

# Products for *Section* 5



- Emergency vehicles
- Tunnels
- Welding units
- Battery chargers
- Large gen-sets



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# other applications



# Self-ejecting devices



Electrical distribution boxes



Road transport vehicles



Units for heated or refrigerated food

## For mobile appliances

Self-ejecting devices protect the electrical installation when a mobile appliance is moved without having first separated the inlet (male) from the socket-outlet (female). There are many applications : fire-brigade vehicles, ambulances, road transport vehicles, electric

boats, mobile food trollies or refrigerating in the food industry companies, cafeterias and hospitals, or electrical equipment boxes located in vulnerable places (*a toll station, for instance*).

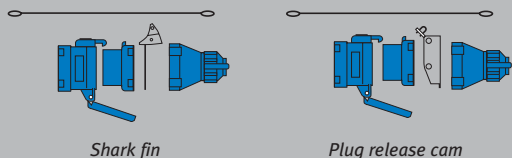
### Advantages of self-ejecting devices:

**Units for heated or refrigerated food:** the unit can leave the kitchen without being first disconnected, and without any damage to the equipment. Watertight deconnectors can be used safely in rooms frequently cleaned with a powerful jetting water.

### Achieving a self-ejecting device

In order to provide a MARECHAL ELECTRIC self-ejecting plug you only need an adequate mechanism, available as an optional feature to a socket-outlet or as an installation accessory to an inlet. Various devices are available depending on the deconnector rated current (*see the pages featuring the DSN, DS and DN ranges*).

Here are the two kinds of self-ejecting plug :



The various mechanisms are described in further detail in the Technical Manual on page 168.

### Boxes for emergency vehicles

MARECHAL ELECTRIC also offers new boxes specially designed for use in emergency, fire-brigade vehicles or ambulances (*see opposite page*).



Applications :

- Battery recharging
- Power supply to breaking circuit compressor
- Permanent diesel pre-heating (*for emergency starts*)
- Power supply to on-board equipment (*with engine off*)

Advantage: save time in emergency situations. No need to disconnect the plug, a slight pull on the wire will release it. The vehicle can move without prior disconnection.

**Road transport vehicles / electric boats:** even if not disconnected prior to departure, the electrical device will not be pulled off by the truck or boat. Watertight deconnectors are also available.

**Electrical distribution boxes:** If a vehicle strikes a toll booth fitted with self-ejecting sockets, the power supply connections will automatically disconnect as the booth shifts from the impact. With the power supply off, the risk of electrocution is prevented allowing the safe rescue of personnel and subsequent repair.

**RETTBOX®**

# Box and coupler socket for emergency vehicles



**Principle:**

The RETTBOX® is an box/inlet fitted with an device that ejects the coupler socket with an electric impulse sent upon start-up of the vehicle. e coupler socket is automatically ejected and the lid closes automatically.

The RETTBOX® supplies parked vehicles with current through a simple coupler socket, the Rettbox-Air also supplies air.

The power supply is provided through a simple coupler socket directly to the parked vehicle. When the motor is started, the coupler socket is automatically ejected and the lid shuts automatically.



**RETTBOX®**

**RETTBOX®-AIR**

**Common features:**

- Loading box: ready-to-install glass-fiber reinforced polyamide with protective isolation
- Reinforced sliding cover and frame made of V4A stainless steel
- Self-closing, sliding lid
- IP55 watertightness
- Compact design: 83 x 163 x 94 mm (W x H x D) for the box and 107 x 180 mm (W x H) for the outer frame
- Coupler socket with self-closing lid
- Easy use thanks to its size and assembling frame
- From 3 to 5 contacts (auxiliary contacts can be added)
- Weight without coupler socket: 1200 g
- When the vehicle starts, self-ejection occurs through an 12/24V electro-magnet
- Optional feature: the sliding lid (H = 318 mm when open) and frame are available with a special RAL colour on request

**RETTBOX® features:**

- From 3 to 5 contacts (auxiliary contacts can be added)
- More than 12 000 operations guaranteed
- Integral switching device, available for a 12V, 24V, 230V or 400V power supply
- DSN1 connection (20A) complying with the IEC / EN 60309-1 standard, with the European Low Voltage Directive, and with the international **Marechal** interchangeability standard (a version with a DSN3 is underway).

**RETTBOX®-AIR features:**

- Integral switching device, available for a 12V, 24V, 230V power supply + compressed air.
- Compressed air: pressure up to 13 bar.
- Power supply coating:
  - Wire: 3 x 2.5 mm<sup>2</sup>
  - Duct for compressed air: Ø 6 mm
  - Flexible protective coating is available in synthetic or stainless steel
- Coupler socket supplied with 4 m wire
- Coupler socket with self-closing lid



*For further information, please ask for our "Self-ejecting systems" documentation (see at the end of the catalogue)*



**Box with DSN1 (20A)\* inlet**



**DSN1 (20A)\* coupler socket**

| Device   | Voltage | Polarity | Part #       |
|--|---------|----------|--------------|
| Rettbox with 12V relay and (male) inlet              | 230V    | 1P+N+E   | 61 16 015Y12 |
| Rettbox with 24V relay and (male) inlet              | 230V    | 1P+N+E   | 61 16 015Y24 |
| Rettbox with 12V relay and (male) inlet              | 400V    | 3P+N+E   | 61 16 017Y12 |
| Rettbox with 24V relay and (male) inlet              | 400V    | 3P+N+E   | 61 16 017Y24 |
| Rettbox-Air with compressed air, 12V relay and Inlet | 230V    | 1P+N+E   | 61 16 015Z12 |
| Rettbox-Air with compressed air, 24V relay and Inlet | 230V    | 1P+N+E   | 61 16 015Z24 |

| Voltage | Polarity | Part #       |
|---------|----------|--------------|
| 230V    | 1P+N+E   | 61 13 015Y00 |
| 230V    | 1P+N+E   | 61 13 015Y00 |
| 400V    | 3P+N+E   | 61 13 017Y00 |
| 400V    | 3P+N+E   | 61 13 017Y00 |
| 230V    | 1P+N+E   | 61 13 015Z00 |
| 230V    | 1P+N+E   | 61 13 015Z00 |

\* version with DSN3 underway

# Tunnel boxes

## and other boxes for specific applications



Lighting control



Express box for direct wiring



Boxes for emergency departments

## The leading range

MARECHAL ELECTRIC is now a leading company in the electric connection for tunnels. Based on technology specially intended for such difficult environments and quick light disconnection, MARECHAL ELECTRIC has already equipped more

than 700 km of underground roads and railroads ... Always with the same objective: provide user safety, optimise maintenance and make the work of emergency services easier.

