

CPS SERIES

POWER CONNECTOR

CPE at a glance

CPE Italia S.p.A. is a private company founded in 1978 and based in Italy at Milan.

CPE started his activity as trading company in the Telecommunication and in the Installing sectors, subsequently expanded his own know how in the sectors of Defence, Broadcasting, Communication Infrastructure, Medical, Transports, Institutes of Nuclear Physics (INFN and CERN), Oceanographic Installations, Power.

Today CPE is a specialized company in harness cables of any kind, from the most complex to the most critical to be obtained in terms of performances, being of very high frequency or very high pressure. CPE can count on internal design competences capable to develop customized connectors with a very high level of complexity, for sectors like the Military, with a profound and specialistic knowledge.

Thanks to the experience and the competences of the 19 Partner Companies CPE is capable to offer a huge gamma of solutions to the many typical problems of the connections.

To better serve his customers the company has been structured on a global scale with manufacturing plants in Italy, Romania, China and Brasil and with branch offices in USA and India.

CPE is one of the major suppliers of Alcatel Lucent for cables assembled and RF connectors on a global scale and has been certified as an official supplier of Telecom Italia.

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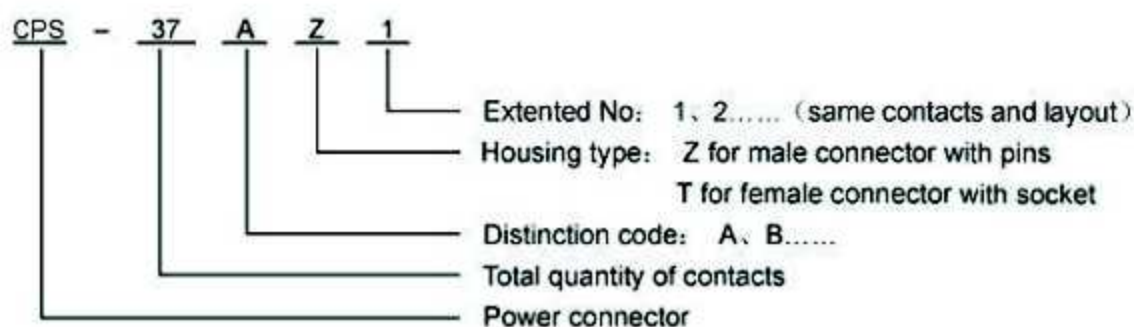
The current data in the manual is right and reliable, please understand if any change in case without notice

CPS series Power Connector

Introduction

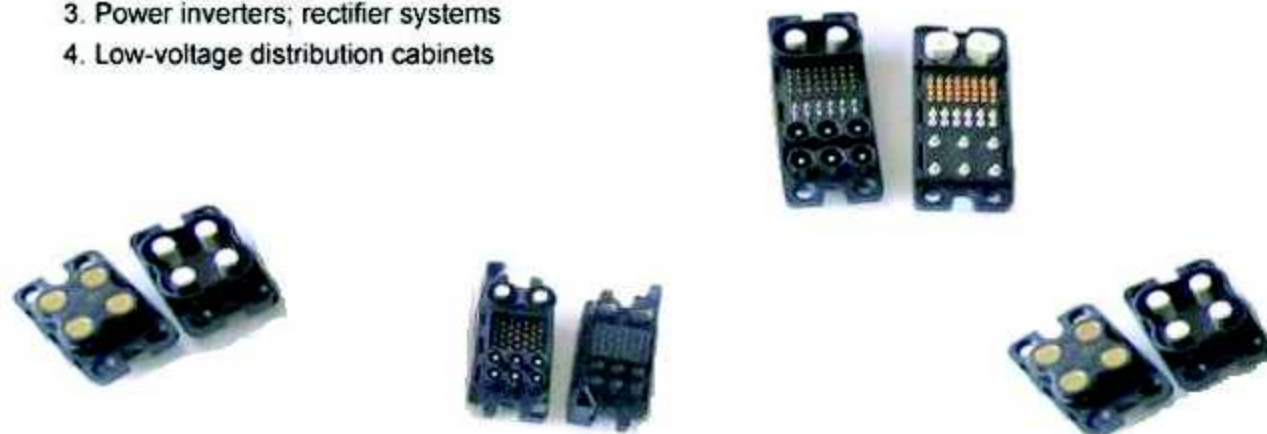
CPS series connector is hot-plug, both signal and power in one, which includes 18, 29, 29A, 37, and JDT cross-plate connectors so on. The connector adopts the most advanced crown spring as contact part, so the product has high reliability of dynamic contact. And the contacts are silver-gilt except #22 and #20 are gilded. The female connector (T) is installed with the sockets, and the male connector (Z) is installed with the pins. At present the optional terminal styles include crimping, solder cup, PCB tail and thread. We also would be glad to design new products based on the customers' requirements in a short designing time.

Product Index



Application

1. Telecommunication power and Electrical power supplies
2. UPS system
3. Power inverters; rectifier systems
4. Low-voltage distribution cabinets



Item		Rated current for Contacts(A)							Page
		22#	20#	16#	12#	8#	4#	0#	
		3	5	15	35	75	125	150	
		Contacts' Quantity							
CPT-13A			11		7				P7
CPS-18			21		8				P9
CPS-29			19			6	4		P10
CPS-37			24		9	4			P11

Material

Housing Material: PBT+30%glass fiber(PBT-G30). UL94V-0. black

Material Contacts:

Pin and Socket: Brass or copper;

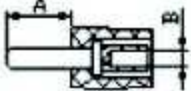
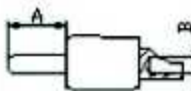
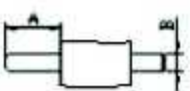
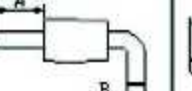
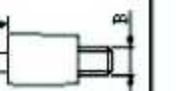
Crown Spring: Beryllium bronze

Surface Material: In ordinary condition, silver plated over nickel for most, but gold plated over nickel for 22#、20#

Contact Specifications

Specification	B (mm)	Mate force(g)	Rated Current (A)	Contact Resistance (mΩ)
22#	Φ0.80	30~200	3	≤13
20#	Φ1.01	50~280	5	≤5.0
16#	Φ1.57	100~320	15	≤2.5
12#	Φ2.38	250~650	35	≤1.0
8#	Φ3.60	300~900	75	≤0.75
4#	Φ6.35	760~1360	125	≤0.66
0#	Φ9.06	820~2000	150	≤0.32

