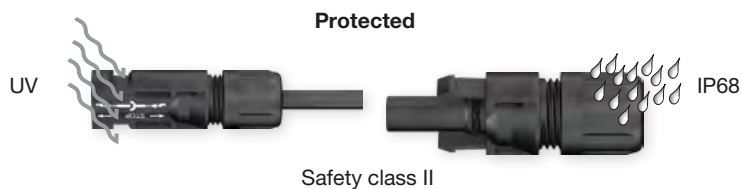


PLUG CONNECTORS

Advantages of the MC4 connector range



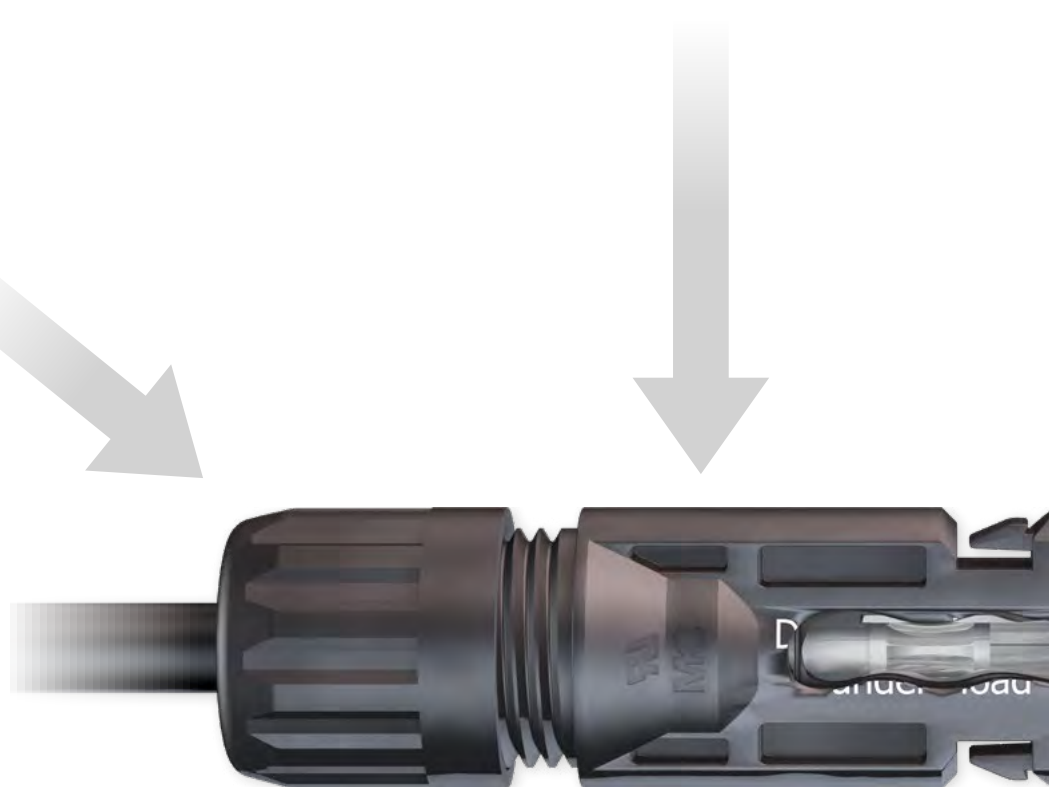
Proven MULTILAM technology with high long-term stability



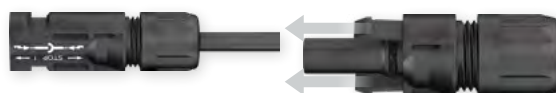
More than 50 years of experience and core competence

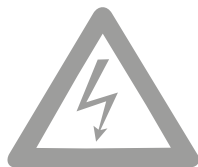
Range of cable cross-sections

- | | | | |
|---------------------|---|---|--------|
| 10 mm ² | ○ | ○ | 8 AWG |
| 6 mm ² | ○ | ○ | 10 AWG |
| 4 mm ² | ○ | ○ | 12 AWG |
| 2.5 mm ² | ○ | ○ | 14 AWG |
| 1.5 mm ² | ○ | | |



