

Advanced Contact Technology

**Multi-Contact**

**MC**

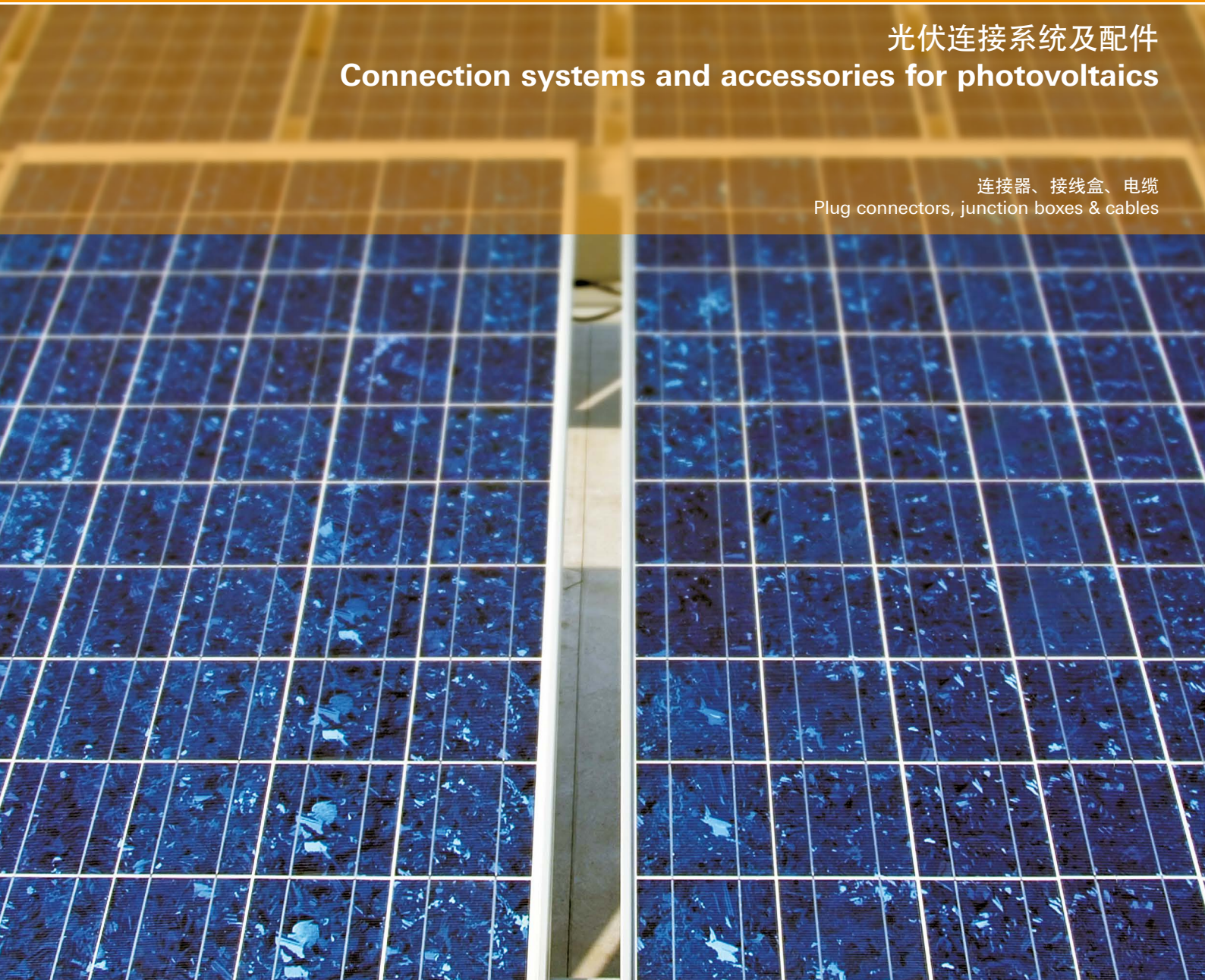
STÄUBLI GROUP

**Solar***line*

可再生能源连接器  
Connectors for Renewable Energy

光伏连接系统及配件  
Connection systems and accessories for photovoltaics

连接器、接线盒、电缆  
Plug connectors, junction boxes & cables





## MULTILAM 技术： 无限可能

MULTILAM是采用铜合金经特殊成型的一组连接元件，根据不同应用，表面镀银或镀金。它可以浮动安装在沟槽内。MULTILAM页片通过恒定的弹簧压力可持续保持与连接表面的接触，使接触电阻低且恒定。

MULTILAM技术可被广泛应用于各种复杂环境中，如大电流（可达几千安培）、高温（可达350°C）、高机械强度、高插拔次数（可达一百万次），并为客户提供全方位的解决方案。

我们可以根据客户的特殊要求设计产品和解决方案。

## MULTILAM Technology: Unlimited Possibilities

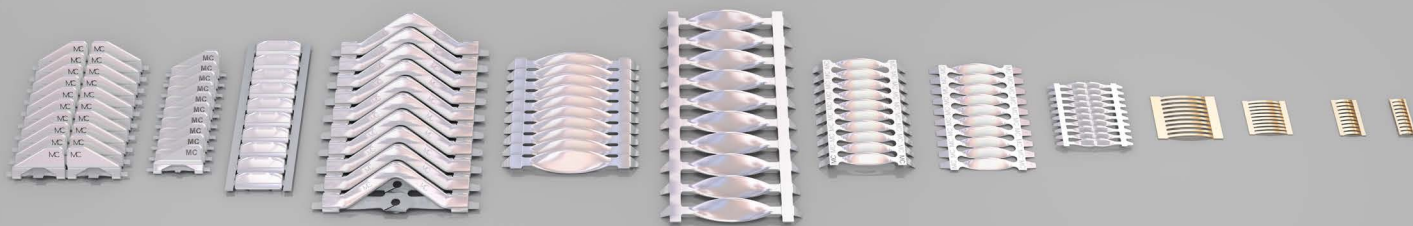
MULTILAM are specially formed, resilient copper-alloy contact elements that are silver or gold plated depending on their application, and are float mounted in a groove. Thanks to their constant spring pressure, MULTILAM louvers maintain continuous contact with the contact surface, resulting in a low and constant contact resistance.

MULTILAM technology allows us to meet a very broad range of requirements and to find solutions within the severest constraints, including electrical (up to several kA), thermal (up to 350 °C), and mechanical, with contact durability of up to 1 million mating cycles.

We specialize in the design of custom solutions.

## 满足最严苛需求的最佳连接解决方案

The right contact technology for the strictest requirements.





## MULTILAM 的优势

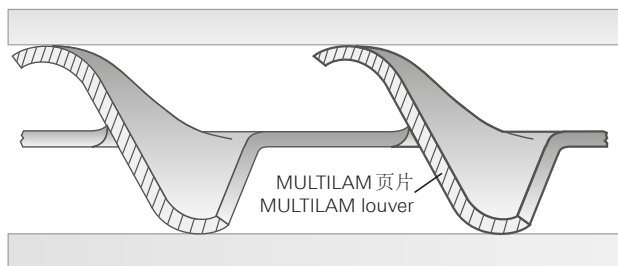
- 电压降小
- 载流能力高
- 功率损耗最小
- 接触电阻最小
- 耐用性强，高达一百万次插拔设计
- 工作温度可达350°C，短时间内允许更高的温度
- 耐油性好
- 抗震和抗冲击性好
- 维护成本低
- 圆形、扁平形和球形等种类
- 抗腐蚀性好

## Advantages of MULTILAM

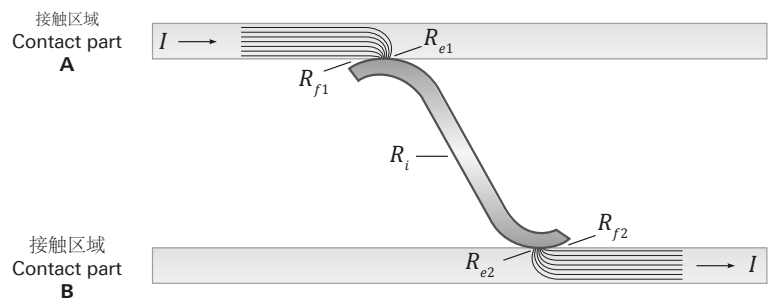
- Minimal voltage drop
- High current-carrying capacity
- Minimal power loss
- Minimal contact resistance
- Highly durable contacts withstand up to 1 million mating cycles
- Operating temperatures of up to 350 °C, higher temperatures permitted for short periods
- Good resistance to oils
- High resistance to vibration, shock, and impact
- Low maintenance costs
- Round, flat, or spherical types
- Very good corrosion resistance

节选自 **MULTILAM**Technology 目录

Extract from the **MULTILAM**Technology catalog



- $R_{e1}/R_{e2}$  = 收缩电阻
- $R_i$  = MULTILAM 页片内阻
- $R_{f1}/R_{f2}$  = 薄膜电阻
- $I$  = 标称电流



- $R_{e1}/R_{e2}$  = Constriction resistance
- $R_i$  = Internal resistance of MULTILAM louver
- $R_{f1}/R_{f2}$  = Film surface contamination resistance
- $I$  = Nominal current

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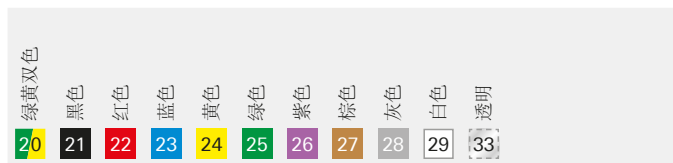
## 安全说明

那些非MC制造的但可与MC零件配合的连接器，以及被它们的制造商有时称之为可与“MC兼容”的连接系统，不符合长期稳定的安全电气连接要求，而且出于安全原因，它们不可以与MC零件连接。如果这些连接器未经MC许可与MC零件配合，我们将不承担任何责任。

## 信息概述

### 颜色代码

对于有多种可选颜色的产品，请在“\*”处填上您需要的颜色代码。



### 变更/保留条款

目录中所有数据、插图及图样都经仔细校对，它们是根据我们迄今为止而有的经验所得出的，但我们不为其中可能出现的错误负责。出于设计和安全因素的考虑，我们同样保留对此目录进行修改的权利。因此，如果您的设备中需要用到我们的产品，在采用目录中给出的数据之前，应该联系我们核对数据，以确保最新信息。我们非常乐意给您提出建议。

### 版权所有

未经我们事先书面准许，不管以何种方式，均不得将该目录用于任何其他用途。

### RoHSready

2011/65/EC指令关于在电气和电子设备中限制使用某些危害性物质。

### 标识

用于该产品的配件或特殊工具

可提供该产品的装配说明书 **MA000**

核查该产品的互动内容

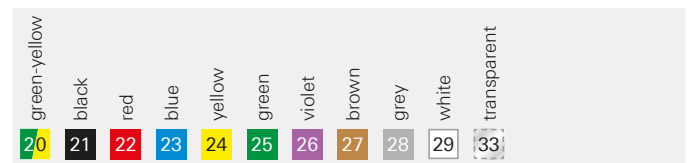
## Safety note

Plug connectors that are not made by MC but can be mated with MC elements and are sometimes also described by their manufacturers as “MC compatible”, do not conform to the requirements for a safe electrical connection with long-term stability and for safety reasons may not be plugged together with MC elements. We therefore accept no liability if these connectors which are not approved by MC are mated with MC elements.

## General information

### Colour code

For those items available in various colours, replace the asterisk “\*” with the appropriate colour code.



### Changes/Provisos

All data, illustrations and drawings in the catalogue have been carefully checked. They are in accordance with our experience to date, but no responsibility can be accepted for errors. We also reserve the right to make modifications for design and safety reasons. When designing equipment incorporating our components, it is therefore advisable not to rely solely on the data in the catalogue but to consult us to make sure this information is up to date. We shall be pleased to advise you.

### Copyright

The use of this catalogue for any other purpose, in whatever form, without our prior written consent is not permitted.

### RoHSready

Directive 2011/65/EC on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

### Symbols

Accessories or special tools exist for this product

The assembly instruction **MA000** is available for this product

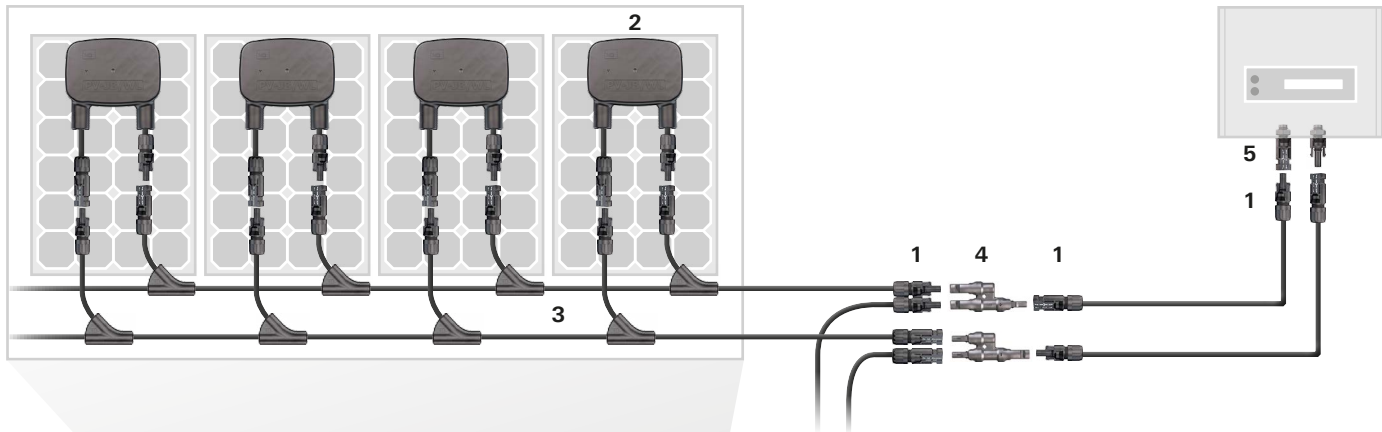
Check out the interactive content for this product

### MC产品组合的应用可能性

MC4连接器系统(1)、PV-JB/WL-...接线盒(2)、分支电缆(3)以及分支插头/插座(4)和MC4面板插座(5)的光伏屋顶安装应用实例。

### Application possibilities of the MC product portfolio

Example of a PV roof installation with MC4 plug connector system (1), PV-JB/WL-... junction box (2) branch cable (3), branch socket/plug (4) and MC4 panel receptacles (5).

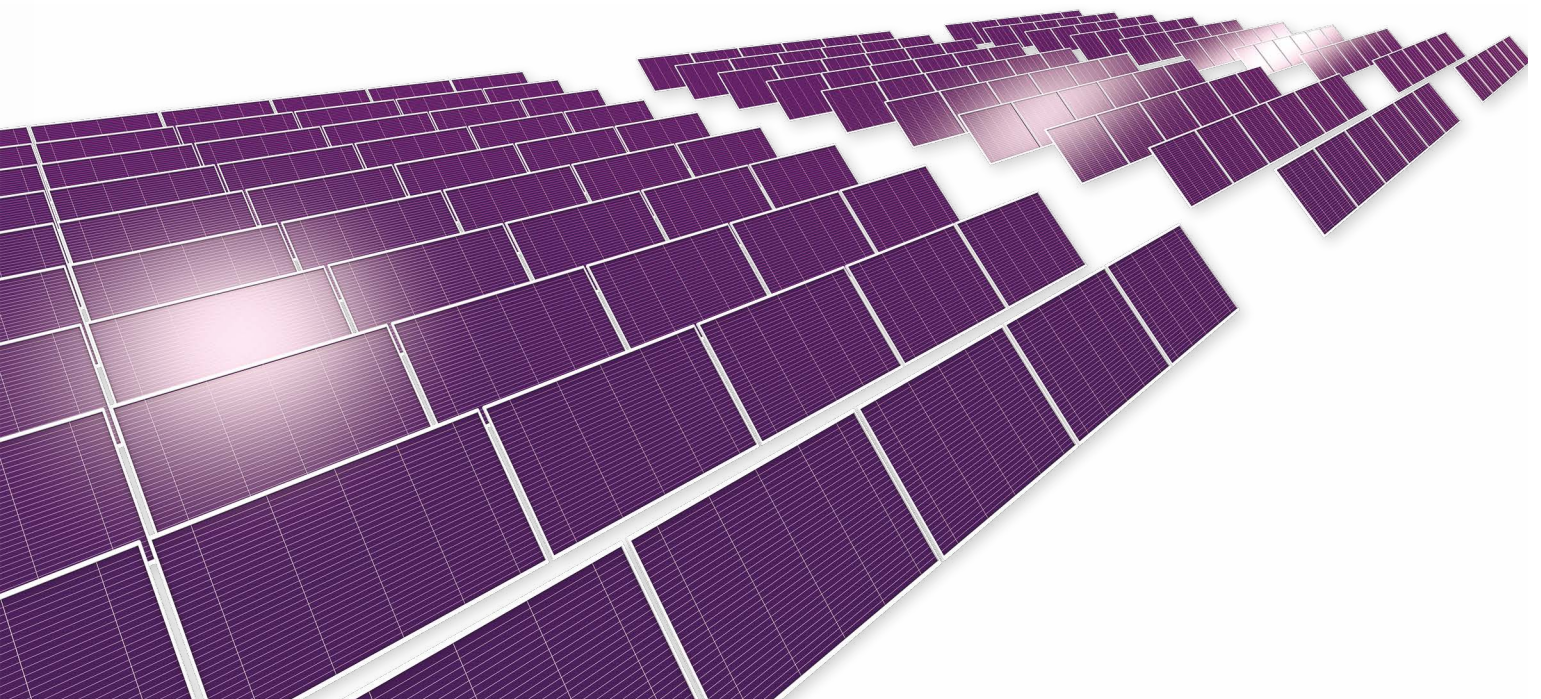
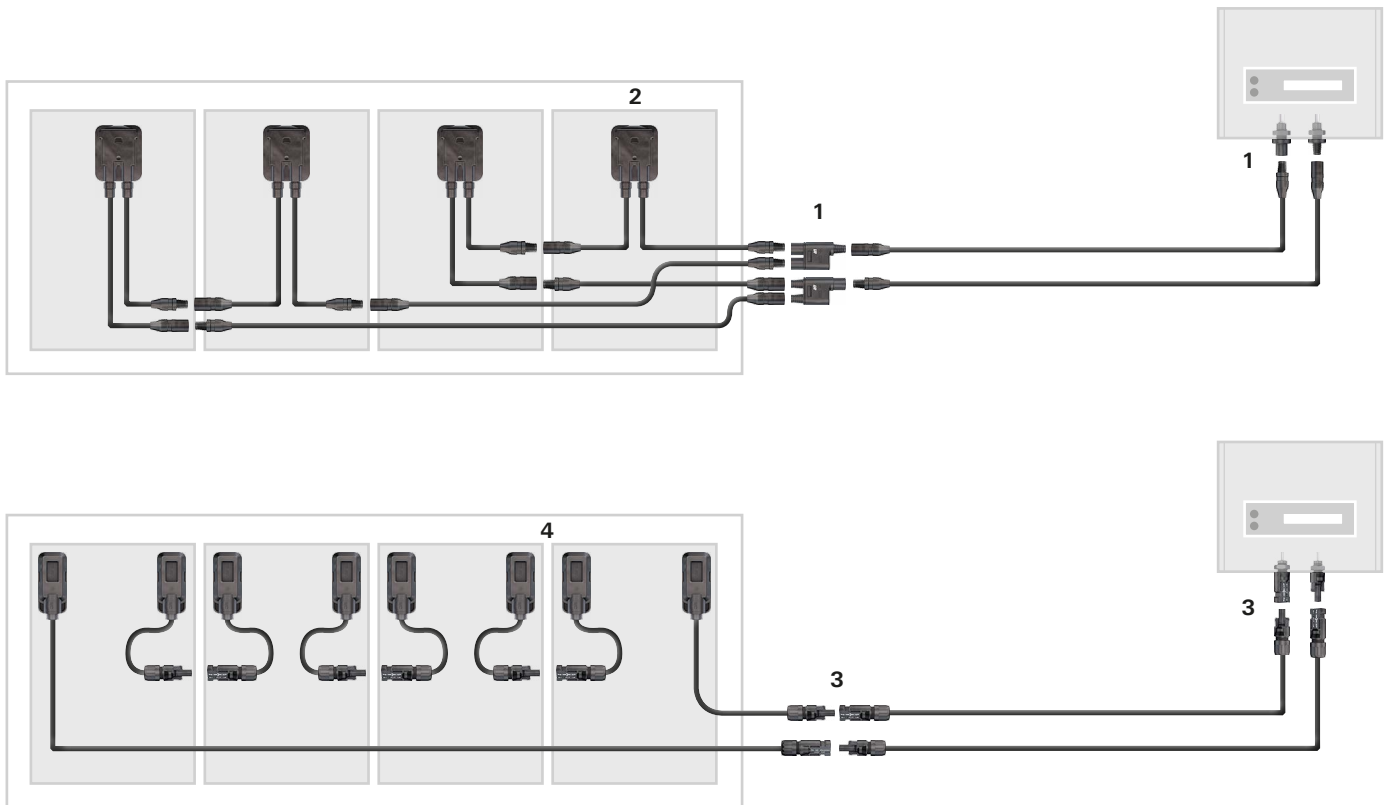


光伏实地安装的应用实例

上个示例给出了MC3连接器系统(1)和两极PV-JB-LC(2)的组合应用。MC4插座系统(3)和单极PV-JB/LP(4)的组合应用见下图。

Examples of a PV field installation

The upper example shows the MC3 plug connector system (1) and the two-pole PV-JB-LC (2). The MC4 connector system (3) and the single-pole PV-JB/LP (4) can be seen below.



**MC4 系列连接器的优势**

**Advantages of the MC4 connector range**

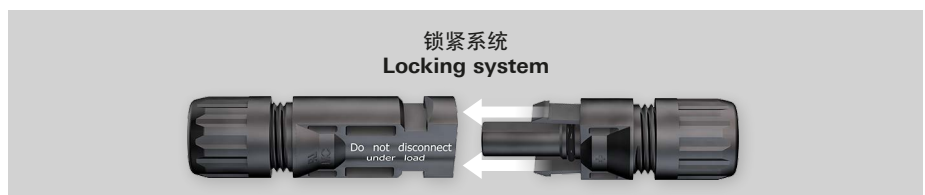
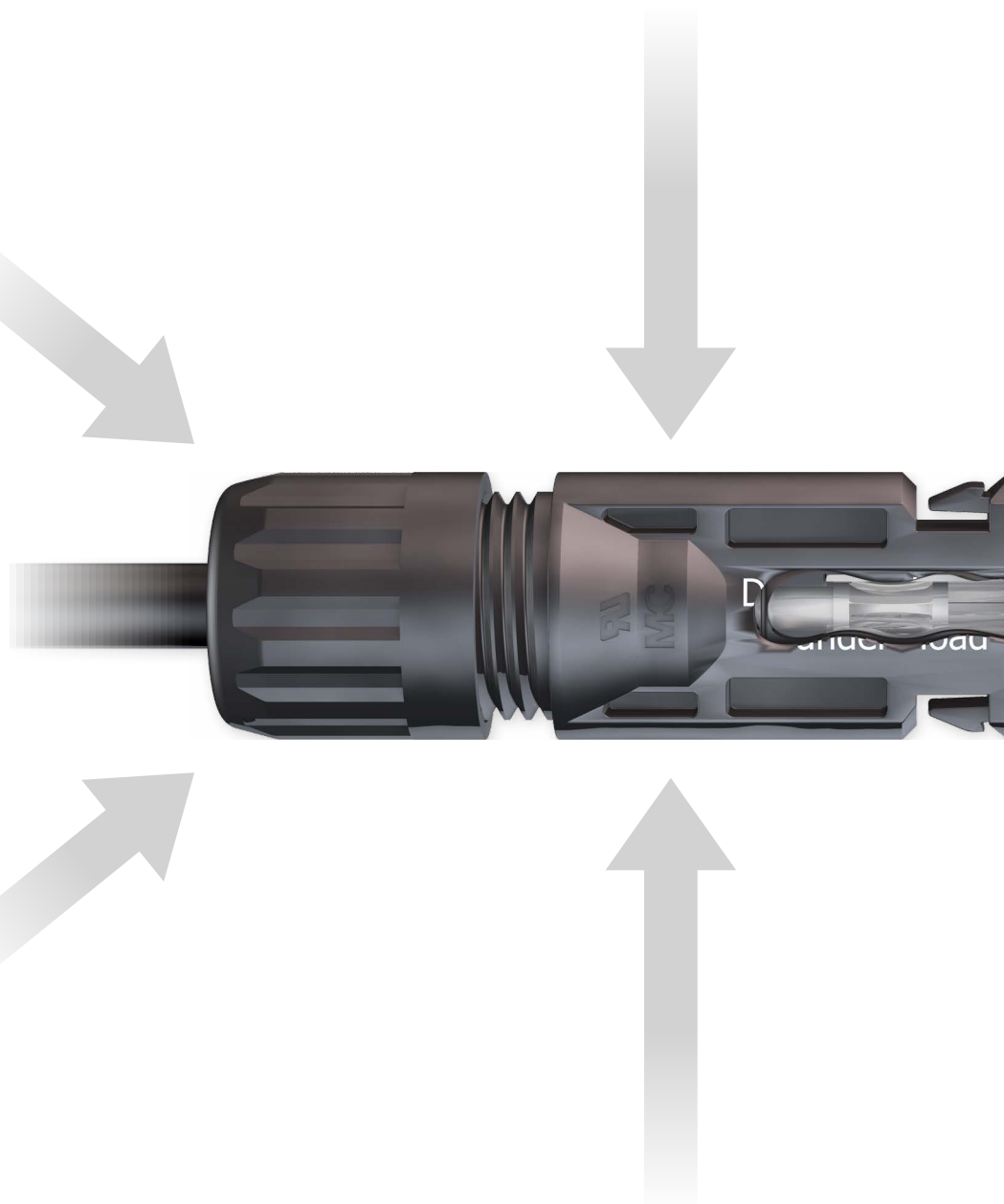


具高长期稳定性的  
久经考验的MULTILAM技术  
**Proven MULTILAM technology  
with high long-term stability**

