



CP

MULTIPOLE POWER CONNECTORS

Motor to bogie, Intervehicle,
Jumpers, Junction boxes



Radiall ™

 VanSystem

About Us



Radiall

Since 1952, Radiall Sa have been enabling the future through collaboration with our customers. The results are a range of innovative and award-winning products that customers trust for unrivaled repeatability and performance.

Radiall Sa are a global company with facilities around the world that specializes in manufacturing the highest quality interconnect components to support the most demanding applications.

At Radiall, you can rely on us to be the industry's global market leader.



VanSystem was a company founded in Lombardy - Italy, which has been operating since 1985 in the industrial market. Since 2015 VanSystem is a Radiall company.

Besides connectors with screw or bayonet coupling complying with the Mil-DTL-5015 standard, we designs and manufactures non-standard products for special applications.

One of our's strong points is an agile and dynamic organizational structure which enables direct and constant interaction with customers in order to meet all their requirements and build solid, long-term partnerships.

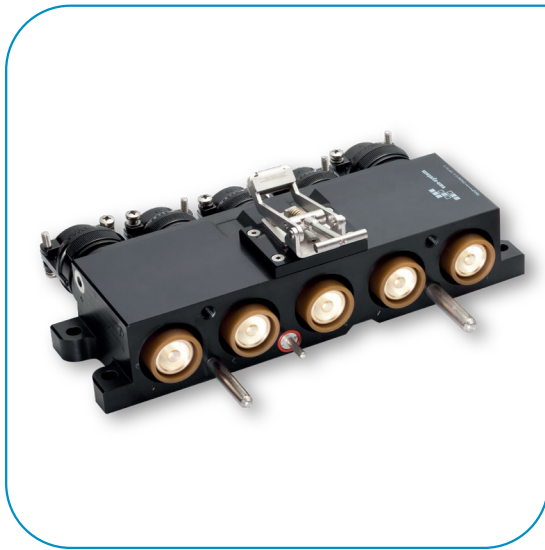
Our team's professionalism, skill and commitment are at your service to help you achieve the solution you are looking for.

Radiall Italia S.r.l. Quality System is qualified according to ISO 9001:2015 and ISO/TS 22163:2017



CP Connectors - Introduction

Multipole Power Connectors



CP - Connectors

Multipole power connectors, up to 1.000A rated current:

- High copper content alloy, silver plating. Can be supplied with multi-contacting band
- Could be used in Railway application for car-to-car jumpers, power distributions and traction motors
- Robust Connection: fully protected connectors: no risk to damage the contacts thanks the robust shell, could be supplied with conductive plating and the proper rear accessory
- Easy installation: fast and reliable coupling with alignment columns, accessories for fastening cable/conduit fixation
- Suitable for harsh environments (adapted for outdoor use), waterproof connection corrosion resistant
- Fire resistant and halogen free compound employed when no flame propagation. Qualified according to EN 45545-2



CP - Box

Junction and Distribution Boxes:

- Type T or Type Y junction box connectors
- Can be supplied with connectors or cable gland
- Could be used in Railway application for power distributions
- Suitable for harsh environments (adapted for outdoor use), waterproof connection corrosion resistant
- Self-protected junction box to connect several lines, power and sensors
- Housing material: aluminum, black anodic oxidation
- Thermoplastic Resin Fire behaviour according to EN 45545-2

CP Connectors - Introduction

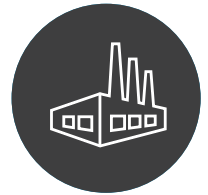
Multipole Power Connectors

CP connectors: up to 1.000A

CP multipole connectors has been developed for motor and power connection in Railway application. Suitable for harsh environments, could be used for car-to-car jumpers, power distributions and traction motors.

Applications:

- Railway
- Energy
- Naval
- Industrial



International Standard Document Compliance:

- EN 50124-1: Railway applications - Insulation coordination
- IEC 60077-1: Railway applications - Electric equipment for rolling stock
- EN 45545-2: Railway applications - Fire protection on railway vehicles
- NFPA 130 (ASTM E 162, ASTM E 662): Standard for Fixed Guideway Transit and Passenger Rail Systems
- UNI CEI 11170-3 : Guidelines for railway vehicle protection for tramways and with guided rail
- NFF 16-102: Railway Rolling Stock - Fire Behavior
- EN 50467: Railway applications - Rolling stock - Electrical connectors, requirements and test methods
- IEC 61373: Railway applications. Rolling stock equipment. Shock and vibration tests
- IEC 60529: Degrees of protection provided by enclosures (IP Code)
- European Directive 2011/65: RoHS complying

CP Box - Introduction

Multipole Power Connectors

Features and Benefits:

- Robust Connection
 - Fully protected connectors: no risk to damage the contacts thanks the robust shell
 - Could be supplied with conductive plating and the proper rear accessory
- Easy installation
 - Fast and reliable coupling with alignment columns
 - Accessories for fastening cable/conduit fixation
- Suitable for harsh environments (adapted for outdoor use)
 - Waterproof connection
 - Dust proof
 - Corrosion resistant

External metal shells	Aluminum alloy
Shell finishes (according to the type)	Hard black anodized Black polyurethanic varnish Gray anodic oxidation
Internal Insulator	Thermoplastic resin Fire behaviour according to EN45545-2
Contacts	High copper content alloy Silver plating
Gasket	Flame retardant silicone compound
Screws and locking levers system	Stainless steel
Cable retention	MS3057 type B/C cable clamp or cable gland

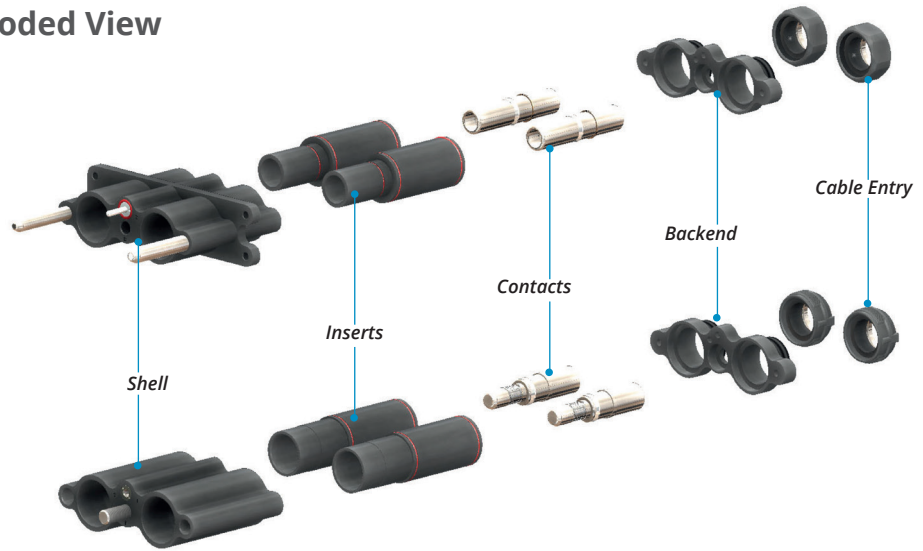


CP Connectors - Introduction

Components Exploded View

SCREW LOCKING

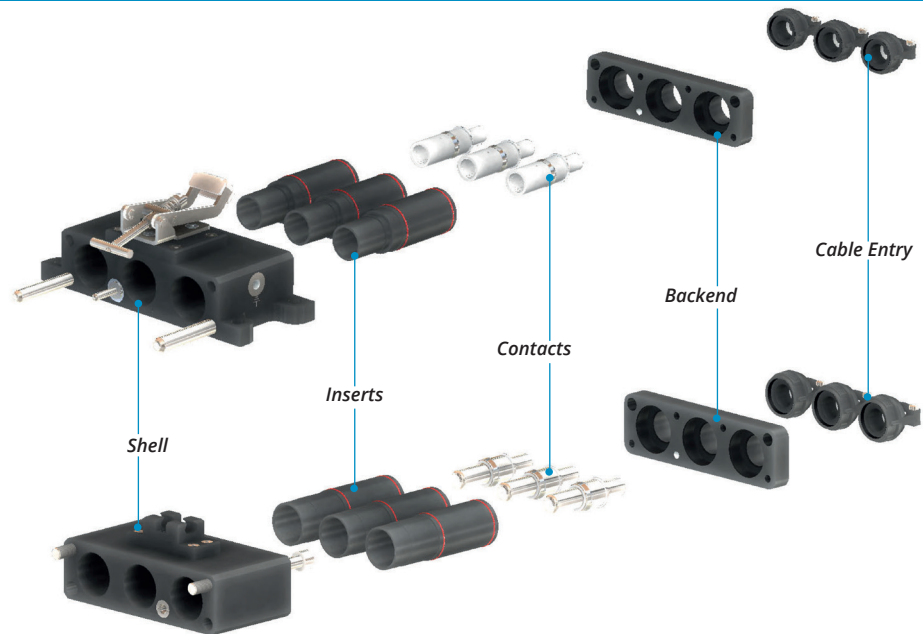
Receptacle Connector



Plug Connector

LOCKING LEVER

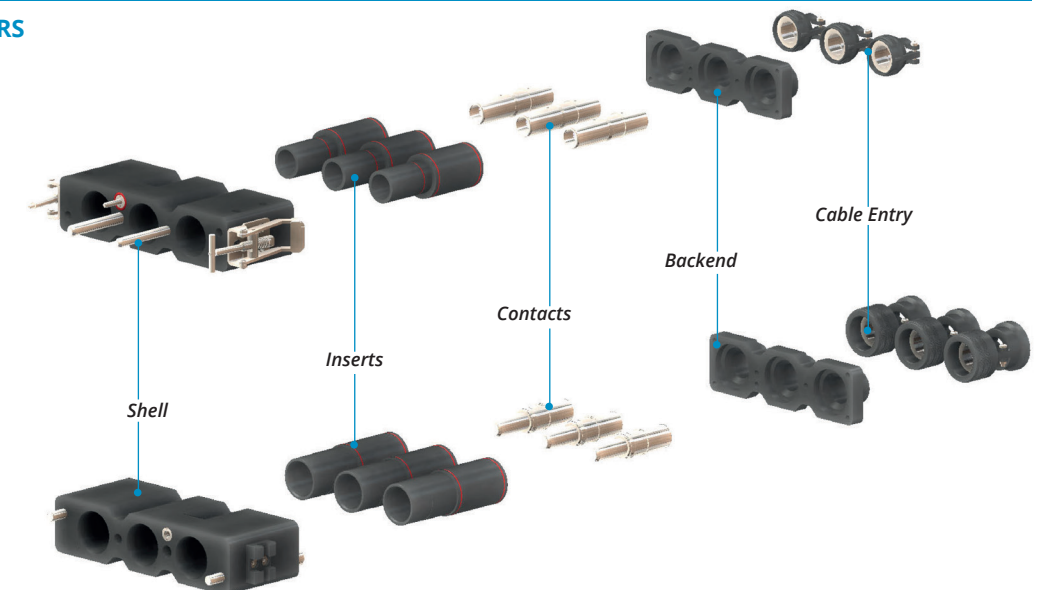
Receptacle Connector



Plug Connector

DOUBLE LOCKING LEVERS

Receptacle Connector

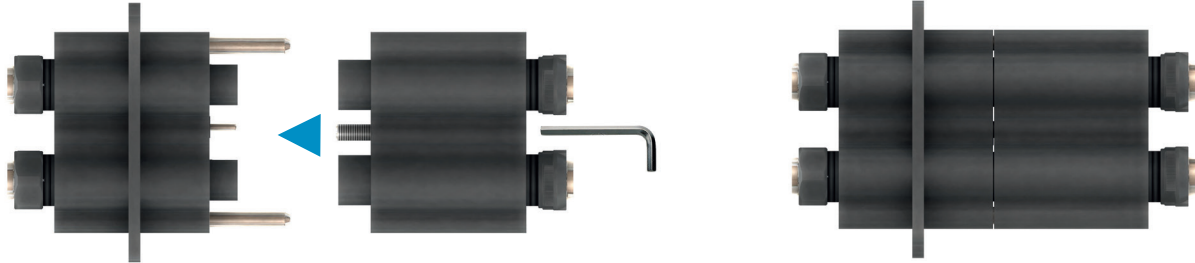


Plug Connector

CP Connectors - Introduction

Mating System

SCREW LOCKING



Receptacle Connector

Plug Connector

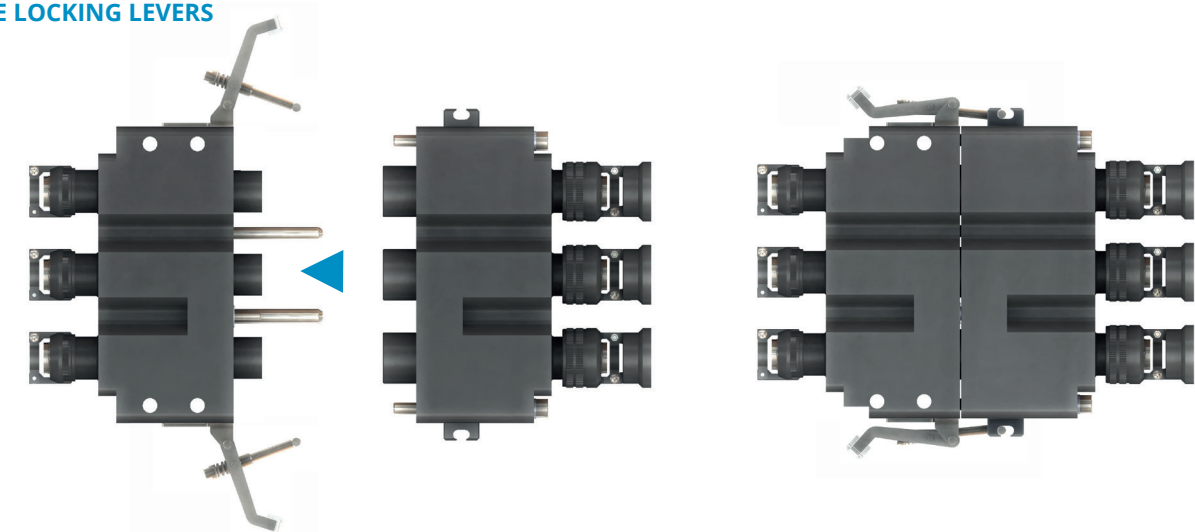
LOCKING LEVER



Receptacle Connector

Plug Connector

DOUBLE LOCKING LEVERS



Receptacle Connector

Plug Connector

CP Connectors - Part number explanation



CP	Series Code	CPxxx	Version
x	Poles Number	x	Multipoles
06	Shell Type	06	Plug
		96	Plug with grounding finger (shielding)
		03	Rear mounting receptacle
		01	Inline connector
		09	Under box
P	Contact Gender	S	Socket contacts
		P	Pin contacts
xx	Polarization Code	xx	Polarization xx
LC	Contact Size	LC	Less contacts (to be purchased separately)
		50	for wire section 50mm ²
		53	for wire section 53 mm ² - AWG 1/0
		70	for wire section 70mm ²
		92	for wire section 92mm ² - AWG 3/0
		95	for wire section 95mm ²
		112	for wire section 112mm ² - AWG 4/0
		120	for wire section 120mm ²
		150	for wire section 150 mm ²
		185	for wire section 185 mm ²
		240	for wire section 240mm ²
TP	Contact Type	-	Crimp Version
		TH	M12 Threaded hole contacts (for 03/99 panel version only)
		TH10	M10 Threaded hole contacts (for 03/99 panel version only)
		TP	With touch proof contacts protection (for contact type 2-30 only)
		CL	Supplied with CL Crimp Lug

CP Connectors - Part number explanation

	-	Without Thread
	R09	Cable clamp RF 3057-12C with reduction (7 – 11mm)
	R10	Cable clamp RF 3057-12C with reduction (14 – 21mm)
	R11	Cable clamp RF 3057-12C (11,3 – 19mm)
	R12	Cable clamp RF 3057-16C with reduction (10,5 – 18,5mm)
	R14	Cable clamp RF 3057-16C with reduction (12,5 – 20,8mm)
	R16	Cable clamp RF 3057-16C (15,5 – 23,8mm)
R14	Cable entry	
	R17	Cable clamp RF 3057-16C oversized (Ø 18 – 25mm)
	R18	Cable clamp RF 3057-20C with reduction (18 – 25mm)
	R19	Cable clamp RF 3057-20C with reduction (20 – 27mm)
	R20	Cable clamp RF 3057-20C (23,4 – 31,8mm)
	R24	Cable clamp RF 3057-24C (25,4 – 35mm)
	R28	Cable clamp RF 3057-28C (30 – 41,3mm)
	MH32E	Internal thread M32 supplied with EMC metal cable gland - clamping range (11-21mm)
	MH40E	Internal thread M40 supplied with EMC metal cable gland - clamping range (19-28mm)
	MH32	Internal thread M32 supplied with metal cable gland - clamping range (11-21mm)
MH40	Internal thread M40 supplied with metal cable gland - clamping range (19-28mm)	
F12	Shell finish	
	F12	Black Hard Deep Anodization - not conductive (<i>RoHS compliance</i>)
	F16	CCF - Black passivation (<i>RoHS compliance</i>) - conductive
	F26	Hard anodization (<i>RoHS compliance</i>)
S	Modification Code <i>If required</i>	
	S	Customization (Consult our sales office)

P/N Sample: CP20A2-06P-LC-R09-F16

CONNECTOR'S TYPE

Version	Series Code	Poles Number	Contact Size	Current Rating	Nominal voltage	Mating system
CP520911	CP20A	2	20	500A	3.600V (PD4 – OV3)	Tightening screw
CP520911	CP25A	2	25L	600A	3.600V (PD4 – OV3)	Tightening screw
CP060212	CP20A	3	20	500A	3.600V (PD4 - OV4)	Single locking lever
CP581111	CP20B	3	20	500A	2.800V (PD4 - OV4)	Double locking levers
CP160913	CP22A	3	22C	550A	900V (PD4 - OV4)	Tightening screw
CP150916	CP22B	3	22	550A	3.000V (PD4 – OV3)	Single locking lever
CP160613	CP25A	3	25L	600A	1.500V (PD4 - OV4) - 750V (APTA)	Double locking levers
CP020113	CP30A	3	30	1.000A	1.500V (PD4 - OV3)	Single locking lever
CP520911	CP22B	4	22	550A	660V (PD4 – OV4)	Tightening screw
CP291215	CP25A	4	25L	600A	2.000V (PD4 - OV4)	Single locking lever
CP220211	CP25B	5	25L	600A	750V (PD4 - OV4)	Double locking levers
CP020113	CP25A	5	30	1.000A	1.500V (PD4 - OV4)	Single locking lever
CP520911	CP25A	8	25L	600A	2.100V (PD4 - OV4)	Tightening screw

CP520911 - Connector with 2 contacts + ground contact

SCREW LOCKING



Rear mounting receptacle



Plug

ELECTRICAL CHARACTERISTICS

Nominal voltage	Test Voltage	Current Rating	Air and creepage distances	Contact resistance	Insulating resistance
300V (PD4 - OV4)	1.750Vac	500A	According to EN 50124-1 Pollution degree: PD4 with protection degree IP67 (mated connectors) Over-voltage category: OV4	< 0,5 mΩ	> 5 GΩ

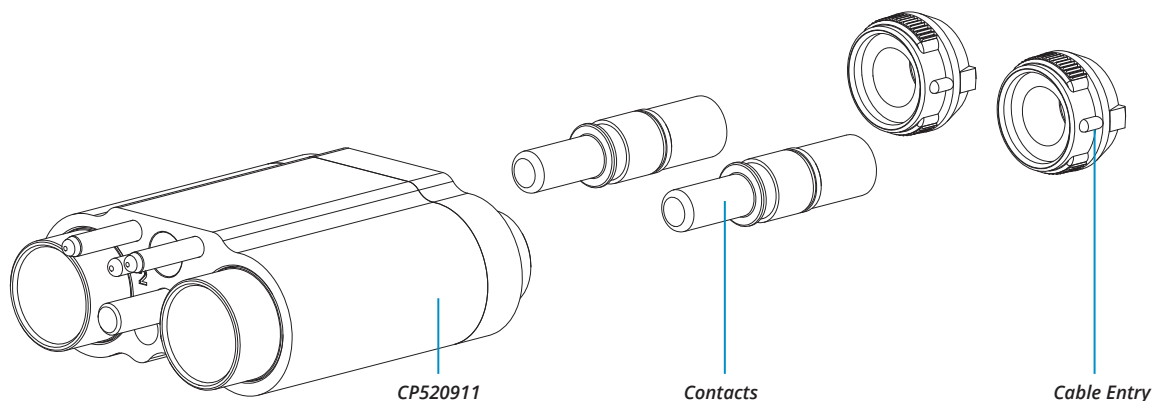
ENVIRONMENTAL CHARACTERISTICS

Connectors working temperature	IP Protection degree (EN 60529)
-40°C ÷ +100°C	IP67 (when mated)

MECHANICAL CHARACTERISTICS

Mating system	Mating endurance	Shock and vibrations tests (EN 61373)
Tightening screw	200 mating cycles minimum	Body mounted, cat. 1, class B

CP520911 - Connector with 2 contacts + ground contact



CP	Series Code	CP20A	Version CP520911
2	Poles Number	2	Multipoles
06	Shell Type **	06	Plug
		03	Rear mounting receptacle
P	Contact Gender	S	Socket contacts
		P	Pin contacts
xx	Polarization Code	xx	Polarization xx
LC	Contact Size *	LC	Less contacts (to be purchased separately - size 20)
		50	Single band, for wire section 50mm ² (CP485 1-20-50)
		70	Single band, for wire section 70mm ² (CP485 1-20-70)
		95	Single band, for wire section 95mm ² (CP485 1-20-95)
		120	Single band, for wire section 120mm ² (CP485 1-20-120)
		92	Single band, for wire section 92mm ² - AWG 3/0 (CP485 1-20-92)
	Contact Type	-	Crimp Version
R11	Cable entry	R09	Cable clamp RF 3057-12C with reduction (7 - 11mm)
		R10	Cable clamp RF 3057-12C with reduction (14 - 21mm)
		R11	Cable clamp RF 3057-12C (11,3 - 19mm)
F12	Shell finish	F12	Black Hard Deep Anodization - not conductive (RoHS compliance)
		F16	CCF - Black passivation (RoHS compliance) - conductive
		F26	Hard anodization (RoHS compliance)
S	Modification Code If required	S	Customization (Consult our sales office)

