



# PWBS

## SINGLE POLE POWER CONNECTORS

SINGLE POLE BAYONET CONNECTOR  
**UP TO 1000A** RATED CURRENT



Radiall 

 VanSystem

## About Us



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 is 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, VanSystem designs and manufactures non-standard products for special applications. One of VanSystem'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. The VanSystem team's professionalism, skill and commitment are at your service to help you achieve the solution you are looking for.

VanSystem's Quality System is qualified according to ISO 9001:2015 and ISO/TS 22163:2017 IRIS Certification™ rules:2017 (International Railway Industry Standard).



## PWBS Connectors - Introduction

### Single pole bayonet connector up to 1000A rated current:

PWBS Single pole bayonet connector has been developed for motor and power connection in Railway application up to 1000A.

Suitable for harsh environments, could be used for car-to-car jumpers, power distributions and traction motors.

The rubber coupling nut allows this connector to be used in severe outdoor connections and harsh ambient conditions.

Customized power connectors solution could be developed to suit your needs.

### APPLICATIONS

- Railway
- Energy
- Naval
- Industrial



## PWBS Connectors - Introduction

Single pole bayonet connector up to 1000A rated current:



### Key characteristics:

- For harsh environments (for outdoor use): waterproof connection, dust proof and corrosion resistant
- Robust Connection, fully protected connectors: no risk to damage the contacts thanks the robust shell
- Copper alloy - Silver plating, can be supplied with one or two contacting band
- Suitable for 12 polarizations to prevent un-correct coupling
- Backshell and accessories for fastening cable/conduit fixation
- Working temperature  $-60^{\circ}\text{C} \div 180^{\circ}\text{C}$  (according to the inserts material)
- EMI protection with grounding finger, conductive plating and the proper rear accessory
- Socket contacts with touch proof protection (type 30)
- Fire resistant and halogen free compound. Qualified according to EN 45545-2





# PWBS Connectors - Introduction

## Single pole bayonet connector up to 1000A 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
- VG 95234: Electrical connectors and plug-and-socket devices, connectors with coupling pressure-water tight, up to 245A
- 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
- Supplied with grounding finger, conductive plating and the proper rear accessory
- Suitable for 12 polarizations to prevent un-correct coupling

#### Easy installation

- Fast and reliable coupling
- Backshell and accessories for fastening cable/conduit fixation

#### Suitable for harsh environments (adapted for outdoor use)

- Waterproof connection
- Dust proof
- Corrosion resistant

#### High level of performance

- Working temperature  $-60^{\circ}\text{C} \div 180^{\circ}\text{C}$  (according to the inserts material)
- EMI protection with grounding finger
- Socket contacts with touch proof protection (type 30)

## PWBS Connectors - Characteristics

### Electrical Characteristics

|                                   |  |
|-----------------------------------|--|
| <b>Working voltage</b>            | Size 32: <ul style="list-style-type: none"> <li>• 750V (OV4)</li> <li>• 1.000V (OV3)</li> <li>• 1.500V (OV2)</li> <li>• 3.000V (OV2) with extended insulation</li> </ul> Size 40: <ul style="list-style-type: none"> <li>• 1.500V (OV4)</li> <li>• 2.500V (OV3)</li> <li>• 3.000V (OV2)</li> </ul> |
| <b>Test Voltage (EN 60077-1)</b>  | up to 5.600V   |
| <b>Working current</b>            | 500A / 600A / 1.000A   |
| <b>Air and creepage distances</b> | According to EN 50124-1  |
| <b>Contact resistance</b>         | < 0,5 mΩ   |
| <b>Insulating resistance</b>      | > 5 GΩ   |
| <b>Rated insulation voltage</b>   | 1.800V Unm (OV4)   |

### Mechanical Characteristics

|  |                           |
|--|---------------------------|
| <b>Coupling mechanism</b>                    | Reverse bayonet           |
| <b>Mating endurance (IEC 61300-2-2)</b>      | 500 mating cycles minimum |
| <b>Shock and vibrations tests (EN 61373)</b> | Category 2 bogie mounted  |

### Environmental Characteristics

|  |   |
|--|---|
| <b>Connectors working temperature</b>        | <ul style="list-style-type: none"> <li>• Standard -40°C ÷ +125°C</li> <li>• High temperature -40°C ÷ +180°C</li> <li>• Low temperature -60°C ÷ +125 °C</li> </ul> |
| <b>Class of temperature air (EN 50125-1)</b> | T3 : -25°C +45°C (external to vehicle)  |
| <b>Protection degree (EN 60529)</b>          | IP67 (when mated)   |
| <b>Corrosion resistant</b>                   | <ul style="list-style-type: none"> <li>• 500h (F16 shell finishes)</li> <li>• 1000h* (F26 shell finishes)</li> <li>• 2000h (F12 shell finishes)</li> </ul>        |

\* Please contact our sales office

### Materials and Finishes

|                           |   |
|---------------------------|---|
| <b>Shells</b>             | Aluminum alloy with different types of finishes protection  |
| <b>Shell finishes</b>     | <ul style="list-style-type: none"> <li>• <b>F12</b> Black Hard Deep Anodization - not conductive (RoHS compliance)</li> <li>• <b>F16</b> CCF - Black passivation - conductive (RoHS compliance)</li> <li>• <b>F26</b> Black Hard Anodization (RoHS compliance)</li> </ul> |
| <b>Internal Insulator</b> | Thermoplastic resin according to UL 94 V0<br>Flame retardant according to EN 45545-2 (HL3 R22 / R23) and NFPA 130 (ASTM E 162, ASTM E 662, BSS7239)   |
| <b>Contacts</b>           | Copper alloy - Silver plating 3.5μ min. can be supplied with one or two contactation band   |
| <b>Gasket</b>             | Flame retardant silicone compound   |

# PWBS Connectors - Characteristics

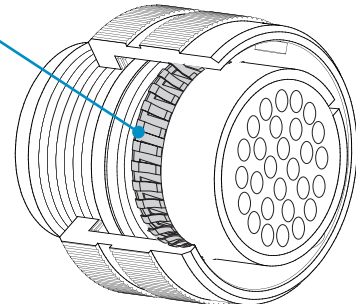
## Product Characteristics

|                                  |   |
|----------------------------------|---|
| <b>Bayonet coupling system</b>   | Composed by three ramps on the external side and three stainless steel studs mounted inside the plug coupling nut.<br>The coupling point, at the end of the ramp, is protected by a stainless steel roller.   |
| <b>Coupling retention system</b> | Obtained by a wave washer installed under the plug connector coupling nut.  |
| <b>Contacts arrangement</b>      | Unipolar central Contacting provided by multi-points contacts band  |
| <b>Contacting</b>                | Provided by multi-points contacts band  |
| <b>Touch proof</b>               | Socket contacts, size 2-30, could be supplied with touch proof contacts protection  |
| <b>Contacts retention</b>        | Metal clip  |
| <b>Polarization</b>              | Suitable for 12 polarizations to prevent un-correct coupling  |
| <b>Shielding</b>                 | Plug connectors can be supplied with grounding finger<br>Shell connectors can be finished in conductive passivation F16 CCF-Black   |
| <b>MS 3057-C cable clamp</b>     | Besides guaranteeing an excellent mechanical strain relief keeping the cable in the center of the connector, these cable-clamps are provided with an internal conical rubber bushing ensuring waterproof protection.<br>The screws in stainless steel have elastic rose-cut antivibration head. |
| <b>AMK backshell</b>             | Provided with gasket and iris spring connected to one another by an internal ring.<br>When screwing the rear coupling nut, the gasket and the spring tighten around the cable or the hose, so to guarantee an excellent mechanical strain relief and water tightness.                           |

## SHIELDING SOLUTIONS

Plug connectors can be supplied with grounding finger (type 96 - 98 - 96GG - 98GG), when mated with receptacle connectors (type 01 - 030 - 03 ) and provided with rear accessories for shielded cables, the connectors have shielding characteristics according to VG95234 specs.

