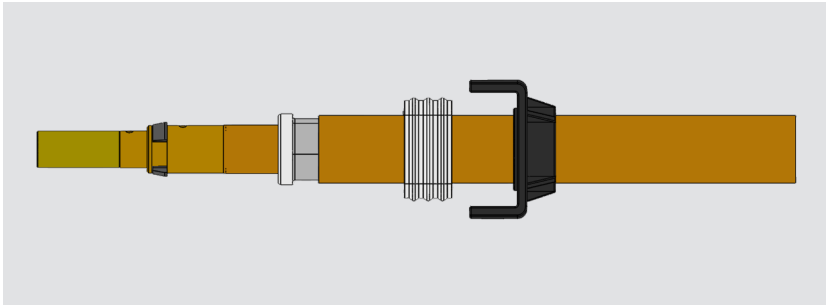
Recommended crimping tool: Hydraulic press

Step 8: Remove film layer, cutting insulation.

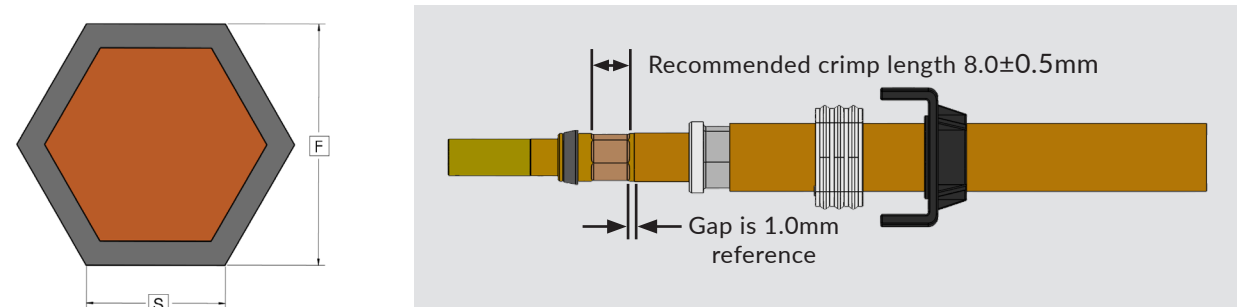


Item	Cutting Length
L3	9±0.5mm

Step 9: Mount the Plug contact assembly (Part 2).



Step 11: Pull one of the wires out and load. Crimp the Rear Shield (Part 5).



Cable Size	Recommended crimp length of Side S	Recommended crimp dist across Flats F	Recommended Min. Pull out force
16mm ²	6.0	6.5±0.1mm	1500N
25mm ²	6.0	7.5±0.1mm	1900N

Notes: The recommended crimp sizes are only for reference. The customer should adjust them according to cable specification and crimp tool and test results including contact resistance and pullout force.

Crimping tool: Manual hydraulic crimping

Die: 25mm² die for 25mm² cable

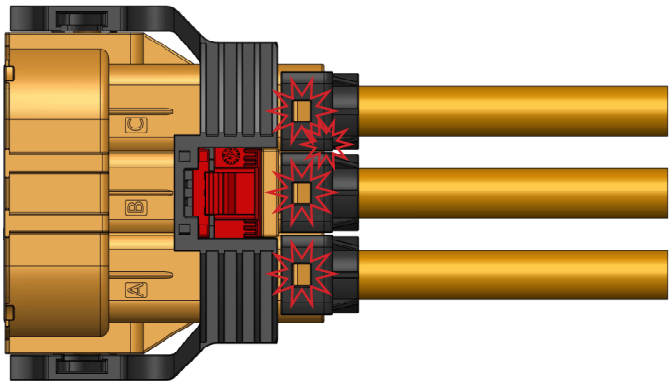


Step 13: Follow steps to assemble another two cables.

Step 14: Insert the crimped terminal into the Plug shell assembly (Part 1) one by one. First assemble the rear sealing grommet (Part 5). After that, assemble the rear cover (Part 6).