* For details see page 36-37

** Plug or Receptacle can be used both with Socket or with Pin Contacts

CP520911 - 2 poles rectangular power connector

SCREW LOCKING



Rear mounting receptacle



Plug

ELECTRICAL CHARACTERISTICS

Nominal voltage	Test Voltage	Current Rating	Air and creepage distances	Contact resistance	Insulating resistance
3.600V (PD4 - OV3)	10.700Vac	600A	According to EN 50124-1 Pollution degree: PD4 with protection degree IP67 (mated connectors) Over-voltage category: OV3	< 0,5 mΩ	> 5 GΩ

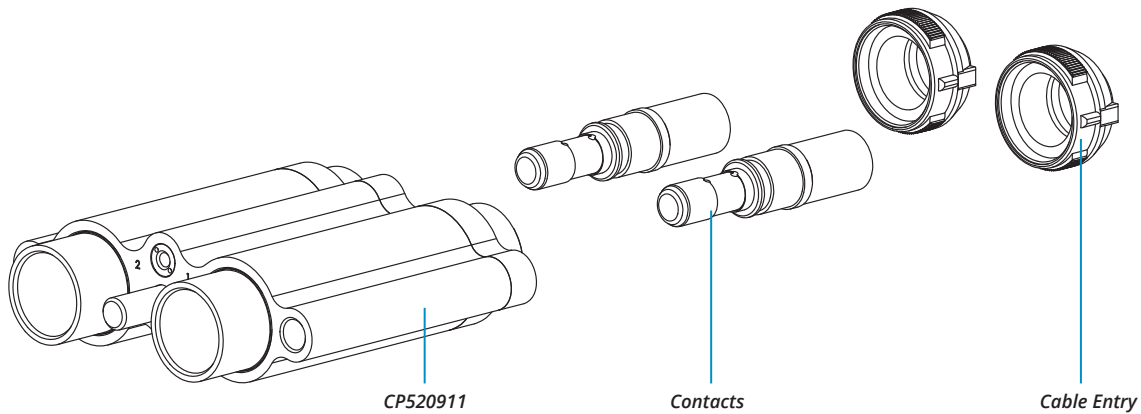
ENVIRONMENTAL CHARACTERISTICS

Connectors working temperature	IP Protection degree (EN 60529)
-40°C ÷ +100°C	IP67 (when mated)

MECHANICAL CHARACTERISTICS

Mating system	Mating endurance	Shock and vibrations tests (EN 61373)
Tightening screw	200 mating cycles minimum	Body mounted, cat. 1, class B

CP520911 - 2 poles rectangular power connector



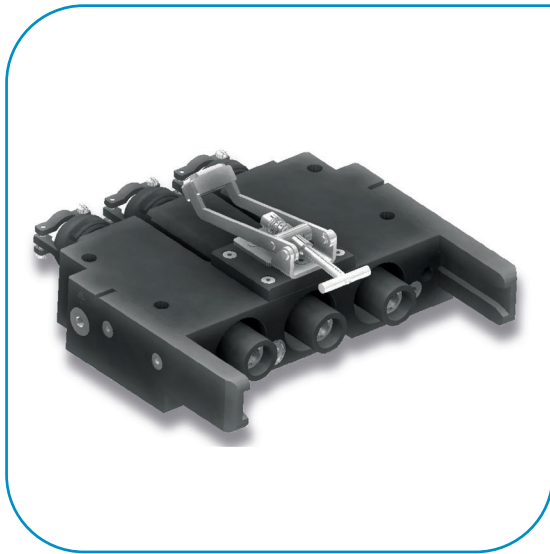
CP	Series Code	CP25A	Version CP520911
2	Poles Number	2	Multipoles
06	Shell Type **	06	Plug
		03	Rear mounting receptacle
P	Contact Gender	S	Socket contacts
		P	Pin contacts
xx	Polarization Code	xx	Polarization xx
LC	Contact Size *	LC	Less contacts (to be purchased separately - size 25)
		50	Single band, for wire section 50 mm ² - Long Contacts (CP485 1-25L-50)
		95	Single band, for wire section 95 mm ² - Long Contacts (CP485 1-25L-95)
		120	Single band, for wire section 120 mm ² - Long Contacts (CP485 1-25L-120)
		150	Single band, for wire section 150 mm ² - Long Contacts (CP485 1-25L-150)
	185	Single band, for wire section 185 mm ² - Long Contacts (CP485 1-25L-185)	
	Contact Type	-	Crimp Version
R19	Cable entry	R18	Cable clamp RF 3057-20C with reduction (18 – 25mm)
		R19	Cable clamp RF 3057-20C with reduction (20 – 27mm)
		R20	Cable clamp RF 3057-20C (23,4 – 31,8mm)
F12	Shell finish	F12	Black Hard Deep Anodization - not conductive (RoHS compliance)
		F16	CCF - Black passivation (RoHS compliance) - conductive
		F26	Hard anodization (RoHS compliance)
S	Modification Code <i>If required</i>	S	Customization (Consult our sales office)

* For details see page 36-37

** Plug or Receptacle can be used both with Socket or with Pin Contacts

CP060212 - 3 poles rectangular power connector

LOCKING LEVER



Under box



Plug

ELECTRICAL CHARACTERISTICS

Nominal voltage	Test Voltage	Current Rating	Air and creepage distances	Contact resistance	Insulating resistance
3.600V (PD4 - OV4)	9.200Vac	500A	According to EN 50124-1 Pollution degree: PD4 with protection degree IP67 (mated connectors) Over-voltage category: OV4	< 0,5 mΩ	> 5 GΩ

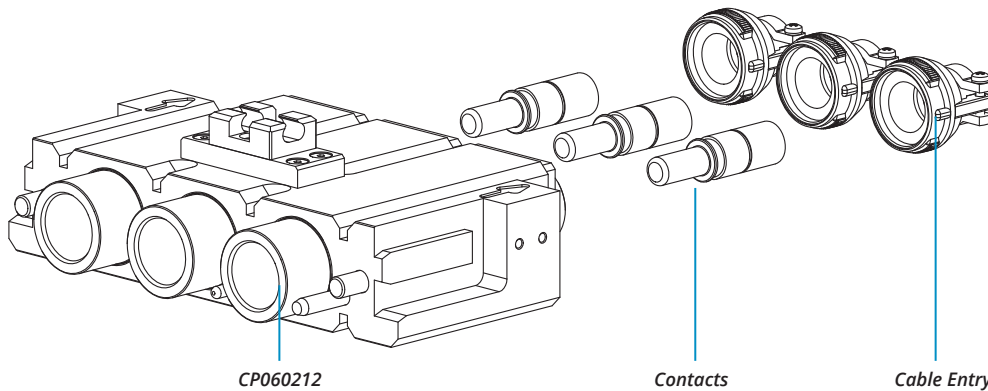
ENVIRONMENTAL CHARACTERISTICS

Connectors working temperature	IP Protection degree (EN 60529)
-40°C ÷ +100°C	IP67 (when mated)

MECHANICAL CHARACTERISTICS

Mating system	Mating endurance	Shock and vibrations tests (EN 61373)
Single locking lever	200 mating cycles minimum	Body mounted, cat. 1, class B

CP060212 - 3 poles rectangular power connector



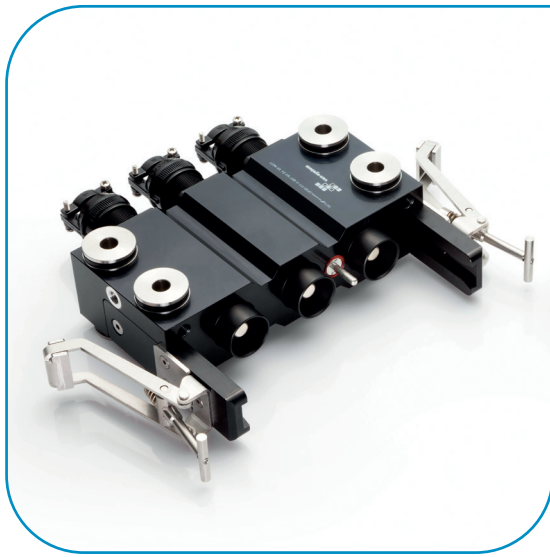
CP	Series Code	CP20A	Version CP060212
3	Poles Number	3	Multipoles
06	Shell Type **	06	Plug
		09	Under Box
P	Contact Gender	S	Socket contacts
		P	Pin contacts
xx	Polarization Code	xx	Polarization xx
		LC	Less contacts (to be purchased separately - size 20)
LC	Contact Size *	50	Single band, for wire section 50mm ² (CP485 1-20-50)
		70	Single band, for wire section 70mm ² (CP485 1-20-70)
		95	Single band, for wire section 95mm ² (CP485 1-20-95)
		120	Single band, for wire section 120mm ² (CP485 1-20-120)
		92	Single band, for wire section 92mm ² - AWG 3/0 (CP485 1-20-92)
		112	Single band, for wire section 112mm ² - AWG 4/0 (CP485 1-20-112)
	Contact Type	-	Crimp Version
R12	Cable entry	R12	Cable clamp RF 3057-16C with reduction (10,5 – 18,5mm)
		R14	Cable clamp RF 3057-16C with reduction (12,5 – 20,8mm)
		R16	Cable clamp RF 3057-16C (15,5 – 23,8mm)
		R17	Cable clamp RF 3057-16C oversized (Ø 18 – 25mm)
		R18	Cable clamp RF 3057-20C with reduction (18 – 25mm)
		R19	Cable clamp RF 3057-20C with reduction (20 – 27mm)
		R20	Cable clamp RF 3057-20C (23,4 – 31,8mm)
F12	Shell finish	F12	Black Hard Deep Anodization - not conductive (RoHS compliance)
		F16	CCF - Black passivation (RoHS compliance) - conductive
		F26	Hard anodization (RoHS compliance)
S	Modification Code <i>If required</i>	S	Customization (Consult our sales office)

* For details see page ' * - ' +

** Plug or Receptacle can be used both with Socket or with Pin Contacts

CP581111 - 3 poles rectangular power connector

LOCKING LEVER



Under box



Plug

ELECTRICAL CHARACTERISTICS

Nominale voltage	Test voltage (EN 60077-1)	Current Rating	Air and creepage distances	Contact resistance	Insulating resistance
2.800V (PD4 - OV4)	8.700Vac	500A	According to EN 50124-1 Pollution degree: PD4 with protection degree IP67 (mated connectors) Over-voltage category: OV4	< 0,5 mΩ	> 5 GΩ

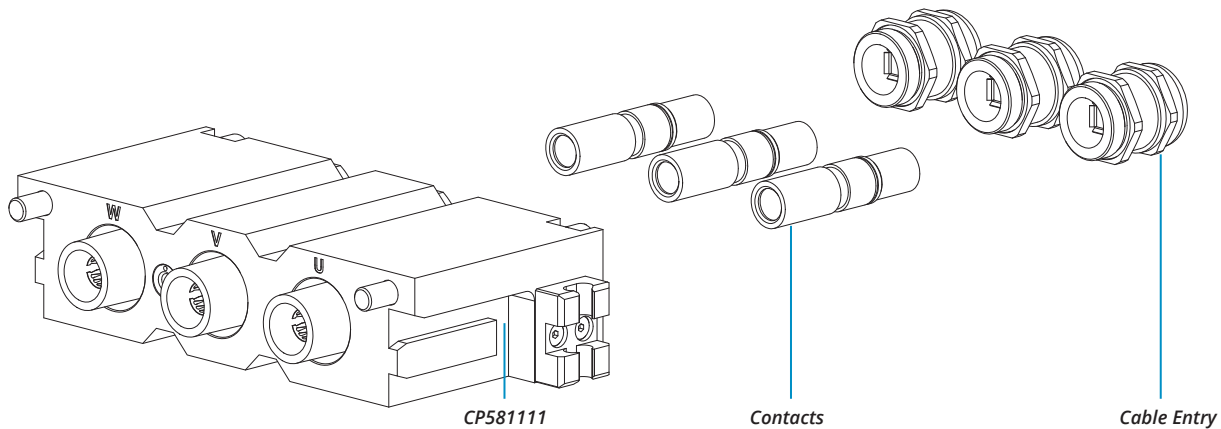
ENVIRONMENTAL CHARACTERISTICS

Connectors working temperature	IP Protection degree (EN 60529)
-55°C ÷ +125°C	IP67 (when mated)

MECHANICAL CHARACTERISTICS

Mating system	Mating endurance	Shock and vibrations tests (EN 61373)
Alignment guides for assisted coupling, 2 mechanical locking lever and a secure lock screw with Nord-lock vibration proof washers	200 mating cycles minimum	Category 2 bogie mounted Fixed connector supplied with anti-vibration elastic supports

CP581111 - 3 poles rectangular power connector



CP	Series Code	CP20B	Version CP581111
3	Poles Number	3	Multipoles
06	Shell Type **	06	Plug
		09	Under Box
P	Contact Gender	S	Socket contacts
		P	Pin contacts
xx	Polarization Code	xx	Polarization xx
LC	Contact Size *	LC	Less contacts (to be purchased separately - size 20)
		50	Single band, for wire section 50mm ² (CP485 1-20-50)
		70	Single band, for wire section 70mm ² (CP485 1-20-70)
		95	Single band, for wire section 95mm ² (CP485 1-20-95)
		120	Single band, for wire section 120mm ² (CP485 1-20-120)
		92	Single band, for wire section 92mm ² - AWG 3/0 (CP485 1-20-92)
	Contact Type	-	Crimp Version
R12	Cable entry	R12	Cable clamp RF 3057-16C with reduction (10,5 – 18,5mm)
		R14	Cable clamp RF 3057-16C with reduction (12,5 – 20,8mm)
		R16	Cable clamp RF 3057-16C (15,5 – 23,8mm)
		R17	Cable clamp RF 3057-16C oversized (Ø 18 – 25mm)
		MH32E	Internal thread M32 supplied with EMC metal cable gland - clamping range (11-21mm)
		MH32	Internal thread M32 supplied with metal cable gland - clamping range (11-21mm)
F12	Shell finish	F12	Black Hard Deep Anodization - not conductive (RoHS compliance)
		F16	CCF - Black passivation (RoHS compliance) - conductive
		F26	Hard anodization (RoHS compliance)
S	Modification Code <i>If required</i>	S	Customization (Consult our sales office)

* For details see page 36-37

** Plug or Receptacle can be used both with Socket or with Pin Contacts

CP160913 - 3 poles rectangular power connector

SCREW LOCKING



Under box



Plug

ELECTRICAL CHARACTERISTICS

Nominal voltage	Test voltage (EN 60077-1)	Current Rating	Max. current (20°C)	Starting current (80°C)	Air and creepage distances	Contact resistance	Insulating resistance
900V (PD4 - OV4)	3.300Vac	550A	240A	370A	According to EN 50124-1 Pollution degree: PD4 with protection degree IP67 (mated connectors) Over-voltage category: OV4	< 0,5 mΩ	> 5 GΩ

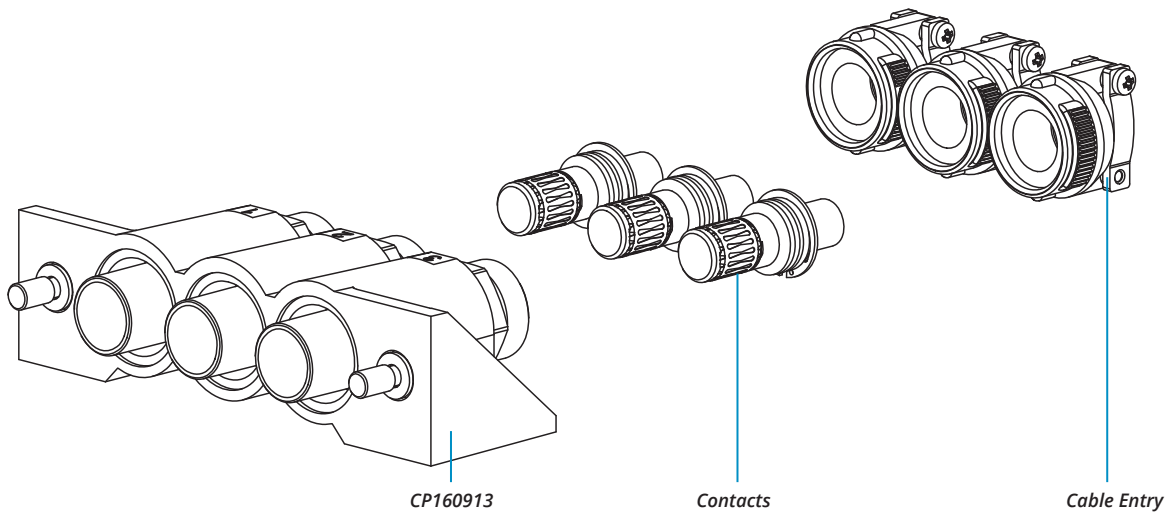
ENVIRONMENTAL CHARACTERISTICS

Connectors working temperature	IP Protection degree (EN 60529)
-55°C ÷ +125°C	IP67 (when mated)

MECHANICAL CHARACTERISTICS

Mating system	Mating endurance	Shock and vibrations tests (EN 61373)
Tightening screws	200 mating cycles minimum	Body mounted, cat. 1, class B

CP160913 - 3 poles rectangular power connector



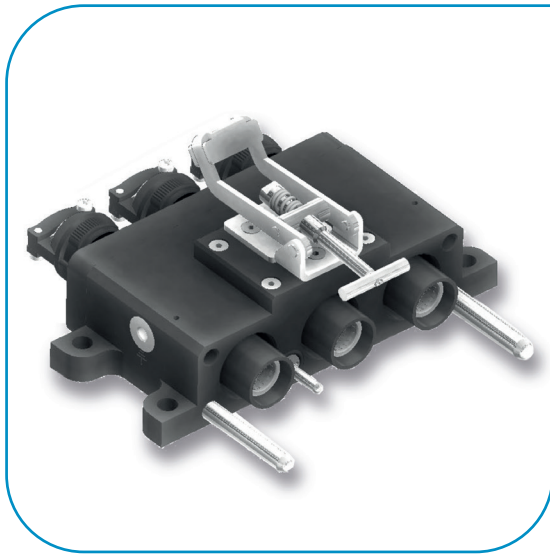
CP	Series Code	CP22A	Version CP160913
3	Poles Number	3	Multipoles
06	Shell Type **	06	Plug
		03	Under box
P	Contact Gender	S	Socket contacts
		P	Pin contacts
xx	Polarization Code	xx	Polarization xx
LC	Contact Size *	LC	Less contacts (to be purchased separately - size 22C)
		35	Single band, for wire section 35 mm ² (CP485 1-22C-35)
		50	Single band, for wire section 50 mm ² (CP485 1-22C-50)
		70	Single band, for wire section 70 mm ² (CP485 1-22C-70)
	Contact Type	-	Crimp Version
R11	Cable entry	R09	Cable clamp RF 3057-12C with reduction (7 – 11mm)
		R10	Cable clamp RF 3057-12C with reduction (14 – 21mm)
		R11	Cable clamp RF 3057-12C (11,3 – 19mm)
F12	Shell finish	F12	Black Hard Deep Anodization - not conductive (RoHS compliance)
		F16	CCF - Black passivation (RoHS compliance) - conductive
		F26	Hard anodization (RoHS compliance)
S	Modification Code <i>If required</i>	S	Customization (Consult our sales office)

* For details see page 36-37

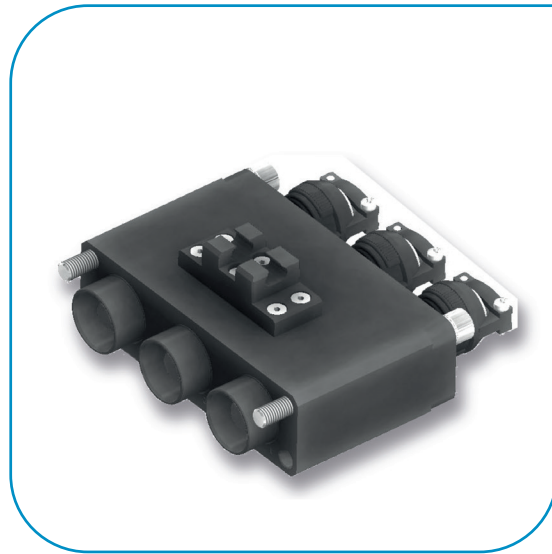
** Plug or Receptacle can be used both with Socket or with Pin Contacts

CP150916 - 3 poles rectangular power connector

LOCKING LEVER



Under box



Plug

ELECTRICAL CHARACTERISTICS

Nominal voltage	Test Voltage	Current Rating	Air and creepage distances	Contact resistance	Insulating resistance
3.000V (PD4 - OV3)	9.200Vac	550A	According to EN 50124-1 Pollution degree: PD4 with protection degree IP67 (mated connectors) Over-voltage category: OV3	< 0,5 mΩ	> 5 GΩ