Locking system

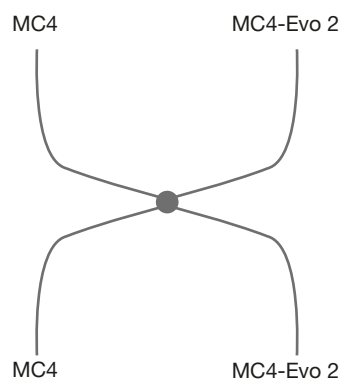




Voltage level

TÜV 1000 V/1500 V
UL 1000 V/1500 V

Compatibility



Certificates



These products are certified by TÜV Rheinland LGA GmbH



cTÜVus



UL recognized



EAC



CSA



JET




















CQC

Safety locking device

NEC 2014



Overview of plug connectors

		Approvals ¹⁾
Plug connectors		
MC4		TÜV EAC   
MC4-Evo 2		TÜV   
MC4-Evo AC		TÜV 
Panel receptacles		
MC4		TÜV EAC  
MC4-Evo 2		TÜV 
Branch connectors		
MC4		EAC 

Legend




















Assembly with tool



Available as ready-assembled product



For assembly on site

Features	Salt mist spray test	Rated current	Rated voltage (max.)				Locking system (UL)	Degree of protection		Safety class	Ambient temperature range	Sealing caps	Page
			Category	A	TÜV (V DC)	UL/CSA (V DC)		TÜV (V AC)	UL (V AC)				
   	VI	22.5/30/45/50	1500	1500	-	-	Locking	IP65 IP68	IP2X	II	-40 ... +85 (TÜV)	x	12 14
   	VI	22/39/45/53/69	1500	1500	-	-	Locking	IP65 IP68	IP2X	II	-40...+85 (TÜV)	x	16 18
 	-	16/20/26/32/43	-	-	250	600	Locking	IP65 IP67	IP2X	II	-40...+85	x	20
   	-	22.5/39/45/51	1250	1500	-	-	Locking	IP65 IP68	IP2X	II	-40...+85	x	22 24
   	-	32/42/47	1500	1500	-	-	Locking	IP65 IP68	IP2X	II	-40...+90 (UL)	x	26 28
	-	50	-	1500	-	-	Locking	IP67	IP2X	II	-40...+85 (UL)	x	30



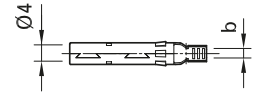
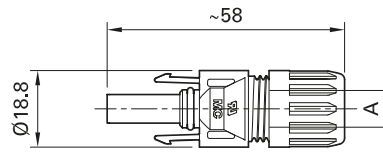
Suitable for customer-specific assembly

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

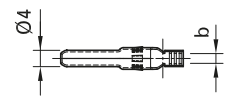
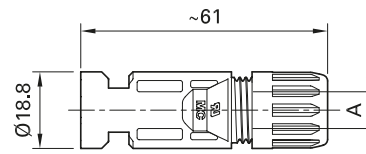
Female and male cable coupler MC4

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

PV-KBT4...



PV-KST4...