### Products suited for special tunnel environments

Very often in a tunnel, there is dust, stone projections, smoke, gas, moisture, water streaming and, of course, pollution.

Electric connections in tunnels are subjected to extremely corrosive conditions.

Designed to withstand such conditions, MARECHAL ELECTRIC boxes equipped with connectors or decontactors provide safe solutions for tunnel maintenance.

#### Corrosion and impact resistance

To ensure optimum safety, MARECHAL ELECTRIC boxes are made of aluminium or cast iron, and connectors made of glass fibre reinforced polyester.

#### Watertightness

All boxes are watertight and withstand the use of high-pressure washing during the tunnels' maintenance.

#### Halogeneous gas and smoke free

In the event of fire, the materials (aluminium, zamak, polyester or polyamide) used for the boxes and connectors protect from dangerous gas and smoke.

#### Quality connection and easy disconnection: use of butt-contact

Easy disconnection = easy maintenance: thanks to the Marechal silver-nickel butt-contact technology, the contacts are never welded. Therefore, the connection quality remains absolutely stable, and the disconnection can be done any time, even after several years.

#### Standards and certifications

The equipment is C.S.T.B. certified. MARECHAL connectors and decontactors are compliant with the IEC /EN 60309-1 standard, with the French decree N° 88-1056 dated November 14, 1988 relating to workers' protection and with the European Low Voltage Directive.

MARECHAL ELECTRIC has already equipped a large number of tunnels in France: A14, A12, A51, A86/A14 connection, Pontchartrain tunnel, La Villette tunnel, Epine tunnel, Croix Rousse tunnel, BPNL (ring road around Lyon), Liège tunnel, Cairo tunnel, Mont Blanc tunnel, Monte Carlo railroad tunnel, Paris underground tunnels...

New products added

# Emergency lighting

## Fire rated distribution boxes

Also see:

Dimensions page 148



Part #: 91161 + suffix  
CSTB certificate  
No RS06-023B

### Watertight IP66 cast iron boxes

Those boxes are used for jointing main cables and providing service tap-offs (CR1-C1 cable). They comprise a base box with a removeable cover fitted with captive stainless steel screws and a silicone seal.

#### Features

- Watertightness according to IEC EN 60529 standard: IP66
- Shock resistance acc. to IEC EN 50102 standard: IK09
- Fire withstand: Electrical continuity guaranteed to 920°C in test house. Temperature increases according to ISO 834 curve of NFC C 32-070 standard.

#### Material

Cast Iron Box  
Captive screws: stainless steel  
Surface treatment: Polyester paint coating  
Marechal CRIC terminals

#### Supply circuit

Cable: single pole or multipole cable  
Conductor size: up to 16 mm<sup>2</sup> (part # 91161) and up to 35 mm<sup>2</sup> (part # 91178)

Terminals: 3 to 5

The main cable, after cutting and stripping, is glanded off and conductors are terminated on the CRIC terminals. These spring-assisted terminals are mounted on a fire-resistant ceramic base.

#### External earth connection

Usually with a steel threaded rod or a Marechal earth terminal, for bare copper conductor of 70 mm<sup>2</sup> maximum cross section.

#### Distribution

Metal cable gland: 2 (part # 91161) to 3 maximum (part # 91178)  
Marechal socket-outlets: 2 (part # 91161) to 3 maximum (part # 91178)  
Protection by thermal fuses mounted on steatite base (4 maxi.)

#### Modularity – Option – Other equipment

MARECHAL ELECTRIC can supply cable coupler, standard or halogen free cable, additional DIN rail terminal blocks and circuit breaker protection on request.



Part #: 91178 + suffix  
CSTB certificate  
No RS06-023A

### Watertight IP66 thermoplastic box (distribution without cutting fire rated cable)

This innovative enclosure features very lightweight materials coupled with rapid installation. Made of thermoplastic materials, it is equipped with 316 stainless steel platinum and allows junction and distribution without cutting fire rated cable (e.g. type CR1-C1).

#### Features

- Watertightness according to IEC EN 60529 standard: IP66
- Shock resistance acc. to IEC EN 50102 standard: IK08
- Fire resistance: Electrical continuity guaranteed to 920°C Temperature increases according to ISO curve as defined in NFC C32-070 standard and P3 classification according to IEC EN 50 200 standard
- CSTB certificate: N° RS05-172

#### Material

Enclosure: Halogen free (VO) thermoplastic, low smoke release, low toxicity (category M1)  
Platinum: 316 Stainless steel  
Captive screws: stainless steel

Main cable conductors are installed on steel terminals without the need to cut and strip. Those terminals are an insulation piercing style, mounted on a fire-rated ceramic base.

Spring-assisted tightening terminals: zinc coated steel

#### Supply circuit

Cable: single pole or multipole cable  
Conductor size: 4 mm<sup>2</sup> to 35 mm<sup>2</sup> stranded cable (max. exterior diameter 28 mm)

Terminals: 3 to 5

#### Distribution

Poly cable gland: 4 maximum  
Marechal socket-outlet: 4 maximum  
Protection by fuses mounted on steatite base



Part #: 92946 + suffix  
CSTB certificate  
No RS05-172

### 400°C Wall mounting socket-outlet

Up to now, no connector complied with the IEC/ EN 12101-3 standard, smoke extraction devices were directly wired, leading to expensive maintenance periods. The new Marechal connector, with its on-load breaking capacity now reduces the time to isolate and disconnect a fan to just seconds.

Mounted on aluminium boxes, the 3P+E 63A / 690V connector withstands 400°C for 2 hours. The main cable, after cutting and stripping, feeds through cable glands and is wired on steel terminals mounted on a fire rated ceramic base. The socket-outlet is prewired to the same terminals with a 16 mm<sup>2</sup> fire resistant cable.



Socket part #: 3934013Z + suffix  
Plug part #: 3938013Z + suffix  
CSTB certificate  
No RS05-026

**For further information, please ask for our "Products for tunnel applications" documentation (see at the end of the catalogue)**

# Standard lighting

## Distribution boxes without cutting main cable



Part #:  
01N4017020Eo + suffix



Part #:  
01N4015010Eo + suffix



Part #:  
93036 + suffix

### Watertight IP66 EXPRESS® Box in Aluminium

Made of aluminium with 2 seals, these boxes permit termination of one or two supply feeds.

