

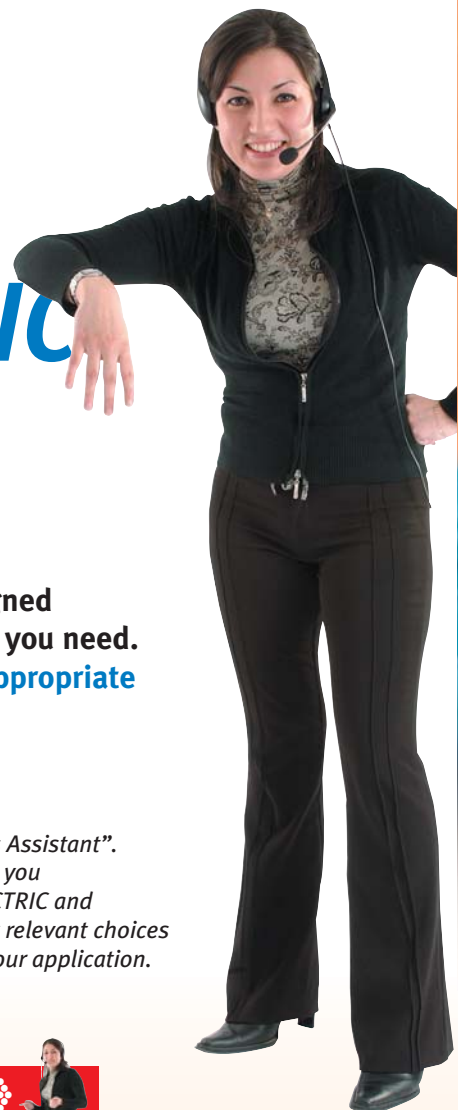


***This is more than a  
plug and socket.***

The DECONTACTOR is a plug and socket with an integral load-break isolating switch.

Combining these functions into the same unit makes the Decontactor a safe, reliable and compact disconnection device for motors and power supplies, saving you time and cost.

# Welcome to your new MARECHAL ELECTRIC catalogue!



This essential tool has been entirely redesigned and has now been organised to help you find what you need. Consult the following two pages to identify your appropriate situation and then ... Follow the guide!

*Hello!  
I am your "Technical Assistant"  
and I shall guide you  
throughout this catalogue  
on all technical issues to make  
an appropriate choice for you.*

*I am your "Sales Assistant".  
I shall introduce you  
MARECHAL ELECTRIC and  
provide the best relevant choices  
depending on your application.*

**GENERAL CONTENTS on next page** ...

## *Do you need technical information?*

Standards, certifications, testing, material choices, ... Our Technical Manual will answer all your questions (p. 150).

## *Adapting a domestic plug to a MARECHAL ELECTRIC equipment is easy!*

MARECHAL ELECTRIC sells adapters including a domestic socket-outlet and a Marechal industrial inlet. You will find such adapters on all 'Part Number' pages.

## *Do you want information about the Marechal Group?*

Consult pages 6, 7, 8 and 9 for conformity to standards, pages 188 and 189 for organisation, customer service and website.

## *To find a product from its part number ...*

- If the product had been ordered after January 2001, consult summary list of part numbers on page 180 to find the relevant description.
- If the product had been ordered before January 2001, consult the corresponding table on page 178 to find the current part number of the product.



## Are you looking for the range that best meets your needs?

- Standard industrial applications, explosive atmospheres, high current ...  
The contents (pp. 4 and 5) shows our product range based on application types.

- Decontactors, current plugs, boxes, connectors, etc.  
At one glance, look at the whole MARECHAL ELECTRIC range (p. 10).
- Everything you need to know about decontactors is on page 14.
- For each range, the 'advantages' page shows a preview of performances and applications.

## Do you wish to order a new part number?

All the ranges are presented in the same manner (advantages, core range, references, dimensions).

- The 'Core Range' page gives you access to the most common part numbers requested and provides key informations to check the part number that you have chosen.
- The point of entry into each 'part number' page is the rated current. For each rated current, you will find all useful part numbers on a double page.

