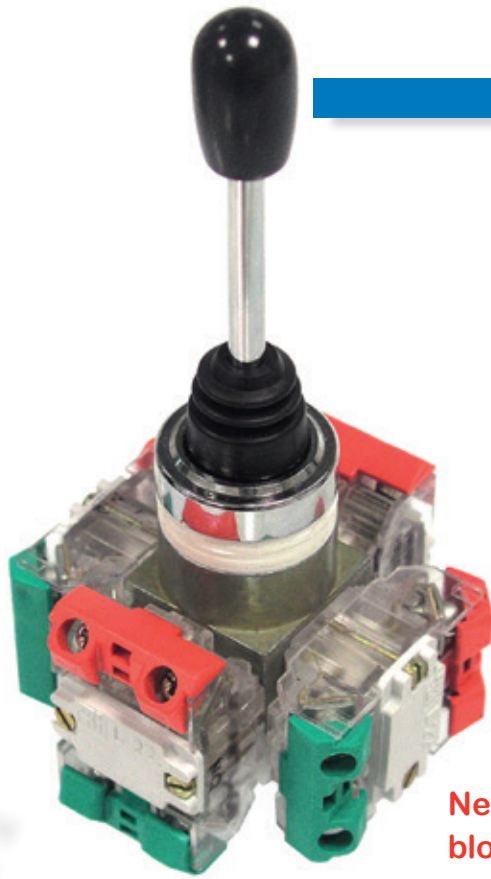
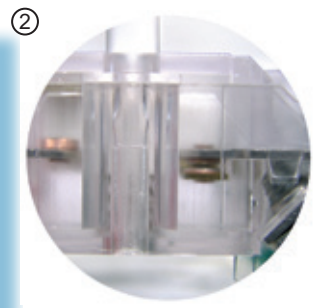


# Joysticks



Adaptability  
Modularity  
Safety  
Reliability

New contact  
blocks



### The range of possibilities :

- ① **Multiple functions**
  - 1 to 4 directions.
  - 1 or 2 speeds per direction.
  - 1 to 2 tiers (1 to 4 contacts) per direction  
1NO, 1NC, 1NC1NO, 2NC, 2NO.
  - Contact identification per standards, colour code  
(green for NO, red for NC)
  - Stable or auto-return positions.
- ② **Flexibility and accuracy in the contact solutions**
  - Self cleaning, reinforced contacts.
  - Choice of the contact material depending on the utilisation:  
low current, harsh atmosphere ...
  - Possibility of modifying the contact sequence using different  
contact thickness: standard, half-thickness, thick.
  - Addition of a specific module (early breaking, tactile sensation)
- ③ **Choice of connections**
  - Screws and brackets or washers, IP2 projection.
  - Single or double tabs for 6,35 mm lugs.
  - Straight, 90°, 45°.  
(Contact us for other connection types)
- ④ **Choice of dimensions**
  - Numerous options for levers and grips  
provide for varying the dimension of the manoeuvring  
device according to the space available or to the  
desired ergonomics.
- ⑤ **A robust device**
  - High mechanical resistance.- IP66 protection
  - Sealing IP66
  - Very low temperature versions.

The modular design of MAFELEC's control and signalling components provides for a multitude of combinations and adaptations. The examples illustrated in this catalogue only represent a fraction of designs produced by our Design Office every day for our customers.

All alternative solutions can be designed from the basic elements, to produce the desired function.



Our equipment complies with the European RoHS directive, restricting the use of certain dangerous substances in electrical equipment.

## Compliance with Standards

<b>Certification</b>	IEC NF EN 60947-5-1, IEC NF EN 60077-2
<b>Vibration resistance and shock</b>	IEC NF EN 61373, IEC NF EN 60068-2-6
<b>Storage temperature</b>	- 40°C to + 85°C per IEC NF EN 60068-2-1, IEC NF EN 60068-2-2
<b>Operating temperature</b>	- 25°C to + 70°C per IEC NF EN 60068-2-1, IEC NF EN 60068-2-2
<b>Protection against accidental contact with active circuits</b>	IP2x per IEC NF EN 60529 with protector
<b>Fire resistance</b>	EN 45545
<b>Degree of protection</b>	IP66 per IEC NF EN 60529
<b>Mechanical service life in millions of switching operations</b>	Automatic return : 1 Stable position : 0.3

## Characteristics of the contact elements

<b>Rated thermal current</b>	I <sub>th</sub> = 20A per IEC NF EN 60947-5-1
<b>Rated insulation voltage</b>	U <sub>i</sub> = 630V per IEC NF EN 60947-5-1 and IEC NF EN 60077-2
<b>Rated surge voltage</b>	6 kV per IEC NF EN 60947-5-1 and IEC NF EN 60077-2
<b>Contact operation type</b>	Slow make depending action
<b>Activation force</b>	Push button : 1NC = 8N, 1NO = 10N, 2NC = 13N, 2NO = 13N
<b>Contact material</b>	Depending on the type of environment:

**Oxidising atmosphere, corrosive sulfurised type (SO<sub>2</sub>, H<sub>2</sub>S)**  
eg Places of high diesel and exhaust concentration or certain industries processing waste incinerators.