Order No.	Type	Female cable coupler	Male cable coupler	Ø range of cable gland	Conductor cross section			Approvals			
					A (mm)	mm ²	AWG	b (mm)	TÜV	UL	SA
32.0010P0001-UR	PV-KBT4/2,5I-UR	x		5-6	2.5	14	3				
32.0011P0001-UR	PV-KST4/2,5I-UR		x	5-6	2.5	14	3				
32.0140P0001-UR	PV-KBT4/2,5X-UR	x		5.5-7.4	2.5	14	3				
32.0141P0001-UR	PV-KST4/2,5X-UR		x	5.5-7.4	2.5	14	3				
32.0012P0001-UR	PV-KBT4/2,5II-UR	x		5.9-8.8	2.5	14	3				
32.0013P0001-UR	PV-KST4/2,5II-UR		x	5.9-8.8	2.5	14	3	x	x	x	x
32.0014P0001-UR	PV-KBT4/6I-UR	x		5-6	4; 6	12; 10	5				
32.0015P0001-UR	PV-KST4/6I-UR		x	5-6	4; 6	12; 10	5				
32.0142P0001-UR	PV-KBT4/6X-UR	x		5.5-7.4	4; 6	12; 10	5				
32.0143P0001-UR	PV-KST4/6X-UR		x	5.5-7.4	4; 6	12; 10	5				
32.0016P0001-UR	PV-KBT4/6II-UR	x		5.9-8.8	4; 6	12; 10	5				
32.0017P0001-UR	PV-KST4/6II-UR		x	5.9-8.8	4; 6	12; 10	5				
32.0080-UR	PV-KBT4/8II-UR	x		6.05-8.56	-	8	4.4		x	x	
32.0081-UR	PV-KST4/8II-UR		x	6.05-8.56	-	8	4.4				
32.0034P0001	PV-KBT4/10II	x		5.9-8.8	10	-	7.2				x
32.0035P0001	PV-KST4/10II		x	5.9-8.8	10	-	7.2	x			

Note:

For more detailed information concerning the suitable cable gland range, please consult MA231



Assembly Instructions MA231

www.staubli.com/electrical



Sealing caps page 43

Assembly tools page 48

- Snap-in lock
- In accordance with NEC 2014, requires a tool to open
- 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, over 15 years of experience in the field
 - Available for assembly with cross-sections of 10 mm²
- Also available as ready made leads
- Mating compatibility with MC4 connector family
- Leads made to customer's specifications, see page 50

Technical data	
Connector system	Ø 4 mm
Rated voltage	1000 V DC (IEC 62852) 1500 V DC (2Pfg2330) ¹⁾ 1500 V DC (UL) ²⁾
Rated current TÜV (85°C)	22.5 A (2.5 mm ²) 39 A (4 mm ² /6 mm ²) 45 A (10 mm ²)
Rated current UL	30 A (14 AWG) 30 A (12 AWG/10 AWG) 50 A (8 AWG)
Rated impulse voltage	12 kV (1000 V DC (TÜV)) 16 kV (1500 V DC (TÜV))
Ambient temperature range	-40°C...+85°C (TÜV) -40°C...+75°C (UL)
Upper limiting temperature	105°C (TÜV)
Degree of protection, mated unmated	IP65, IP68 (1 h/1 m) IP2X
Overvoltage category/Pollution degree	CATIII/3
Contact resistance of plug connectors	≤0.25 mΩ
Safety class	1000 V DC: II 1500 V DC: 0
Contact system	MULTILAM
Type of termination	Crimping
Contact material	Copper, tin plated
Insulation material	PC/PA
Locking system (UL)	Locking type
Flame class	UL94-V0
Ammonia resistance (acc. to DLG)	1500 h, 70°C/70% RH, 750 ppm
Salt mist spray test, degree of severity 6	IEC 60068-2-52
TÜV-Rheinland certified, in accordance with IEC 62852	R60127190 ³⁾
TÜV-Rheinland certified, in accordance with 2Pfg2330	R60087448
UL recognized component, in accordance with UL 6703	E343181
CSA certified, in accordance with UL 6703	250725
CQC certified according CNCA/CTS0002-2012	CQC16024138286