Contacts Terminal Style

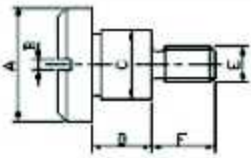
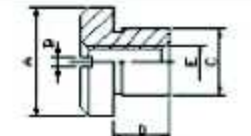
Crimping	Solder cup	PCB trail		Internal thread	External thread
Y	H	B	B	N	W
					

(Remark: terminal type shown for pin contact, the number of pin contacts same as the sockets, besides, the crimping terminal type for the male connector, but not for female connector)

Contact Mounting

Contact Spec	Terminal type	B (mm)	Wire length (mm)	Wire spec AWG	Remark
22#	B	Φ0.8	/	/	In ordinary condition, the length for pin out of housing are classified into short, standard, long and longer, besides, the length is defined based on the customers' requirement.
20#	Y	Φ1.1	6.0	20-24	
	H	Φ1.3	4.0	/	
	B	Φ1.0	/	/	
16#	Y	Φ1.8	6.5	16	
	H	Φ2.2	5.0	/	
	B	Φ1.57	/	/	
12#	Y	Φ2.7	6.5	12-14	
		Φ3.2	6.5	10	
	H	Φ2.8	5.0	/	
	B	Φ2.38	/	/	
8#	Y	Φ4.5	10.0	8-10	
		Φ5.8	12.5	6	
	H	Φ4.8	6.5	/	
	B	Φ3.6	/	/	
4#	Y	Φ7.3	12.5	4-6	
	N	M5.0	/	/	
	W	M5.0	/	/	
0#	Y	Φ11.5	15.0	0-2	
	N	M6.0	/	/	
	W	M6.0	/	/	

Mounting Screw(nut)

drawing	name	item	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)
	pin mounting (A)	CPS-TA-001	Φ12.7	1.2	Φ7.6	6.6	M4	7
	pin mounting (D)	CPS-TA-004	Φ9.52	1.2	Φ6.35	6.65	M4	6.35
	pin mounting (H)	CPS-TA-009	Φ12.7	1.2	Φ8.6	6.6	M4	7.0
	pin mounting (J)	CPS-TA-010	Φ7.0	1.2	Φ5.0	6.6	M3	6.2
	Nut mounting	CPS-TA-005	Φ12.5	1.4	Φ7.6	6.6	M4	/

CPT-13A Straddle mount connector

Type

Female connector: CPT-13A

Male connector: PCB Gold-finger

Operating Condition

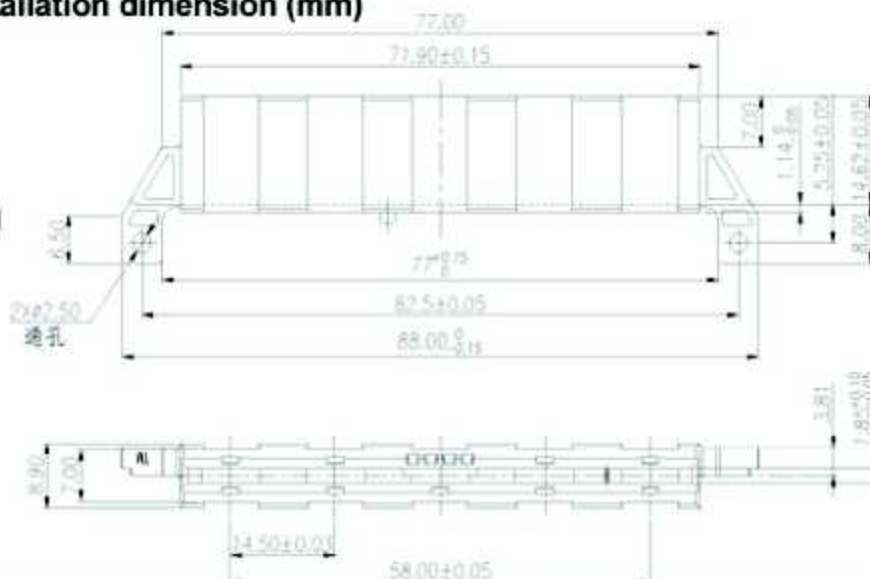
Operating temperature	-55~+125 °C
Relative humidity	95% (40 °C)
Vibration	10~500Hz (acceleration 98m/s ²)
Shock	Acceleration 294m/s ²



Main Technical Parameter

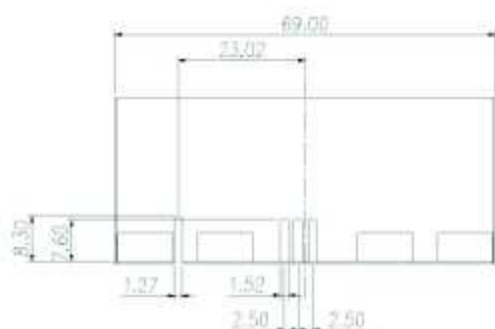
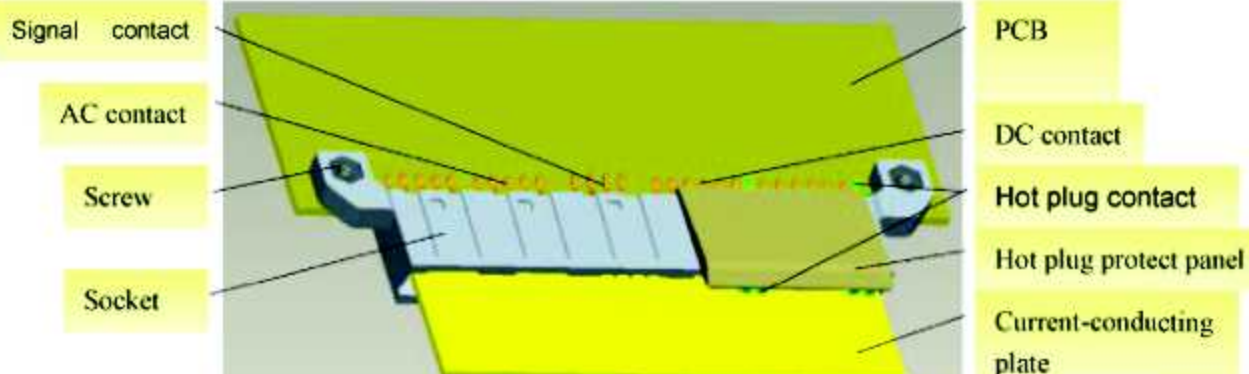
Type	Connector CPT-13A has hot-plug springs and binder parts, and connector CPT-13 has no these parts.		
Insulation resistance	≥500MΩ		
Mechanical life	500 cycles		
Housing material	High performance thermoplastic UL94V-0		
Contact	spec	Power contact	Signal I contact
	Qty	9	4
	Rated current	25A	2A
	Rated voltage	300V	60V
	Contact resistance	≤2mΩ	≤20mΩ
	Withstand voltage	1500V	500V
	Surface plating	Gold plated over nickel	
	Terminal style	The tail end of contact straddles on PCB board, and soldering together.	
	Material	Copper ally	

