



PWK

SINGLE POLE CONNECTORS

Single Pole Insulated Connector
up to 600A Rated Current



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



PWK Connectors - Introduction

Single Pole Insulated Connector up to 600A Rated Current

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

Features and Benefits

Robust Connection

- Fully protected connectors: no risk to damage the contacts thanks the robust shell
- Suitable for 36 polarizations to prevent un-correct coupling

Easy installation

- Robust and reliable coupling
- Backshell and accessories for fastening cable/conduit fixation
- The inclination of the plug can be adjusted within a range of $\pm 22^\circ$ or 0°

Suitable for harsh environments (adapted for outdoor use)

- Waterproof connection (up to IP68 - 10 meters - 12 hours)
- Dust proof
- Corrosion resistant

High level of performance

- Working temperature $-55^\circ\text{C} \div 125^\circ\text{C}$ (according to the inserts material)
- Socket contacts with multi-points contacts band

PWK Connectors - Part number explanation



PWK	Series Code	PWK	PWK series
08	Shell Type	06*	Plug connector with straight backshell
		08	Plug connector with 90° elbow
		02	Front mounting receptacle connector unable to accept rear accessories (NFPA)
		02C	Front mounting receptacle connector unable to accept rear accessories
DA	Connector Class	-	Without backshell
		DA	Shell having an internal metric thread
T	Caps	-	Without caps
		T	With plastic caps
25	Insert Arrangement	25	Shell Size 25 Single Pole
P	Contact Gender	S	Socket contacts (for panel Connector)
		P	Pin contacts (for plug Connector)
185	Contact Type	LC	Less contacts
		35	Single band, for wire section 35 mm ²
		50	Single band, for wire section 50 mm ²
		70	Single band, for wire section 70 mm ²
		95	Single band, for wire section 95 mm ²
		120	Single band, for wire section 120 mm ²
		150	Single band, for wire section 150 mm ²
		185	Single band, for wire section 185 mm ²
		TH	M12 Threaded hole contacts (for Receptacle)
		TH10	M10 Threaded hole contacts (for Receptacle)
A	Polarization X	-	Coding Pin not fixed
		A	Polarization A
		B	Polarization B
		C	Polarization C
		D	Polarization D
		E	Polarization E
		F	Polarization F
1	Polarization Y	-	Coding Pin not fixed
		1	Polarization 1
		2	Polarization 2
		3	Polarization 3
		4	Polarization 4
		5	Polarization 5
		6	Polarization 6
M40	Cable entry	M40	internal metric thread M40
		MH40P	internal metric thread M40 supplied with plastic cable gland (OD Ø 16-28)
		MH40P20	internal metric thread M40 supplied with plastic cable gland (OD Ø 12-20)
G	Panel Gasket	-	Without panel gasket
		G	With waterproof panel gasket

* On request please consult or sales office

P/N Sample: PWK 08DAT 25P185 A1 MH40 P

PWK Connectors - Accessories

Pin Crimp Contacts

(for plug Connector)

Order Number	Short Description	Wire Section mm ²	AWG Cable size	Working current	Manual Crimping tool	Crimp Die	Stripping length (mm)
VS815009	PWK485 25-35P	35	-	600A	CRT-HT45	CDI-ME14	20
VS815008	PWK485 25-50P	50	-	600A	CRT-HT45	CDI-ME17	20
VS815007	PWK485 25-70P	70	-	600A	CRT-HT131****	CDI-ME24C	24
VS815006	PWK485 25-95P	95	-	600A	CRT-HT131****	CDI-ME24C	30
VS815010	PWK485 25-120P	120	-	600A	CRT-HT131****	CDI-ME29C	30
VS815005	PWK485 25-150P	150	-	600A	CRT-HT131****	CDI-ME37C	29
VS815011	PWK485 25-185P	185	-	600A	CRT-HT131****	CDI-ME37C	29

**** On alternative: CRT-HT120

Working current to be checked with the specific cable characteristics

Socket Threaded Contacts

(for panel Connector 02)

Order Number	Short Description	Working current	Threaded
VS815002	PWK485 25-TH10S	600A	M10
VS815003	PWK485 25-THS	600A	M12

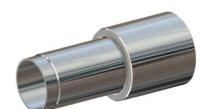
Socket Threaded Contacts

(for panel Connector 02C)

Order Number	Short Description	Working current	Threaded
VS815012	PWK485 25C-TH10S	600A	M10
VS815013	PWK485 25C-THS	600A	M12

