

Terminal for EV Charge Vehicle Inlet System

应用于电动汽车充电插座系统的端子

<u>Item</u>	<u>Picture</u>	<u>Description</u>	<u>P/N</u>
<u>1</u>		12mm DC terminal For 70mm²	2361915-1
<u>2</u>		12mm DC replaceable sleeve For 70mm²	2400467-1
<u>3</u>		12mm DC terminal For 50mm²	2361915-3
<u>4</u>		6mm PE terminal For 25mm²	2390185-1
<u>5</u>		6mm PE replaceable sleeve For 25mm²	2400467-2

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1. GENERAL/综述

This specification contains the guidelines for the application of close barrel Terminal for EV Charge Vehicle Inlet System.

本规范阐述了电动汽车充电插座用圆形端子的应用要求。

The contacts are listed by their use, the wire size ranges and the crimping data in section 3.

端子及相应的导线与压接参数在本规范的第三部分。

2. REFERENCE DOCUMENTS/参考文件

2.1 Customer Drawing/客户图

This application specification is based on the latest valid customer drawings. The dimension and materials of the contacts are shown in the TE customer drawings.

本规范基于以下有效客户图纸的最新版本。端子的尺寸和选用的材料于 TE 的客户图中所定义。

C-2361915 (12mm DC terminal)

C-2400467 (12mm DC terminal)

C-2390185 (6mm PE terminal)

2.2 Product Specification/产品规范

Please see the Product Specification of GB charging inlet according to customer and terminal P/N.

根据客户及使用的端子料号，请参考相应的充电插座总成的产品规范。

3. APPLICATION TOOLS/应用工具

To produce a correct wire crimp, as validated by TE with the wires listed in this specification, following application tools are required.

为了正确的进行压接，必须使用该规范中所列的已经经过 TE 验证过的线和压接工具。

TERMINAL P/N	WIRE SIZE [mm ²]	HEIGHT (Ch1) [mm]	SHAPE	STRIP LENGTH [mm]	APPLICATOR	TERMINATOR
2361915-1	70	10.55±0.15	W	18.25± 0.5	2396876-1	HF20 or HV20
2400467-1	70	10.55±0.15	W	18.25± 0.5	2396876-1	HF20 or HV20
2361915-3	50	8.70±0.15	W	18.25± 0.5	2396881-1	HF20 or HV20
2390185-1	25	6.1± 0.1	W	16.0±0.5	2371952-4	HF20 or HV20
2400467-2	25	6.1± 0.1	W	16.0±0.5	2396877-1	HF20 or HV20

Table 1/表 1

Crimp Die Sets are subject to wear and their condition and quality have to be monitored. Suspect and/or worn Die Sets have not to be used for the production of these crimps. Die Sets are available as spare parts.

压接卡模在使用过程中会磨损，其状态和品质需要监控。有问题的或者磨损的卡模不能用于压接产品。卡模可以单独定制。

4. WIRES/导线

4.1 Assessment of the wires/导线的判定

To ensure the required electrical crimp contact stability with stable crimp resistance a permissible maximum storage period of 8 months for unprocessed cable (referring to cable manufacturer production date) has to be respected.

为了保证稳定的压接电阻来获得良好的电接触，未压接线的储存期限在 8 个月内（自生产日期开始）。

4.2 Wire selection/导线的选择

Terminal P/N 端子料号	Conductor Material 线导体材料	Wire Size 线径	Standard 标准	Identification 导线规格说明	Wire Supplier 导线供应商
2361915-1	Cu ETP1	70mm ²	LV216	FHLR2GCB2G 70 mm ² / 0.21 T180 0.6/0.9 kV	Coroplast
2400467-1	Cu ETP1	70mm ²	LV216	FHLR2GCB2G 70 mm ² / 0.21 T180 0.6/0.9 kV	Coroplast
2361915-3	Cu ETP1	50mm ²	LV216	FLR2GCB2G 50 mm ² / 0.21	Coroplast
2390185-1	Cu ETP1	25mm ²	LV216	Xinhongye FLRY-B 25mm ²	Xinhongye
2400467-2	Cu ETP1	25mm ²	LV216	QB-E-SIR 600V/900V(等同 FHLR2G)	FORCE

Table 2(表 2)

The contact system is released for the application with wires specified table2, The released contact-wire-combinations and crimp parameters are given in table 1.