Grounding Finger



## PWBS Connectors - Part number explanation

|   |   |      |    |    |      |   |   |        |    |     |     |   |    |
|---|---|------|----|----|------|---|---|--------|----|-----|-----|---|----|
| H | V | PWBS | 06 | DA | 40P1 | P | A | 1-2550 | TP | M40 | F12 | G | S_ |
|---|---|------|----|----|------|---|---|--------|----|-----|-----|---|----|

|      |                    |       |  |                      |
|------|--------------------|-------|--|----------------------|
| H    | Temperature range  | -     | -40°C ÷ +125°C   |                      |
|      |                    | H     | -40°C ÷ +180°C   |                      |
|      |                    | L     | -60°C ÷ +125°C   |                      |
| V    | Working Voltage    | -     | 1.500V (OV2) for Shell 32 - 3.000V (OV2) for Shell 40  |                      |
|      |                    | V     | 3.000V (OV2) - with extended insulation  |                      |
|      |                    | V4    | 3.000V (OV4 - PD3) - with V4 insulation  |                      |
|      |                    | A     | 750V (APTA) - with modified insulation   |                      |
| PWBS | Series Code        | PWBS  |  |                      |
| 06   | Shell Type         | 06    | Plug with metal coupling nut   |                      |
|      |                    | 61GG  | Plug with rubber coated coupling nut (short version)   |                      |
|      |                    | 65    | Plug with Heavy Duty coupling nut  |                      |
|      |                    | 96    | Plug with grounding finger (shielding)   |                      |
|      |                    | 961GG | Plug with grounding finger and rubber coated coupling nut (short version)  |                      |
|      |                    | 030   | Rear mounting receptacle able to accept accessories  |                      |
|      |                    | 03    | Rear mounting receptacle   |                      |
|      |                    | 01    | Inline connector   |                      |
| DA   | Connector Class    | AC    | Backshell with MS 3057-C type cable clamp  |                      |
|      |                    | AMK   | Provided with gasket and an iris spring connected to one another by an internal ring. The iris spring is used to connect multicore jacketed cables or jacketed hoses |                      |
|      |                    | AWN   | Provided with gasket and an iris spring connected to one another, to guarantee an excellent mechanical strain relief and water tightness                             |                      |
|      |                    | DA    | Backshell with external UNEF thread or internal metric thread  |                      |
| T    | Caps**             | -     | Without caps   |                      |
|      |                    | T     | With plastic caps  |                      |
| 40P1 | Insert Arrangement | 32P1  | Shell size 32 single pole  |                      |
|      |                    | 40P1  | Shell size 40 single pole  |                      |
| P    | Contact Gender     | S     | Socket contacts  |                      |
|      |                    | P     | Pin contacts   |                      |
| A    | Polarization Code  | A     | Shell size 32 - 0°   | Shell size 40 - 0°   |
|      |                    | B     | Shell size 32 - 30°  | Shell size 40 - 36°  |
|      |                    | C     | Shell size 32 - 60°  | Shell size 40 - 72°  |
|      |                    | D     | Shell size 32 - 90°  | Shell size 40 - 108° |
|      |                    | E     | Shell size 32 - 120°   | Shell size 40 - 144° |
|      |                    | F     | Shell size 32 - 150°   | Shell size 40 - 180° |
|      |                    | G     | Shell size 32 - 180°   | Shell size 40 - 216° |
|      |                    | H     | Shell size 32 - 210°   | Shell size 40 - 252° |
|      |                    | I     | Shell size 32 - 240°   | Shell size 40 - 288° |
|      |                    | L     | Shell size 32 - 270°   | Shell size 40 - 324° |
|      |                    | M     | Shell size 32 - 300°   |                      |
|      |                    | N     | Shell size 32 - 330°   |                      |

\*\* If required



## PWBS Connectors - Part number explanation

|                |  |                 |   |
|----------------|--|-----------------|---|
| <b>1-25-50</b> | <b>Contact Type</b>                      | <b>1-25-50</b>  | Single band, for wire section 50 mm <sup>2</sup> (for shell size 32)                  |
|                |  | <b>1-25-95</b>  | Single band, for wire section 95 mm <sup>2</sup> (for shell size 32)                  |
|                |  | <b>1-25-120</b> | Single band, for wire section 120 mm <sup>2</sup> (for shell size 32)                 |
|                |  | <b>1-25-150</b> | Single band, for wire section 150 mm <sup>2</sup> (for shell size 32)                 |
|                |  | <b>1-25-185</b> | Single band, for wire section 185 mm <sup>2</sup> (for shell size 32)                 |
|                |  | <b>1-20-50</b>  | Single band, for wire section 50mm <sup>2</sup> (for shell size 40)                   |
|                |  | <b>1-20-70</b>  | Single band, for wire section 70mm <sup>2</sup> (for shell size 40)                   |
|                |  | <b>1-20-95</b>  | Single band, for wire section 95mm <sup>2</sup> (for shell size 40)                   |
|                |  | <b>1-20-120</b> | Single band, for wire section 120mm <sup>2</sup> (for shell size 40)                  |
|                |  | <b>1-20-92</b>  | Single band, for wire section 92mm <sup>2</sup> - AWG 3/0 (for shell size 40)         |
|                |  | <b>1-20-112</b> | Single band, for wire section 112mm <sup>2</sup> - AWG 4/0 (for shell size 40)        |
|                |  | <b>2-30-70</b>  | Double band, for wire section 70mm <sup>2</sup> (for shell size 40)                   |
|                |  | <b>2-30-95</b>  | Double band, for wire section 95mm <sup>2</sup> (for shell size 40)                   |
|                |  | <b>2-30-120</b> | Double band, for wire section 120mm <sup>2</sup> (for shell size 40)                  |
|                |  | <b>2-30-150</b> | Double band, for wire section 150mm <sup>2</sup> (for shell size 40)                  |
|                |  | <b>2-30-185</b> | Double band, for wire section 185mm <sup>2</sup> (for shell size 40)                  |
|                |  | <b>2-30-240</b> | Double band, for wire section 240mm <sup>2</sup> (for shell size 40)                  |
|                |  | <b>2-30-262</b> | Double band, for wire section MCM262 (for shell size 40)                              |
|                |  | <b>2-30-535</b> | Double band, for wire section MCM535 (for shell size 40)                              |
|                |  | <b>2-30-646</b> | Double band, for wire section MCM646 (for shell size 40)                              |
| <b>TP</b>      | <b>Contact Type</b>                      | <b>TH</b>       | Threaded hole contacts (for 03 panel version only)                                    |
|                |  | <b>TP</b>       | With touch proof contacts protection (for contact type 2-30 only)                     |
| <b>M40</b>     | <b>Cable entry</b>                       | -               | UNEF thread   |
|                |  | <b>R8</b>       | (AC) cable clamp (8 – 13,5mm)   |
|                |  | <b>R10</b>      | (AC) cable clamp (9,6 – 15,9mm)   |
|                |  | <b>R12</b>      | (AC) cable clamp (11,3 – 19mm)  |
|                |  | <b>R16</b>      | (AC) cable clamp (15,5 – 23,8mm)  |
|                |  | <b>R18</b>      | (AC) cable clamp (18 – 25mm)  |
|                |  | <b>R20</b>      | (AC) cable clamp (23,4 – 31,8mm)  |
|                |  | <b>R24</b>      | (AC) cable clamp (25,4 – 35,5mm)  |
|                |  | <b>R28</b>      | (AC) cable clamp (30 – 41,3mm)  |
|                |  | <b>XX</b>       | (AMK-AWN) clamping range according to wire diameter (please contact our sales office) |
|                |  | <b>M32</b>      | (DA) internal thread M32  |
|                |  | <b>M40</b>      | (DA) internal thread M40  |
|                |  | <b>MH32</b>     | (DA) internal thread M32 supplied with metal cable gland - clamping range (11-21mm)   |
|                |  | <b>MH40</b>     | (DA) internal thread M40 supplied with metal cable gland - clamping range (19-28mm)   |
| <b>F12</b>     | <b>Shell finish</b>                      | <b>F12</b>      | Black Hard Deep Anodization - not conductive (RoHS compliance)                        |
|                |  | <b>F16</b>      | CCF - Black passivation (RoHS compliance) - conductive                                |
|                |  | <b>F26</b>      | Hard anodization (RoHS compliance)  |
| <b>G</b>       | <b>Panel Gasket</b>                      | <b>G</b>        | With waterproof panel gasket  |
|                |  | <b>G3</b>       | With waterproof shielded panel gasket   |
| <b>S</b>       | <b>Modification Code<br/>If required</b> | <b>S</b>        | Customization (Consult our sales office)  |