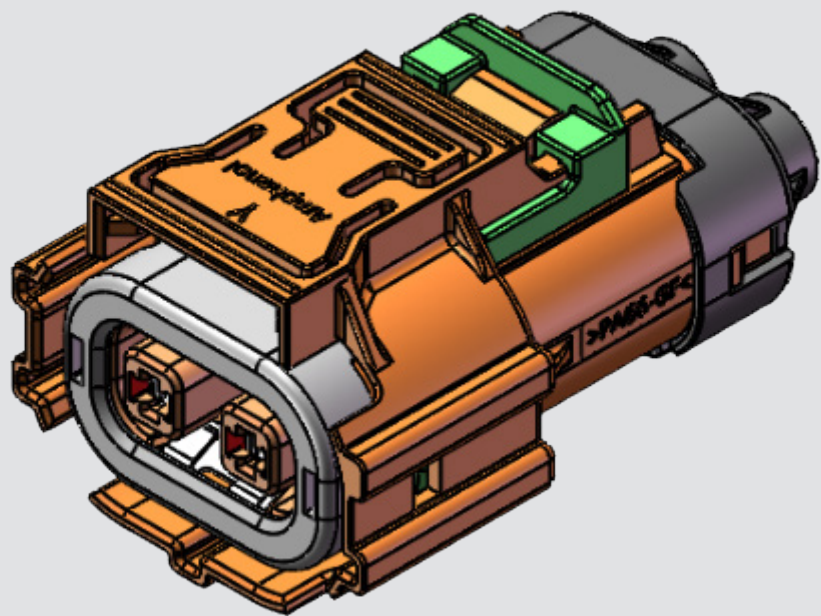


Note: The rear cover must be locking to the buckle of plug shell



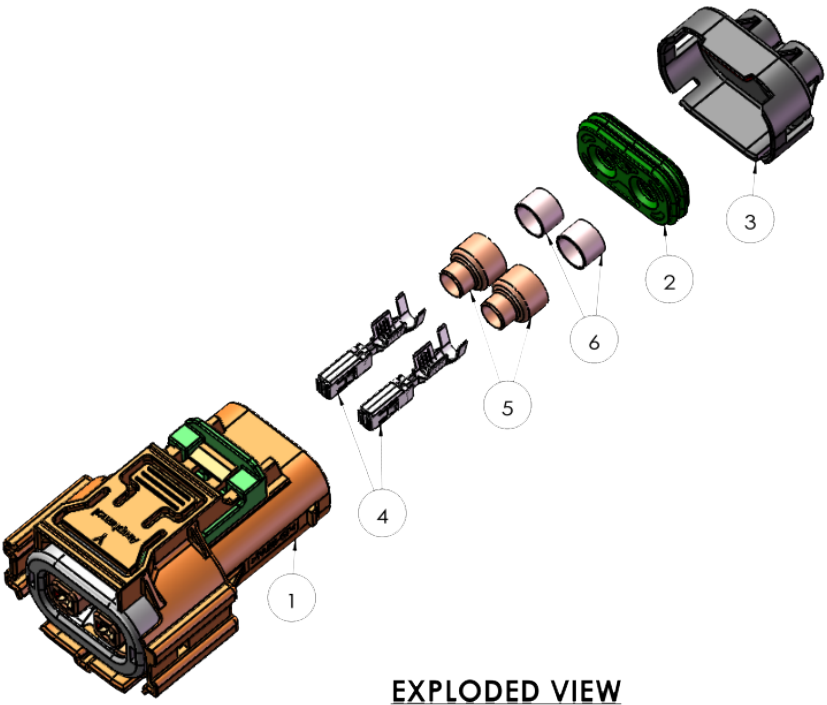
Notes: Need to do Insulation Resistance and DWV test after cable assembly
Insulation Resistance test: 1000V DC, 100MΩ Min, 60s
DWV test: 3000V AC, leakage current ≤ 5mA, 60s

ePower-Lite Mini



Part 1: Package Contents

- 1. Package Contents
 - 1: Plug Shell assembly
 - 2: Grommet
 - 3: Cable Cover
 - 4: Socket contact
 - 5: Outer Ferrule
 - 6: Inner Ferrule

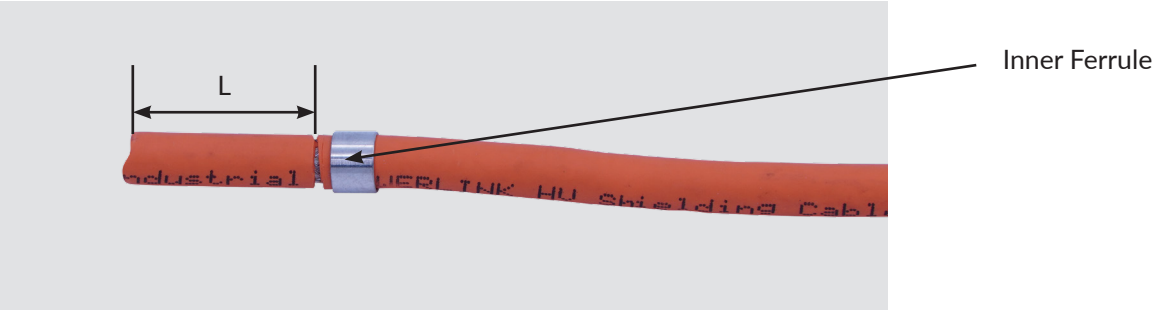


2. Recommended wire specification

Wire Size	Wire OD (mm)	Recommended Min. Pullout force (N)
4.0mm ²	5.8 ± 0.2	325

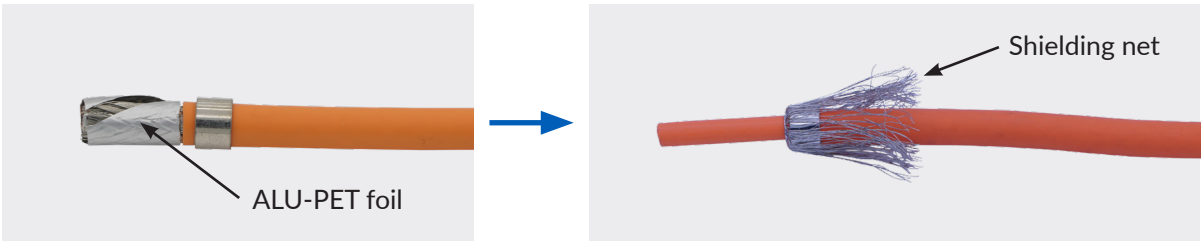
Part 2: Assembly

Step 1: Installing the inner ferrule for 4mm² wire then cutting and stripping the jacket.

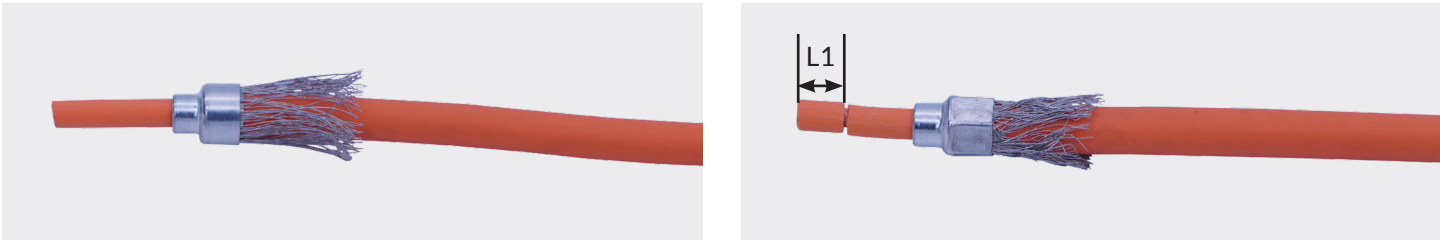


Item	2 Ports (Include all cable sizes)
L	21.5 ± 0.5 mm

Step 2: Strip out ALU-PET foil, evenly disperse and bend the shielding net, ensure the inner ferrule is in close contact with shielding wire.