该端子系统应用于表格 2 中所列的导线。表格 1 中列出了已经发行的配套的端子和线以及其压接参数。

Other wires require the validation and approval of the TE engineering department. The wires are applied as single wire terminations.

使用其他导线之前，必须经过 TE 工程部门的验证和同意。这个导线只使用于单芯线的压接机台。

4.3 Wire preparation/线的准备

The cable has to be cut accurately with a 90 deg. angle.

导线的裁切的切口与出线方向要成 90°。

The cable insulation must be stripped before crimping. The stripping length of the outer insulation and shield is defined in the following Assembly Steps. The insulation must be cut accurately and pulled off from the conductor. Offcut of insulation must not remain on the conductor. Single strands may not be damaged, fanned out, cut or pulled out. Furthermore the operator should avoid touching the bare single strands and the strands shall not be twisted. All single strands need to be caught in the crimp and not a single strand must remain outside the crimp.

导线的绝缘层在压接之前需剥离，绝缘层和屏蔽层的剥离长度在下面的步骤中有定义。绝缘层的切除的长度要正确，然后从导体上剥离，不能残留在导体上。芯线不能损坏，外鼓，断裂和拉出。在接下来的操作中要避免接触芯线，避免弯曲芯线。所有的芯线必须被压接，不能有芯线外露在压接区域外。



Figure 1/图 1 Single un-shielding core wire/单芯非屏蔽线

TERMINAL P/N	WIRE SIZE	DIM A
2390185-1	25mm ²	16.0± 0.5mm
2400467-2	25mm ²	16.0± 0.5mm

Table 3/表 3

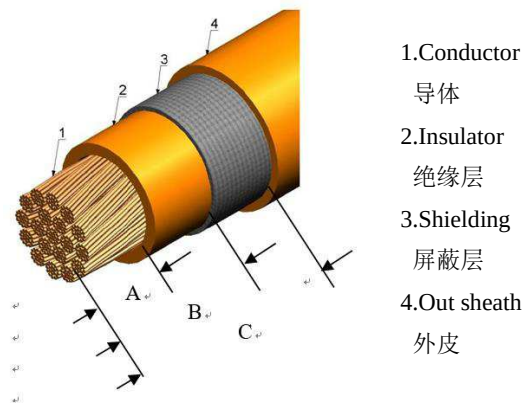


Figure 1. 1/图 1.1 Shielding wire/屏蔽线

TERMINAL P/N	WIRE SIZE	DIM A	DIM B	DIM C
2361915-1	70mm ²	18.25± 0.5mm	114-160029	
2400467-1	70mm ²	18.25± 0.5mm	114-160203	
2361915-3	50mm ²	18.25± 0.5mm	114-160207	

Table 3.1/表 3.1

5. REQUIREMENTS ON THE CRIMPED CONTACT WITH W-CRIMP SHAPE (CLOSED BARREL)

W 形状的端子铆压需求（圆形压接）

5.1 Conductor position/导线芯线位置

The single strands of the conductor are clamped inside the crimp area. The wire end must be fully inserted into the crimp area. Insulation must not be inside of the crimping area, see figure 2

所有芯线必须铆接在端子铆接区域内部。芯线的头部要完全插入到端子铆接区域,绝缘层不能进行压接,参考图 2。



Figure 2/图 2

5.2 Crimp Geometry/压接形状

The crimp geometry, crimp heights including their corresponding tolerances as well as wire sizes are given in table 1. 压接的形状，压接高度及公差，导线的尺寸在表 1 中定义。

The crimp height is the key quality feature of a crimp connection. The measurement allows a non-destructing examination and a continuous process inspection. It is provided for every wire size and contact.

Crimp height may also be measured in a cross section image. The mechanical operated measurement is preferred. The crimp height is given in table 2.

压接高度对压接品质有关键影响。在制程的持续监控中，压接高度允许非破坏性的直接量测，适用与每一个线径和端子。压接高度也可以通过截面进行量测，推荐使用机器化操作进行量测。表格 1 种给出了压接高度。

During the application process the crimp height must be checked. This is valid for each batch and after every change or switchover of contact reel or wire bundle or applicator respective it's setup or components.