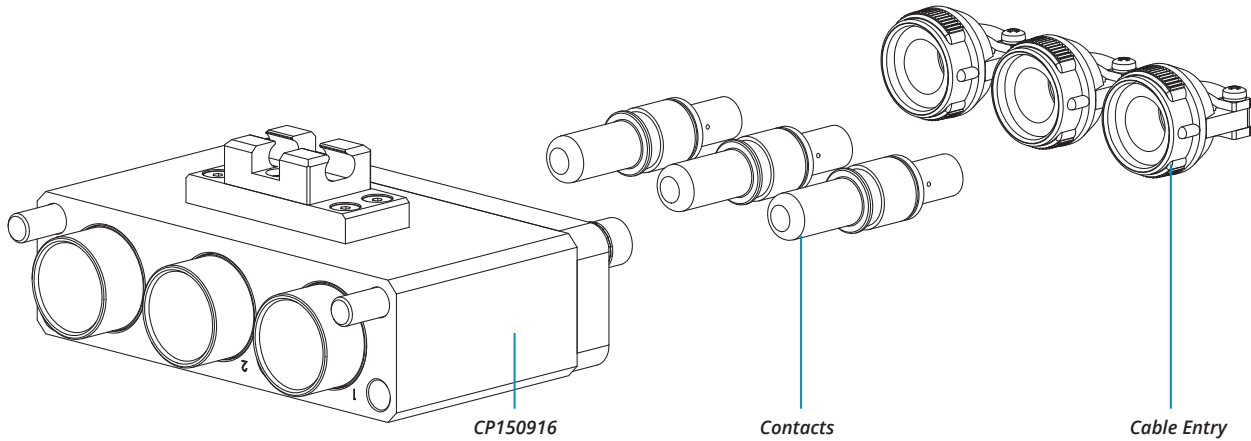
ENVIRONMENTAL CHARACTERISTICS

Connectors working temperature	IP Protection degree (EN 60529)
-55°C ÷ +125°C	IP67 (when mated)

MECHANICAL CHARACTERISTICS

Mating system	Mating endurance	Shock and vibrations tests (EN 61373)
Single locking lever	200 mating cycles minimum	Body mounted, cat. 1, class B

CP150916 - 3 poles rectangular power connector



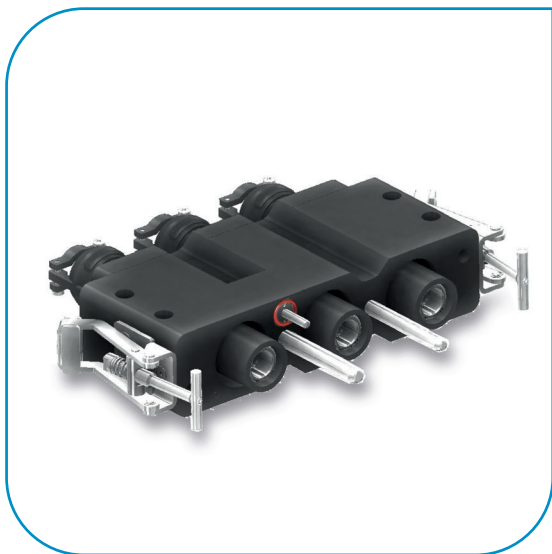
CP	Series Code	CP22B	Version CP150916
3	Poles Number	3	Multipoles
06	Shell Type **	06	Plug
		03	Rear mounting receptacle
P	Contact Gender	S	Socket contacts
		P	Pin contacts
xx	Polarization Code	xx	Polarization xx
LC	Contact Size *	LC	Less contacts (to be purchased separately - size 22)
		50	Single band, for wire section 50 mm ² (CP485 1-22-50)
		53	Single band, for wire section 53 mm ² - AWG 1/0 (CP485 1-22-53)
		70	Single band, for wire section 70 mm ² (CP485 1-22-70)
		95	Single band, for wire section 95 mm ² (CP485 1-22-95)
	Contact Type	-	Crimp Version
R11	Cable entry	R09	Cable clamp RF 3057-12C with reduction (7 - 11mm)
		R10	Cable clamp RF 3057-12C with reduction (14 - 21mm)
		R11	Cable clamp RF 3057-12C (11,3 - 19mm)
F12	Shell finish	F12	Black Hard Deep Anodization - not conductive (RoHS compliance)
		F16	CCF - Black passivation (RoHS compliance) - conductive
		F26	Hard anodization (RoHS compliance)
S	Modification Code <i>If required</i>	S	Customization (Consult our sales office)

* For details see page 36-37

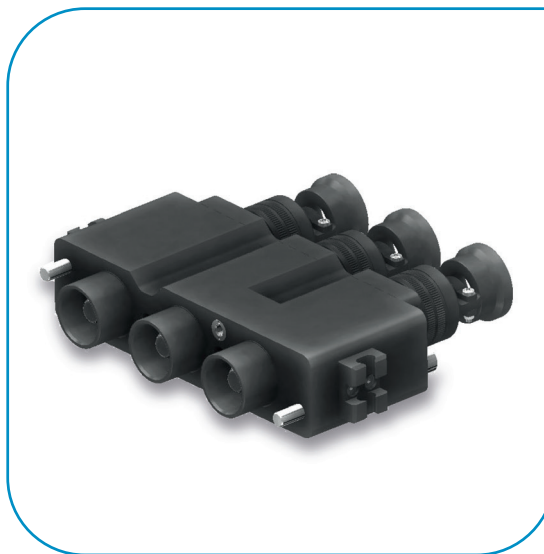
** Plug or Receptacle can be used both with Socket or with Pin Contacts

CP160613 - 3 poles rectangular power connector

LOCKING LEVER



Under box



Plug

ELECTRICAL CHARACTERISTICS

Nominal voltage	Test Voltage	Current Rating	Air and creepage distances	Contact resistance	Insulating resistance
1.500V (PD4 - OV4) 750V (APTA)	3.300Vac	600A	According to EN 50124-1 Pollution degree: PD4 with protection degree IP67 (mated connectors) Over-voltage category: OV4	< 0,5 mΩ	> 5 GΩ

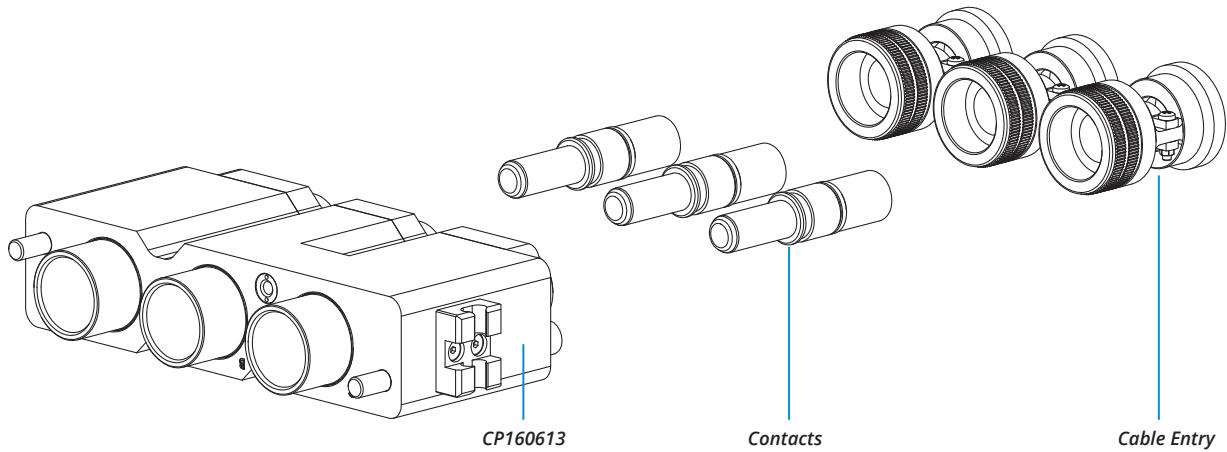
ENVIRONMENTAL CHARACTERISTICS

Connectors working temperature	IP Protection degree (EN 60529)
-40°C ÷ +125°C	IP67 (when mated)

MECHANICAL CHARACTERISTICS

Mating system	Mating endurance	Shock and vibrations tests (EN 61373)
Double locking levers	200 mating cycles minimum	Category 2, bogie mounted

CP160613 - 3 poles rectangular power connector



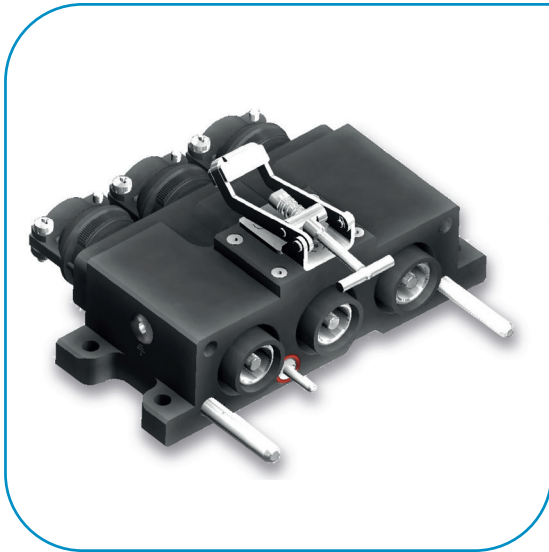
CP	Series Code	CP25A	Version CP160613
3	Poles Number	3	Multipoles
06	Shell Type **	06	Plug
		03	Rear mounting receptacle
P	Contact Gender	S	Socket contacts
		P	Pin contacts
xx	Polarization Code	xx	Polarization xx
LC	Contact Size *	LC	Less contacts (to be purchased separately - size 25L)
		50	Single band, for wire section 50 mm ² - Long Contacts (CP485 1-25L-50)
		95	Single band, for wire section 95 mm ² - Long Contacts (CP485 1-25L-95)
		120	Single band, for wire section 120 mm ² - Long Contacts (CP485 1-25L-120)
		150	Single band, for wire section 150 mm ² - Long Contacts (CP485 1-25L-150)
	Contact Type	-	Crimp Version
R12	Cable entry	R12	Cable clamp RF 3057-16C with reduction (10,5 – 18,5mm)
		R14	Cable clamp RF 3057-16C with reduction (12,5 – 20,8mm)
		R16	Cable clamp RF 3057-16C (15,5 – 23,8mm)
		R17	Cable clamp RF 3057-16C oversized (Ø 18 – 25mm)
F12	Shell finish	F12	Black Hard Deep Anodization - not conductive (RoHS compliance)
		F16	CCF - Black passivation (RoHS compliance) - conductive
		F26	Hard anodization (RoHS compliance)
S	Modification Code If required	S	Customization (Consult our sales office)

* For details see page 36-37

** Plug or Receptacle can be used both with Socket or with Pin Contacts

CP020113 - 3 poles rectangular power connector

LOCKING LEVER



Under box



Plug

ELECTRICAL CHARACTERISTICS

Nominal voltage	Test Voltage	Current Rating	Air and creepage distances	Contact resistance	Insulating resistance
1.500V (PD4 - OV3)	5.600Vac	1.000A	According to EN 50124-1	< 0,5 mΩ	> 5 GΩ

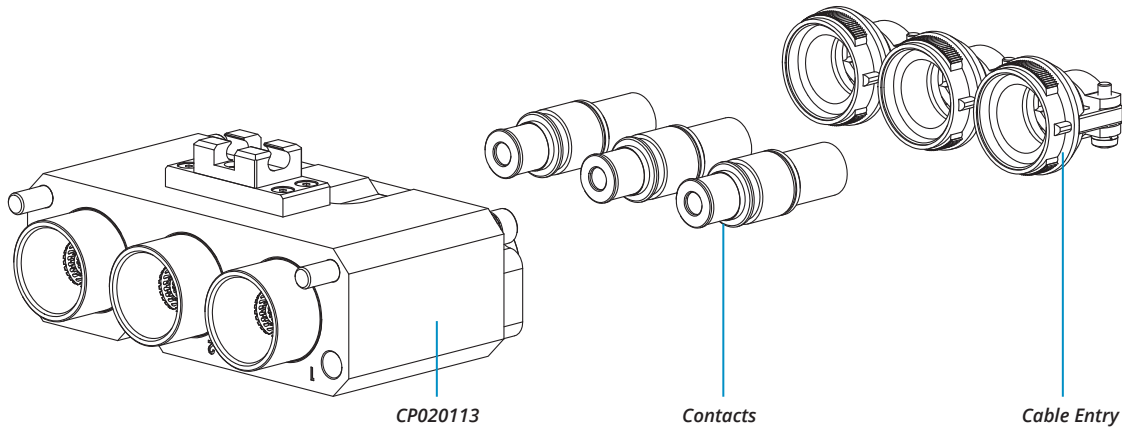
ENVIRONMENTAL CHARACTERISTICS

Connectors working temperature	IP Protection degree (EN 60529)
-55°C ÷ +180°C	IP67 (when mated)

MECHANICAL CHARACTERISTICS

Mating system	Mating endurance	Shock and vibrations tests (EN 61373)
Single locking lever	200 mating cycles minimum	Body mounted, cat. 1, class B

CP020113 - 3 poles rectangular power connector



CP	Series Code	CP30A	Version CP020113
3	Poles Number	3	Multipoles
06	Shell Type **	06	Plug
		09	Under Box
P	Contact Gender	S	Socket contacts
		P	Pin contacts
xx	Polarization Code	xx	Polarization xx
LC	Contact Size *	LC	Less contacts (to be purchased separately - size 30)
		95	Double band, for wire section 95mm ² (CP485 2-30-95)
		120	Double band, for wire section 120mm ² (CP485 2-30-120)
		150	Double band, for wire section 150mm ² (CP485 2-30-150)
		185	Double band, for wire section 185mm ² (CP485 2-30-185)
		240	Double band, for wire section 240mm ² (CP485 2-30-240)
		262	Double band, for wire section MCM262 (CP485 2-30-262)
		535	Double band, for wire section MCM535 (CP485 2-30-535)
	Contact Type	-	Crimp Version
R18	Cable entry	R18	Cable clamp RF 3057-20C with reduction (18 - 25mm)
		R19	Cable clamp RF 3057-20C with reduction (20 - 27mm)
		R20	Cable clamp RF 3057-20C (23,4 - 31,8mm)
F12	Shell finish	F12	Black Hard Deep Anodization - not conductive (RoHS compliance)
		F16	CCF - Black passivation (RoHS compliance) - conductive
		F26	Hard anodization (RoHS compliance)
S	Modification Code If required	S	Customization (Consult our sales office)

* For details see page 36-37

** Plug or Receptacle can be used both with Socket or with Pin Contacts

CP520911 - Connector with 4 contacts + ground contact

SCREW LOCKING



Rear mounting receptacle



Plug

ELECTRICAL CHARACTERISTICS

Nominal voltage	Test Voltage	Current Rating	Air and creepage distances	Contact resistance	Insulating resistance
660V (PD4 - OV4)	10.500Vac	550A	According to EN 50124-1 Pollution degree: PD4 with protection degree IP67 (mated connectors) Over-voltage category: OV4	< 0,5 mΩ	> 5 GΩ

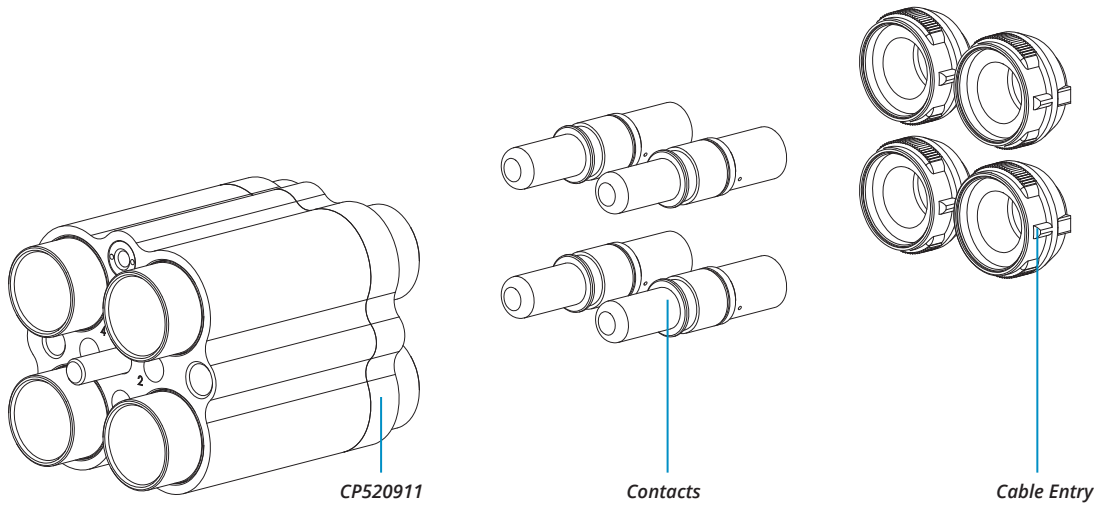
ENVIRONMENTAL CHARACTERISTICS

Connectors working temperature	IP Protection degree (EN 60529)
-40°C ÷ +100°C	IP67 (when mated)

MECHANICAL CHARACTERISTICS

Mating system	Mating endurance	Shock and vibrations tests (EN 61373)
Tightening screw	200 mating cycles minimum	Body mounted, cat. 1, class B

CP520911 - Connector with 4 contacts + ground contact



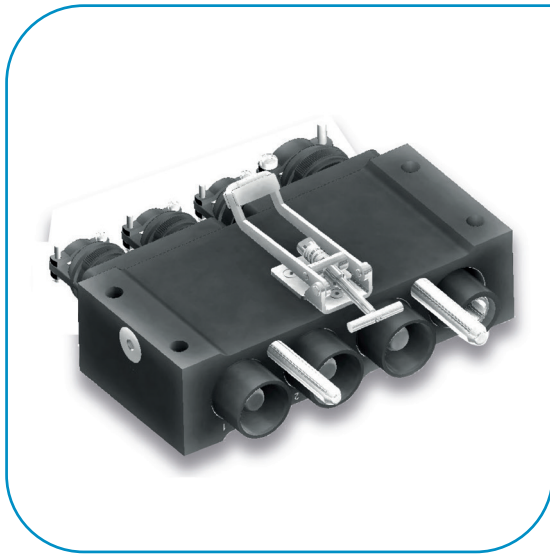
CP	Series Code	CP22B	Version CP520911
4	Poles Number	4	Multipoles
06	Shell Type **	06	Plug
		03	Rear mounting receptacle
P	Contact Gender	S	Socket contacts
		P	Pin contacts
xx	Polarization Code	xx	Polarization xx
LC	Contact Size *	LC	Less contacts (to be purchased separately - size 22)
		50	Single band, for wire section 50 mm ² (CP485 1-22-50)
		53	Single band, for wire section 53 mm ² - AWG 1/0 (CP485 1-20-53)
		70	Single band, for wire section 70 mm ² (CP485 1-20-70)
		95	Single band, for wire section 95 mm ² (CP485 1-20-95)
		150	Single band, for wire section 150 mm ² (CP485 1-20-150)
	Contact Type	-	Crimp Version
R11	Cable entry	R09	Cable clamp RF 3057-12C with reduction (7 – 11mm)
		R10	Cable clamp RF 3057-12C with reduction (14 – 21mm)
		R11	Cable clamp RF 3057-12C (11,3 – 19mm)
		R12	Cable clamp RF 3057-16C with reduction (10,5 – 18,5mm)
		R14	Cable clamp RF 3057-16C with reduction (12,5 – 20,8mm)
		R16	Cable clamp RF 3057-16C (15,5 – 23,8mm)
		R17	Cable clamp RF 3057-16C oversized (Ø 18 – 25mm)
F12	Shell finish	F12	Black Hard Deep Anodization - not conductive (RoHS compliance)
		F16	CCF - Black passivation (RoHS compliance) - conductive
		F26	Hard anodization (RoHS compliance)
S	Modification Code <i>If required</i>	S	Customization (Consult our sales office)

* For details see page 36-37

** Plug or Receptacle can be used both with Socket or with Pin Contacts

CP291215 - 4 poles rectangular power connector

LOCKING LEVER



Under box



Plug

ELECTRICAL CHARACTERISTICS

Nominal voltage	Test Voltage	Working current	Air and creepage distances	Contact resistance	Insulating resistance
2.000V (PD4 - OV4)	6.800Vac	800A	According to EN 50124-1 Pollution degree: PD4 with protection degree IP67 (mated connectors) Over-voltage category: OV4	< 0,5 mΩ	> 5 GΩ

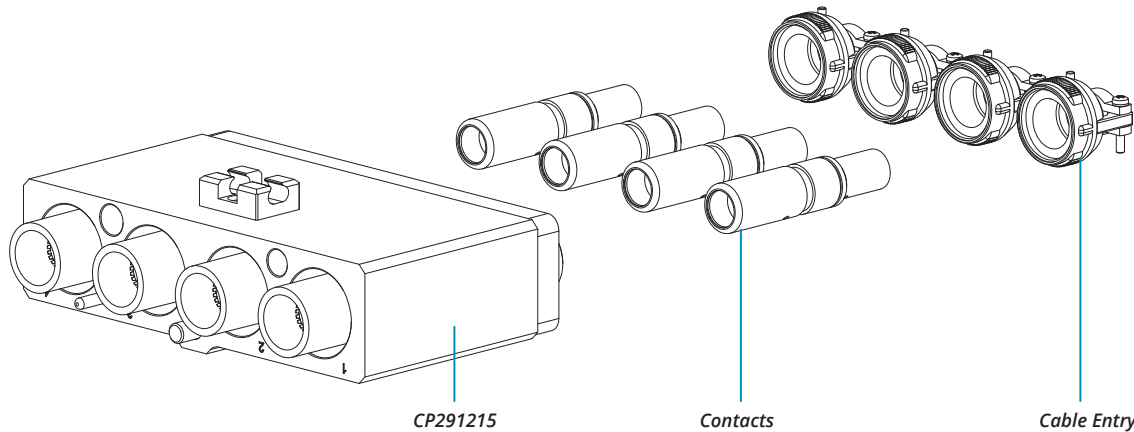
ENVIRONMENTAL CHARACTERISTICS

Connectors working temperature	IP Protection degree (EN 60529)
-40°C ÷ +125°C	IP67 (when mated)

MECHANICAL CHARACTERISTICS

Mating system	Mating endurance	Shock and vibrations tests (EN 61373)
Single locking lever Alignment polarized columns	200 mating cycles minimum	Category 2 bogie mounted