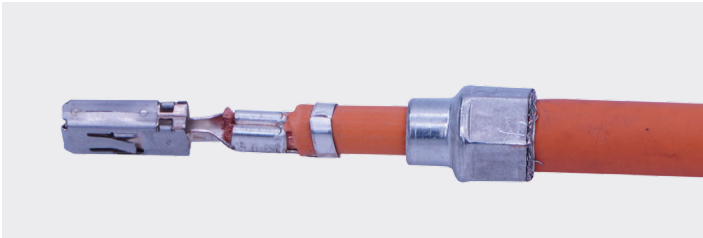


Step 3: Assemble the outer ferrule and crimping to right crimp height (7.5 ± 0.1 mm), cutting and the jacket.



Item	2 Ports (Include all cable sizes)
L1	5.8 ± 0.2 mm

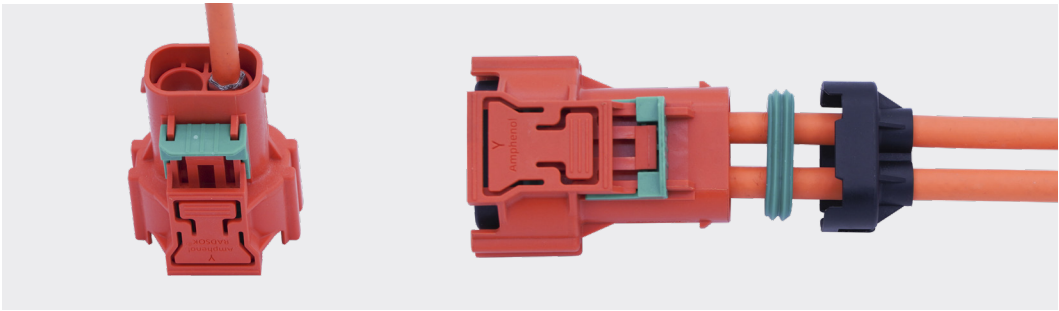
Step 4: Stripping the jacket and cut off the exposed shielding wire of cable, crimping the terminal by right crimping tool.



Recommended manual crimping tool as below (P/N: FX3-0094-000):



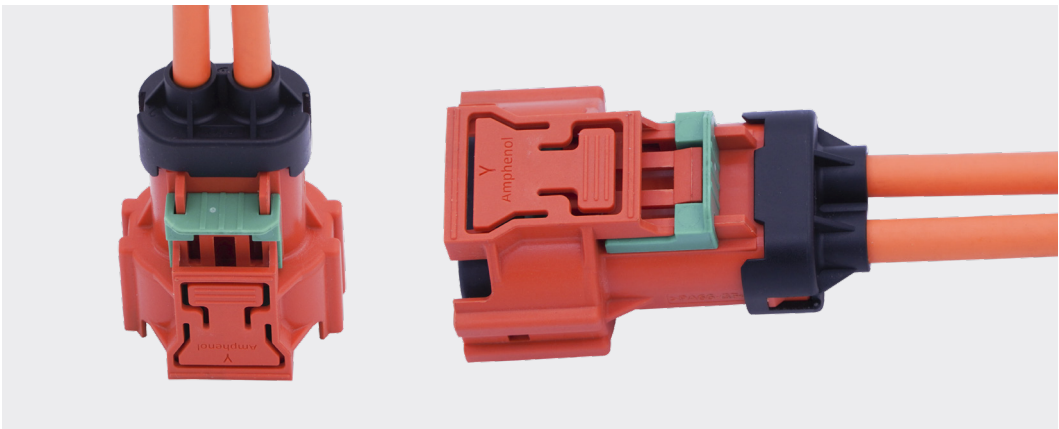
Step 5: Insert the contact with cable assembled into the plug shell, the collar snapped into the shoulder of the hole.



Step 6: Install the cable grommet.