The main cable conductors are installed without the need for cutting and stripping by means of insulation piercing

#### Features

- Watertightness according to IEC EN 60529 standard: IP66
- Shock resistance acc. to IEC EN 50102 standard: IK09

#### Material

Enclosure: cast aluminium  
Captive screws: stainless steel

#### Supply circuit

Cable: single-pole or multipole cable  
Cross section: 4 mm<sup>2</sup> to 35 mm<sup>2</sup> stranded cable  
(max exterior diameter 28 mm)

Terminals: 3 to 5

terminals. The actual cable connections can be made outside of the enclosure.

Specific entries allow automatic cable positioning and perfect watertightness.

#### External earth connection

Usually with a steel threaded rod or a Marechal earth terminal, for bare copper conductor of 50 mm<sup>2</sup> maximum cross section.

#### Distribution

Metal cable gland: 2 maximum  
Marechal socket-outlet: 1 to 2 maximum  
Protection by circuit breakers or fuses.

#### Modularity – Option – Other equipment

MARECHAL ELECTRIC can supply cable coupler, standard or halogen free cable, additional DIN rail terminal blocks and circuit breaker protection on request.



Call us to order  
one of these boxes!

### Watertight IP66 Thermoplastic Boxes

This innovative enclosure features very light-weight materials coupled with rapid installation.

The main cable conductors are installed without the need for cutting and stripping by means of insulation piercing terminals. The actual cable connections can be made outside of the enclosure.

#### Features

- Watertightness according to IEC EN 60529 standard: IP66
- Shock resistance acc. to IEC EN 50102 standard: IK08

#### Material

Enclosure: Halogen free (VO) thermoplastic  
Captive screws: stainless steel

#### Supply circuit

Cable: single pole or multipole cable  
Conductor size: 4 mm<sup>2</sup> to 35 mm<sup>2</sup> stranded cable  
(max. exterior diameter 28 mm)

Terminals: 3 to 5

Up to four service outlets can be provided, either as cable glands, Marechal PN socket-outlets or Marechal DSN decontactors.

#### External earth connection

Usually with a steel threaded rod or a Marechal earth terminal, for bare copper conductor of 70 mm<sup>2</sup> maximum cross section.

#### Distribution

Poly cable gland: 4 maximum  
Marechal socket-outlet: 4 maximum  
Protection by circuit breakers or fuses.

#### Modularity – Option – Other equipment

MARECHAL ELECTRIC can supply cable coupler, standard or halogen free cable, additional DIN rail terminal blocks and circuit breaker protection on request.

**For further information, please ask for our  
"Products for tunnel applications"  
documentation (see at the end of the catalogue)**

# Security Recess

## Fire department box

Also see:

Dimensions page 148



Part #: 91277 + suffix

### Watertight IP55 Aluminium Box

Especially developed in collaboration with emergency services who specialise in tunnel rescue, this box is installed in a security recess.

Completely made of aluminium, this box is composed of a back box, an inclined cover with an inspection window.

#### Features

- Watertightness according to IEC EN 60529 standard: IP66
- Shock resistance acc. to IEC EN 50102 standard: IK09

**Material:** Cast aluminium enclosure. Stainless steel captive screws.

#### Supply circuit

Cable: max 5 x 16 mm<sup>2</sup>

**Terminals:** 3 to 5

#### External earth connection

Usually with a steel threaded rod or a Marechal earth terminal, for bare copper conductor of 70 mm<sup>2</sup> maximum cross section.

One or two Marechal Deconnectors can be fit on the inclined cover and are protected by a differential circuit breaker.

#### Distribution

Up to 2 Marechal socket-outlets, DS or DN type. Connection of the power cable on terminal blocks mounted on DIN rail or directly on to the protection device. Protection: By circuit breaker mounted on DIN rail, accessible through a metal window.

#### Modularity – Option – Other equipment

Optional protection devices available on request



Call us to order one of these boxes!

# Other boxes for specific applications



### Box for liquefied gas

Safety box for loading and unloading liquefied gas during vehicle connection



| Marechal socket-outlet | Current | Voltage | Box part # | Plug (inlet + handle) part # |   |           |
|------------------------|---------|---------|------------|------------------------------|---|-----------|
| <b>DN</b>              | 50 A    | 400 V   | 9 0670 A   | 19 68 037 01A                | + | 19 6A 013 |
| <b>DN</b>              | 80 A    | 230 V   | 9 0670 B   | 19 68 037                    | + | 19 6A 013 |
| <b>DN</b>              | 16 A    | 400 V   | 9 0670 C   | 19 18 017                    | + | 19 1A 013 |
| <b>DS</b>              | 100 A   | 400 V   | 9 0670 D   | 39 38 017                    | + | 31 9A 013 |



### Portable service boxes

#### IP54 Polyester box (2-3-4 outlets)

- Entry by cable gland (maximum 4 outlets)
- Entry by inlet (maximum 3 outlets)

- From 16 to 90 A - **DS**, **DSN** or **DN** 24, 230 or 400 V plugs and socket-outlets
- Protection on request

# CCH Battery charger connectors 75 to 200 A



## Description :

- Battery charger connectors
- From 75 to 200A - 690V
- Pilot contact rated at 20 A - 50 V
- With or without earth contact
- Conductors from 16 to 75 mm<sup>2</sup>
- High reliability due to the silver-nickel butt-contacts
- Easy plug insertion thanks to closing lever
- Crimped or soldered connections by ferrules

| Wiring (mm <sup>2</sup> ) | Rated current (A) |
|---------------------------|-------------------|
| 16                        | 75                |
| 30                        | 100               |
| 40                        | 125               |
| 50                        | 150               |
| 75                        | 200               |

## I Inlet (male)



| Plug                            | Rated current | CCH black polyamide    |                            | CCH grey polyamide     |                            |
|---------------------------------|---------------|------------------------|----------------------------|------------------------|----------------------------|
|                                 |               | 2P + pilot<br>50V max. | 2P + E +pilot<br>690V max. | 2P + pilot<br>50V max. | 2P + E +pilot<br>690V max. |
| Wire section (mm <sup>2</sup> ) |               |                        |                            |                        |                            |
| 16                              | 75 A          | 5-0206-016             | 5-0207-016                 | 5-0205-016             | 5-0209-016                 |
| 30                              | 100 A         | 5-0206-030             | 5-0207-030                 | 5-0205-030             | 5-0209-030                 |
| 40                              | 125 A         | 5-0206-040             | 5-0207-040                 | 5-0205-040             | 5-0209-040                 |
| 50                              | 150 A         | 5-0206-050             | 5-0207-050                 | 5-0205-050             | 5-0209-050                 |
| 75                              | 200 A         | 5-0206-075             | 5-0207-075                 | 5-0205-075             | 5-0209-075                 |