Drawing and Installation dimension (mm)



Operating pictorial

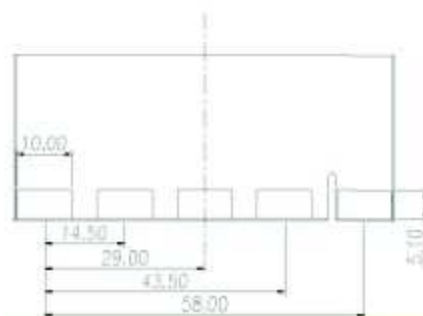
Operating pictorial



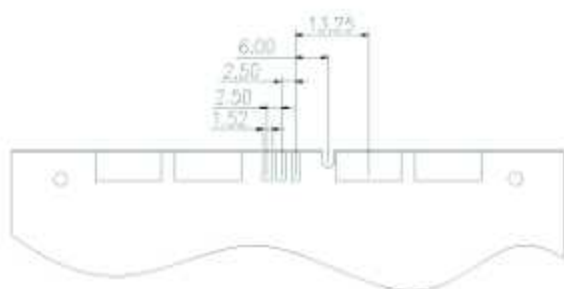
Combination PCB layout, 4pcs power and signal interfaces



PCB thickness (mm)



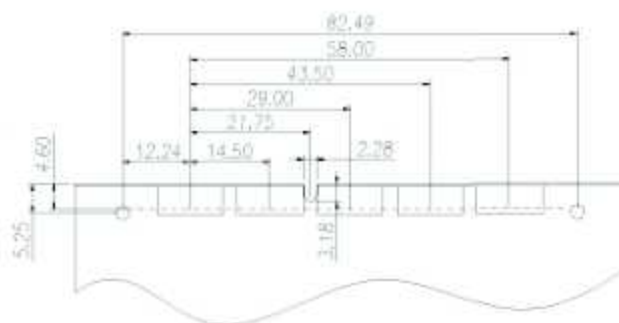
Combination PCB layout, 5pcs power interfaces



Combination PCB layout, 4pcs power and signal interfaces



PCB thickness (mm)



Combination PCB layout, 5pcs power interfaces

JDS-18 Power Connector

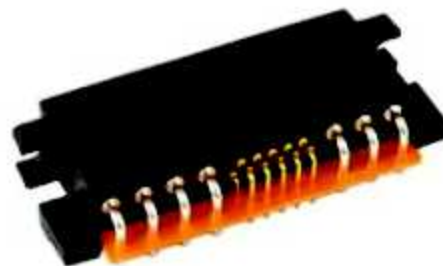
Type

Male Connector: CPS-18Z

Female Connector: CPS-18T

Operating Condition

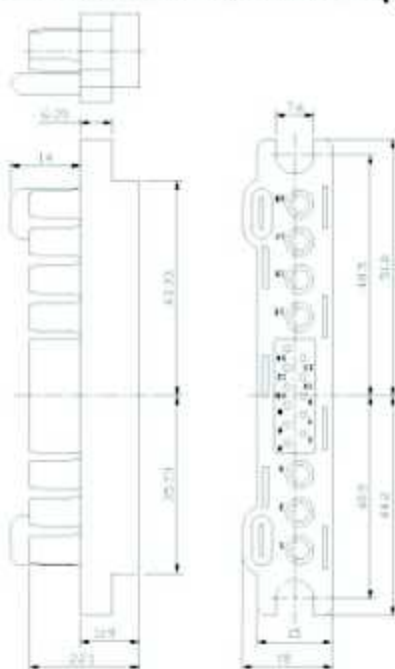
Operating temperature	-55~+125 °C
Relative humidity	98% (40 °C)
Vibration	10~2000Hz (acceleration 147m/s ²)
Shock	Acceleration 980m/s ²



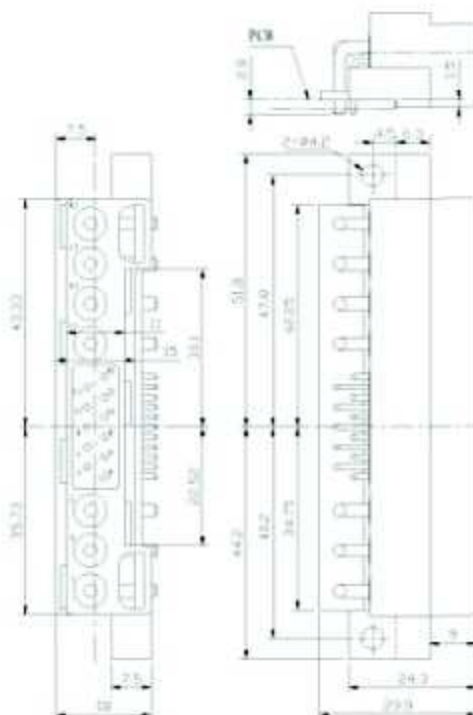
Main Technical Parameter

Insulation resistance		≥ 1000MΩ	
Mechanical life		1000 cycles	
Housing material		PBT G6 UL94V-0 black	
Contact	Spec	Signal contact	Power contact
		20#	12#
	Quantity	11	7
	Rated current	5A	35A
	Contact resistance	≤5.0mΩ	≤1.0mΩ
	Withstand voltage	1000V	1500V
	Surface plating	Gold plated over nickel	Silver plated over nickel
	Terminal style	Pin : PCB trail(B); Socket: crimping(Y), PCB trail (B), solder cup(H)	
Material	Pin ,socket	Brass or copper ally	
	Crown spring	Beryllium Bronze	

