



N°22e - Rev. : 2



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A manufacturer of products using the **Marechal** technology.

**GENERAL**

The SPeX is a plug and socket-outlet for use in explosive atmospheres and conforms to the relevant international and European standards, particularly the ATEX 94/9/EC Directive. SPeX can be used in zones 1 and 2 (gas) and 21 and 22 (dust).

SPeX is a single pole connector whose socket-outlet is fitted with an electromechanical device (switch + ring) allowing its electrical interlocking with a contactor, in order to guarantee a connection and disconnection off-load in complete safety. Socket-outlet contacts are protected against standard test finger (IP2X) according to IEC/EN 60529 standard.

**INSTALLATION**

⚠ SPeX must be installed by a qualified electrician. Be sure power is off before starting.

Wiring must be made according to applicable national installation standards.

The supply of the pilot circuit must be protected against transient over-voltages of 4 kV by means of an appropriate isolating device.

Electrical interlocking with a contactor is compulsory.

**Assembly**

Insert cable through the cable gland and the handle or through the inclined sleeve.

**Wiring of the pilot wires**

Use flexible conductors with a cross-sectional area between 0.5 and 1 mm<sup>2</sup>.

These conductors must be connected to the wires of the microswitch by means of the isolated crimping lugs supplied. Use an appropriate crimping tool.

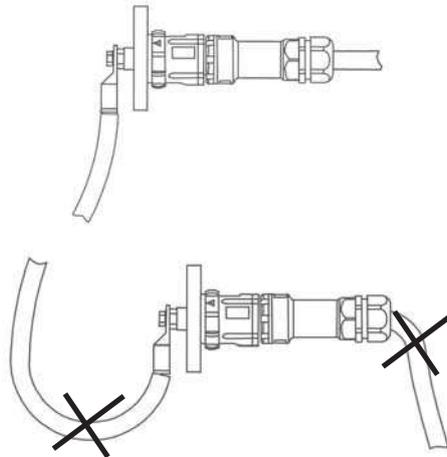
**Wiring of the main conductor**

Respect the ATEX (T5) classification. The cross-section must be at least that defined in the certificate or the CE Declaration of Conformity, depending on the maximum current.

Strip the conductor by 46 mm. Crimp the threaded lug or the ferrule with the appropriate die (NFC 20-130 or VDE 0220 or another).

Hexagonal crimping is recommended. Tighten directly the threaded lug with a 24 mm key or tighten the ferrule with a screw and a washer with a 19 mm key. Apply a torque ca. **70 N.m**.

While tightening the ferrule, maintain the rear of the contact with a 24 mm key.



**Assembly of the connector**

Assemble the handles on the body of the products with the supplied gaskets and screws and tighten the cable gland with an appropriate tool. To achieve the IP65/IP66 of an interlocked connector, use a cable that incorporates the two pilot wires that are required for the interlock, or use an ATEX cable gland bushing that allows the passage of the main cable and the two pilot cables.

The silicone ring must be assembled on the receptacle ring.

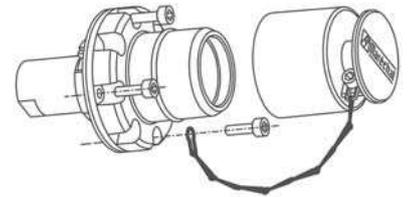
**Assembly of the metal inclined sleeve.**

Respect air and creepage distances when assembling the appliance inlet or the socket-outlet onto the metal inclined sleeve, according to the operating voltage of the main and auxiliary circuit and the degree of pollution.

⚠ Connect the metal inclined sleeve to Earth.

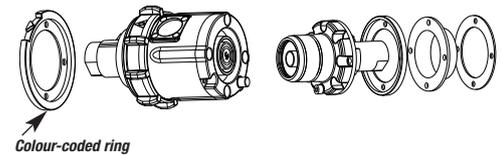
**Assembly of the plug/inlet cap**

Assemble the small fixing part supplied on the last link of the chain and fix it to the plug/inlet body by means of one of the screws.