¹⁾ 2Pfg2330: only approved for locations with restricted access

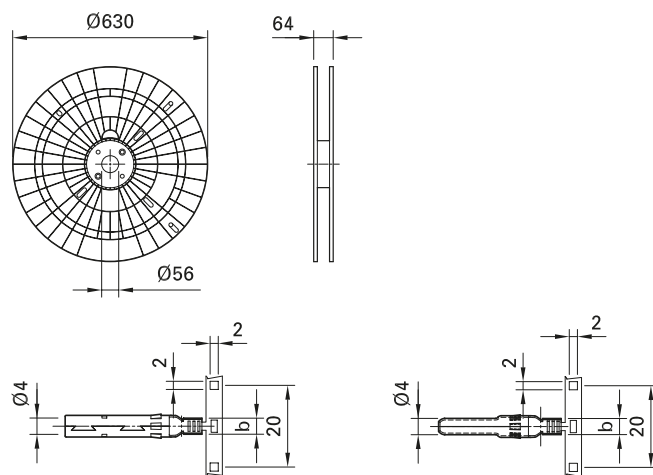
²⁾ for selected configurations; see assembly instructions MA231 for details

³⁾ For PV junction boxes in accordance with IEC62790, lines in accordance with EN50618 must be used

Female and male cable coupler MC4

Contacts on carrier band (including insulating part)

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



Order No.	Type	Female cable coupler	Male cable coupler	Ø range of cable gland	Conductor cross section		b (mm)	Crimping tool	Contacts per reel ²⁾	Approvals			
					A (mm)	mm ²				AWG	TÜV	UL	CSA
32.0010P2000-UR	PV-KBT4/2,5I-UR	x		5-6	2.5	14	3	¹⁾	2000	x	x	x	x
32.0011P2000-UR	PV-KST4/2,5I-UR		x	5-6	2.5	14	3	¹⁾	2000				
32.0140P2000-UR	PV-KBT4/2,5X-UR	x		5.5-7.4	2.5	14	3	¹⁾	2000				
32.0141P2000-UR	PV-KST4/2,5X-UR		x	5.5-7.4	2.5	14	3	¹⁾	2000				
32.0012P2000-UR	PV-KBT4/2,5II-UR	x		5.9-8.8	2.5	14	3	¹⁾	2000				
32.0013P2000-UR	PV-KST4/2,5II-UR		x	5.9-8.8	2.5	14	3	¹⁾	2000				
32.0014P2000-UR	PV-KBT4/6I-UR	x		5-6	4; 6	12; 10	5	¹⁾	2000				
32.0015P2000-UR	PV-KST4/6I-UR		x	5-6	4; 6	12; 10	5	¹⁾	2000				
32.0142P2000-UR	PV-KBT4/6X-UR	x		5.5-7.4	4; 6	12; 10	5	¹⁾	2000				
32.0143P2000-UR	PV-KST4/6X-UR		x	5.5-7.4	4; 6	12; 10	5	¹⁾	2000				
32.0016P2000-UR	PV-KBT4/6II-UR	x		5.9-8.8	4; 6	12; 10	5	¹⁾	2000				
32.0017P2000-UR	PV-KST4/6II-UR		x	5.9-8.8	4; 6	12; 10	5	¹⁾	2000				
32.0034P1700	PV-KBT4/10II	x		5.9-8.8	10	-	7.2	¹⁾	1700				
32.0035P1700	PV-KST4/10II		x	5.9-8.8	10	-	7.2	¹⁾	1700				

Note:

For more detailed information concerning the suitable cable gland range, please consult MA231