P/N Sample: PWBS 06AC 32P1SA 1-25-50 R8 F16

## PWBS Connectors - Contacts

### Pin Crimp Contacts



| Contact type | Shell size | Multi-points Contact band | Wire Section mm <sup>2</sup> | AWG Cable size | Working current | Manual Crimping tool | Crimp Die                | Stripping length (mm) |
|--------------|------------|---------------------------|------------------------------|----------------|-----------------|----------------------|--------------------------|-----------------------|
| 1-25-50      | 32         | (on Socket contacts)      | 50                           | -              | 600A            | CRT-HT45*            | CDI-ME14*                | 20                    |
| 1-25-95      | 32         | (on Socket contacts)      | 95                           | -              | 600A            | CRT-HT120            | CDI-ME24C                | 30                    |
| 1-25-120     | 32         | (on Socket contacts)      | 120                          | -              | 600A            | CRT-HT120            | CDI-ME29C                | 30                    |
| 1-25-150     | 32         | (on Socket contacts)      | 150                          | -              | 600A            | CRT-HT120            | CDI-ME37C                | 29                    |
| 1-25-185     | 32         | (on Socket contacts)      | 185                          | -              | 600A            | CRT-HT120            | CDI-ME37C                | *                     |
| 1-20-50      | 40         | (on Socket contacts)      | 50                           | -              | 500A            | CRT-HT120            | CDI-ME17C*<br>CDI-ME20C* | 20                    |
| 1-20-70      | 40         | (on Socket contacts)      | 70                           | -              | 500A            | CRT-HT120            | CDI-ME20C*<br>CDI-ME24C* | 22*<br>24*            |
| 1-20-95      | 40         | (on Socket contacts)      | 95                           | -              | 500A            | CRT-HT120            | CDI-ME24C                | 20                    |
| 1-20-120     | 40         | (on Socket contacts)      | 120                          | -              | 500A            | CRT-HT120            | CDI-ME29C                | 20                    |
| 1-20-92      | 40         | (on Socket contacts)      | 92                           | 3/0            | 500A            | CRT-HT120            | CDI-ME24C                | 20                    |
| 1-20-112     | 40         | (on Socket contacts)      | 112                          | 4/0            | 500A            | CRT-HT120            | CDI-ME30C                | 20                    |
| 2-30-95      | 40         | Double                    | 95                           | -              | 1.000A          | CRT-HT120            | CDI-ME24C                | 30                    |
| 2-30-120     | 40         | Double                    | 120                          | -              | 1.000A          | CRT-HT120            | CDI-ME29C                | 30                    |
| 2-30-150     | 40         | Double                    | 150                          | -              | 1.000A          | CRT-HT120            | CDI-ME37C                | 29                    |
| 2-30-185     | 40         | Double                    | 185                          | -              | 1.000A          | CRT-HT120*           | *                        | *                     |
| 2-30-240     | 40         | Double                    | 240                          | -              | 1.000A          | CRT-HT120            | CDI-ME60C                | 40                    |
| 2-30-262     | 40         | Double                    | -                            | 262 MCM        | 1.000A          | CRT-HT120            | CDI-ME37C                | 27                    |
| 2-30-535     | 40         | Double                    | -                            | 535 MCM        | 1.000A          | CRT-HT120            | CDI-ME60C                | 40                    |
| 2-30-646     | 40         | Double                    | -                            | 646 MCM        | 1.000A          | CRT-HT120            | CDI-MK32C*               | 40                    |