**Any other atmosphere including saline atmospheres.**

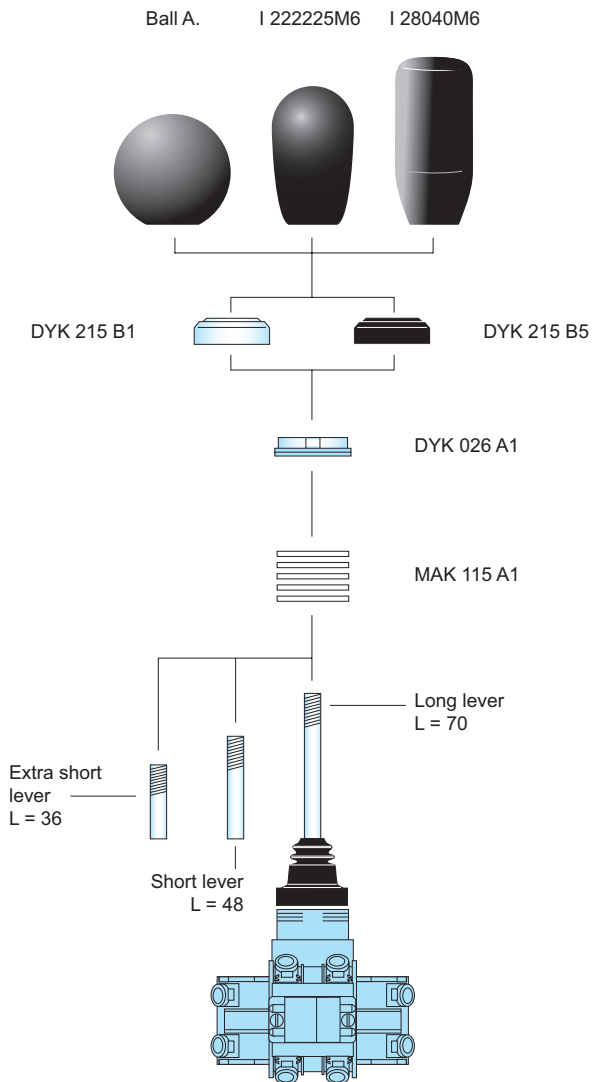
Atmospheres	Highly sulfurised (SO <sub>2</sub> , H <sub>2</sub> S)	Other
Current level*		
≥ 10 mAmps	AgPd	AgNi
1mAmp < I < 10 mAmps	AgNi + gilding	AgNi + gilding

\* For all levels of current < 15mAmps, please contact us to specify the conditions of use (outdoor pollution, signal type, EMC, ...).

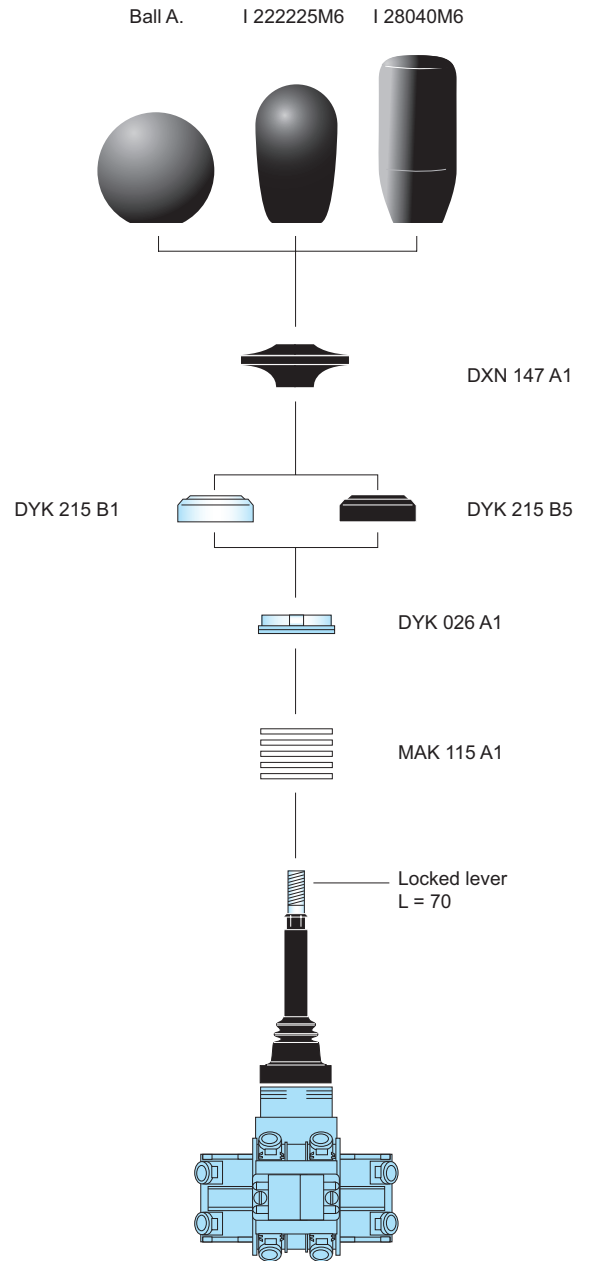
<b>Maximum number of contacts</b>	4 (2 stacks) by side
<b>Terminal markings</b>	Per IEC NF EN 60947-5-1
<b>Operating power</b>	AC-12 : 230V/15A & 400V/8A AC-15 : 230/8A & 400V/8A DC-12 : 24V/15A & 110V/8A DC-13 : 24V/4A & 110V/1A
<b>Connection</b>	Screw and bracket : min. 1x 0.22 mm <sup>2</sup> , max. 2x2.5 mm <sup>2</sup> Single or double tab for 6.35 mm clip. Special connection on request

22 Joysticks - Presentation

- Joystick Ø 22



- Joystick Ø 22 with central position locks



NOTA : The rings to lock (ref YSK 8073 ou DXN 147 A1) of joystick aire delivered disassembled for the mounting, and must be correctly fixed after the assemblage of this one.