Assembly Instructions MA231

www.staubli.com/electrical



Sealing caps page 43

Assembly tools page 48

- 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

Technical data	
Connector system	Ø 4 mm
Rated voltage	1000 V DC (IEC 62852) 1500 V DC (2Pfg2330) ³⁾ 1500 V DC (UL) ⁴⁾
Rated current TÜV (85°C)	22.5 A (2.5 mm ²) 39 A (4 mm ² /6 mm ²) 45 A (10 mm ²)
Rated current UL	30 A (14 AWG) 30 A (12 AWG/10 AWG) 50 A (8 AWG)
Rated impulse voltage	12 kV (1000 V DC (TÜV)) 16 kV (1500 V DC (TÜV))
Ambient temperature range	-40°C...+85°C (TÜV); -40°C...+75°C (UL)
Upper limiting temperature	105°C (TÜV)
Degree of protection, mated unmated	IP65, IP68 (1 h/1 m) IP2X
Overvoltage category/Pollution degree	CATIII/3
Contact resistance of plug connectors	≤0.25 mΩ
Safety class	1000 V DC: II 1500 V DC: 0
Contact system	MULTILAM
Type of termination	Crimping
Contact material	Copper, tin plated
Insulation material	PC/PA
Locking system (UL)	Locking type
Flame class	UL94-V0
Ammonia resistance (acc. to DLG)	1500 h, 70°C/70% RH, 750 ppm
Salt mist spray test, degree of severity 6	IEC 60068-2-52
TÜV-Rheinland certified, in accordance with IEC 62852	R60127190 ⁵⁾
TÜV-Rheinland certified, in accordance with 2Pfg2330	R60087448
UL recognized component, in accordance with UL 6703	E343181
CSA certified, in accordance with UL 6703	250725
CQC certified according CNCA/CTS0002-2012	CQC16024138286

¹⁾ Information about a semi-automatic crimp device or assembly device on request

²⁾ Reel type subject to alterations

³⁾ 2Pfg2330: Only for use in PV-systems with restricted access locations

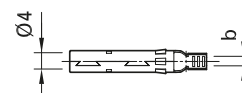
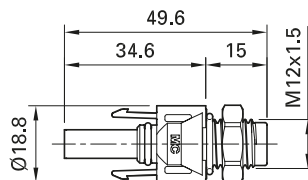
⁴⁾ For selected configurations; see assembly instructions MA231 for details

⁵⁾ For PV junction boxes in accordance with IEC62790, lines in accordance with EN50618 must be used

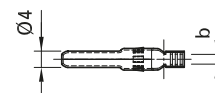
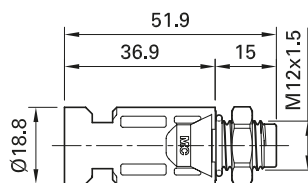
Female and male panel receptacle MC4

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

PV-ADBP4-S2...



PV-ADSP4-S2...



Order No.	Type	Female cable coupler	Male cable coupler	Conductor cross section			Approvals		
				mm ²	AWG	b (mm)	TÜV	RU	SP
32.0076P0001-UR	PV-ADBP4-S2/2.5-UR	x		2.5	14	3	x	x	x
32.0077P0001-UR	PV-ADSP4-S2/2.5-UR		x	2.5	14	3			
32.0078P0001-UR	PV-ADBP4-S2/6-UR	x		4; 6	12; 10	5			
32.0079P0001-UR	PV-ADSP4-S2/6-UR		x	4; 6	12; 10	5			
32.0150P0001	PV-ADBP4-S2/10	x		10		7.2	x		
32.0151P0001	PV-ADSP4-S2/10		x	10		7.2			

Note:

For more detailed information concerning the suitable cable gland range, please consult MA275.



Sealing caps page 43

Special socket wrench insert page 47

Unlocking tool page 48



Assembly Instructions MA275

www.staubli.com/electrical

- 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 plastic nut (included in delivery)
- Rapid, precise plugging
- Protection class IP68 (1 m/1 h) guarantees the highest connection safety
- Mating compatibility with MC4 connector family
- Includes sealing element for enclosure

Technical data	
Connector system	Ø 4 mm
Rated voltage	1250 V DC (TÜV) 1500 V DC (UL)
Rated current TÜV (85°C)	22.5 A (2.5 mm ² ; 14 AWG) 39 A (4 mm ² ; 12 AWG) 45 A (6 mm ² ; 10 AWG) 51 A (10 mm ²)
Rated impulse voltage	16 kV (1250 V)
Ambient temperature range	-40°C...+85°C (TÜV/UL)
Upper limiting temperature	105°C (TÜV)
Degree of protection, mated unmated	IP65; IP68 (1 m/1 h) IP2X
Overvoltage category/Pollution degree	CATIII/3
Contact resistance of plug connectors	≤0.25 mΩ
Safety class	II
Contact system	MULTILAM
Type of termination	Crimping
Contact material	Copper, tin plated
Insulation material	PC/PA
Locking system (UL)	Locking type
Flame class	UL94-V0
TÜV-Rheinland certified, in accordance with IEC 62852	R60127181
UL recognized component, in accordance with UL 6703	E343181
CSA certified, in accordance with UL 6703	250725

