

**MA213-09 (cn\_en)**  
**安装说明**

**CombiTac uniq**  
**PE模块**

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**MA213-09 (cn\_en)**  
**Assembly instructions**

**CombiTac uniq**  
**PE module**

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## 安全须知

仅可使用 Stäubli 指定的组件和工具。自行装配时，切勿背离本手册所述的制备及装配说明，否则 Stäubli 无法保证产品安全性或性能达到官方技术参数。请勿以任何方式修改产品。

可与 Stäubli 元件插合的非 Stäubli 原厂制造的连接器的，在某些情况下，某些制造商甚至将其描述为“与 Stäubli 兼容”，但该连接器并不符合长期稳定安全的电连接要求，而且出于安全考虑，不得与 Stäubli 元件插合在一起。因此，Stäubli 对因此类连接器（即未经 Stäubli 批准）与 Stäubli 元件插合而造成的任何损失不承担任何责任。

如您未遵守上述警告，则 Stäubli Electrical Connectors (Stäubli) 不承担任何责任。



**IEC 60417-618**  
安装需电气专业知识

产品可由具备电气技能或受过此方面指导的人员依照适用的安全法规进行装配或安装。



**IEC 60417-6042**  
注意电击风险

请在断电状态下工作  
操作电气装置时，请遵守五项安全规定。  
各电气装置确定后，应按照规定顺序执行以下五项基本要求（除非另有必要理由）：  
- 完全分离；  
- 确保不会重新连接；  
- 确认无工作电压；  
- 进行接地和短路；  
- 针对临近带电部件提供防护。  
任何从事此工作活动的人员均应具备电气技能或受过此方面指导，或者由同等能力的人员监督。  
来源：EN 50110-1:2013

最终应用时，还应检查电击防护。

对于大于 DC 60 V 或大于 AC 30 V 的电压，必须测量以确认金属外壳到保护地 (PE) 的电阻。



**IEC 60417-6070**  
在负载下请勿断开

仅当额定电压不超过 AC 1000 V / DC 1500 V DC 时，连接器才可能在带电压的状态下断开和插合。  
当额定电压超过 AC 1000 V / DC 1500 V 时，仅在连接器插合状态下方可带电，且不允许在负载下进行断开和插合动作。这也适用于在单一型号中同时配置电连接模块与气体和液体模块的情况。

## Safety instructions

Use only the components and tools specified by Stäubli. In case of self-assembly, do not deviate from the preparation and assembly instructions as stated herein, otherwise Stäubli cannot give any guarantee as to safety or conformity with the technical data. Do not modify the product in any way.

Connectors not originally manufactured by Stäubli which can be mated with Stäubli elements and in some cases are even described as "Stäubli-compatible" by certain manufacturers do not conform to the requirements for safe electrical connection with long-term stability, and for safety reasons must not be plugged together with Stäubli elements. Stäubli therefore does not accept any liability for any damages resulting from mating such connectors (i.e. lacking Stäubli approval) with Stäubli elements.

Stäubli Electrical Connectors (Stäubli) does not accept any liability in the event of failure to observe these warnings.

### Installation, electrotechnical expertise

The products may be assembled and installed by electrically skilled or instructed persons duly observing all applicable safety regulations.

### Caution, risk of electric shock

Work in a de-energized state  
Follow the five safety rules, when working on electrical installations.  
After the respective electrical installations have been identified, the following five essential requirements shall be undertaken in the specified order unless there are essential reasons for doing otherwise:  
- disconnect completely;  
- secure against re-connection;  
- verify absence of operating voltage;  
- carry out earthing and short-circuiting;  
- provide protection against adjacent live parts.  
Any person engaged in this work activity shall be electrically skilled or instructed, or shall be supervised by such a person.  
Source: EN 50110-1:2013

Protection against electric shock shall be checked in the end-use applications too.

For voltages > DC 60 V or > AC 30 V, protective earthing (PE) measures of metal housings must be taken.

### Do not disconnect under load

Connecting and disconnecting when live is only permitted if the rated voltage does not exceed AC 1000 V / DC 1500 V.  
For rated voltages over AC 1000 V / DC 1500 V, the voltage must only be applied in mated condition, disconnecting under load or connecting when live is not permitted. This also applies for electrical connections in close proximity to fluid and gas connections.