\* Please, consul our commercial office

\*\* TP = can be supplied with touch proof protections

Working current to be checked with the specific cable characteristics

## PWBS Connectors - Contacts

### Socket Crimp Contacts



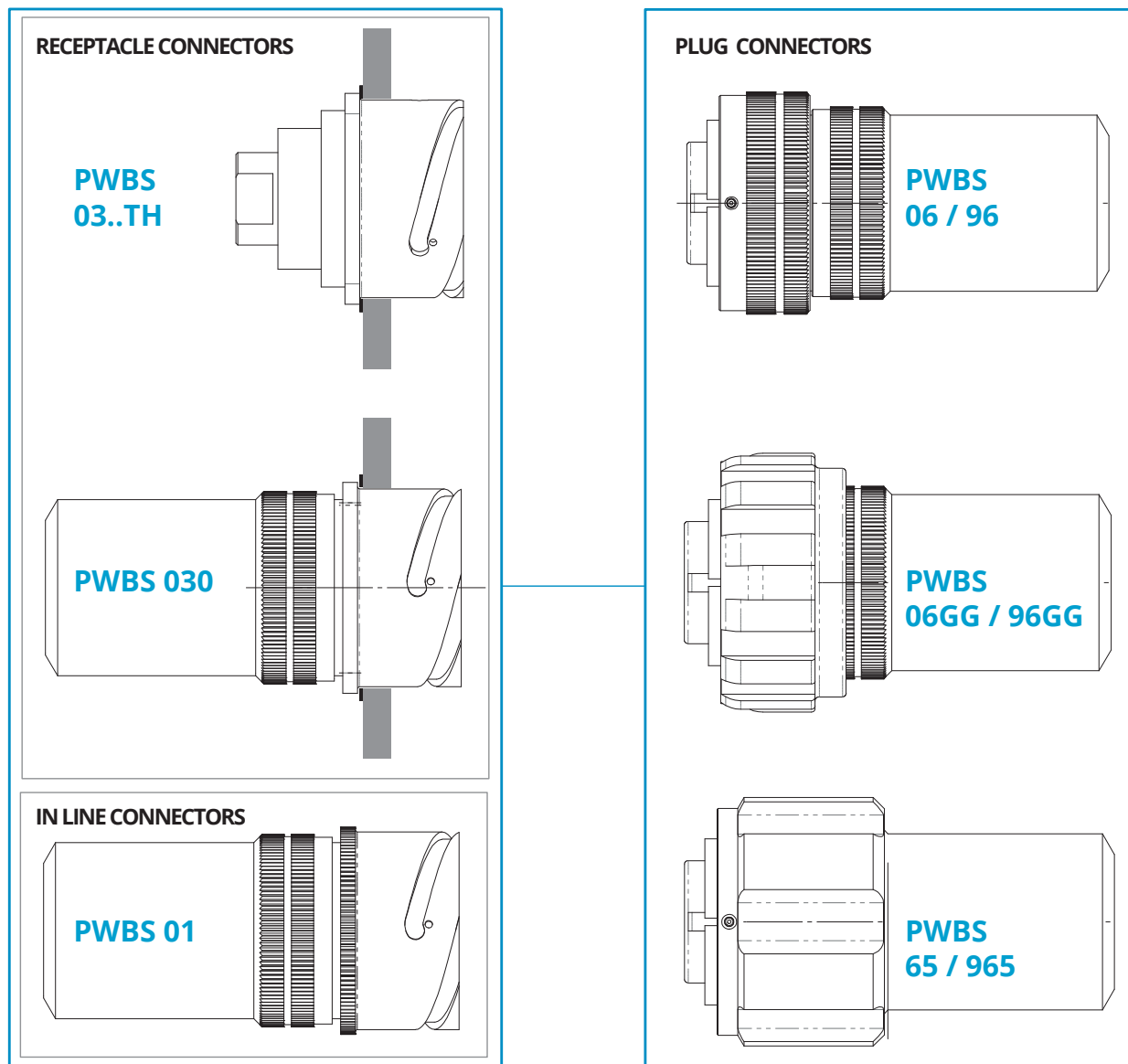
| Contact type | Shell size | Multi-points Contact band | Wire Section mm <sup>2</sup> | AWG Cable size | Working current | Manual Crimping tool | Crimp Die                | Stripping length (mm) |
|--------------|------------|---------------------------|------------------------------|----------------|-----------------|----------------------|--------------------------|-----------------------|
| 1-25-50      | 32         | Single                    | 50                           | -              | 600A            | CRT-HT45*            | CDI-ME14*                | 20                    |
| 1-25-95      | 32         | Single                    | 95                           | -              | 600A            | CRT-HT120            | CDI-ME24C                | 30                    |
| 1-25-120     | 32         | Single                    | 120                          | -              | 600A            | CRT-HT120            | CDI-ME29C                | 30                    |
| 1-25-150     | 32         | Single                    | 150                          | -              | 600A            | CRT-HT120            | CDI-ME37C                | 29                    |
| 1-25-185     | 32         | Single                    | 185                          | -              | 600A            | CRT-HT120            | CDI-ME37C                | *                     |
| 1-20-50      | 40         | Single                    | 50                           | -              | 500A            | CRT-HT120            | CDI-ME17C*<br>CDI-ME20C* | 20                    |
| 1-20-70      | 40         | Single                    | 70                           | -              | 500A            | CRT-HT120            | CDI-ME20C*<br>CDI-ME24C* | 22*<br>24*            |
| 1-20-95      | 40         | Single                    | 95                           | -              | 500A            | CRT-HT120            | CDI-ME24C                | 20                    |
| 1-20-120     | 40         | Single                    | 120                          | -              | 500A            | CRT-HT120            | CDI-ME29C                | 20                    |
| 1-20-92      | 40         | Single                    | 92                           | 3/0            | 500A            | CRT-HT120            | CDI-ME24C                | 20                    |
| 1-20-112     | 40         | Single                    | 112                          | 4/0            | 500A            | CRT-HT120            | CDI-ME30C                | 20                    |
| 2-30-95**    | 40         | (on male contacts)        | 95                           | -              | 1.000A          | CRT-HT120            | CDI-ME24C                | 30                    |
| 2-30-120**   | 40         | (on male contacts)        | 120                          | -              | 1.000A          | CRT-HT120            | CDI-ME29C                | 30                    |
| 2-30-150**   | 40         | (on male contacts)        | 150                          | -              | 1.000A          | CRT-HT120            | CDI-ME37C                | 29                    |
| 2-30-185**   | 40         | (on male contacts)        | 185                          | -              | 1.000A          | CRT-HT120*           | *                        | *                     |
| 2-30-240**   | 40         | (on male contacts)        | 240                          | -              | 1.000A          | CRT-HT120            | CDI-ME60C                | 40                    |
| 2-30-262**   | 40         | (on male contacts)        | -                            | 262 MCM        | 1.000A          | CRT-HT120            | CDI-ME37C                | 27                    |
| 2-30-535**   | 40         | (on male contacts)        | -                            | 535 MCM        | 1.000A          | CRT-HT120            | CDI-ME60C                | 40                    |
| 2-30-646**   | 40         | (on male contacts)        | -                            | 646 MCM        | 1.000A          | CRT-HT120            | CDI-MK32C*               | 40                    |

\* Please, consul our commercial office

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

Working current to be checked with the specific cable characteristics

## PWBS Connectors - Shell compatibility table



## PWBS Connectors - 030 Shell

### Rear Mounting Panel Receptacle With Ramps

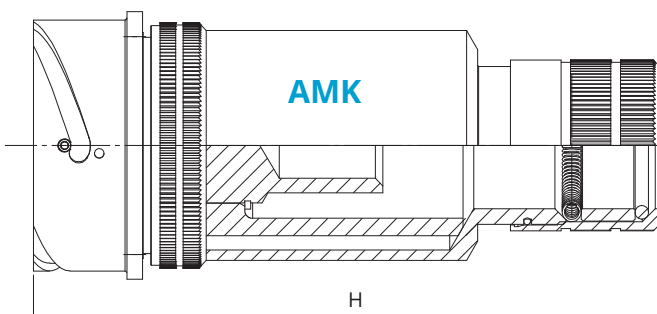
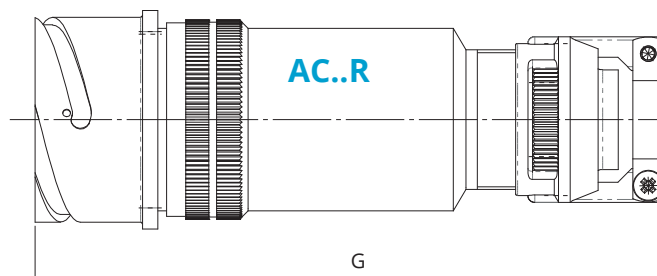
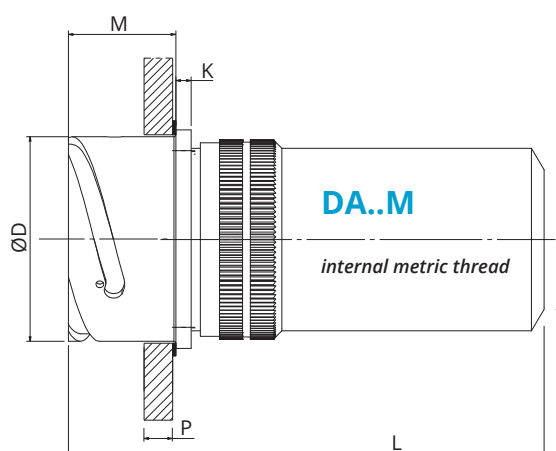
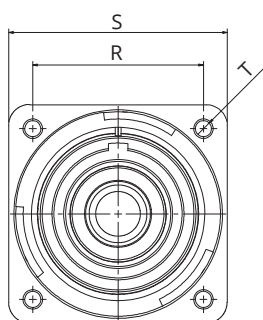


Receptacle connector supplied with straight backshell:

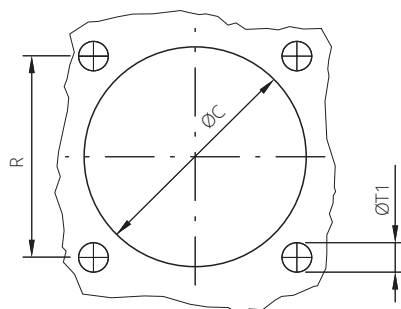
- **DA..M**: internal metric thread
- **AC..R**: MS 3057-C type cable clamp
- **AMK**: IRIS spring for multicore jacketed cables

Optional external grounding terminal.