积40余年的经验及核心能力  
**More than 40 years of  
experience and  
core competence**

电缆截面范围  
**Range of cable cross-sections**

10 mm <sup>2</sup>	○	○	8 AWG
6 mm <sup>2</sup>	○	○	10 AWG
4 mm <sup>2</sup>	○	○	12 AWG
2,5 mm <sup>2</sup>	○	○	14 AWG
1,5 mm <sup>2</sup>	○		

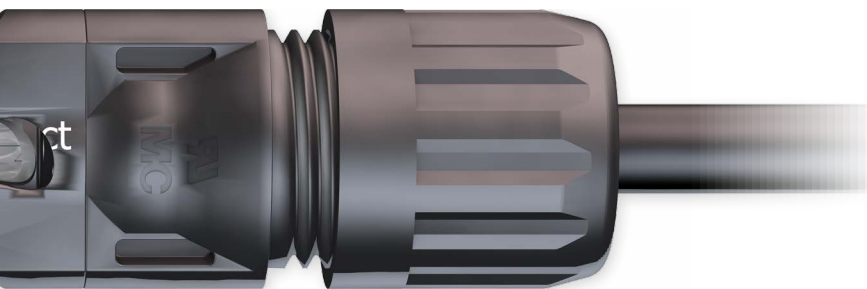
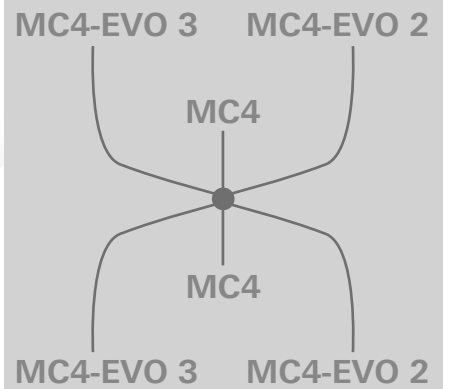




电压等级  
Voltage level

TÜV 1000 V/1500 V  
UL 600 V/1000 V

兼容性  
Compatibility



认证书

Certificates



TÜV



UL  
recognized



GOST-R



CSA



JET

安全锁紧装置  
Safety locking device



NEC 2011

连接器总览

Overview of plug connectors



认证<sup>1)</sup>  
Approvals<sup>1)</sup>

连接器/Plug connectors

MC3								
MC4								
MC4-EVO 3								
MC4-EVO 2								

面板插座/Panel receptacles

MC3						
MC4						

分支连接器/Branch connectors

MC3				
MC4				

图标/Legend

使用工具装配  
Assembly **with** tool

可提供已装配好的产品  
Available as ready-assembled product

特点 Features	盐雾试验 Salt mist spray test	额定电流 Rated current	额定电压 Rated voltage			锁紧系统 (UL) Locking system (UL)	防护等级 Degree of protection		安全等级 Safety class	环境温度范围 Ambient temperature range	密封盖 Sealing caps	页码 Page
			类型 Category	A	TÜV (V DC)		UL/ CSA (V DC)	MC (V DC)				
	V	20/30/43	1000	600	1000	直插式	IP65 IP67	IP2X	II	-40...+90	x	<b>12</b>
	VI	17/22,5/30/43	1500	1000/ 600	1500	嵌入式	IP65 IP68	IP2X	II	-40...+90	x	<b>14 16</b>
	V	17/22/30	1500	1000	1500	嵌入式	IP65 IP68	IP2X	II	-40...+85	x	<b>18</b>
	V	22/39/45/53/69	1500	1000	1500	嵌入式	IP65 IP68	IP2X	II	-40...+85	x	<b>20</b>
	-	20/30	1000	-	1000	直插式	IP65	IP2X	II	-40...+85	x	<b>24</b>
	-	17/22,5/30	1250	1000	1250	嵌入式	IP65 IP68	IP2X	II	-40...+90	x	<b>26 28</b>
	-	30	-	600	1000	直插式	IP65	IP2X	II	-40...+90	x	<b>30</b>
	-	30	-	-	1000	嵌入式	IP67	IP2X	II	-40...+90	x	<b>32</b>

<sup>1)</sup> 某些情况下，认证书仅限于特殊型号或仍在申请中。详情请参见产品信息的相关页码。

<sup>1)</sup> Certifications are in some cases limited to specific types or still pending. Details are given on the relevant product pages.



用于现场安装  
For assembly on site



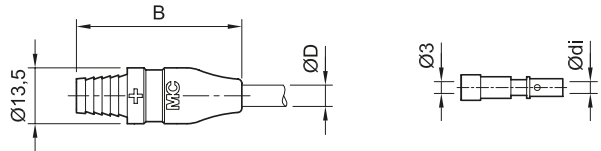
适用于客户特定的安装  
Suitable for customer-specific assembly

**公和母电缆连接器 MC3** **Female and male cable coupler MC3**

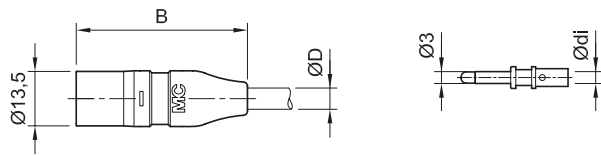
公和母电缆连接器分别为单独零件  
(包括绝缘部分)

Female and male cable coupler as individual part  
(including insulating part)

PV-KBT3...



PV-KST3...



型号 Type	订货号 Order No.	母电缆连接器 Female cable coupler	公电缆连接器 Male cable coupler	B (mm)	电缆外径 Cable outer diameter Ø D (mm)	导线截面积 Conductor cross section		Ø di (mm)	装配工具 Assembly device		认证 Approvals
						mm <sup>2</sup>	AWG		PV-RWZ3	PV-AWZ3	
PV-KBT3I-UR	32.0000-UR	x		40	3,2 – 4,8	2,5; 4	14; 12; 10	3	x	x	  
PV-KST3I-UR	32.0001-UR		x	41,6	3,2 – 4,8	2,5; 4	14; 12; 10	3	x	x	
PV-KBT3II-UR	32.0002-UR	x		40	4,9 – 7,1	2,5; 4	14; 12; 10	3	x	x	
PV-KST3II-UR	32.0003-UR		x	41,6	4,9 – 7,1	2,5; 4	14; 12; 10	3	x	x	
PV-KBT3III-UR	32.0004-UR	x		50	6,5 – 9	2,5; 4	14; 12; 10	3	x	x	
PV-KST3III-UR	32.0005-UR		x	51,6	6,5 – 9	2,5; 4	14; 12; 10	3	x	x	
PV-KBT3/6III-UR	32.0006-UR	x		50	6,5 – 9	6		4	x	x	
PV-KST3/6III-UR	32.0007-UR		x	51,6	6,5 – 9	6		4	x	x	
PV-KBT3/6IIA	32.0062	x		51,6	4,9 – 7,1	6		4		x	
PV-KST3/6IIA	32.0063		x	51,6	4,9 – 7,1	6		4		x	
PV-KBT3IV	32.0032	x		50	6,5 – 9	10		5		x	
PV-KST3IV	32.0033		x	51,6	6,5 – 9	10		5		x	

密封盖, 参阅第56页  
 装配工具, 参阅第60和61页

Sealing caps page 56  
 Assembly tools page 60, 61

装配说明 **MA207**  
[www.multi-contact.com](http://www.multi-contact.com)

Assembly Instructions **MA207**  
[www.multi-contact.com](http://www.multi-contact.com)

**创新之处**

- 国际市场上首批光伏连接器
- 久经考验的MULTILAM技术具有高持久稳定性
- 17余年来已被安装使用达数百万次
- 可提供截面积达10 mm<sup>2</sup>的连接器的
- 也可提供成品电缆，参阅第68页
- 根据客户所需规格而制造的电缆，参阅第70页

**The original**

- First series PV plug connector on the world market
- Proven MULTILAM technology with high long-term stability
- Has been installed millions of times over 17 years
- Available for assembly with cross sections of 10 mm<sup>2</sup>
- Also available as ready made leads, see page 68
- Leads made to customer's specifications, see page 70

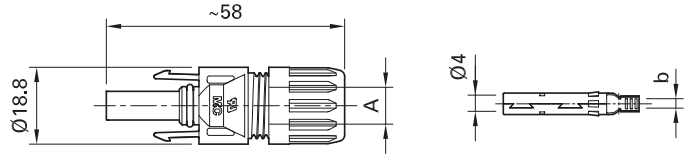
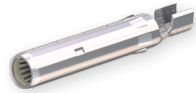
技术参数	Technical data	
连接器系统	Connector system	Ø 3 mm
额定电压	Rated voltage	1000 V DC (IEC) 600 V DC (UL)
额定电流	Rated current	20 A (2,5 mm <sup>2</sup> , 4 mm <sup>2</sup> ; 14 AWG, 12 AWG) 30 A (6 mm <sup>2</sup> ; 10 AWG) 43 A (10 mm <sup>2</sup> )
额定脉冲电压	Rated impulse voltage	12 kV
环境温度范围	Ambient temperature range	-40 °C...+90 °C (IEC) -40 °C...+75 °C (UL; 10 AWG, 12 AWG) -40 °C...+70 °C (UL; 14 AWG)
温度上限	Upper limiting temperature	105 °C (IEC)
防护等级, 已插合 未插合	Degree of protection, mated unmated	IP65, IP67 IP2X
过压类别/污染等级	Overvoltage category/Pollution degree	CATIII/3
连接器的接触电阻	Contact resistance of plug connectors	≤ 0,5 mΩ
安全等级	Safety class	II
连接系统	Contact system	MULTILAM
接线方式	Type of termination	压接 Crimping
触点材质	Contact material	铜、镀锡 Copper, tin plated
绝缘材料	Insulation material	TPE/PA
插入力/拔出力	Insertion force/Withdrawal force	≤ 50 N/≥ 50 N
锁紧系统 (UL)	Locking system (UL)	直插式/Latching type
阻燃等级	Flame class	UL94-HB/UL94-V0
盐雾试验, 严酷等级5	Salt mist spray test, degree of severity 5	IEC 60068-2-52
TÜV 认证, 符合EN 50521标准	TÜV-Rheinland certified, in accordance with EN 50521	R60026534
UL认证部件, 符合UL 6703标准	UL-recognized components, in accordance with UL 6703	E343181
CSA认证, 符合UL 6703标准	CSA certified, in accordance with UL 6703	250725

**公和母电缆连接器 MC4** **Female and male cable coupler MC4**

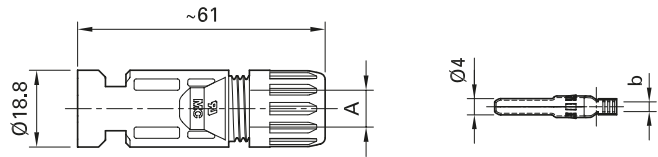
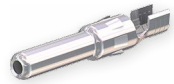
公和母电缆连接器分别为单独零件  
(包括绝缘部分)




Female and male cable coupler as individual part  
(including insulating part)


PV-KBT4...



PV-KST4...



型号 Type	订货号 Order No.	母电缆连接器 Female cable coupler	公电缆连接器 Male cable coupler	Ø-电缆固定头范围 Ø range of cable gland	导线截面积 Conductor cross section		b	认证 Approvals
				A (mm)	mm <sup>2</sup>	AWG	(mm)	  
PV-KBT4/2,5I-UR	32.0010P0001-UR	×		3 – 6	1,5; 2,5	14	3	} × × ×
PV-KST4/2,5I-UR	32.0011P0001-UR		×	3 – 6	1,5; 2,5	14	3	
PV-KBT4/2,5II-UR	32.0012P0001-UR	×		5,5 – 9	1,5; 2,5	14	3	
PV-KST4/2,5II-UR	32.0013P0001-UR		×	5,5 – 9	1,5; 2,5	14	3	
PV-KBT4/6I-UR	32.0014P0001-UR	×		3 – 6	4; 6	12; 10	5	
PV-KST4/6I-UR	32.0015P0001-UR		×	3 – 6	4; 6	12; 10	5	
PV-KBT4/6II-UR	32.0016P0001-UR	×		5,5 – 9	4; 6	12; 10	5	
PV-KST4/6II-UR	32.0017P0001-UR		×	5,5 – 9	4; 6	12; 10	5	
PV-KBT4/8II-UR	32.0080P0001-UR	×		6,5 – 8,9	–	8	–	} × ×
PV-KST4/8II-UR	32.0081P0001-UR		×	6,5 – 8,9	–	8	–	
PV-KBT4/10II	32.0034P0001	×		5,5 – 9	10	–	7,2	} ×
PV-KST4/10II	32.0035P0001		×	5,5 – 9	10	–	7,2	

 安全锁紧夹, 见第55 页  
密封盖, 见第57页  
装配工具, 见第63页

 **Safety lock clip** page 55  
**Sealing caps** page 57  
**Assembly tools** page 63

 装配说明 **MA231**  
[www.multi-contact.com](http://www.multi-contact.com)

 **Assembly Instructions MA231**  
[www.multi-contact.com](http://www.multi-contact.com)

- 嵌入式锁紧
  - 根据NEC2011标准制造的PV-SSH4安全锁紧夹只能用工具才能松开
  - 久经考验的MULTILAM技术具有长期的高的稳定性，这保证了连接器在整个使用寿命中可以保持持续的较低的功率损失
  - 经过了12年来在实际光伏电站运行使用中的检验
  - 可提供截面积为10 mm<sup>2</sup>的连接器
  - 也可提供成品电缆，见第68页
  - 根据客户所需规格而制造的电缆，参阅第70页
- Snap-in lock
  - Locking by safety lock clip PV-SSH4 in accordance with NEC 2011, can be released only with tool
  - Proven MULTILAM technology with high long-term stability, which ensures consistently low performance loss throughout the entire service life of the plug connector
  - Tried and tested plug connectors, 12 years of experience in the field
  - Available for assembly with cross-sections of 10 mm<sup>2</sup>
  - Also available as ready made leads, see page 68
  - Leads made to customer's specifications, see page 70

技术参数	Technical data	
连接器系统	Connector system	Ø 4 mm
额定电压	Rated voltage	1000 V DC/1500 V DC (IEC) <sup>1)</sup> 1000 V DC/600 V DC (UL) <sup>2)</sup>
额定电流 IEC (90 °C)	Rated current IEC (90 °C)	17 A (1,5 mm <sup>2</sup> ) 22,5 A (2,5 mm <sup>2</sup> ; 14 AWG) 30 A (4 mm <sup>2</sup> ; 6 mm <sup>2</sup> ; 12 AWG, 10 AWG) 43 A (10 mm <sup>2</sup> ) 50 A (8 AWG)
额定电流 IEC (85 °C)	Rated current IEC (85 °C)	17 A (1,5 mm <sup>2</sup> ) 22,5 A (2,5 mm <sup>2</sup> ; 14 AWG) 39 A (4 mm <sup>2</sup> ; 12 AWG) 45 A (6 mm <sup>2</sup> ; 10 AWG)
额定脉冲电压	Rated impulse voltage	12 kV (1000 V DC (IEC)) 16 kV (1500 V DC (IEC))
环境温度范围	Ambient temperature range	-40 °C...+90 °C (IEC) -40 °C...+75 °C (UL) -40 °C...+70 °C (UL: 14 AWG)
温度上限	Upper limiting temperature	105 °C (IEC)
防护等级, 已插合 未插合	Degree of protection, mated unmated	IP65, IP68 (1 h/1 m) IP2X
过压类别/污染等级	Overvoltage category/Pollution degree	CATIII/3
连接器的接触电阻	Contact resistance of plug connectors	≤ 0,35 mΩ
安全等级	Safety class	1000 V DC: II 1500 V DC: 0
连接系统	Contact system	MULTILAM
接线方式	Type of termination	压接/Crimping
触点材质	Contact material	铜、镀锡/Copper, tin plated
绝缘材料	Insulation material	PC/PA
锁紧系统	Locking system (UL)	嵌入式/Locking type
阻燃等级	Flame class	UL94-V0
耐氨性 (参考DLG)	Ammonia resistance (acc. to DLG)	1500 h, 70 °C/70 % RH, 750 ppm
盐雾试验, 严酷等级6	Salt mist spray test, degree of severity 6	IEC 60068-2-52
TÜV 认证, 符合EN 50521标准	TÜV-Rheinland certified, in accordance with EN 50521	R60028286
TÜV 认证, 符合2Pfg2330标准	TÜV-Rheinland certified, in accordance with 2Pfg2330	R60087448
UL认证部件, 符合UL 6703标准	UL recognized component, in accordance with UL 6703	E343181
CSA认证, 符合UL 6703标准	CSA certified, in accordance with UL 6703	250725

<sup>1)</sup> 2Pfg2330: 仅用于限制进入的光伏电站系统

<sup>2)</sup> 适用于特定配置; 详情参见装配说明MA231

<sup>1)</sup> 2Pfg2330: only approved for locations with restricted access

<sup>2)</sup> for selected configurations; see assembly instructions MA231 for details

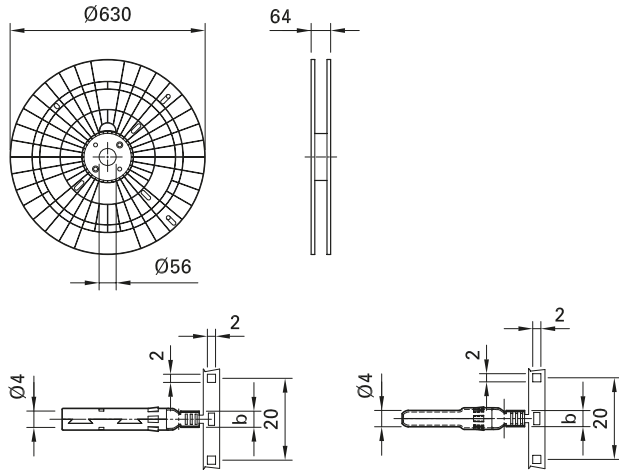
**公和母电缆连接器  
MC4**










**Female and male cable coupler  
MC4**

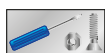
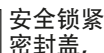
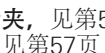
支撑带上的触头  
(包括绝缘部分)

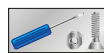


Contacts on carrier band  
(including insulating part)

PV-KBT4...  
PV-KST4...




型号 Type	订货号 Order No.	母电缆连接器 Female cable coupler	公电缆连接器 Male cable coupler	Ø-电缆固定头范围 Ø range of cable gland		导线截面积 Conductor cross section		压接工具 Crimping tool	每卷盘的触头数 <sup>3)</sup> Contacts per reel <sup>3)</sup>	认证 Approvals
				A (mm)	mm <sup>2</sup>	AWG	b (mm)			
PV-KBT4/2,5I-UR	32.0010P2000-UR	×		3-6	1,5; 2,5	14	3	1)	2000	  
PV-KST4/2,5I-UR	32.0011P2000-UR		×	3-6	1,5; 2,5	14	3	1)	2000	
PV-KBT4/2,5II-UR	32.0012P2000-UR	×		5,5-9	1,5; 2,5	14	3	1)	2000	
PV-KST4/2,5II-UR	32.0013P2000-UR		×	5,5-9	1,5; 2,5	14	3	1)	2000	
PV-KBT4/6I-UR	32.0014P2000-UR	×		3-6	4; 6	12; 10	5	1)	2000	
PV-KST4/6I-UR	32.0015P2000-UR		×	3-6	4; 6	12; 10	5	1)	2000	
PV-KBT4/6II-UR	32.0016P2000-UR	×		5,5-9	4; 6	12; 10	5	1)	2000	
PV-KST4/6II-UR	32.0017P2000-UR		×	5,5-9	4; 6	12; 10	5	1)	2000	
PV-KBT4/8II-UR	32.0080P2000-UR	×		6,5-8,9	-	8	-	-	2)	  
PV-KST4/8II-UR	32.0081P2000-UR		×	6,5-8,9	-	8	-	-	2)	
PV-KBT4/10II	32.0034P1700	×		5,5-9	10	-	7,2	1)	1700	  
PV-KST4/10II	32.0035P1700		×	5,5-9	10	-	7,2	1)	1700	

 安全锁紧夹, 见第55页  
 密封盖, 见第57页  
 装配工具, 见第63页

 **Safety lock clip** page 55  
 **Sealing caps** page 57  
 **Assembly tools** page 63

 装配说明 **MA231**  
[www.multi-contact.com](http://www.multi-contact.com)

 Assembly Instructions **MA231**  
[www.multi-contact.com](http://www.multi-contact.com)

- 用于全自动装配的进料带
- 可提供专为MC4实现自动压接而设计的工具
- 由于专门研制的卷盘而使得运作可靠
- Feeder bands for fully automatic assembly
- Tools specially designed for MC4 are available for automatic crimping
- Process reliability as result of specially developed supply reel

技术参数	Technical data	
连接器系统	Connector system	Ø 4 mm
额定电压	Rated voltage	1000 V DC/1500 V DC (IEC) <sup>4)</sup> 1000 V DC/600 V DC (UL)
额定电流 IEC (90 °C)	Rated current IEC (90 °C)	17 A (1,5 mm <sup>2</sup> ) 22,5 A (2,5 mm <sup>2</sup> ; 14 AWG) 30 A (4 mm <sup>2</sup> , 6 mm <sup>2</sup> ; 12 AWG, 10 AWG) 43 A (10 mm <sup>2</sup> ) 50 A (8 AWG)
额定电流 IEC (85 °C)	Rated current IEC (85 °C)	17 A (1,5 mm <sup>2</sup> ) 22,5 A (2,5 mm <sup>2</sup> ; 14 AWG) 39 A (4 mm <sup>2</sup> ; 12 AWG) 45 A (6 mm <sup>2</sup> ; 10 AWG)
额定脉冲电压	Rated impulse voltage	12 kV (1000 V DC (IEC)) 16 kV (1500 V DC (IEC))
环境温度范围	Ambient temperature range	-40 °C...+90 °C (IEC) -40 °C...+75 °C (UL) -40 °C...+70 °C (UL: 14 AWG)
温度上限	Upper limiting temperature	105 °C (IEC)
防护等级, 已插合 未插合	Degree of protection, mated unmated	IP65, IP68 (1 h/1 m) IP2X
过压类别/污染等级	Overvoltage category/Pollution degree	CATIII/3
连接器的接触电阻	Contact resistance of plug connectors	≤ 0,35 mΩ
安全等级	Safety class	1000 V DC: II 1500 V DC: 0
连接系统	Contact system	MULTILAM
接线方式	Type of termination	压接/Crimping
触点材质	Contact material	铜, 镀锡/Copper, tin plated
绝缘材料	Insulation material	PC/PA
锁紧系统	Locking system (UL)	嵌入式/Locking type
阻燃等级	Flame class	UL94-V0
耐氨性 (参考DLG)	Ammonia resistance (acc. to DLG)	1500 h, 70 °C/70 % RH, 750 ppm
盐雾试验, 严酷等级6	Salt mist spray test, degree of severity 6	IEC 60068-2-52
TÜV认证, 符合EN 50521标准	TÜV-Rheinland certified, in accordance with EN 50521	R60028286
TÜV认证, 符合2Pfg2330标准	TÜV-Rheinland certified, in accordance with 2Pfg2330	R60087448
UL认证部件, 符合UL 6703标准	UL recognized component, in accordance with UL 6703	E343181
CSA认证, 符合UL 6703标准	CSA certified, in accordance with UL 6703	250725

<sup>1)</sup> 可索取半自动压接工具或装配工具的资料

<sup>2)</sup> 大宗商品/零部件

<sup>3)</sup> 卷盘类型可能会有变动

<sup>4)</sup> 2Pfg2330: 仅用于限制进入的光伏电站系统

<sup>1)</sup> Information about a semi-automatic crimp device or assembly device on request

<sup>2)</sup> Bulk goods/individual parts

<sup>3)</sup> Reel type subject to alterations

<sup>4)</sup> 2Pfg2330: Only for use in PV-systems with restricted access locations

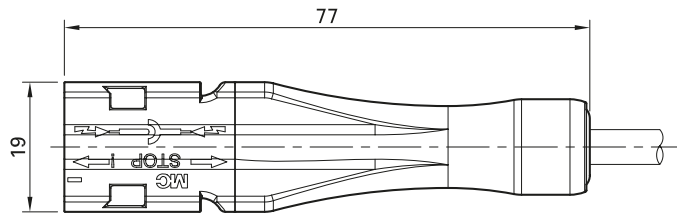
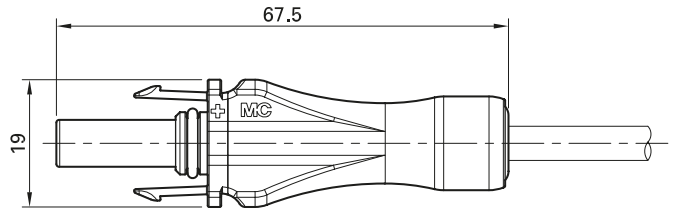
**公和母电缆连接器  
MC4-EVO 3**

成品连接器，带电缆



**Female and male cable coupler  
MC4-EVO 3**

Ready-made with cable



型号 Type	订货号 Order No.	电缆端 Cable end	电缆型号 Cable type	电缆端 Cable end	导体截面积 Conductor cross section	额定电流 Rated current	额定电压 Rated voltage	电缆颜色 Colour of cable	认证 Approvals
					mm <sup>2</sup> AWG	A	TÜV (V DC)    UL (V DC)		
MC-K4SXL/PV-PLS-BII/-/...	32.1164-1)*	x	FLEX-SOL-XL 4,0		4,0    12	30	1000    -	21	
MC-K4SXL/PV-PLS-SII/-/...	32.1165-1)*			x	4,0    12	30			
MC-K6SXL/PV-PLS-BIII/-/...	32.1167-1)*	x	FLEX-SOL-XL 6,0		6,0    10	30	1000    -	21	
MC-K6SXL/PV-PLS-SIII/-/...	32.1168-1)*			x	6,0    10	30			
MC-K2,5BE2/PV-PLS-BII/-/...	32.1188-1)	x	BETAFlam® Solar 125 flex UL 1000 V		2,5    14	22	1500    1000	21	
MC-K2,5BE2/PV-PLS-SII/-/...	32.1189-1)			x	2,5    14	22			
MC-K4BE2/PV-PLS-BIII/-/...	32.1191-1)	x			4,0    12	30			
MC-K4BE2/PV-PLS-SIII/-/...	32.1192-1)			x	4,0    12	30			
MC-K6BE2/PV-PLS-BIII/-/...	32.1194-1)	x	Byson		6,0    10	30	1500    1000	21	
MC-K6BE2/PV-PLS-SIII/-/...	32.1195-1)			x	6,0    10	30			
MC-K2,5BY/PV-PLS-BII/-/...	32.1179-1)	x	Byson		2,5    14	22	1000    1000	21	
MC-K2,5BY/PV-PLS-SII/-/...	32.1180-1)			x	2,5    14	22			
MC-K4BY/PV-PLS-BIII/-/...	32.1182-1)	x			4,0    12	30			
MC-K4BY/PV-PLS-SIII/-/...	32.1183-1)			x	4,0    12	30			
MC-K6BY/PV-PLS-BIII/-/...	32.1185-1)	x	Byson		6,0    10	30	1000    1000	21	
MC-K6BY/PV-PLS-SIII/-/...	32.1186-1)			x	6,0    10	30			