## S Socket-outlet (female)



| Socket                          | Rated current | CCH black polyamide    |                            | CCH grey polyamide     |                            |
|---------------------------------|---------------|------------------------|----------------------------|------------------------|----------------------------|
|                                 |               | 2P + pilot<br>50V max. | 2P + E +pilot<br>690V max. | 2P + pilot<br>50V max. | 2P + E +pilot<br>690V max. |
| Wire section (mm <sup>2</sup> ) |               |                        |                            |                        |                            |
| 16                              | 75 A          | 5-2106-016             | 5-2107-016                 | 5-2105-016             | 5-2109-016                 |
| 30                              | 100 A         | 5-2106-030             | 5-2107-030                 | 5-2105-030             | 5-2109-030                 |
| 40                              | 125 A         | 5-2106-040             | 5-2107-040                 | 5-2105-040             | 5-2109-04Z                 |
| 50                              | 150 A         | 5-2106-050             | 5-2107-050                 | 5-2105-050             | 5-2109-050                 |
| 75                              | 200 A         | 5-2106-075             | 5-2107-075                 | 5-2105-075             | 5-2109-075                 |

| Spare parts   | CCH black polyamide |            | CCH grey polyamide |  |
|---|---------------------|------------|--------------------|--|
|   |                     |            |                    |  |
| Socket contact  | 5-2106-021          |            | 5-2109-021         |  |
| Plug contact  | 5-0206-011          |            | 5-0209-011         |  |
| Socket earth contact                                  |                     | 5-2000-029 |                    |  |
| Plug earth contact                                    |                     | 5-0200-019 |                    |  |
| Socket pilot contact                                  |                     | 5-2000-229 |                    |  |
| Plug pilot contact                                    |                     | 5-0200-219 |                    |  |
| <b>Copper ferrules (connection in mm<sup>2</sup>)</b> |                     |            |                    |  |
| 16  |                     | 42 301     | <b>416</b>         |  |
| 30  |                     | 42 301     | <b>430</b>         |  |
| 40  |                     | 42 301     | <b>440</b>         |  |
| 50  |                     | 42 301     | <b>450</b>         |  |
| 75  |                     | 52 106     | <b>475</b>         |  |

# CRIC Terminals

## from 2 x 1.5 to 2 x 120 mm<sup>2</sup>

Also see:

Dimensions page 148

**CCH**  
Battery charger  
connectors  
75 to 200 A

**CRIC**  
Terminals

### Main features:

- From 2 x 1.5 to 2 x 120 mm<sup>2</sup>  
500 Volts AC/DC max.
- Spring-assisted tightening (even after copper yield)
- Vibration-resistant, thermal cycling-resistant and anti-shearing terminals
- Compliant with the NFC 20-110 standard
- Compliant with the safety "e" standards (by choice of the insulation base)
- Identification of conductors with colour caps or labels

### Prevention of loose conductors:

Voltage drop and subsequent temperature rise are dependent on the torque applied to the conductors.

The CRIC terminals are characterised by :

- special screw threading: - providing better results of the tightening torque and strength (optimum applied strength), - helping achieve perfect tightening, even without a tool, - prevents both sections of the terminal from moving apart
- a spring-assisted tightening system (spring placed inside the terminal head) that: - provides constant strength applied to the conductors with no deterioration, - compensates for strand settlement and copper yield.



### Terminal

insulated with  
fixing part

insulated +  
screw with rear part

earth with  
threaded hole

### Connection of...

|             | Minimum                 | Maximum                 |                |                |                |
|-------------|-------------------------|-------------------------|----------------|----------------|----------------|
| <b>T6</b>   | 2 x 1.5 mm <sup>2</sup> | 2 x 6 mm <sup>2</sup>   | <b>6TA 6</b>   | <b>6TB 6</b>   | <b>6TD 6</b>   |
| <b>T16</b>  | 2 x 4 mm <sup>2</sup>   | 2 x 16 mm <sup>2</sup>  | <b>6TA 16</b>  | <b>6TB 16</b>  | <b>6TD 16</b>  |
| <b>T35</b>  | 2 x 6 mm <sup>2</sup>   | 2 x 35 mm <sup>2</sup>  | <b>6TA 35</b>  | <b>6TB 35</b>  | <b>6TD 35</b>  |
| <b>B70</b>  | 2 x 25 mm <sup>2</sup>  | 2 x 70 mm <sup>2</sup>  | <b>6BA 70</b>  | <b>6BB 70</b>  | <b>6BD 70</b>  |
| <b>B120</b> | 2 x 50 mm <sup>2</sup>  | 2 x 120 mm <sup>2</sup> | <b>6BA 120</b> | <b>6BB 120</b> | <b>6BD 120</b> |



### Terminal

earth +  
screw with rear part

earth + screw  
with threaded hole

insulated with  
no fixing part

label or cap  
identification

### Connection of...

|             | Minimum                 | Maximum                 |                |                |               |               |
|-------------|-------------------------|-------------------------|----------------|----------------|---------------|---------------|
| <b>T6</b>   | 2 x 1.5 mm <sup>2</sup> | 2 x 6 mm <sup>2</sup>   | <b>6TE 6</b>   | <b>6TF 6</b>   | <b>6TV 6</b>  | <b>6EP 6</b>  |
| <b>T16</b>  | 2 x 4 mm <sup>2</sup>   | 2 x 16 mm <sup>2</sup>  | <b>6TE 16</b>  | <b>6TF 16</b>  | <b>6TV 16</b> | <b>6EP 16</b> |
| <b>T35</b>  | 2 x 6 mm <sup>2</sup>   | 2 x 35 mm <sup>2</sup>  | <b>6TE 35</b>  | <b>6TF 35</b>  | <b>6TV 35</b> | <b>6EP 35</b> |
| <b>B70</b>  | 2 x 25 mm <sup>2</sup>  | 2 x 70 mm <sup>2</sup>  | <b>6BE 70</b>  | <b>6BF 70</b>  | -             | <b>6C 70</b>  |
| <b>B120</b> | 2 x 50 mm <sup>2</sup>  | 2 x 120 mm <sup>2</sup> | <b>6BE 120</b> | <b>6BF 120</b> | -             | <b>6C 120</b> |