Can be mated with 06 – 06GG – 96 – 96GG – 65 – 965 plugs



Panel cut out



| Shell Size | ØD   | L  | G*  | H*  | M    | K | P max | S    | R    | T  | T1  | ØC   |
|------------|------|----|-----|-----|------|---|-------|------|------|----|-----|------|
| 32         | 53,4 | ** | 165 | 165 | 24.4 | 4 | 7.5   | 57   | 44.5 | M5 | 5.5 | 54.3 |
| 40         | 65,5 | ** | 170 | 168 | 24.4 | 4 | 7.5   | 69.8 | 55.6 | M5 | 5.5 | 66.4 |

\* Dimensions "G" and "H" can be different from the value indicated according to backshells accessories, wires size and some special configurations. Verify with our sales office.

\*\* Consult our sales office

Dimensions in mm



## PWBS Connectors - 03..TH Shell

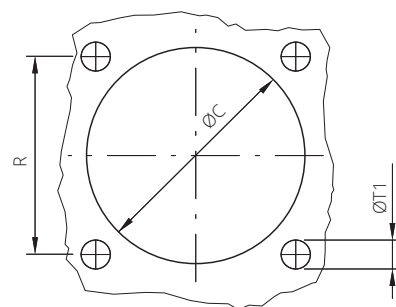
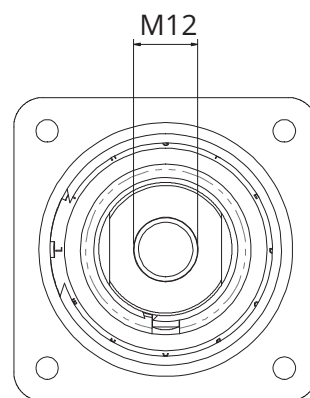
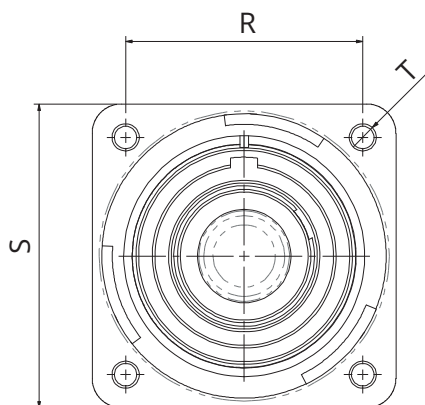
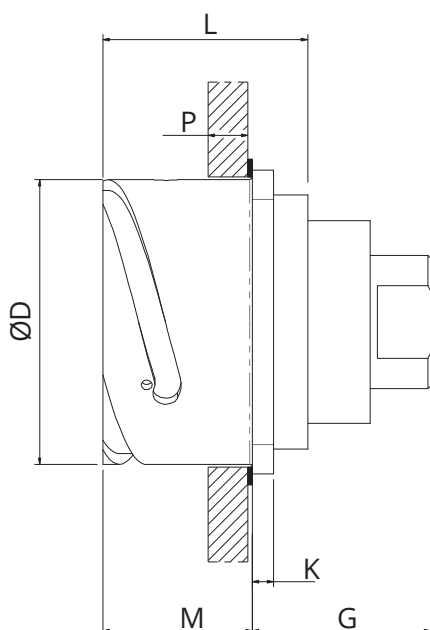
### Rear Mounting Panel Receptacle With Ramps. Contact With Rear Threaded Hole.



Receptacle connector unable to accept rear accessories.

Optional external grounding terminal.

Can be mated with:  
06 - 06GG - 96 - 96GG - 65 - 965 plugs.



Panel cut out

| Shell Size | ØD   | L    | M    | K | G  | P max | S    | R    | T  | T1  | ØC   |
|------------|------|------|------|---|----|-------|------|------|----|-----|------|
| 32         | 53,4 | 38.4 | 24.4 | 4 | 34 | 7.5   | 57   | 44.5 | M5 | 5.5 | 54.3 |
| 40         | 65,5 | 38.5 | 24.4 | 4 | ** | 7.5   | 69.8 | 55.6 | M5 | 5.5 | 66.4 |

\*\* Consult our sales office

Dimensions in mm

## PWBS Connectors - 06 / 96 Shell

### Plug Connector With Bayonet Coupling Nut



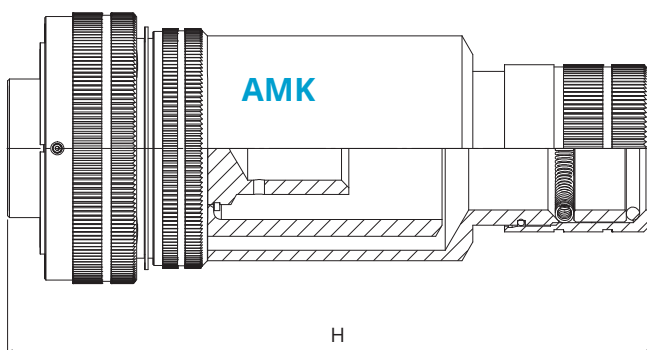
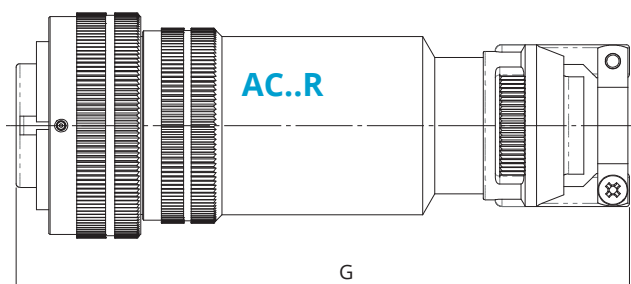
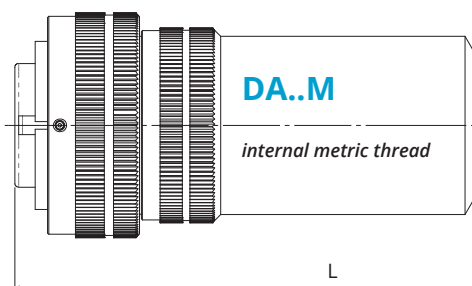
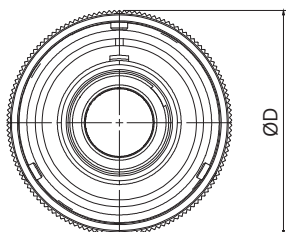
Plug connector supplied with straight backshell:

- **DA..M:** internal metric thread
- **AC..R:** MS 3057-C type cable clamp
- **AMK:** IRIS spring for multicore jacketed cables

Shell type:

- 06 with straight backshell
- 96 provided with grounding finger

Can be mated with 030 - 03..TH - 01 receptacles.



| Shell Size | ØD   | L  | G*  | H*  |
|------------|------|----|-----|-----|
| 32         | 60   | ** | 165 | 167 |
| 40         | 72.4 | ** | 170 | 172 |

\* Dimensions "G" and "H" can be different from the value indicated according to backshells accessories, wires size and some special configurations. Verify with our sales office.

\*\* Consult our sales office

Dimensions in mm

## PWBS Connectors - 06GG / 96GG Shell

### Plug Connector With Rubber Covered Bayonet Coupling Nut



The rubber covered coupling nut is able to protect against dust and impact.