密封盖，参阅第57页  
 解锁工具，参阅第63页

Sealing caps page 57  
 Unlocking tool page 63

装配说明 **MA264**  
[www.multi-contact.com](http://www.multi-contact.com)

Assembly Instructions **MA264**  
[www.multi-contact.com](http://www.multi-contact.com)

- 创新型的集成密封系统能够满足较高的防护等级要求，如IP65、IP67和IP68(1 h/1 m)
- 连接器采用一个内置嵌入式锁扣锁紧，符合NEC2011规定的标准，达到最大的锁紧可靠度，并且只能用PV-MS-PLS工具才能解锁。
- 可与MC4插合。
- 只提供预装配件，导线截面积为2,5 mm<sup>2</sup>、4 mm<sup>2</sup>和6 mm<sup>2</sup>。
- 注册JET?请联系我们!
- The innovative integrated sealing system guarantees high protection categories of IP65, IP67 and IP68 (1 h/1 m).
- The connector can be locked in conformity with NEC 2011 by an integrated snap-in lock for maximum dependability, and can be unlocked only with the tool PV-MS-PLS.
- Compatible for mating with MC4.
- Only available pre-assembled with the conductor cross sections 2,5 mm<sup>2</sup>, 4 mm<sup>2</sup> and 6 mm<sup>2</sup>.
- **JET registration? Contact us!**

技术参数	Technical data	
连接器系统	Connector system	Ø 4 mm
额定电压	Rated voltage	1000 V DC / 1500 V DC (IEC) <sup>2)</sup> 600 V DC / 1000 V DC (UL) <sup>2)</sup> 1500 V DC (JET)
额定电流	Rated current	17 A (1,5 mm <sup>2</sup> ; 16 AWG) 22 A (2,5 mm <sup>2</sup> ; 14 AWG) 30 A (4 mm <sup>2</sup> , 6 mm <sup>2</sup> ; 12 AWG, 10 AWG)
额定脉冲电压	Rated impulse voltage	12 kV (1000 V) 16 kV (1500 V)
环境温度范围	Ambient temperature range	-40 °C...+85 °C (IEC) -40 °C...+70 °C (UL)
温度上限	Upper limiting temperature	+105 °C (IEC)
防护等级, 已插合 未插合	Degree of protection, mated unmated	IP65, IP68 (1 h/1 m) IP2X
过压类别/污染等级	Overvoltage category/Pollution degree	CATIII/3
连接器的接触电阻	Contact resistance of plug connectors	≤ 0,35 mΩ
安全等级	Safety class	II
连接系统	Contact system	MULTILAM
接线方式	Type of termination	压接 Crimp termination
触头材质	Contact material	黄铜、镀锡 Brass, tin plated
绝缘材料	Insulation material	PPE/TPE
锁紧系统	Locking system (UL)	嵌入式 / Locking type
阻燃等级	Flame class	UL-94-V0
抗氨测试 (根据DLG)	Ammonia resistance (acc. to DLG)	1500 h, 70 °C/70 % RH, 750 ppm
盐雾试验, 严酷等级5	Salt mist spray test, degree of severity 5	IEC 60068-2-52
TÜV认证, 符合EN 50521标准	TÜV-Rheinland certified according EN 50521	R60035159
UL认证部件, 符合UL 6703标准	UL recognized component, according UL 6703	E343181
CSA认证, 符合UL 6703标准	CSA recognized component according UL 6703	250725

<sup>1)</sup> 请指明电缆长度(单位 cm); 电缆长度依需求而定

<sup>2)</sup> 取决于电缆型号

\* 请添加您所需的颜色代码

<sup>1)</sup> Please indicate cable length in cm; cable lengths on request.

<sup>2)</sup> Depending on cable type

\* Add the desired colour code

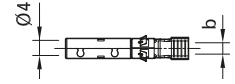
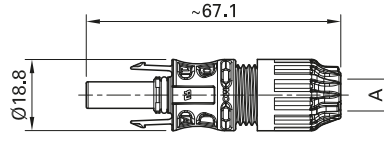
**公和母电缆连接器  
MC4-EVO 2**

**Female and male cable coupler  
MC4-EVO 2**

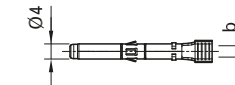
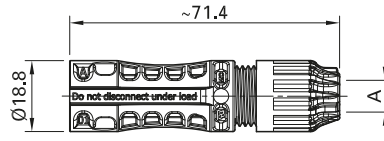
公和母电缆连接器分别为单独零件  
(包括绝缘部分)




Female and male cable coupler as individual part  
(including insulating part)


**PV-KBT4-EVO 2/...-UR**




**PV-KST4-EVO 2/...-UR**




型号 Type	订货号 Order No.	母电缆连接器 Female cable coupler	公电缆连接器 Male cable coupler	Ø-电缆固定头范围 Ø range of cable gland		导线截面积 Conductor cross section		认证 Approvals
				A (mm)	mm <sup>2</sup>	AWG	b (mm)	
PV-KBT4-EVO 2/2,5I-UR	32.0082P0001-UR	x		4,7 – 6,1				  
PV-KST4-EVO 2/2,5I-UR	32.0083P0001-UR		x		1,5	16	3,0	
PV-KBT4-EVO 2/2,5II-UR	32.0084P0001-UR	x		6,1 – 7,6	2,5	14		
PV-KST4-EVO 2/2,5II-UR	32.0085P0001-UR		x					
PV-KBT4-EVO 2/6I-UR	32.0086P0001-UR	x		4,7 – 6,1				
PV-KST4-EVO 2/6I-UR	32.0087P0001-UR		x					
PV-KBT4-EVO 2/6II-UR	32.0088P0001-UR	x		6,1 – 7,6	4,0	12	5,0	
PV-KST4-EVO 2/6II-UR	32.0089P0001-UR		x		6,0	10		
PV-KBT4-EVO 2/6III-UR	32.0090P0001-UR	x		7,6 – 8,5				
PV-KST4-EVO 2/6III-UR	32.0091P0001-UR		x					
PV-KBT4-EVO 2/10III-UR	32.0092P0001-UR	x		7,6 – 8,5	10	8	7,2	
PV-KST4-EVO 2/10III-UR	32.0093P0001-UR		x					

 密封盖，参阅第57页  
装配工具，见第63页

 **Sealing caps** page 57  
**Assembly tools** page 63

 装配说明 **MA273**  
[www.multi-contact.com](http://www.multi-contact.com)

 **Assembly Instructions MA273**  
[www.multi-contact.com](http://www.multi-contact.com)

- MC4-EVO 2是Multi-Contact的最新光伏连接器产品。
- 拥有IEC、UL、JET、cTÜVus等国际认证
- 完全适用于1500 V DC (IEC、JET) 和1000 V DC (UL)
- 自2004年以来，MULTILAM专业技术的品质和耐用性已经过数亿次考验
- 对紫外线、氨、盐雾具有耐抗性，防护等级高 (IP68) ，因而适用于所有气候环境
- 该连接器可现场组装或预装，可使用MC4工具
- The MC4-EVO 2 is the latest addition to the Multi-Contact PV connector portfolio.
- Internationally certified with IEC, UL, JET, cTÜVus
- Approved for 1500 V DC (IEC, JET), 1000 V DC (UL) unrestricted access
- MULTILAM Technology, has proven the quality and durability several 100 million times since 2004
- Suited for all climatic environments thanks to resistance to UV, ammonia, salt-mist spray and high IP class (IP68)
- Available as a field and preassembled connector, MC4 tools can be used

技术参数	Technical data	
连接器系统	Connector system	Ø 4 mm
额定电压	Rated voltage	1000 V DC / 1500 V DC (IEC) <sup>1)</sup> 600 V DC / 1000 V DC (UL) <sup>2)</sup> 1500 V DC (JET) <sup>3)</sup>
额定电流 IEC (85 °C)	Rated current IEC (85 °C)	22 A (1,5 mm <sup>2</sup> ) 39 A (2,5 mm <sup>2</sup> / 14 AWG) 45 A (4,0 mm <sup>2</sup> / 12 AWG) 53 A (6,0 mm <sup>2</sup> / 10 AWG) 69 A (10,0 mm <sup>2</sup> / 8 AWG)
额定脉冲电压	Rated impulse voltage	12 kV (1000 V) 16 kV (1500 V)
环境温度范围	Ambient temperature range	-40 °C ... +85 °C (IEC/UL)
温度上限	Upper limiting temperature	115 °C (IEC)
防护等级, 已插合 未插合	Degree of protection, mated unmated	IP65/IP68 (1h/1m) IP2X
过压类别 / 污染等级	Overvoltage category / Pollution degree	CAT III / 3
连接器的接触电阻	Contact resistance of plug connectors	≤ 0,35 mΩ
安全等级	Safety class	II
连接系统	Contact system	MULTILAM
接线方式	Type of termination	Crimpen / Crimping
触点材质	Contact material	Kupfer, verzinkt / Copper, tin plated
绝缘材料	Insulation material	PA
锁紧系统	Locking system (UL)	Locking type
阻燃等级	Flame class	UL94-V0
耐氨性 (参考TÜV)	Ammonia resistance (acc. to TÜV)	Q60095359
TÜV认证, 符合IEC 62852标准	TÜV-Rheinland certified, in accordance with IEC 62852	R60083124
UL认证部件, 符合UL 6703标准	UL recognized component, in accordance with UL 6703	E349713
CSA认证, 符合UL 6703标准	CSA certified, in accordance with UL 6703	CU 72141256 01
JET注册	JET registration	1625-C4302-167

<sup>1)</sup> 连接器适用于PV1F或PV 1500 DC-F电缆。

<sup>2)</sup> 连接器适用于USE2或PV-Wire电缆。

<sup>3)</sup> 连接器适用于拥有“S-JET mark”标志的电缆。

<sup>1)</sup> The connectors are to be used with PV1F or PV 1500 DC-F cables.

<sup>2)</sup> The connectors are to be used with USE2 or PV-Wire cables.

<sup>3)</sup> The connectors are to be used with cables with the “S-JET mark” label.

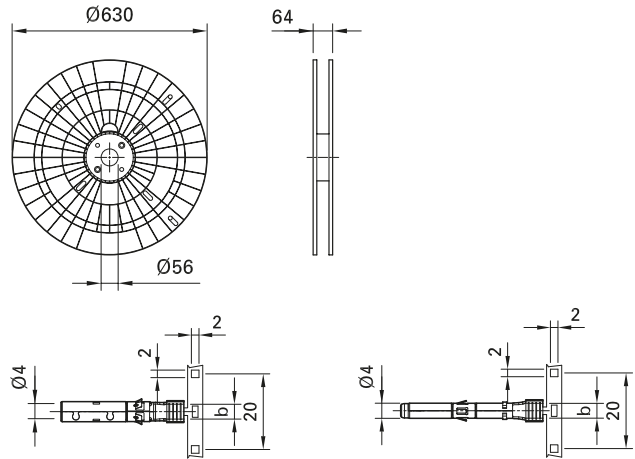
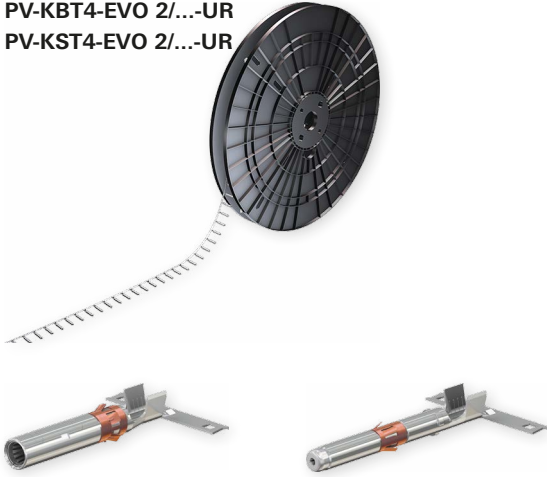
公和母电缆连接器  
MC4-EVO 2

Female and male cable coupler  
MC4-EVO 2

支撑带上的触头  
(包括绝缘部分)

Contacts on carrier band  
(including insulating part)

PV-KBT4-EVO 2/...-UR  
PV-KST4-EVO 2/...-UR



型号 Type	订货号 Order No.	母电缆连接器 Female cable coupler	公电缆连接器 Male cable coupler	Ø-电缆固定头范围 Ø range of cable gland		导线截面积 Conductor cross section		压接工具 Crimping tool	每卷盘的触头数 <sup>2)</sup> Contacts per reel <sup>2)</sup>	认证 Approvals
				A (mm)		mm <sup>2</sup>	AWG			
PV-KBT4-EVO 2/2,5I-UR	32.0082P2000-UR	x		4,7 – 6,1				1)	2000	  
PV-KST4-EVO 2/2,5I-UR	32.0083P2000-UR		x			1,5	16			
PV-KBT4-EVO 2/2,5II-UR	32.0084P2000-UR	x		6,1 – 7,6	2,5	14		1)	2000	
PV-KST4-EVO 2/2,5II-UR	32.0085P2000-UR		x						1)	
PV-KBT4-EVO 2/6I-UR	32.0086P2000-UR	x		4,7 – 6,1				1)	2000	
PV-KST4-EVO 2/6I-UR	32.0087P2000-UR		x							
PV-KBT4-EVO 2/6II-UR	32.0088P2000-UR	x		6,1 – 7,6	4,0	12	5,0	1)	2000	
PV-KST4-EVO 2/6II-UR	32.0089P2000-UR		x			6,0	10			
PV-KBT4-EVO 2/6III-UR	32.0090P2000-UR	x		7,6 – 8,5				1)	2000	
PV-KST4-EVO 2/6III-UR	32.0091P2000-UR		x							
PV-KBT4-EVO 2/10III-UR	32.0092P1700-UR	x		7,6 – 8,5		10	8	1)	1700	
PV-KST4-EVO 2/10III-UR	32.0093P1700-UR		x							

密封盖, 参阅第57页  
 解锁工具, 参阅第63页

Sealing caps page 57  
 Assembly tools page 63

装配说明 MA273  
[www.multi-contact.com](http://www.multi-contact.com)

Assembly Instructions MA273  
[www.multi-contact.com](http://www.multi-contact.com)

- MC4-EVO 2是Multi-Contact的最新光伏连接器产品。
- 拥有IEC、UL、JET、cTÜVus等国际认证
- 完全适用于1500 V DC (IEC、JET) 和1000 V DC (UL)
- 自2004年以来，MULTILAM专业技术的品质和耐用性已经过数亿次考验
- 对紫外线、氨、盐雾具有耐抗性，防护等级高 (IP68) ，因而适用于所有气候环境
- 该连接器可现场组装或预装，可使用MC4工具
- The MC4-EVO 2 is the latest addition to the Multi-Contact PV connector portfolio.
- Internationally certified with IEC, UL, JET, cTÜVus
- Approved for 1500 V DC (IEC, JET), 1000 V DC (UL) unrestricted access
- MULTILAM Technology, has proven the quality and durability several 100 million times since 2004
- Suited for all climatic environments thanks to resistance to UV, ammonia, salt-mist spray and high IP class (IP68)
- Available as a field and preassembled connector, MC4 tools can be used

技术参数	Technical data	
连接器系统	Connector system	Ø 4 mm
额定电压	Rated voltage	1000 V DC / 1500 V DC (IEC) <sup>3)</sup> 600 V DC / 1000 V DC (UL) <sup>4)</sup> 1500 V DC (JET) <sup>5)</sup>
额定电流 IEC (85 °C)	Rated current IEC (85 °C)	22 A (1,5 mm <sup>2</sup> ) 39 A (2,5 mm <sup>2</sup> / 14 AWG) 45 A (4,0 mm <sup>2</sup> / 12 AWG) 53 A (6,0 mm <sup>2</sup> / 10 AWG) 69 A (10,0 mm <sup>2</sup> / 8 AWG)
额定脉冲电压	Rated impulse voltage	12 kV (1000 V) 16 kV (1500 V)
环境温度范围	Ambient temperature range	-40 °C ... +85 °C (IEC/UL)
温度上限	Upper limiting temperature	115 °C (IEC)
防护等级, 已插合 未插合	Degree of protection, mated unmated	IP65/IP68 (1h/1m) IP2X
过压类别 / 污染等级	Overvoltage category / Pollution degree	CAT III / 3
连接器的接触电阻	Contact resistance of plug connectors	≤ 0,35 mΩ
安全等级	Safety class	II
连接系统	Contact system	MULTILAM
接线方式	Type of termination	Crimpen / Crimping
触点材质	Contact material	Kupfer, verzinkt / Copper, tin plated
绝缘材料	Insulation material	PA
锁紧系统	Locking system (UL)	Locking type
阻燃等级	Flame class	UL94-V0
耐氨性 (参考TÜV)	Ammonia resistance (acc. to TÜV)	Q60095359
TÜV认证, 符合IEC 62852标准	TÜV-Rheinland certified, in accordance with IEC 62852	R60083124
UL认证部件, 符合UL 6703标准	UL recognized component, in accordance with UL 6703	E349713
CSA认证, 符合UL 6703标准	CSA certified, in accordance with UL 6703	CU 72141256 01
JET注册	JET registration	1625-C4302-167

<sup>1)</sup> 可索取半自动压接工具或装配工具的资料

<sup>2)</sup> 卷盘类型可能会有变动

<sup>3)</sup> 连接器适用于PV1F或PV 1500 DC-F电缆。

<sup>4)</sup> 连接器适用于USE2或PV-Wire电缆。

<sup>5)</sup> 连接器适用于拥有“S-JET mark”标志的电缆。

<sup>1)</sup> Information about a semi-automatic crimp device or assembly device on request

<sup>2)</sup> Reel type subject to alterations

<sup>3)</sup> The connectors are to be used with PV1F or PV 1500 DC-F cables.

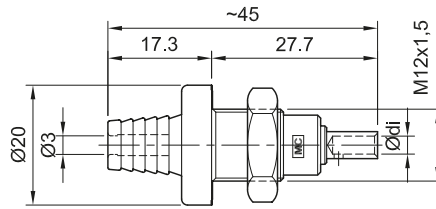
<sup>4)</sup> The connectors are to be used with USE2 or PV-Wire cables.

<sup>5)</sup> The connectors are to be used with cables with the “S-JET mark” label.

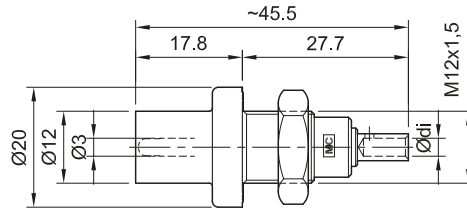
公和母面板插座  
MC3

Female and male panel receptacle  
MC3

PV-ADBP3...



PV-ADSP3...



型号 Type	订货号 Order No.	母电缆连接器 Female cable coupler	公电缆连接器 Male cable coupler	电缆接线 Cable connection Ø di (mm)	导线截面积 Conductor cross section mm <sup>2</sup>
PV-ADBP3/GWD	32.0052	x		3	2,5; 4
PV-ADSP3/GWD	32.0053		x	3	2,5; 4
PV-ADBP3/6/GWD	32.0048	x		4	6
PV-ADSP3/6/GWD	32.0049		x	4	6

密封盖, 参阅第56页  
特殊套筒扳手, 参阅第62页

Sealing caps page 56  
Special socket wrench insert page 62

装配说明 MA223  
[www.multi-contact.com](http://www.multi-contact.com)

Assembly Instructions MA223  
[www.multi-contact.com](http://www.multi-contact.com)

- MC3面板插座连接器是逆变器或接线盒与分支电缆之间的接口
  - 通过螺纹直接安装或用锁紧螺母(交货时提供)直接安装在穿孔面板中
  - 插接快速、精确
  - IP65防护等级确保最高的连接安全性
  - 与MC3兼容
- MC3 panel-receptacle connectors are the interface between an inverter or junction box or junction and a branch cable
  - Mounting directly by means of screw thread or in perforated plate with locknut (included in delivery)
  - Rapid, precise plugging
  - Protection class IP65 guarantees the highest connection safety
  - Mating compatibility with MC3

技术参数	Technical data	
连接器系统	Connector system	Ø 3 mm
额定电压	Rated voltage	1000 V DC (IEC)
额定电流	Rated current	20 A (2,5 mm <sup>2</sup> , 4 mm <sup>2</sup> ) 30 A (6 mm <sup>2</sup> )
测试电压	Test voltage	6 kV (50 Hz, 1 min.)
环境温度范围	Ambient temperature range	-40 °C...+85 °C (IEC)
温度上限	Upper limiting temperature	105 °C (IEC)
防护等级, 已插合 未插合	Degree of protection, mated unmated	IP65 IP2X
过压类别/污染等级	Overvoltage category/Pollution degree	CATIII/3
连接器的接触电阻	Contact resistance of plug connectors	≤ 0,5 mΩ
安全等级	Safety class	II
连接系统	Contact system	MULTILAM
接线方式	Type of termination	压接 Crimping
触头材质	Contact material	铜、镀锡 Copper, tin plated
绝缘材料	Insulation material	PA
锁紧系统 (UL)	Locking system (UL)	直插式 /Latching type
插入力/拔出力	Insertion force/Withdrawal force	≤ 50 N/≥ 50 N
阻燃等级	Flame class	UL94-HB/UL94-V0

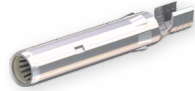
**说明:**  
也可提供客户定制带电缆特殊款型。  
电缆长度和电缆端头根据需求提供, 参阅第70页。

**Note:**  
Custom made special versions with cable are also available.  
Lengths and choice of cable ends on request, see page 70

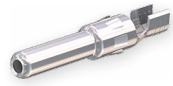
**公和母面板插座  
MC4**

公和母面板插座分别为单独零件  
(包括绝缘部分)

PV-ADBP4-S2...

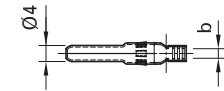
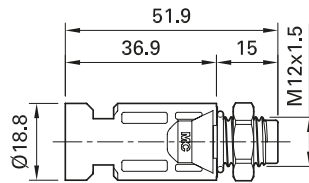
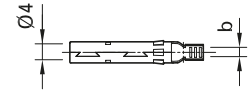
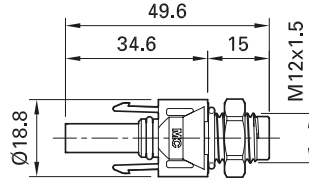





PV-ADSP4-S2...

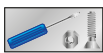


**Female and male panel receptacle  
MC4**

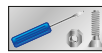
Female and male panel receptacles as individual part  
(including insulating part)



型号 Type	订货号 Order No.	母电连接器 Female cable coupler	公电连接器 Male cable coupler	导线截面积 Conductor cross section		b (mm)	认证 Approvals
				mm <sup>2</sup>	AWG		
PV-ADBP4-S2/2,5-UR	32.0076P0001-UR	x		1,5; 2,5	14	3	  
PV-ADSP4-S2/2,5-UR	32.0077P0001-UR		x	1,5; 2,5	14	3	
PV-ADBP4-S2/6-UR	32.0078P0001-UR	x		4; 6	12; 10	5	
PV-ADSP4-S2/6-UR	32.0079P0001-UR		x	4; 6	12; 10	5	



安全锁紧夹, 参阅第55页  
密封盖, 参阅第57页  
特殊套筒扳手, 参阅第62页  
解锁工具, 参阅第63页



**Safety locking clip** page 55  
**Sealing caps** page 57  
**Special socket wrench insert** page 62  
**Unlocking tool** page 63



装配说明 **MA275**  
[www.multi-contact.com](http://www.multi-contact.com)



Assembly Instructions **MA275**  
[www.multi-contact.com](http://www.multi-contact.com)

- MC4面板插座连接器是逆变器或接线盒或接头与分支电缆之间的接口
  - 采用螺纹直接安装或用锁紧螺母(包括在交货件中)直接安装在穿孔面板中
  - 插接快速、精确
  - IP67防护等级确保最高的连接安全性
  - 与MC4兼容
  - 包括外壳密封件
- MC4 panel-receptacle connectors are the interface between an inverter or junction box or junction and a branch cable
  - Mounting directly by means of screw thread or in perforated plate with locknut (included in delivery)
  - Rapid, precise plugging
  - Protection class IP68 (1 m/1 h) guarantees the highest connection safety
  - Mating compatibility with MC4
  - Includes sealing element for enclosure

技术参数	Technical data	
连接器系统	Connector system	Ø 4 mm
额定电压	Rated voltage	1000 V DC/1250 V DC (IEC) 600 V DC/1000 V DC (UL)
额定电流 IEC (90 °C)	Rated current IEC (90 °C)	17 A (1,5 mm <sup>2</sup> ) 22,5 A(2,5 mm <sup>2</sup> ; 14 AWG) 30 A (4 mm <sup>2</sup> , 6 mm <sup>2</sup> ; 12 AWG, 10 AWG)
额定电流 IEC (85 °C)	Rated current IEC (85 °C)	17 A (1,5 mm <sup>2</sup> ) 22,5 A(2,5 mm <sup>2</sup> ; 14 AWG) 39 A (4 mm <sup>2</sup> ; 12 AWG) 45 A (6 mm <sup>2</sup> ; 10 AWG)
额定脉冲电压	Rated impulse voltage	12 kV
环境温度范围	Ambient temperature range	-40 °C...+90 °C (IEC)
温度上限	Upper limiting temperature	105 °C (IEC)
防护等级, 已插合 未插合	Degree of protection, mated unmated	IP65; IP68 (1 m/1 h) IP2X
过压类别/污染等级	Overvoltage category/Pollution degree	CATIII/3
连接器的接触电阻	Contact resistance of plug connectors	≤ 0,35 mΩ
安全等级	Safety class	II
连接系统	Contact system	MULTILAM
接线方式	Type of termination	压接 Crimping
触头材质	Contact material	铜、镀锡 Copper, tin plated
绝缘材料	Insulation material	PC/PA
锁紧系统 (UL)	Locking system (UL)	嵌入式 / Locking type
阻燃等级	Flame class	UL94-V0
TÜV 认证, 符合EN 50521标准	TÜV-Rheinland certified, in accordance with EN 50521	R60028286
UL认证部件, 符合UL 6703标准	UL recognized component, in accordance with UL 6703	E356494
CSA认证, 符合UL 6703标准	CSA certified, in accordance with UL 6703	250725

**说明:**

也可提供客户定制带电缆特殊款型。  
电缆长度和电缆端头根据要求提供, 参阅第70页。

**Note:**

Custom made special versions with cable are also available.  
Lengths and choice of cable ends on request, see page 70

**公和母面板插座  
MC4**

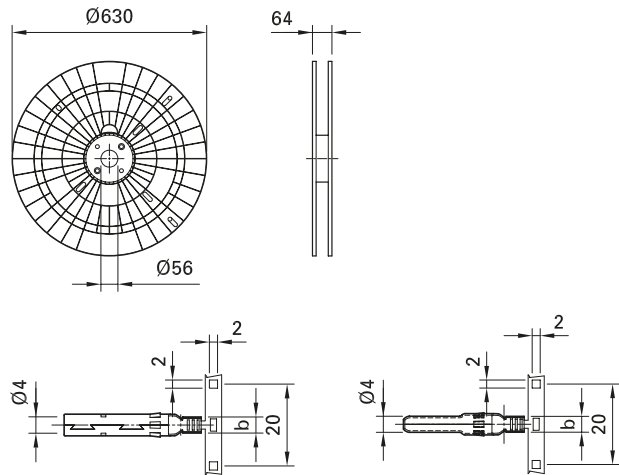
支撑带上的触点  
(包括绝缘部分)





PV-ADBP4-S2...  
PV-ADSP4-S2...

