

Spécial units



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Mafelec, the specialist in adapted control.

Specific control components to customer specification.

The range of possibilities :

- ① **Multi directional switches**
- Contact is ensured in all positions
- ② **Toggle switches**
- Switches with cam followers
- ③ **Interlocked buttons**
- Safe control
- ④ **Foot control**
- Hands-free control
- ⑤ **Accessories**
- Range of mounting, safety, sealing and labelling for control components.



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

Compliance with Standards

Certification	IEC NF 60947-5-1, IEC NF EN 60077-2
Protective finish	Tropicalisation (operating +40°C with 95% humidity) per IEC NF EN 60068-2-3, IEC NF EN 60068-2-30
Vibration resistance	IEC NF EN 61373, IEC NF EN 60068-2-6
Storage temperature	- 40°C to + 85°C per IEC NF EN 60068-2-1, IEC NF EN 60068-2-2
Operating temperature	- 25°C to + 70°C per IEC NF EN 60068-2-1, IEC NF EN 60068-2-2
Protection against accidental contact with active circuits	IP2x as per IEC NF EN 60529
Fire resistance	EN 45545
Degree of protection	IEC NF EN 60529 : IP40 without seal, IP66 with TJ seal and capped head
Mechanical service life in millions of switching operations	Momentary pushbutton : 1 Joystick circuit breaker : 1 Interlocked pushbutton : 1

Characteristics of the contact elements

Rated thermal current	I _{th} = 20A per IEC NF EN 60947-5-1
Rated insulation voltage	U _i = 630V per IEC NF EN 60947-5-1 and IEC NF EN 60077-2
Rated surge voltage	6 kV per IEC NF EN 60947-5-1 and IEC NF EN 60077-2
Contact operation type	Slow make depending action
Activation force	Pushbuttons: 1NC = 8N, 1NO = 10N, 2NC = 13N, 2NO = 13N
Contact material	Depending on the type of environment: Oxidising atmosphere, corrosive sulfurised type (SO₂, H₂S) eg Places of high diesel and exhaust concentration or certain industries processing waste incinerators.

Any other atmosphere including saline atmospheres.

Atmospheres	Highly sulfurised (SO ₂ , H ₂ S)	Other
Current level*		
≥ 10 mAmps	AgPd	AgNi
1 mAmp < 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, ...).

Maximum number of contacts	Pushbuttons : - Momentary: 8 - Push-push: 4 - Push-pull: 4 - Illuminated: 6
Terminal markings	Per IEC NF EN 60947-5-1
Operating power	AC-12 : 230V/15A & 400V/8A AC-15 : 230V/8A & 400V/8A DC-12 : 24V/15A & 110V/8A DC-13 : 24V/4A & 110V/1A
Connection	Screw and bracket : min. 1x 0.22 mm ² , max. 2x2.5 mm ² Single or double tab for 6.35 mm clip. Special connection on request

Toggle switches

22 Toggle switches - Complete units - Ø 22 Range

- Switch with cam followers - Black metal bezel - Attachment by punch screws - 1 or 2 contacts per tier, max. 8 contacts.
- Connection by tab for 6.35 mm clip

Description	Direction	Contact	Schematic	Part Number	Weight Kg
Toggle switch 2 directions with stable positions		1NC		L 2 2 T 1 O F 2	0.090
		1NO		L 2 2 T 1 F F 2	0.090
		1NO1NC		L22T1O1FF2	0.100
		2NC		L 2 2 T 2 O F 2	0.100
		2NO		L 2 2 T 2 F F 2	0.100
Toggle switch 2 directions with automatic return		1NC		L22T1ORAF2	0.090
		1NO		L22T1FRAF2	0.090
		1NO1NC		L22T1O1FRAF2	0.100
		2NC		L22T2ORAF2	0.100
		2NO		L22T2FRAF2	0.100

Connection by IP2x screw /bracket
replace F2 by V2

Example: L22T2FRA V2

Dimensions - Cutouts

Support thickness : 1 to 6 mm

Add 16 mm to the 39 mm dimension
for every additional electrical tier