### Convenient front cover flap

- Marechal's modular system provides for multiple combinations, based on a small number of basic elements: socket-outlet, inlet, box, sleeve, handle. It is described, in detail, on the cover flap (see picture below). This is handy when you need to select part numbers!



### Do you need a spare part?

You will find, at the end of the Technical Manual, all the forms you need to order Marechal spare parts.

For further information,  
please call  
**+33 (0)1 45 11 60 00**



# GENERAL

"All products grouped  
by application!"

Welcome to your new MARECHAL ELECTRIC catalogue!	p. 2
Marechal technology and international standard	p. 6
All ranges at one glance ...	p. 10



## Section 1 - Products for standard industrial applications from 16 to 250 A p. 12

DECONTACTOR™ or plug & socket-outlet?	p. 14
DECONTACTORS: selection guide	p. 16
• <b>DECONTACTORS</b> ( <i>standard, with auxiliaries, self-ejecting</i> ) <b>and adapters for domestic plugs and socket-outlets</b>	
<b>DSN</b> range	p. 18
<b>DS</b> range	p. 30
<b>DN</b> range	p. 46
• <b>Compact plugs and socket-outlets</b>	
<b>PN</b> range	p. 62
• <b>Multicontact plugs and socket-outlets</b> ( <i>for control and signal</i> )	<b>DSN</b> <b>DN</b> <b>PN</b> p. 70
• <b>Distribution boxes</b>	p. 84

## Section 2 - Products for potentially explosive atmospheres from 20 to 200 A p. 90

• <b>PX / DX</b> DECONTACTORS in metal ( <i>from 20 to 200A</i> )	p. 91
• <b>DXN</b> DECONTACTORS in polyamide ( <i>from 20 to 63A</i> )	p. 92

## Section 3 - Products for specific industrial applications from 25 to 150 A p. 104

• <b>DECONTACTORS</b> for "star-delta" motor connections	<b>DN</b> <b>DS</b> p. 106
• <b>DECONTACTORS</b> for motors ( <i>disconnectable motor switches</i> )	
<b>DB</b> range	p. 112

## Section 4 - Products for high currents (> 250 A) p. 124

• <b>PF</b> plugs and socket-outlets	p. 126
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# CONTENTS

## Section 5 - Products for other applications

p. 134

- **Self-ejecting devices - Box and coupler socket for emergency vehicles** p. 136
- **Tunnel boxes and other boxes for specific applications** p. 138
- **Terminals and battery charger connectors** p. 142
- **Single pole and welding connectors** p. 144

"New, complete and user-friendly ..."



## Technical Manual

p. 150

Compliance with standards and regulations	p. 152
Integral switching device and load breaking capacity	p. 153
Rated current and operating current	p. 154
Product resistance	p. 155
Opening / Returning or closing lid	p. 166
Dual voltage socket-outlets	p. 167
Self-ejecting plugs and sockets	p. 168
International standard and colour-coding	p. 170
<b>Finding a spare part</b>	<b>p. 172</b>

Old/new part numbers cross-reference table	p. 178
List of part numbers	p. 180

## MARECHAL ELECTRIC

p. 187

Innovation & Quality	p. 187
Web site & CD-ROM	p. 189
Literature and catalogues	p. 190
Glossary of technical terms	p. 191



## On the front cover flap:

### Ranges and applications

A synthesis to help your choice

### Marechal's modular system

By combining 2 products with 3 installation accessories, you can create 6 product configurations.

### Automatic watertightness

Easy watertightness without use of locking rings

### Dual voltage socket-outlets

Reduce your installation costs.



## What you should know about standards ...

All industrial plugs and socket-outlets are governed by the international European standard IEC/EN 60309-1. This standard contains general quality rules (*performance criteria, testing ...*) that all plugs and socket-outlets should comply with in order not to endanger the safety of people and property.

Regardless of their techniques (*pin and sleeve contacts, butt-style contacts, flat contacts, ...*) all plugs and sockets throughout the world have to comply with the general quality rules of the IEC/EN 60309-1 standard.