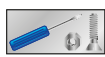


**Female and male panel receptacle  
MC4**

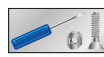
Contacts on carrier band  
(including insulating part)



型号 Type	订货号 Order No.	母电连接器 Female cable coupler	公电连接器 Male cable coupler	导线截面积 Conductor cross section			压接工具 Crimping tool	每卷盘的触头数 <sup>2)</sup> Contacts per Reel <sup>2)</sup>	认证 Approvals
				mm <sup>2</sup>	AWG	b (mm)			
PV-ADBP4-S2/2,5-UR	32.0076P2000-UR	x		1,5; 2,5	14	3	1)	2000	   
PV-ADSP4-S2/2,5-UR	32.0077P2000-UR		x	1,5; 2,5	14	3	1)	2000	
PV-ADBP4-S2/6-UR	32.0078P2000-UR	x		4; 6	12; 10	5	1)	2000	
PV-ADSP4-S2/6-UR	32.0079P2000-UR		x	4; 6	12; 10	5	1)	2000	

 安全锁紧夹, 参阅第55页  
密封盖, 参阅第57页  
特殊套筒扳手, 参阅第62页  
解锁工具, 参阅第63页

 装配说明 **MA275**  
[www.multi-contact.com](http://www.multi-contact.com)

 **Safety locking clip** page 55  
**Sealing caps** page 57  
**Special socket wrench insert** page 62  
**Unlocking tool** page 63

 Assembly Instructions **MA275**  
[www.multi-contact.com](http://www.multi-contact.com)

- 用于全自动装配的进料带
- 可提供专为MC4实现自动压接而设计的工具
- 由于专门研制的卷盘而使得运作可靠
- Feeder bands for fully automatic assembly
- Tools specially designed for MC4 available for automatic crimping
- Process reliability as result of specially developed supply reel

技术参数	Technical data	
连接器系统	Connector system	Ø 4 mm
额定电压	Rated voltage	1000 V DC / 1250 V DC (IEC) 600 V DC / 1000 V DC (UL)
额定电流 IEC (90 °C)	Rated current IEC (90 °C)	17 A (1,5 mm <sup>2</sup> ) 22,5 A (2,5 mm <sup>2</sup> ; 14 AWG) 30 A (4 mm <sup>2</sup> , 6 mm <sup>2</sup> ; 12 AWG, 10 AWG)
额定电流 IEC (85 °C)	Rated current IEC (85 °C)	17 A (1,5 mm <sup>2</sup> ) 22,5 A (2,5 mm <sup>2</sup> ; 14 AWG) 39 A (4 mm <sup>2</sup> ; 12 AWG) 45 A (6 mm <sup>2</sup> ; 10 AWG)
额定脉冲电压	Rated impulse voltage	12 kV
环境温度范围	Ambient temperature range	-40 °C...+90 °C (IEC)
温度上限	Upper limiting temperature	105 °C (IEC)
防护等级, 已插合 未插合	Degree of protection, mated unmated	IP65; IP68 (1 m/1 h) IP2X
过压类别/污染等级	Overvoltage category/Pollution degree	CATIII/3
连接器的接触电阻	Contact resistance of plug connectors	≤ 0,35 mΩ
安全等级	Safety class	II
连接系统	Contact system	MULTILAM
接线方式	Type of termination	压接 Crimping
触头材质	Contact material	铜、镀锡 Copper, tin plated
绝缘材料	Insulation material	PC/PA
锁紧系统 (UL)	Locking system (UL)	嵌入式 / Locking type
阻燃等级	Flame class	UL94-V0
TÜV 认证, 符合EN 50521标准	TÜV-Rheinland certified, in accordance with EN 50521	R60028286
UL认证部件, 符合UL 6703标准	UL recognized component, in accordance with UL 6703	E356494
CSA认证, 符合UL 6703标准	CSA certified, in accordance with UL 6703	250725

<sup>1)</sup> 可索取半自动压接工具或装配工具的资料

<sup>2)</sup> 卷盘类型可能会有变动

<sup>1)</sup> Information about a semi-automatic crimp device or assembly device on request

<sup>2)</sup> Reel type subject to alterations

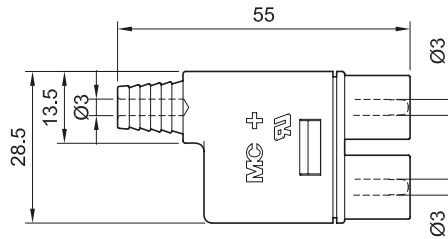
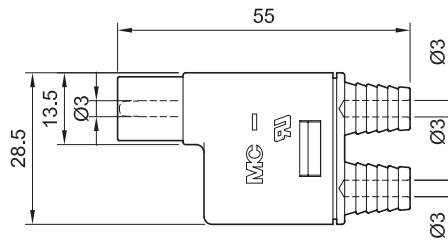
分支插座, 分支插头  
MC3

Branch socket, branch plug  
MC3

PV-AZB3-UR



PV-AZS3-UR



型号 Type	订货号 Order No.	产品名称 Description	认证 Approvals
PV-AZB3-UR	32.0008-UR	分支插座/Branch socket	
PV-AZS3-UR	32.0009-UR	分支插头/Branch plug	



密封盖, 参阅第56页



Sealing caps page 56



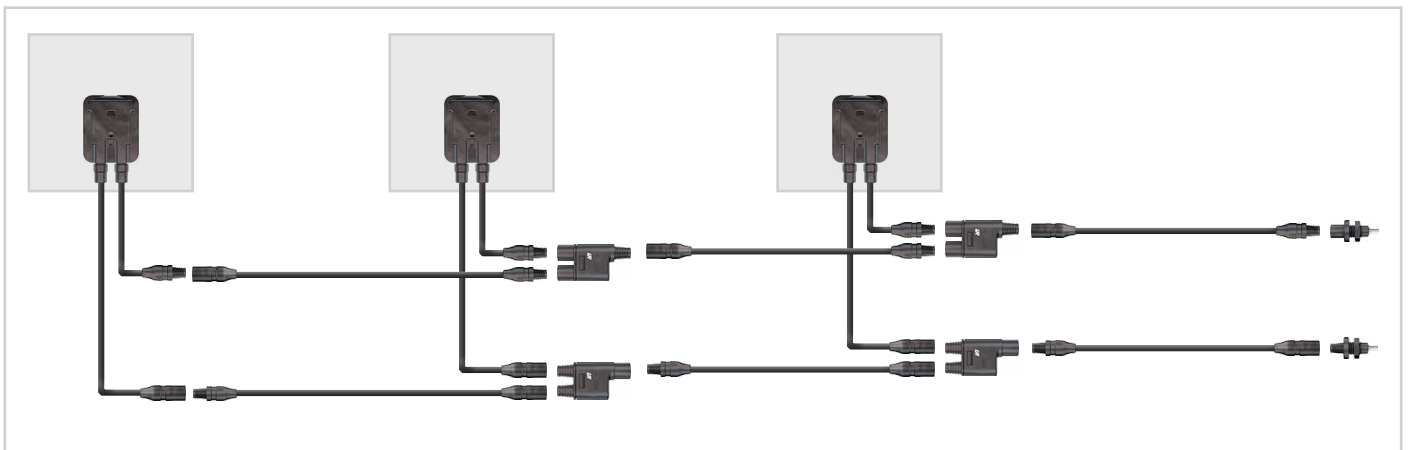
装配说明 MA249  
[www.multi-contact.com](http://www.multi-contact.com)



Assembly Instructions MA249  
[www.multi-contact.com](http://www.multi-contact.com)

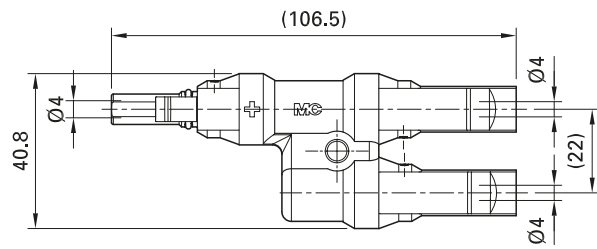
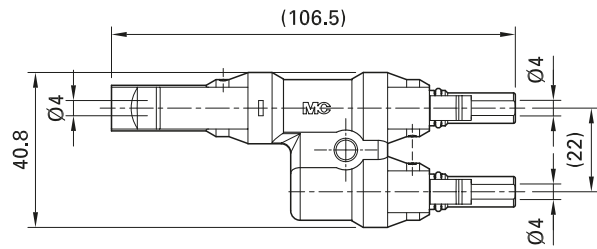
- 用于光伏模组的安全而简便的并联或串并联。
- 可与单极MC光伏电缆连接器MC3进行插合。未插合连接器必须盖上密封盖加以保护。
- For a safe and simple parallel or serial-parallel connection of PV-modules.
- Pluggable with single-pole MC PV-cable coupler MC3. Unmated connections must be protected by sealing caps.

技术参数	Technical data	
连接器系统	Connector system	<b>Ø 3 mm</b>
额定电压	Rated voltage	<b>1000 V DC (MC) 600 V DC (UL)</b>
额定电流	Rated current	<b>30 A</b>
额定脉冲电压	Rated impulse voltage	<b>8 kV</b>
环境温度范围	Ambient temperature range	<b>-40 °C...+90 °C (MC) -40 °C...+40 °C (UL)</b>
温度上限	Upper limiting temperature	<b>105 °C (MC)</b>
防护等级, 已插合 未插合	Degree of protection, mated unmated	<b>IP65 IP2X</b>
过压类别/污染等级	Overvoltage category/Pollution degree	<b>CATIII/2</b>
连接器的接触电阻	Contact resistance of plug connectors	<b>≤ 0,5 mΩ</b>
安全等级	Safety class	<b>II</b>
连接系统	Contact system	<b>MULTILAM</b>
触头材质	Contact material	<b>铜、镀锡 Copper, tin plated</b>
绝缘材料	Insulation material	<b>PA</b>
锁紧系统 (UL)	Locking system (UL)	<b>直插式 / Latching type</b>
插入力/拔出力	Insertion force/Withdrawal force	<b>≤ 50 N / ≥ 50 N</b>
阻燃等级	Flame class	<b>UL94-V0</b>
UL认证部件, 符合UL 6703标准 CSA认证, 符合UL 6703标准	UL recognized component, in accordance with UL 6703 CSA certified, in accordance with UL 6703	<b>E343181 250725</b>



分支插座, 分支插头  
MC4

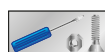
Branch socket, branch plug  
MC4



型号 Type	订货号 Order No.	产品名称 Description
PV-AZB4	32.0018	分支插座/Branch socket
PV-AZS4	32.0019	分支插头/Branch plug



安全锁紧夹, 参阅第55页  
密封盖, 参阅第57页  
解锁工具, 参阅第63页



Safety locking clip page 55  
Sealing caps page 57  
Unlocking tool page 63



装配说明 MA250  
[www.multi-contact.com](http://www.multi-contact.com)

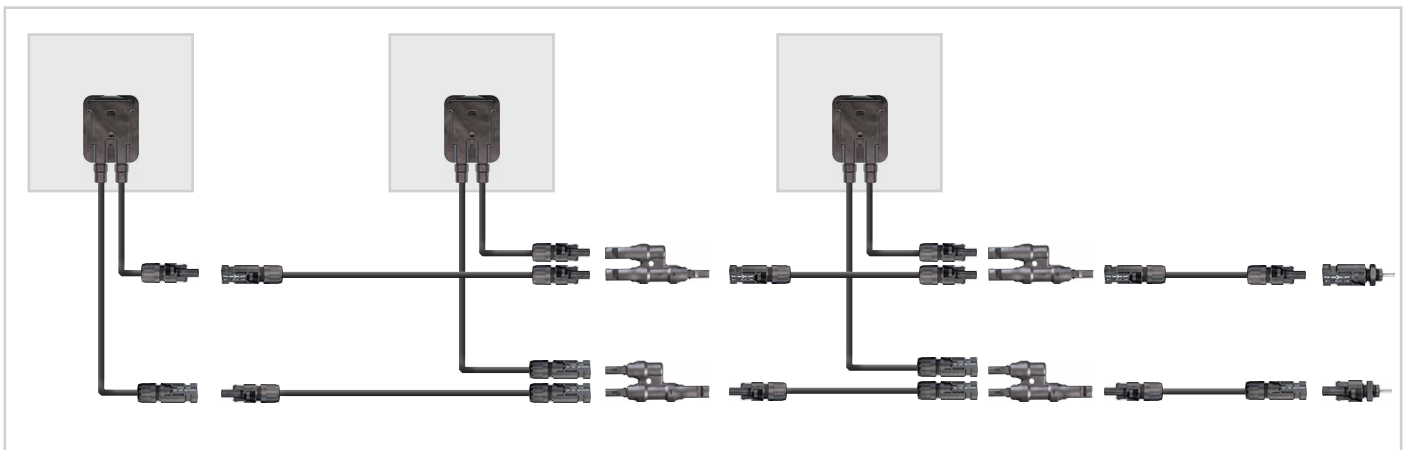


Assembly Instructions MA250  
[www.multi-contact.com](http://www.multi-contact.com)

- 用于光伏模组的安全而简便的并联或串并联。
- 可与单极MC光伏电缆连接器MC4进行插合。未插合连接器必须盖上密封盖加以保护。
- For a safe and simple parallel or serial-parallel connection of PV-modules.
- Pluggable with single-pole MC PV-cable coupler MC4. Unmated connections must be protected by sealing caps.

**技术参数****Technical data**

连接器系统	Connector system	<b>Ø 4 mm</b>
额定电压	Rated voltage	<b>1000 V DC (MC)</b>
额定电流	Rated current	<b>30 A</b>
额定脉冲电压	Rated impulse voltage	<b>12 kV</b>
环境温度范围	Ambient temperature range	<b>-40 °C...+90 °C (MC)</b>
温度上限	Upper limiting temperature	<b>105 °C (MC)</b>
防护等级, 已插合 未插合	Degree of protection, mated unmated	<b>IP67 IP2X</b>
过压类别 / 污染等级	Overvoltage category / Pollution degree	<b>CATIII/2</b>
连接器的接触电阻	Contact resistance of plug connectors	<b>≤0,5 mΩ</b>
安全等级	Safety class	<b>II</b>
连接系统	Contact system	<b>MULTILAM</b>
触头材质	Contact material	<b>铜、镀锡 Copper, tin plated</b>
绝缘材料	Insulation material	<b>PC</b>
锁紧系统	Locking system (UL)	<b>嵌入式 / Locking type</b>
阻燃等级	Flame class	<b>UL94-V0</b>



### MC接线盒的优势


### Advantages of the MC junction boxes

插头连接器使用经过检验测试并具有长期稳定性的MULTILAM技术。  
**Plug connector incorporates tried and tested MULTILAM technology with long-term stability**



受保护  
**Protected**

IEC 60068-2-52




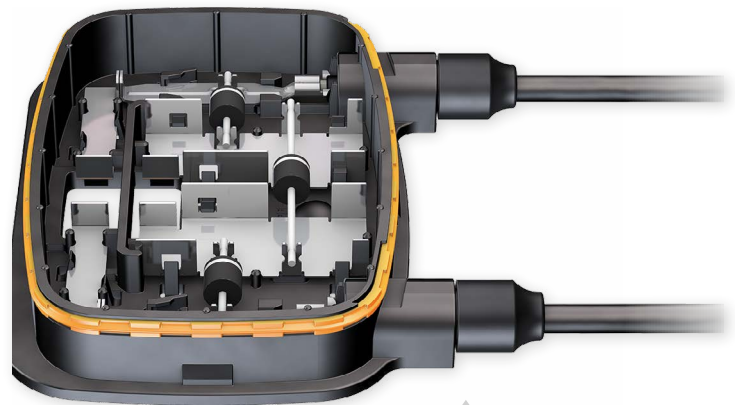
IP65/  
 IP68  
 (1m/1h)

Ammonia

安全等级 II / Safety class II


电压等级  
**Voltage level**

TÜV 1000 V/1500 V  
 UL 600 V/1000 V

适用于客户定制安装  
**Suitable for customer-specific assembly**

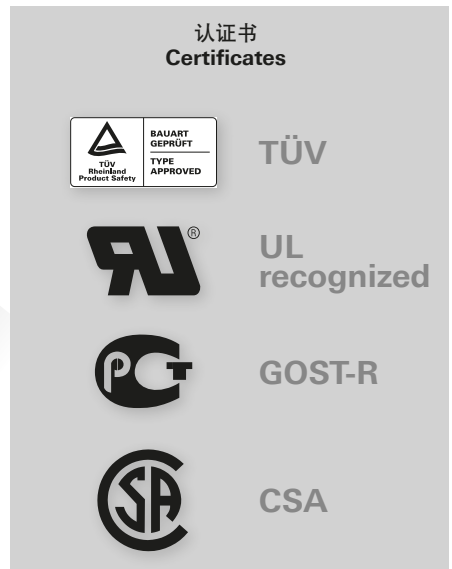
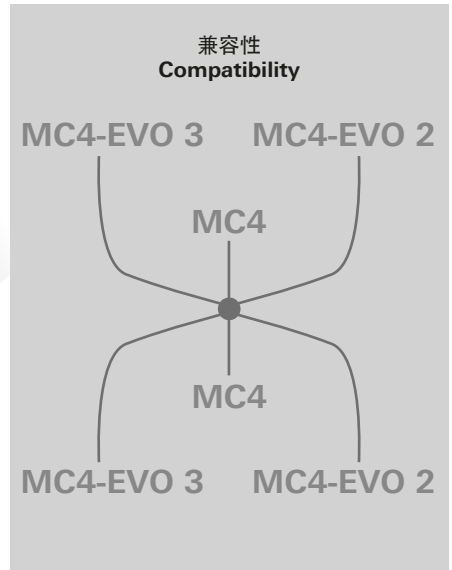
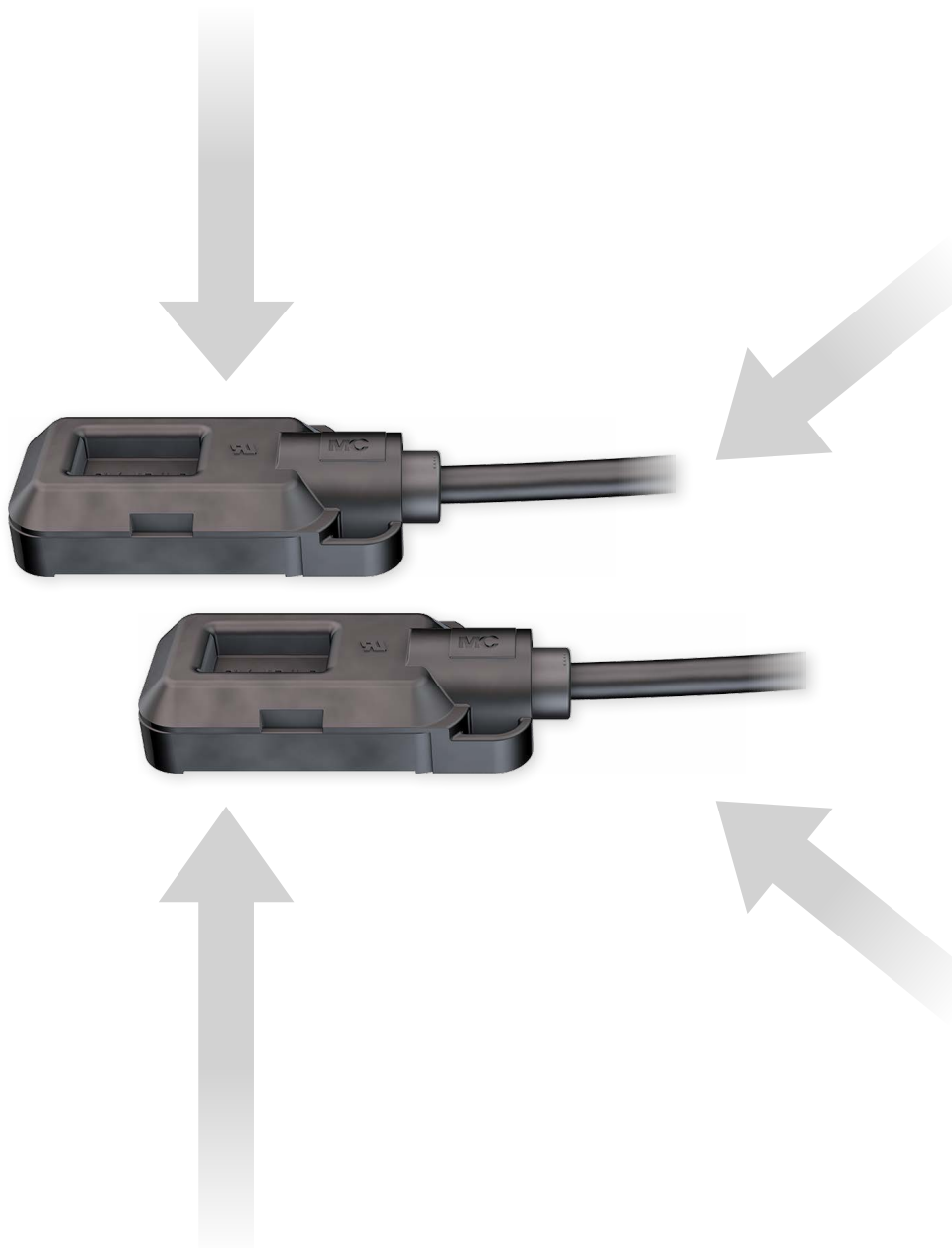
- 连接器系统 / Connector system
- 二极管 / Diode
- 电缆长度 / Cable length



# 3

连接方式  
Connection alternatives

- 焊接/Welding
- 锡焊/Soldering
- 压接/Clamping



安装/Assembly  
适用于自动安装  
Suitable for automated assembly

接线盒概述

Overview junction boxes

	连接系统 Connector System	认证 <sup>1)</sup> Approvals <sup>1)</sup>

用于晶体模组/For crystalline modules

PV-JB/WL-H  
PV-JB/WL-V



MC3  
MC4  
MC4-EVO 3



PV-JB/MF...



MC4  
MC4-EVO 3



用于薄膜模组/For thin-film modules

PV-JB/LP



MC4



TwinBox  
PV-JB/TB-...