Panel Gasket

Order Number	Short Description	Shell size
VS815014	PWK215-25	25

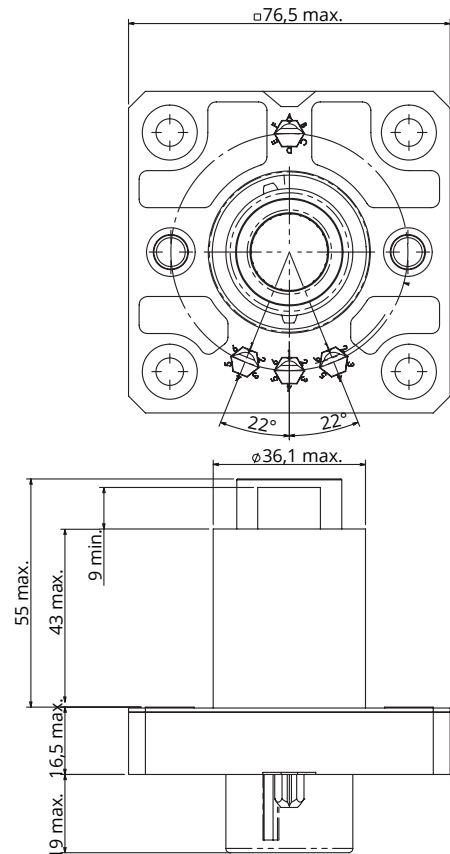


Extraction Tool

Order Number	Short Description	Shell size
VS815015	PWK Extraction Tool	25

PWK Connectors - Single Pole Connectors

Power Receptacle Connector



Reference documents:

- EN 50124-1
- EN 60077-1
- EN 45545-2
- NFPA130 (ASTME162, ASTME662, BSS7239)
- APTA SS-E-001-98
- EN 60529
- EN 61373
- European directive 2011/65UE RoHs

Materials and finishes:

- Shells: thermoplastic resin - Fire behaviour (fire and smoke) according to EN 45545-2, NFPA130 (ASTME162, ASTME662, BSS7239)
- Screws and levers: stainless steel
- Gaskets: silicone rubber

Additional coding key on request (n°6 configurations)

The position depends on the chosen angular polarization (-22°, 0°, +22°)

Total possible codings: 36

Part Number	Short Description	Description
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on request	PWK 02T 25S TH G	Front mounting receptacle connector unable to accept rear accessories (NFPA) n°1 Socket contact - M12 Threaded hole contacts
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on request	PWK 02T 25S TH10 G	Front mounting receptacle connector unable to accept rear accessories (NFPA) n°1 Socket contact - M10 Threaded hole contacts
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ELECTRICAL CHARACTERISTICS

Nominal voltage	Test Voltage	Current rating single contact Max 20°	Air and creepage distances
1500V APTA SS-E001-98: up to 1500V	5600Vac	600A (700A for 5')	According to EN 50124-1 Pollution degree: PD3A (mated connectors) Over-voltage category: OV3

ENVIRONMENTAL CHARACTERISTICS

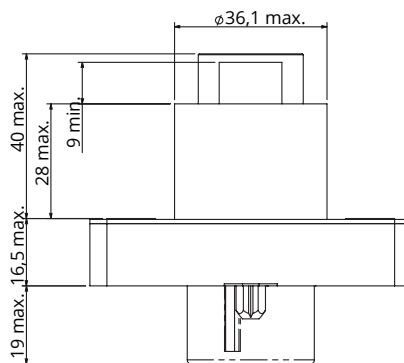
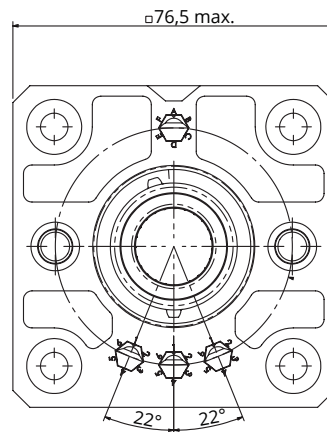
Connectors working temperature	IP Protection degree (EN 60529)
- 55°C ÷ +125°C	IP 68 with mated connectors at 10 meters depth for 12 hours

MECHANICAL CHARACTERISTICS

Mating system	Shock and vibrations tests (EN 61373)
n°2 M8x1.25 screws	category 1, body mounted