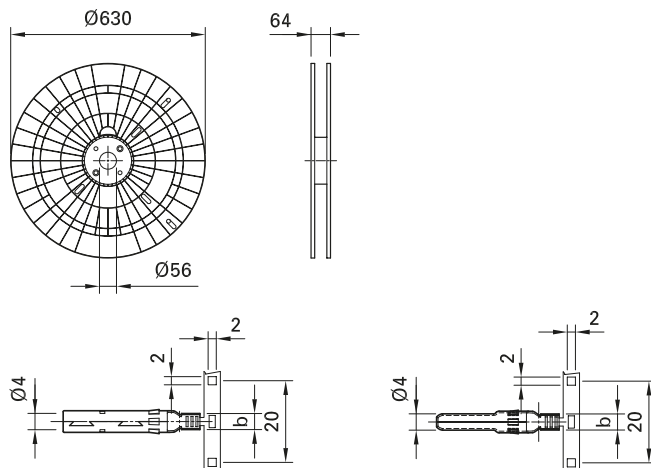
Note:

Custom made special versions with cable are also available. Lengths and choice of cable ends on request, see page 50

Female and male panel receptacle MC4

Contacts on carrier band (including insulating part)

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



Order No.	Type	Female cable coupler	Male cable coupler	Conductor cross section			Crimping tool	Contacts per Reel ⁽²⁾	Approvals		
				mm ²	AWG	b (mm)			TÜV	UL	CSA
32.0076P2000-UR	PV-ADBP4-S2/2.5-UR	x		2.5	14	3	¹⁾	2000	x	x	x
32.0077P2000-UR	PV-ADSP4-S2/2.5-UR		x	2.5	14	3	¹⁾	2000			
32.0078P2000-UR	PV-ADBP4-S2/6-UR	x		4; 6	12; 10	5	¹⁾	2000			
32.0079P2000-UR	PV-ADSP4-S2/6-UR		x	4; 6	12; 10	5	¹⁾	2000			
32.0150P1700	PV-ADBP4-S2/10	x		10		7.2	¹⁾	1700	x		
32.0151P1700	PV-ADSP4-S2/10		x	10		7.2	¹⁾	1700			

Note:

For more detailed information concerning the suitable cable gland range, please consult MA275.



Sealing caps page 43

Special socket wrench insert page 47

Unlocking tool page 48



Assembly Instructions MA275

www.staubli.com/electrical

- Feeder bands for fully automatic assembly
- Tools specially designed for MC4 available for automatic crimping
- Process reliability as result of specially developed supply reel

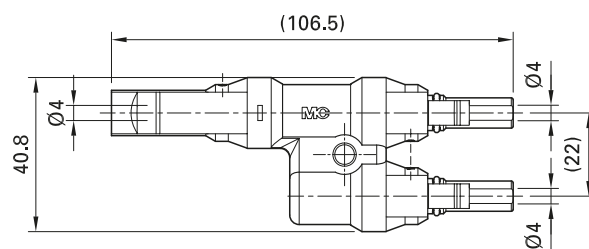
Technical data	
Connector system	Ø 4 mm
Rated voltage	1250 V DC (TÜV) 1500 V DC (UL)
Rated current TÜV (85°C)	22.5 A (2.5 mm ² ; 14 AWG) 39 A (4 mm ² ; 12 AWG) 45 A (6 mm ² ; 10 AWG) 51 A (10 mm ²)
Rated impulse voltage	16 kV (1250 V)
Ambient temperature range	-40°C...+85°C (TÜV/UL)
Upper limiting temperature	105°C (TÜV)
Degree of protection, mated unmated	IP65; IP68 (1 m/1 h) IP2X
Overvoltage category/Pollution degree	CATIII/3
Contact resistance of plug connectors	≤0.25 mΩ
Safety class	II
Contact system	MULTILAM
Type of termination	Crimping
Contact material	Copper, tin plated
Insulation material	PC/PA
Locking system (UL)	Locking type
Flame class	UL94-V0
TÜV-Rheinland certified, in accordance with IEC 62852	R60127181
UL recognized component, in accordance with UL 6703	E343181
CSA certified, in accordance with UL 6703	250725