MC4  
MC4-EVO 3



图标/Legend



用硅胶安装  
Mounting with silicone



用密封胶安装  
Mounting with potting compound

特性 Features	盐雾试验 Salt mist spray test	额定电流 Rated current	额定电压 Rated voltage		最大 max.	汇流带 Bus ribbons	二极管数量 Number of diodes	插入状态下的防护等级 Degree of protection, mated	环境温度范围 Ambient temperature range	电极 Poles	页码 Page
			类型 Category	A							
	V	10 <sup>2)</sup> 12	1500	1000	4	焊接 锡焊 压接 Welding Soldering Clamping	3	IP65	-40...+85 -40...+40	2	<b>38</b> <b>40</b>
	-	12 30 <sup>3)</sup>	1000	1000	4	焊接 锡焊 Soldering	3	IP65 IP68	-40...+105 -40...+85	2	<b>42</b>
	-	30	1000	600	1	焊接 锡焊 Welding Soldering	0	IP67	-40...+85 -40...+40	1	<b>44</b>
	-	25	1500	1000	1	焊接 Welding	0	IP65 IP68	-40...+90 -40...+40	1	<b>46</b>

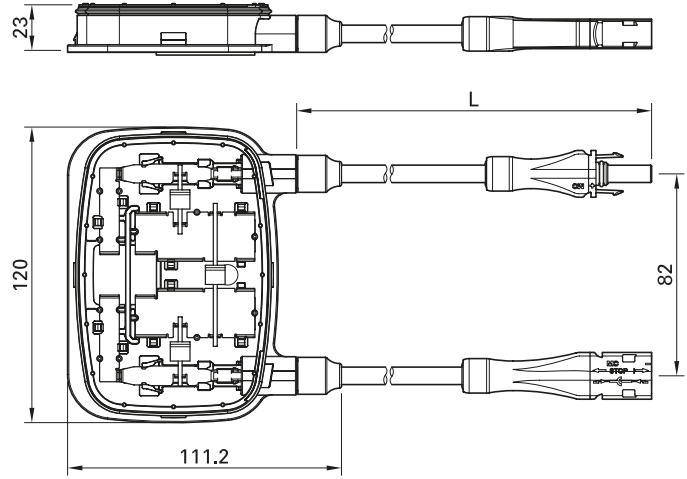
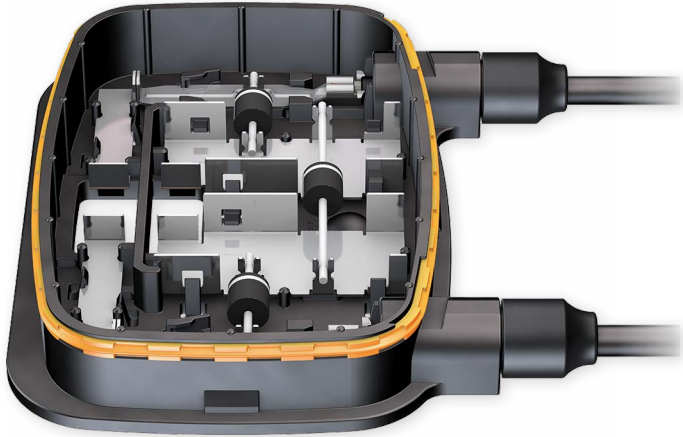
<sup>1)</sup> 某些情况下，认证仅限于特殊型号或正在申请中。详情参阅相关的产品页码  
<sup>2)</sup> 经查询，也适用于配备其他旁路二极管的情况。  
<sup>3)</sup> 无旁路二极管

<sup>1)</sup> Certifications are in some cases limited to specific types or still pending. Details are given on the relevant product pages  
<sup>2)</sup> Available equipped with alternative bypass diode, on inquiry  
<sup>3)</sup> Without bypass diode

适用于客户定制安装  
 Suitable for customer-specific assembly

适用于自动安装  
 Suitable for automated assembly

光伏接线盒 PV-JB/WL-H PV junction box PV-JB/WL-H



型号 Type	订货号 Order No.	汇流带连接方式 Connection of the bus ribbons		电缆截面积 Cable cross section mm <sup>2</sup>	电缆长度(L) Length of cable (L) cm	电缆型号 Cable type	额定电压 Rated voltage		认证 Approvals		
		WS <sup>1)</sup>	C <sup>1)</sup>				V (TÜV)	V (UL)			
PV-JB/WL-H-00-C-WS	32.7275-100	x		4	100	FLEX-SOL-XL	1000	-	x		
PV-JB/WL-H-00-C-C	32.7276-100		x	4	100	BETAflam®	1500	1000	x	x	x
PV-JB/WL-H-00-D-WS	32.7277-100-UR	x		4	100	Byson	1000	1000	x		x
PV-JB/WL-H-00-D-C	32.7278-100-UR		x	4	100						
PV-JB/WL-H-00-B-WS	32.7279-100-UR	x		4	100						
PV-JB/WL-H-00-B-C	32.7280-100-UR		x	4	100						

安全锁紧夹, 参阅第57页  
解锁工具, 参阅第63页

Sealing caps page 57  
Unlocking tool page 63

装配说明 MA269  
[www.multi-contact.com](http://www.multi-contact.com)

Assembly Instructions MA269  
[www.multi-contact.com](http://www.multi-contact.com)

- 接线盒在晶体模组上配备汇流带，用于电连接。
  - 接线盒的浅盒结构使得其可直接安装在模组框下。连接焊带端部可焊接、锡焊，也可选择接线卡座接线盒用硅RTV胶固定在面板上。另外，其凸出的外壳也可起保护作用，防止电缆在电缆接头处发生扭结。
  - 接线盒用硅胶固定在面板上。另外，其凸出的外壳也可起保护作用，防止电缆在电缆套管处发生扭结。
  - 为了完全符合NEC 2011要求，需要使用特殊工具PV-MS-PLS断开电缆耦合器。
  - 与MC4兼容
  - 根据顾客需求定制款型(见第71页)
    - 单根导线长度
    - 配备MC3和MC4连接器
    - 红色或蓝色电缆(仅限TUV认证型号)
    - 可以根据需求使用其他旁路二极管VSB2045 10 A生产
  - 包括安装时用于固定的PSA胶带
- **Junction box for electrical connection of horizontal ribbon conductors on crystalline modules**
  - The low profile construction of the box allows it to be installed directly under the module frame. Ribbon termination is achieved by welding, soldering, or, optionally, by terminal clips.
  - The box is fixed to the panel with silicone RTV. Additional protection given by the projecting cover, which prevents kinking of the cables at the point where they emerge from the cable gland.
  - Fully NEC 2011 compliant requiring the special tool PV-MS-PLS to disconnect the cable couplers.
  - Compatible with MC4
  - Custom versions on request (see page 71):
    - Individual lead lengths
    - Equipped with MC3 and MC4 connectors
    - Cable colours red or blue (only TÜV types)
    - Can be produced on request with alternative bypass diode of type VSB2045 10 A.
  - Includes PSA tape strips for fixturing during installation.

**技术参数****Technical data**

连接器系统	Connector system	<b>MC4-EVO 3<sup>3)</sup></b>
额定电流	Rated current	<b>12 A (SBX3040)<sup>3)</sup></b>
测试电流 1,25 x I	Test current 1,25 x I	<b>15 A</b>
额定电压	Rated voltage	<b>1000 V DC/1500 V DC (IEC)<sup>2)</sup> 600 V DC/1000 V DC (UL)<sup>2)</sup></b>
环境温度范围	Ambient temperature range	<b>-40 °C...+85 °C</b>
防护等级, 已插合 未插合	Degree of protection, mated unmated	<b>IP65 IP2X</b>
连接器的接触电阻	Contact resistance of plug connectors	<b>≤0,35 mΩ (MC4, MC4-EVO 3) ≤0,5 mΩ (MC3)</b>
触头材质	Contact material	<b>铜、镀锡/Copper, tin plated</b>
绝缘材料	Insulation material	<b>PPE</b>
连接器锁紧系统	Locking system plug connectors (UL)	<b>嵌入式/ Locking type</b>
阻燃等级	Flame class	<b>UL94-5VA</b>
耐氨性 (参考DLG)	Ammonia resistance (acc. to DLG)	<b>1500 h, 70 °C/70 % RH, 750 ppm</b>
盐雾试验, 严酷等级5	Salt mist spray test, degree of severity 5	<b>IEC 60068-2-52</b>
TÜV 认证	TÜV certified	<b>R60040598</b>
UL认证部件, 符合UL 4703标准	UL recognized component, in accordance with UL 4703	<b>E335016</b>
CSA认证, 符合UL 4703标准	CSA certified according, in accordance with UL 4703	<b>250725</b>
适用于模组类型	Intended for Module type	<b>晶体/Crystalline</b>
电极	Poles	<b>2</b>
二极管	Diodes	<b>3</b>
汇流带数量	Number of bus ribbons	<b>4</b>
汇流带方向	Orientation of bus ribbons	<b>水平/Horizontal</b>
汇流带连接方式	Connection of the bus ribbons	<b>焊接/锡焊/压接 Welding/Soldering/Clamping</b>
安装	Installation	<b>硅胶/Silicone</b>
是否适合半自动化装配	Suitable for semi-automated assembly	<b>是/Yes</b>

<sup>1)</sup> WS 焊接/锡焊  
C 压接

<sup>2)</sup> 取决于电缆型号。

<sup>3)</sup> 其他款型需求, 见第69页。

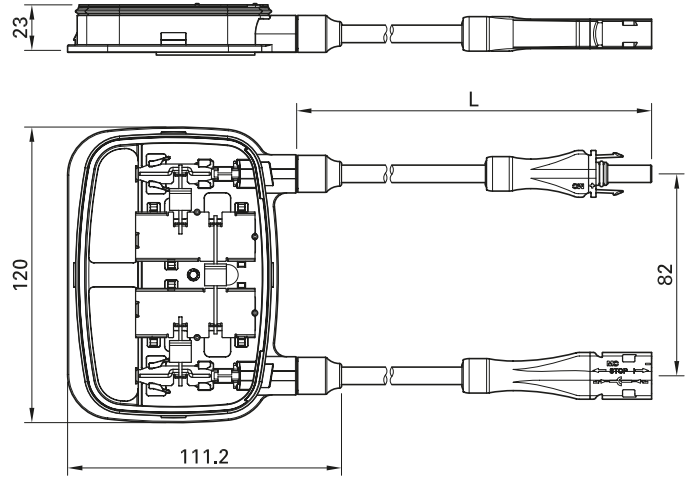
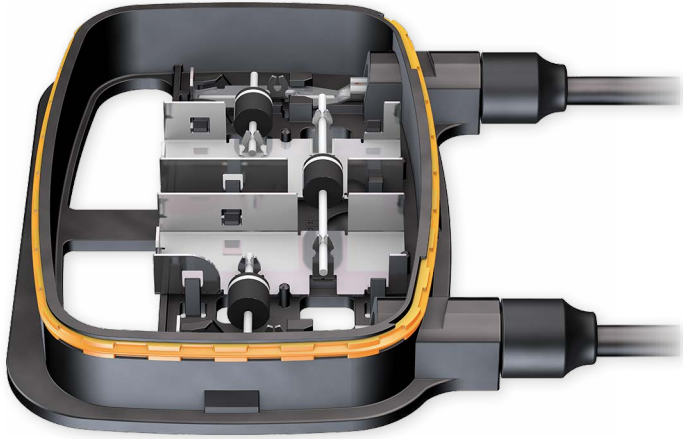
<sup>1)</sup> WS Welding/Soldering  
C Clamping

<sup>2)</sup> Depending on cable type

<sup>3)</sup> Other versions on request, see page 71

光伏接线盒 PV-JB/WL-V

PV junction box PV-JB/WL-V



型号 Type	订货号 Order No.	汇流带连接方式 Connection of the bus ribbons		电缆截面积 Cable cross section mm <sup>2</sup>	电缆长度(L) Length of cable (L) cm	电缆型号 Cable type	额定电压 Rated voltage		认证 Approvals		
		WS <sup>1)</sup>	C <sup>1)</sup>				V (TÜV)	V (UL)			
PV-JB/WL-V-00-C-WS	32.7281-100	x		4	100	FLEX-SOL-XL	1000	-	x		
PV-JB/WL-V-00-C-C	32.7282-100		x	4	100	BETAflam®	1500	1000	x	x	x
PV-JB/WL-V-00-D-WS	32.7283-100-UR	x		4	100	Byson	1000	1000	x		x
PV-JB/WL-V-00-D-C	32.7284-100-UR		x	4	100						
PV-JB/WL-V-00-B-WS	32.7285-100-UR	x		4	100						
PV-JB/WL-V-00-B-C	32.7286-100-UR		x	4	100						

安全锁紧夹，参阅第57页  
解锁工具，参阅第63页

Sealing caps page 57  
Unlocking tool page 63

装配说明 MA274  
[www.multi-contact.com](http://www.multi-contact.com)

Assembly Instructions MA274  
[www.multi-contact.com](http://www.multi-contact.com)

- 接线盒在晶体模组上配备垂直带状导线，用于电连接。
  - 接线盒的浅盒结构使得其可以直接安装在模组框下。连接焊带端部可焊接，锡焊，也可选择接线卡座。
  - 接线盒用硅胶固定在面板上。另外，其凸出的外壳也可起保护作用，防止电缆在电缆套管处发生扭结。
  - 为了完全符合NEC 2011要求，需要使用特殊工具PV-MS-PLS断开电缆耦合器。
  - 与MC4兼容
  - 根据顾客需求定制款型（见第71页）：
    - 单根导线长度
    - 配备MC3和MC4连接器
    - 红色或蓝色电缆（仅限TÜV认证型号）
    - 根据需求可以使用其他旁路二极管VSB2045 10A生产
  - 包括安装时用于固定的PSA胶带。
- **Junction box for electrical connection of vertical ribbon conductors on crystalline modules**
  - The low profile construction of the box allows it to be installed directly under the module frame. Ribbon termination is achieved by welding, soldering, or, optionally, by terminal clips.
  - The box is fixed to the panel with silicone. Additional protection given by the projecting cover, which prevents kinking of the cables at the point where they emerge from the cable sleeve.
  - Fully NEC 2011 compliant requiring the special tool PV-MS-PLS to disconnect the cable couplers.
  - Compatible with MC4
  - Custom versions on request (see page 71):
    - Individual lead lengths
    - Equipped with MC3 and MC4 connectors
    - Cable colours red or blue (only TÜV types)
    - Can be produced on request with alternative bypass diode of type VSB2045 10 A.
  - Includes PSA tape strips for fixturing during installation.

技术参数	Technical data	
连接器系统	Connector system	<b>MC4-EVO 3<sup>3)</sup></b>
额定电流	Rated current	<b>12 A (SBX3040)<sup>3)</sup></b>
测试电流 1,25 x I	Test current 1,25 x I	<b>15 A</b>
额定电压	Rated voltage	<b>1000 V DC / 1500 V DC (IEC)<sup>2)</sup> 600 V DC / 1000 V DC (UL)<sup>2)</sup></b>
环境温度范围	Ambient temperature range	<b>-40 °C...+85 °C</b>
防护等级，已插合 未插合	Degree of protection, mated unmated	<b>IP65 IP2X</b>
连接器的接触电阻	Contact resistance of plug connectors	<b>≤ 0,35 mΩ (MC4, MC4-EVO 3) ≤ 0,5 mΩ (MC3)</b>
触头材质	Contact material	<b>铜、镀锡 / Copper, tin plated</b>
绝缘材料	Insulation material	<b>PPE</b>
连接器锁紧系统	Locking system plug connectors (UL)	<b>嵌入式 / Locking type</b>
阻燃等级	Flame class	<b>UL94-5VA</b>
耐氨性（参考DLG）	Ammonia resistance (acc. to DLG)	<b>1500 h, 70 °C / 70 % RH, 750 ppm</b>
盐雾试验，严酷等级5	Salt mist spray test, degree of severity 5	<b>IEC 60068-2-52</b>
TÜV 认证	TÜV certified	<b>R60040598</b>
UL认证部件，符合UL 4703标准	UL recognized component, in accordance with UL 4703	<b>E335016</b>
CSA认证，符合UL 4703标准	CSA certified according, in accordance with UL 4703	<b>250725</b>
适用于模组类型	Intended for Module type	<b>晶体 / Crystalline</b>
电极	Poles	<b>2</b>
二极管	Diodes	<b>3</b>
汇流带数量	Number of bus ribbons	<b>4</b>
Anschluss Flachbandleiter	Connection of bus ribbons	<b>Vertikal / Vertical</b>
汇流带连接方式	Connection of the bus ribbons	<b>焊接 / 焊料 / 压接 Welding / Soldering / Clamping</b>
安装	Installation	<b>硅胶 / Silicone</b>
是否适合半自动化装配	Suitable for semi-automated assembly	<b>是 / Yes</b>

<sup>1)</sup> WS 焊接/锡焊  
C 压接

<sup>2)</sup> 取决于电缆型号。

<sup>3)</sup> 其他款型需求，见第69页。

<sup>1)</sup> WS Welding/Soldering  
C Clamping

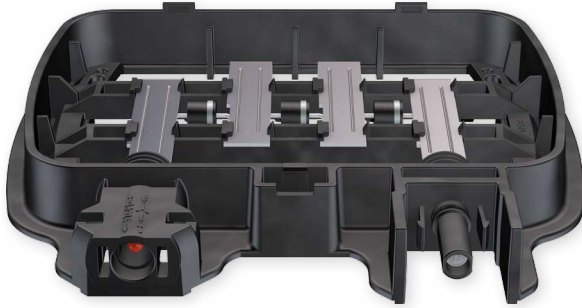
<sup>2)</sup> Depending on cable type

<sup>3)</sup> Other versions on request, see page 71

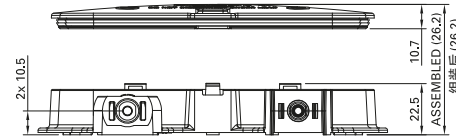
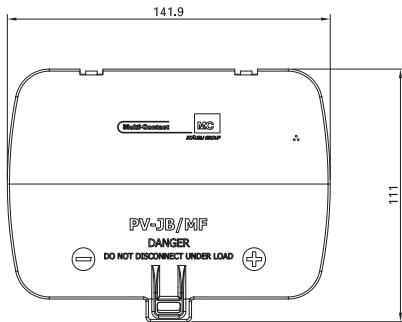
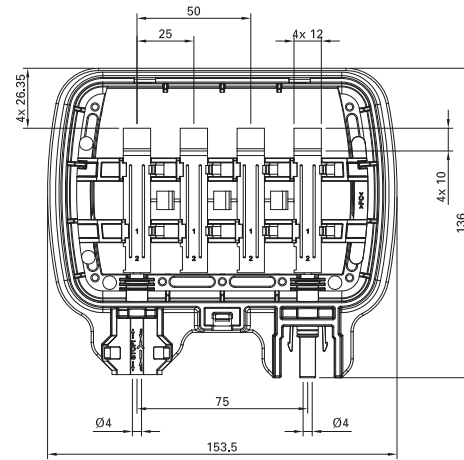
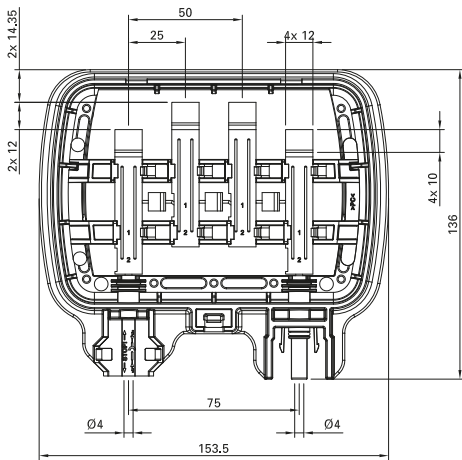
光伏接线盒 PV-JB/MF...

PV junction box PV-JB/MF...

PV-JB/MF-U01



PV-JB/MF-U02



型号 Type	订货号 Order No.	额定电流 Rated current A	额定电压 Rated voltage V	汇流带 Bus Ribbons	二极管 Diode	插头/插座型号 Plug/Socket type
PV-JB/MF	55000014	30	1000	未定义/open	-	MC4, MC4-EVO 3
PV-JB/MF-U01	55000014-U01	12 <sup>1)</sup>	45	水平/horizontal	3 × Schottky	MC4, MC4-EVO 3
PV-JB/MF-U02	55000014-U02	12 <sup>1)</sup>	45	垂直/vertical	3 × Schottky	MC4, MC4-EVO 3

我们的全新接线盒集成MC4连接器，配置灵活，适用于各种应用。

- 可提供整套接线盒方案，也可针对客户需求提供基座盒。
- 基座盒PV-JB/MF已经过认证，从而降低了客户应用时的测试工作量。
- 在基座盒的设计选型方面，我们乐于为您提供帮助，当然也为您提供各个阶段的技术支持。
- 无线、自动化的设计以及更大的封装密度节省时间和费用。

Our new open format junction box with integrated MC4 connector allows for countless possible configurations to suit a wide range of applications.

- Junction box can be supplied as complete solution or be purchased as stand-alone enclosure for complete customer generated solutions
- **Base enclosure PV-JB/MF** carries certification, allowing for minimal re-test requirements
- Available with several tiers of Engineering and Manufacturing support
- Time and cost saving via cable-free, automation-friendly design and greater packaging density.

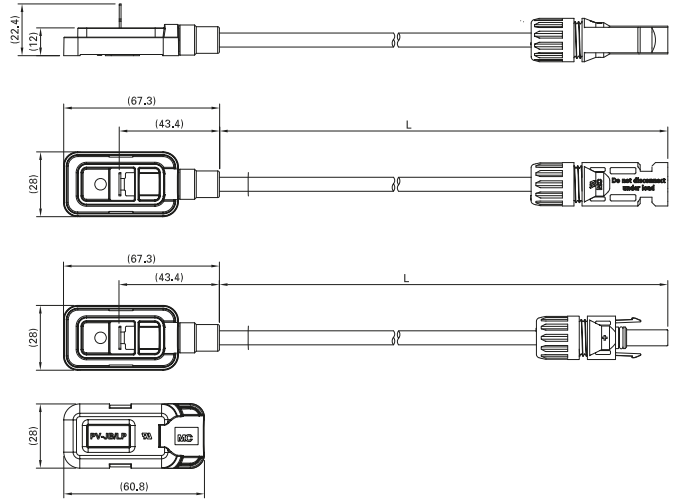
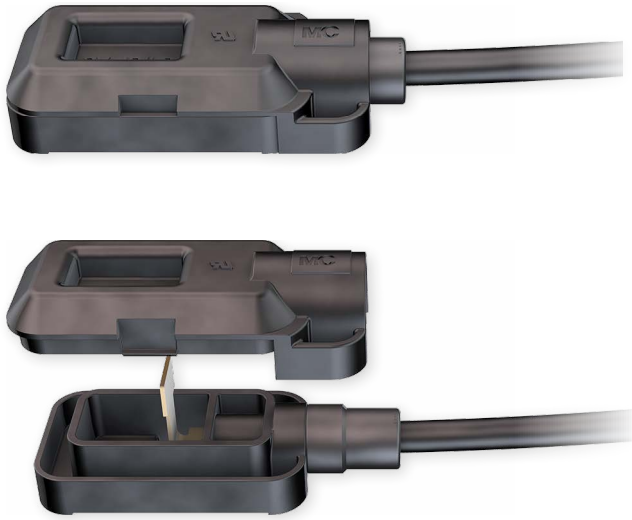
技术参数	Technical data	
连接器系统	Connector system	MC4/MC4-EVO 3
额定电流	Rated current	12 A <sup>1)</sup>
额定电压	Rated voltage	1000 V DC (UL3730) 1000 V DC (pol/⊕) (EN50548)
测试电压	Test voltage	10 kV (50Hz, 1min.), (pol/⊕)
环境温度范围	Ambient temperature range	-40 °C ...+105 °C (IEC) -40 °C ...+85 °C (UL)
防护等级, 已插合 未插合	Degree of protection, mated unmated	IP68 IP2X
连接器的接触电阻	Contact resistance of plug connectors	≤ 0,35mΩ
触头材质	Contact material	铜/铜合金, 镀锡 Copper/Copper alloy, tin plated
绝缘材料	Insulation material	PPE/PS
连接器锁紧系统	Locking system plug connectors	嵌入式/Snap-in
阻燃等级	Flame class	UL94-5VA
TÜV认证	TÜV certified	EN50548
UL-认证 / CSA-认证	UL-Recognized/CSA certified	UL3730
适用于模组类型	Intended for Module type	晶体/Crystalline
电极	Poles	2
二极管	Diodes	3
汇流带数量	Number of bus ribbons	4
汇流带连接方式	Connection of bus ribbons	垂直或水平 /Vertical or horizontal
汇流带连接方式	Connection of the bus ribbons	焊接/Löten
安装	Installation	硅胶/Silicone
是否适合自动化装配	Suitable for automated assembly	是/Yes

<sup>1)</sup> 安培数基于75 °C环境温度下（根据EN50548标准）的热旁路二极管测试，以及温升测试（根据UL3730标准）

<sup>1)</sup> Amperage based on Thermal Bypass Diode Test at 75 °C ambient temperature according to EN50548 and Temperature Rise Test according to UL3730

光伏接线盒 PV-JB/LP...

PV junction box PV-JB/LP...



型号 Type	订货号 Order No.	产品名称 Description	电缆截面积 Cable cross section	L	电缆型号 Cable type	电缆颜色 Cable colour	认证 Approvals
			mm <sup>2</sup>	cm			
PV-JB/LP/N4RS/...	32.7246-023*	无二极管外壳的接线盒装置 Junction box set without Diode enclosure	4	23 <sup>1)</sup>	MC4	21	x      x      x

**MC4安全锁紧夹**, 参阅第55页  
**密封盖**, 参阅第57页  
**解锁工具**, 参阅第63页

**Safety lock clip MC4** page 55  
**Sealing caps** page 57  
**Unlocking tool** page 63

**装配说明 MA272**  
[www.multi-contact.com](http://www.multi-contact.com)

**Assembly Instructions MA272**  
[www.multi-contact.com](http://www.multi-contact.com)

- 大功率薄膜单极接线盒在应用中仅使用硅胶，并且最大额定电流不超过30 A
  - 为了便于电阻焊接，模组焊带终端是第一个在壳体外垂直定位的特殊设计。焊接后，连接被下压到封装容器里。锡焊也适用（通过第一步降低接触面）
  - 接线盒设计满足全自动安装
  - 通过灌封内部连接空间使外壳被永久密封
  - 高防护等级 IP67
- High-power thin film single pole junction box for application only with silicone, with maximum rated current of 30 A
  - Designed specifically for ease of resistance welding, the module ribbon termination is first in a vertical orientated outside of the enclosure. After welding the connection is pressed down into the potting well. Soldering is also possible (by first depressing the contact).
  - The design of the junction box allows fully automated assembly.
  - The housing is permanently sealed by potting the inner connection chamber.
  - High protection class IP67

**技术参数****Technical data**

连接器系统	Connector system	<b>MC4</b>
无二极管状态下的额定电流	Rated current without Diode	<b>最大/Max. 30 A</b>
额定电压	Rated voltage	<b>1000 V DC (IEC) 600 V DC (UL)</b>
环境温度范围	Ambient temperature range	<b>-40...+85 °C</b>
防护等级，已插合 未插合	Degree of protection, mated unmated	<b>IP67 IP2X</b>
连接器的接触电阻	Contact resistance of plug connectors	<b>≤ 0,35 mΩ</b>
触头材质	Contact material	<b>铜，镀锡 Copper, tin plated</b>
绝缘材料	Insulation material	<b>mPPE</b>
连接器锁紧系统	Locking system plug connectors (UL)	<b>嵌入式 / Locking type</b>
阻燃等级	Flame class	<b>UL94-5VA</b>
TÜV 认证，符合EN 50548标准 UL认证部件，符合UL 4703标准 CSA认证，符合UL 4703标准	TÜV-Rheinland certified, in accordance with EN 50548 UL recognized component, in accordance with UL 4703 CSA certified, in accordance with UL 4703	<b>R60017180 E350378 250725</b>

用于模组类型	Intended for Module type	<b>薄膜 / 晶体 Thin film / Crystalline</b>
电极	Poles	<b>1</b>
二极管	Diodes	<b>-</b>
汇流带数量	Number of bus ribbons	<b>1</b>
汇流带的连接	Connection of the bus ribbons	<b>焊接 / 锡焊 Welding / Soldering</b>
装配	Installation	<b>硅胶或灌胶 Potting compound &amp; silicone</b>
是否适合自动装配	Suitable for automated assembly	<b>是 Yes</b>

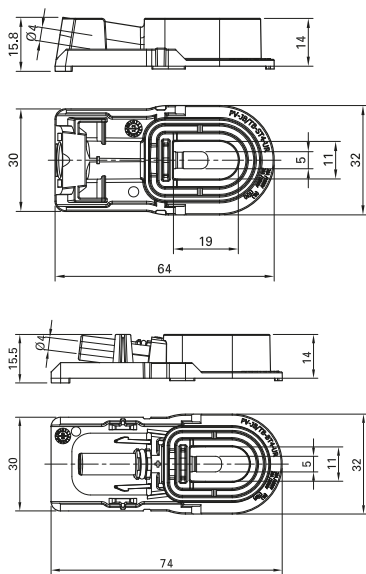
\* 加上所希望的颜色代码

1) 其他长度根据需求提供

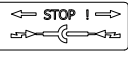
\* Add the desired colour code

1) Other lengths available upon request

**光伏接线盒TwinBox PV-JB/TB-...      PV-Junction box TwinBox PV-JB/TB-...**



**DANGER**  
DO NOT DISCONNECT  
UNDER LOAD




型号 Type	订货号 Order No.	产品名称 Description
PV-JB/TB-BT4-UR	32.7242-UR	整套插座接线盒，包括盒盖和粘合膜 Socket junction box, complete with cover and adhesive foil
PV-JB/TB-ST4-UR	32.7243-UR	整套插头接线盒，包括盒盖和警告贴纸“DO NOT DISCONNECT UNDER LOAD” Plug junction box, complete with cover and Warning sticker“DO NOT DISCONNECT UNDER LOAD”

 密封盖，参阅第57页  
解锁工具，参阅第63页

 装配说明 **MA263**  
[www.multi-contact.com](http://www.multi-contact.com)

 **Sealing caps** page 57  
**Unlocking tool** page 63

 **Assembly instructions MA263**  
[www.multi-contact.com](http://www.multi-contact.com)

- 专为薄膜光伏模组而开发
- 为自动化生产而设计
- 组件、灌胶、硅胶和粘合膜之间互相匹配，确保高度工艺可靠性。
- 灌胶确保接线盒的电连接区域与面板之间气密密封
- 由于接线盒集成了MC4连接技术，设计更为紧凑

#### 预组装的光伏电缆：

TwinBox的连接应用了MC4连接器系统。选择不同的电缆和连接器可实现不同的电压系统。比如IEC 1000 V – 1500 V，以及UL 600 V – 1000 V。

- Specially developed for thin-film PV modules
- Designed for fully automated assembly
- High dependability due to perfect matching of components, potting compound, silicone and adhesive foil.
- Compartment for electrical connection between box and panel hermetically sealed with potting compound.
- Compact design due to integration of the MC4 connection technology directly into the junction box

#### Pre-assembled PV cables:

The connection of the TwinBox is achieved by using the MC4 connector system. Depending on the choice of cables and connectors various voltage systems may be realized: IEC 1000 V – 1500 V as well as UL 600 V – 1000 V.