# CS Single pole and welding connectors 75 to 500 A



## Description :

- Single pole connectors from 16 to 150 mm<sup>2</sup>
- From 75 to 500 A - TBT (50 volts max.)
- Bayonet locking system providing perfect contact when connected
- Self-cleaning contacts
- Highly reliable silver-nickel butt-contacts
- Crimped or soldered connections by ferrules
- Connection by screw in option

| Type<br>CS | Wiring<br>(mm <sup>2</sup> ) | In rated<br>current (A) | I max welding<br>cycle (A) |     |
|------------|------------------------------|-------------------------|----------------------------|-----|
|            |                              |                         | 5 min cycles<br>60%        | 30% |
| CS2        | 16                           | 75                      | 100                        | 150 |
|            | 30                           | 100                     | 125                        | 200 |
|            | 40                           | 125                     | 150                        | 250 |
|            | 50                           | 150                     | 200                        | 300 |
|            | 50                           | 150                     | 200                        | 300 |
| CS3        | 75                           | 200                     | 250                        | 350 |
|            | 100                          | 250                     | 300                        | 400 |
|            | 120                          | 275                     | 350                        | 450 |
| CS5        | 150                          | 325                     | 450                        | 500 |

Definition of 30% welding cycle: on a 5 min cycle, 30% of the time working (i.e. 1 mn 30 s) and 70% off (i.e. 3 mn 30 s)

## I Inlet (male)



| Inlet                     | Rated current<br>welding cycle |      | CS2        | CS3        | CS5        |
|---------------------------|--------------------------------|------|------------|------------|------------|
|                           | 60%                            | 30%  |            |            |            |
| Wiring (mm <sup>2</sup> ) |                                |      |            |            |            |
| 16                        | 100A                           | 150A | 42 901 016 |            |            |
| 30                        | 125A                           | 200A | 42 901 030 |            |            |
| 40                        | 150A                           | 250A | 42 901 040 |            |            |
| 50                        | 200A                           | 300A | 42 901 050 | 43 901 050 |            |
| 75                        | 250A                           | 350A |            | 43 901 075 |            |
| 100                       | 300A                           | 400A |            | 43 901 100 |            |
| 120                       | 350A                           | 450A |            |            | 45 901 120 |
| 150                       | 450A                           | 500A |            |            | 45 901 150 |
| screw                     | 200A                           | 300A | 42 901 121 |            |            |
| screw                     | 300A                           | 400A |            | 43 901 121 |            |
| screw                     | 450A                           | 500A |            |            | 45 901 121 |

| Plug                      | Rated current<br>welding cycle |      | CS2        | CS3        | CS5        |
|---------------------------|--------------------------------|------|------------|------------|------------|
|                           | 60%                            | 30%  |            |            |            |
| Wiring (mm <sup>2</sup> ) |                                |      |            |            |            |
| 16                        | 100A                           | 150A | 40 201 016 |            |            |
| 30                        | 125A                           | 200A | 40 201 030 |            |            |
| 40                        | 150A                           | 250A | 40 201 040 |            |            |
| 50                        | 200A                           | 300A | 40 201 050 | 40 301 050 |            |
| 75                        | 250A                           | 350A |            | 40 301 075 |            |
| 100                       | 300A                           | 400A |            | 40 301 100 |            |
| 120                       | 350A                           | 450A |            |            | 40 501 120 |
| 150                       | 450A                           | 500A |            |            | 40 501 150 |



Also see:

Dimensions page 149

## **S** Socket-outlet (female)



| Socket                    | Rated current<br>welding cycle |      | CS <sub>2</sub> | CS <sub>3</sub> | CS <sub>5</sub> |
|---------------------------|--------------------------------|------|-----------------|-----------------|-----------------|
|                           | 60%                            | 30%  |                 |                 |                 |
| Wiring (mm <sup>2</sup> ) |                                |      |                 |                 |                 |
| 16                        | 100A                           | 150A | 42 401 016      |                 |                 |
| 30                        | 125A                           | 200A | 42 401 030      |                 |                 |
| 40                        | 150A                           | 250A | 42 401 040      |                 |                 |
| 50                        | 200A                           | 300A | 42 401 050      | 43 401 050      |                 |
| 75                        | 250A                           | 350A |                 | 43 401 075      |                 |
| 100                       | 300A                           | 400A |                 | 43 401 100      |                 |
| 120                       | 350A                           | 450A |                 |                 | 45 401 120      |
| 150                       | 450A                           | 500A |                 |                 | 45 401 150      |
| screw                     | 200A                           | 300A | 42 401 121      |                 |                 |
| screw                     | 300A                           | 400A |                 | 43 401 121      |                 |
| screw                     | 450A                           | 500A |                 |                 | 45 401 121      |

| Coupler socket            | Rated current<br>welding cycle |      | CS <sub>2</sub> | CS <sub>3</sub> | CS <sub>5</sub> |
|---------------------------|--------------------------------|------|-----------------|-----------------|-----------------|
|                           | 60%                            | 30%  |                 |                 |                 |
| Wiring (mm <sup>2</sup> ) |                                |      |                 |                 |                 |
| 16                        | 100A                           | 150A | 42 301 016      |                 |                 |
| 30                        | 125A                           | 200A | 42 301 030      |                 |                 |
| 40                        | 150A                           | 250A | 42 301 040      |                 |                 |
| 50                        | 200A                           | 300A | 42 301 050      | 43 301 050      |                 |
| 75                        | 250A                           | 350A |                 | 43 301 075      |                 |
| 100                       | 300A                           | 400A |                 | 43 301 100      |                 |
| 120                       | 350A                           | 450A |                 |                 | 45 301 120      |
| 150                       | 450A                           | 500A |                 |                 | 45 301 150      |



| Spare parts                                       | CS <sub>2</sub> | CS <sub>3</sub> | CS <sub>5</sub> |
|---|-----------------|-----------------|-----------------|
| <b>Socket-outlet</b>                              |                 |                 |                 |
| Contact   | 42 301 021      | 43 301 021      | 45 301 021      |
| Insulating handle                                 | 42 301 013      | 43 301 013      | 45 301 013      |
| Insulating interior                               | 42 401 013      | 43 401 013      | 45 401 013      |
| <b>Plug</b>                                       |                 |                 |                 |
| Contact   | 40 201 011      | 40 301 011      | 40 501 011      |
| Insulating handle                                 | 40 201 013      | 40 301 013      | 40 501 013      |
| Insulating interior                               | 42 901 013      | 43 901 013      | 45 901 013      |
| <b>Copper ferrules (wiring in mm<sup>2</sup>)</b> |                 |                 |                 |
| 16  | 42 301 416      |                 |                 |
| 30  | 42 301 430      |                 |                 |
| 40  | 42 301 440      |                 |                 |
| 50  | 42 301 450      | 43 301 450      |                 |
| 75  |                 | 43 301 475      |                 |
| 100   |                 | 43 301 400      |                 |
| 120   |                 |                 | 45 301 520      |
| 150   |                 |                 | 45 301 550      |
| <b>Screw</b>                                      |                 |                 |                 |
| ∅ 14 (except CS <sub>2</sub> : ∅ 10)              | 42 000 121      | 43 000 121      | 45 000 121      |