One category of industrial plugs and socket-outlets using the brass pin and sleeve contact technology with harmonised configurations is governed by a specific standard: IEC/EN 60309-2. It is a special standard for this particular plug socket-outlet; it sets dimensional rules enabling a manufacturer's male plug to connect to another manufacturer's female socket-outlet and vice versa.

So far, there are needs for over 70 different electrical supplies in the industrial world (voltage, frequency, AC and DC currents), based on the requirements of the application, plus major constraints associated with environments: chemical, food-processing, mining, etc. However the IEC/EN 60309-2 standard limits by definition both the number of contact configurations available and the technology to meet the demands of industry. Marechal opted out of the optional IEC/EN60309-2 dimensional standard of brass pin and sleeve technology in preference for silver-nickel tip butt contact technology. Marechal has been manufacturing a real alternative to connector users for over fifty years offering safety and electrical performance in strict compliance with the obligatory industrial connector standards around the world.

**Only plugs and socket-outlets using butt-contacts meet users' requirements, in strict compliance with standards and directives ...**

To meet both the connection requirements of many of the world's countries and the different voltages and polarities within those countries, the manufacturers of butt-contact connectors have come together to form an association called BECMA\* – The Butt-contact Electrical Connectors Manufacturing Association. Its purpose is to ensure common engineering standards for product to comply with both the IEC/EN 60309-1 and European Low Voltage Directive (LVD).

The EN 60309-2 standard does not cover:

- rectangular-shaped plugs and sockets-outlets (*such as charger connectors for fork lifts*),
- plugs and socket-outlets using flat contacts (*such as American plugs and sockets*),
- plugs and socket-outlets using butt- contacts,
- plugs and socket-outlets equipped with auxiliary contacts,
- plugs and socket-outlets with breaking and making capacity required for motor power supply,
- plugs and socket-outlets with rated current exceeding 125 A,
- plugs and socket-outlets that required live part protection against any unwanted contact on the socket-outlet side and plug side (*such as charger connectors on electric vehicles*),
- etc.

The purpose of the Association is to give to its members the means to achieve plugs and socket-outlets interchangeability, in a manner that does not endanger the safety of people and property, as required by international standard, IEC 60309-1, and the European Low Voltage Directive. To do so, the members of the Association agreed to comply strictly and fully with a common technical documentation, and to harmonise their manufacturing processes. Based on the butt-contact technology developed by MARECHAL ELECTRIC since 1953, BECMA's harmonisation system is a true, faithful **INTERNATIONAL INTERCHANGEABILITY STANDARD** that closely meets various industrial applications and their geographical scope.

Manufacturers of butt-contact plugs and socket-outlets offer several ranges of plugs and sockets and DECONTACTOR™ (*plugs and sockets with an integral switching device*):

- DN type decontactors intended for heavy industries,
- DS decontactors and PN current plugs and sockets intended for manufacturing industries,
- DSN decontactors with a high watertightness level, intended for food-processing companies,
- DXN and DX decontactors for use in explosive atmospheres.

\* for more information: [www.becma.ch](http://www.becma.ch)

# INTERNATIONAL STANDARD

## Compliant with the European Low Voltage Directive

Thanks to the international standard developed by BECMA (the Butt-contact Electrical Connectors Manufacturers' Association), international companies manufacture industrial plugs and socket-outlets all over the world that comply with the **European Low Voltage Directive**.

This standard guarantees complete conformity to the LVD and all other statutory requirements of the EU member countries when the plug of one BECMA manufacturer is inserted into the socket of another – and vice-versa.