技术参数	Technical data	
连接器系统	Connector system	<b>MC4</b>
额定电压 <sup>1)</sup>	Rated voltage <sup>1)</sup>	<b>MC4:</b> <b>1000 V DC / 1500 V DC<sup>2)</sup> (IEC)</b> <b>600 V DC (UL)</b> <b>1000 V DC (UL)</b> <b>MC4-EVO 3:</b> <b>1000 V DC / 1500 V DC (IEC)</b>
额定电流	Rated current	<b>25 A</b>
额定脉冲电压	Rated impulse voltage	<b>16 kV</b>
测试电压	Test voltage	<b>6 kV 适用于 /for 1000 V</b> <b>8 kV 适用于 /for 1500 V</b>
环境温度范围	Ambient temperature range	<b>-40 °C ... +90 °C (IEC)</b>
最大工作温度，经UL认证	Max. operating temperature UL	<b>MOT 80 °C</b>
温度上限	Upper limiting temperature	<b>+105 °C</b>
防护等级，已插合 未插合	Degree of protection, mated unmated	<b>IP65/IP68 (1 h/1 m)</b> <b>IP2X</b>
安全等级	Safety class	<b>III</b>
污染等级	Degree of pollution	<b>3 已插合 /mated</b>
触头材质	Contact material	<b>铜合金，镀锡</b> <b>Copper alloy, tin plated</b>
绝缘材料	Insulation material	<b>PA</b>
连接器锁紧系统	Locking system plug connectors	<b>嵌入式 /Snap-In</b>
阻燃等级	Flame class	<b>UL94-V0</b>
TÜV认证	TÜV Rheinland certified	<b>R60091405</b>
UL认证	UL-Recognized	<b>E335016</b>

<sup>1)</sup> 证书应同样对所应用连接器与零部件的额定电压进行检查。

<sup>2)</sup> 根据2PFG2330，1500 V DC (IEC)仅适用于严格受限的场所

<sup>1)</sup> The rated voltage of the components and connectors used must be checked in the certificates.

<sup>2)</sup> 1500 V DC (IEC) according 2PFG2330: only for restricted access locations

## 太阳能电缆 FLEX-SOL-XL

## Solar Cable FLEX-SOL-XL

PV1-F MC-FLEX-SOL-XL 1,5 mm<sup>2</sup> TÜV Zert.-Nr. R60024459

## 电气参数

## Electrical data

标称电压	Nominal voltage	<b>U<sub>0</sub>/U: 0,6/1 kV AC/max. 1,8 kV DC</b>
测试电压根据EN 50395-6标准	Test voltage according to EN 50395-6	<b>6,5 kV AC/15 kV DC (5 min.)</b>
额定电流	Rated current	<b>2,5 mm<sup>2</sup>: 41 A; 4 mm<sup>2</sup>: 55 A 6 mm<sup>2</sup>: 70 A; 10 mm<sup>2</sup>: 98 A</b>
额定电压	Rated voltage	<b>1000 V DC</b>
完整电缆的绝缘电阻根据EN 50395-8.2标准	Insulation resistance of the complete cable according to EN 50395-8.2	<b>1014 Ωcm (20 °C)/1011 Ωcm (90 °C)</b>

## 热特性和机械特性

## Thermal and mechanical properties

环境温度	Ambient temperature	<b>-40 °C ... +90 °C</b>
最高导线温度	Maximum conductor temperature	<b>最高/max. +120 °C</b>
高耐热性	Highly heat resistant	<b>-40 °C ... +90 °C (&gt; 150.000 小时/hours) -40 °C ... +105 °C (&gt; 70.000 小时/hours) -40 °C ... +120 °C (&gt; 20.000 小时/hours)</b>
使用寿命	Expected usable life	<b>25 年/years</b>
高机械应力	Mechanically highly stressable	
低温下具柔性	Flexible at low temperatures	
抗磨性	Abrasion resistance	<b>优良/Very good</b>
抗拉强度	Tensile strength	<b>18 N/mm<sup>2</sup></b>
断裂伸长强度	Elongation at rupture	<b>160 %</b>
硬度	Hardness	<b>40 Shore D</b>

## 抗环境影响能力

## Resistance to environmental influences

耐...	Resistant to...	<b>紫外线/UV 臭氧/Ozone 水解/Hydrolysis</b>
经测试, 符合标准IEC 60811-2-1, 耐...	Resistance to... tested according to IEC 60811-2-1	<b>酸、碱和油 (IRM902) Acids, alcalis and oil (IRM 902)</b>

## 防火性能

## Fire behaviour

耐火	Insulation	<b>阻燃剂, 低烟雾 flame retardant with particularly low smoke emission</b>
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## 电缆结构

## Cable structure

导线: 优良的镀锡铜线 根数多于标准线	Conductor: fine-wire tinned copper strands Number larger than standard	<b>符合IEC/EN 60228标准的5级电线 Wire class 5 in accordance to IEC/EN 60228</b>
内部绝缘(自然色) 包皮层绝缘, 颜色有黑色、红色或蓝色	Inner insulation (natural-coloured) Sheath insulation, with colour patch (black, red or blue)	<b>聚烯烃(化学交联化合物) Polyolefin (Chemically linked compound)</b>

## 认证

## Approvals

TÜV认证, 经测试符合2 PFG 1169/08.07标准	TÜV certified, tested according to 2 PFG 1169/08.07)	<b>TÜV认证号R 60024459 TÜV Certificate No. R 60024459</b>
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单极双重绝缘太阳能电缆采用镀锡铜绞线制作。FLEX-SOL-XL 坚固、柔性又省空间的设计确保了光伏装置在整个使用寿命期间保持稳定的电和机械性能。

对于 FLEX-SOL-XL 电缆包覆的绝缘部分，我们采用了一种化学交联化合物，电缆外包层的整个厚度都为完整且可控的交联绝缘层。

通过化学方式进行交联确保了整个工艺的高可靠性、高重复性和材料的高同质性。归功于此，FLEX-SOL-XL 才具有出色的机械和热性能：高机械强度、高耐高温性和寒冷条件下的柔软性。

FLEX-SOL-XL 电缆也具阻燃性、不含卤素，符合 RoHS 指令，尤其是其遇火时的低烟雾性。

**典型应用**

用于重型户外电线的低压应用。与 MC 用于光伏的连接器系统结合使用：连接线的装配，光伏模组的接线可节省时间。

Single-pole, double insulated solar cable with fine-wire tinned copper strands. The robust, flexible and space-saving design of FLEX-SOL-XL ensures constant electrical and mechanical properties during the whole life of the PV installation.

For the insulation of our FLEX-SOL-XL cables we use a chemically cross-linked compound. This exhibits complete and controlled in-depth cross-linking throughout the thickness of the cable sheath.

Cross-linking by chemical means results in a high overall process reliability and reproducibility and material homogeneity to which FLEX-SOL-XL cables owe their outstanding mechanical and thermal characteristics: high mechanical strength, high temperature resistance and flexibility under cold conditions.

FLEX-SOL-XL cables are also flame retardant, halogen-free, RoHS-conform and with particularly low smoke emission in case of fire.

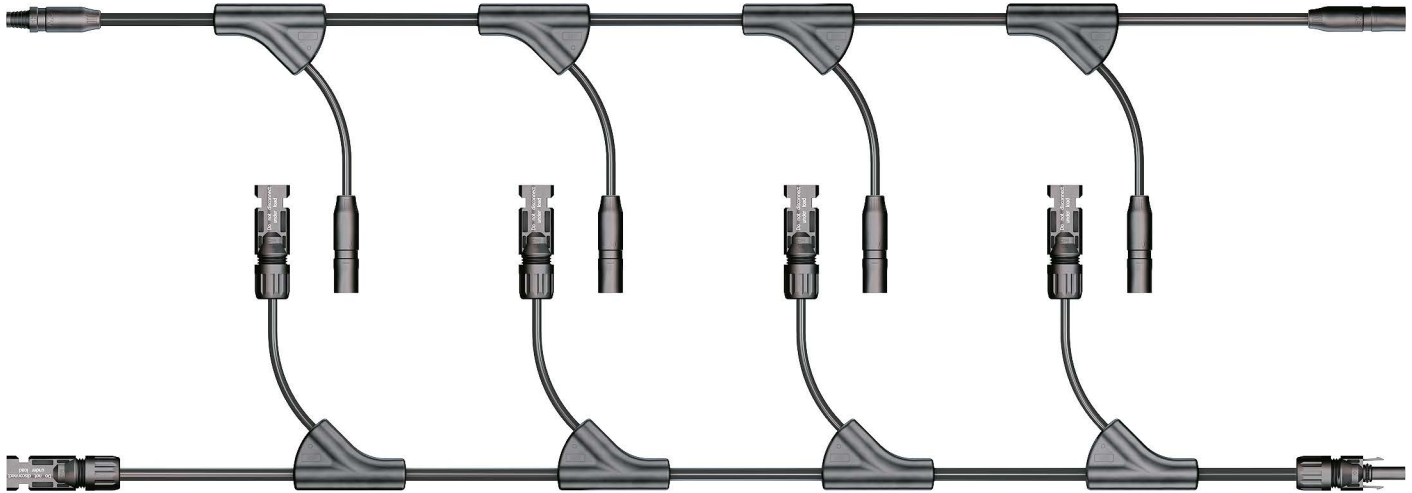
**Typical application**

Use in the low-voltage field for heavy-duty outdoor wiring. In combination with the MC plug connector system for photovoltaics (PV): Assembly of connecting leads for time-saving cabling of PV modules.

类型 Type	订货号 Order No.	包装 Packaging unit			导体截面 Conductor cross section	导体-Ø Conductor Ø	外径-Ø Outer-Ø	芯线结构: 根数 x Ø (mm) Strand design: Number x Ø (mm)	额定电流 <sup>1)</sup> Rated current <sup>1)</sup>	导线电阻 / 20 °C Conductor resistance / 20 °C	颜色 <sup>2)</sup> Colours <sup>2)</sup>	认证 Approvals
		捆装 Bound together	纸盒装 Cardboard box	卷装 (max.) Spool								
		订货单位 / Order unit										
		m	每盒长度 / pcs. at	每卷长度 / pcs. at	mm <sup>2</sup>	mm	mm		A	Ω/km		
FLEX-SOL-XL 2,5	62.7426-001*	...			2,5	2,05	5,1	50 x Ø0,25	41	7,7	21	

## 分支电缆线PV-K/BC...

## Branch Cable Leads PV-K/BC...



型号 Type	产品名称 Description	订货填写表, 见页码 Order form, see page
PV-K/BC...	分支电缆, 据客户要求定制 Branch cable, according to customer's specification	66

## 多种可能性

- FLEX-SOL-XL截面积<sup>1)</sup>  
主电缆/分支电缆: 4,0 mm<sup>2</sup>/4,0 mm<sup>2</sup>  
6,0 mm<sup>2</sup>/2,5 mm<sup>2</sup>
- 分支电缆数量 max. 80
- 分支电缆长度(25 – 120 cm)<sup>2)</sup>
- 主电缆起始端和末端的特殊长度<sup>4)</sup>以及单根电缆线的长度<sup>4)</sup>(最大总长100 m)<sup>3)</sup>
- 如果需要, 定义电缆线的格距<sup>4)</sup>, “无限长度”电缆也可以提供(最长 100 m)<sup>3)</sup>
- 主缆和分支电缆的终端
  - MC3/MC4连接器
  - MC4-EVO 3连接器(仅限分支电缆)
  - 不带连接器(直切或剥离到精确长度)
  - 根据客户要求
- 选用件: 所有分支和主缆连接器上的密封盖

## 说明

为防止连接器未插合时脏污, 我们建议使用密封盖。

## Variation possibilities

- Cross sections<sup>1)</sup> FLEX-SOL-XL  
Main cable/branch cables: 4,0 mm<sup>2</sup>/4,0 mm<sup>2</sup>  
6,0 mm<sup>2</sup>/2,5 mm<sup>2</sup>
- Number of branches max. 80
- Length of branches (25 – 120 cm)<sup>2)</sup>
- Special lengths<sup>4)</sup> at the beginning/end of the main cable and lengths<sup>4)</sup> of the individual cable strings (max. overall length 100 m)<sup>3)</sup>
- If appropriate, defined grid length for cable string<sup>4)</sup>, “endless” cables are also possible (max. 100 m)<sup>3)</sup>
- Termination of the main cable and branches:
  - MC3/MC4 connectors,
  - MC4-EVO 3 connectors (branches only)
  - without connectors (cut off straight or stripped to a precise length)
  - as agreed with individual customer.
- Optional: Sealing caps on all connectors (of all branches and of the main cable)

## Note

We recommend using the sealing caps in order to protect the connectors from soiling when unmated.

为了简化和缩短在太阳能发电园区或坡屋顶上劳力密集而又耗时的装配工作，MC提供可单独定制安装的分支电缆线。

分支电缆线的包装方式根据其长度而定，例如卷装、捆装和/或塑料薄膜焊接封口包装，只需拆包并接在它们的安装位置即可。

“无限长度线”也有可能，例如，就在需要用之前在安装现场将电缆剪切至光伏装置所需的长度。该方式适用于具规则间隔(“格距”)光伏模组的较大规模的安装。

这种接线方式省钱、高效、安全、可靠，并且确保了MC一贯的优质性。

#### 分支电缆线的优势

- 快速高效的模组接线，节省了安装时间
- 根据客户所需规格进行制造
- 连续主缆减少了接触点数量，从而减少了接触电阻
- 已预安装，并且100 %经MC检测

In order to simplify and shorten the labor intensive and time-consuming assembly work in solar parks or on sloping roofs MC offers individual customized mounted branch cable leads.

The branch cable leads are packed in a manner appropriate to their length, i.e. rolled, bundled and/or welded into plastic film, and need only to be unpacked and connected at their place of installation.

“Endless leads” are also possible, i.e. the cables are cut to the length required for the PV installation on-site shortly before they are needed. This variant is suitable for relatively large installations with regularly spaced PV modules (“grid length”).

This cabling method is inexpensive, efficient, safe, reliable and ensures the accustomed good MC quality.

#### Advantages of branch cable leads

- Fast and efficient module wiring, reduced assembly time
- Fabrication according to customer specification
- Continuous main cable reducing the number of contact points, thereby reducing contact resistance
- Pre-assembled and 100 % inspected by MC

#### 技术参数

#### Technical data

连接器系统 <sup>5)</sup>	Connector system <sup>5)</sup>	MC3/MC4/MC4-EVO 3 <sup>6)</sup>
额定电压	Rated voltage	1000 V DC (MC)
额定电流	Rated current	30 A
额定脉冲电压	Rated impulse voltage	12 kV
最大允许工作电压	Maximum permitted operating voltage	< 50 V
环境温度范围	Ambient temperature range	-40 °C...+90 °C (MC)
温度上限	Upper limiting temperature	105 °C (MC)
防护等级, 已插合 未插合	Degree of protection, mated unmated	IP67 IP2X
连接器的接触电阻	Contact resistance of plug connectors	≤ 0,35 mΩ (MC4, MC4-EVO 3) / ≤ 0,5 mΩ (MC3)
安全等级	Safety class	II
连接系统	Contact system	MULTILAM
接线方式	Type of termination	压接 Crimping
触头材质	Contact material	铜、镀锡 Copper, tin plated
锁紧系统	Locking system (UL)	直插式 / Latching type (MC3) 嵌入式 / Locking type (MC4, MC4-EVO 3)
电缆型号	Cable type	FLEX-SOL-XL
污染等级	Degree of pollution	3

<sup>1)</sup> 其他截面积，请咨询我们

<sup>2)</sup> 分支电缆长度公差: ±30 mm

<sup>3)</sup> 加长电缆经同意后提供

<sup>4)</sup> 每段电缆的最小长度: 25 cm  
每段电缆的公差: -50 mm / +10 mm

<sup>5)</sup> 请根据相应的安装手册查看技术参数:  
MC3: MA207; MC4: MA231; MC4-EVO3: MA264

<sup>6)</sup> 根据要求

<sup>1)</sup> Other cross-sections on inquiry

<sup>2)</sup> Branch tolerance: ±30 mm

<sup>3)</sup> Greater lengths by agreement

<sup>4)</sup> Minimum length per cable section: 25 cm  
Tolerance per cable section: -50 mm / +10 mm

<sup>5)</sup> For technical data please refer to the appropriate installation instructions  
MC3: MA207; MC4: MA231; MC4-EVO3: MA264

<sup>6)</sup> On request

适配器测试线

Adapter leads

适配器测试线MC3和MC4

测试线的一端配备MC光伏连接器，另一端带Ø4 mm的MC安全插头，用于连接带Ø4 mm安全插座的测试仪器，以确保在光伏模组和系统上测试的安全电流和电压。

Adapter test lead MC3 and MC4

One end equipped with MC PV connector, the other end with Ø 4 mm MC safety plug for measuring instruments with Ø 4 mm safety sockets ensuring safe current and voltage measuring on PV-modules and systems.

PV-AMLB3/150



PV-AMLB4/150



PV-AMLS3/150



PV-AMLS4/150



技术参数

Technical data

连接器系统	Connector system	<b>MC3, MC4</b>
额定电压	Rated voltage	<b>1000 V DC</b>
额定电流	Rated current	<b>19 A</b>
导体横截面	Conductor cross section	<b>1 mm<sup>2</sup></b>
电缆长度	Cable length	<b>150 cm</b>
电缆绝缘材料	Cable insulation	<b>PVC</b>
过压类别/污染等级	Overvoltage category/Pollution degree	<b>CATIII/2</b>

型号 Type	订货号 Order No.	光伏插头 PV plug	光伏插座 PV socket	MC 系统 MC System	颜色 Colours
PV-AMLB3/150	32.1098-150*		×	MC3	21 23 29
PV-AMLS3/150	32.1099-150*	×		MC3	21 22
PV-AMLB4/150	32.1198-150*		×	MC4	21 23 29
PV-AMLS4/150	32.1199-150*	×		MC4	21 22

\* 请添加所需的颜色代码

\* Add the desired colour code



密封盖，参阅第56和57页  
安全锁紧夹，参阅第55页



Sealing caps page 56, 57  
Safety lock clip page 55

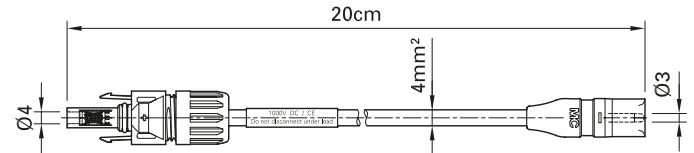
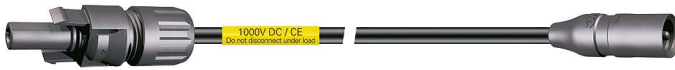
## MC3/MC4适配器导线

用于两个MC光伏连接器系统MC3和MC4(MC4-EVO 3)的互连。

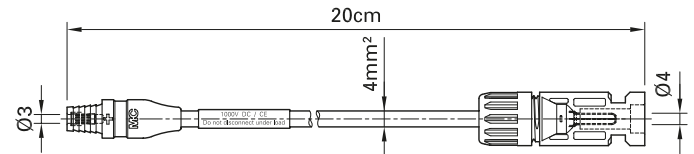
## Adapter lead MC3/MC4

To interconnect the two MC PV-Plug connector systems MC3 and MC4 (MC4-EVO 3).

### PV-A-KBT4/KST3



### PV-A-KBT3/KST4



### 技术参数

连接器系统

额定电压

额定电流

防护等级, 已插合  
未插合

环境温度范围

温度上限

过压类别/污染等级

更多技术参数, 参阅页码

### Technical data

Connector system

Rated voltage

Rated current

Degree of protection, mated  
unmated

Ambient temperature range

Upper limiting temperature

Overvoltage category/Pollution degree

Further technical data, see pages

**MC3/MC4**

**1000 V DC**

**20 A**

**IP67  
IP2X**

**-40 °C...+90 °C (IEC)**

**105 °C (IEC)**

**CATIII/2**

**12, 14**

型号 Type	订货号 Order No.
<b>PV-A-KBT4/KST3</b>	<b>32.6096</b>
<b>PV-A-KBT3/KST4</b>	<b>32.6097</b>



密封盖, 参阅第56和57页  
安全锁紧夹, 参阅第55页



Sealing caps page 56, 57  
Safety lock clip page 55

**测试插座和插头 MC3和MC4** **Test socket and plug MC3 and MC4**

具镀金触头的特殊结构用于高插拔频率的测试和测量。  
无锁紧系统。

Special construction with gold plated contacts for test and measurement to achieve higher mating cycles.  
**Without locking system.**

PV-KBT3-P AU



PV-KBT4-P AU



PV-KST3-P AU



PV-KST4-P AU



**技术参数**

**Technical data**

连接器系统	Connector system	<b>MC3, MC4</b>
额定电压	Rated voltage	<b>1000 V DC (IEC)</b>
额定电流	Rated current	<b>20 A (MC3) (10 AWG/4 mm<sup>2</sup>) 30 A (MC4) (10 AWG/4 mm<sup>2</sup>)</b>
测试电压	Test voltage	<b>6 kV (50 Hz, 1 min.)</b>
导体截面积	Conductor cross section	<b>2,5 mm<sup>2</sup>; 4 mm<sup>2</sup> (14 AWG; 12 AWG; 10 AWG)</b>
防护等级, 未插入	Degree of protection, unmated	<b>IP2X</b>
过压类别/污染等级	Overvoltage category/Pollution degree	<b>CATIII/2</b>
连接器的接触电阻	Contact resistance of plug connectors	<b>≤0,3 mΩ</b>
触头材质	Contact material	<b>铜, 镀金 Copper, gold plated</b>
绝缘材料	Insulation material	<b>TPE/PA (MC3) PC/PA (MC4)</b>

型号 Type	订货号 Order No.	插座 Socket		插头 Plug		适用于 Suitable for	 装配说明 Assembly instruction
		MC3	MC4	MC3	MC4		
PV-KBT3-P AU	32.0042	×				PV-KST3..., PV-ADSP3..., PV-AZS3, PV-AZB3	MA259
PV-KST3-P AU	32.0043			×		PV-KBT3..., PV-ADBP3..., PV-AZS3, PV-AZB3	MA259
PV-KBT4II-P AU	32.0044		×			PV-KST4..., PV-ADSP4-S2..., PV-AZS4, PV-AZB4	MA260
PV-KST4II-P AU	32.0045				×	PV-KBT4..., PV-ADBP4-S2..., PV-AZS4, PV-AZB4	MA260

### 测试插头MC4 PV-PST

### Test plug MC4 PV-PST

此测试插头用于检查MC4触头在绝缘材料中的正确位置。

This test plug is used to control the correct location of the MC4 contact in the insulation.

PV-PST



型号 Type	订货号 Order No.	装配说明 Assembly instruction
PV-PST	32.6028	MA231

### MC4安全锁紧夹PV-SSH4

### MC4 Safety lock clip PV-SSH4

可插拔安全锁紧夹用来锁紧光伏连接，只能使用工具PV-MS...进行解锁。

The pluggable safety lock clip secures the PV connection and can only be unlocked with the tools PV-MS...

