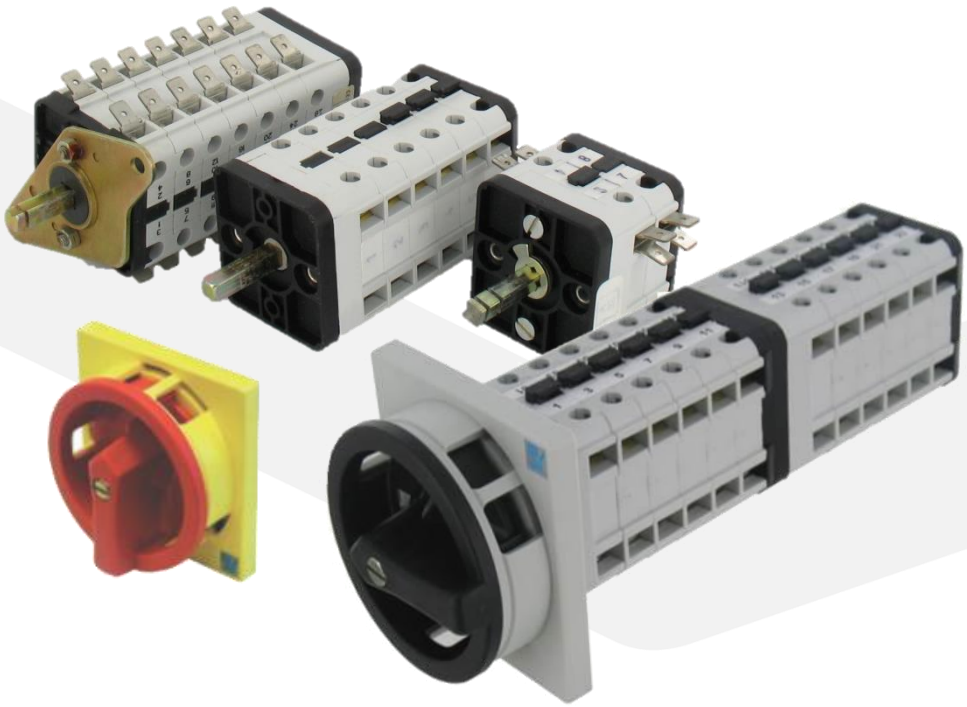
MAFELEC



V18
ISOLATOR SWITCHES

CONTROL AND SIGNALING SOLUTIONS FOR HARSH ENVIRONMENTS

V18
ISOLATOR SWITCHES

Robust

Long life durability :

- Qualified according to IEC 60947 standard
- Qualified according to nuclear standards IEEE 323 & 344
- A foolproof mechanical and electrical robustness
- Applications in harsh environments

Configurable

Adaptable to your applications :

- Various modes of connections adapted to your installation
- Up to 36 contacts with customizable diagram
- Possibilities of particular adaptations and special realizations on request

APPLICATION

➢ **Isolate circuits**

- These switches have a particularly strong design which allows them very numerous applications in severe environments (shocks, vibrations, temperature, radiations, earthquakes).
- It arises from technical evolutions brought by strong customers requirements (electrical distribution market, nuclear applications…)
- V18 switches are particularly adapted to electrical distribution plants.
- V18 also comes in other applications as command switch for many types of circuits or it can be integrated on different systems as auxiliary switch or position report function on circuit breakers.