CP291215 - 4 poles rectangular power connector



CP	Series Code	CP25A	Version CP291215
4	Poles Number	4	Multipoles
06	Shell Type **	06	Plug
		09	Rear mounting receptacle
P	Contact Gender	S	Socket contacts
		P	Pin contacts
xx	Polarization Code	xx	Polarization xx
LC	Contact Size *	LC	Less contacts (to be purchased separately - size 25L)
		50	Single band, for wire section 50 mm ² - Long Contacts (CP485 1-25L-50)
		95	Single band, for wire section 95 mm ² - Long Contacts (CP485 1-25L-95)
		120	Single band, for wire section 120 mm ² - Long Contacts (CP485 1-25L-120)
		150	Single band, for wire section 150 mm ² - Long Contacts (CP485 1-25L-150)
	Contact Type	-	Crimp Version
R12	Cable entry	R12	Cable clamp RF 3057-16C with reduction (10,5 – 18,5mm)
		R14	Cable clamp RF 3057-16C with reduction (12,5 – 20,8mm)
		R16	Cable clamp RF 3057-16C (15,5 – 23,8mm)
		R17	Cable clamp RF 3057-16C oversized (Ø 18 – 25mm)
F12	Shell finish	F12	Black Hard Deep Anodization - not conductive (RoHS compliance)
		F16	CCF - Black passivation (RoHS compliance) - conductive
		F26	Hard anodization (RoHS compliance)
S	Modification Code <i>If required</i>	S	Customization (Consult our sales office)

* For details see page 36-37

** Plug or Receptacle can be used both with Socket or with Pin Contacts

CP220211 - 5 poles rectangular power connector

LOCKING LEVER



Under box



Plug

ELECTRICAL CHARACTERISTICS

Nominal voltage	Test Voltage	Current Rating	Air and creepage distances	Contact resistance	Insulating resistance
750V (PD4 - OV4)	3300Vac	600A	According to EN 50124-1 Pollution degree: PD4 with protection degree IP67 (mated connectors) Over-voltage category: OV4	< 0,5 mΩ	> 5 GΩ

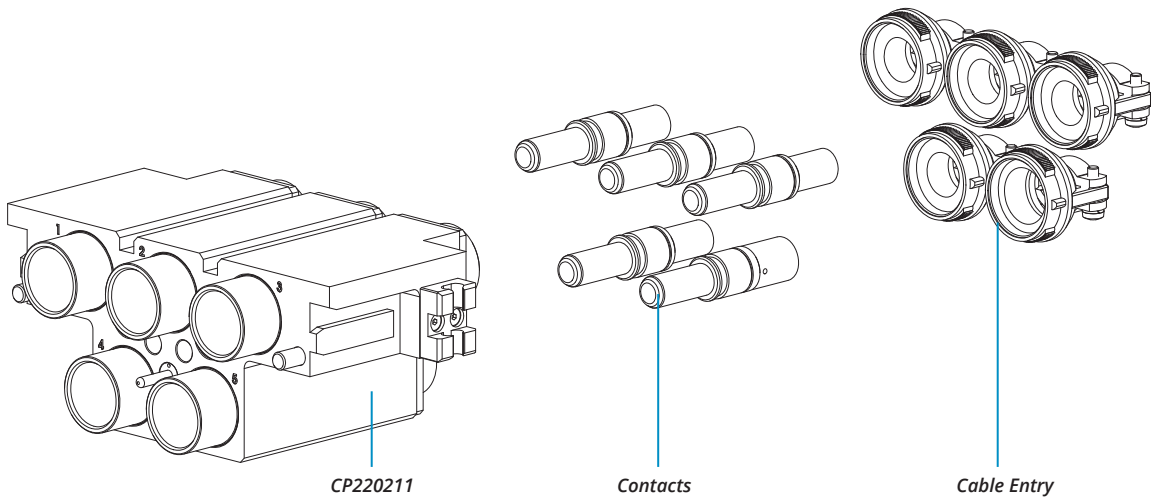
ENVIRONMENTAL CHARACTERISTICS

Connectors working temperature	IP Protection degree (EN 60529)
-40°C ÷ +100°C	IP67 (when mated)

MECHANICAL CHARACTERISTICS

Mating system	Mating endurance	Shock and vibrations tests (EN 61373)
Double locking levers	200 mating cycles minimum	Category 2 bogie mounted

CP220211 - 5 poles rectangular power connector



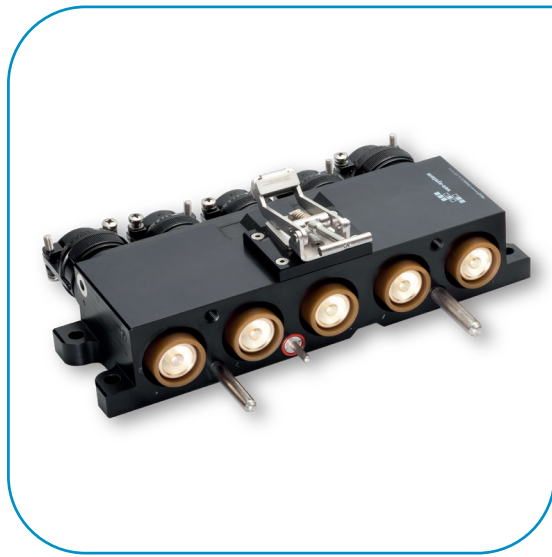
CP	Series Code	CP25B	Version CP220211
5	Poles Number	5	Multipoles
06	Shell Type **	06	Plug
		09	Under Box
P	Contact Gender	S	Socket contacts
		P	Pin contacts
xx	Polarization Code	xx	Polarization xx
LC	Contact Size *	LC	Less contacts (to be purchased separately - size 25L)
		50	Single band, for wire section 50 mm ² - Long Contacts (CP485 1-25L-50)
		95	Single band, for wire section 95 mm ² - Long Contacts (CP485 1-25L-95)
		120	Single band, for wire section 120 mm ² - Long Contacts (CP485 1-25L-120)
		150	Single band, for wire section 150 mm ² - Long Contacts (CP485 1-25L-150)
		185	Single band, for wire section 185 mm ² - Long Contacts (CP485 1-25L-185)
	Contact Type	-	Crimp Version
R18	Cable entry	R18	Cable clamp RF 3057-20C with reduction (18 – 25mm)
		R19	Cable clamp RF 3057-20C with reduction (20 – 27mm)
		R20	Cable clamp RF 3057-20C (23,4 – 31,8mm)
F12	Shell finish	F12	Black Hard Deep Anodization - not conductive (RoHS compliance)
		F16	CCF - Black passivation (RoHS compliance) - conductive
		F26	Hard anodization (RoHS compliance)
S	Modification Code <i>If required</i>	S	Customization (Consult our sales office)

* For details see page 36-37

** Plug or Receptacle can be used both with Socket or with Pin Contacts

CP020113 - 5 poles rectangular power connector

LOCKING LEVER



Under box



Plug

ELECTRICAL CHARACTERISTICS

Nominal voltage	Test Voltage	Current Rating	Air and creepage distances	Contact resistance	Insulating resistance
1.500V (PD4 - OV4)	5.600Vac	1.000A	According to EN 50124-1	< 0,5 mΩ	> 5 GΩ

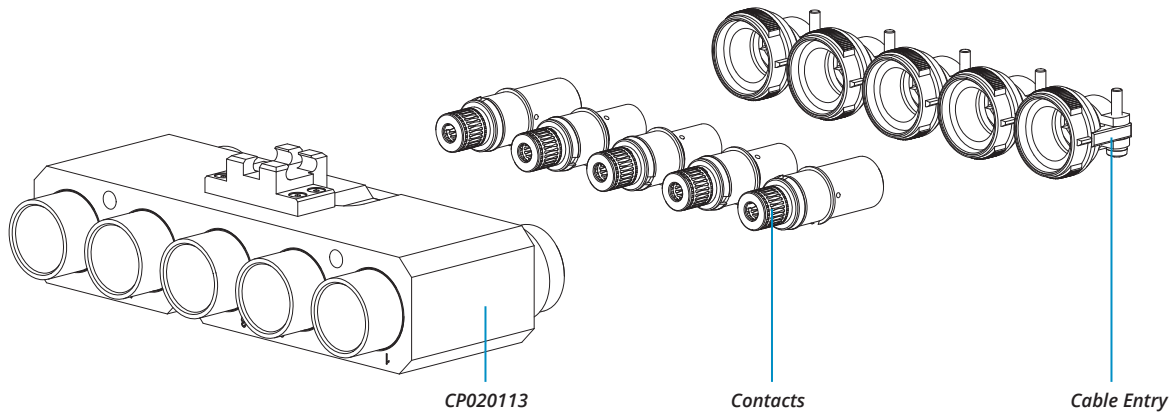
ENVIRONMENTAL CHARACTERISTICS

Connectors working temperature	IP Protection degree (EN 60529)
-55°C ÷ +180°C	IP67 (when mated)

MECHANICAL CHARACTERISTICS

Mating system	Mating endurance	Shock and vibrations tests (EN 61373)
Single locking lever Alignment polarized columns	200 mating cycles minimum	Body mounted, cat. 1, class B

CP020113 - 5 poles rectangular power connector



CP	Series Code	CP25A	Version CP020113
5	Poles Number	5	Multipoles
06	Shell Type **	06	Plug
		09	Under Box
P	Contact Gender	S	Socket contacts
		P	Pin contacts
xx	Polarization Code	xx	Polarization xx
LC	Contact Size *	LC	Less contacts (to be purchased separately - size 30)
		95	Double band, for wire section 95mm ² (CP485 2-30-95)
		120	Double band, for wire section 120mm ² (CP485 2-30-120)
		150	Double band, for wire section 150mm ² (CP485 2-30-150)
		185	Double band, for wire section 185mm ² (CP485 2-30-185)
		240	Double band, for wire section 240mm ² (CP485 2-30-240)
		262	Double band, for wire section MCM262 (CP485 2-30-262)
		535	Double band, for wire section MCM535 (CP485 2-30-535)
646	Double band, for wire section MCM646 (CP485 2-30-646)		
	Contact Type	-	Crimp Version
R18	Cable entry	R18	Cable clamp RF 3057-20C with reduction (18 – 25mm)
		R19	Cable clamp RF 3057-20C with reduction (20 – 27mm)
		R20	Cable clamp RF 3057-20C (23,4 – 31,8mm)
F12	Shell finish	F12	Black Hard Deep Anodization - not conductive (RoHS compliance)
		F16	CCF - Black passivation (RoHS compliance) - conductive
		F26	Hard anodization (RoHS compliance)
S	Modification Code <i>If required</i>	S	Customization (Consult our sales office)

* For details see page 36-37

** Plug or Receptacle can be used both with Socket or with Pin Contacts

CP520911 - 8 poles rectangular power connector

SCREW LOCKING



Rear mounting receptacle



Plug composed by 2 connectors with 4 poles

ELECTRICAL CHARACTERISTICS

Nominal voltage	Test Voltage	Current Rating	Air and creepage distances	Contact resistance	Insulating resistance
2.100V (PD4 - OV4)	7.500Vac	600A	According to EN 50124-1 Pollution degree: PD4 with protection degree IP67 (mated connectors) Over-voltage category: OV4	< 0,5 mΩ	> 5 GΩ

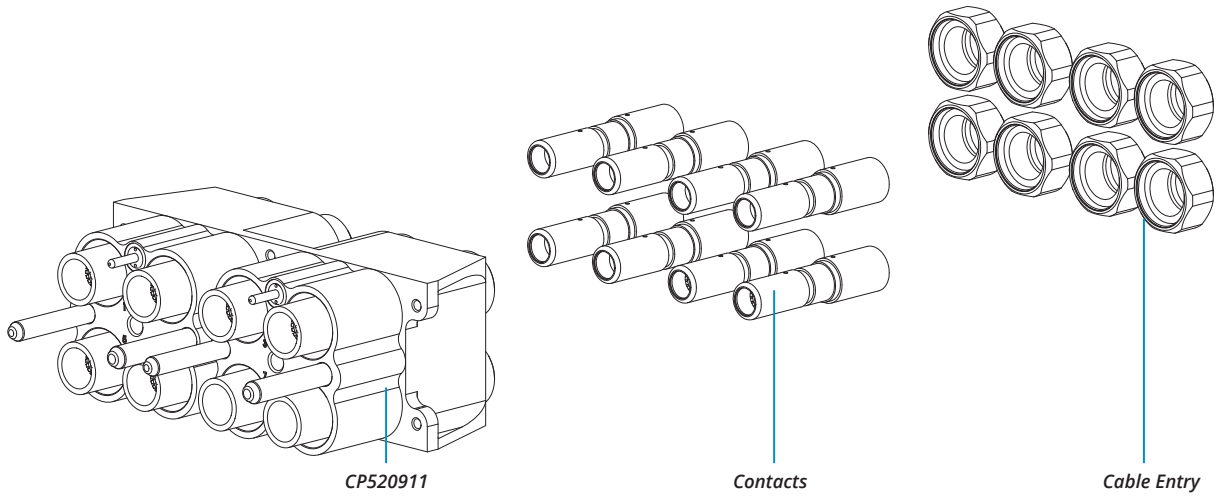
ENVIRONMENTAL CHARACTERISTICS

Connectors working temperature	IP Protection degree (EN 60529)
-40°C ÷ +100°C	IP67 (when mated)

MECHANICAL CHARACTERISTICS

Mating system	Mating endurance	Shock and vibrations tests (EN 61373)
Tightening screw	200 mating cycles minimum	Body mounted, cat. 1, class B

CP520911 - 8 poles rectangular power connector



CP	Series Code	CP25A	Version CP520911
8	Poles Number	8	Multipoles
06	Shell Type **	06	Plug
		03	Rear mounting receptacle
P	Contact Gender	S	Socket contacts
		P	Pin contacts
xx	Polarization Code	xx	Polarization xx
		LC	Less contacts (to be purchased separately - size 25L)
LC	Contact Size *	50	Single band, for wire section 50 mm ² - Long Contacts (CP485 1-25L-50)
		95	Single band, for wire section 95 mm ² - Long Contacts (CP485 1-25L-95)
		120	Single band, for wire section 120 mm ² - Long Contacts (CP485 1-25L-120)
		150	Single band, for wire section 150 mm ² - Long Contacts (CP485 1-25L-150)
		185	Single band, for wire section 185 mm ² - Long Contacts (CP485 1-25L-185)
	Contact Type	-	Crimp Version
R19	Cable entry	R18	Cable clamp RF 3057-20C with reduction (18 - 25mm)
		R19	Cable clamp RF 3057-20C with reduction (20 - 27mm)
		R20	Cable clamp RF 3057-20C (23,4 - 31,8mm)
F12	Shell finish	F12	Black Hard Deep Anodization - not conductive (RoHS compliance)
		F16	CCF - Black passivation (RoHS compliance) - conductive
		F26	Hard anodization (RoHS compliance)
S	Modification Code If required	S	Customization (Consult our sales office)

* For details see page 36-37

** Plug or Receptacle can be used both with Socket or with Pin Contacts

CP Connectors - Contacts

Pin Crimp Contacts



Order Number	Short Description	Contact size	Multi-points Contact band	Wire Section mm ²	AWG Cable size	Working current	Manual Crimping tool	Crimp Die	Stripping length (mm)
VS813006	CP485 1-20-50P**	20	***	50	-	500A	CRT-HT131****	CDI-ME17C* CDI-ME20C*	20
VS813007	CP485 1-20-70P**	20	***	70	-	500A	CRT-HT131****	CDI-ME20C* CDI-ME24C*	22* 24*
VS813008	CP485 1-20-95P**	20	***	95	-	500A	CRT-HT131****	CDI-ME24C	20
VS813009	CP485 1-20-120P**	20	***	120	-	500A	CRT-HT131****	CDI-ME29C	20
VS813010	CP485 1-20-92P**	20	***	92	3/0	500A	CRT-HT131****	CDI-ME24C	20
VS813011	CP485 1-20-112P**	20	***	112	4/0	500A	CRT-HT131****	CDI-ME30C	20
VS813039	CP485 1-22-50P	22	***	50	-	550A	CRT-HT131****	CDI-ME17C	20
VS813040	CP485 1-22-53P	22	***	53	1/0	550A	CRT-HT131****	CDI-ME14C	18
VS813041	CP485 1-22-70P	22	***	70	-	550A	CRT-HT131****	CDI-ME20C	22
VS813042	CP485 1-22-95P	22	***	95	-	550A	CRT-HT131****	CDI-ME29C	30
VS813043	CP485 1-22-150P	22	***	150	-	550A	CRT-HT131****	CDI-ME37C	29
VS813059	CP485 1-22C-35P	22	***	35	-	550A	CRT-HT45*	CDI-ME14*	14.5
VS813060	CP485 1-22C-50P	22	***	50	-	550A	CRT-HT45*	CDI-ME14*	14
VS813061	CP485 1-22C-70P	22	***	70	-	550A	CRT-HT131****	CDI-ME20C	19
VS813044	CP485 1-25L-50P**	25	***	50	-	600A	CRT-HT45*	CDI-ME14*	20
VS813045	CP485 1-25L-95P**	25	***	95	-	600A	CRT-HT131****	CDI-ME24C	30
VS813046	CP485 1-25L-120P**	25	***	120	-	600A	CRT-HT131****	CDI-ME29C	30
VS813047	CP485 1-25L-150P**	25	***	150	-	600A	CRT-HT131****	CDI-ME37C	29
VS813048	CP485 1-25L-185P**	25	***	185	-	600A	CRT-HT131****	CDI-ME37C	*
VS813012	CP485 2-30-95P	30	Double	95	-	1.000A	CRT-HT131****	CDI-ME24C	30
VS813013	CP485 2-30-120P	30	Double	120	-	1.000A	CRT-HT131****	CDI-ME29C	30
VS813014	CP485 2-30-150P	30	Double	150	-	1.000A	CRT-HT131****	CDI-ME37C	29
VS813015	CP485 2-30-185P	30	Double	185	-	1.000A	CRT-HT131****	*	*
VS813016	CP485 2-30-240P	30	Double	240	-	1.000A	CRT-HT131****	CDI-ME60C	40
VS813017	CP485 2-30-262P	30	Double	-	262 MCM	1.000A	CRT-HT131****	CDI-ME37C	27
VS813018	CP485 2-30-535P	30	Double	-	535 MCM	1.000A	CRT-HT131****	CDI-ME60C	40
VS813019	CP485 2-30-646P	30	Double	-	646 MCM	1.000A	CRT-HT131****	CDI-MK32C*	40

* Please, consul our commercial office

** TP = can be supplied with touch proof protections

*** On Socket contacts

**** On alternative: CRT-HT120

Working current to be checked with the specific cable characteristics

CP Connectors - Contacts

Socket Crimp Contacts



Order Number	Short Description	Contact size	Multi-points Contact band	Wire Section mm ²	AWG Cable size	Working current	Manual Crimping tool	Crimp Die	Stripping length (mm)
VS813025	CP485 1-20-50S	20	Single	50	-	500A	CRT-HT131****	CDI-ME17C* CDI-ME20C*	20
VS813026	CP485 1-20-70S	20	Single	70	-	500A	CRT-HT131****	CDI-ME20C* CDI-ME24C*	22* 24*
VS813027	CP485 1-20-95S	20	Single	95	-	500A	CRT-HT131****	CDI-ME24C	20
VS813028	CP485 1-20-120S	20	Single	120	-	500A	CRT-HT131****	CDI-ME29C	20
VS813029	CP485 1-20-92S	20	Single	92	3/0	500A	CRT-HT131****	CDI-ME24C	20
VS813030	CP485 1-20-112S	20	Single	112	4/0	500A	CRT-HT131****	CDI-ME30C	20
VS813049	CP485 1-22-50S	22	Single	50	-	550A	CRT-HT131****	CDI-ME17C	20
VS813050	CP485 1-22-53S	22	Single	53	1/0	550A	CRT-HT131****	CDI-ME14C	18
VS813051	CP485 1-22-70S	22	Single	70	-	550A	CRT-HT131****	CDI-ME20C	22
VS813052	CP485 1-22-95S	22	Single	95	-	550A	CRT-HT131****	CDI-ME29C	30
VS813053	CP485 1-22-150S	22	Single	150	-	550A	CRT-HT131****	CDI-ME37C	29
VS813062	CP485 1-22C-35S	22	Single	35	-	550A	CRT-HT45*	CDI-ME14*	14.5
VS813063	CP485 1-22C-50S	22	Single	50	-	550A	CRT-HT45*	CDI-ME14*	14
VS813064	CP485 1-22C-70S	22	Single	70	-	550A	CRT-HT131****	CDI-ME20C	19
VS813054	CP485 1-25L-50S	25	Single	50	-	600A	CRT-HT45*	CDI-ME14*	20
VS813055	CP485 1-25L-95S	25	Single	95	-	600A	CRT-HT131****	CDI-ME24C	30
VS813056	CP485 1-25L-120S	25	Single	120	-	600A	CRT-HT131****	CDI-ME29C	30
VS813057	CP485 1-25L-150S	25	Single	150	-	600A	CRT-HT131****	CDI-ME37C	29
VS813058	CP485 1-25L-185S	25	Single	185	-	600A	CRT-HT131****	CDI-ME37C	*
VS813031	CP485 2-30-95S**	30	***	95	-	1.000A	CRT-HT131****	CDI-ME24C	30
VS813032	CP485 2-30-120S**	30	***	120	-	1.000A	CRT-HT131****	CDI-ME29C	30
VS813033	CP485 2-30-150S**	30	***	150	-	1.000A	CRT-HT131****	CDI-ME37C	29
VS813034	CP485 2-30-185S**	30	***	185	-	1.000A	CRT-HT131****	*	*
VS813035	CP485 2-30-240S**	30	***	240	-	1.000A	CRT-HT131****	CDI-ME60C	40
VS813036	CP485 2-30-262S**	30	***	-	262 MCM	1.000A	CRT-HT131****	CDI-ME37C	27
VS813037	CP485 2-30-535S**	30	***	-	535 MCM	1.000A	CRT-HT131****	CDI-ME60C	40
VS813038	CP485 2-30-646S**	30	***	-	646 MCM	1.000A	CRT-HT131****	CDI-MK32C*	40

* Please, consul our commercial office

** Contacts TP 2-30-xx = supplied with touch proof protections

*** On Pin contacts

**** On alternative: CRT-HT120

Working current to be checked with the specific cable characteristics

Cable Clamp C type

Accessories For Connectors

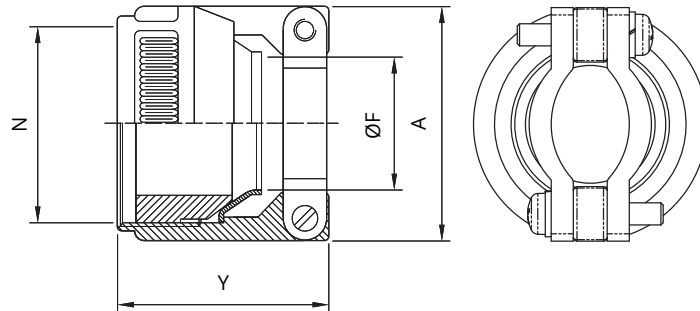
IP67

RF 3057 - ...C water tight Cable Clamp

Besides guaranteeing an excellent mechanical strain relief keeping the cable in the centre of the connector, these cable-clamps are provided with an internal conical rubber bushing ensuring waterproof protection.

