



# OVERSURGE PROTECTIONS

Complementing lightning protection systems, MSM offers a wide range of equipment to safeguard facilities and their electric equipment of surges that may occur. This product line is characterized by its robustness, compactness, ease of installation and high performance.

The range of products for the protection of marine equipment includes protective equipment for power lines, data networks and communications, photovoltaic systems and coaxial lines.

In addition to the wide range of protection products we offer, MSM offers technical support service to help you select the most suitable protection for each case.

## TYPES

### SURGE PROTECTORS TYPE 1. Test wave 10/350 $\mu$ s.

Surge protectors Type 1 are recommended for installations where there is a high probability of lightning.

Code	No. of poles	Nominal voltage (V)	$I_{imp}/I_{max}$ (kA)	Description
MAD1-200/240	1	240	50/200	Unipolar protector. To be installed between the phase and neutral.
MAD1-400/240	1	240	100/400	Unipolar protector. To be installed between the neutral and ground installation.
MAD2-400/240	2	240	100/400	Bipolar protector Type 1.
MAD4-400/240	4	240/400	100/400	Tetrapolar protector Type 1.

### SURGE PROTECTORS TYPE 2. Test wave 8/20 $\mu$ s.

Surge protectors Type 2 are installed at the heading of electrical installations and secondary power units. They protect electrical and electronic equipment from transient surges of industrial, atmospheric or manoeuvre origin.

Code	No. of poles	Nominal voltage(V)	$I_{imp}/I_{max}$ (kA)	Description
MBV1-25/240	1	240	25	Unipolar protector. Recommended for low-risk facilities.
MBV1-40/240			40	Unipolar protector. Recommended for medium-risk facilities.
MBV1-60/240			60	Unipolar protector. Recommended for high-risk facilities.
MBD2-25/240	1P+N	240	25	Bipolar protector. Recommended for low-risk single-phase systems.
MBD2-40/240			40	Bipolar protector. Recommended for medium-risk single-phase systems.
MBD2-60/240			60	Bipolar protector. Recommended for high-risk single-phase systems.
MBD4-25/240	3P+N	240/400	25	Tetrapolar protector. Recommended for low-risk three-phase systems.
MBD4-40/240			40	Tetrapolar protector. Recommended for medium-risk three-phase systems.
MBD4-60/240			60	Tetrapolar protector. Recommended for high-risk three-phase systems.

### SURGE PROTECTORS TYPE 3. Test wave 8/20 $\mu$ s - 1.2/50 $\mu$ s.

Surge protectors Type 3 are always installed coordinated with surge protectors Type 2. To be installed at the power supply input of the receiving equipment.

Code	No. of poles	Nominal voltage (V)	$I_{max}$ (kA)	Description
MCV1-15/240	1	240	15	Unipolar protector. Recommended for low-risk facilities.

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Specifications subject to change without previous notice.



Other protections available under request.



## DATA NETWORK AND CONTROL PROTECTORS.

### TD SERIES

Surge protectors for data lines protect electronic equipment in the communication network against any transient surge induced on the data lines. These guards must be installed as close as possible to the equipment to be protected.

Protectors for data lines are available for any type of connector: DB9, DB25, RJ45, RJ11, 2-wire, BNC.

## COAXIAL CABLE PROTECTORS.

### CD SERIES

Surge protectors for coaxial cables protect electronic equipment associated with the coaxial installation against any transient surge induced on coaxial cables. These guards must be installed as close as possible to the equipment to be protected.

Protectors for coaxial cables are available for any type of connector: BNC, F, N, N-Bulkhead, TNC.

## PROTECTORS FOR PHOTOVOLTAIC INSTALLATIONS.

### BF3 SERIES

Surge protectors for protection Type 2 are intended for equipment working on direct current, protecting photovoltaic equipment against transient overvoltage of atmospheric or manoeuvre origin.

This surge protector is available for voltages of 600V d.c. and 1000V d.c.

These models also have the ability to provide a remote alarm (optional).



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