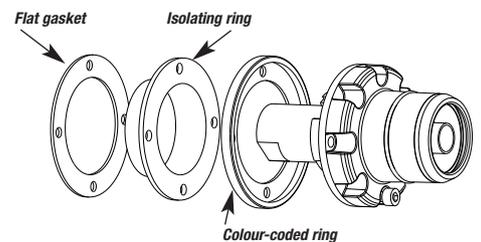
**Colour-coded rings**

In order to achieve watertightness, do not forget the colour-coded ring at the rear of the inlet or socket-outlet.



The colour-coded rings allows visual identification of the pole depending on the colour code of each country.

**Isolating ring**



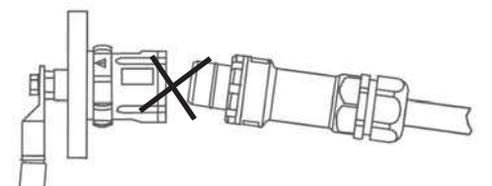
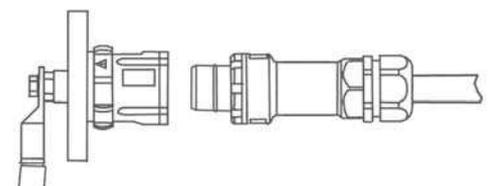
When assembling the SPeX on a metallic support (enclosure, panel, etc ...), the isolating ring must be positioned as above.

**OPERATION**

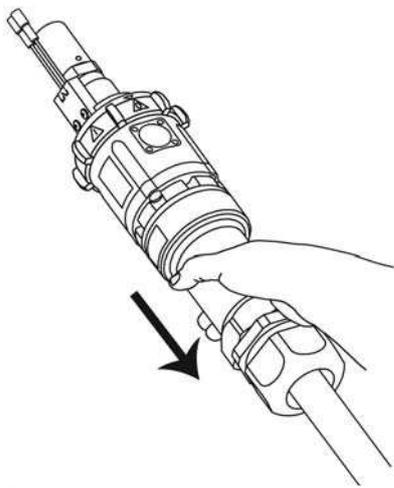
To ensure a safe and reliable operation, the SPeX must be used according to its designed destination, in a strict respect of the required operation of connection and disconnection.

Socket-outlets, plugs, connectors and inlets are protected against dust and water ingress by means of caps, which must be re-assembled after use.

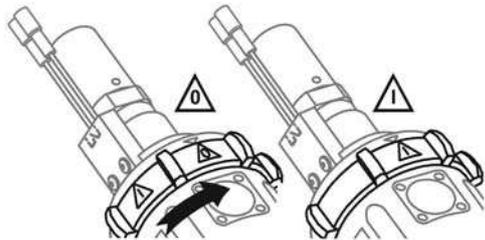
To achieve IP65/IP66, the socket-outlet or connector cap must be assembled with its slot facing the socket-outlet protruding finger.



1 Insert the plug straight into the socket-outlet, until a 'click' is heard. The plug and its flexible cable must not exert constraint on the socket-outlet.

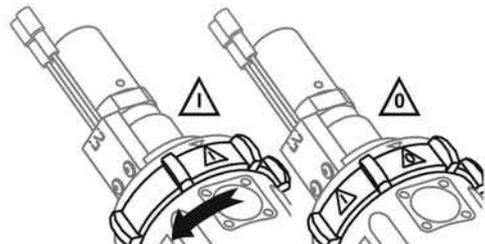


**2** Pull on the plug to make sure it is properly latched in the socket-outlet. A small rotation of the plug, in either direction, allows the locking finger of the socket-outlet to prevent any further rotation.



**3** To close the pilot circuit, turn the ring of the socket-outlet up to the stop towards "1". Check the continuity of the pilot.

**!** DO NOT ATTEMPT TO TURN THE RING TOWARDS "1" WHEN THERE IS NO PLUG ENGAGED.



**4** To open the pilot circuit and unlock the plug, turn the ring back to "0" up to the stop. Press on the button to release the plug. The caps must then be re-assembled on both sides.