The screws in stainless steel have elastic rose-cut antivibration head.

With gasket in flame resistant rubber.



Finishes : F16 CCF - Black passivation (*RoHS compliance*) - conductive

Type	Part Number flame resistant rubber	Short Description flame resistant rubber	Y max	A max	ØF cable min max	N Thread in inches
12C	VS705325	RF 3057-12C F16	35.7	37.5	11.3 19	1" 3/16-18 UNEF
12C	VS705330	RF 3057-12C R09 F16	35.7	37.5	7 11	1" 3/16-18 UNEF
12C	VS705331	RF 3057-12C R10 F16	35.7	37.5	14 21	1" 3/16-18 UNEF
16C	VS705326	RF 3057-16C F16	39	43.5	15.5 23.8	1" 7/16-18 UNEF
16C	VS705332	RF 3057-16C R12 F16	39	43.5	10.5 18.5	1" 7/16-18 UNEF
16C	VS705333	RF 3057-16C R14 F16	39	43.5	12.5 20.8	1" 7/16-18 UNEF
20C	VS705327	RF 3057-20C F16	44.8	54	23.4 31.8	1" 3/4-18 UNS
20C	VS705334	RF 3057-20C R18 F16	44.8	54	18 25	1" 3/4-18 UNS
20C	VS705335	RF 3057-20C R19 F16	44.8	54	20 27	1" 3/4-18 UNS
24C	VS705328	RF 3057-24C F16	52	58	25.4 35	2"-18 UNS
28C	VS705329	RF 3057-28C F16	52.3	63.5	30 41.3	2"1/4-16 UN

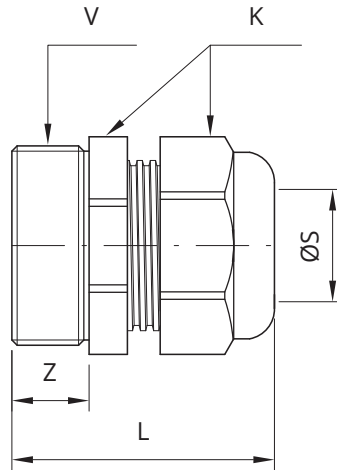
Dimensions in mm

Cable Gland - Metric threaded

Accessories For Connectors

These glands guarantee an excellent strain relief resistance with waterproof protection (IP68 and IP69). The body is in metallic material (Brass with nickel finish – operating temperature -30 °C to +100 °C). They prevent the cable from twisting when coupling the connectors.

These adapters are available with metric thread.



Metallic cable glands

Part Number	Short Description	V	ØS Clamping range	K	Z	L
VS705015	AL M32 M	M32x1.5	11-21	36	10	47
VS705016	AL M40 M	M40x1.5	19-28	46	10	52

Metallic cable glands - Shielded

Part Number	Short Description	V	ØS Clamping range	K	Z	L
VS705067	AL M32 E	M32x1.5	11-21	36	9	45.5
On Request	AL M40 E	M40x1.5	19-28	45	9	48

Dimensions in mm

CP - Screw locking

MOTOR TO BOGIE, INTERVEHICLE, JUMPERS

CP520911 - 410A

Page 46

- 2 poles, 410A
- screw locking system



CP520911 - DC

Page 48

- 2 poles, 1.000A
- screw locking system



CP160913

Page 49

- 3 poles, 240A
- screw locking system



PW3

Page 50

- 3 poles, 450A
- screw locking system



CP030616

Page 52

- 3 poles, 350A
- screw locking system



CP030616-38-09S M060

Page 53

- 3 power cables entry - 3 cables exit



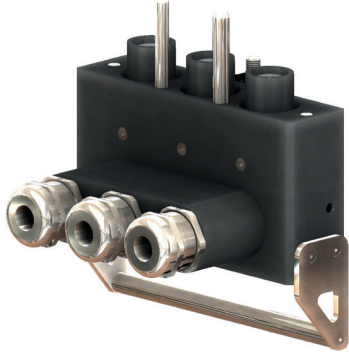
CP - Screw locking

MOTOR TO BOGIE, INTERVEHICLE, JUMPERS

CP010218

Page 54

- 3 poles, 500A
- screw locking system



CP520911-3PH

Page 55

- 4 poles, 500A
- screw locking system



CP520911

Page 56

- 8 poles, 1.000A
- screw locking system



CP120312

Page 58/60

- 4+4 poles, 245A
- screw locking system



CP120312

Page 59/60

- 4+4 poles, 245A
- screw locking system



CP - Locking Lever - 3 poles

MOTOR TO BOGIE, INTERVEHICLE, JUMPERS

CP011219

Page 61/63

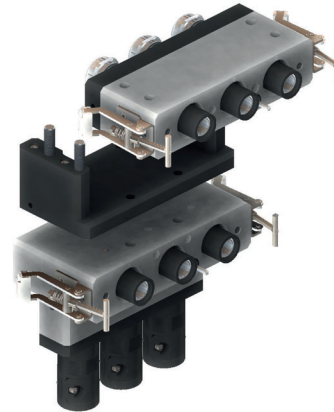
- 3 poles, 600A
- double locking levers system



CP011219 + CP020120

Page 62/63

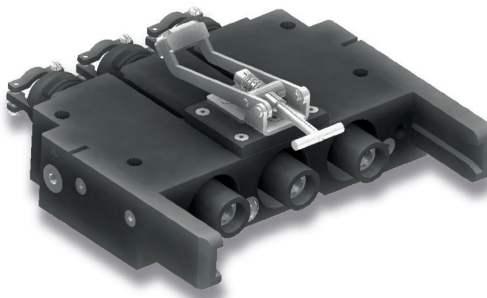
- 3 + 3 poles, 600A/450A
- double locking levers system



CP060212

Page 64

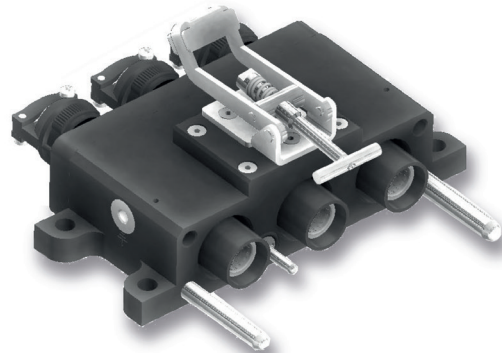
- 3 poles, 350A
- single locking lever system



CP150916

Page 66

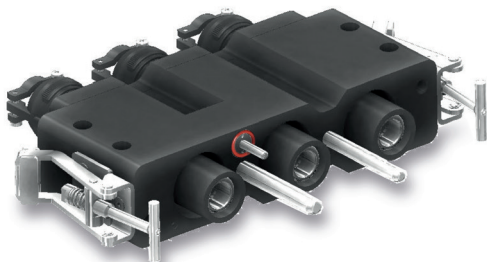
- 3 poles, 550A
- single locking lever system



CP160613-450A

Page 67

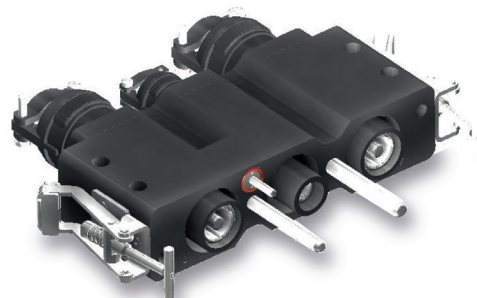
- 3 poles, 450A
- double locking levers system



CP160613-900A

Page 68

- 3 poles, 900A
- double locking levers system



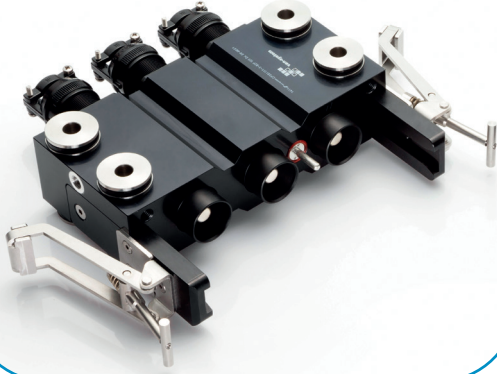
CP - Locking Lever - 3 / 4 / 5 poles

MOTOR TO BOGIE, INTERVEHICLE, JUMPERS

CP581111

Page 69

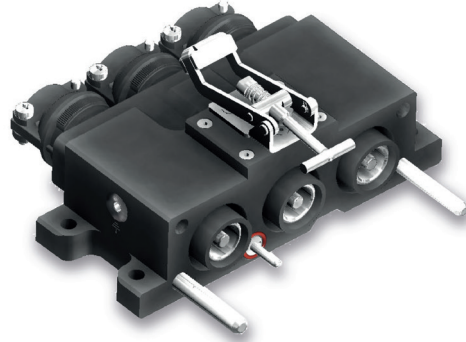
- 3 poles, 400A
- double locking levers system with anti-vibration - elastic supports



CP020113

Page 70

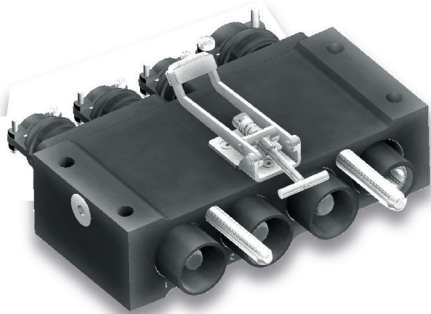
- 3 poles, 800A
- single locking lever system



CP291215

Page 71

- 4 poles, 600A
- single locking lever system



CP020113

Page 72

- 5 poles, 1.000A
- single locking lever system



CP220211

Page 73

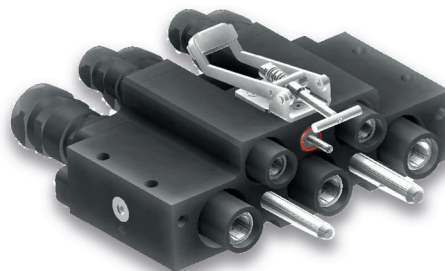
- 5 poles, 600A/700A
- double locking levers system



CP191013

Page 74

- 5 poles, 675A
- single locking lever system



CP - Power Boxes

JUNCTION BOXES

CP120616

Page 75

- type T junction box
- for 6 cable section 50mm²
- 225A / 450A



CP010718

Page 77

- type T junction box
- for 6 cable section 50mm²
- 225A / 450A



CP331112

Page 78

- type Y junction box
- entry of 3 feeding cables
- exit with 2 connectors
- 250A / 500A



CP060414

Page 80

- type Y junction box
- entry of 3 feeding cables
- exit of 6 cables
- 225A / 450A



CPB050317/BT2

Page 81

Junction Box with metal fixing frame and 2 bayonet connectors



CPB050317/BT3

Page 82

Junction Box with metal fixing frame and bayonet connector



CP - Power Boxes

JUNCTION BOXES

- CP041020/CP051020/CP061020** *Page 83/84/85*
- AT deviation box



- PB400611** *Page 86*
- 3 Ways Junction Box



- PB400611-06-50** *Page 87*
- 3 Ways Junction Box



- PB030113** *Page 88*
- 3 Ways Junction Box



LJP - LUG JOINT PROTECTOR

- RF LJP 1 PH36** *Page 90*
- LJP - Lug Joint Protector



CP520911 - Connector with 2 contacts + ground contact

SCREW LOCKING



Main application: Battery connection

Conforms European norm EN50467 "Railway applications - rolling stock - electrical connectors requirements and test methods" (where applicable)

Part Number	Short Description	Description
VS289015	CP520911-2-06P-70-M016A	Connector with 2 Pin contacts + ground contact, crimp termination for 70mm ² cables, straight plug. Mating Configuration A
VS289014	CP520911-2-03S-70-M016A	Connector with 2 Socket contacts + ground contact, crimp termination for 70mm ² cables, rear panel mounting receptacle. Mating Configuration A

ELECTRICAL CHARACTERISTICS

Nominal voltage	Test Voltage	Working current	Air and creepage distances	Contact resistance	Insulating resistance
300V (PD4 - OV4)	1.750Vac	410A	According to EN 50124-1 Pollution degree: PD4 with protection degree IP67 (mated connectors) Over-voltage category: OV4	< 0,5 mΩ	> 5 GΩ

ENVIRONMENTAL CHARACTERISTICS

Connectors working temperature	IP Protection degree (EN 60529)
-40°C ÷ +100°C	IP67 (when mated)

MECHANICAL CHARACTERISTICS

Mating system	Mating endurance	Shock and vibrations tests (EN 61373)
Tightening screw	200 mating cycles minimum	Body mounted, cat. 1, class B

Z-B.Bus

CP520911 - Connector with 2 contacts + ground contact

SCREW LOCKING



Main application: Battery connection

Conforms European norm EN50467 "Railway applications - rolling stock - electrical connectors requirements and test methods" (where applicable)

Part Number	Short Description	Description
VS289017	CP520911-2-06P-70-M016B	Connector with 2 Pin contacts + ground contact, crimp termination for 70mm ² cables, straight plug. Mating Configuration B
VS289016	CP520911-2-03S-70-M016BS	Connector with 2 Socket contacts + ground contact, crimp termination for 70mm ² cables, rear panel mounting receptacle. Mating Configuration B

ELECTRICAL CHARACTERISTICS

Nominal voltage	Test Voltage	Working current	Air and creepage distances	Contact resistance	Insulating resistance
3.600V (PD4 – OV3)	10.500Vac	410A	According to EN 50124-1 Pollution degree: PD4 with protection degree IP67 (mated connectors) Over-voltage category: OV3	< 0,5 mΩ	> 5 GΩ

ENVIRONMENTAL CHARACTERISTICS

Connectors working temperature	IP Protection degree (EN 60529)
-40°C ÷ +100°C	IP67 (when mated)

MECHANICAL CHARACTERISTICS

Mating system	Mating endurance	Shock and vibrations tests (EN 61373)
Tightening screw	200 mating cycles minimum	Body mounted, cat. 1, class B

Z-Acm

CP520911 - 2 poles rectangular power connector

SCREW LOCKING



Main application: Battery connection

Conforms European norm EN50467 "Railway applications - rolling stock - electrical connectors requirements and test methods" (where applicable)

Part Number	Short Description	Description
VS289019	CP520911-2-06P-185-M016	Connector with 2 Pin contacts + ground contact, crimp termination for 185mm ² cables, straight plug
VS289018	CP520911-2-03S-150-M016	Connector with 2 Socket contacts + ground contact, crimp termination for 150mm ² cables, rear panel mounting receptacle

ELECTRICAL CHARACTERISTICS

Nominale voltage	Test Voltage	Working current	Air and creepage distances	Contact resistance	Insulating resistance
3.600V (PD4 - OV3)	10.700Vac	1.000A	According to EN 50124-1 Pollution degree: PD4 with protection degree IP67 (mated connectors) Over-voltage category: OV3	< 0,5 mΩ	> 5 GΩ

ENVIRONMENTAL CHARACTERISTICS

Connectors working temperature	IP Protection degree (EN 60529)
-40°C ÷ +100°C	IP67 (when mated)

MECHANICAL CHARACTERISTICS

Mating system	Mating endurance	Shock and vibrations tests (EN 61373)
Tightening screw Z-DC	200 mating cycles minimum	Body mounted, cat. 1, class B

CP160913 - 3 poles rectangular power connector

SCREW LOCKING



Main application: Motor to vehicle connection

Conforms European norm EN50467 "Railway applications - rolling stock - electrical connectors requirements and test methods" (where applicable)

Part Number	Short Description	Description
VS289052	CP160913-3-04P-M001	Power receptacle connector with 3 Pin contacts + ground contact
VS289053	CP160913-3-04S-M001	Power plug connector with 3 Socket contacts + ground contact

ELECTRICAL CHARACTERISTICS

Nomiale voltage	Test voltage (EN 60077-1)	Working current	Max. current (20°C)	Starting current (80°C)	Air and creepage distances	Contact resistance	Insulating resistance
900V (PD4 - OV4)	3.300Vac	240A	240A	370A	According to EN 50124-1 Pollution degree: PD4 with protection degree IP67 (mated connectors) Over-voltage category: OV4	< 0,5 mΩ	> 5 GΩ

ENVIRONMENTAL CHARACTERISTICS

Connectors working temperature	IP Protection degree (EN 60529)
-55°C ÷ +125°C	IP67 (when mated)

MECHANICAL CHARACTERISTICS

Mating system	Mating endurance	Shock and vibrations tests (EN 61373)
Tightening screws	200 mating cycles minimum	Body mounted, cat. 1, class B

Sir

PW3 - 3 poles power connector

SCREW LOCKING



Main application: Power connection

Conforms European norm EN50467 "Railway applications - rolling stock - electrical connectors requirements and test methods" (where applicable)

Part Number	Short Description	Description
On request	PW3 99DA 32P1 SA 1-25-150 MH40E F16	Power receptacle connector with 3 socket contacts + EMI Shield crimp for 150÷185 mm ² with metallic louver multipoint contact Cable retention with cable gland M40x1.5 with shield continuity
On request	PW3 06DA 32P1 PA 1-25-150 MH40E F16	Power Plug connector with 3 pin contacts + EMI shield crimp for 150÷185 mm ² Cable retention with cable gland M40x1.5 with shield continuity

ELECTRICAL CHARACTERISTICS

Nominal voltage	Test voltage (EN 60077-1)	Working current	Air and creepage distances	Contact resistance	Insulating resistance
1.500V (PD4 - OV4)	5.600Vac	450A	According to EN 50124-1 Pollution degree: PD4 with protection degree IP67 (mated connectors) Over-voltage category: OV4	< 0,5 mΩ	> 5 GΩ

ENVIRONMENTAL CHARACTERISTICS

Connectors working temperature	IP Protection degree (EN 60529)
-55°C ÷ +125°C	IP67 (when mated)

MECHANICAL CHARACTERISTICS

Mating system	Mating endurance	Shock and vibrations tests (EN 61373)
Tightening screws	200 mating cycles minimum	Category 2, bogie mounted

PW3 - 3 poles power connector

SCREW LOCKING



Main application: Power connection

Conforms European norm EN50467 "Railway applications - rolling stock - electrical connectors requirements and test methods" (where applicable)

Part Number	Short Description	Description
On request	PW3-99DA 32P1 SA LC 1-25-xx MH40E F16	Power receptacle connector with 3 socket contacts + EMI Shield crimp for 150÷185 mm ² with metallic louver multipoint contact (to be purchased separately) Cable retention with cable gland M40x1.5 with shield continuity
On request	PW3-06DA 32P1 PA LC 1-25-xx MH40E F16	Power Plug connector with 3 pin contacts + EMI shield crimp for 150÷185 mm ² (to be purchased separately) Cable retention with cable gland M40x1.5 with shield continuity

ELECTRICAL CHARACTERISTICS

Nominal voltage	Test voltage (EN 60077-1)	Working current	Air and creepage distances	Contact resistance	Insulating resistance
1.500V (PD4 - OV4)	5.600Vac	450A	According to EN 50124-1 Pollution degree: PD4 with protection degree IP67 (mated connectors) Over-voltage category: OV4	< 0,5 mΩ	> 5 GΩ

ENVIRONMENTAL CHARACTERISTICS

Connectors working temperature	IP Protection degree (EN 60529)
-55°C ÷ +125°C	IP67 (when mated)

MECHANICAL CHARACTERISTICS

Mating system	Mating endurance	Shock and vibrations tests (EN 61373)
Tightening screws	200 mating cycles minimum	Category 2, bogie mounted

CP030616 - 3 poles rectangular power connector

SCREW LOCKING



Main application: Motor to vehicle connection

Conforms European norm EN50467 "Railway applications - rolling stock - electrical connectors requirements and test methods" (where applicable)

Part Number	Short Description	Description
VS289171	CP030616-3-06P	Connector with 3 Pin contacts + ground contact, crimp termination for 50mm ² cables, straight plug
VS289170	CP030616-38-09S	Connector with 3 Socket contacts + ground contact, crimp termination for 50mm ² cables, rear panel mounting receptacle

ELECTRICAL CHARACTERISTICS

Nominal voltage	Test voltage (EN 60077-1)	Working current	Air and creepage distances	Contact resistance	Insulating resistance
3.250V (PD4 - OV3)	9.800Vac	350A	According to EN 50124-1 Pollution degree: PD4 with protection degree IP67 (mated connectors) Over-voltage category: OV3	< 0,5 mΩ	> 5 GΩ

ENVIRONMENTAL CHARACTERISTICS

Connectors working temperature	IP Protection degree (EN 60529)
-55°C ÷ +250°C	IP67 (when mated)

MECHANICAL CHARACTERISTICS

Mating system	Mating endurance	Shock and vibrations tests (EN 61373)
Tightening screw	150 mating cycles minimum	Category 2, bogie mounted