PWK Connectors - Single Pole Connectors

Power Receptacle Connector



Reference documents:

- EN 50124-1
- EN 60077-1
- EN 45545-2
- NFPA130 (ASTME162, ASTME662, BSS7239)
- APTA SS-E-001-98
- EN 60529
- EN 61373
- European directive 2011/65UE RoHs

Materials and finishes:

- Shells: thermoplastic resin - Fire behaviour (fire and smoke) according to EN 45545-2, NFPA130 (ASTME162, ASTME662, BSS7239)
- Screws and levers: stainless steel
- Gaskets: silicone rubber

Additional coding key on request (n°6 configurations)

The position depends on the chosen angular polarization (-22°, 0°, +22°)

Total possible codings: 36

Part Number	Short Description	Description
on request	PWK 02CT 25S TH G	Front mounting receptacle connector unable to accept rear accessories n°1 Socket contact - M12 Threaded hole contacts
on request	PWK 02CT 25S TH10 G	Front mounting receptacle connector unable to accept rear accessories n°1 Socket contact - M10 Threaded hole contacts

ELECTRICAL CHARACTERISTICS

Nomiale voltage	Test Voltage	Current rating single contact Max 20°	Air and creepage distances
1500V APTA SS-E001-98: up to 750V	5600Vac	600A (700A for 5')	According to EN 50124-1 Pollution degree: PD3A (mated connectors) Over-voltage category: OV3

ENVIRONMENTAL CHARACTERISTICS

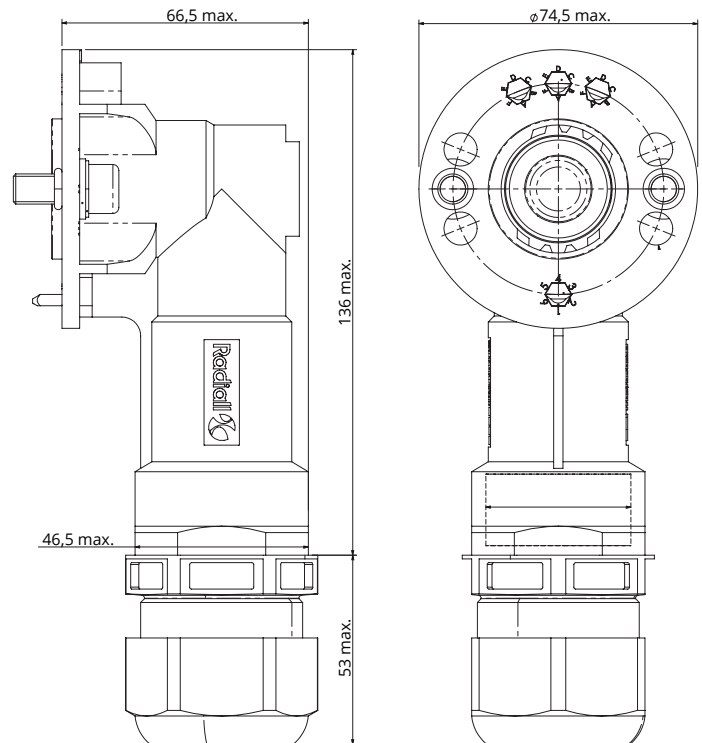
Connectors working temperature	IP Protection degree (EN 60529)
- 55°C ÷ +125°C	IP 68 with mated connectors at 10 meters depth for 12 hours

MECHANICAL CHARACTERISTICS

Mating system	Shock and vibrations tests (EN 61373)
n°2 M8x1.25 screws	category 1, body mounted

PWK Connectors - Single Pole Connectors

Plug connector with 90° elbow



Reference documents:

- EN 50124-1
- EN 60077-1
- EN 45545-2
- NFPA130 (ASTME162, ASTME662, BSS7239)
- APTA SS-E-001-98
- EN 60529
- EN 61373
- European directive 2011/65UE RoHs

Materials and finishes:

- Shells: thermoplastic resin - Fire behaviour (fire and smoke) according to EN 45545-2, NFPA130 (ASTME162, ASTME662, BSS7239)
- Screws and levers: stainless steel

Additional coding key on request (n°6 configurations)
The position depends on the chosen angular polarization (-22°, 0°, +22°)
Total possible codings: 36