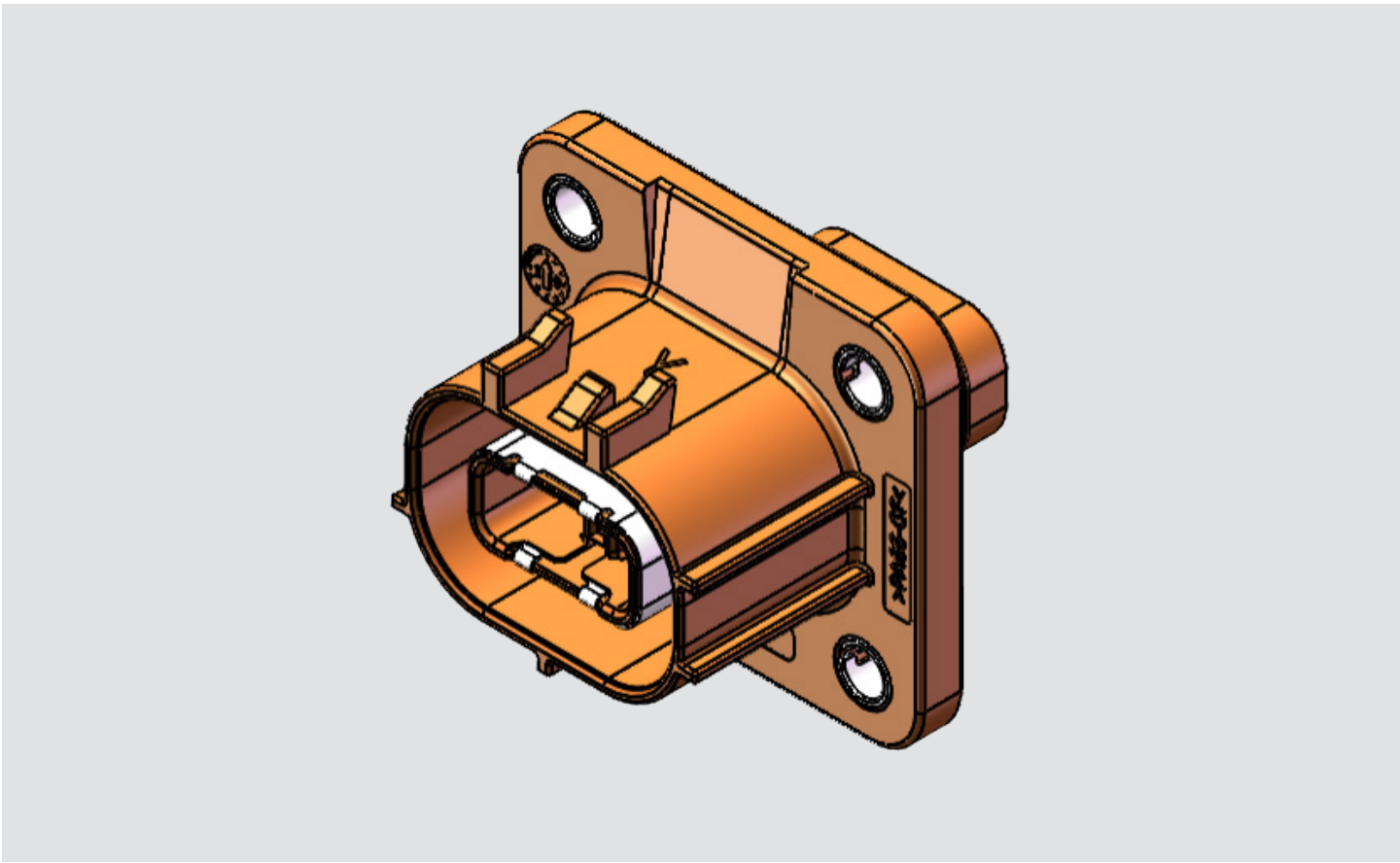
Step 7: Install the cable cover



Notes:

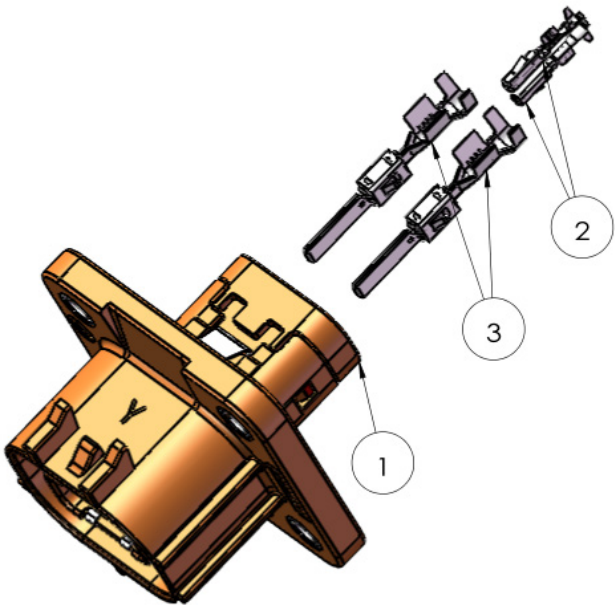
Need to do Insulation Resistance and DWV test after cable assembly
Insulation Resistance test: 600V DC, 500MΩ Min, 60s
DWV test: 2200V AC, leakage current $\leq$ mA, 60s

ePower-Lite Mini Series Receptacle Connector



Part 1: Package Contents

- 1. Package Contents
 - 1: Receptacle Shell Assembly
 - 2: Power Pin Contact
 - 3: Socket Contact



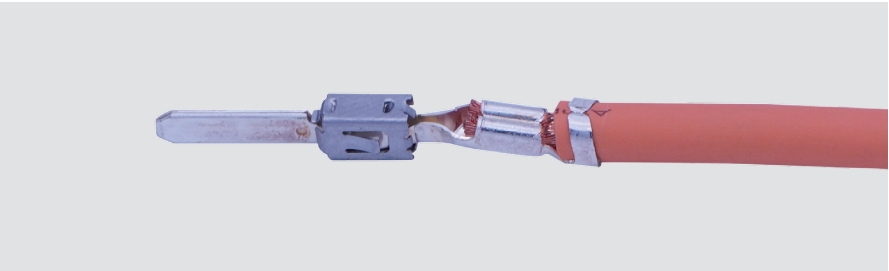
EXPLODED VIEW

Part 2: Assembly Steps for Power Pin

Step 1: 4mm² wire cutting and stripping jacket dimensions

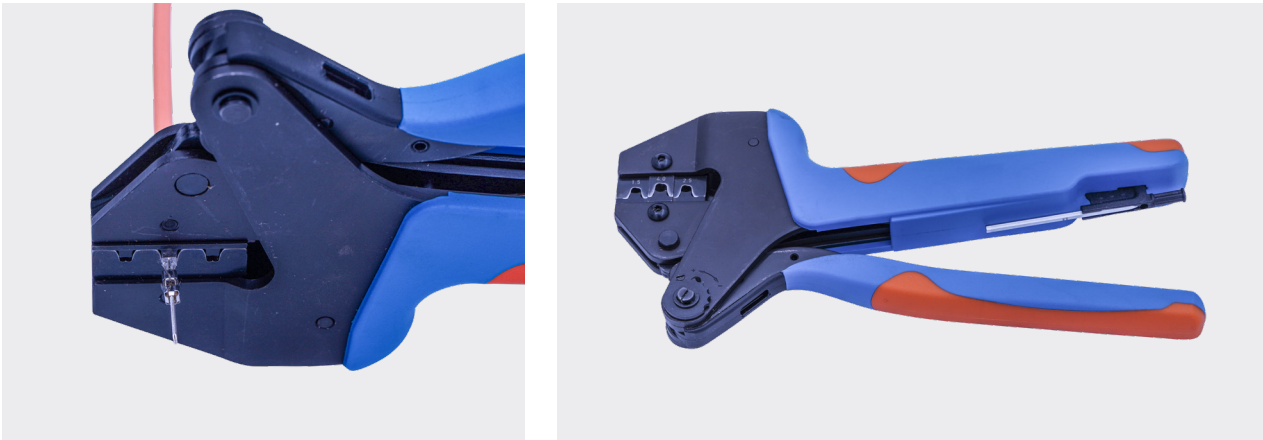


Step 2: Insert conductor into hole of socket and crimping use right crimping tool

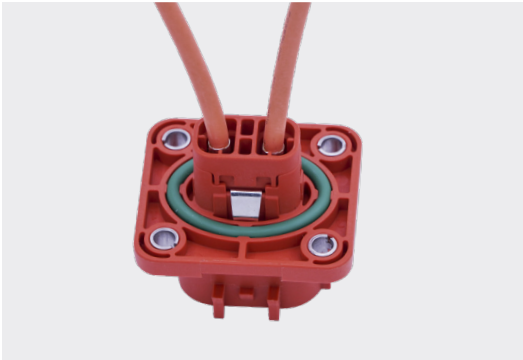


Wire Size	Recommended Min. Pullout force (N)
4.0mm ²	325

Recommended manual crimping tool as below (P/N: FX3-0094-000):



Step 5: Insert the contact with cable assembled into the plug shell, the collar snapped into the shoulder of the hole.