**安全须知****Safety instructions****ISO 7000-0434B**  
注意

每次使用连接器前,需提前检查外部是否有缺陷(尤其是绝缘层)如有安全疑虑,必须咨询专业人员或更换连接器。

带外壳应用的连接器的防水功能可参考相关产品的IP保护等级。

未插合的连接器必须防潮防尘。被污染的公母连接器不应插合使用。

**Caution**

Each time the connector is used, it should previously be inspected for external defects (particularly the insulation). If there are any doubts as to its safety, a specialist must be consulted or the connector must be replaced.

The plug connectors are watertight in accordance with the product specific IP protection class.

Unmated plug connectors must be protected from moisture and dirt. The male and female parts must not be plugged together when soiled.

**产品使用说明或技巧****Useful hint or tip**

欲了解更多技术参数,请参阅产品目录。

For further technical data please see the product catalog.

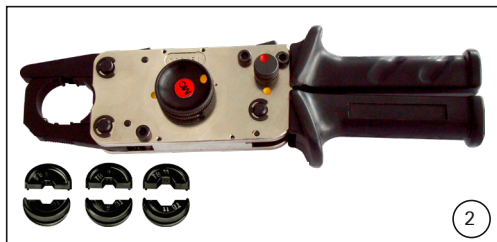


**工具准备**

(ill. 1)  
卡环钳用于固定直径 14 mm 的卡环。

**Required tools**

(ill. 1)  
Retaining ring pliers for retaining rings with Ø 14 mm.

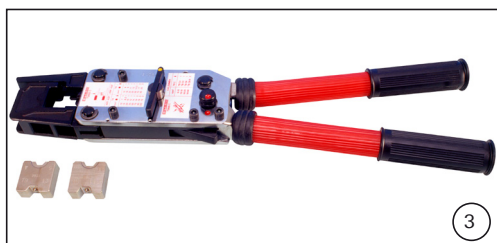


(ill. 2)  
适用于导体截面积为  
10 – 35 mm<sup>2</sup>, 规格为 AWG8 - 2 的  
导线:  
压接钳 M-PZ13,  
订货号 18.3700  
和压接模具 (见表1)

(ill. 2)  
**for conductor cross section  
10 – 35 mm<sup>2</sup>, AWG8 - 2:**  
Crimping pliers M-PZ13,  
Order no. 18.3700  
and crimping dies (see Tab. 1)

**注意事项:**  
i 操作说明 MA224,  
www.staubli.com/electrical

**Note:**  
i Operating instructions MA224,  
www.staubli.com/electrical



(ill. 3)  
适用于导体截面积为  
25 – 50 mm<sup>2</sup>, 规格为 AWG 4 - 1/0 的  
导线:  
压接钳 M-PZ-T2600,  
订货号 18.3710  
和压接模具 (见表1)

(ill. 3)  
**for conductor cross section  
25 – 50 mm<sup>2</sup>, AWG 4 - 1/0:**  
Crimping pliers M-PZ-T2600,  
Order no. 18.3710  
and crimping dies (see Tab. 1)

**注意事项:**  
i 操作说明 MA226,  
www.staubli.com/electrical

**Note:**  
i Operating instructions MA226,  
www.staubli.com/electrical



(ill. 4)  
适用于导体截面积为  
16 – 50 mm<sup>2</sup>, 规格为 AWG 6 - 1/0 的  
导线:  
电液压接工具  
CZ-B500, 订货号 18.311, 适用于 230 V,  
或订货号 18.3112, 适用于 110/120 V,  
以及压接模具 (见表1)

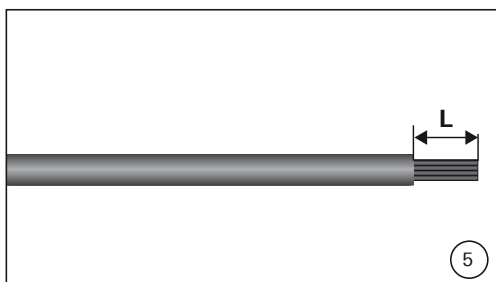
(ill. 4)  
**for conductor cross section  
16 – 50 mm<sup>2</sup>, AWG 6 - 1/0:**  
Electro hydraulic crimping tool  
CZ-B500, order no. 18.311 for 230 V  
or order no. 18.3112 for 110/120 V  
and crimping dies (see Tab. 1)