Drawing and installation dimension (mm)



Female connector CPS-18Z



Male connector CPS-18T

CPS-29 Power Connector

Type

Male Connector : CPS-29Z

Female Connector : CPS-29T



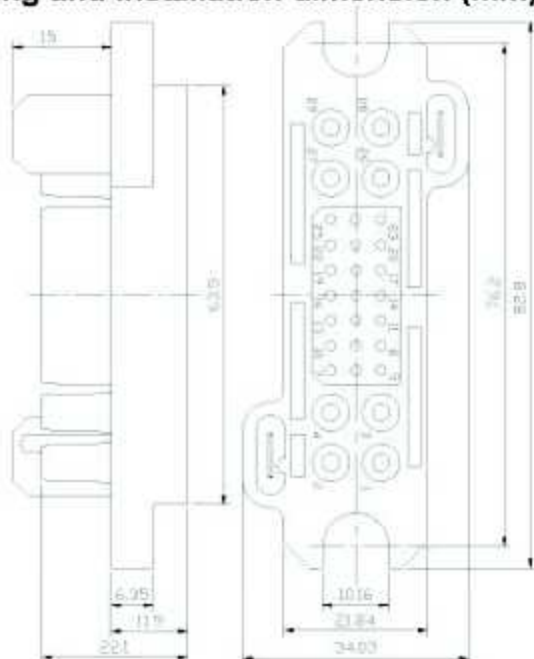
Operating Condition

Operating temperature	-55~+125 °C
Relative humidity	98% (40 °C)
Vibration	10~2000Hz (acceleration 147m/s ²)
Shock	Acceleration 980m/s ²

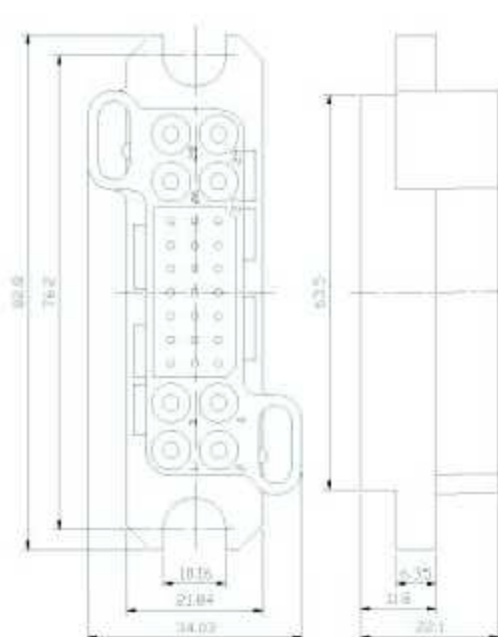
Main Technical Parameter

Insulation resistance		≥ 1000MΩ	
Mechanical life		1000 cycles	
Housing material		PBT G6 UL94V-0 black	
Contact	Spec	Signal contact	Power contact
		20#	12#
	Quantity	21	8
	Rated current	5A	35A
	Contact resistance	≤5.0mΩ	≤1.0mΩ
	Withstand voltage	1000V	1500V
	Surface plating	Gold plated over nickel	Silver plated over nickel
	Terminal style	crimping(Y), PCB trail(B), solder cup(H)	
Material	Pin /Socket	Brass or copper ally	
	Crown spring	Beryllium bronze	

Drawing and Installation dimension (mm)



Female Connector CPS-29Z



Male Connector CPS-29T

CPS-37 Power Connector

Type

Male Connector: CPS-37Z

Female Connector CPS-37T

Operating Condition

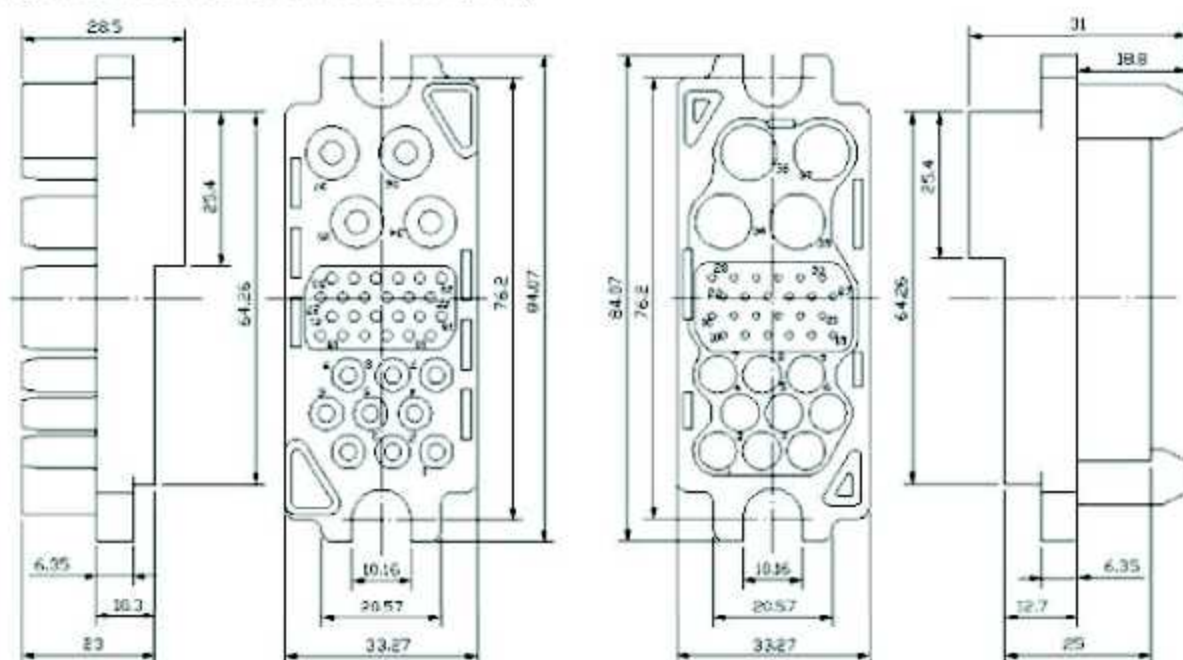
Operating temperature	-55 ~ +125 °C
Relative humidity	98% (40 °C)
Vibration	10 ~ 2000Hz (acceleration 147m/s ²)
Shock	Acceleration 980m/s ²