TS

CP030616-38-09S M060 - 3 power cables entry – 3 cables exit

SCREW LOCKING



Main application: Motor Connection

Contacts nr: 3 Socket designed for direct connection to Lug
 Mating system composed by: Alignment columns for assisted coupling
 Threaded hole for safe locking

Part Number	Short Description	Description
on request	CP030616-38-09S M060	Power receptacle connector with 3 socket contacts + ground contact ,exit bar at 90°

ELECTRICAL CHARACTERISTICS

Nominal voltage	Test voltage (EN 60077-1)	Working current	Air and creepage distances	Contact resistance	Insulating resistance
3.250V (PD4 - OV3)	9.800Vac	350A	According to EN 50124-1 Pollution degree: PD4 with protection degree IP67 (mated connectors) - Over-voltage category: OV3	< 0,5 mΩ	> 5 GΩ

ENVIRONMENTAL CHARACTERISTICS

Connectors working temperature	Rated insulation voltage UNm	IP Protection degree (EN 60529)
- 55°C ÷ +250°C	3900V	IP67 (connectors mated)

MECHANICAL CHARACTERISTICS

External metal shell	Screws	Thermoplastic Resin	Shock and vibrations tests (EN 61373)
Metal shells: aluminum alloy Gray anodic oxidation	Stainless Steel	Thermoplastic resin, Silicone compound Fire behaviour according to EN 45545-2 HL2	Category 2 bogie mounted

CP010218 - 3 poles rectangular power connector

SCREW LOCKING



Main application: Power connection

Conforms European norm EN50467 "Railway applications - rolling stock - electrical connectors requirements and test methods" (where applicable)

Part Number	Short Description	Description
VS289184	CP010218-38-09PZ	Power Receptacle connector with 3 contacts . Cable exit at 90° - Mating configuration Z Contacts nr: 3 Socket - Contact termination able to connect with Lug according to standard NFF 00363 (up to 150 mm ²)
VS289183	CP010218-38-09PC	Power Receptacle connector with 3 contacts . Cable exit at 90° - Mating configuration C Contacts nr: 3 Socket - Contact termination able to connect with Lug according to standard NFF 00363 (up to 150 mm ²)
VS289182	CP010218-38-06S	Power plug connector with 3 contacts . Cable exit at 90° - Mating configuration Z / C Contacts nr: 3 Socket - Contact termination able to connect with Lug according to standard NFF 00363 (up to 150 mm ²)

ELECTRICAL CHARACTERISTICS

Nominal voltage	Test Voltage	Working current	Clearances and creepage distances According to EN 50124-1	Contact resistance	Insulating resistance
750V (PD4 - OV4)	3300Vac	500A	Pollution degree: PD4 with protection degree IP67 (mated connectors) Over-voltage category: OV4	< 0,5 mΩ	> 5 GΩ
1.500V (PD4 - OV1)	6400Vac	500A	Pollution degree: PD4 with protection degree IP67 (mated connectors) Over-voltage category: OV1	< 0,5 mΩ	> 5 GΩ

ENVIRONMENTAL CHARACTERISTICS

Connectors working temperature	IP Protection degree (EN 60529)
-55°C ÷ +125°C	IP67 (when mated)

MECHANICAL CHARACTERISTICS

Mating system	Mating endurance	Shock and vibrations tests (EN 61373)
Two secure lock screws + Nord-lock	200 mating cycles minimum	Category 2, bogie mounted

AI-Bel

CP520911 - Connector with 4 contacts + ground contact

SCREW LOCKING



Main application: Motor to vehicle connection

Conforms European norm EN50467 "Railway applications - rolling stock - electrical connectors requirements and test methods" (where applicable)

Part Number	Short Description	Description
VS289013	CP520911-4-06P-50-M016	Connector with 4 Pin contacts + ground contact, crimp termination for 50mm ² cables, straight plug
VS289012	CP520911-4-03S-70-M016	Connector with 4 Socket contacts + ground contact, crimp termination for 70mm ² cables, rear panel mounting receptacle
VS289011	CP520911-4-06P-95-M016	Connector with 4 Pin contacts + ground contact, crimp termination for 95mm ² cables, straight plug
VS289010	CP520911-4-03S-95-M016	Connector with 4 Socket contacts + ground contact, crimp termination for 95mm ² cables, rear panel mounting receptacle

ELECTRICAL CHARACTERISTICS

Nominal voltage	Test Voltage	Working current	Air and creepage distances	Contact resistance	Insulating resistance
660V (PD4 - OV4)	10.500Vac	500A	According to EN 50124-1 Pollution degree: PD4 with protection degree IP67 (mated connectors) Over-voltage category: OV4	< 0,5 mΩ	> 5 GΩ

ENVIRONMENTAL CHARACTERISTICS

Connectors working temperature	IP Protection degree (EN 60529)
-40°C ÷ +100°C	IP67 (when mated)

MECHANICAL CHARACTERISTICS

Mating system	Mating endurance	Shock and vibrations tests (EN 61373)
Tightening screw	200 mating cycles minimum	Body mounted, cat. 1, class B

3PH

CP520911 - 8 poles rectangular power connector

SCREW LOCKING



Main application: Motor to vehicle connection

Conforms European norm EN50467 "Railway applications - rolling stock - electrical connectors requirements and test methods" (where applicable)

Part Number	Short Description	Description
VS289007	CP520911-8-03S-240-M016	Connector with 8 Socket contacts + ground contact, crimp termination for 240mm ² cables, rear panel mounting receptacle

To be mated with 2 connectors CP520911 - 4 poles (page 57)

ELECTRICAL CHARACTERISTICS

Nominal voltage	Test Voltage	Working current	Air and creepage distances	Contact resistance	Insulating resistance
2.100V (PD4 - OV4)	7.500Vac	1.000A	According to EN 50124-1 Pollution degree: PD4 with protection degree IP67 (mated connectors) Over-voltage category: OV4	< 0,5 mΩ	> 5 GΩ

ENVIRONMENTAL CHARACTERISTICS

Connectors working temperature	IP Protection degree (EN 60529)
-40°C ÷ +100°C	IP67 (when mated)

MECHANICAL CHARACTERISTICS

Mating system	Mating endurance	Shock and vibrations tests (EN 61373)
Tightening screw Z-Lcm	200 mating cycles minimum	Body mounted, cat. 1, class B

CP520911 - 4 poles rectangular power connector

SCREW LOCKING



Main application: Motor to vehicle connection

Conforms European norm EN50467 "Railway applications - rolling stock - electrical connectors requirements and test methods" (where applicable)

Part Number	Short Description	Description
VS289008	CP520911-4-06P-240-M016A	Connector with 4 Pin contacts + ground contact, crimp termination for 240mm ² cables, straight plug - Mating Configuration A
VS289009	CP520911-4-06P-240-M016B	Connector with 4 Pin contacts + ground contact, crimp termination for 240mm ² cables, straight plug - Mating Configuration B

ELECTRICAL CHARACTERISTICS

Nominal voltage	Test Voltage	Working current	Air and creepage distances	Contact resistance	Insulating resistance
2.100V (PD4 - OV4)	7.500Vac	1.000A	According to EN 50124-1 Pollution degree: PD4 with protection degree IP67 (mated connectors) Over-voltage category: OV4	< 0,5 mΩ	> 5 GΩ

ENVIRONMENTAL CHARACTERISTICS

Connectors working temperature	IP Protection degree (EN 60529)
-40°C ÷ +100°C	IP67 (when mated)

MECHANICAL CHARACTERISTICS

Mating system	Mating endurance	Shock and vibrations tests (EN 61373)
Tightening screw Z-LCM	200 mating cycles minimum	Body mounted, cat. 1, class B

CP120312-4-09S-35-M013 - 4 poles rectangular power connector

SCREW LOCKING



Main application: Rheostat

Conforms European norm EN50467 "Railway applications - rolling stock - electrical connectors requirements and test methods" (where applicable)

Part Number	Short Description	Description
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VS289203	CP120312-4-09SA-35-M013	Power receptacle connector with 4 socket contacts - crimp for 35 mm ² Cable retention with cable gland M32 - A polarization
VS289205	CP120312-4-09SB-35-M013	Power receptacle connector with 4 socket contacts - crimp for 35 mm ² Cable retention with cable gland M32 - B polarization

ELECTRICAL CHARACTERISTICS

Nominal voltage	Test Voltage EN 60077-1	Working current	Air and creepage distances	Contact resistance	Insulating resistance
2.000V (PD4 - OV3) *	8.200Vac	245A	According to EN 50124-1 Pollution degree: PD4 with protection degree IP67 (mated connectors) Over-voltage category: OV3	< 0,5 mΩ	> 5 GΩ

* Rated insulation voltage UNm: 2400V

ENVIRONMENTAL CHARACTERISTICS

Connectors working temperature	IP Protection degree (EN 60529)
- 55°C ÷ +125°C	IP67 (when mated)

MECHANICAL CHARACTERISTICS

Mating system	Mating endurance	Shock and vibrations tests (EN 61373)
Holes for alignment and polarization columns for assisted coupling Screw holes for secure lock screw	200 mating cycles minimum	Category 2, bogie mounted

Reo

CP120312-4-06P-35-M059 - 4 poles rectangular power connector

SCREW LOCKING



Main application: Rheostat

Conforms European norm EN50467 "Railway applications - rolling stock - electrical connectors requirements and test methods" (where applicable)

Part Number	Short Description	Description
VS289202	CP120312-4-06PA-35-M059	Power Plug connector with 4 Pin contacts - crimp for 35 mm ² Cable retention with cable gland M32 (with Shield continuity) - A polarization
VS289204	CP120312-4-06PB-35-M059	Power Plug connector with 4 Pin contacts - crimp for 35 mm ² Cable retention with cable gland M32 (with Shield continuity) - B polarization

ELECTRICAL CHARACTERISTICS

Nominal voltage	Test Voltage EN 60077-1	Working current	Air and creepage distances	Contact resistance	Insulating resistance
2.000V (PD4 - OV3) *	8.200Vac	245A	According to EN 50124-1 Pollution degree: PD4 with protection degree IP67 (mated connectors) Over-voltage category: OV3	< 0,5 mΩ	> 5 GΩ

* Rated insulation voltage UNm: 2400V

ENVIRONMENTAL CHARACTERISTICS

Connectors working temperature	IP Protection degree (EN 60529)
- 55°C ÷ +125°C	IP67 (when mated)

MECHANICAL CHARACTERISTICS

Mating system	Mating endurance	Shock and vibrations tests (EN 61373)
Alignment and polarization columns for assisted coupling Secure lock screw with Nord-lock vibration proof washers	200 mating cycles minimum	Category 2, bogie mounted

Reo

CP120312-4-35-M013 - 4+4 poles rectangular power connector

SCREW LOCKING



Main application: Rheostat

Conforms European norm EN50467 "Railway applications - rolling stock - electrical connectors requirements and test methods" (where applicable)

Part Number	Short Description	Description
VS289203	CP120312-4-09SA-35-M013	Power receptacle connector with 4 socket contacts - crimp for 35 mm ² Cable retention with cable gland M32 - A polarization
VS289205	CP120312-4-09SB-35-M013	Power receptacle connector with 4 socket contacts - crimp for 35 mm ² Cable retention with cable gland M32 - B polarization
VS289202	CP120312-4-06PA-35-M059	Power Plug connector with 4 Pin contacts - crimp for 35 mm ² Cable retention with cable gland M32 (with Shield continuity) - A polarization
VS289204	CP120312-4-06PB-35-M059	Power Plug connector with 4 Pin contacts - crimp for 35 mm ² Cable retention with cable gland M32 (with Shield continuity) - B polarization
VS289206	CP120312-09	Spacer for power receptacle connector (2 pieces)

ELECTRICAL CHARACTERISTICS

Nominal voltage	Test Voltage EN 60077-1	Working current	Air and creepage distances	Contact resistance	Insulating resistance
2.000V (PD4 - OV3) *	8.200Vac	245A	According to EN 50124-1 Pollution degree: PD4 with protection degree IP67 (mated connectors) Over-voltage category: OV3	< 0,5 mΩ	> 5 GΩ

* Rated insulation voltage UNm: 2400V

ENVIRONMENTAL CHARACTERISTICS

Connectors working temperature	IP Protection degree (EN 60529)
- 55°C ÷ +125°C	IP67 (when mated)

MECHANICAL CHARACTERISTICS

Mating system	Mating endurance	Shock and vibrations tests (EN 61373)
Alignment and polarization columns for assisted coupling Secure lock screw with Nord-lock vibration proof washers	200 mating cycles minimum	Category 2, bogie mounted

Reo

CP011219 - 3 poles rectangular power connector

LOCKING LEVER



Main application: Power Connection

Conforms European norm EN50467 "Railway applications - rolling stock - electrical connectors requirements and test methods" (where applicable)

Part Number	Short Description	Description
VS289208	CP011219 4 09S 313 M058	Power receptacle connector with 3 Socket contacts - for MCM313 (159 mm ²) Cable retention with cable gland - Metallic louver multipoint contact
VS289209	CP011219 3 08P 313 M058	Power plug 90° connector with 3 Pin contacts - crimp for MCM313 Cable retention with reinforced cable clamp - Metallic louver multipoint contact

ELECTRICAL CHARACTERISTICS

Nominal voltage	Test Voltage	Working current	Air and creepage distances	Contact resistance	Insulating resistance
750V (PD4 - OV4)	3.700Vac *	600A (contact MCM313)	According to EN 50124-1 Pollution degree: PD4 with protection degree IP67 (mated connectors) Over-voltage category: OV4	< 0,5 mΩ	> 5 GΩ

* according to APTA SS-E-001-98

ENVIRONMENTAL CHARACTERISTICS

Connectors working temperature	IP Protection degree (EN 60529)
- 55°C ÷ +125°C	IP67 (when mated)

MECHANICAL CHARACTERISTICS

Mating system	Mating endurance	Shock and vibrations tests (EN 61373)
N° 2 alignment columns for assisted coupling N°2 mechanical lever for approach N° 2 secure lock screw with Heico-lock vibration proof washers	200 mating cycles minimum	Category 2, bogie mounted

Bal

CP020120 - 3 poles rectangular power connector

LOCKING LEVER



Main application: Power Connection

Conforms European norm EN50467 "Railway applications - rolling stock - electrical connectors requirements and test methods" (where applicable)

Part Number	Short Description	Description
VS289211	CP020120 08P 262 M058	Power plug 90° connector with 3 Pin contacts nr: 2 crimp for MCM262 (133 mm ²), nr: 1 crimp for AWG3/0 (92 mm ²) Cable retention with cable clamp, Metallic louver multipoint contact
VS289210	CP020120 3 09S 262 M058	Power receptacle connector with 3 socket contacts nr: 2 crimp for MCM262 (133 mm ²), nr: 1 crimp for AWG3/0 (92 mm ²) Cable retention with cable clamp, Metallic louver multipoint contact

ELECTRICAL CHARACTERISTICS

Nominal voltage	Test Voltage	Working current	Air and creepage distances	Contact resistance	Insulating resistance
750V (PD4 - OV4)	3.700Vac *	600A (contact MCM262) 450A (contact AWG3/0)	According to EN 50124-1 Pollution degree: PD4 with protection degree IP67 (mated connectors) Over-voltage category: OV4	< 0,5 mΩ	> 5 GΩ

* according to APTA SS-E-001-98

ENVIRONMENTAL CHARACTERISTICS

Connectors working temperature	IP Protection degree (EN 60529)
- 55°C ÷ +125°C	IP67 (when mated)

MECHANICAL CHARACTERISTICS

Mating system	Mating endurance	Shock and vibrations tests (EN 61373)
N° 2 alignment columns for assisted coupling N° 2 mechanical lever for approach N° 2 secure lock screw with Heico-lock vibration proof washers	200 mating cycles minimum	Category 2, bogie mounted

Bal

CP011219 + CP020120 - 3+3 poles rectangular power connector

LOCKING LEVER



Main application: Power Connection

Conforms European norm EN50467 "Railway applications - rolling stock - electrical connectors requirements and test methods" (where applicable)

Part Number	Short Description	Description
VS289211	CP020120 08P 262 M058	Power plug 90° connector with 3 Pin contacts nr: 2 crimp for MCM262 (133 mm ²), nr: 1 crimp for AWG3/0 (92 mm ²) Cable retention with cable clamp, Metallic louver multipoint contact
VS289210	CP020120 3 09S 262 M058	Power receptacle connector with 3 socket contacts nr: 2 crimp for MCM262 (133 mm ²), nr: 1 crimp for AWG3/0 (92 mm ²) Cable retention with cable clamp, Metallic louver multipoint contact
VS289208	CP011219 4 09S 313 M058	Power receptacle connector with 3 Socket contacts - for MCM313 (159 mm ²) Cable retention with cable gland - Metallic louver multipoint contact
VS289209	CP011219 3 08P 313 M058	Power plug 90° connector with 3 Pin contacts - crimp for MCM313 Cable retention with reinforced cable clamp - Metallic louver multipoint contact
On request	CP020120FP	Fastening Plate

ELECTRICAL CHARACTERISTICS

Nominal voltage	Test Voltage	Working current	Air and creepage distances	Contact resistance	Insulating resistance
750V (PD4 - OV4)	3.700Vac *	600A (contact MCM) 450A (contact AWG3/0)	According to EN 50124-1 Pollution degree: PD4 with protection degree IP67 (mated connectors) Over-voltage category: OV4	< 0,5 mΩ	> 5 GΩ

* according to APTA SS-E-001-98

ENVIRONMENTAL CHARACTERISTICS

Connectors working temperature	IP Protection degree (EN 60529)
- 55°C ÷ +125°C	IP67 (when mated)

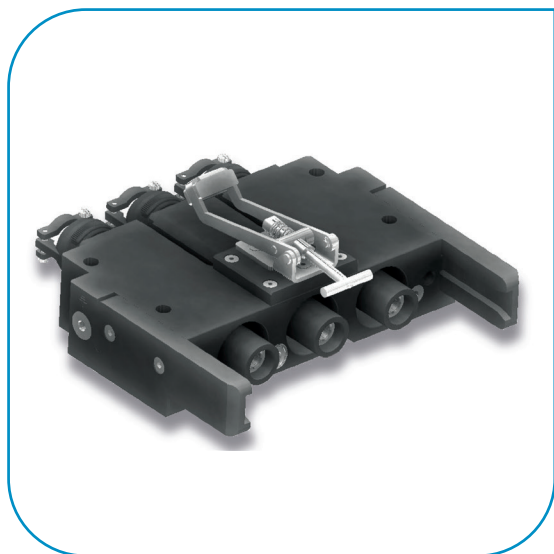
MECHANICAL CHARACTERISTICS

Mating system	Mating endurance	Shock and vibrations tests (EN 61373)
N° 2 alignment columns for assisted coupling N°2 mechanical lever for approach N° 2 secure lock screw with Heico-lock vibration proof washers	200 mating cycles minimum	Category 2, bogie mounted

Bal

CP060212 - 3 poles rectangular power connector

LOCKING LEVER



Main application: Motor to vehicle connection

Conforms European norm EN50467 "Railway applications - rolling stock - electrical connectors requirements and test methods" (where applicable)

Part Number	Short Description	Description
VS289002	CP060212-3-06P	Connector with 3 Pin contacts + ground contact, crimp termination for 95mm ² cables, straight plug
VS289001	CP060212-3-09S	Connector with 3 Socket contacts + ground contact, crimp termination for 120mm ² cables, rear panel mounting receptacle

ELECTRICAL CHARACTERISTICS

Nominale voltage	Test Voltage	Working current	Air and creepage distances	Contact resistance	Insulating resistance
3.600V (PD4 - OV4)	9.200Vac	350A	According to EN 50124-1 Pollution degree: PD4 with protection degree IP67 (mated connectors) Over-voltage category: OV4	< 0,5 mΩ	> 5 GΩ

ENVIRONMENTAL CHARACTERISTICS

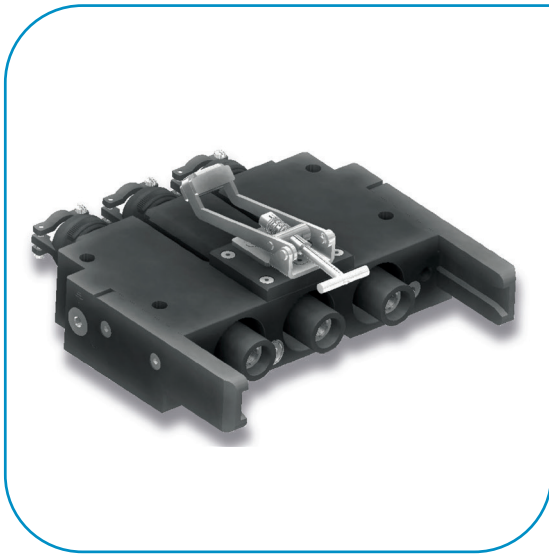
Connectors working temperature	IP Protection degree (EN 60529)
-40°C ÷ +100°C	IP67 (when mated)

MECHANICAL CHARACTERISTICS

Mating system	Mating endurance	Shock and vibrations tests (EN 61373)
Single locking lever <i>Taf</i>	200 mating cycles minimum	Body mounted, cat. 1, class B

CP060212 - 3 poles rectangular power connector

LOCKING LEVER



Main application: Motor to vehicle connection

Conforms European norm EN50467 "Railway applications - rolling stock - electrical connectors requirements and test methods" (where applicable)

Part Number	Short Description	Description
VS289004	CP060212-3-06P-B	Connector with 3 Pin contacts + ground contact, crimp termination for 95mm ² cables, straight plug. Mating Configuration B.
VS289003	CP060212-3-09S-B	Connector with 3 Socket contacts + ground contact, crimp termination for 120mm ² cables, rear panel mounting receptacle. Mating Configuration B.