Butt-contact plug and socket-outlet stickers bear:

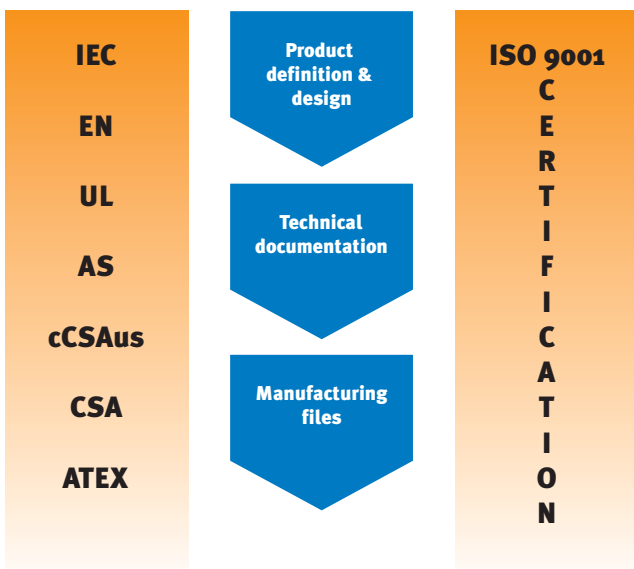
On the socket-outlet side: **CE** with **Marechal** plug

On the plug side: **CE** with **Marechal** socket-outlet

Make sure that you always use plugs, socket-outlets and spare parts bearing **Marechal**, to guarantee the **CE** compliance of your assemblies.



MARECHAL ELECTRIC is a member of the BECMA association (Butt-contact Electrical Connectors Manufacturers Association). This association is Based in Switzerland, and includes independent international companies (●) that make interchangeable butt-contact plugs and socket-outlets throughout the world.



All Marechal Electric's design and manufacturing processes are covered by ISO 9001 certification.

## Many references throughout the world

Marechal products are designed to meet the most stringent requirement in the area of electrical connection (from 5 to 1000 A, 24 to 1000 V, 1 to 37 contacts) in all types of industry, from the smallest industrial company to the major international company:

AIRBUS,  
AIR FRANCE,  
AIR LIQUIDE,  
ALCAN,  
AMEC SPIE,  
COCA COLA,  
EDF,  
EURODISNEY,  
FORD,  
KRAFT FOODS,  
L'OREAL,  
McDONALD'S,

MOTOROLA,  
MARINAS & HARBOURS,  
FIRE BRIGADES,  
SHELL,  
UNIVERSAL STUDIOS,

And also over 500 km of underground road or railroad tracks (MONT BLANC TUNNEL, CHANNEL TUNNEL, etc.)

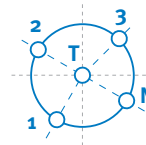
Like all members of the BECMA Association, MARECHAL ELECTRIC complies with the common electric butt-contact plug and socket-outlet keying position chart:



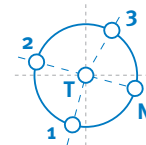
The following illustrations show a front side of a socket-outlet with its latch on the top

There are 24 keying positions. Most have been assigned to a particular operating voltage (See table). Others are free, in order to address other voltages or fulfil specific needs.

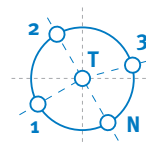
## 24 positions to differentiate voltages



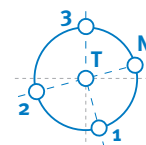
**Position 05**  
Free



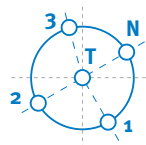
**Position 06**  
25 - 28V 50 Hz or DC



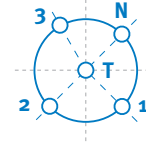
**Position 07**  
110 - 125V or 220 - 250V 60Hz



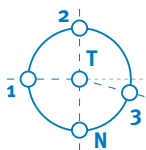
**Position 08**  
20 - 24V 50 Hz or DC



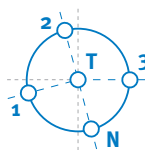
**Position 09**  
480 - 500V 50 Hz



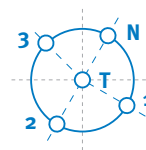
**Position 10**  
110 - 130V DC



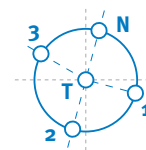
**Position 01**  
220 - 250V or 380 - 440V 50 Hz



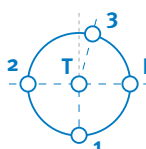
**Position 02**  
20 - 24V 60 Hz



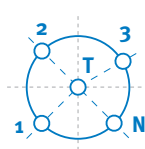
**Position 11**  
115 - 127V or 200 - 220V 400 Hz