Codification of products

Type	/ Fixing	/ Handle	/ Mechanism	/ Terminals	/ Contact scheme	/ Adaptive devices //
Eg : V18	/ FS1	/ LH1	/ 04R	/ SC	/ F23-O1	/ 0 //

Type

V18	Isolator switch

Fixing

FS1	Front Side mounting on panel

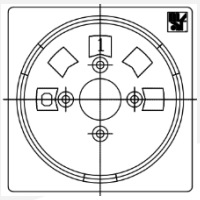
Handle

LH1	Handle □ 75X75, Black-Grey, lockable in 2 positions marked O-1
LH2	Handle □ 75X75, Red-Yellow, lockable in 2 positions marked O-1
LH3	Handle □ 75X75, Black-Grey, lockable in 1 positions marked O-1
LH4	Handle □ 75X75, Red-Yellow, lockable in 2 positions marked O-1

Mechanism

04S	Standard mechanism for 90° positioning
04R	Reinforced mechanism for 90° positioning *(Used to realize electrical diagrams with recovery contacts)*

We have others possibilities of handles, marking and position mechanisms :
Consult us



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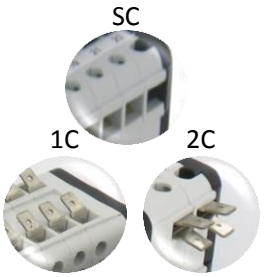
Terminals

SC	Screw-Clamp terminals (IP20)
1C	Fast-On Clips 6,35 inclined at 45°
2C	Double Fast-On Clips 6,35

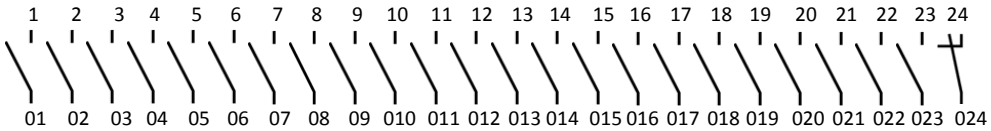


Contact

Fxx-Oxx

Fxx : Number of Normally Open contacts (NO)
Oxx : Number of Normally Close contacts (NC)

Eg : F23-O1
In this example the isolator switch is equipped with :
23 NO contacts and 1 NC contact



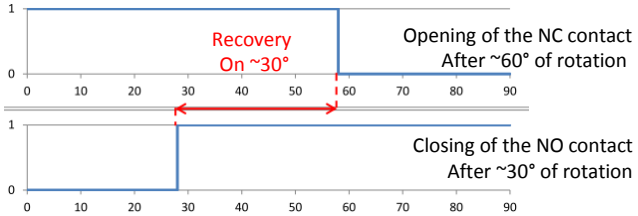
Marking

Each electrical stage is composed of 2 contacts.

Each contact is marked by two numbers to differentiate between the incoming and the outgoing (01 et 1 , 02 et 2, 03 et 3…). The numbers are graded from the control handle to the rear of the switch. The break contacts are positioned in the even-numbered rows starting from the rear of the switch. *Possibility to realize special marking of the contacts on request.*

Recovery contacts

We have the possibility to realize diagrams with contact recovery : consult us *(in this case a specific scheme number will appear in contact codification)*



Codification of products

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Eg : V18	/ FS1	/ LH1	/ 04R	/ SC	/ F23-O1	/ 0	//

Adaptive devices

0

Standard isolator without adaptive device

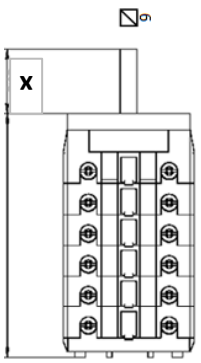
SExx

Realization of a switch with a specific length of axes of xx mm at request. (often used for auxiliary switch and report position switch).

This kind of adaptation is often used when the product is use to report a position and/or operated by a mechanical system.
In this case the product is not equipped with handle and there is no position mechanism.

Eg. of codification : V18/FS1/0/0/SC/F6-O6/SE33//

SEXX



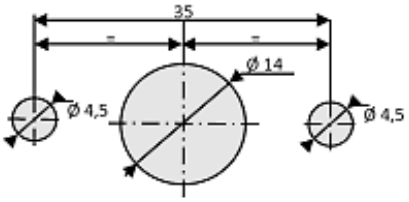
We have the possibility to study any particular request adapted to your needs in order to facilitate the integration of the switch in your system

Eg : Realization on a special fixing interface to use V18 switch as report position in a circuit breaker.