ELECTRICAL CHARACTERISTICS

Nominal voltage	Test Voltage	Working current	Air and creepage distances	Contact resistance	Insulating resistance
3.600V (PD4 - OV4)	9.200Vac	350A	According to EN 50124-1 Pollution degree: PD4 with protection degree IP67 (mated connectors) Over-voltage category: OV4	< 0,5 mΩ	> 5 GΩ

ENVIRONMENTAL CHARACTERISTICS

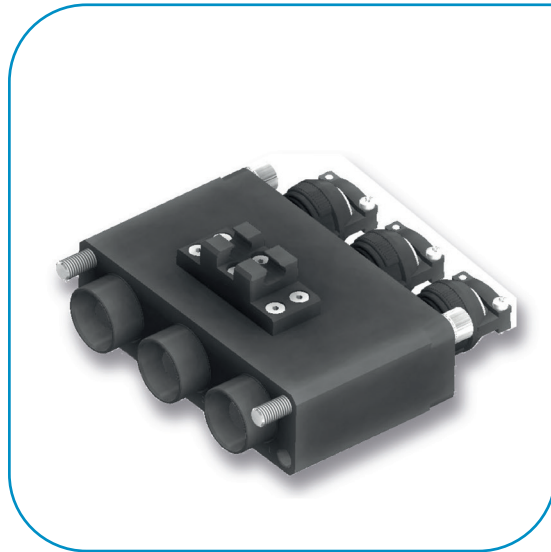
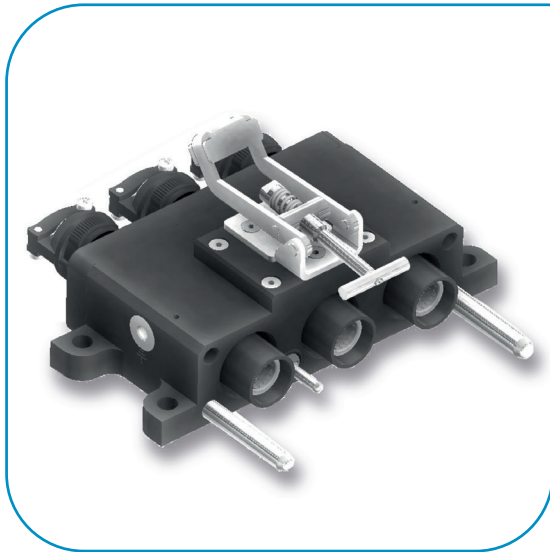
Connectors working temperature	IP Protection degree (EN 60529)
-40°C ÷ +100°C	IP67 (when mated)

MECHANICAL CHARACTERISTICS

Mating system	Mating endurance	Shock and vibrations tests (EN 61373)
Single locking lever <i>Taf</i>	200 mating cycles minimum	Body mounted, cat. 1, class B

CP150916 - 3 poles rectangular power connector

LOCKING LEVER



Main application: Motor to vehicle connection

Conforms European norm EN50467 "Railway applications - rolling stock - electrical connectors requirements and test methods" (where applicable)

Part Number	Short Description	Description
VS289133	CP150916-3-06P	Connector with 3 Pin contacts + ground contact, crimp termination for AWG 1/0 cables, straight plug
VS289132	CP150916-3-09S	Connector with 3 Socket contacts + ground contact, crimp termination for AWG 1/0 cables, rear panel mounting receptacle

ELECTRICAL CHARACTERISTICS

Nominal voltage	Test Voltage	Working current	Air and creepage distances	Contact resistance	Insulating resistance
3.000V (PD4 - OV3)	9.200Vac	550A	According to EN 50124-1 Pollution degree: PD4 with protection degree IP67 (mated connectors) Over-voltage category: OV3	< 0,5 mΩ	> 5 GΩ

ENVIRONMENTAL CHARACTERISTICS

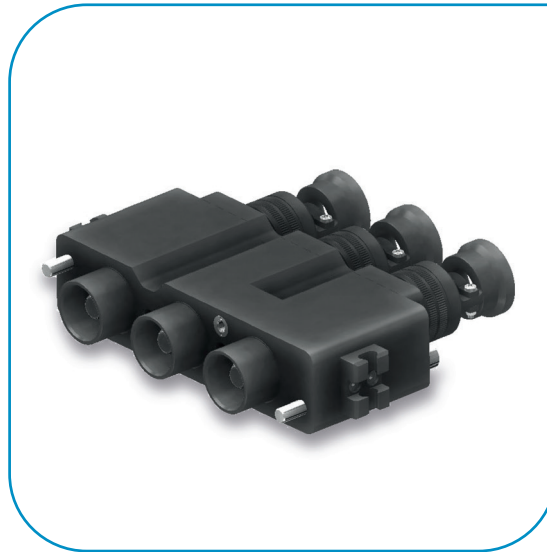
Connectors working temperature	IP Protection degree (EN 60529)
-55°C ÷ +125°C	IP67 (when mated)

MECHANICAL CHARACTERISTICS

Mating system	Mating endurance	Shock and vibrations tests (EN 61373)
Single locking lever <i>Clem</i>	200 mating cycles minimum	Body mounted, cat. 1, class B

CP160613 - 3 poles rectangular power connector

LOCKING LEVER



Main application: Motor to vehicle connection

Conforms European norm EN50467 "Railway applications - rolling stock - electrical connectors requirements and test methods" (where applicable)

Part Number	Short Description	Description
VS289106	CP160613-3-06P M022	Connector with 3 Pin contacts + ground contact, crimp termination for MCM313 - 160mm ² cables, straight plug
VS289107	CP160613-3-09S M023	Connector with 3 Socket contacts + ground contact, crimp termination for MCM313 - 160mm ² cables, rear panel mounting receptacle

ELECTRICAL CHARACTERISTICS

Nominal voltage	Test Voltage	Working current	Air and creepage distances	Contact resistance	Insulating resistance
1.500V (PD4 - OV4) 750V (APTA)	3.300Vac	450A	According to EN 50124-1 Pollution degree: PD4 with protection degree IP67 (mated connectors) Over-voltage category: OV4	< 0,5 mΩ	> 5 GΩ

ENVIRONMENTAL CHARACTERISTICS

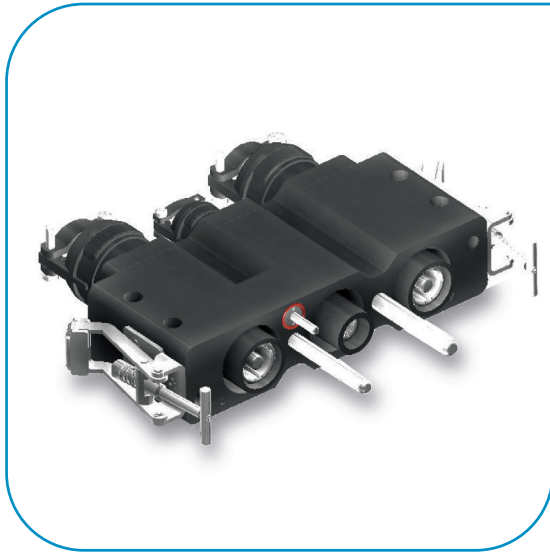
Connectors working temperature	IP Protection degree (EN 60529)
-40°C ÷ +125°C	IP67 (when mated)

MECHANICAL CHARACTERISTICS

Mating system	Mating endurance	Shock and vibrations tests (EN 61373)
Double locking levers <i>Mia-Hon</i>	200 mating cycles minimum	Category 2, bogie mounted

CP160613 - 3 poles rectangular power connector

LOCKING LEVER



Main application: Motor to vehicle connection

Conforms European norm EN50467 "Railway applications - rolling stock - electrical connectors requirements and test methods" (where applicable)

Part Number	Short Description	Description
VS289108	CP160613-3-06P M020	Connector with 3 Pin contacts + ground contact, 2 crimp termination for MCM 646 - 327mm ² cables and 1 crimp termination or cable AWG 2 - 33mm ² straight plug
VS289109	CP160613-3-09S M021	Connector with 3 Socket contacts + ground contact, 2 crimp termination for MCM 646 - 327mm ² cables and 1 crimp termination or cable AWG 2 - 33mm ² rear panel mounting receptacle

ELECTRICAL CHARACTERISTICS

Nominal voltage	Test Voltage	Working current	Air and creepage distances	Contact resistance	Insulating resistance
1.500V (PD4 - OV4) 750V (APTA)	3.300Vac	900A (AWG 2: 150A)	According to EN 50124-1 Pollution degree: PD4 with protection degree IP67 (mated connectors) Over-voltage category: OV4	< 0,5 mΩ	> 5 GΩ

ENVIRONMENTAL CHARACTERISTICS

Connectors working temperature	IP Protection degree (EN 60529)
-40°C ÷ +125°C	IP67 (when mated)

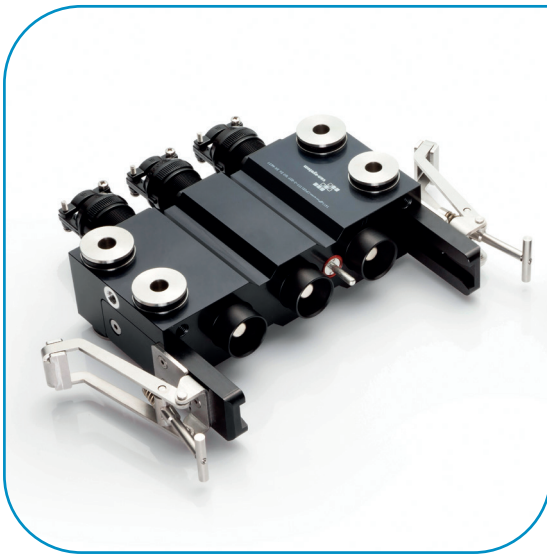
MECHANICAL CHARACTERISTICS

Mating system	Mating endurance	Shock and vibrations tests (EN 61373)
Double locking levers	200 mating cycles minimum	Body mounted, cat. 1, class B

Mia-Hon

CP581111 - 3 poles rectangular power connector

LOCKING LEVER



Main application: Motor to vehicle connection

Conforms European norm EN50467 "Railway applications - rolling stock - electrical connectors requirements and test methods" (where applicable)

Part Number	Short Description	Description
VS289026	CP581111-3-02P 120	Connector with 3 Pin contacts + ground contact, 2 crimp termination for 120mm ² cables and straight plug
VS289027	CP581111-3-06A 120	Connector with 3 Socket contacts + ground contact, 2 crimp termination for 120mm ² cables and rear panel mounting receptacle

ELECTRICAL CHARACTERISTICS

Nominal voltage	Test voltage (EN 60077-1)	Working current	Air and creepage distances	Contact resistance	Insulating resistance
2.800V (PD4 - OV4)	8.700Vac	400A	According to EN 50124-1 Pollution degree: PD4 with protection degree IP67 (mated connectors) Over-voltage category: OV4	< 0,5 mΩ	> 5 GΩ

ENVIRONMENTAL CHARACTERISTICS

Connectors working temperature	IP Protection degree (EN 60529)
-55°C ÷ +125°C	IP67 (when mated)

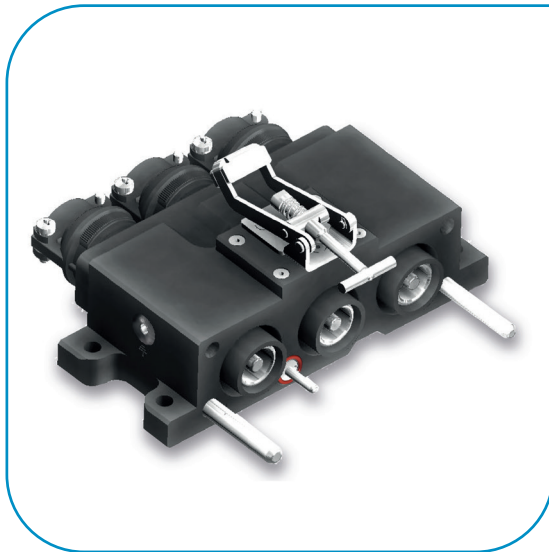
MECHANICAL CHARACTERISTICS

Mating system	Mating endurance	Shock and vibrations tests (EN 61373)
Alignment guides for assisted coupling, 2 mechanical locking lever and a secure lock screw with Nord-lock vibration proof washers	200 mating cycles minimum	Category 2 bogie mounted Fixed connector supplied with anti-vibration elastic supports

Met-Gen

CP020113 - 3 poles rectangular power connector

LOCKING LEVER



Main application: Motor to vehicle connection

Conforms European norm EN50467 "Railway applications - rolling stock - electrical connectors requirements and test methods" (where applicable)

Part Number	Short Description	Description
VS289079	CP020113-3-06S M019	Connector with 3 Socket contacts + ground contact, crimp termination for 150mm ² or 180mm ² cables, straight plug
VS289078	CP020113-3-09P M019	Connector with 3 Pin contacts + ground contact, crimp termination for 150mm ² or 180mm ² cables, rear panel mounting receptacle

ELECTRICAL CHARACTERISTICS

Nominal voltage	Test Voltage	Working current	Air and creepage distances	Contact resistance	Insulating resistance
1.500V	5.600Vac	800A	According to EN 50124-1	< 0,5 mΩ	> 5 GΩ

ENVIRONMENTAL CHARACTERISTICS

Connectors working temperature	IP Protection degree (EN 60529)
-55°C ÷ +180°C	IP67 (when mated)

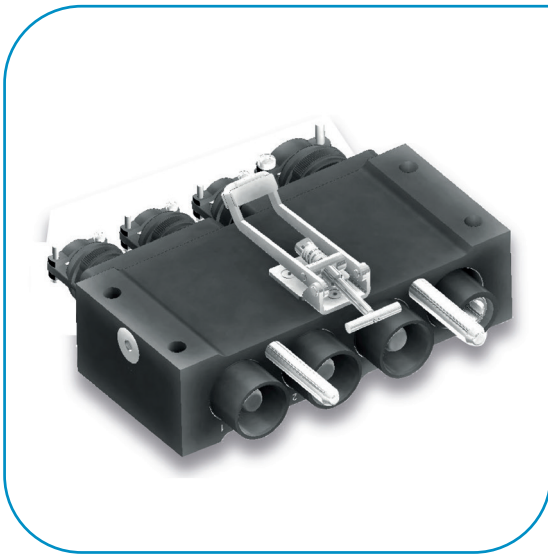
MECHANICAL CHARACTERISTICS

Mating system	Mating endurance	Shock and vibrations tests (EN 61373)
Single locking lever	200 mating cycles minimum	Body mounted, cat. 1, class B

Men

CP291215 - 4 poles rectangular power connector

LOCKING LEVER



Main application: Motor to vehicle connection

Conforms European norm EN50467 "Railway applications - rolling stock - electrical connectors requirements and test methods" (where applicable)

Part Number	Short Description	Description
VS289160	CP291215-4-09P M027	Connector with 3 Pin contacts Finger Tested + 1 Socket contact + ground contact, 3 crimp termination for 120mm ² and 1 crimp termination for 150mm ² cables, straight plug
VS289168	CP291215-4-06S M027	Connector with 3 Socket contacts Finger Tested + 1 Pin contact + ground contact, 3 crimp termination for 120mm ² and 1 crimp termination for 150mm ² cables, rear panel mounting receptacle

ELECTRICAL CHARACTERISTICS

Nomiale voltage	Test Voltage	Working current	Air and creepage distances	Contact resistance	Insulating resistance
2.000V (PD4 - OV4)	6.800Vac	800A	According to EN 50124-1 Pollution degree: PD4 with protection degree IP67 (mated connectors) Over-voltage category: OV4	< 0,5 mΩ	> 5 GΩ

ENVIRONMENTAL CHARACTERISTICS

Connectors working temperature	IP Protection degree (EN 60529)
-40°C ÷ +125°C	IP67 (when mated)

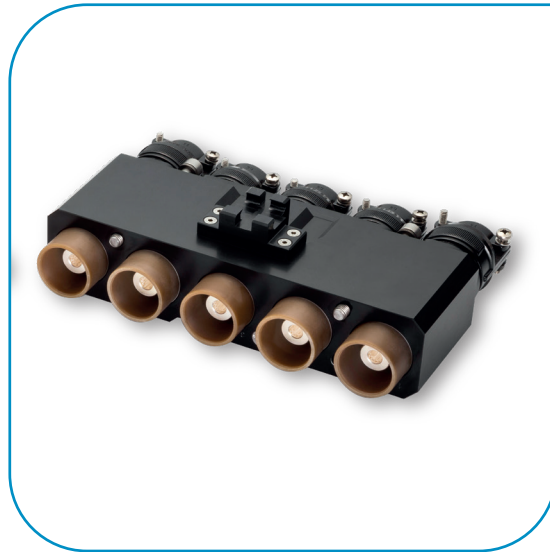
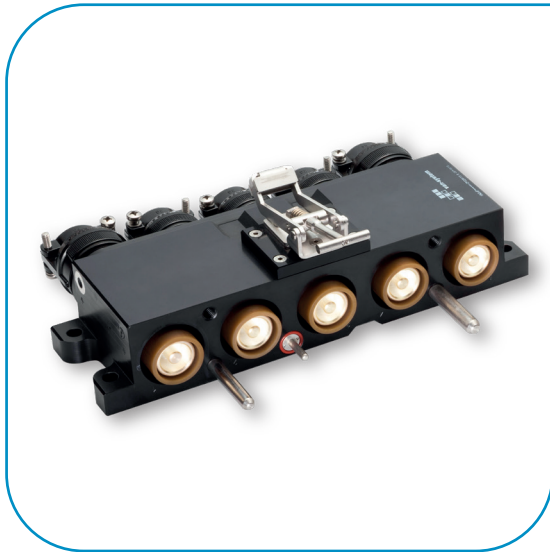
MECHANICAL CHARACTERISTICS

Mating system	Mating endurance	Shock and vibrations tests (EN 61373)
Single locking lever Alignment polarized columns	200 mating cycles minimum	Category 2 bogie mounted

MI L4

CP020113 - 5 poles rectangular power connector

LOCKING LEVER



Main application: Motor to vehicle connection

Conforms European norm EN50467 "Railway applications - rolling stock - electrical connectors requirements and test methods" (where applicable)

Part Number	Short Description	Description
VS289036	CP020113-5-06S M019	Connector with 5 Socket contacts + ground contact, 2 crimp termination for 240mm ² and 3 crimp termination for 150mm ² or 185mm ² cables, straight plug
VS289035	CP020113-5-09P M019	Connector with 5 Pin contacts + ground contact, 2 crimp termination for 240mm ² and 3 crimp termination for 150mm ² or 185mm ² cables, rear panel mounting receptacle

ELECTRICAL CHARACTERISTICS

Nominal voltage	Test Voltage	Working current	Air and creepage distances	Contact resistance	Insulating resistance
1.500V (PD4 - OV4)	5.600Vac	1.000A	According to EN 50124-1	< 0,5 mΩ	> 5 GΩ

ENVIRONMENTAL CHARACTERISTICS

Connectors working temperature	IP Protection degree (EN 60529)
-55°C ÷ +180°C	IP67 (when mated)

MECHANICAL CHARACTERISTICS

Mating system	Mating endurance	Shock and vibrations tests (EN 61373)
Single locking lever Alignment polarized columns	200 mating cycles minimum	Body mounted, cat. 1, class B

Men

CP220211 - 5 poles rectangular power connector

LOCKING LEVER



Main application: Motor to vehicle connection

Conforms European norm EN50467 "Railway applications - rolling stock - electrical connectors requirements and test methods" (where applicable)

Part Number	Short Description	Description
VS289021	CP220211-5-06P-120/185-M001	Connector with 5 Pin contacts + ground contact 4 crimp termination for 120mm ² cables and 1 crimp termination for 185mm ² cables, straight plug
VS289020	CP220211-5-06S-120/185-M001	Connector with 5 Socket contacts + ground contact 4 crimp termination for 120mm ² cables and 1 crimp termination for 185mm ² cables, rear panel mounting receptacle

ELECTRICAL CHARACTERISTICS

Nominal voltage	Test Voltage	Working current	Air and creepage distances	Contact resistance	Insulating resistance
750V (PD4 - OV4)	3300Vac	700A	According to EN 50124-1 Pollution degree: PD4 with protection degree IP67 (mated connectors) Over-voltage category: OV4	< 0,5 mΩ	> 5 GΩ

ENVIRONMENTAL CHARACTERISTICS

Connectors working temperature	IP Protection degree (EN 60529)
-40°C ÷ +100°C	IP67 (when mated)

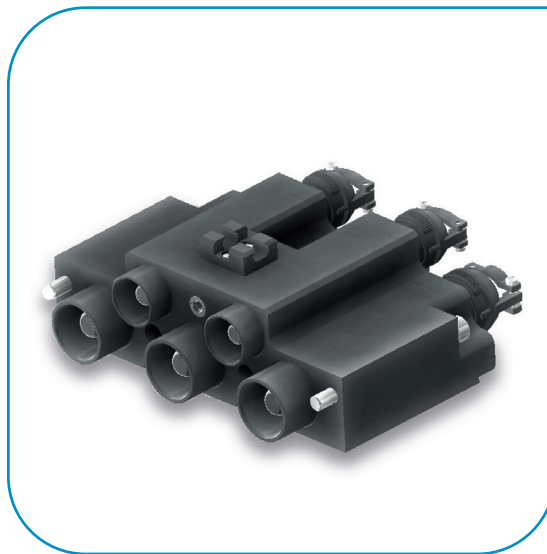
MECHANICAL CHARACTERISTICS

Mating system	Mating endurance	Shock and vibrations tests (EN 61373)
Double locking levers	200 mating cycles minimum	Category 2 bogie mounted

Tai

CP191013 - 5 poles rectangular power connector

LOCKING LEVER



Main application: Motor to vehicle connection

Conforms European norm EN50467 "Railway applications - rolling stock - electrical connectors requirements and test methods" (where applicable)

Part Number	Short Description	Description
*	*	Connector with 5 Pin contacts + ground contact 3 crimp termination for 150mm ² cables and 2 crimp termination for 50mm ² cables, straight plug
*	*	Connector with 5 Socket contacts + ground contact 3 crimp termination for 150mm ² cables and 2 crimp termination for 50mm ² cables, rear panel mounting receptacle