# SP4 Single pole power connector

## Max 700 A 1000 V AC / 1500 V DC

### S Socket-outlet (female)



#### Socket-outlet without lug

| Country  | Eur./Japan | U.K./S.Afr.  | USA          | Australia    |
|----------|------------|--------------|--------------|--------------|
| L1       | 4544 001   | 4544 001 P40 | 4544 001 P80 | 4544 001 P67 |
| L2       | 4544 002   | 4544 002 P40 | 4544 002 P80 | 4544 002 P67 |
| L3       | 4544 003   | 4544 003 P40 | 4544 003 P80 | 4544 003 P67 |
| Neutral  | 4544 00N   | 4544 00N P40 | 4544 00N P80 | 4544 00N P67 |
| Earth    | 4544 00T   | 4544 00T P40 | 4544 00T P80 | 4544 00T P67 |
| Positive | 4544 00P   | 4544 00P P40 | 4544 00P P80 | 4544 00P P67 |
| Negative | 4544 00M   | 4544 00M P40 | 4544 00M P80 | 4544 00M P67 |



#### Crimping lug \* Straight with terminal Straight threaded \*\*

| Flexible wiring (mm <sup>2</sup> ) | Diam. (mm) | Diam. 12 mm |
|------------------------------------|------------|-------------|
| 70                                 | 454 A70 C  | 454 A70 D   |
| 95                                 | 454 A95 C  | 454 A95 D   |
| 120                                | 454 A12 C  | 454 A12 D   |
| 150                                | 454 A15 C  | 454 A15 D   |
| 185                                | 454 A18 C  | 454 A18 D   |
| 240                                | 454 A24 C  | 454 A24 D   |
| 300                                | 454 A30 C  | 454 A30 D   |
| 400                                | 454 A40 C  | 454 A40 D   |

\* Wiring with lugs to crimp in compliance with NFC 20-130 / IEC 1238-1 (for VDE 0220 standard, please consult us) \*\* Select the threaded version when combining a handle with the socket-outlet



### Si Sleeve \*

Inclined metal 45°

454 A027

\* The use of an inclined sleeve is recommended from 150 mm<sup>2</sup> to minimise the impact of the weight of the cable.



### H Handle

| Flexible wiring (mm <sup>2</sup> ) | Tightening          |
|------------------------------------|---------------------|
| 70 to 240                          | 454 A753 17 - 38 mm |
| 300 to 400                         | 454 A783 35 - 48 mm |

### S + H

= Coupler socket



### I Inlet (male)



#### Inlet without lug

| Country  | Eur./Japan | U.K./S.Afr.  | USA          | Australia    |
|----------|------------|--------------|--------------|--------------|
| L1       | 4548 001   | 4548 001 P40 | 4548 001 P80 | 4548 001 P67 |
| L2       | 4548 002   | 4548 002 P40 | 4548 002 P80 | 4548 002 P67 |
| L3       | 4548 003   | 4548 003 P40 | 4548 003 P80 | 4548 003 P67 |
| Neutral  | 4548 00N   | 4548 00N P40 | 4548 00N P80 | 4548 00N P67 |
| Earth    | 4548 00T   | 4548 00T P40 | 4548 00T P80 | 4548 00T P67 |
| Positive | 4548 00P   | 4548 00P P40 | 4548 00P P80 | 4548 00P P67 |
| Negative | 4548 00M   | 4548 00M P40 | 4548 00M P80 | 4548 00M P67 |



#### Crimping lug \* Straight with terminal Straight threaded \*\*

| Flexible wiring (mm <sup>2</sup> ) | Diam. (mm) | Diam. 12 mm |
|------------------------------------|------------|-------------|
| 70                                 | 454 A70 C  | 454 A70 D   |
| 95                                 | 454 A95 C  | 454 A95 D   |
| 120                                | 454 A12 C  | 454 A12 D   |
| 150                                | 454 A15 C  | 454 A15 D   |
| 185                                | 454 A18 C  | 454 A18 D   |
| 240                                | 454 A24 C  | 454 A24 D   |
| 300                                | 454 A30 C  | 454 A30 D   |
| 400                                | 454 A40 C  | 454 A40 D   |

\* Wiring with lugs to crimp in compliance with NFC 20-130 / IEC 1238-1 (for VDE 0220 standard, please consult us) \*\* Select the threaded version when combining a handle with the socket-outlet



### Si Sleeve \*

Inclined metal 45°

454 A027

\* The use of an inclined sleeve is recommended from 150 mm<sup>2</sup> to minimise the impact of the weight of the cable.



### H Handle

| Flexible wiring (mm <sup>2</sup> ) | Tightening          |
|------------------------------------|---------------------|
| 70 to 240                          | 454 A753 17 - 38 mm |
| 300 to 400                         | 454 A783 35 - 48 mm |

### I + H

= Plug



For more information, please ask for our "SP4 Single pole power connector" documentation (see at the end of the catalogue)

Also see:

Dimensions page 148

### The highest possible safety

- Reliable mechanical and electrical interlocking,
- IP2X socket-outlet when cap removed,
- Automatic IP66/67 watertightness.

### An easy operable connector

- Straight insertion of the plug into the socket-outlet without any rotation,
- Different mechanical keying of L1, L2, L3, N and E,
- Visual identification by standard colors,
- Screwed crimping lugs facilitate cable replacement.



### Performances

Thanks to the **butt contact** principle, the SP4 single pole connector:

- withstands continuously up to 700 A / 1000 V AC or 1500 V DC (70 mm<sup>2</sup> to 400 mm<sup>2</sup> conductors),
- withstands at least 2000 operations.

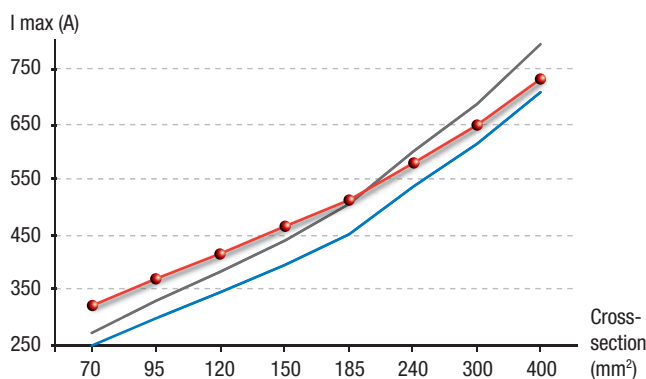
### Applications

- Army, defence
- Automotive manufacturing (*welding*),
- Civil engineering (*concrete injection pumps*),
- Entertainment Industry
- Harbors (*shore-to-ship & ship-to-ship feeders*),
- Large gen-sets
- Mining (*drag-lines*),
- Steel industry
- Testing facilities (*e.g. electrical motors*),
- etc.