Dimensions

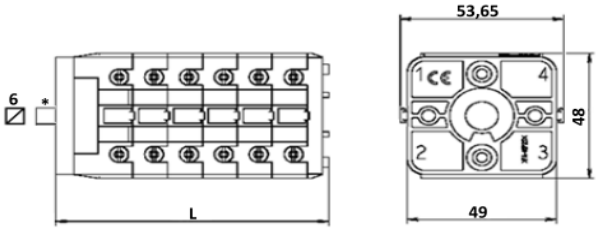
Drilling

Handles
LH1, LH2, LH3 et LH4

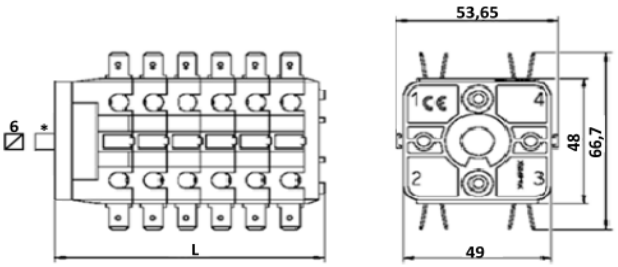


Rear length

Screw-Clamp Terminals (SC)

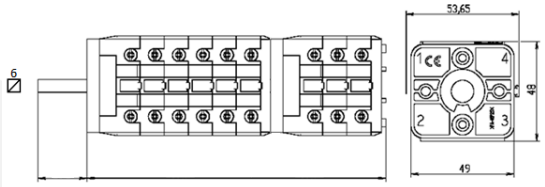


Fast-On clip Terminals (1C or2C)

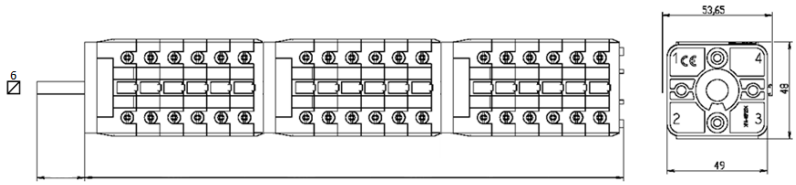


Stages numbers	L (mm)
1	32,4
2	43,9
3	55,4
4	66,9
5	78,4
6	89,9
7	122,3
8	133,8
9	145,3
10	156,8
11	168,3
12	179,8
13	212,2
14	223,7
15	235,2
16	246,7
17	258,2
18	269,7

Beyond 6 stages V18 switches are composed of an assembly of 2 contact blocks : a 6 stages block + a block with the number of stage necessary to complete the need.
Eg1 : Switch equipped with 9 stages



Similiarly, beyond 12 stages V18 switches are composed of an assembly of 3 contact blocks : two 6 stages blocks + a block with the number of stage necessary to complete the need.
Eg2 : Switch equipped with 18 stages (maximal configuration)



Installation and maintenance

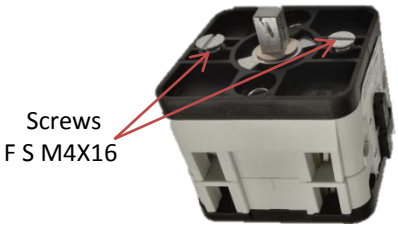
Fixing

The standard device can be fitted on a 2 to 4 mm thick panel.

The product is fixed to the panel through 2 fixing screws. 2 people are recommended to fix correctly the switch: a person behind the panel to guide and maintain the product, the other one to set up the handle.