Part 3: Assembly Steps for HVIL pin

Step 1: Wire cutting and stripping the jacket



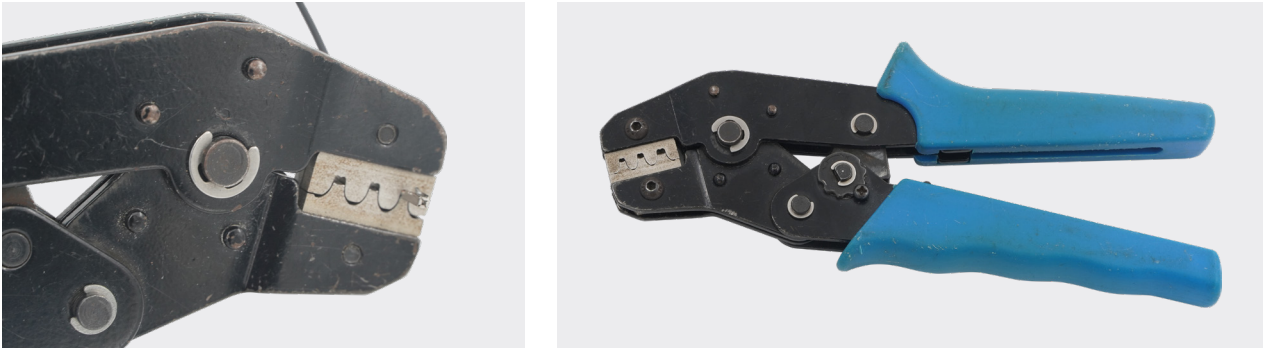
Step 2: Insert conductor into hole of socket and crimping use right crimping tool



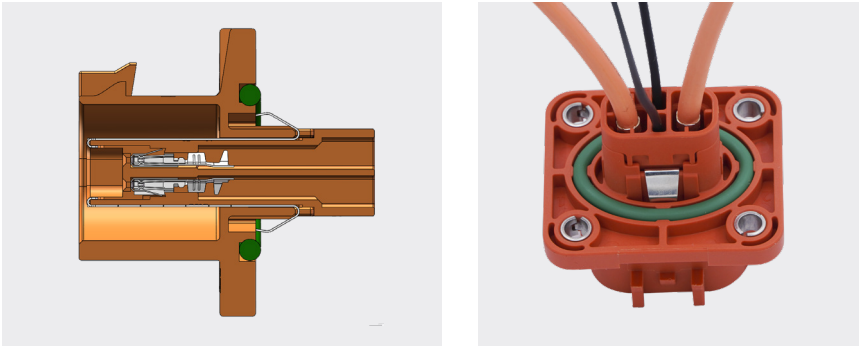
Recommended HVIL Wire Specification

Receptacle	HVIL Wire Size	Recommended Min. Pullout force (N)
2 ports	22 AWG	40
	20 AWG	60

Recommended Crimping tool as below (P/N: FX3-0095-000):



Step 3: Insert the HVIL contacts into the receptacle shell assembly, the claws face to the sides

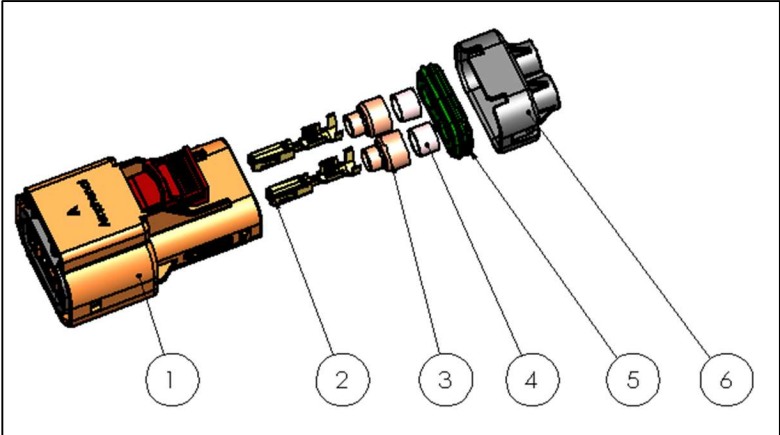


HISTORY OF CHANGES

Rev	Change	Originator	Date
A	New document	Leon Xie	22024/7/15

PLUG

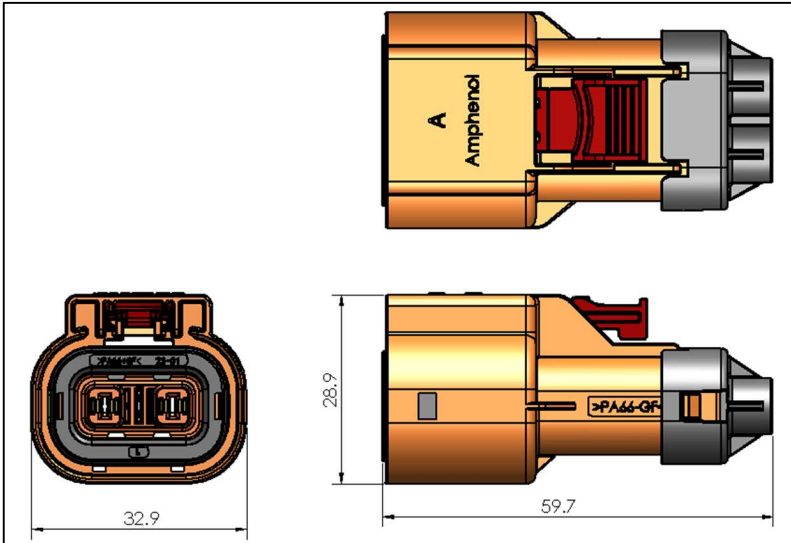
Part 1: Package contents and specifications.