Main Technical Parameter

Insulation resistance		≥ 1000MΩ		
Mechanical life		1000 cycles		
Housing material		PBT G6 UL94V-0 black		
Contact	Spec	Signal contact	Power contact	
		20#	12#	8#
	quantity	24	9	4
	Rated current	5A	35A	75A
	Contact resistance	≤5.0mΩ	≤1.0mΩ	≤0.75mΩ
	Withstand voltage	1000V	1500V	1500V
	Surface plating	Gold plated over nickel		Silver plated over nickel
	Terminal style	crimping(Y), PCB trail (B), solder cup(H)		
	material	Pin ,socket	Brass or copper ally	
		Crown spring	Beryllium bronze	

Drawing and Installation dimension (mm)



Female connector CPS-37Z

Male connector CPS-37T

Power Blade Connector System

CPP Series

Part number: CPPF1605BVT01R
Part Type: Female
of power
Contacts: 5 pin
of signal
Contacts: 16 pin
Termination Vertical
Solder



Special Feature

- Custom design flexibility
- Options for power contact spacing
- 40A current-carrying each power contacts
- Rugged blind-mate design
- High strength housings
- Eased assembly into PCB
- Less than 2mΩ contact resistance
- -20 to 80°C operation
- Less than 35°C temperature-rise each contact

Application

- Power supplies
- UPS
- Servers
- Storage enclosures
- Com. Equipment
- Datacom /Networking
- Telecom.

Materials

- Housing
High performance thermoplastic PPA+15% glassfiber, UL 94-0
- Housing color: Black
- Contacts
High conductivity copper ally for contacts
- Plating
All contacts 0.38 μm (min.) gold over 1.27 μm (min.) nickel

Electrical Specifications

- Voltage rating:

Power contact:	250Vac
Signal contact:	50Vac
- Current rating: 40A for single power contact
- Withstanding voltage

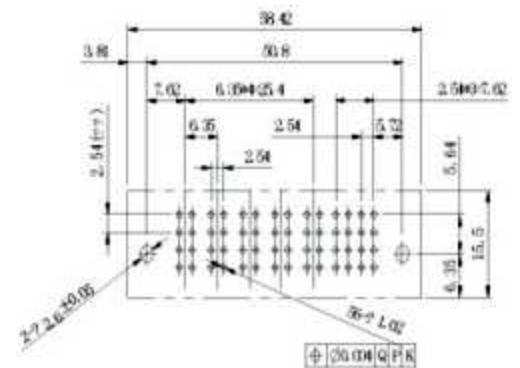
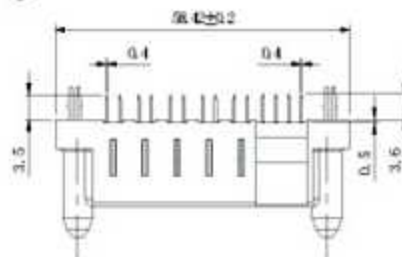
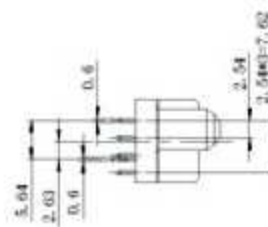
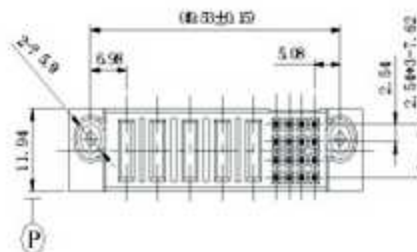
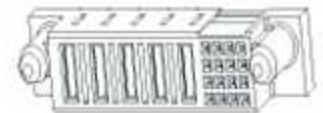
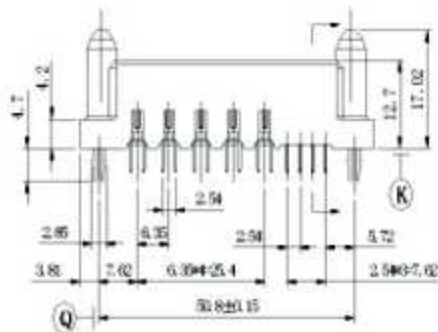
Power contact	2500Vac
Signal contact:	1000Vac
- Insulation resistance

Power contact:	20,000MΩ
Signal contact:	5,000 MΩ
- Contact resistance

Power contact:	2mΩ
Signal contact:	20mΩ

Mechanical Performa

- Durability life: 500 cycles
- Vibration: 20-500Hz at the acceleration of 5g
- Shock



Recommend Pcb Layout
 Faced side

Power Blade Connector System

CPP Series

Part number: CPPM1605BRT01R

Part Type: Male

of power

Contacts: 5 pin

of signal

Contacts: 16 pin



Special Feature

- Custom design flexibility
- Options for power contact spacing
- 40A current-carrying each power contacts
- Rugged blind-mate design
- High strength housings
- Eased assembly into PCB
- Less than 2mΩ contact resistance
- -20 to 80°C operation
- Less than 35°C temperature-rise each contact

Application

- Power supplies
- UPS
- Servers
- Storage enclosures
- Com. Equipment
- Datacom/Networking
- Telecom.

Materials

- Housing
High performance thermoplastic PPA+15% glassfiber, UL 94-0
- Housing color: Black
- Contacts
High conductivity copper ally for contacts
- Plating
All contacts: 0.38 μm(min) gold over 1.27μm (min) nickel

Electrical Specifications

- Voltage rating:

Power contact:	250Vac
Signal contact:	50Vac
- Current rating: 40A for single power contact
- Withstanding voltage