## MAINTENANCE

From time to time, the fastening screws should be checked for tightness. Contact surfaces must be checked for cleanliness. Any deposit of dust can be rubbed off with a clean cloth. Do not file or grind contact surfaces as this would damage the silver-nickel tips. Sprays should not be used, as they tend to collect dirt. Depending on prevailing conditions, the pitting of plug and socket-outlet contacts should be regularly monitored.

The plug O-ring must be regularly inspected.

**!** Rules applying to products for use in explosive atmospheres impose that any replacement of component must be performed under the control of the manufacturer: MARECHAL ELECTRIC S.A.

Any repair or service must be achieved with genuine **Marechal** parts only.

## RESPONSIBILITY

A **Marechal** product must be used with a **Marechal** complementary accessory only.

MARECHAL ELECTRIC S.A.'s responsibility cannot be engaged in case **Marechal** products would be associated with socket-outlets, inlets or spare parts other than **Marechal**.

MARECHAL ELECTRIC S.A.'s responsibility is strictly limited to the obligations expressly agreed in its general sales conditions.

Any penalty or indemnity provided herein will be considered as lump damages, redeeming from any other sanctions.

## DECLARATION OF CONFORMITY

The SPeX uses the **Marechal** technology.

It was designed, manufactured and controlled in a strict respect of the relevant international and European standards, laws and directives, and particularly of the ATEX Directive. It bears the CE marking whenever applicable. It also bears its Ex classification.

**MARECHAL ELECTRIC S.A.** is a member of the international association, **BECMA: the Butt-contact Electrical Connectors Manufacturers' Association**.



www.becma.ch

**MARECHAL**  
**electric**

**CE – Déclaration de conformité**  
**EC – Declaration of conformity**

Nous / we

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Déclarons que le produit / Declare that the product:

**Connecteur unipolaire de puissance / Single-pole power Connector**

Type Type	Marquage Marking	Et est conforme aux normes suivantes And complies with the following standards
SPeX	Ex e II T ① pour/for G Ex tD A21 T ② pour/for D LCIE 07 ATEX 6073 X	EN 60079-0 EN 60079-7 EN 61241-0 EN 61241-1

Intensité / Current A	Section / Section mm <sup>2</sup>	① GAZ / GAS Classe de température pour : Temperature class for:		② POUSSIÈRES / DUST Température de surface : Surface temperature for:	
		-20 °C < Ta < +40 °C	-20 °C < Ta < +60 °C	-20 °C < Ta < +40 °C	-20 °C < Ta < +60 °C
235	70	T6	T5	T 56 °C	T 76 °C
290		T5			
335		T6	T5		
415	95	T5			
376		T6	T5		
456		T5			
415	120	T6	T5		
493		T5			
450		T6	T5		
530	185	T5			
497		T6	T5		
570		T5			
540	240	T6	T5		
620		T5			
600		T6	T5		
680	400	T5			

Satisfait aux dispositions de la Directive du Conseil :  
Satisfy the measures set in the Council Directive:

ATEX n° 94/9/CE du 23 mars 1994  
ATEX N° 94/9/EC March 23<sup>rd</sup> 1994

Année d'apposition de marquage « CE » :  
Affixing date of 'CE' marking:

2007

avec les caractéristiques d'étanchéité suivantes / with the following watertightness characteristics: IP65/IP66

N° de notification de l'évaluation relatif à la qualité : LCIE 00 ATEX Q 8001 selon l'Annexe IV réalisé par l'organisme notifié n° 0081 : LCIE - 33, avenue du Général Leclerc - 92260 Fontenay-Aux-Roses - France

Quality Assessment Notification Number: LCIE 00 ATEX Q 8001 according to Annex IV carried out by Notified Body N° 0081: LCIE - 33, avenue du Général Leclerc - 92260 Fontenay-Aux-Roses - France

Saint-Maurice, 08 / 10 / 2008

Manuel DA COSTA  
Responsable ATEX / ATEX Manager



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