¹⁾ Information about a semi-automatic crimp device or assembly device on request

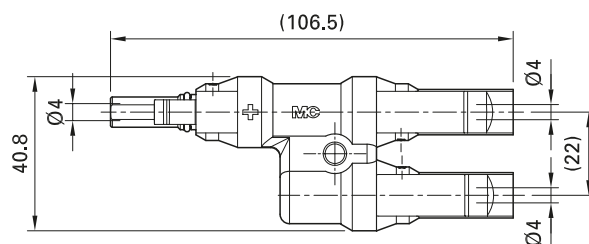
²⁾ Reel type subject to alterations


Branch socket, branch plug MC4

PV-AZB4



PV-AZS4



Order No.	Type	Description	Approvals
32.0018	PV-AZB4	Branch socket	
32.0019	PV-AZS4	Branch plug	



Sealing caps page 43

Unlocking tool page 48

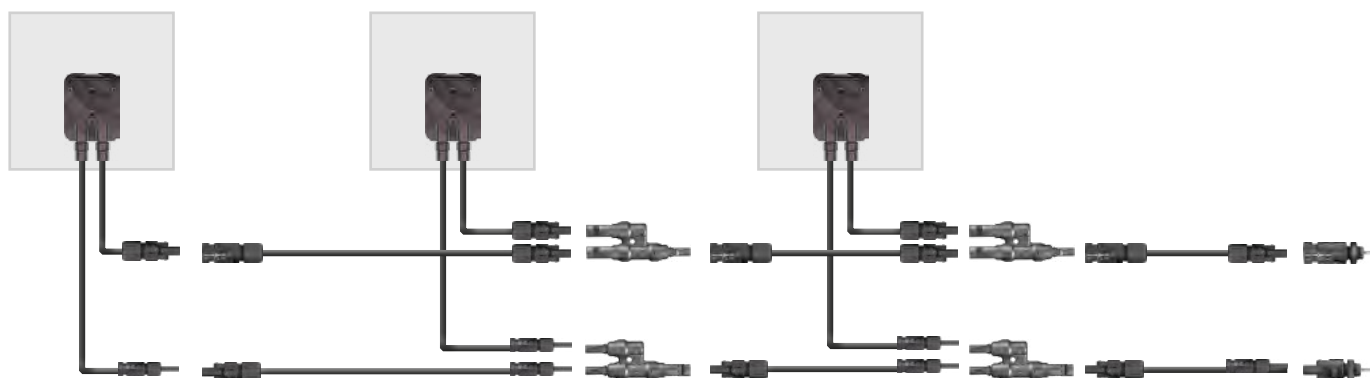


Assembly Instructions MA250

www.staubli.com/electrical

- For a safe and simple parallel or serial-parallel connection of PV-modules.
- Pluggable with single-pole Stäubli PV-cable coupler MC4. Unmated connections must be protected by sealing caps.