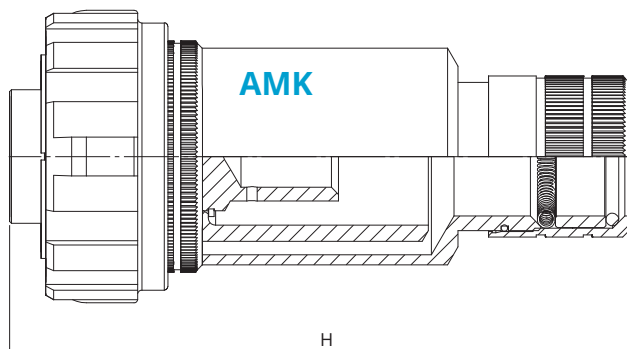
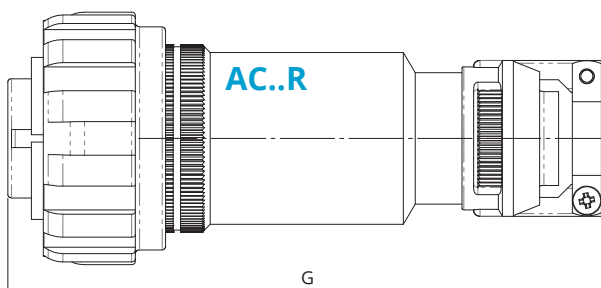
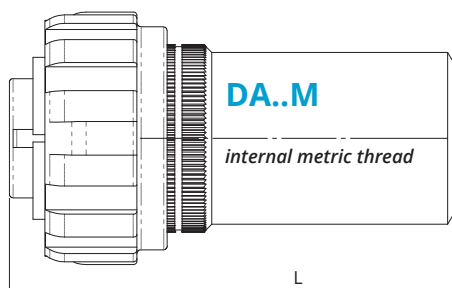
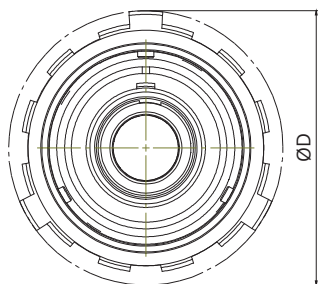
Plug connector supplied with straight backshell:

- **DA..M**: internal metric thread
- **AC..R**: MS 3057-C type cable clamp
- **AMK**: IRIS spring for multicore jacketed cables

Shell type:

- 06 with straight backshell
- 96 provided with grounding finger

Can be mated with 030 - 03..TH - 01 receptacles.



| Shell Size | ØD | L  | G*  | H*  |
|------------|----|----|-----|-----|
| 32         | 76 | ** | 165 | 167 |
| 40         | 90 | ** | 170 | 172 |

\* Dimensions "G" and "H" can be different from the value indicated according to backshells accessories, wires size and some special configurations. Verify with our sales office.

\*\* Consult our sales office

Dimensions in mm

## PWBS Connectors - 65 / 965 Shell

### Plug Connector With Heavy Duty Bayonet Coupling Nut



Connector with special coupling-nut particularly robust and suitable to be used with working gloves.

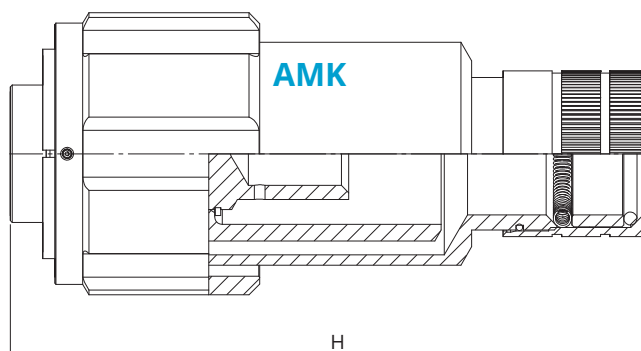
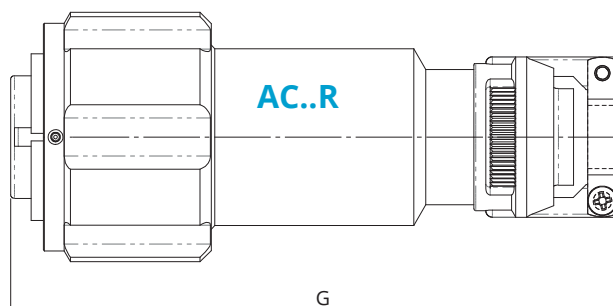
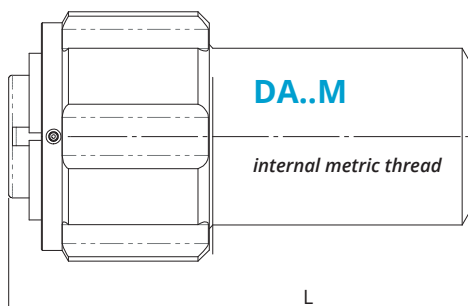
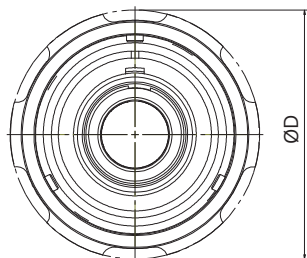
Plug connector supplied with straight backshell:

- **DA..M:** internal metric thread
- **AC..R:** MS 3057-C type cable clamp
- **AMK:** IRIS spring for multicore jacketed cables

Shell type:

- 06 with straight backshell
- 96 provided with grounding finger

Can be mated with 030 - 03..TH - 01 receptacles.



| Shell Size | ØD   | L  | G*  | H*  |
|------------|------|----|-----|-----|
| 32         | 67.1 | ** | 165 | 167 |
| 40         | 79.1 | ** | 170 | 172 |

\* Dimensions "G" and "H" can be different from the value indicated according to backshells accessories, wires size and some special configurations. Verify with our sales office.

\*\* Consult our sales office

Dimensions in mm

## PWBS Connectors - 01 Shell

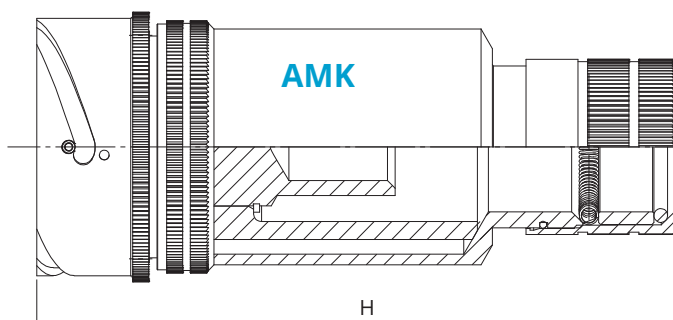
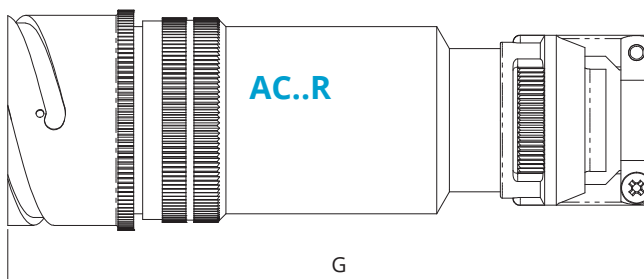
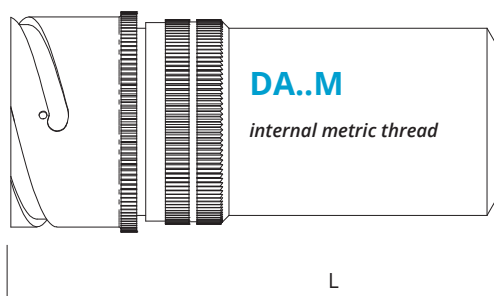
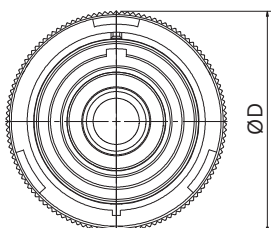
### Plug Connector With Ramps



Cable connecting plug able to accept rear straight backshell:

- **DA..M**: internal metric thread
- **AC..R**: MS 3057-C type cable clamp
- **AMK**: IRIS spring for multicore jacketed cables

Can be mated with 06 – 96 – 06GG – 96GG – 65 – 965 plugs.



| Shell Size | ØD   | L  | G*  | H*  |
|------------|------|----|-----|-----|
| 32         | 53.4 | ** | 165 | 165 |
| 40         | 65.5 | ** | 170 | 168 |

\* Dimensions "G" and "H" can be different from the value indicated according to backshells accessories, wires size and some special configurations. Verify with our sales office.