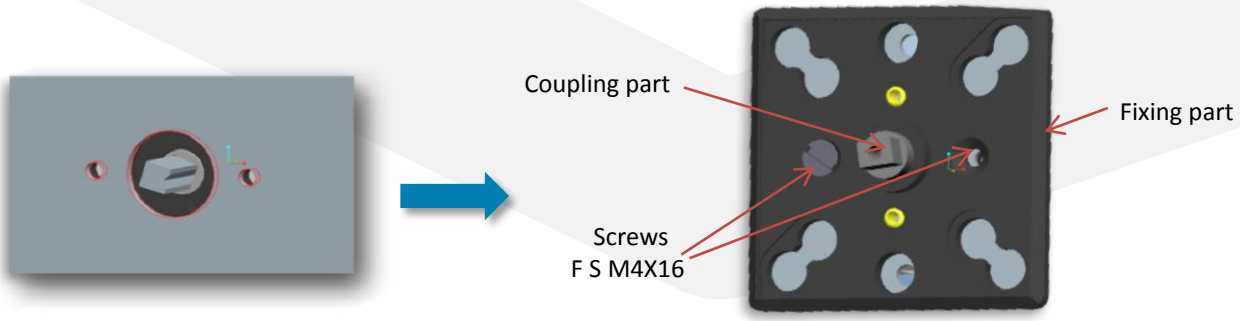
Step 0 (preparation) :

Unscrew the fixing screws located at the top of the switch block. Separate the components of the handle kit.



Step 1 :

Position the switch at the rear of the panel and take care of the right alignment with the holes.
Insert coupling part on command tree behind the cover and fix the assembly by 2 screws
Set up the fixing part and screw it with the screws FS M4X16 (We recommend a torque tightening of 1,2N.m for these screws).



Installation and maintenance

Fixing

Step 2 :

Set up the escutcheon plate in alignment with the threaded insert of the fixing part . Tighten the screws.

Threaded insert

Escutcheon plate screws

Step 3 :

Set up the handle and screw it (we recommend to don't exceed a torque of 0,2N.m for this screw.)

Handle screw

Installation and maintenance

Wiring

The standard wiring of these switches is realized with M3,5 screw and clamp or by Fast-On clip 6,35.
The maximal section of cable is 4mm².
A common practice is to set a fork terminal for M3,5 screw, 6,35mm large, on the cable . Insert it under the clamp and tighten it. We recommend a tightening torque of 0,6 N.m /!\ Do not exceed 0,8 N.m : an excess of torque can cause the rotation of the fixed contact and consequently a bad continuity of the circuit.
We recommend to use isolated Fast-On clip to ensure the same terminal protection level that a screw-clamp wiring.

Example of SC terminals

Maintenance

No special cleaning is required.

Never use solvents, acids or any chemicals. Do not use sandpaper or other metal abrasive.
No special maintenance on contacts. After a few years of use, remove simply the dust with a vacuum cleaner or a wet fabric. Use only water to moisten slightly the fabric.

For the maintenance of escutcheon plates , or handles , use a fabric slightly moistened with a mixture of water and alcohol (type cleaning glasses)

Electrical, mechanical, environmental characteristics

Electrical characteristics

Rated thermal current (Ith)		25A
Max rated voltage (AC)		380V
Impulse withstand voltage (Uimp)		6kV
Rated short-time withstand current (10s)		100A
Rated alternate current (Ie) (AC)		
Resistivity T= 100ms	Voltage per contact 135VDC	1A
Minimum utilization characteristics		10mA-6V
Maximum connection (Cu only)	Rigid or flexible cable Screw/clamp Fast-On clip	 2X4 mm² max 6,35

Mechanical and environmental characteristics

Mechanical strength	1 000 000 cycles of semi-intensive operation
Fixing	Horizontal on a 1 to 4 mm panel thick
Recommended torque for fixing screws	1,2 N.m
Recommended torque for screw/clamp terminals (Recommended screwdriver : Ø5,5mm or Pozi2)	0,5-0,8 N.m
Terminal protection level	IP20
Pollution degree	Type 3
Working temperature	- 40°C à +75°C
Storage temperature	- 40°C à +75°C