1.Plug Kit (1x)	4.Inner Shielding Ring (2x)
2.Terminal (2x)	5.Grommet (1x)
3. Outer Shielding Ring(2x)	6.Cable Cover (1x)

Specifications:

- Current: 40A MAX.
- Operating voltage: 1000V DC.
- Operating temperature: -40~+125℃.
- Durability: 100 cycles MIN.
- Water proof: IPX7, IP6K9K (when connector mated).
- Touch proof: IPXXB unmated and IPXXD mated.
- HVIL: yes.
- Shield: yes.
- Keyway : 3 (A/B/D)



Part 2: Cable assembly for plug

Step 1: Pre-assemble.

- Installing the inner ferrule for 4 mm² cable.

Cable spec:

	4mm² cable
Cable size	4 mm²
Conductor	2.6mm
Insulation	3.9~4.7mm
Jacket	5.6~6.0mm



Attention: If use different cable specification please contact Amphenol to confirm.

Step 2: Wire cutting stripping and assembly

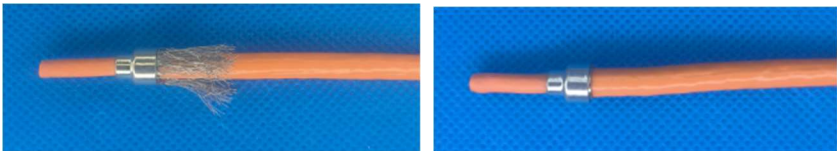
- Cut the cable jacket. “L”=21.5±0.5mm



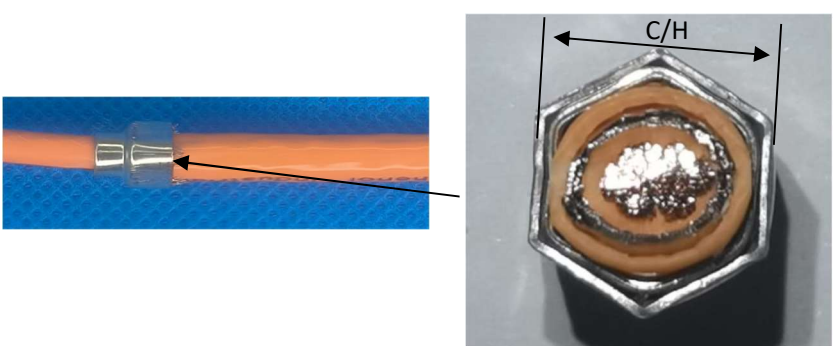
- Strip out ALU foil, evenly disperse and bend the shielding braid.



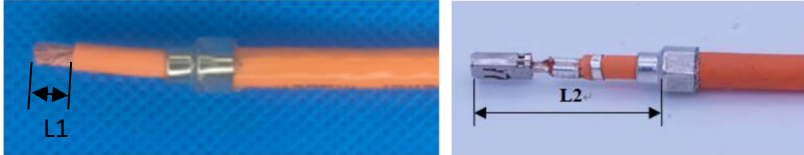
- Installing the outer shielding ring, cut the extra shield braid.



- Crimp the shielding ring into a hexagon. C/H=7.1±0.2mm.



- Crimp the terminal. L1=5.8±0.2mm, L2=33.5±0.5mm



Recommended manual crimping tool as below(P/N:FX3-0094-000):



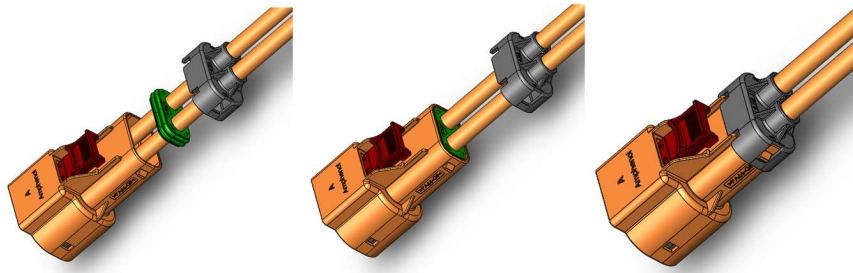
Key process parameters



Different crimp type and dimension can be used after test(USCAR 21) with the test result is acceptable .

Step 3 Plug assemble

- Insert the contact with cable assembled into the plug shell, the collar snapped into the shoulder of the hole.
- Install the cable grommet.
- Install the cable cover.

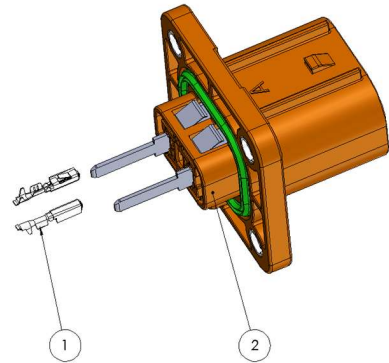


Step 5: test for plug

- It is better to have some test for the plug after cable assembly.
Reference test conditions:
 - ✧ IR: 1000V DC, 60S 200MΩ Min (Socket contact to Socket contact, Socket contact to Shell, Socket contact to Shielding).
 - ✧ DWV : 3000V AC (50~60Hz), 60S, leakage current 5mA Max. There shall be no dielectric breakdown or flash-over (Socket contact to Socket contact, Socket contact to Shell).

Receptacle-Pin Type

Part 1: Package contents and specifications.