PV-SSH4



安全锁紧夹锁紧状态  
Safety lock clip mounted

型号 Type	订货号 Order No.	装配说明 Assembly instruction
PV-SSH4	32.5280	MA252

#### 技术参数

UL认证, 文件号

#### Technical data

UL-Recognized

E356494, E343181

**密封盖 Sealing caps**

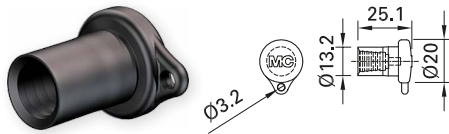
**密封盖MC3**

密封盖用于密封未插入的光伏连接器。  
为防止丢失，直接将带环套在电缆连接器上。

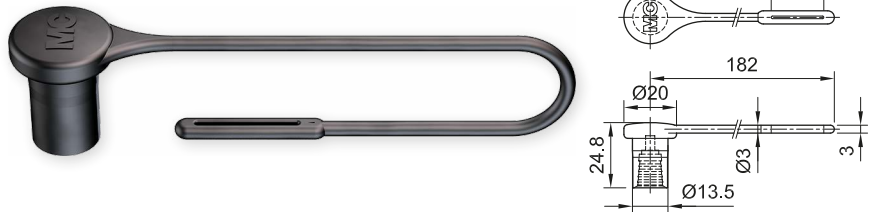
**Sealing caps MC3**

Sealing caps for tight sealing of unplugged PV connectors.  
To prevent loss, simply push the strap loop over the cable connector.

**PV-BVK3-OL**



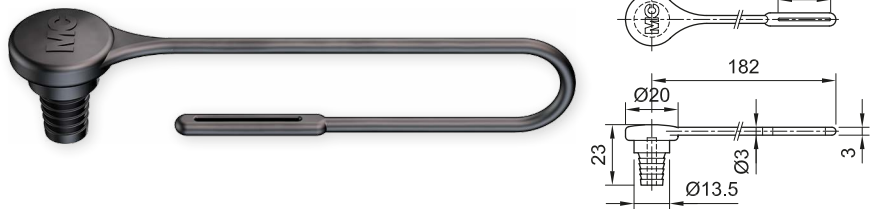
**PV-BVK3**



**PV-SVK3-OL**



**PV-SVK3**



**技术参数**

材质	Material	<b>TPE</b>
插入状态下的防护等级	Degree of protection, mated	<b>IP67</b>

**Technical data**

型号 Type	订货号 Order No.	是否带软线 With cord	适用于插头 Suitable for plug side	适用于插座 Suitable for socket side	MC 系统 MC System
<b>PV-BVK3</b>	<b>32.0710</b>	x		x	MC3
<b>PV-SVK3</b>	<b>32.0711</b>	x	x		MC3
<b>PV-BVK3-OL</b>	<b>32.0720</b>			x	MC3
<b>PV-SVK3-OL</b>	<b>32.0721</b>		x		MC3

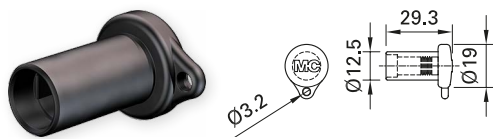
### 密封盖MC4

密封盖用于未插合光伏连接器的密封。

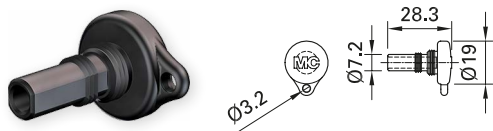
### Sealing caps MC4

Sealing caps for tight sealing of unplugged PV connectors.

**PV-BVK4**



**PV-SVK4**



#### 技术参数

材质  
插合状态下的防护等级

#### Technical data

Material **TPE**  
Degree of protection, mated **IP67**

型号 Type	订货号 Order No.	适用于插头 Suitable for plug side	适用于插座 Suitable for socket side	MC 系统 MC System
<b>PV-BVK4</b>	<b>32.0716</b>		×	MC4, MC4-EVO 3
<b>PV-SVK4</b>	<b>32.0717</b>	×		MC4, MC4-EVO 3

## 装配工具

## Assembly tools

## 剥线钳PV-AZM-...


适用于截面积为1,5 mm<sup>2</sup>, 2,5 mm<sup>2</sup>, 4 mm<sup>2</sup>, 6 mm<sup>2</sup>和10 mm<sup>2</sup>的导线，带长度定位器。尤其适用于FLEX-SOL-XL光伏电缆的剥线，用于屋顶作业时少量电缆的剥线。

## Stripping pliers PV-AZM-...

With length stop for conductor cross sections 1,5 mm<sup>2</sup>, 2,5 mm<sup>2</sup>, 4 mm<sup>2</sup>, 6 mm<sup>2</sup> and 10 mm<sup>2</sup>. Specially adapted for the FLEX-SOL-XL PV cable, for stripping small cable quantities on the roof.

## PV-AZM-...



型号 Type	订货号 Order No.	名称 Designation	剥线范围 for cable cross sections mm <sup>2</sup>	 装配说明 Assembly instruction
<b>PV-AZM-156</b>	<b>32.6027-156</b>	带嵌块的剥线钳/Pliers with Insert	1,5; 2,5; 4; 6	MA207, MA223, MA259, MA260
<b>PV-AZM-410</b>	<b>32.6027-410</b>	带嵌块的剥线钳/Pliers with Insert	4; 6; 10	MA231, MA268

## 零部件

## Individual parts

## PV-M-AZM-156



## PV-M-AZM-410



PV-M-AZM-156	32.6057-156	嵌块/Insert	1,5; 2,5; 4; 6	MA207, MA223, MA259, MA260
PV-M-AZM-410	32.6057-410	嵌块/Insert	4; 6; 10	MA231, MA268

### 压线钳PV-CZ...

只能使用下述工具来装配经UL认证的产品。

#### PV-CZ



### Crimping pliers PV-CZ...

Only the tools stated below may be used for the assembly of UL-approved products.

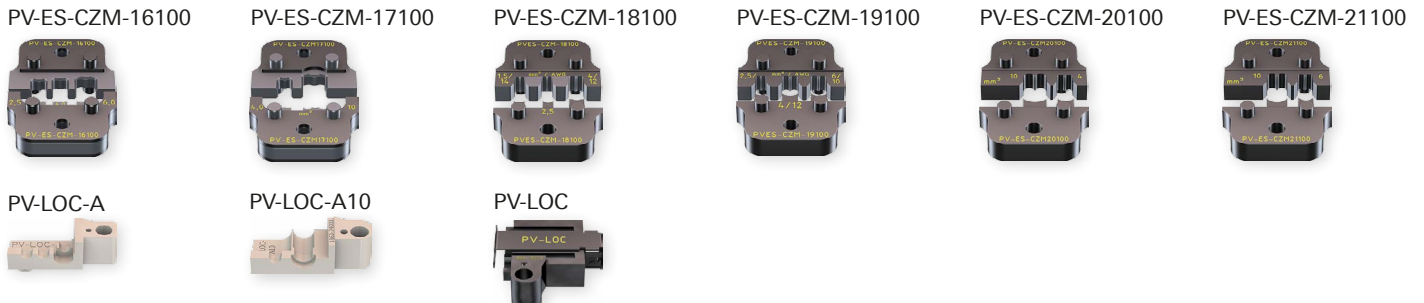
#### PV-CZM...



型号 Type	订货号 Order No.	名称 Designation	接线范围 Crimp range		适用于 suitable for			MA 装配说明 Assembly instruction
			mm <sup>2</sup>	AWG	MC3	MC4	MC4-EVO 2	
<b>PV-CZ</b>	<b>32.6008</b>	1)	2,5; 4	14; 12	×			MA207, MA223
<b>PV-CZM-16100A</b>	<b>32.6020-16100A</b>	2)	2,5; 4; 6	14; 12; 10	×			MA251
<b>PV-CZM-17100</b>	<b>32.6020-17100</b>	2)	4; 10	–	×			MA207, MA223, MA251, MA268
<b>PV-CZM-18100</b>	<b>32.6020-18100</b>	2)	1,5; 2,5; 4	14; 12		×		MA251
<b>PV-CZM-19100</b>	<b>32.6020-19100</b>	2)	2,5; 4; 6	14; 12; 10		×		MA251
<b>PV-CZM-20100</b>	<b>32.6020-20100</b>	2)	4; 10	–		×		MA251
<b>PV-CZM-21100</b>	<b>32.6020-21100</b>	2)	6; 10	–		×		MA251
<b>PV-CZM-22100</b>	<b>32.6020-22100</b>	2)	–	12; 10; 8		×		MA251
<b>PV-CZM-40100</b>	<b>32.6020-40100</b>	2)	1,5; 2,5; 4	16; 14; 12			×	MA251
<b>PV-CZM-41100</b>	<b>32.6020-41100</b>	2)	2,5; 4; 6	14; 12; 10			×	MA251
<b>PV-CZM-42100</b>	<b>32.6020-42100</b>	2)	4; 10	12; 8			×	MA251

#### 零部件, 仅用于PV-CZM...

#### Individual parts, only for PV-CZM...



PV-ES-CZM-16100	32.6021-16100	嵌块/Insert	2,5; 4; 6	14; 12; 10	×			MA251
PV-ES-CZM-17100	32.6021-17100	嵌块/Insert	4; 10	–	×			MA207, MA223, MA251, MA268
PV-LOC-A	32.6039	定位块/Locator	2,5; 4; 6	–	×			MA251
PV-LOC-A10	32.6049	定位块/Locator	4; 10	–	×			MA207, MA223, MA251, MA268
PV-ES-CZM-18100	32.6021-18100	嵌块/Insert	1,5; 2,5; 4	14; 12		×		MA251
PV-ES-CZM-19100	32.6021-19100	嵌块/Insert	2,5; 4; 6	14; 12; 10		×		MA251
PV-ES-CZM-20100	32.6021-20100	嵌块/Insert	4; 10	–		×		MA251
PV-ES-CZM-21100	32.6021-21100	嵌块/Insert	6; 10	–		×		MA251
PV-ES-CZM-22100	32.6021-22100	嵌块/Insert	–	12; 10; 8		×		MA251
PV-ES-CZM-40100	32.6021-40100	嵌块/Insert	1,5; 2,5; 4	16; 14; 12			×	MA251
PV-ES-CZM-41100	32.6021-41100	嵌块/Insert	2,5; 4; 6	14; 12; 10			×	MA251
PV-ES-CZM-42100	32.6021-42100	嵌块/Insert	4; 10	12; 8			×	MA251
PV-LOC	32.6040	定位块/Locator	通用 / universal			×		MA251
PV-LOC-B	32.6055	定位块/Locator	–	12; 10; 8		×		MA251
PV-LOC-C	32.6056	定位块/Locator	通用 / universal			×	×	MA251

1) 仅用于柔性电缆(5级和6级)

1) For flexible cable only (class 5 and 6)

2) 压线钳包括定位器和嵌块

2) Crimping pliers incl. locator and insert

**MC3装配工具PV-RWZ3**

用于导体截面积为2,5 mm<sup>2</sup>到6 mm<sup>2</sup>的PV-KBT3...和PV-KST3...  
电缆连接器的装配。适用于安装现场的使用，例如在屋顶等。

**MC3 Assembly device PV-RWZ3**

For assembly of the cable coupler PV-KBT3... and PV-KST3...  
for conductor cross sections from 2,5 mm<sup>2</sup> to 6 mm<sup>2</sup>. Suitable  
for on-site use, e.g. on the roof etc.

**PV-RWZ3**

编号 Pos.	型号 Type	订货号 Order No.	名称 Designation
1 + 2 + 3	PV-RWZ3	32.6050	装配工具，包括2个锥形轴 Assembly device incl. 2 tapered spindles

**零部件****Individual parts**

编号 Pos.	型号 Type	订货号 Order No.	名称 Designation
1	PV-R-RWZ3	32.6051	装配工具/Assembly device
2	PV-KO3 I+II	32.6052	锥形轴，用于尺寸I+II，最大外径为Ø 6,6 mm的绝缘体 Tapered spindle for insulators size I+II, up to outer-Ø 6,6 mm
3	PV-KO3 III	32.6053	锥形轴，用于尺寸III，最大外径为Ø 7,6 mm的绝缘体 Tapered spindle for insulators size III, up to outer-Ø 7,6 mm



装配说明 **MA207, MA259**  
[www.multi-contact.com](http://www.multi-contact.com)



Assembly Instructions **MA207, MA259**  
[www.multi-contact.com](http://www.multi-contact.com)

## MC3装配工具PV-AWZ3

用于导体截面积从2,5 mm<sup>2</sup>到10 mm<sup>2</sup>的PV-KBT3...和 PV-KST3... 电缆连接器的装配。

此款工具与用来固定该工具的扳手结合使用，是用于在屋顶上进行装配工作的理想工具。所包含的锥形轴放在可拆卸式匣中。

## MC3 Assembly device PV-AWZ3

For assembly of cable couplers PV-KBT3... and PV-KST3..., for conductor cross sections from 2,5 mm<sup>2</sup> to 10 mm<sup>2</sup>.

This feature combined with the keyring to secure the tool makes this ideal for use in assembly on rooftops. The included tapered spindles will be delivered fixed in a removable magazine.

### PV-AWZ3



编号 Pos.	型号 Type	订货号 Order No.	名称 Designation
	<b>PV-AWZ3</b>	<b>32.6060</b>	装配工具，包括编号1-5的配件 Assembly device, incl. pos. 1-5

### 零部件

### Individual parts

编号 Pos.	型号 Type	订货号 Order No.	名称 Designation
1	PV-KO 2,5-4	32.6061	主轴 2,5; 4 mm <sup>2</sup> , 最大外径为-Ø 6,6 mm/Spindle 2,5; 4 mm <sup>2</sup> , up to outer-Ø 6,6 mm
2	PV-KO 6	32.6062	主轴 6 mm <sup>2</sup> , 最大外径为-Ø 7,6 mm/Spindle 6 mm <sup>2</sup> , up to outer-Ø 7,6 mm
3	PV-KO 10	32.6063	主轴 10 mm <sup>2</sup> ,最大外径为-Ø 8,4 mm/Spindle 10 mm <sup>2</sup> , up to outer-Ø 8,4 mm
4	PV-AWZ3-ML	32.6064	空匣，可拆卸式/Magazine empty, removable
5	PV-AWZ3-KK	32.6065	电缆扣/Cable grip



装配说明 **MA268**  
[www.multi-contact.com](http://www.multi-contact.com)



Assembly Instructions **MA268**  
[www.multi-contact.com](http://www.multi-contact.com)

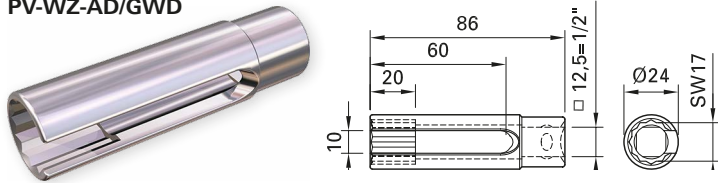
### 套筒扳手

为实现简便安全的面板插座安装，MC建议使用这些套筒扳手。

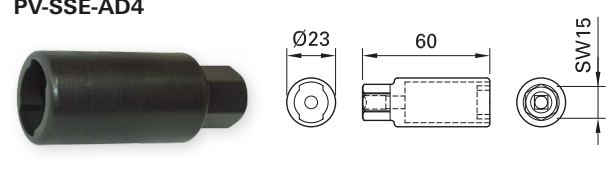
### Socket wrench insert


MC recommends these socket wrench inserts for a simple and safe assembly of the panel receptacles.

PV-WZ-AD/GWD



PV-SSE-AD4

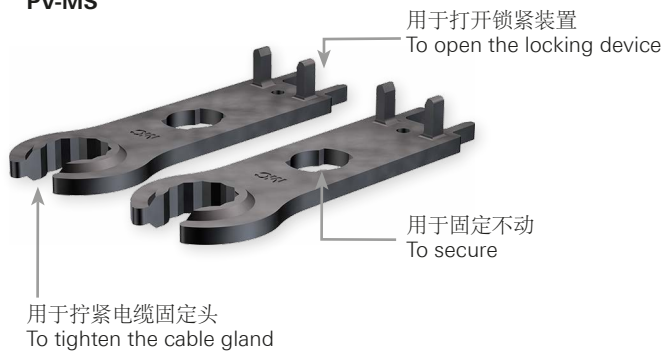


型号 Type	订货号 Order No.	适用于面板插座 suitable for panel receptacles	 装配说明 Assembly instruction
PV-WZ-AD/GWD	32.6006	MC3, MC4	MA223
PV-SSE-AD4	32.6026	MC4	

### 开口扳手和解锁工具 MC4 和 MC4-EVO 3

用于锁紧和拧松电缆固定头，松开连接器的锁紧装置。

PV-MS



### Open-end spanner and unlocking tool MC4 and MC4-EVO 3

To tighten and unscrew the cable gland and to open the locking device of the connection.

PV-MS-PLS



型号 Type	订货号 Order No.	产品名称 Description	适用于 suitable for	MA MA	装配说明 Assembly instruction
PV-MS	32.6024	开口扳手套件 (包括2个开口扳手), 塑料材质 Open-end spanner set (consisting of 2 open-end spanners), plastics	MC4	MA231, MA260	
PV-MS-PLS	32.6058	解锁工具, 包括工具包 (由2个开口扳手组成), 金属材质 Unlocking tool, incl. belt pouch (consisting of 2 open-end spanners), metal	MC4 MC4-EVO 3	MA270	

**工具箱 MC3 PV-WZ3-SET**

铝制工具箱，带有泡沫嵌块和装配工具，所包括的零件见下表。

**Tool case MC3 PV-WZ3-SET**

Aluminium case with foam insert and assembly tools. The listed parts are included.

**PV-WZ3-SET**



编号 Pos.	型号 Type	订货号 Order No.	名称 Description	宽度 Width	高度 Height	深度 Depth
	<b>PV-WZ3-SET</b>	<b>32.6029</b>	工具箱，包括标号1-3的工具/Case, incl. Pos. 1-3	446 mm	149 mm	333 mm

零部件			Individual parts
1	PV-CZ	32.6008	压线钳/Crimping pliers
2	PV-RWZ3	32.6050	装配工具，包括2个锥形轴/Assembly device incl. 2 tapered spindles
3	-	-	塑料箱/Plastic box

**MC4工具箱PV-WZ4-SET**

带工具的塑料工具箱，用于装配光伏连接器。

**MC4 Tool case PV-WZ4-SET**

Plastic case with tools for assembly of PV connectors.

**PV-WZ4-SET**

编号 Pos.	型号 Type	订货号 Order No.	名称 Description	宽度 Width	高度 Height	深度 Depth
	<b>PV-WZ4-SET</b>	<b>32.6019</b>	工具箱，包括编号1-3的工具/Case, incl. Pos. 1-3	345 mm	90 mm	275 mm

**零部件****Individual parts**

1	PV-CZM-19100	32.6020-19100	压线钳/Crimping pliers	2,5 mm <sup>2</sup> ; 4 mm <sup>2</sup> ; 6 mm <sup>2</sup> /14 AWG; 12 AWG; 10 AWG
2	PV-MS	32.6024	开口扳手套件/Open-end spanner set	
3	-	-	塑料箱/Plastic box	

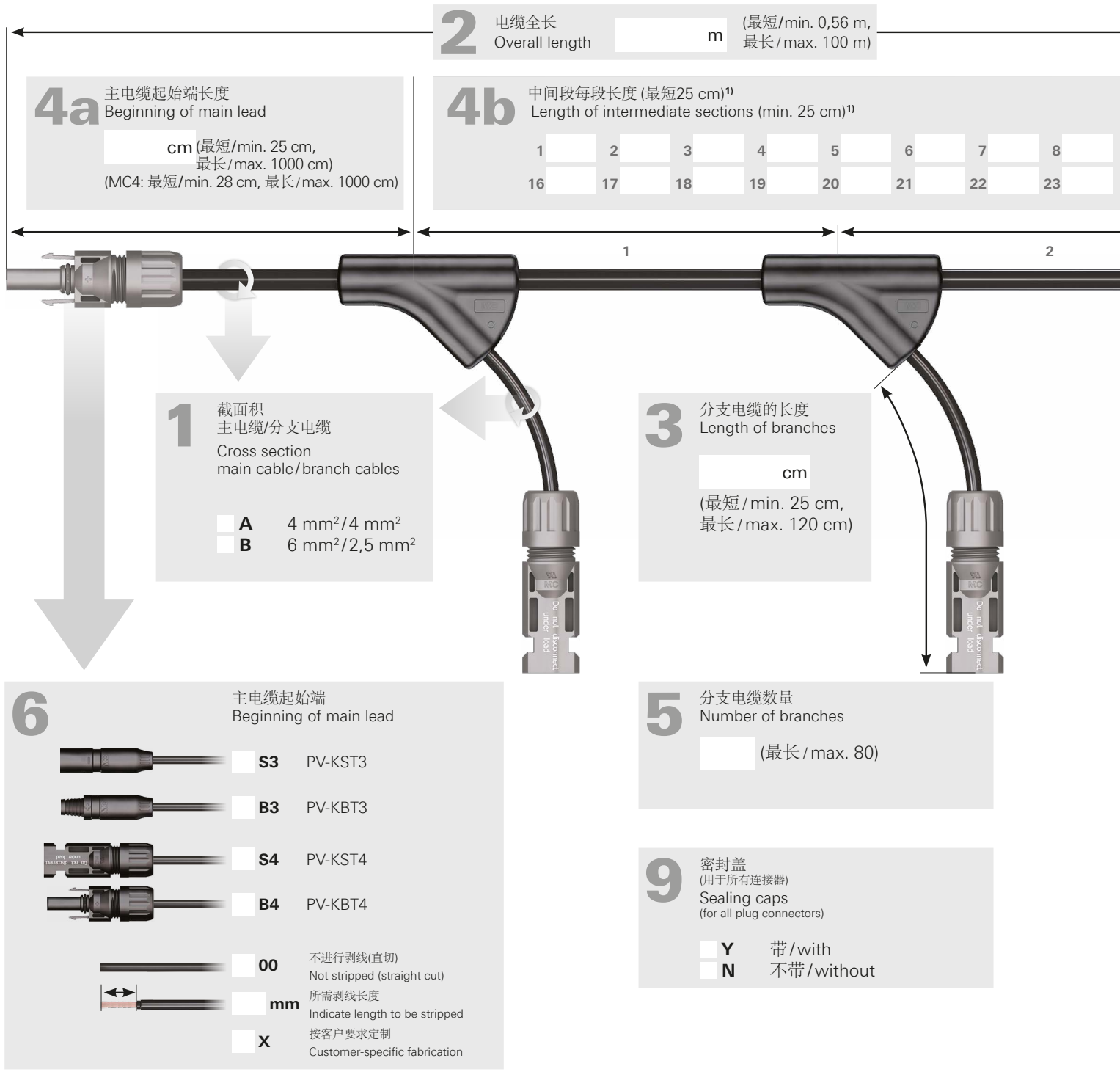
**选用件****Optional**

	PV-WZ-AD/GWD	32.6006	套筒扳手/Socket wrench insert
	PV-SSE-AD4	32.6026	套筒扳手/Socket wrench insert
	PV-ES-CZM-...	32.6021-...	嵌块，参阅第59页/Insert, see page 59
	PV-LOC...	...	定位块，参阅第59页/Locator, see page 59
	PV-AZM-156	32.6027-156	剥线钳/Stripping pliers
	PV-AZM-410	32.6027-410	剥线钳/Stripping pliers

分支电缆PV-K/BC...  
根据客户要求定制

Branch cable PV-K/BC...  
according to customer request

数量 Quantity     订单 Order     报价 Quotation     产品编号 Reference



[www](http://www.multi-contact.com) 互动表单: [www.multi-contact.com](http://www.multi-contact.com)  
> Downloads > Online Forms

[www](http://www) Interactive Form: [www.multi-contact.com](http://www.multi-contact.com)  
> Downloads > Online Forms

为了确定您所需的产品类型，请填写编号1至9的框。  
在发送该订单后，您将收到一张您最终订单的简图供确认。

To determine your article designation, please fill in boxes 1–9.  
After sending in this order form you will receive an approval sketch for your definitive order.

PV-K/BC-  -  /  -  X -  -  /  /  -

格距(每段长度相等)  
Grid length (all sections of equal length)

9	10	11	12	13	14	15
24	25	26	27	28	29	30

**4c** 主电缆末端  
End of main lead

(最短/min. 25 cm, 最长/max. 1000 cm)  
(MC4: 最短/min. 28 cm, 最长/max. 1000 cm)

**7** 分支电缆终端头  
Termination of branches

	<input type="text" value="S3"/>	PV-KST3
	<input type="text" value="B3"/>	PV-KBT3
	<input type="text" value="S4"/>	PV-KST4
	<input type="text" value="B4"/>	PV-KBT4
	<input type="text" value="S5"/>	PV-PLS-S
	<input type="text" value="B5"/>	PV-PLS-B
	<input type="text" value="00"/>	不剥线(直切) Not stripped (straight cut)
	<input type="text" value="mm"/>	所需剥线长度 Indicate length to be stripped
<input type="text" value="X"/>	<input type="text" value="X"/>	根据客户要求定制 Customer-specific fabrication

**8** 主电缆末端  
End of main lead

PV-KST3	<input type="text" value="S3"/>	
PV-KBT3	<input type="text" value="B3"/>	
PV-KST4	<input type="text" value="S4"/>	
PV-KBT4	<input type="text" value="B4"/>	
		<input type="text" value="00"/>
不剥线(直切) Not stripped (straight cut)		
所需剥线长度 Indicate length to be stripped		<input type="text" value="mm"/>
根据客户要求定制 Customer-specific fabrication		<input type="text" value="X"/>

<sup>1)</sup> 分支电缆若超过30段，每段长度不同，请另表填写。







<sup>1)</sup> For more than 30 sections with individual lengths, please fill in an additional table.

## 光伏电缆组件 MC3和MC4

## PV-Cable assemblies MC3 and MC4

为确保安全而专业的电缆接线，建议使用MC的各类电缆组件。

We recommend Multi-Contact's various cable assemblies for safe and professional cabling.