\*\* Consult our sales office

Dimensions in mm



## PWBS Connectors - Accessories

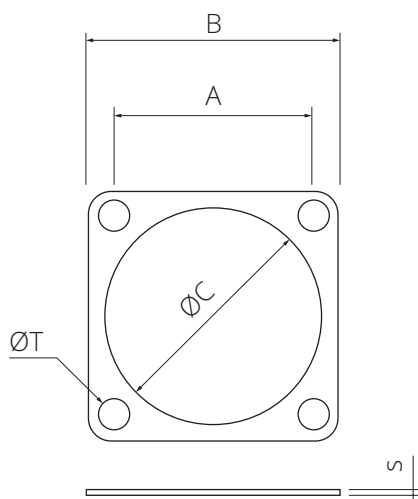
### Gasket

These gaskets are used to make panel connectors water resistant.

Available in two version:

- gasket C216: non conductive chloroprene rubber gasket (IP67 protection)
- gasket C216G3: conductive silicone gaskets with embedded metal screen.

These gaskets guarantee watertightness and RFI shielding

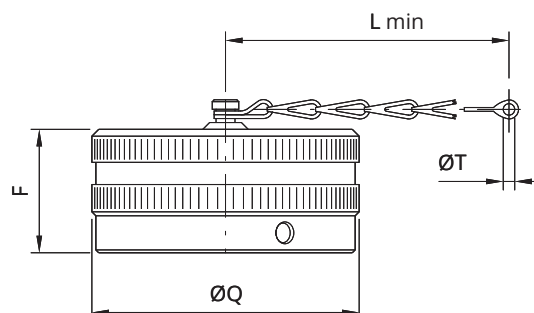
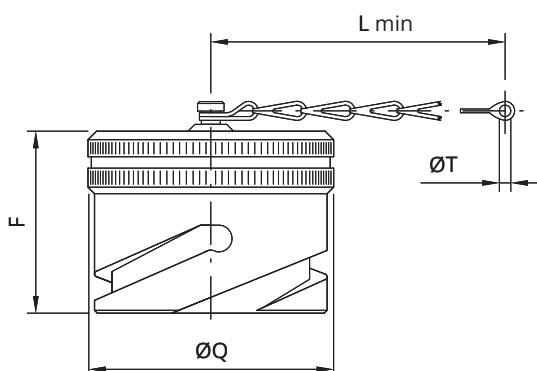


| Shell size | Order Number<br>Non conductive | Van-System P/N<br>Non conductive | Order Number<br>Conductive | Van-System P/N<br>Conductive | A<br>±0.2 | B<br>-0<br>+0.4 | ØC<br>±0.3 | S<br>C216 | S<br>C216G3 | ØT<br>±0.3 |
|------------|--------------------------------|----------------------------------|----------------------------|------------------------------|-----------|-----------------|------------|-----------|-------------|------------|
| 32         | VS412409                       | C216-32                          | VS412439                   | C216G3-32                    | 44.5      | 57              | 53.4       | 0.8±0.3   | 0.8±0.2     | 5.1        |
| 40         | VS412411                       | C216-40                          | VS412441                   | C216G3-40                    | 55.5      | 69.9            | 65.5       | 0.8±0.3   | 0.8±0.2     | 5.1        |

Dimensions in mm

### Caps

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



Plug connector cap with stainless steel chain and lug.

Receptacle connector cap with stainless steel chain and lug.

| Shell size | Order Number | Van-System P/N  | ØQ   | F  | L min | ØT  | Shell size | Order Number | Van-System P/N  | ØQ   | F  | L min | ØT  |
|------------|--------------|-----------------|------|----|-------|-----|------------|--------------|-----------------|------|----|-------|-----|
| 32         | *            | PWBS 042-32 F16 | 55.5 | ** | 206   | 4.3 | 32         | *            | PWBS 043-32 F16 | 60   | ** | 206   | 4.3 |
| 40         | *            | PWBS 042-40 F16 | 67.6 | ** | 206   | 4.3 | 40         | *            | PWBS 043-40 F16 | 72.4 | ** | 206   | 4.3 |

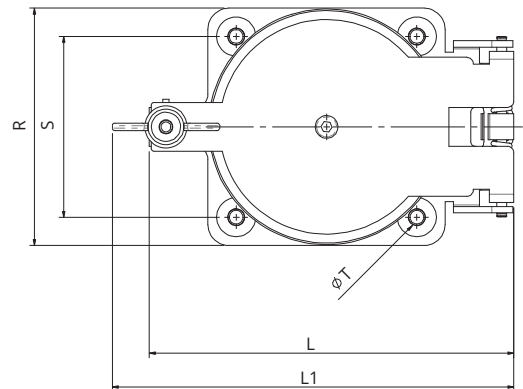
\* on request

\*\* Consult our sales office

Dimensions in mm

## PWBS Connectors - Accessories

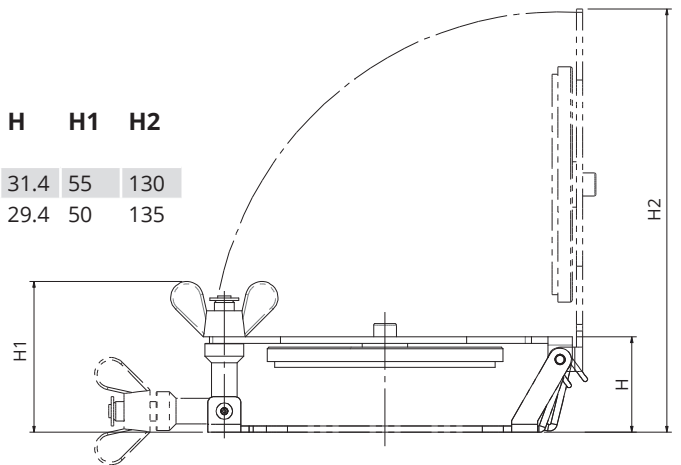
### Caps



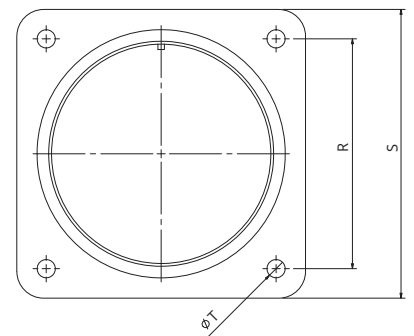
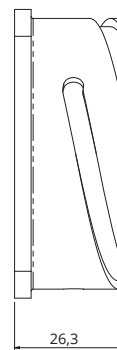
Stainless spring cap for receptacle connector  
(can be used with contacts without touch proof only)

| Shell Size | Order Number | Van-System P/N | S    | R    | ØT  | L   | L1  | H    | H1 | H2  |
|------------|--------------|----------------|------|------|-----|-----|-----|------|----|-----|
| 32         | *            | TPM-32R        | 57   | 44.5 | 5.2 | 110 | 125 | 31.4 | 55 | 130 |
| 40         | *            | TPM-40R        | 55.6 | 73   | 5.2 | 115 | 124 | 29.4 | 50 | 135 |

\* on request



### Dummy receptacle connector



Useful to hold the plug connectors when not in use (can be used with connectors without touch proof only).