在压接制程中，压接高度必须检测，每当换用不同批次的端子和线或者调机后都要重新检测压接高度。

The crimp height has to be measured over both extensions in middle of the crimp, figure 3:

压接高度须在压接中部的两个突起部位进行量测，如图 3 所示：

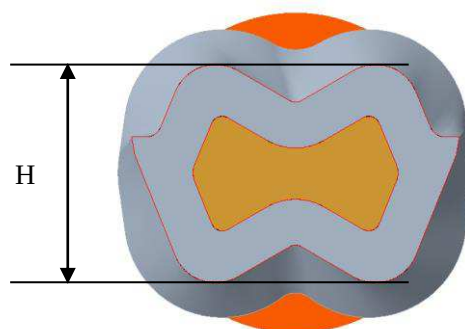


Figure 3/图 3 (Pic exemplarily/示例图)

5.3 Cross Sections/截面

When creating cross sections the correct grinding layer must be selected. The grinding layer has to be in the middle of the crimp area , see figure 4.

当制作切面时，研磨的部位必须有所选择。研磨的位置要位于压接部位的中间。

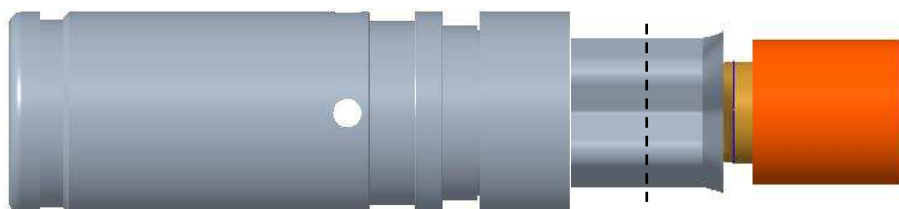


Figure 4/图 4 (Pic exemplarily/示例图)

5.4 Wire pull-out forces/导线拔出力

Measurement of wire pull-out forces from the wire crimp is a supporting manufacturing control.

量测导线从压接部位的拔出力，有助于制程管控。

The pull-out forces must fulfil the requirements according product specification LV215-1

导线的拔出力需满足 LV215-1 中的相关规定。

Wire Size 线径	Wire pull-out force 导线拔出力
25mm ²	1900N Min
50mm ²	2800N Min
70mm ²	3400N Min

Table 4/表 4

5.5 Crimp Position/压接位置

The TE applicator positions the contacts in the crimping tool at middle position as shown, figure 5 and 6. Correct position and condition of applicator has to be checked for every production lot.

端子压接部位要位于 TE 压接治具的中间，每一个批号的产品都要检查压接部位是否放置正确。

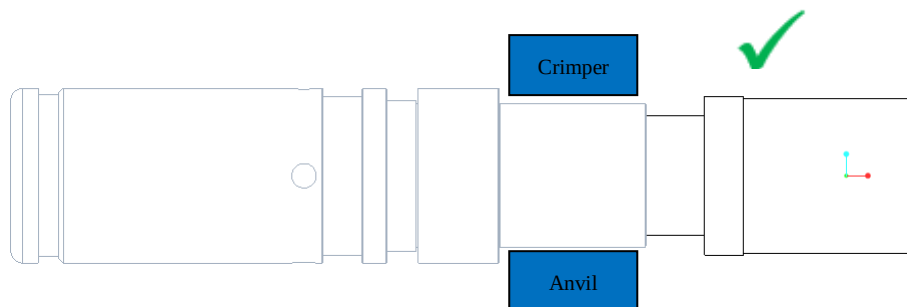


Figure 5/图 5 (Pic exemplarily/示例图)

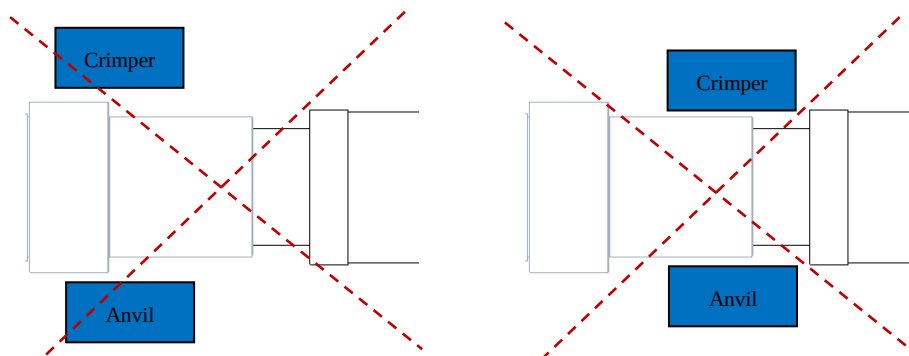


Figure 6/图 6(Pic exemplarily/示例图)

5.6 Contact area /接触区

During processing and following processing the contact area may not be damaged or bent.