型号 Type	订货号 Order No.	母电缆连接器 <sup>1)</sup> Female cable coupler <sup>1)</sup>	电缆型号 <sup>1)</sup> Cable type <sup>1)</sup>	公电缆连接器 <sup>1)</sup> Male cable coupler <sup>1)</sup>	导体截面积 Conductor cross section	额定电流 Rated current	认证 Approvals	电缆颜色 Colour of cable
<b>MC3</b>								
MC-K2,5SXL/PV-KBT3II/-/...	32.1060- <sup>2)</sup> *		FLEX-SOL-XL 2,5		mm <sup>2</sup>	A		21
MC-K2,5SXL/PV-KST3II/-/...	32.1061- <sup>2)</sup> *	×	FLEX-SOL-XL 2,5	×	2,5	20		
MC-K2,5SXL/PV-KBT3II/PV-KST3II/...	32.1062- <sup>2)</sup> *	×	FLEX-SOL-XL 2,5	×	2,5	20		
MC-K4SXL/PV-KBT3II/-/...	32.1063- <sup>2)</sup> *	×	FLEX-SOL-XL 4,0		4	20		
MC-K4SXL/PV-KST3II/-/...	32.1064- <sup>2)</sup> *		FLEX-SOL-XL 4,0	×	4	20		
MC-K4SXL/PV-KBT3II/PV-KST3II/...	32.1065- <sup>2)</sup> *	×	FLEX-SOL-XL 4,0	×	4	20		
MC-K6SXL/PV-KBT3/6III/-/...	32.1066- <sup>2)</sup> *	×	FLEX-SOL-XL 6,0		6	30		
MC-K6SXL/PV-KST3/6III/-/...	32.1067- <sup>2)</sup> *		FLEX-SOL-XL 6,0	×	6	30		
MC-K6SXL/PV-KBT3/6III/PV-KST3/6III/...	32.1068- <sup>2)</sup> *	×	FLEX-SOL-XL 6,0	×	6	30		
MC-K10SXL/PV-KBT3IV/-/...	32.1069- <sup>2)</sup> *	×	FLEX-SOL-XL 10		10	43		
MC-K10SXL/PV-KST3IV/-/...	32.1070- <sup>2)</sup> *		FLEX-SOL-XL 10	×	10	43		
MC-K10SXL/PV-KBT3IV/PV-KST3IV/...	32.1071- <sup>2)</sup> *	×	FLEX-SOL-XL 10	×	10	43		
<b>MC4</b>								
MC-K2,5SXL/PV-KBT4I/-/...	32.1130- <sup>2)</sup> *		FLEX-SOL-XL 2,5		mm <sup>2</sup>	A		21
MC-K2,5SXL/PV-KST4I/-/...	32.1131- <sup>2)</sup> *	×	FLEX-SOL-XL 2,5	×	2,5	22,5		
MC-K2,5SXL/PV-KBT4I/PV-KST4I/...	32.1132- <sup>2)</sup> *	×	FLEX-SOL-XL 2,5	×	2,5	22,5		
MC-K4SXL/PV-KBT4I/-/...	32.1133- <sup>2)</sup> *	×	FLEX-SOL-XL 4,0		4	30		
MC-K4SXL/PV-KST4I/-/...	32.1134- <sup>2)</sup> *		FLEX-SOL-XL 4,0	×	4	30		
MC-K4SXL/PV-KBT4I/PV-KST4I/...	32.1135- <sup>2)</sup> *	×	FLEX-SOL-XL 4,0	×	4	30		
MC-K6SXL/PV-KBT4I/-/...	32.1136- <sup>2)</sup> *	×	FLEX-SOL-XL 6,0		6	30		
MC-K6SXL/PV-KST4I/-/...	32.1137- <sup>2)</sup> *		FLEX-SOL-XL 6,0	×	6	30		
MC-K6SXL/PV-KBT4I/PV-KST4I/...	32.1138- <sup>2)</sup> *	×	FLEX-SOL-XL 6,0	×	6	30		
MC-K10SXL/PV-KBT4I/-/...	32.1139- <sup>2)</sup> *	×	FLEX-SOL-XL 10		10	43		
MC-K10SXL/PV-KST4I/-/...	32.1140- <sup>2)</sup> *		FLEX-SOL-XL 10	×	10	43		
MC-K10SXL/PV-KBT4I/PV-KST4I/...	32.1141- <sup>2)</sup> *	×	FLEX-SOL-XL 10	×	10	43		

<sup>1)</sup> 更多技术参数:

MC3公、母连接器，见第12页  
MC4公、母电缆连接器，见第14页  
太阳能电缆FLEX-SOL-XL，见第48页

<sup>2)</sup> 请指明所需长度(单位cm)

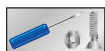
\* 请添加您所需的颜色代码

<sup>1)</sup> For more technical data on:

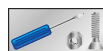
Male, female coupler MC3, see page 12  
Male, female coupler MC4, see page 14  
Solar cable FLEX-SOL-XL, see page 48

<sup>2)</sup> Please indicate length in cm

\* Add the desired colour code



**MC4安全锁紧夹**，参阅第55页  
**密封盖**，参阅第56和57页  
**解锁工具**，参阅第63页



**Safety lock clip MC4** page 55  
**Sealing caps** page 56, 57  
**Unlocking tool MC4** page 63

长度定义

Definition of cable lengths

电缆组件的电缆长度

对于订购现成电缆线，电缆长度 L 如下例所示来确定。

Cable lengths of cable assemblies

For ordering ready made leads, the cable length L is defined as in the examples shown below.

母电缆连接器  
Female cable coupler



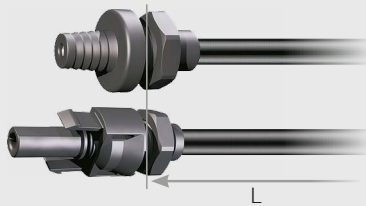
公电缆连接器  
Male cable coupler



电缆接线头  
Cable lug



母面板插座  
Female panel receptacle



公面板插座  
Male panel receptacle



完全或部分剥线  
Complete or partial stripping



订购示例

MC3公和母电缆连接器  
电缆截面积: 2,5 mm<sup>2</sup>

32.1062-2)\*

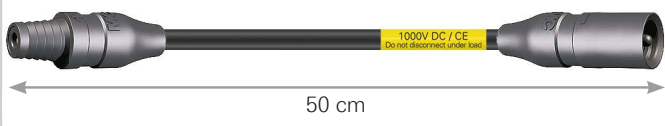
电缆长度50 cm

32.1062-050\*

电缆颜色 黑色

32.1062-050**21**

成品电缆线: **32.1062-05021**



Ordering example:

MC3 female and male cable coupler  
Cable cross section: 2,5 mm<sup>2</sup>

32.1062-2)\*

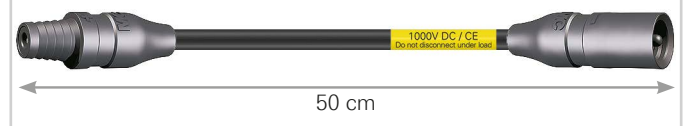
Cable length 50 cm

32.1062-050\*

Cable colour black


















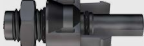






32.1062-050**21**

Ready-made lead: **32.1062-05021**



**电缆组件 根据客户要求定制** **Cable assemblies according to customer request**

<input type="text"/> 数量 <b>Quantity</b>	<input type="checkbox"/> 订单 <b>Order</b>	<input type="checkbox"/> 报价 <b>Quotation</b>	<input type="text"/> 产品编号 <b>Reference</b>
--	---	---	---

<p><b>端 1/Side 1</b></p> <div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 5px;"> <p>MC3</p> <p><input type="checkbox"/> PV-KBT3 </p> <p><input type="checkbox"/> PV-KST3 </p> <p><input type="checkbox"/> PV-ADBP3 </p> <p><input type="checkbox"/> PV-ADSP3 </p> </div> <div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 5px;"> <p>MC4</p> <p><input type="checkbox"/> PV-KBT4 </p> <p><input type="checkbox"/> PV-KST4 </p> <p><input type="checkbox"/> PV-ADBP4-S2 </p> <p><input type="checkbox"/> PV-ADSP4-S2 </p> </div> <div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 5px;"> <p>MC4-EVO 2</p> <p><input type="checkbox"/> PV-KBT4-EVO 2 </p> <p><input type="checkbox"/> PV-KST4-EVO 2 </p> </div> <div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 5px;"> <p>MC4-EVO 3</p> <p><input type="checkbox"/> PV-PLS-B </p> <p><input type="checkbox"/> PV-PLS-S </p> </div> <div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 5px;"> <p><input type="checkbox"/> 电缆接线头 <b>Cable lug</b></p> <p><input type="checkbox"/> Ø <input type="text"/> </p> <p><input type="checkbox"/> Ø <input type="text"/> </p> <p>绝缘 / Isolation: <input type="checkbox"/> 不带 / without <input type="checkbox"/> 带 / with</p> </div> <div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 5px;"> <p><input type="checkbox"/> 部分剥线 <b>Partial stripping</b></p> <p>长度: <input type="text"/> (最长 / max. 45 mm)</p> <p>Length: <input type="text"/> (最长 / max. 45 mm)</p> </div> <div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 5px;"> <p><input type="checkbox"/> 不剥线 <b>Not stripped</b></p> <p></p> </div> <div style="border: 1px solid #ccc; padding: 5px;"> <p><input type="checkbox"/> 其他 <b>Other</b></p> <p><input type="text"/></p> </div>	<p><b>电缆 / Cable</b></p> <p>电缆截面积 (mm<sup>2</sup>): <b>Cable cross section (mm<sup>2</sup>):</b> 5 电缆型号 / 5 cable types</p> <p><input type="checkbox"/> 2,5 <input type="checkbox"/> 4 <input type="checkbox"/> 6 <input type="checkbox"/> 10</p> <p>电缆长度<sup>1)</sup> / <b>Length of cable<sup>1)</sup>:</b></p> <p><input type="text"/> cm</p>	<p><b>端 2/Side 2</b></p> <div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 5px;"> <p>MC3</p> <p><input type="checkbox"/> PV-KBT3 </p> <p><input type="checkbox"/> PV-KST3 </p> <p><input type="checkbox"/> PV-ADBP3 </p> <p><input type="checkbox"/> PV-ADSP3 </p> </div> <div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 5px;"> <p>MC4</p> <p><input type="checkbox"/> PV-KBT4 </p> <p><input type="checkbox"/> PV-KST4 </p> <p><input type="checkbox"/> PV-ADBP4-S2 </p> <p><input type="checkbox"/> PV-ADSP4-S2 </p> </div> <div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 5px;"> <p>MC4-EVO 2</p> <p><input type="checkbox"/> PV-KBT4-EVO 2 </p> <p><input type="checkbox"/> PV-KST4-EVO 2 </p> </div> <div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 5px;"> <p>MC4-EVO 3</p> <p><input type="checkbox"/> PV-PLS-B </p> <p><input type="checkbox"/> PV-PLS-S </p> </div> <div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 5px;"> <p><input type="checkbox"/> 电缆接线头 <b>Cable lug</b></p> <p><input type="checkbox"/> Ø <input type="text"/> </p> <p><input type="checkbox"/> Ø <input type="text"/> </p> <p>绝缘 / Isolation: <input type="checkbox"/> 不带 / without <input type="checkbox"/> 带 / with</p> </div> <div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 5px;"> <p><input type="checkbox"/> 部分剥线 <b>Partial stripping</b></p> <p>长度: <input type="text"/> (最长 / max. 45 mm)</p> <p>Length: <input type="text"/> (最长 / max. 45 mm)</p> </div> <div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 5px;"> <p><input type="checkbox"/> 不剥线 <b>Not stripped</b></p> <p></p> </div> <div style="border: 1px solid #ccc; padding: 5px;"> <p><input type="checkbox"/> 其他 <b>Other</b></p> <p><input type="text"/></p> </div>
<p><b>发送人 / Sender</b></p> <p>公司 / Company <input type="text"/></p> <p>姓名 / Name <input type="text"/></p> <p>部门 / Department <input type="text"/></p> <p>地址 / Address <input type="text"/></p> <p>电话 / Tel. <input type="text"/></p> <p>传真 / Fax <input type="text"/></p> <p>电邮 / E-Mail <input type="text"/></p> <p>日期 / Date <input type="text"/></p> <p>签名 / Signature <input type="text"/></p> <p>其他 / Other <input type="text"/></p>		

<sup>1)</sup> 长度定义, 参阅第69页

<sup>1)</sup> Definition, see page 69

**PV-JB/WL-...接线盒**  
根据客户要求定制

**Junction box PV-JB/WL-...**  
according to customer request

<input type="text"/>	数量 Quantity	<input type="checkbox"/>	订单 Order	<input type="checkbox"/>	报价 Quotation	<input type="text"/>	产品编号 Reference
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<input type="checkbox"/> MC4 <input type="checkbox"/> PV-JB/WL-H <input type="checkbox"/> PV-JB/WL-V	截面面积 Cross section <b>4 mm<sup>2</sup></b>	长度单位cm Length in cm L1 <input type="text"/> (最短/min. 25 cm) L2 <input type="text"/> (最短/min. 25 cm)	电缆型号 Cable type <input type="checkbox"/> BETAflam® <input type="checkbox"/> Byson <input type="checkbox"/> FLEX-SOL-XL

<input type="checkbox"/> MC4-EVO 3 <input type="checkbox"/> PV-JB/WL-H <input type="checkbox"/> PV-JB/WL-V	截面面积 Cross section <b>4 mm<sup>2</sup></b>	长度单位cm Length in cm L1 <input type="text"/> (最短/min. 25 cm) L2 <input type="text"/> (最短/min. 25 cm)	电缆型号 Cable type <input type="checkbox"/> BETAflam® <input type="checkbox"/> Byson <input type="checkbox"/> FLEX-SOL-XL

模组电流 Module current IMPP: <input type="text"/> A	模组短路电流 Module short-circuit current Isc: <input type="text"/> A	二极管型号 Diode type <input type="text"/>	其他 Other <input type="text"/>
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## 创新

## Innovations



MC4-EVO AC  
600 V AC, 最大 / up to 32 A



MC4-EVO AC扩展了Multi-Contact的产品范围，能够满足微型逆变器、纳米以及组串逆变器的应用需求。

- 400 V (IEC), 600 V (UL) / 32 A
- 先进的MULTILAM连接技术
- 可使用现有的MC4工具
- 可现场安装，也可工厂预装
- 防护等级为IP65 / IP67
- 未插合状态下触摸防护等级为IP2X
- 可提供不同编码
- 结构紧凑，可直接安装在模组框下或用于模组叠加

With the MC4-EVO AC expands Multi-Contact his Portfolio to fulfill the needs of Micro-, Nano- and Stringinverters.

- 400 V (IEC), 600 V (UL)/32 A
- MULTILAM Contact technology
- Existing tools of MC4 can be used
- Field – as well as factory assembly
- Protection degree IP65/IP67
- IP2X touch protected unmated
- Different codings possible
- Compact form for hiding in module frame or stacking of modules

## 客户化解决方案

## Customized solutions

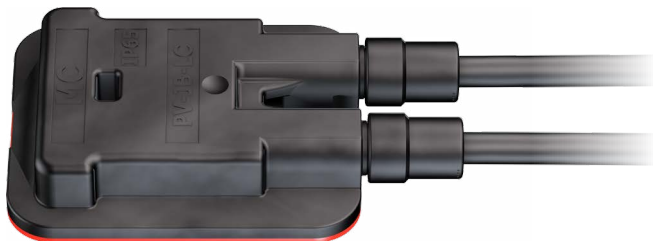
## 光伏接线盒 PV-JB-LC/SP...



## PV Junction box PV-JB-LC/SP...

技术参数	Technical data	
额定电压	Rated voltage	1000 V DC (IEC)
额定电流	Rated current	10 A
防护等级, 已插合 未插合	Degree of protection, mated unmated	IP67 IP2X
汇流带连接方式	Connection of the bus ribbons	锡焊 Soldering
安装	Installation	双面胶贴/ Adhesive pad
TÜV 认证 EN 50548 + A	TÜV Rheinland certified, EN 50548 + A	R60090328

## 光伏接线盒 PV-JB-LC...



## PV Junction box PV-JB-LC...

技术参数	Technical data	
额定电压	Rated voltage	1000 V DC (IEC)
额定电流	Rated current	2,5 A – 10 A
防护等级, 已插合	Degree of protection, mated	IP65
汇流带连接方式	Connection of the bus ribbons	锡焊 Soldering
安装	Installation	双面胶贴/ Adhesive pad 硅胶 /Silicone
TÜV 认证 EN 50548 + A	TÜV Rheinland certified, EN 50548 + A	R60090328

欢迎咨询更多关于客户化定制方案

Ask us about our customized solutions.

## 信息概述

如果用户希望将本目录中所列出的产品用于我们未提及的应用时，请用户自己确认产品是否与行业标准相符。

## 变更/保留条款

目录中所有数据、插图及图样经仔细校对，与我们的最新知识相一致，但我们不为其中可能出现的错误负责。

出于设计和安全因素的考虑，我们同样保留对此目录进行修改的权利。因此，如果您的设备中需要用到我们的产品，不建议只参考目录中的数据，而应咨询我们以确保最新信息。我们会非常乐意给您提出建议。

## General information

Users wishing to employ products listed in the catalogue for applications we have not considered are themselves responsible for making certain that the products comply with standards other than those stated.

## Changes/Provisos

All data, illustrations and drawings in the catalogue have been carefully checked. They are in accordance with our experience to date, but no responsibility can be accepted for errors.

We also reserve the right to make modifications for design and safety reasons. When designing equipment incorporating our components, it is therefore advisable not to rely solely on the data in the catalogue but to consult us to make sure this information is up to date. We shall be pleased to advise you.

## 特性曲线图

## 载流能力与温度的关系图

下面的曲线图给出了FLEX-SOL-XL电缆的载流能力与环境温度间的相互关系(依照2 PfG 1169/08.07标准)。

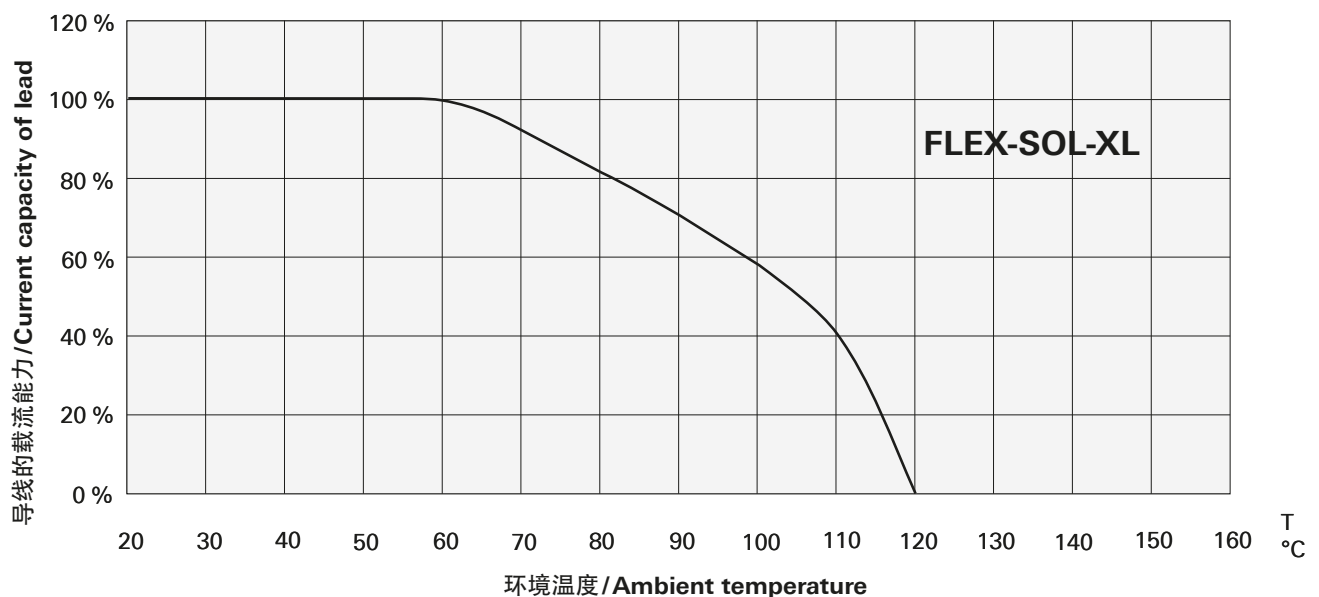
100 %符合所述额定电流。

## Derating diagram

## Temperature-dependence of Current-carrying Capacity

The following curve shows the correlation between the current-carrying capacity of the FLEX-SOL-XL cable and the ambient temperature according to 2 PfG 1169/08.07.

100 % corresponds to the rated current stated.



**技术信息****Technical information****压接端**

导线端头与光伏连接器的压接套进行压接时，我们推荐使用规定的压接工具。而按照装配说明对UL认证产品进行自主装配时，只能使用规定的压接工具。压接套的设计适合于一定截面积范围的超柔导线。可使用柔性导线。若使用镀锡导线是有好处的。

**连接电缆**

为确保光伏连接器的电缆出口能够充分防水，对于绝缘套管，必须使用规定直径范围连接电缆。

**铺设条件**

铺设光伏电缆时，应避免在光伏连接器出口处的连接电缆成锐角。我们建议要注意连接电缆的最小弯曲半径。

**插拔次数**

光伏连接器最大插拔寿命为100次。

**额定电流**

见特性曲线图。

**最大系统电压**

最大系统电压是太阳能光伏连接器的各元件可使用和额定的符合IEC 60664-1标准的最大电压。

**接触电阻**

接触电阻是两个接触面之间接触点处的电阻。

**测试电压**

是光伏连接器系统的新元件在没有被击穿或电弧的情况下进行测试所得的电压。

**负载下断开**

负载情况下不允许断开光伏连接器。带压情况下允许插拔。

**连接器的保护**

务必使用密封盖对未插合的光伏连接器进行防潮和防尘保护。

**接线盒的定位**

接线盒必须安装在光伏模组上，其位置就是使用时电缆出口端朝下。

**Crimped terminations**

For termination of the conductors to the crimping sleeves of the PV plug connectors we recommend using the stated crimping tools. For UL certified products only the tools mentioned can be used for self-assembly according to the assembly instructions. The crimping sleeves are designed for highly flexible conductors of the stated cross-section ranges. The use of flexible conductors is possible. It is advantageous to use tinned conductors.

**Connecting cables**

To ensure that the cable outlets of the PV plug connectors are sufficiently watertight, connecting cables of the specified diameter ranges for the insulating casings must be used.

**Laying conditions**

When laying the PV leads, avoid having the connecting cable resting on a sharp edge at the exit from the PV connector. We recommend observing the minimum bending radius of the connecting cables.

**Plugging cycles**

The maximum life of the PV connectors is 100 plugging cycles.

**Rated current**

See derating diagram

**Max. system voltage**

Is the maximum voltage for which the components of the PV plug connector system may be used and are rated in accordance with IEC 60664-1.

**Contact resistance**

is the resistance at the point of contact between two contact surfaces.

**Test voltage**

Is the voltage at which the new components of the PV plug connector system are tested under defined conditions without breakdown or arcing.

**Unplugging under load**

PV plug connections must not be unplugged while under load. Plugging and unplugging while under tension is permitted.

**Protection against weather**

Sealing caps must be used to protect unplugged PV-connectors from moisture and dirt.

**Positioning of the junction box**

The junction box must be fixed on the PV module in such a position that the cable outlets of the junction box point downwards when in use.

## 更多有关导线的技术参数

### 最小允许弯曲半径

VDE 0298第三部分规定了导线的最小允许弯曲半径。下表为固定和移动软导线的最小弯曲半径。

弯曲半径	Bend radii	
额定电压	Rated voltage	> 600 V
固定	Fixed	6 d
移动	Mobile	10 d

d = 导线外径

### 多股铜导线为何要镀锡?

若将光亮软铜绞线置于温度超过90 °C的环境中,会导致铜褪色并损害其焊接功能。同时,可能在铜与绝缘材料之间引起反应,从而危害软导线的机械性能。

### 20 °C温度下5级铜导线的电阻

下表给出20 °C温度下由单根裸线组成的铜线相对于标称截面积的导体电阻,符合IEC/EN 60228标准。

标准截面积 Nominal cross section	导体电阻 Conductor resistance
mm <sup>2</sup>	Ω/km
1,5	13,3
2,5	7,98
4,0	4,95
6,0	3,30
10	1,91

### mm<sup>2</sup>/AWG表

我司多股线的标称截面积的单位用mm<sup>2</sup>表示。下图给出导线与AWG值的对照表。<sup>1)</sup>

## Further technical data on leads

### Smallest Permissible Bend Radii

VDE 0298, part 3, stipulates minimum permissible bend radii of leads. In the following table, the minimum bend radii are shown for fixed and mobile flexible leads.

d = Outside diameter of lead

### Why tinned multistrand copperwires?

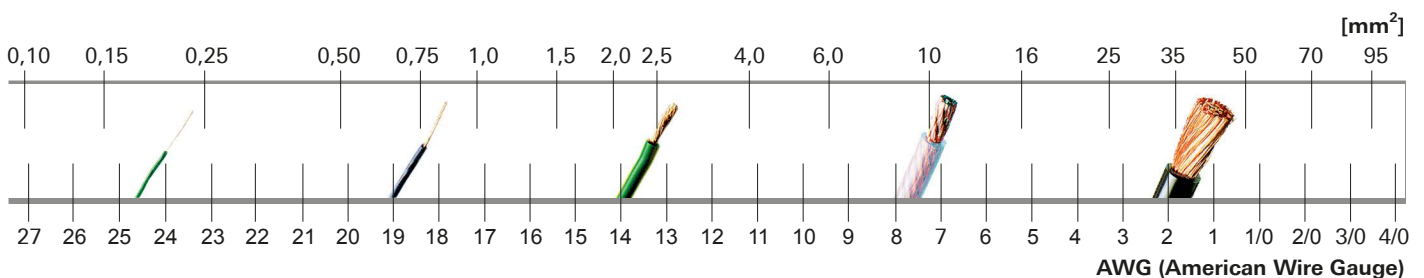
If bright-soft copper stranded wires are exposed to temperatures > 90 °C, this can result in discoloration of the copper and an impairment of its soldering properties. Reactions between the copper and the insulating material may also occur which have a deleterious effect on the mechanical properties of the flexible leads.

### Resistance of conductor at 20 °C for class 5 Cu conductors

The following table shows the conductor resistance for fine-stranded copper wires with bare individual strands at 20 °C in relation to the nominal cross-section according to IEC/EN 60228.

### Table mm<sup>2</sup>/AWG

The nominal cross-section of our multi-strand wires is stated in sq. mm. The following chart gives an indication of their comparability with corresponding AWG values.<sup>1)</sup>



<sup>1)</sup> 此图表基于UL 758中有关“设备布线材料安全的UL标准”中给出的绞线值。

<sup>1)</sup> The chart is based on values for stranded wires given in UL 758 “UL Standard for Safety for Appliance Wiring Material”.

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