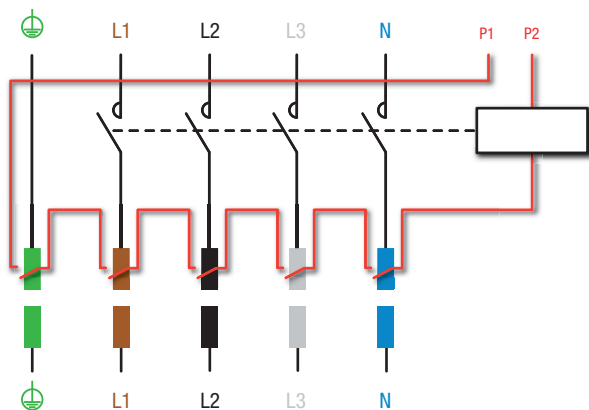
### SP4 features

#### Current according to conductor cross-section at 30 °C ambient temperature

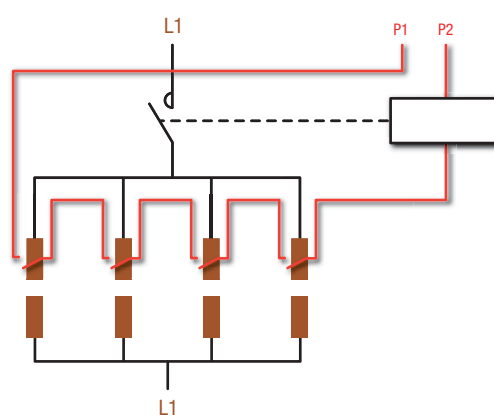
- Curve for the continuous max current for the SP4 after 2000 operational cycles as a function of the conductor cross-section
- Curve for the continuous max current specified by the cable manufacturers in order to maintain a cable temperature < 85 °C
- Curve for the continuous max current as per IEC 60364-5-52 (or NFC 15-100) maintaining a cable temperature < 70 °C



#### Wiring diagram electrical of interlocking: by connecting all polarities

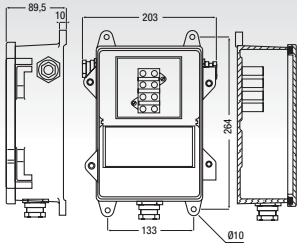


#### Wiring diagram electrical of interlocking: increased current by parallel connection

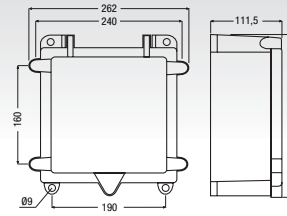


# Dimensions

## Fire-rated and watertight IP66 cast iron distribution boxes (emergency lighting)

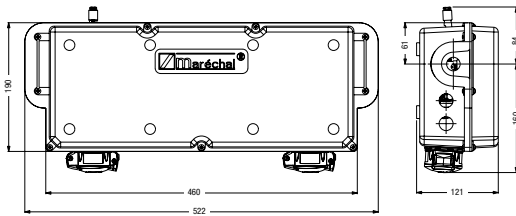


PART # 91 161 (METAL)



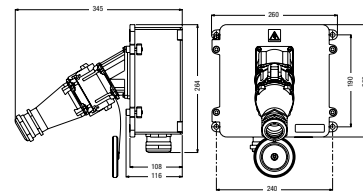
PART # 91 178 (METAL)

## Fire rated and watertight IP66 thermoplastic distribution box (emergency lighting)



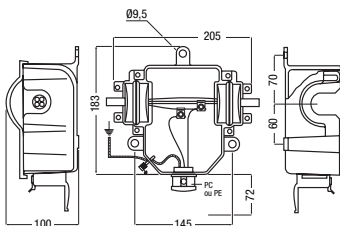
PART # 92 946 (POLY) Dimensions in mm (HxWxD): 190 x 522 x 121

## 400°C wall mounting socket-outlet

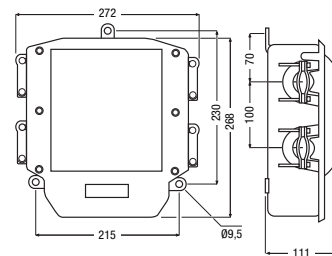


Dimensions in mm (HxWxD): 264 x 260 x 345

## Watertight IP66 EXPRESS® box in aluminium (standard lighting)

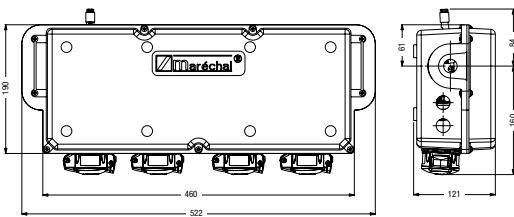


PART # 01 N4015 010E0 (METAL)



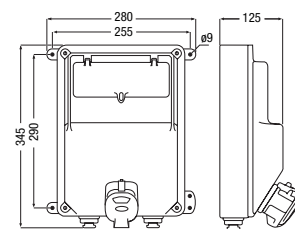
PART # 01 N4017 020E0 (METAL)

## Watertight IP66 thermoplastic distribution box (standard lighting)



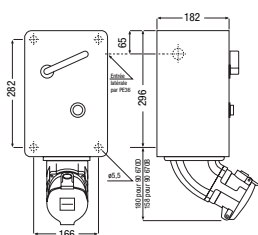
PART # 93 036 (POLY) Dimensions in mm (HxWxD): 190 x 522 x 121

## Fire dept. tunnel box (safety niche)



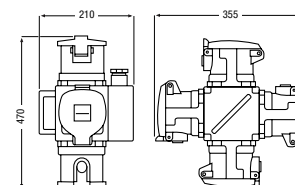
PART # 91 277 (METAL)

