

MA30 Series

AC and DC mains power surge protector and filter



- **18kA surge protection and RFI filtering**
- **Protects panel loads up to 30 Amps in series, unlimited Amps in parallel**
- **Suitable for AC or DC application**
- **Thermal and short circuit protection**
- **LED status indication feature and remote alarm and power fail capability with Form C contacts**
- **10 year product warranty**



The MA30 Series of surge protection devices protects electronic equipment power supplies and computer networks against the effects of 'noise pollution' induced in AC power supplies. MA30 units 'clean up' the effects of industrial noise and surges caused by lightning, switching devices, thyristor controls, transmission system overloads and power-factor correction circuits.

Industrial control systems and dc power supplies utilizing programmable logic controllers (plc) and industrial computers are particularly vulnerable due to the aggressive electrical environments for which they are intended, such as process plants, factories and water treatment sites. Although industrial computers and plcs are designed to be rugged, the extra protection provided by the DIN rail mounting MA30 units is critical. Ideally suited for protecting panel mounted equipment and typically used in the controls section of a motor control center (MCC), the MA30 range provides surge and RFI protected power.

With a unique 'three-stage' combination of protection elements, these units suppress conducted RFI and voltage surges. The circuit elements are first, surge clipping components to absorb

transient surges that may otherwise damage equipment; second a filter to suppress noise in the system and third, 'ring' suppression. The third of these prevents surges causing the filter to 'ring' (oscillate) under low load conditions – an effect that actually accentuates interference in most commercially available filters.

Suitable for AC or DC application, MA30 units reduce both electromagnetic emissions and the susceptibility of the associated equipment to emissions from other sources. MA30 devices also offer ultimate installation flexibility. To protect circuits rated 30A or less, MA30 devices should be installed in series. To protect higher current circuits, simply install the MA30 in parallel.

An LED status indication facility is standard with the MA30 units. This displays both 'power on' and that protection is present. Thermal fusing is also incorporated into each 18kA rated device as an additional safety feature. MA30 units also

offer short circuit protection. An optional remote monitoring unit is also available with audio and visual indication status, along with features such as a test switch for checking the monitoring circuitry and an audio alarm silence switch.

MA30 devices exceed the requirements of IEC 61000-4-5. Since MA30 units suppress conducted RFI and voltage surges they enable associated equipment to comply with this aspect of 'CE' mark standards.

AC & DC Power Protection

Specification

All figures typical at 77°F (25°C) unless otherwise stated

Maximum surge current

18kA (8/20μs) per mode

Maximum leakage current

<0.3mA

Maximum continuous operating current

30A series connection
Unlimited Amps in parallel

Working voltage

	AC	DC
MA30/D/1/SI	120V, 47-63Hz	140V
MA30/D/1TT	120V, 47-63Hz	140V
MA30/D/2/SI	240V, 47-63Hz	280V
MA30/D/2TT	240V, 47-63Hz	280V
MA30/D/3/SI	240V, 47-63Hz	280V

Maximum continuous operating voltage

25% above nominal

Limiting voltage

@ 500A ring

120V/140V versions	295V
240V/280V versions	404V

@ 500A 8/20μs

120V/140V versions	320V
240V/280V versions	628V

@ 3kA 8/20μs

120V/140V versions	396V
240V/280V versions	820V

@ 10kA 8/20μs

120V/140V versions	585V
240V/280V versions	1020V

Maximum attenuation (typical)

-55dB @ 100MHz

Modes protected

Single phase: L-N, L-E, N-E
Split phase: L-E, L-L

Ambient temperature limits

-40°F to +185°F (working)
-40°C to +85°C (working)

Humidity

95% RH (non-condensing)

Casing

ABS with DIN-rail mounting foot

Connectors

Screw terminal

Terminals

#10 AWG (5.3mm²)

Mounting

1.4 inch (35mm) DIN rail

Indication

Green LED on	Protection present
Green LED off	Internal failure

Weight

3.53oz (100g)