* Consult our commercial office

ELECTRICAL CHARACTERISTICS

Nominal voltage	Test Voltage	Working current	Air and creepage distances	Contact resistance	Insulating resistance
3.000V (PD4 - OV3)	9200Vac	675A	According to EN 50124-1 Pollution degree: PD4 with protection degree IP67 (mated connectors) Over-voltage category: OV3	< 0,5 mΩ	> 5 GΩ

ENVIRONMENTAL CHARACTERISTICS

Connectors working temperature	IP Protection degree (EN 60529)
-60°C ÷ +125°C	IP67 (when mated)

MECHANICAL CHARACTERISTICS

Mating system	Mating endurance	Shock and vibrations tests (EN 61373)
Single locking lever	200 mating cycles minimum	Category 2 bogie mounted

Gim

CP120616 - 3 power cables entry - 6 cables exit

CP JUNCTION AND DISTRIBUTION BOX



Main application: Junction and Distribution Boxes

Type T junction box

Part Number	Short Description	Description
VS289169	CP120616	Junction Box: 3 power cables entry size 120mm ² (MS 3057 20C Ø 18mm - Ø 25mm) 6 cables exit size 50mm ² (M32: Ø 11mm - Ø 21mm)

ELECTRICAL CHARACTERISTICS

Nominal voltage	Test Voltage	Working current	Air and creepage distances
750V (PD4 - OV4)	3.300Vac	225 A / 450A	According to EN 50124-1 Pollution degree: PD4 with protection degree IP67 (mated connectors) Over-voltage category: OV4

ENVIRONMENTAL CHARACTERISTICS

Connectors working temperature	IP Protection degree (EN 60529)
-40°C ÷ +125°C	IP67 (when box closed)

MECHANICAL CHARACTERISTICS

External metal shell	Screws	Bracket	Thermoplastic Resin	Shock and vibrations tests (EN 61373)
Aluminum alloy - black varnish finishes	Stainless steel	Stainless Steel Neutral passivation	Fire behaviour according EN 45545-2	Category 2 bogie mounted

MI L4

CP010718 - 3 power cables entry - 6 cables exit

CP JUNCTION AND DISTRIBUTION BOX



Main application: Junction and Distribution Boxes

Type T junction box

Part Number	Short Description	Description
VS289193	CP010718 M033	Junction Box: 3 power cables entry size 120mm ² (MS 3057 20C Ø 18mm - Ø 25mm) 6 cables exit size 50mm ² (M32: Ø 11mm - Ø 21mm)

ELECTRICAL CHARACTERISTICS

Nominal voltage	Test Voltage	Working current	Air and creepage distances
750V (PD4 - OV4)	3.300Vac	225 A / 450A	According to EN 50124-1 Pollution degree: PD4 with protection degree IP67 (mated connectors) Over-voltage category: OV4

ENVIRONMENTAL CHARACTERISTICS

Connectors working temperature	IP Protection degree (EN 60529)
-55°C ÷ +125°C	IP67 (when box closed)

MECHANICAL CHARACTERISTICS

External metal shell	Screws	Bracket	Thermoplastic Resin	Shock and vibrations tests (EN 61373)
Aluminum alloy Black anodic oxidation	Stainless Steel	Stainless Steel Neutral passivation	Fire behaviour according EN 45545-2	Category 2 bogie mounted

Met Bs

CP010718 - 3 power cables entry - 6 cables exit

CP JUNCTION AND DISTRIBUTION BOX



Main application: Junction and Distribution Boxes

Type T junction box

Part Number	Short Description	Description
VS350071	CP010718	Junction Box: 3 power cables entry size 120mm ² (M40 Ø19mm - Ø 28mm) 6 cables exit size 50mm ² (M32 Ø11mm - Ø21mm)

ELECTRICAL CHARACTERISTICS

Nomiale voltage	Test Voltage	Working current	Air and creepage distances
750V (PD4 - OV4)	3.300Vac	225 A / 450A	According to EN 50124-1 Pollution degree: PD4 with protection degree IP67 (mated connectors) Over-voltage category: OV4

ENVIRONMENTAL CHARACTERISTICS

Connectors working temperature	IP Protection degree (EN 60529)
-55°C ÷ +125°C	IP67 (when box closed)

MECHANICAL CHARACTERISTICS

External metal shell	Screws	Bracket	Thermoplastic Resin	Shock and vibrations tests (EN 61373)
Aluminum alloy Black anodic oxidation	Stainless Steel	Stainless Steel Neutral passivation	Fire behaviour according EN 45545-2	Category 2 bogie mounted

San

CP331112 - 3 power cables entry - 6 cables exit

CP JUNCTION AND DISTRIBUTION BOX



Main application: Junction and Distribution Boxes

Type Y junction box

Part Number	Short Description	Description
VS289082	CP331112	Junction Box: 3 power cables entry size 185mm ² (MS 3057 24C Ø16mm - Ø 23,8mm) exit with 2 connectors (to be ordered separately)

To be mated with connector CP331112-3-06S (2 connectors per box)

ELECTRICAL CHARACTERISTICS

Nominal voltage	Test Voltage	Working current	Air and creepage distances
1.500V	5.600Vac	250A / 500A	According to EN 50124-1

ENVIRONMENTAL CHARACTERISTICS

Connectors working temperature	IP Protection degree (EN 60529)
-40°C ÷ +120°C	IP67 (when box closed and connectors mated)

MECHANICAL CHARACTERISTICS

External metal shell	Screws	Thermoplastic Resin	Shock and vibrations tests (EN 61373)
Aluminum alloy - black varnish finishes	Stainless steel	Fire behaviour according EN 45545-2	Category 2 bogie mounted

Men-Lim

CP331112 - 3 poles rectangular power connector

CP JUNCTION AND DISTRIBUTION BOX



Main application: Junction Boxes

Conforms European norm EN50467 "Railway applications - rolling stock - electrical connectors requirements and test methods" (where applicable)

Part Number	Short Description	Description
VS289080	CP331112-3-06S 50-M017 A	Connector with 3 Pin contacts + ground contact, 3 crimp termination 50mm ² (MS 3057 20C Ø16mm - Ø23,8mm) - straight plug. Mating Configuration A.
VS289081	CP331112-3-06S 50-M017 B	Connector with 3 Pin contacts + ground contact, 3 crimp termination 50mm ² (MS 3057 20C Ø16mm - Ø23,8mm) - straight plug. Mating Configuration B.
VS289033	CP331112-3-06S 95-M017 A	Connector with 3 Pin contacts + ground contact, 3 crimp termination 95mm ² (MS 3057 20C Ø16mm - Ø23,8mm) - straight plug. Mating Configuration A.
VS289034	CP331112-3-06S 95-M017 B	Connector with 3 Pin contacts + ground contact, 3 crimp termination 95mm ² (MS 3057 20C Ø16mm - Ø23,8mm) - straight plug. Mating Configuration B.

To be mated with box CP331112

ELECTRICAL CHARACTERISTICS

Nominal voltage	Test Voltage	Working current	Air and creepage distances	Contact resistance	Insulating resistance
1.500V	5.600Vac	250A	According to EN 50124-1	< 0,5 mΩ	> 5 GΩ

ENVIRONMENTAL CHARACTERISTICS

Connectors working temperature	IP Protection degree (EN 60529)
-40°C ÷ +120°C	IP67 (when mated)

MECHANICAL CHARACTERISTICS

Mating system	Mating endurance	Shock and vibrations tests (EN 61373)
Single locking lever	200 mating cycles minimum	Category 2 bogie mounted

Men-Lim

CP060414 - 3 power cables entry - 6 cables exit

CP JUNCTION AND DISTRIBUTION BOX



Main application: Junction and Distribution Boxes

Type Y junction box

Part Number	Short Description	Description
VS289110	CP060414	Junction Box: 3 power cables entry size MCM313 (MS 3057 20C Ø 15,5mm - Ø 23,8mm) 6 cables exit size AWG 2/0 (M32 Ø11mm - Ø20mm)

ELECTRICAL CHARACTERISTICS

Nominale voltage	Test Voltage	Working current	Air and creepage distances
750V (PD4 - OV4)	3.300Vac	225A / 450A	According to EN 50124-1 Pollution degree: PD4 with protection degree IP67 (mated connectors) Over-voltage category: OV4

ENVIRONMENTAL CHARACTERISTICS

Connectors working temperature	IP Protection degree (EN 60529)
-40°C ÷ +120°C	IP67 (when box closed)

MECHANICAL CHARACTERISTICS

External metal shell	Screws	Thermoplastic Resin	Shock and vibrations tests (EN 61373)
Aluminum alloy - black anodic oxidation	Stainless Steel	Fire behaviour according EN 45545-2	Category 2 bogie mounted

Mia

CPB050317/BT2 - Cables entry – 2 Bayonet Connectors

CP JUNCTION AND DISTRIBUTION BOX



Main application: Junction and Distribution Boxes

Type T junction box

Part Number	Short Description	Description
VS350069	CPB050317/BT2	Junction Box with metal fixing frame and bayonet connectors

ELECTRICAL CHARACTERISTICS (Bayonet Connectors)

Nomiale voltage	Test Voltage	Working current	Number of contacts	Contacts plating
500 Vac 700 Vdc	2.000Vac	13A	37+37	Gold

ENVIRONMENTAL CHARACTERISTICS

Connectors working temperature	IP Protection degree (EN 60529)
-40°C ÷ +120°C	IP67 (when box closed)

MECHANICAL CHARACTERISTICS

External metal shell	Screws	Thermoplastic Resin	Shock and vibrations tests (EN 61373)
Aluminum alloy – black varnish finishes	Stainless Steel	Fire behaviour according EN 45545-2	Category 2 bogie mounted

Car

CPB050317/BT3 - Cables entry - 1 Bayonet Connector

CP JUNCTION AND DISTRIBUTION BOX



Main application: Junction and Distribution Boxes

Type T junction box

Part Number	Short Description	Description
VS350070	CPB050317/BT3	Junction Box with metal fixing frame and bayonet connector

ELECTRICAL CHARACTERISTICS (Bayonet Connector)

Nominal voltage	Test Voltage	Working current	Number of contacts	Contacts plating
500 Vac 700 Vdc	2.000Vac	13A	37	Gold

ENVIRONMENTAL CHARACTERISTICS

Connectors working temperature	IP Protection degree (EN 60529)
-40°C ÷ +120°C	IP67 (when box closed)

MECHANICAL CHARACTERISTICS

External metal shell	Screws	Thermoplastic Resin	Shock and vibrations tests (EN 61373)
Aluminum alloy - black varnish finishes	Stainless Steel	Fire behaviour according EN 45545-2	Category 2 bogie mounted

Car

CP041020 - 3 power cables entry 7 cables exit

CP JUNCTION AND DISTRIBUTION BOX



Main application: Junction and Distribution Boxes

AT deviation box A type

Part Number	Short Description	Description
VS289219	CP041020	AT deviation box A type 3 power cables entry 7 cables exit Cable clamps: aluminum alloy - Protective finish: CCF black (conductive)

ELECTRICAL CHARACTERISTICS

Nominal voltage	Test Voltage	Air and creepage distances
750V (PD4 - OV4)	3.300Vac EN 60077-1	According to EN 50124-1 Pollution degree: PD4 with protection degree IP67 (mated connectors) Over-voltage category: OV4

ENVIRONMENTAL CHARACTERISTICS

Connectors working temperature	IP Protection degree (EN 60529)
-40°C ÷ +125°C	IP67 (when box closed)

MECHANICAL CHARACTERISTICS

External metal shell	Screws	Thermoplastic Resin	Shock and vibrations tests (EN 61373)
Aluminum alloy - black anodic oxidation	Stainless Steel	Fire behaviour according EN 45545-2	Body mounted, cat. 1, class A

CP051020 - 2 power cables entry 6 cables exit

CP JUNCTION AND DISTRIBUTION BOX



Main application: Junction and Distribution Boxes

AT deviation box B type

Part Number	Short Description	Description
VS289220	CP051020	AT deviation box B type 2 power cables entry 6 cables exit Cable clamps: aluminum alloy - Protective finish: CCF black (conductive)

ELECTRICAL CHARACTERISTICS

Nominal voltage	Test Voltage	Air and creepage distances
750V (PD4 - OV4)	3.300Vac EN 60077-1	According to EN 50124-1 Pollution degree: PD4 with protection degree IP67 (mated connectors) Over-voltage category: OV4

ENVIRONMENTAL CHARACTERISTICS

Connectors working temperature	IP Protection degree (EN 60529)
-40°C ÷ +125°C	IP67 (when box closed)

MECHANICAL CHARACTERISTICS

External metal shell	Screws	Thermoplastic Resin	Shock and vibrations tests (EN 61373)
Aluminum alloy - black anodic oxidation	Stainless Steel	Fire behaviour according EN 45545-2	Body mounted, cat. 1, class A

CP061020 - 2 power cables entry 8 cables exit

CP JUNCTION AND DISTRIBUTION BOX



Main application: Junction and Distribution Boxes

AT deviation box C type

Part Number	Short Description	Description
VS289221	CP061020	AT deviation box C type 2 power cables entry 8 cables exit Cable clamps: aluminum alloy - Protective finish: CCF black (conductive)

ELECTRICAL CHARACTERISTICS

Nominal voltage	Test Voltage	Air and creepage distances
750V (PD4 - OV4)	3.300Vac EN 60077-1	According to EN 50124-1 Pollution degree: PD4 with protection degree IP67 (mated connectors) Over-voltage category: OV4

ENVIRONMENTAL CHARACTERISTICS

Connectors working temperature	IP Protection degree (EN 60529)
-40°C ÷ +125°C	IP67 (when box closed)

MECHANICAL CHARACTERISTICS

External metal shell	Screws	Thermoplastic Resin	Shock and vibrations tests (EN 61373)
Aluminum alloy – black anodic oxidation	Stainless Steel	Fire behaviour according EN 45545-2	Body mounted, cat. 1, class A

PB400611 - 3 Ways Junction Box

CP JUNCTION AND DISTRIBUTION BOX



Main application: Motor Connection

3-way junction box complete with housing for fixing cables and cable glands at 90° for 50 mm² cables

Part Number	Short Description	Description
on request	PB400611	3 Ways Junction Box

ELECTRICAL CHARACTERISTICS

Nominal voltage	Test Voltage	Working current	Peak current
1.500V	5.600V	130A	200A 10 sec

ENVIRONMENTAL CHARACTERISTICS

Connectors working temperature	IP Protection degree (EN 60529)
-25°C ÷ +115°C	IP67 (with sealed busbar)

MECHANICAL CHARACTERISTICS

Body and cap	Screws	Thermoplastic Resin	Shock and vibrations tests (EN 61373)
Thermoplastic resin fire resistant according to UNI CEI 11170-3 and NFF 16-102	Stainless Steel	Fire behaviour according to EN 45545-2	Category 2 bogie mounted

PB400611-06-50 - 3 Ways Junction Box

CP JUNCTION AND DISTRIBUTION BOX



Main application: Motor Connection

3-way junction box complete with housing for fixing cables and cable glands at 90° for 50 mm² cables

Part Number	Short Description	Description
on request	PB400611	3 Ways Junction Box

ELECTRICAL CHARACTERISTICS

Nominal voltage	Test Voltage	Working current	Peak current
1.500V	5.600V	130A	200A 10 sec

ENVIRONMENTAL CHARACTERISTICS

Connectors working temperature	IP Protection degree (EN 60529)
-25°C ÷ +115°C	IP67 (with sealed busbar)

MECHANICAL CHARACTERISTICS

Body and cap	Screws	Thermoplastic Resin	Shock and vibrations tests (EN 61373)
Thermoplastic resin fire resistant according to UNI CEI 11170-3 and NFF 16-102	Stainless Steel	Fire behaviour according to EN 45545-2	Category 2 bogie mounted

PB030113 - 3 Ways Junction Box

CP JUNCTION AND DISTRIBUTION BOX



Main application: Motor Connection

3-way junction box

- Cable retention by cable glands
- Watertight lid with phases indication closed with captive screws

Part Number	Short Description	Description
on request	PB030113	3 Ways Junction Box

ELECTRICAL CHARACTERISTICS

Nominal voltage	Test Voltage	Working current	Peak current
1.500V	4.400V	150A	300A 10 sec

ENVIRONMENTAL CHARACTERISTICS

Connectors working temperature	IP Protection degree (EN 60529)
-25°C ÷ +125°C	IP67 (with sealed busbar)

MECHANICAL CHARACTERISTICS

Body and cap	Screws	Thermoplastic Resin	Shock and vibrations tests (EN 61373)
Thermoplastic resin fire resistant according to UNI CEI 11170-3 and NFF 16-101	Stainless Steel	Fire behaviour according to EN 45545-2	Category 2 bogie mounted

Bal

VA1754 - Cable Guide Clamp

FOR MULTIPLE CABLES



Part Number	Short Description	Description
on request	VA1754	Cable Guide Clamp for multiple cables (for cable diameter: ~ 18mm)

RF LJP 1 150 PH36 - One Pole Power Connector

LJP - LUG JOINT PROTECTOR



Main application: Lug Joint Protector

Conforms European norm EN50467 "Railway applications - rolling stock - electrical connectors requirements and test methods" (where applicable)

Part Number	Short Description	Description
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*	RF LJP 1 150 PH36	Inline junction with insulating body and cable gland (PG36), with two hermafrodite face-to-face crimp contacts 150 mm ² Car side / 150 mm ² boogie side
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* Consult our commercial office

ELECTRICAL CHARACTERISTICS

Nominal voltage	Test Voltage	Working current	Air and creepage distances	Contact resistance	Insulating resistance
3.000V (PD4 - OV3)*	9400Vac	800A	According to EN 50124-1 Pollution degree: PD4 with protection degree IP67 (mated connectors) Over-voltage category: OV3	< 0,5 mΩ	> 5 GΩ

* Rated insulation voltage UNm: 3700V

ENVIRONMENTAL CHARACTERISTICS

Connectors working temperature	IP Protection degree (EN 60529)
- 55°C +125°C	IP67 (when mated)

MECHANICAL CHARACTERISTICS

Mating system	Shock and vibrations tests (EN 61373)
Screws	Category 2 bogie mounted

Bal

RF LJP 1 646 PH36 - One Pole Power Connector

LJP - LUG JOINT PROTECTOR



Main application: Lug Joint Protector

Conforms European norm EN50467 "Railway applications - rolling stock - electrical connectors requirements and test methods" (where applicable)

Part Number	Short Description	Description
*	RF LJP 1 646 PH36	Inline junction with insulating body and cable gland (PG36), with two hermafrodite face-to-face crimp contacts 2 MCM 646 (327 mm ²) / MCM 535 (271mm ²)

* Consult our commercial office

ELECTRICAL CHARACTERISTICS

Nominal voltage	Test Voltage EN 60077-1	Working current	Air and creepage distances	Contact resistance	Insulating resistance
750V (PD4 - OV3)	3300V *	900A	According to EN 50124-1 Pollution degree: PD4 with protection degree IP67 (mated connectors) Over-voltage category: OV3 Clearances and creepage distances according to NFPA 130	< 0,5 mΩ	> 5 GΩ

* 3700V according to APTA SS-E-001

ENVIRONMENTAL CHARACTERISTICS

Connectors working temperature	IP Protection degree (EN 60529)
- 55°C +125°C	IP67 (when mated)

MECHANICAL CHARACTERISTICS

Mating system	Shock and vibrations tests (EN 61373)
Screws	Category 2 bogie mounted

Bal

CP Connectors - Tools

Crimping tools

For the instructions concerning the contacts crimping please consult the tools manuals.

We recommend to respect the following general rules:

- always use the tools recommended by Radiall VanSystem's in the catalogue or manuals
- apply the suggested norms for tool maintenance and calibration

DO NOT USE ALTERNATIVE GREASES OR OILS which could damage the insert and affect the functionality of the connector.

Manual crimping tool - Crimp Die



Tool	Description	Part Number
CRT-HT45	Manual crimping tool	VS610003
CRT-HT120	Manual crimping tool	VS610001
CRT-HT131	Crimping Tool HT 131	VS610048
CDI-ME14	Crimp Die	VS610013
CDI-ME17-C	Crimp Die	VS610047
CDI-ME20-C	Crimp Die	VS610048
CDI-ME24-C	Crimp Die	VS610014
CDI-ME29-C	Crimp Die	VS610015
CDI-ME30-C	Crimp Die	VS610049
CDI-ME37-C	Crimp Die	VS610050
CDI-ME60-C	Crimp Die	VS610051
CDI-MK32-C	Crimp Die	VS610052

Removal tools



Tool	Description	Part Number
CPES-784-15	Removal tool for contacts Ø15	VS610047
CPES-784-20	Removal tool for contacts Ø20	VS610044
CPES-784-22	Removal tool for contacts Ø22	VS610076
CPES-784-25	Removal tool for contacts Ø25	VS610045
CPES-784-30	Removal tool for contacts Ø30	VS610046

Information regarding the use of the product within recommended safety limits

To use the connectors described in this catalogue according to the necessary safety requirements we suggest you apply the following criteria:

- use the connectors and connected cables within their electrical and environmental limits
- follow the characteristics of each version (shell, class and type of strain relief) and carefully choose the appropriate connector for the required use
- make sure to respect the procedures regarding the correct assembly of connectors and the crimping of contacts
- any connector damaged during shipment, storage, assembly or use should be replaced
- never uncouple the connectors when under power
- always protect the parts against shock when the circuit is under power
- always check the circuit before putting it under power
- consult Radiall Italia Srl if in doubt
- the user must take final responsibility for electrical safety Radiall Italia Srl reserves the right to amend the specifications of this catalogue without issuing prior notice.

For the instructions concerning assembly and crimping of contacts please consult the appropriate tools manuals.

We recommend to respect the following general rules:

- to be used always the tools recommended by Radiall Italia Srl's catalogue or manuals
- to be applied the suggested norms for tool maintenance and calibration

DO NOT USE ALTERNATIVE GREASES OR OILS which could damage the insert and affect the functionality of the connector. Radiall Italia Srl reserves the right to amend the specifications of this catalogue without issuing prior notice.

The data defined in this document are given as an indication. In the effort to improve our products, we reserve the right to make any change judged necessary.



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