**注意事项:**  
i 操作说明 MA306,  
www.staubli.com/electrical

**Note:**  
i Operating instructions MA306,  
www.staubli.com/electrical

Tab. 1

PE 触子 PE contact	导体横截面 Conductor cross section		减径套 订货号 Reduction sleeve Order no.	压接钳 Crimping pliers			剥线长度 Stripping length L (mm)	控制尺寸 (X) Control dimension (X) (mm)		
	mm <sup>2</sup>	AWG		M-PZ13	M-PZ-T2600	CZ-B500		M-PZ13	M-PZ-T2600	CZ-B500
				压接模具 / Crimping dies 订货号 / Order no.						
CT-BP10/10/PE-GND AG CT-SP10/10/PE-GND AG	10	8	RH16-10 (05.5112)	MES-PZ-TB-9/16 (18.3703)	TB9 (18.3712)	MTB09-16-50 (18.3029)	16	7,3	7,3	7,3
CT-BP10/16/PE-GND AG CT-SP10/16/PE-GND AG	16	6	/	MES-PZ-TB-9/16 (18.3703)	TB9 (18.3712)	MTB09-16-50 (18.3029)	16	7,3	7,3	7,3
CT-BP10/25/PE-GND AG CT-SP10/25/PE-GND AG	25	/	RH35-25 (11013330)	MES-PZ-TB-13/35 (18.3705)	TB13 (18.3712)	MTB13-35-50 (18.3024)	20	10,2	10,2	10,4
CT-BP10/AWG4/PE-GND AG CT-SP10/AWG4/PE-GND AG	/	4	RH35-AWG4 (11013149)	MES-PZ-TB-13/35 (18.3705)	TB13 (18.3712)	MTB13-35-50 (18.3024)	20	10,2	10,2	10,4
CT-BP10/35/PE-GND AG CT-SP10/35/PE-GND AG	35	2	/	MES-PZ-TB-13/35 (18.3705)	TB13 (18.3712)	MTB13-35-50 (18.3024)	20	10,2	10,2	10,4/
CT-BP10/50/PE-GND AG CT-SP10/50/PE-GND AG	50	1/0	/	/	TB14,5 (18.3713)	MTB14,5-50-50 (18.3025)	21	/	11,4	11,2

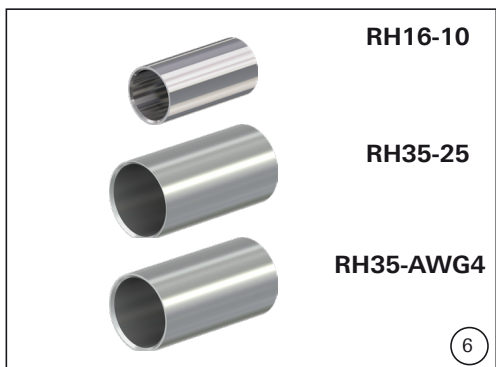


### 电缆准备

(ill. 5)  
将电缆绝缘层剥去长度 L (见表1)。

### Cable preparation

(ill. 5)  
Strip the cable to length L (see Tab. 1).



**注意(图6):**

**i** 对于导体截面积为 10 mm<sup>2</sup>、25 mm<sup>2</sup>，规格为 AWG 4 的导线，用户必须安装所提供的减径套。

以下型号的PE针已包含了减径套：

- CT-BP10/10/PE-GND AG
- CT-SP10/10/PE-GND AG
- CT-BP10/25/PE-GND AG
- CT-SP10/25/PE-GND AG
- CT-BP10/AWG4/PE-GND AG
- CT-SP10/AWG4/PE-GND AG

**Note (ill. 6):**

**i** For the conductor cross sections 10 mm<sup>2</sup>, 25 mm<sup>2</sup> and AWG 4 the supplied reduction sleeve must be fitted by the user.