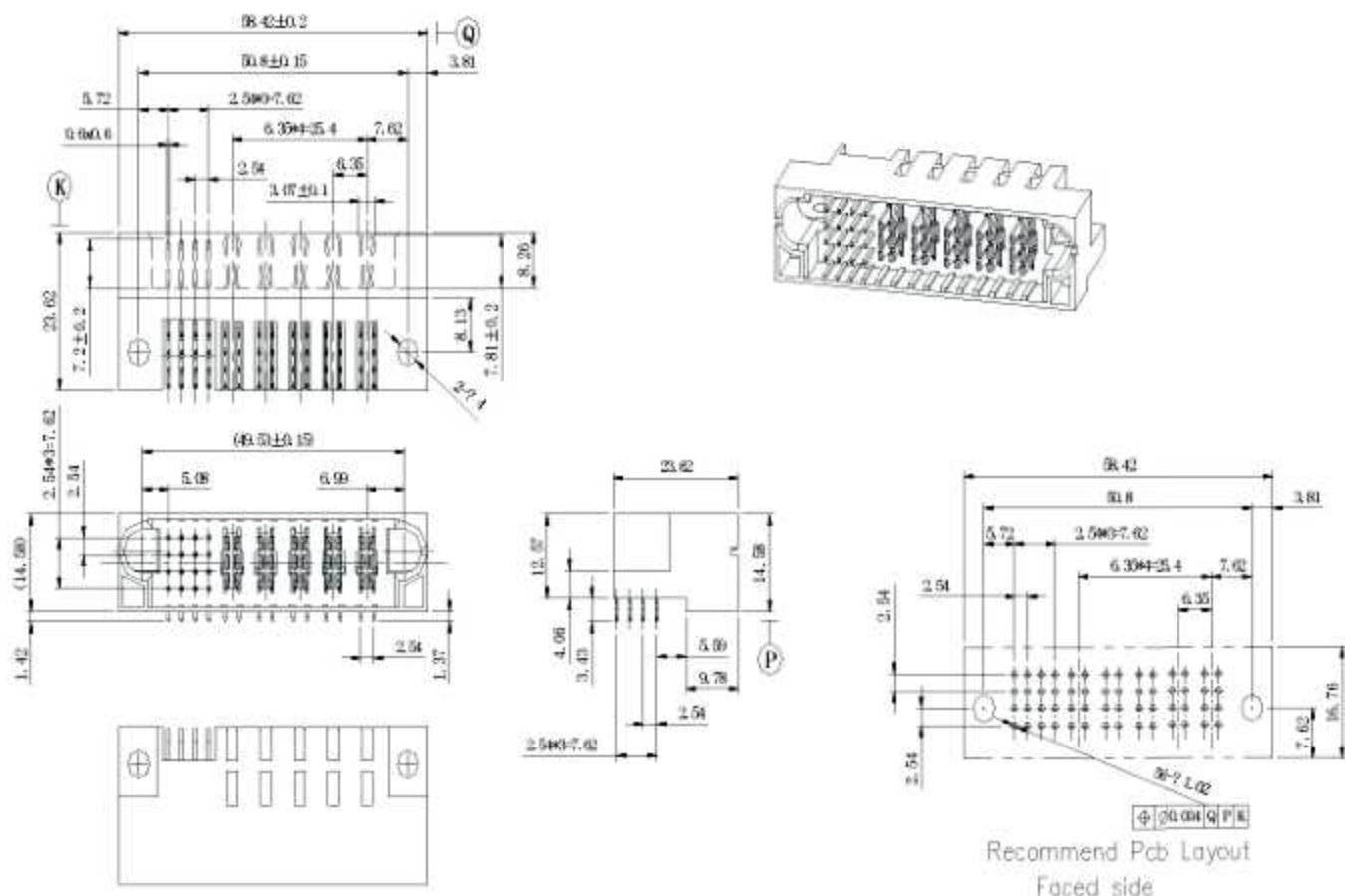
Power contact	2500Vac
Signal contact:	1000Vac
- Insulation resistance

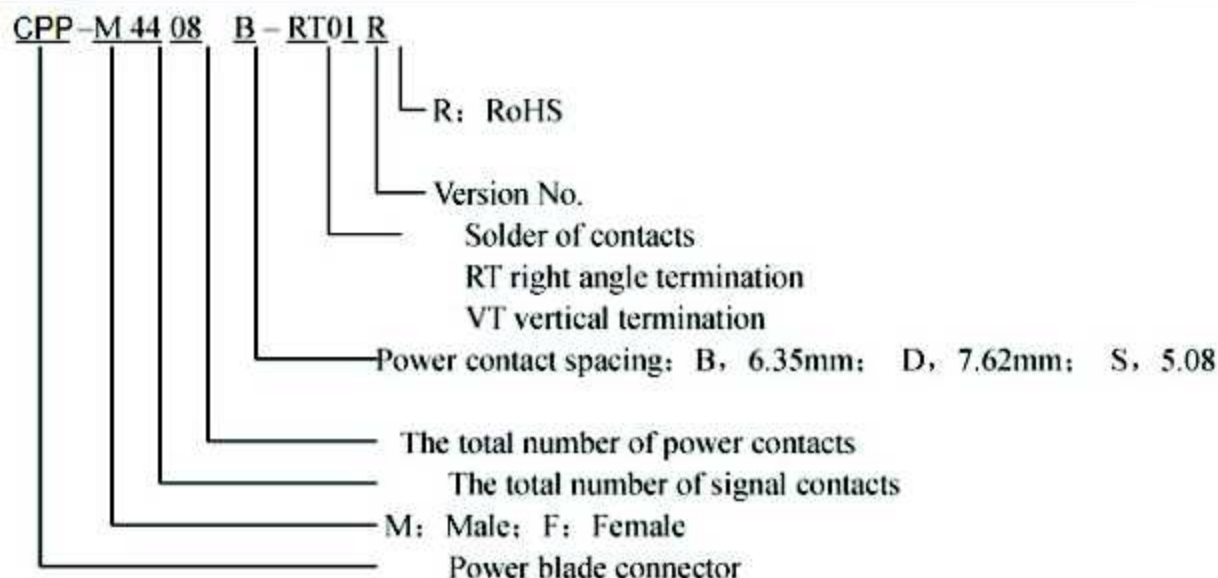
Power contact:	20,000MΩ
Signal contact:	5,000 MΩ
- Contact resistance

Power contact:	2mΩ
Signal contact:	20mΩ

Mechanical Performance and Drawing

- Durability life: 500 cycles
- Vibration: 20-500Hz at the acceleration of 5g
- Shock





Product type:

Male(right angle header)

Part Number	Qty of signal contacts	Qty of power contacts	Power contact spacing
CPP-M4408B-RT01R	44	8	6.35mm
CPP-M2406B-RT01R	24	6	6.35 mm
CPP-M2406B-RT02R	24	3+3	6.35 mm
CPP-M2406S-RT01R	24	6	5.08 mm
CPP-M2410B-RT01R	24	6+4	6.35 mm
CPP-M1606B-RT01R	16	4+2	6.35 mm
CPP-M1605B-RT01R	16	5	6.35mm
CPP-M0808B-RT01R	8	4+4	6.35mm
CPP-M0003D-RT01R	3	3	7.62mm
CPP-M0002D-RT01R	2	2	7.62mm
CPP-M2411B-RT01R	24	6+5	6.35mm