Part Number	Short Description	Description
on request	PWK 08DAT 25P LC MH40P	Plug connector with 90° elbow n°1 Pin contact (crimp up to 185mm ² - supplied separately) internal metric thread M40 supplied with plastic cable gland (OD Ø 16-28)
on request	PWK 08DAT 25P LC MH40P20	Plug connector with 90° elbow n°1 Pin contact (crimp up to 185mm ² - supplied separately) internal metric thread M40 supplied with plastic cable gland (OD Ø 12-20)

ELECTRICAL CHARACTERISTICS

Nominal voltage	Test Voltage	Current rating single contact Max 20°	Air and creepage distances
1500V APTA SS-E001-98: up to 1500V	5600Vac	600A (700A for 5')	According to EN 50124-1 Pollution degree: PD3A (mated connectors) Over-voltage category: OV3

ENVIRONMENTAL CHARACTERISTICS

Connectors working temperature	IP Protection degree (EN 60529)
- 55°C ÷ +125°C	IP 68 with mated connectors at 10 meters depth for 12 hours

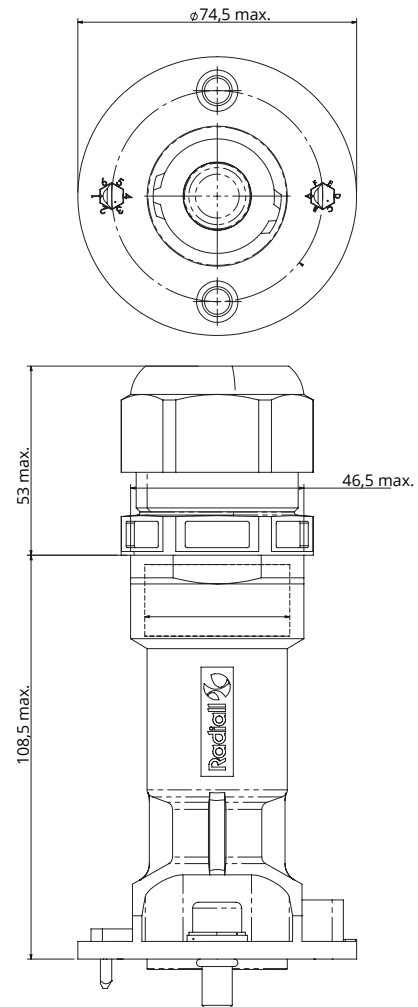
MECHANICAL CHARACTERISTICS

Mating system	Shock and vibrations tests (EN 61373)
n°2 M8x1.25 screws	category 1, body mounted

PWK Connectors - Single Pole Connectors

Plug connector with straight backshell *

* On request please consult our sales office



Reference documents:

- EN 50124-1
- EN 60077-1
- EN 45545-2
- NFPA130 (ASTME162, ASTME662, BSS7239)
- APTA SS-E-001-98
- EN 60529
- EN 61373
- European directive 2011/65UE RoHs

Materials and finishes:

- Shells: thermoplastic resin - Fire behaviour (fire and smoke) according to EN 45545-2, NFPA130 (ASTME162, ASTME662, BSS7239)
- Screws and levers: stainless steel

Additional coding key on request (n°6 configurations)

The position depends on the chosen angular polarization (-22°, 0°, +22°)

Total possible codings: 36

Part Number	Short Description	Description
on request	PWK 06DAT 25P LC MH40P	Plug connector with straight backshell n°1 Pin contact (crimp up to 185mm ² - supplied separately) internal metric thread M40 supplied with plastic cable gland (OD Ø 16-28)
on request	PWK 06DAT 25P LC MH40P20	Plug connector with straight backshell n°1 Pin contact (crimp up to 185mm ² - supplied separately) internal metric thread M40 supplied with plastic cable gland (OD Ø 12-20)

ELECTRICAL CHARACTERISTICS

Nominal voltage	Test Voltage	Current rating single contact Max 20°	Air and creepage distances
1500V APTA SS-E001-98: up to 1500V	5600Vac	600A (700A for 5')	According to EN 50124-1 Pollution degree: PD3A (mated connectors) Over-voltage category: OV3

ENVIRONMENTAL CHARACTERISTICS

Connectors working temperature	IP Protection degree (EN 60529)
- 55°C ÷ +125°C	IP 68 with mated connectors at 10 meters depth for 12 hours

MECHANICAL CHARACTERISTICS

Mating system	Shock and vibrations tests (EN 61373)
n°2 M8x1.25 screws	category 1, body mounted

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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