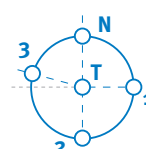
**Position 12**  
115 - 127V or 200 - 220V 200 Hz



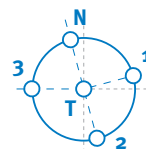
**Position 03**  
110 - 130V or 190 - 230V 50 Hz



**Position 04**  
255 - 277V or 440 - 480V 60 Hz

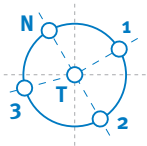


**Position 13**  
40 - 48V 50 Hz or DC



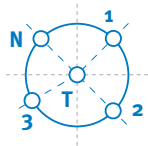
**Position 14**  
347 V or 600V 60 Hz

# UNIQUE KEYING SYSTEM



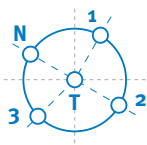
**Position 15**

Free



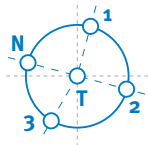
**Position 16**

120 - 127V or 208 - 220V 60Hz



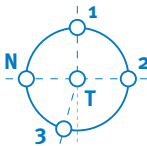
**Position 17**

Free



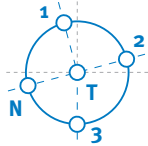
**Position 18**

Free



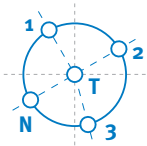
**Position 19**

380 - 440 V 50 Hz or  
660 - 690 V 50Hz or DC



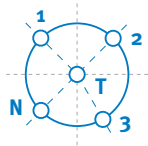
**Position 20**

220 - 250V DC



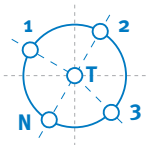
**Position 21**

Free



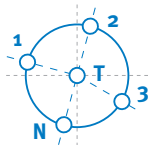
**Position 22**

1000V 50Hz



**Position 23**

Free



**Position 24**

Free

Operating voltage	Current type	Polarity	Keying position
20 - 24V	AC 50Hz	All *	08
20 - 24V	AC 60Hz	All *	02
20 - 24V	DC	2P, 3P, 2P+E	08
25 - 28V	AC 50 / 60 Hz	All *	06
25 - 28V	DC	2P, 3P, 2P+E	06
40 - 48V	AC 50Hz	All *	13
40 - 48V	DC	2P, 3P, 2P+E	13
110 - 125V	AC 60Hz	1P+N+E	07
110 - 125V 220 - 250V	AC 60Hz	2P+N+E, 3P+N+E	07
110 - 130V	AC 50Hz	1P+N+E	03
110 - 130V 190 - 230V	AC 50Hz	2P+N+E, 3P+N+E	03
110 - 130V	DC	2P+E	10
115 - 127V	AC 200Hz	1P+N+E	12
115 - 127V 200 - 220V	AC 200Hz	2P+N+E, 3P+N+E	12
115 - 127V	AC 400Hz	1P+N+E	11
115 - 127V 200 - 220V	AC 400Hz	2P+N+E, 3P+N+E	11
120 - 127V	AC 60Hz	1P+N+E	16
120 - 127V 208 - 220V	AC 60Hz	2P+N+E, 3P+N+E	16
190 - 230V	AC 50Hz	2P+E, 3P+E	03
200 - 220V	AC 200Hz	2P+E, 3P+E	12
200 - 220V	AC 400Hz	2P+E, 3P+E	11
208 - 220V	AC 60Hz	2P+E, 3P+E	16
220 - 250V	AC 50Hz	1P+N+E	01
220 - 250V 380 - 440V	AC 50Hz	2P+N+E, 3P+N+E	01
220 - 250V	AC 60Hz	2P+E, 3P+E	07
220 - 250V	DC	2P+E	20
255 - 277V	AC 60Hz	1P+N+E	04
255 - 277V 440 - 480V	AC 60Hz	2P+N+E, 3P+N+E	04
347V	AC 60Hz	1P+N+E	14
347V 600V	AC 60Hz	2P+N+E, 3P+N+E	14
380 - 440V 660 - 690V	AC 50Hz	2P+N+E, 3P+N+E	19
380 - 440V	AC 50Hz	2P+E, 3P+E	01
380 - 440V	AC 50Hz	1P+N+E	19
440 - 480V	AC 60Hz	2P+E, 3P+E	04
480 - 500V	AC 50Hz	2P+E, 3P+E	09
600V	AC 60Hz	2P+E, 3P+E	14
660 - 690V	AC 50Hz	2P+E, 3P+E	19
660 - 690V	DC	2P+E	19
1000V	AC 50Hz	1P+N+E, 2P+E, 2P+N+E, 3P+E, 3P+N+E	22