Female(vertical receptable)

Part Number	Qty of signal contacts	Qty of power contacts	Power contact spacing
CPP-F4408B-VT01R	44	8	6.35mm
CPP-F2406B-VT01R	24	6	6.35mm
CPP-F2406B-VT02R	24	3+3	6.35mm
CPP-F2406S-VT01R	24	6	5.08mm
CPP-F2410B-VT01R	24	6+4	6.35mm
CPP-F1606B-VT01R	16	4+2	6.35mm
CPP-F1605B-VT01R	16	5	6.35mm
CPP-F0808B-VT01R	8	4+4	6.35mm
CPP-F0003D-VT01R	3	3	7.62mm
CPP-F0002D-VT01R	2	2	7.62mm
CPP-F2411B-VT01R	24	6+5	6.35mm

Isolator Standoffs

Type and Main Technical Parameter

Item	Figure	Thread dimension (mm)	External size (mm)	Rated Voltage (V)	Withstand voltage (V)	Screw moment (Kgf.cm)	color
CPY-01		M6x9 M6x10	16.2x25	600	3000	50	Black
CPY-02		M6x9 M6x10	23.1x30	600	3000	65	Black
CPY-03		M6x10 M6x12	23.1x30	600	3000	65	Black
CPY-04		M6x9 M6x10	23.1x30	600	3000	65	Black
CPY-05		M5x9.5	Φ26x26	600	3000	45	Black or Red
CPY-06		M8x8	Φ30x30	1500	5000	58	Black
CPY-07		M10x12	Φ40x40	1500	5000	100	Black

Remark: 1,operating temperature: -30~125℃; 2,insulation resistance≥ 500 MΩ

Type and Main Technical Parameter

Item	Figure	Thread dimension (mm)	External size (mm)	Rated Voltage (V)	Withstand voltage (V)	Screw moment (Kgf.cm)	color
CPY-08		M5x6.5	Φ20x20	400	1500	50	Black
CPY-09		M6 x9 M6 x10	Φ20x20	1000	5000	80	Red
CPY-10		M6 x9 M6 x10	Φ20x20	1000	4000	80	Red
CPY-11		M8x14	Φ20x20	3000	8000	130	Red
CPY-12		M8x10	Φ20x20	1000	5000	150	Red
CPY-13		M6 x9 M6 x6.5	Φ20x20	600	3000	70	Red
CPY-14 A		M8x11	Φ28x28	3000	15000	150	Red
CPY-15		M8x10.5	23x30.5	1500	5000	195	Red or Black

Remark: 1, operating temperature: -30~125℃; 2, insulation resistance ≥ 500 MΩ

Type and Main Technical Parameter

Item	Figure	Thread dimension (mm)	External size (mm)	Rated Voltage (V)	Withstand voltage (V)	Screw moment (Kgf.cm)	color
CPY-16		M8x10.5	23x50	1500	5000	195	Red or Black
CPY-17		M8x10.5	23x45	1500	5000	195	Red or Black
CPY-18		M10x10	34x30.3	1500	5000	305	Red or Black
CPY-19		M10x11	36x34.3	1500	5000	305	Red or Black
CPY-24		M10x18	39x45	1500V	5000	350	Red
CPY-25		M6X8	23.5x30	1500V	5000	65	Red
CPY-25 A		M6X8	23.5x30	1500V	5000	65	Black

Remark: 1, operating temperature: -30 ~ 125°C; 2, insulation resistance ≥ 500 MΩ

Type and Main Technical Parameter

Item	Figure	Thread dimension (mm)	External size (mm)	Rated Voltage (V)	Withstand voltage (V)	Screw moment (Kgf.cm)	color
CPY-27		M6X6 M6X13	17x20	600V	5000	50	Red
CPY-27 A		M6X6	17x20	600V	5000	50	Red
CPY-30		M8X8.5 M8X25.7	23.9X35	600V	5000	100	Red
CPY-30 A		M8X8.5	23.9X35	600V	5000	100	Red
CPY-31		M6X10	Φ 30 x30	2000	5000	180	Red
CPY-32		M8X10 M12X10	Φ 39x39	5000	30000	650	Red
CPY-33		M6x10	Φ 26 x26	1500	5000	80	Red

Remark: 1, operating temperature: -30~125℃; 2, insulation resistance≥ 500 MΩ

Type and Main Technical Parameter

Item	Figure	Thread dimension (mm)	External size (mm)	Rated Voltage (V)	Withstand voltage (V)	Screw moment (Kgf.cm)	color
CPY-34		M6x6.5	21x20	1000	3000	60	Red
CPY-35		M4x10	15.9x14	1000	3000	40	Red
CPY-36		M6x10 M6x15	15.9x14	1000	3000	45	Red
CPY-37		M5x6	Φ26 x26	800	3000	70	Red
CPY-50		M6x10	45x15	800	4000	70	Black
CPY-51		M8x10	Φ30 x30	3000	15000	180	Red
CPY-70		M8x10	41 x23	2000	7000	120	Black

Remark: 1、Operating temperature: -30~125℃; 2、withstand resistance≥ 500 MΩ

Pneumatic Crimping Tool

Pneumatic crimping tool is special instrument used for connecting wire and contact together. At present, CPF comprise of four kinds ,which all be compliant with GB9022-88,also crimping tool be custom-tailored for clients.