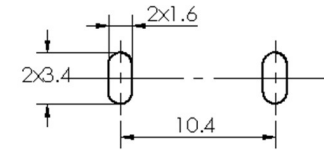
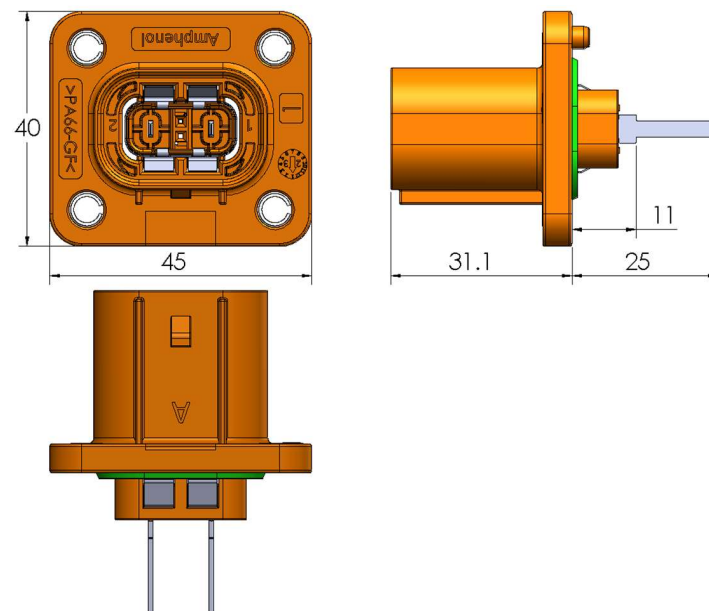


1.HVIL Socket Contact (2x)

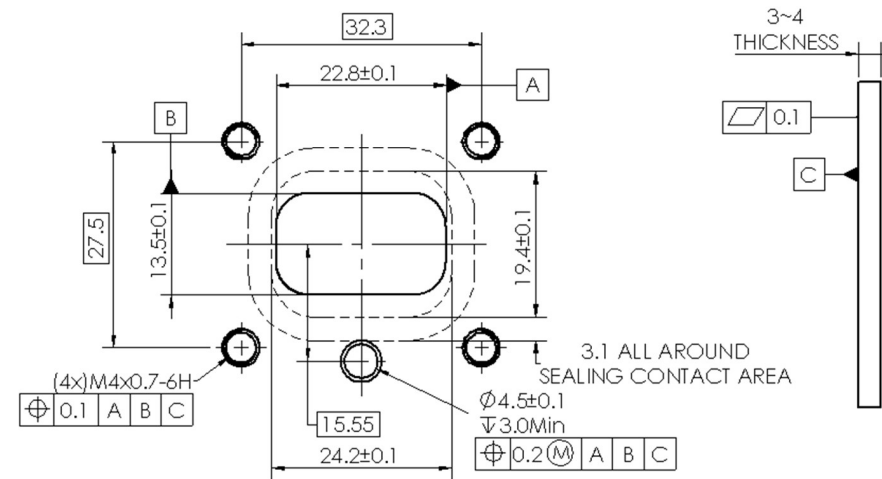
2.Receptacle body (1x)

Specifications:

- Current: 40A MAX.
- Operating voltage: 1000V DC.
- Operating temperature: -40~+125℃.
- Durability: 100 cycles MIN.
- Water proof: IPX7, IP6K9K (when connector mated).
- Touch proof: IPXXB unmated and IPXXD mated.
- HVIL: yes.
- Shield: yes.
- KeyWay : 3 (A/B/D)



PCB LAYOUT



PANEL LAYOUT

Part 2: Cable assembly for HVIL

Step 1: Pre-assembly.

- Cable spec: 20 AWG/ 22 AWG
- Cut the cable insulator and pre-assemble the cable with contact.

A=3.5±0.5mm



Step 2: Crimp the HVIL socket contact.

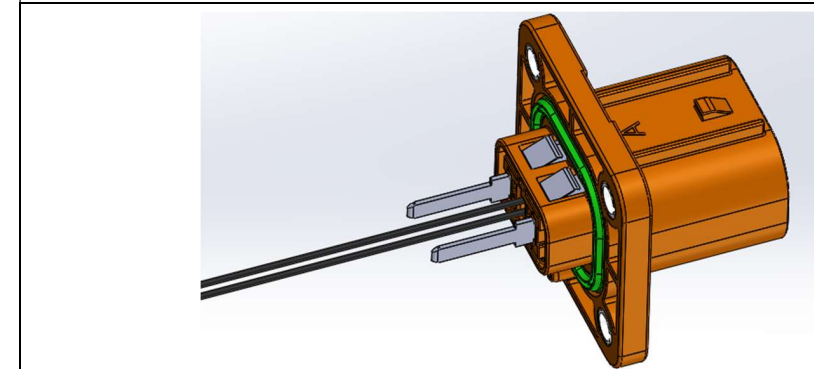
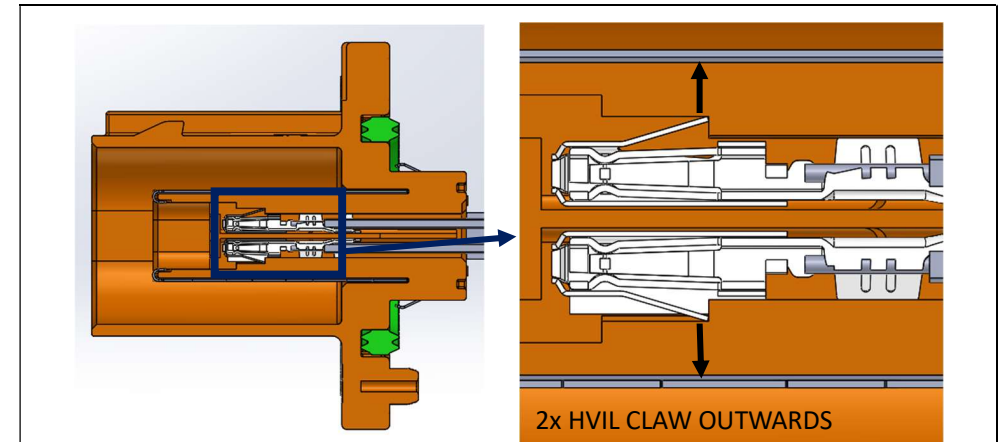
Key process parameters

- Recommended Crimping tool as below(P/N:FX3-0095-000):



Step 3: Install the contacts

- Install the HVIL contacts, 2x HVIL claw outwards.