| Shell Size | Order Number | Van-System P/N | S    | R    | ØT  |
|------------|--------------|----------------|------|------|-----|
| 32         | *            | PWBS 05-32 F16 | 57   | 44.5 | 4.4 |
| 40         | *            | PWBS 05-40 F16 | 69.8 | 55.6 | 4.4 |

\* on request

## PWBS 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          | Order Number |
|------------|----------------------|--------------|
| CRT-HT45   | Manual crimping tool | VS610003     |
| CRT-HT120  | Manual crimping tool | VS610001     |
| 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     |

*\* on request*

### Removal tools



| Tool        | Description                   | Order Number |
|-------------|-------------------------------|--------------|
| CPES-784-15 | Removal tool for contacts Ø15 | VS610047     |
| CPES-784-20 | Removal tool for contacts Ø20 | VS610044     |
| CPES-784-25 | Removal tool for contacts Ø25 | VS610045     |
| CPES-784-30 | Removal tool for contacts Ø30 | VS610046     |



## PWBS Connectors - Special Product Solution

### CP100516 single power connector



#### Connector with 90° plug bayonet connector

- 90° plug bayonet connector
- Contacts nr: 1 Pin designed for cable lug
- Crimp lug (for 120mm<sup>2</sup>, 150mm<sup>2</sup> or 240mm<sup>2</sup> cable) with connection screw to the central contact
- With polarization key, can be supplied with 6 different polarizations
- Shells: Aluminum alloy - Protection plate: black epoxy varnish
- Connector accessories: backshell with MS3057-C cable clamp

|      |                 |
|------|-----------------|
| Item | CP100516-1-08Px |
|------|-----------------|



#### Connector with ground connection - rear panel mounting.

- Bayonet connector with external ground connection - rear panel mounting
- Contacts nr: 1 Socket with termination for direct connection to the bar, M12 threaded
- Shells: Aluminum alloy - Protection plate: black epoxy varnish

|      |                 |
|------|-----------------|
| Item | CP100516-1-03Sx |
|------|-----------------|



#### Connector with Pin double multi-points contact band

- Plug bayonet connector, 1 Pin contact for conductor 95 mm<sup>2</sup>, 120 mm<sup>2</sup>, 150 mm<sup>2</sup>, 185 mm<sup>2</sup> or 240 mm<sup>2</sup> with multi-points contact band.
- Shells: Aluminum alloy - Protection plate: black epoxy varnish
- Connector accessories: backshell with MS3057-C cable clamp.

|      |                    |
|------|--------------------|
| Item | CP100516-1-06Px-xx |
|------|--------------------|



#### Connector with external ground connection

- Bayonet connector .
- Contacts nr: 1 Socket with crimp termination
- Shells: Aluminum alloy - Protection plate: black epoxy varnish.
- Connector accessories: backshell with MS3057-C cable clamp (on request).

|      |                 |
|------|-----------------|
| Item | CP100516-1-03Sx |
|------|-----------------|

MI.L4 - SAL.



## PWBS Connectors - Special Product Solution

### CP211213 single power connector



#### Connector with front finger test device – for cable MCM 646

- Straight plug bayonet connector, 1 Socket contact for cable MCM 646 - 327 mm<sup>2</sup>, with multi-points contact band
- Shells: Aluminum alloy - Protection plate: black epoxy varnish
- Connector accessories: backshell with MS3057-C cable clamp

|      |               |
|------|---------------|
| Item | CP211213-61Sx |
|------|---------------|



#### Connector with direct connection to busbar

- Bayonet connector rear panel mounting
- Contacts nr: 1 Pin with termination for direct connection to the busbar, M12 threaded
- Double multi-point contactation band
- Shells: Aluminum alloy - Protection plate: black epoxy varnish

|      |                 |
|------|-----------------|
| Item | CP211213-1-03Px |
|------|-----------------|



#### Connector for cable MCM 262

- Plug bayonet connector, 1 Socket contact for conductor MCM 262 - 133 mm<sup>2</sup> with multi-points contact band
- Shells: Aluminum alloy - Protection plate: black epoxy varnish
- Connector accessories: backshell with cable retention trough toroidal spring and adapter M32 threaded
- The connector is supplied with thermoplastic caps

|      |                 |
|------|-----------------|
| Item | CP211213-1-61Sx |
|------|-----------------|



#### Connector rear panel mounting and M32 backshell

- Bayonet connector - rear panel mounting
- Contacts nr: 1 Pin with crimp termination for conductor MCM 262 - 133 mm<sup>2</sup> with multi-points contact band
- Shells: Aluminum alloy - Protection plate: black epoxy varnish
- Connector accessories: backshell with cable retention trough toroidal spring and adapter M32 threaded

|      |                 |
|------|-----------------|
| Item | CP211213-1-03Px |
|------|-----------------|

Mia-Hon





## PWBS Connectors - Special Product Solution

### CP110616 single power connector



#### Connector - unipolar central + 2 pilot contacts

- Plug bayonet connector with rubber coated coupling nut and backshell
- Contacts nr:
  - 1 Pin contact for conductor 150 mm<sup>2</sup> with double multi-point contactation band
  - 2 Pin contacts size 16 for conductor 2.5mm<sup>2</sup>
- Shells: Aluminum alloy - Protection plate: black epoxy varnish

Item

CP110616-1+2-06P-150



#### Connector unipolar central + 2 pilot contacts

- Bayonet connector rear panel mounting
- Contacts nr:
  - 1 Socket contact for direct connection to bus bar
  - 2 Socket contacts size 16 for conductor 2.5mm<sup>2</sup> (Jumpered)
- Shells: Aluminum alloy - Protection plate: black epoxy varnish

Item

CP110616-1+2-03S-120

Mi.L4 - Sal.

### CP090313 - single power connector



#### Connector - backshell for rubber conduit

- Bayonet connector - rear panel mounting
- Contacts nr: 1 Pin with multi-point contactation, size 2-30-185 and 2-30-240
- With polarization pin, can be supplied with 6 different polarizations
- Shells: Aluminum alloy - Protection plate: F7 black epoxy-polyurethane varnish
- Connector accessories: backshell for Adapter for rubber conduit

Item

CP090313-1-06P



#### Connector - rear panel mounting

- Bayonet connector - rear panel mounting
- Contacts nr: 1 Socket with multi-point contactation, size 2-30-185 and 2-30-240
- With polarization pin, can be supplied with 6 different polarizations
- Shells: Aluminum alloy - Protection plate: black epoxy varnish
- Connector accessories: backshell with MS3057-C cable clamp

Item

CP090313-1-03S

Mi.Ex.



## PWBS Connectors - Special Product Solution

### CP300912 single power connector



#### Connector with 90° plug bayonet connector or adapter for rubber conduit

- Bayonet connector – 90°
- Contacts nr: 1 Pin with multi-point contactation, wire section 240 mm<sup>2</sup>
- Shells: Aluminum alloy - Protection plate: F7 black epoxy-polyurethane varnish
- Connector accessories: backshell for MS3057-C cable clamp

|      |                   |
|------|-------------------|
| Item | CP300912 832B1S-A |
| Item | CP300912 832B1S-B |



|      |                    |
|------|--------------------|
| Item | CP300912 832B1S xx |
|------|--------------------|



#### Connector front panel mounting with screws or fixing nut

- Bayonet connector – front panel mounting
- Contacts nr: 1 crimp Socket for double multi-point contactation band, wire section 240 mm<sup>2</sup>

|      |               |
|------|---------------|
| Item | CP300912 00AC |
|------|---------------|



|      |                  |
|------|------------------|
| Item | CP300912 7032B1P |
|------|------------------|

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### 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 VanSystem Srl if in doubt
- the user must take final responsibility for electrical safety Radiall VanSystem 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 VanSystem'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 VanSystem Srl reserves the right to amend the specifications of this catalogue without issuing prior notice.

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*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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