Technical data	
Connector system	Ø 4 mm
Rated voltage	1500 V DC (UL)
Rated current	50 A
Rated impulse voltage	12 kV
Ambient temperature range	-40°C...+85°C (UL)
Upper limiting temperature	105°C (Stäubli)
Degree of protection, mated unmated	IP67 IP2X
Overvoltage category/Pollution degree	CATIII/2
Contact resistance of plug connectors	≤0.5 mΩ
Safety class	II
Contact system	MULTILAM
Contact material	Copper, tin plated
Insulation material	PC
Locking system (UL)	Locking type
Flame class	UL94-V0
UL recognized component, in accordance with UL 6703	E343181



ACCESSORIES

Adapter leads

Adapter test lead MC4

One end equipped with Stäubli PV connector, the other end with Ø 4 mm Stäubli safety plug for measuring instruments with

Ø 4 mm safety sockets ensuring safe current and voltage measuring on PV-modules and systems.

PV-AMLB4/150



PV-AMLS4/150



Order No.	Type	PV-plug	PV-socket	System	Colours
32.1198-150*	PV-AMLB4/150		x	MC4	21 23 29
32.1199-150*	PV-AMLS4/150	x		MC4	21 22

Technical data

Connector system	MC4
Rated voltage	1000 V DC
Rated current	19 A
Conductor cross section	1 mm ²
Cable length	150 cm
Cable insulation	PVC
Overvoltage category/Pollution degree	CATIII/2

* Add the desired colour code



Sealing caps page 43

Test socket and plug MC4

Special construction with gold plated contacts for test and measurement to achieve higher mating cycles.


Without locking system.

PV-KBT4II-P AU



PV-KST4II-P AU



Order No.	Type	Socket	Plug	Suitable for	 Assembly instruction
32.0044	PV-KBT4II-P AU	x		PV-KST4..., PV-ADSP4-S2..., PV-AZS4, PV-AZB4	MA260
32.0045	PV-KST4II-P AU		x	PV-KBT4..., PV-ADBP4-S2..., PV-AZS4, PV-AZB4	MA260

Technical data	
Connector system	MC4
Rated voltage	1000 V DC
Rated current	30 A (10 AWG/4 mm ²)
Test voltage	6 kV (50 Hz, 1 min.)
Conductor cross section	2.5 mm ² ; 4 mm ² ; (14 AWG; 12 AWG; 10 AWG)
Degree of protection, unmated	IP2X
Overvoltage category/Pollution degree	CATIII/2
Contact resistance of plug connectors	≤0.25 mΩ
Contact material	Copper, gold plated
Insulation material	PC/PA

Test plugs

Test plug MC4

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

PV-PST




Order No.	Type	 Assembly instruction
32.6028	PV-PST	MA231, MA260, MA275

Test plug MC4-Evo 2

This test plug is used to control the correct location of the MC4-Evo 2 contact in the insulation.

PV-EVO-PST



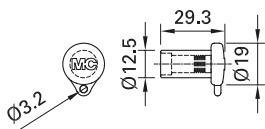
Order No.	Type	 Assembly instruction
32.6073	PV-EVO-PST	MA273

Sealing caps

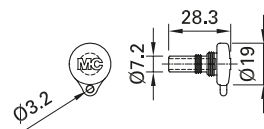
Sealing caps MC4, MC4-Evo 2 and MC4-Evo AC

Sealing caps for tight sealing of unplugged PV connectors.

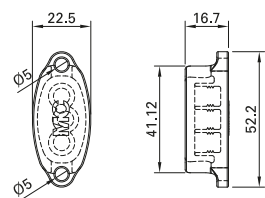
PV-BVK4



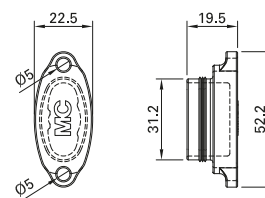
PV-SVK4



PV-BVK-EVO AC



PV-SVK-EVO AC



Order No	Type	Suitable for plug side	Suitable for socket side	System
32.0716	PV-BVK4		x	MC4, MC4-Evo 2
32.0717	PV-SVK4	x		MC4, MC4-Evo 2
32.0748	PV-BVK-EVO AC		x	MC4-Evo AC
32.0749	PV-SVK-EVO AC	x		MC4-Evo AC

Technical data

Material	TPE
Degree of protection, mated	IP67



Assembly Instructions MA258

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