Reduction sleeves are included with:

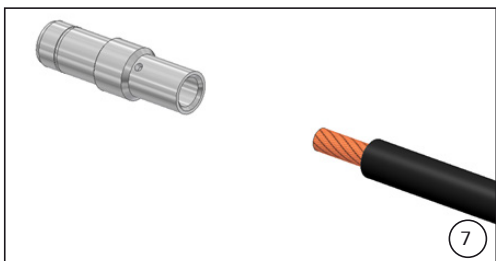
- CT-BP10/10/PE-GND AG
- CT-SP10/10/PE-GND AG
- CT-BP10/25/PE-GND AG
- CT-SP10/25/PE-GND AG
- CT-BP10/AWG4/PE-GND AG
- CT-SP10/AWG4/PE-GND AG

### 压接

尽可能将裸露的电缆插入触子压接套筒。

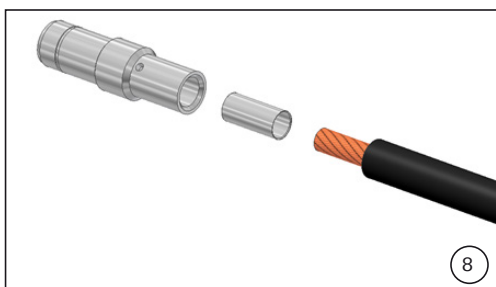
### Crimping

Insert stripped cable into the contact crimping sleeve as far as possible.



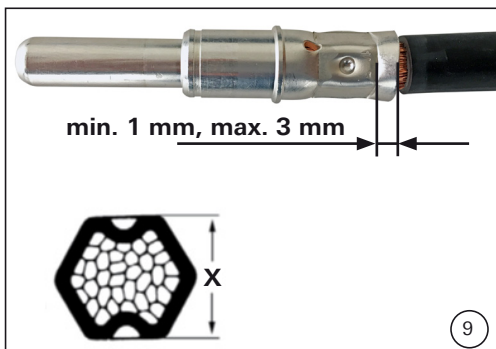
(ill. 7)  
无减径套压接。

(ill. 7)  
Crimping without reduction sleeve.



(ill. 8)  
有减径套压接。

(ill. 8)  
Crimping with reduction sleeve.



**注意(图9)**

压接模具的位置尺寸最小为 1 mm，最大为 3 mm。

根据控制尺寸 (X) 检查压接，(表1)。

**Attention (ill. 9)**

Crimping die position min. 1 mm and max. 3 mm.

Check crimping according to control dimension (X), (Tab. 1).

**注意事项:**

**i 如果没有使用减径套:**

压接前后，必须能在观察孔中看到导线。

**如果使用了减径套:**

压接前后，必须能在观察孔中看到减径套。

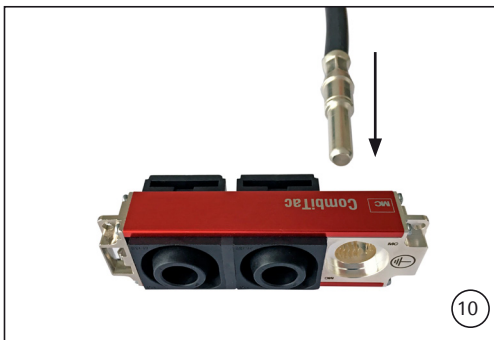
**Note:**

**i If no reduction sleeves are used:**

Wires must be visible in the sight hole before and after crimping.

**If reduction sleeves are used:**

Reduction sleeves must be visible in the sight hole before and after crimping.



**装配**

**(ill. 10 - 11)**

尽可能将压接的 PE 触子插入 PE 模块支撑块中。

**Assembly**

**(ill. 10 - 11)**

Insert crimped PE contact into the PE module carrier as far as possible.

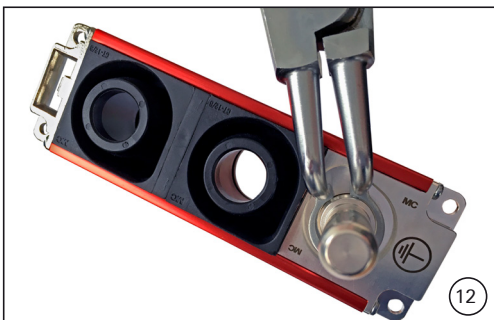


**(ill. 12)**

使用钳子插入卡环。

**(ill. 12)**

Insert the retaining ring by using the pliers.



**⚠ 注意(图 13)**

进行人工检查, 确保卡环正确地固定在凹槽中。

**⚠ Attention (ill. 13)**

Make a visual check to ensure the retaining ring is correctly secured in the groove.



**PE 模块插针和插座的组装步骤相同。**

**Assembly procedure for PE module pins and sockets is the same.**

注意事项 / Notes:

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