## Box for liquefied gas

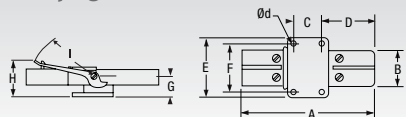


PART # 90 670A  
90 670B  
90 670C  
90 670D

## Portable service boxes (IP54 polyester)

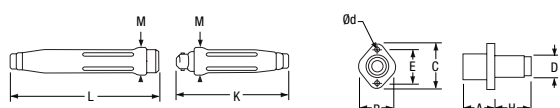


### CCH : plug and socket-outlet



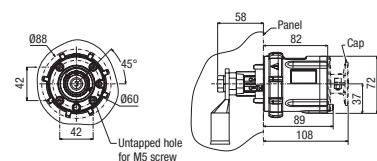
|     | A   | B  | C  | D  | E   | F  | G  | H  | I   | Ød |
|-----|-----|----|----|----|-----|----|----|----|-----|----|
| CCH | 228 | 60 | 48 | 82 | 106 | 82 | 35 | 65 | 106 | 7  |

### CS : inlet, plug, socket-outlet, coupler socket

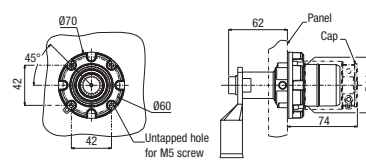


|     | A  | B  | C  | D  | d   | E  | H  | K   | L   | M  |
|-----|----|----|----|----|-----|----|----|-----|-----|----|
| CS2 | 21 | 32 | 50 | 26 | 4.5 | 38 | 57 | 115 | 152 | 31 |
| CS3 | 33 | 44 | 70 | 32 | 5.5 | 44 | 66 | 158 | 204 | 38 |
| CS5 | 45 | 45 | 71 | 32 | 5.5 | 45 | 50 | 165 | 220 |    |

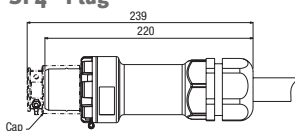
### SP4 - Socket-outlet



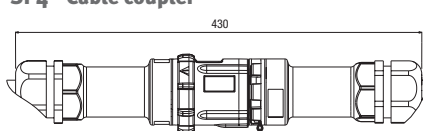
### SP4 - Inlet



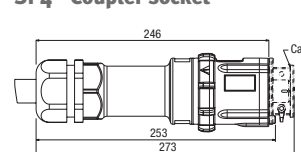
### SP4 - Plug



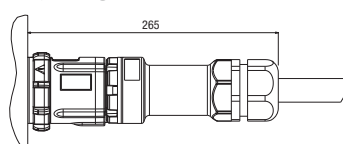
### SP4 - Cable coupler



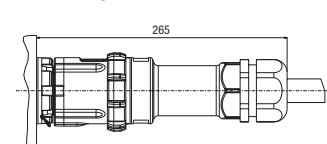
### SP4 - Coupler socket



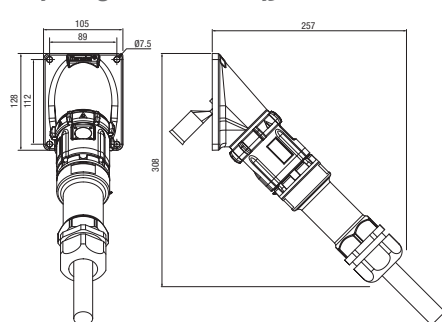
### SP4 - Plug connected in a socket-outlet



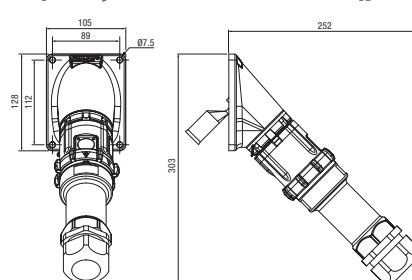
### SP4 - Coupler socket connected in an Inlet



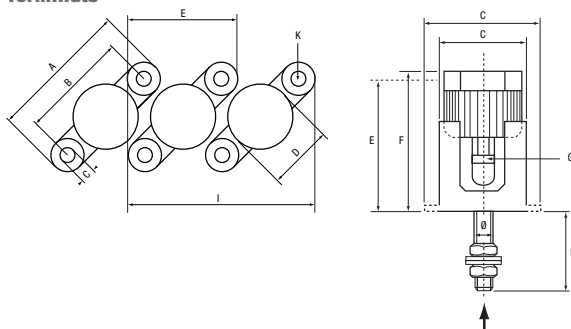
### SP4 - Plug connected in a 45° inclined socket



### SP4 - Coupler socket connected in a 45° inclined appliance Inlet



### Terminals



|                                   | A  | B  | C    | D    | E    | F    | G         | H    | I    | K    | Ø   |
|-----------------------------------|----|----|------|------|------|------|-----------|------|------|------|-----|
| 6TA6/6TD6/6TV6                    | 19 | 16 | 23.5 | 26.5 | 25   | 30   | 3.1x6     |      | 45.5 | Ø3.3 | M4  |
| 6TB6                              | 19 | 16 | 23.5 | 26.5 | 25   | 30   | 3.1x6     | 23   | 45.5 | Ø3.3 | M4  |
| 6TE6                              | 19 | 16 | 23.5 | 26.5 | 25   | 30   | 3.1x6     | 25   | 45.5 | Ø3.3 | M4  |
| 6TF6                              | 19 | 16 | 23.5 | 26.5 | 25   | 30   | 3.1x6     | 5    | 45.5 | Ø3.3 | M4  |
| 6TA16/6TD16/6TV16                 | 23 | 19 | 29   | 33   | 36   | 43   | 4.9x10    |      | 56   | Ø4.5 | M5  |
| 6TB16                             | 23 | 19 | 29   | 33   | 36   | 43   | 4.9x10    | 22   | 56   | Ø4.5 | M5  |
| 6TE16                             | 23 | 19 | 29   | 33   | 36   | 43   | 4.9x10    | 24,5 | 56   | Ø4.5 | M5  |
| 6TF16                             | 23 | 19 | 29   | 33   | 36   | 43   | 4.9x10    | 5,5  | 56   | Ø4.5 | M5  |
| 6TA35/6TD35/6TV35                 | 30 | 25 | 37   | 42   | 57   | 70   | 8.1x16    |      | 72   | Ø5.5 | M8  |
| 6TB35                             | 30 | 25 | 37   | 42   | 57   | 70   | 8.1x16    | 29   | 72   | Ø5.5 | M8  |
| 6TE35                             | 30 | 25 | 37   | 42   | 57   | 70   | 8.1x16    | 34   | 72   | Ø5.5 | M8  |
| 6TF35                             | 30 | 25 | 37   | 42   | 57   | 70   | 8.1x16    | 7    | 72   | Ø5.5 | M8  |
| 6BA70/6BB70/6BD70/<br>6BE70/6BF70 | 45 |    | 35   | 56   | 58.5 | 76.2 | 11.2x22.5 |      |      | Ø5.2 | Ø10 |