Step 4: test for receptacle

- It is better to have some test for the plug after cable assembly.

Reference test conditions:

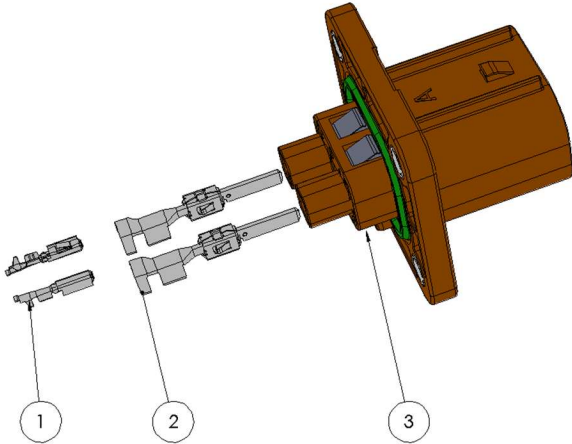
- ✧ IR: 1000V DC, 60S 200MΩ min (Pin to Pin, Pin to Shell, Pin to Shielding).
- ✧ DWV : 3000V AC (50~60Hz), 60S, leakage current 5mA Max. There shall be no dielectric breakdown or flash-over (Pin to Pin, Pin to Shell, Pin to Shielding).



Different crimp type and dimension can be used after test(USCAR 21) with the test result is acceptable .

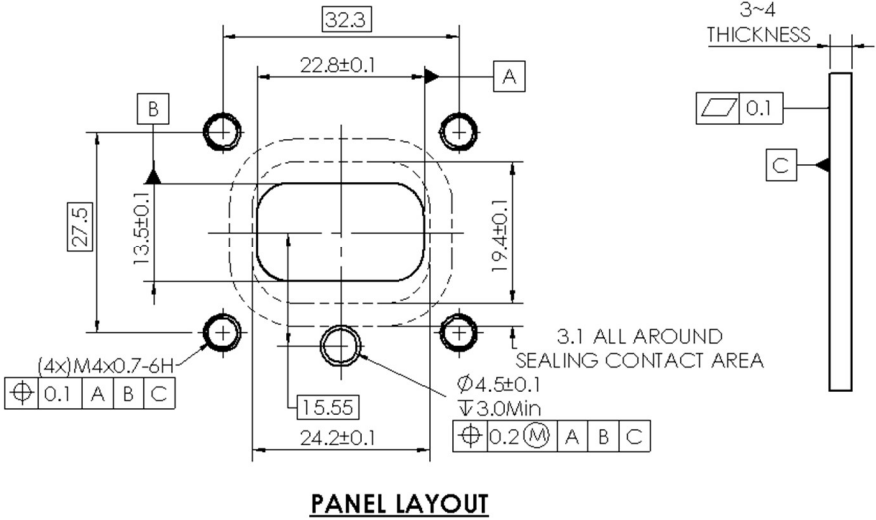
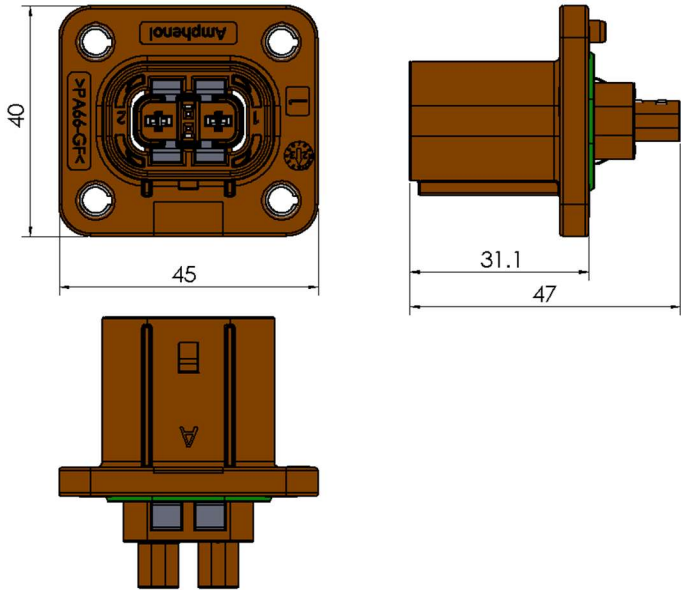
Receptacle-Bubar Type

Part 1: Package contents and specifications.



- 1.HVIL Socket Contact (2x)
- 2. Power Pin Contact (2x)
- 3.Receptacle body (1x)

- Specifications:
- Current: 40A MAX.
 - Operating voltage: 1000V DC.
 - Operating temperature: -40~+125℃.
 - Durability: 100 cycles MIN.
 - Water proof: IPX7, IP6K9K (when connector mated).
 - Touch proof: IPXXB unmated and IPXXD mated.
 - HVIL: yes.
 - Shield: yes.
 - KeyWay : 3 (A/B/D)



Part 2: Cable assembly for HVIL

Step 1: Pre-assembly.

- Cut the cable insulator and pre-assemble the cable with contact.

$A=3.5 \pm 0.5\text{mm}$
 $B=5.8 \pm 0.5\text{mm}$

HVIL CABLE	22 AWG 20 AWG	
POWER CABLE	2.5mm ² 4 mm ²	

Step 2: Crimp the HVIL socket contact.

Key process parameters

HVIL CABLE CRIMP Recommended Crimping tool: FX3-0095-000		
POWER CABLE CRIMP Recommended Crimping tool: FX3-0094-000		

⚠ Different crimp type and dimension can be used after test(USCAR 21) with the test result is acceptable .

Step 3: Crimp the HVIL socket contact.

- Install the HVIL contacts, 2x HVIL claw outwards.
- Install the Power contacts

Step 4: test for plug

- It is better to have some test for the plug after cable assembly.
Reference test conditions:
 - ❖ IR: 1000V DC, 60S 200MΩ min (Pin to Pin, Pin to Shell, Pin to Shielding).
 - ❖ DWV : 3000V AC (50~60Hz), 60S, leakage current 5mA Max. There shall be no dielectric breakdown or flash-over (Pin to Pin, Pin to Shell, Pin to Shielding).