\* All: AC = 1P+N, 2P, 2P+N, 3P, 3P+N, 1P+N+E, 2P+E, 2P+N+E, 3P+E, 3P+N+E DC = 2P, 2P+E

The colours in the above table correspond to the international voltage standard. They appear on the ring and voltage sticker of the socket-outlet or inlet, for easy identification of the device frequency/voltage combination.

**For further information about the colour-coding, please consult the Technical Manual (page 170).**

## AT A GLANCE ...



### DSN DECONTACTORS

#### Universal applications

The only industrial plug and socket-outlet with an automatic IP66/67. This watertightness is achieved just by inserting the plug and is maintained when you remove the plug from the socket and close the lid. From 20 to 63A – Up to 1000V AC and 250V DC.

*See page 18*



### DS DECONTACTORS

#### The quality standard for manufacturing industry

The largest and most complete range: covering rated currents from 30 to 250A, available in metal version from 90A, with many options. Meets most manufacturing industry needs. Up to 1000V AC and 250V DC.

*See page 30*



### DN DECONTACTORS

#### Heavy-duty and long lifetime for heavy industries

The first ever industrial plug and socket with an integral switching device, the DN is, by excellence, the best heavy-duty solution. DN plugs and sockets are designed to last over twenty years in difficult environments. From 20 to 150A – Up to 500V AC and 130V DC.

*See page 46*



## PN plugs and sockets

### Standard or high temperature compact plugs and sockets

Like most **Marechal** industrial products, PN plugs and sockets provide automatic IP66/67 watertightness when the plug is connected to the socket-outlet or when the socket-outlet lid is closed. A high temperature IP44 version is also available!  
30 A – Up to 500 V AC and 130 V DC.

*See page 62*

## DXN DECONTACTORS

### ATEX 'ED' SAFETY DECONTACTOR™

For explosive atmospheres, with 'ed' protection mode, compliant with ATEX Directive N° 199/92/EC dated 23<sup>rd</sup> March 1994. They are designed for zones 1 and 2 (Gas) and zones 21 and 22 (Dust). From 20 to 63 A – up to 750 V AC and 250 V DC.

*See page 90*



# ... ALL MARECHAL ELECTRIC RANGES



## Multicontact plugs and sockets

### Combining low currents and high current contacts

Multicontact plugs and sockets are used for control and signal purposes. They convey information and low voltage signals. Example: telephone line connections, travelling crane controls ...

5 to 37 contacts - From 5 to 25 A - Up to 500 V AC and 130 V DC.

*See page 70*

## PF high current plugs and sockets

### High performance plugs and socket-outlets

315 to 600 A, up to 1000 Volts, IK10, IP66/67, up to 8 auxiliaries ... and easy and safe handling!

Supply power to quarry machines, tunnel, boats and cranes, city equipment, public service equipment ...

*See page 124*



## Distribution boxes

### The essential addition

To combine a plug or a DECONTACTOR™ and a circuit-breaker or fuses, and create a derivation for crossing line, offer pre-wired terminal blocks, etc.

*See page 84*



## DB DECONTACTOR™ for motors

### Air-break separable motor switches

The motor DECONTACTOR™ was specially designed to supply and switch motors or any other highly inductive loads.

From 40 to 125 A - From 3 to 45 kW - Up to 690 V AC and 250 V DC.

*See page 112*