在制程中，端子的接触区不能损坏或折弯。

5.7 Sealing area/密封区

Processing and following processing the sealing area may not be damaged or bent.

在制程中，端子的密封区不能损坏或折弯。

5.8 Shape and position tolerances/形状和位置公差

Measuring the shape and position deviation is not always necessary, if the contact is obviously straight by eye. In case a measurement is required, the measurement equipment required at least a 10-time better measuring precision compared with the requirement tolerances, see figure 7 and 8. Meeting the specific shape and position tolerances must be ensured before the contact is inserted into the housing. If contacts are bent during the application process and exceed the specified tolerances these must not be bent back or reworked, but have to be scrapped.

当目视端子明显是直的，量测压接后的形状和位置并不是必须的。如果需要量测，量测仪器的精度必须是要求公差的10倍,参考图7。在端子装入塑壳前，压接的形状和位置度公差要满足规格。如果一些端子的形状和位置度不满足规格，这些端子不能重工使用，必须报废。

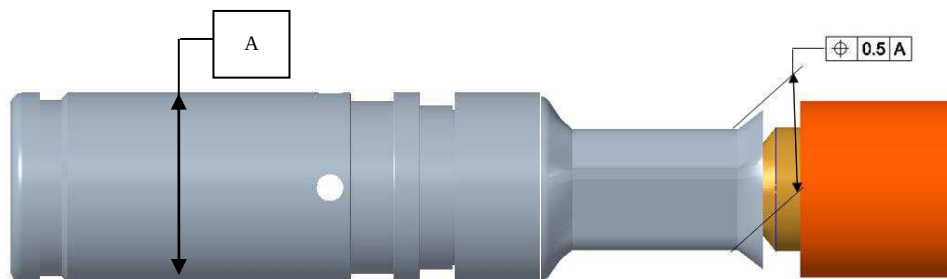


Figure 7/图 7 (Pic exemplarily/示例图)

5.9 Measuring equipment and measuring position/量测设备和量测位置

As measuring equipment for measuring the crimp height, a digital caliper with a measuring accuracy of 0.01mm is the minimum requirement. Measurement of crimp height has to be done as follows and always in the middle of the crimp area across whole crimp, see figure 9 and figure 3.

量测压接高度，可以使用精度为 0.01mm 的千分尺。量测压接高度的位置要位于压接部位的中间位置，如下图 8 所示：

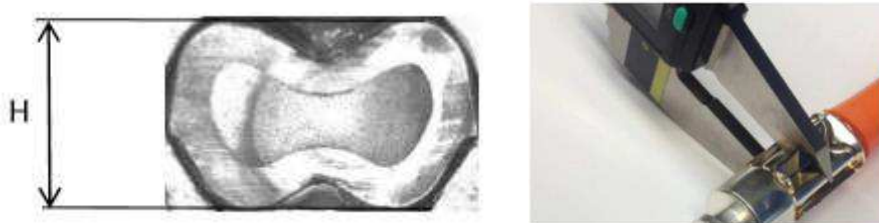


Figure 8/图 8 (Pic exemplarily/示例图)

Record of change history
变更历史记录

LTR	REVISION RECORD 变更记录	DWN 制作	APP 核定	DATE 时间
A	UPDATE PN 2390185-1	J.YANG	G.ZHANG	25FEB2022
A1	ADD PN 2361915-1/2361915-3/2400467-1/2400467-2	J.YANG	G.ZHANG	20APR2023

DR 制作 GERRY.ZHANG 25FEB2022		TE Connectivity Shanghai, China		
CHK 审核 G.ZHANG 25FEB2022				
APP 核准 WD.ZHANG 25FEB2022		NO 114-160042	REV A1	LOC ES
TITLE 标题	Vehicle Charge Inlet GB INLET Terminal 电动汽车国标充电插座端子			