Main Technical Specifications

Operating temperature: -10~40℃

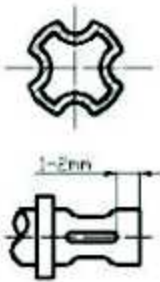
Shock: acceleration 1000m/s²

Relative humidity: 95%

fog-corrosion retardancy: 5%NaCl, 48hous

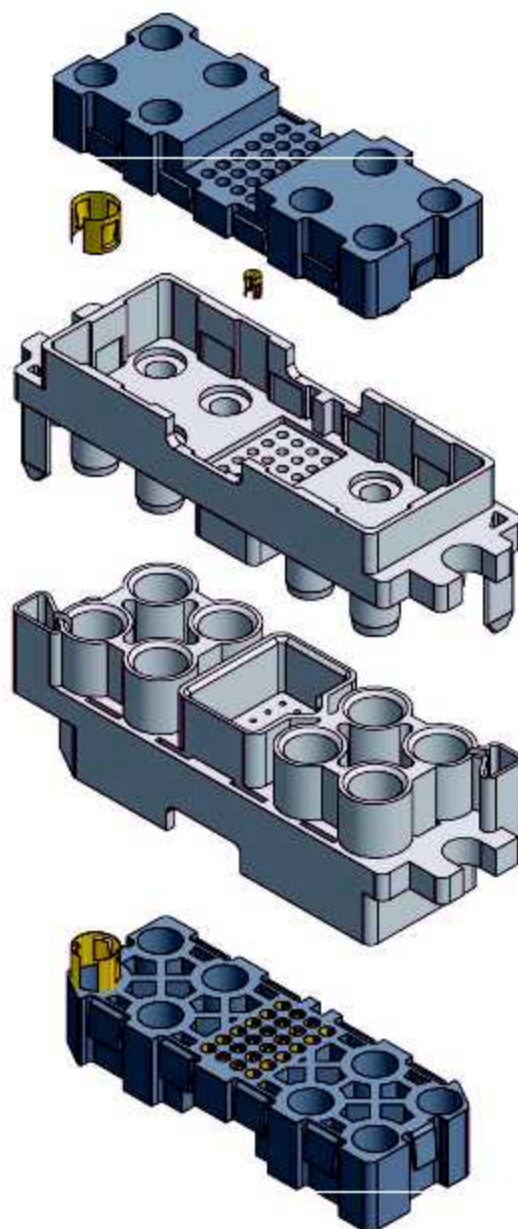
Mechanical life: 200000 cycles

Type

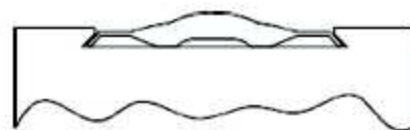
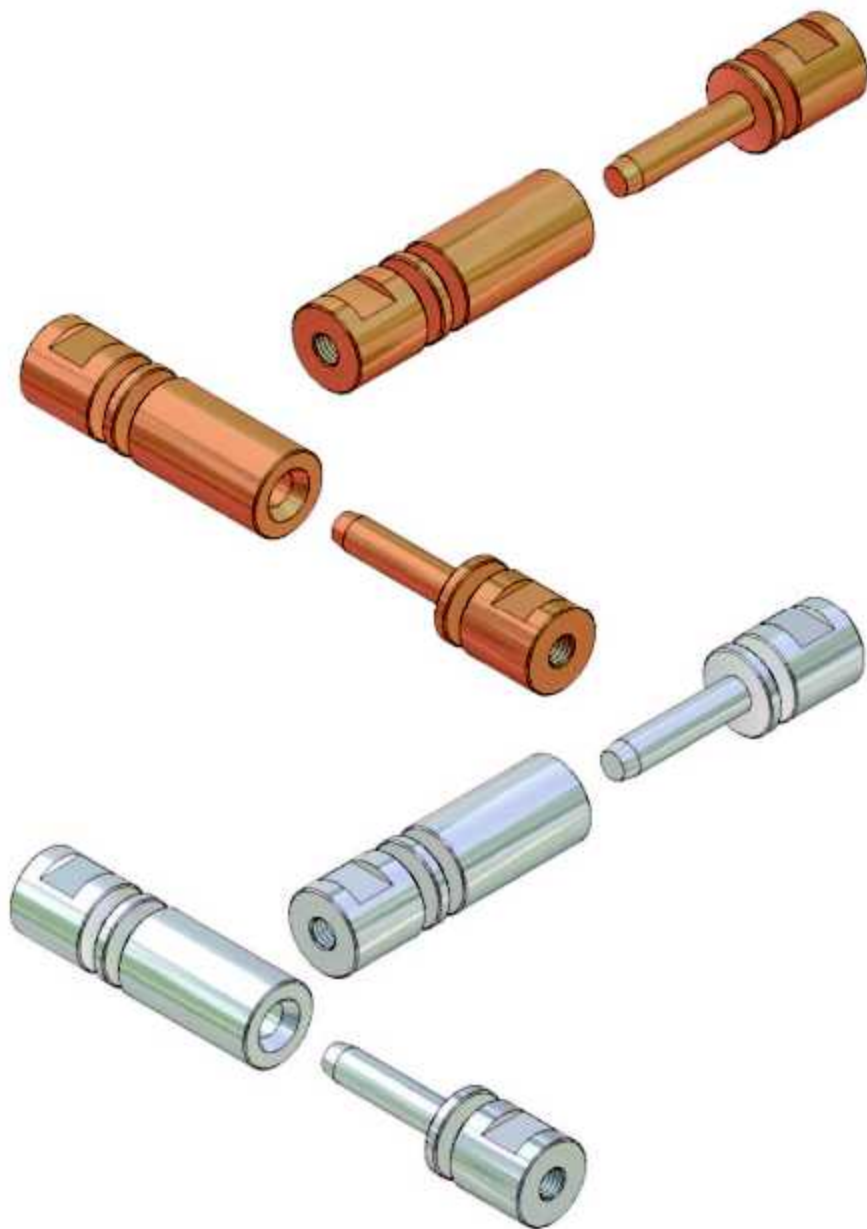
Item	Pneumatic pressure MPa	Contact specification	Adaptable Pressing wire No. (AWG)	Max. diameter of positioning hole(mm)	remark
CPF-01	0.3~0.4	20#	20-24	Φ2.7	Crimping shape 
		16#	16	Φ5	
CPF-02	0.5~0.6	14#	12-14	Φ5	
		12#	10-14	Φ5.8	
CPF-03	0.8~0.9	8#	6-10	Φ8	
		4#	4-6	Φ10.8	
CPF-04	0.5~0.6	10#	10	Φ6.6	

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CUSTOM SOLUTION FOR MULTIPIN CONNECTOR POWER+SIGNAL



CUSTOM SOLUTION FOR CONTACT WITH WORKING CURRENT UP TO 1000Amp.



LAMELLA CONTACTS FEATURES:

- Low contact resistance
- Low voltage drop
- High short circuit currents
- Compact design
- Self cleaning
- Low insertion force
- High current transfer density
- High number of mating cycles