Dimensions

See figure 1

EMC compliance

BS EN 60950 : 1992
BS EN 61000-6-2 : 1999

Model	500A Ring (V)	500A 8/20μs (V)	3kA 8/20 8/20μs (V)	10kA 8/20μs (V)
MA30/D/1/SI	295	320	396	585
MA30/D/1TT	295	320	396	585
MA30/D/2/SI	404	628	820	1020
MA30/D/2TT	404	628	820	1020
MA30/D/3/SI	404	628	820	1020

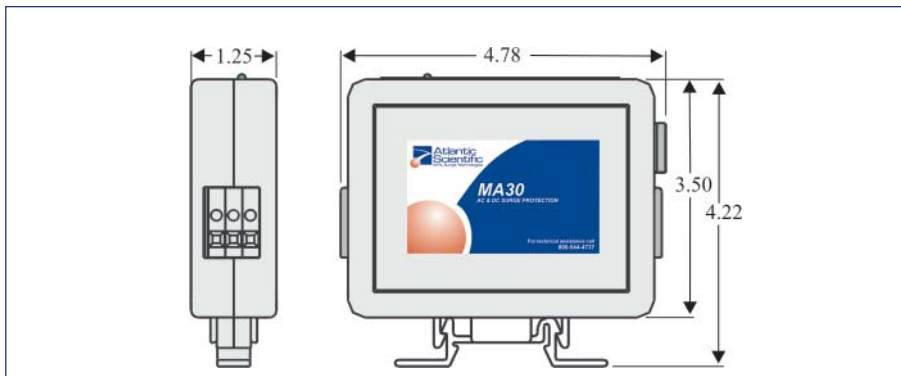


Figure 1 Dimensions

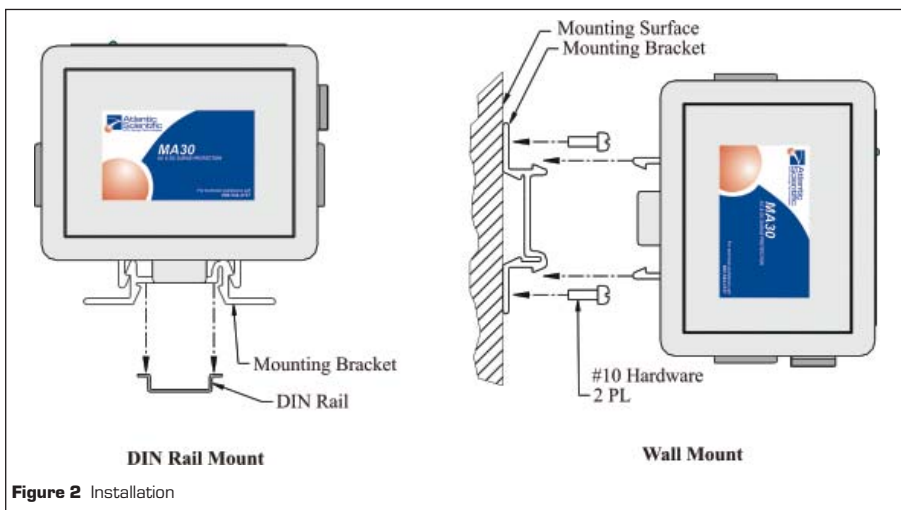


Figure 2 Installation

Installation

The grounding (earthing) of the surge protector and the protected equipment is very important and, if possible, should be accomplished as illustrated. The unit is marked Protected and Unprotected and it is important that the unit is installed with the Unprotected side connected to the incoming AC power and the Protected side connected to the equipment to be protected. For parallel application however; the Unprotected side is connected to the incoming AC power and the Protected side left unconnected.

Note: In accordance with our policy of continuous improvement, we reserve the right to change the product's specification without notice.

To order specify -

As per table above

Remote Monitoring Unit

(Model number 11101)

Indication

Green LED on	Protection present
Red LED on	Fault indication
Audible alarm	Fault indication

Connectors

Screw terminal

Terminals

14 AWG (2mm²)

Weight

1 lb (450g)

Dimensions

5.5" x 4" x 1.5" (135mm x 100mm x 40mm)