

**Filtering and surge protection
for industrial control systems
and computer/OEM equipment**

MA05/10 SERIES

surge protection devices



- ◆ **Unique design for EMC compliance – exceeding IEC61000-4-5, level 4**
- ◆ **Wall/floor mounting and DIN-rail mounting versions available**
- ◆ **5A or 10A continuous line current ratings**
- ◆ **Up to 73dB suppression of RF interference**
- ◆ **Combines high quality filtering with ‘ring’ suppression**
- ◆ **High level of surge protection – 6.5kA**

Telematic’s MA05 and MA10 Series protect electronic equipment and computer networks against the effects of ‘noise pollution’ induced in mains power supplies. A unique combination of circuit elements ‘cleans up’ the effects of industrial noise and surges caused by lightning, switching devices, thyristor controls, transmission system overloads and power-factor correction circuits. The units are available in alternative versions (*) – ‘standard’ I units for wall or floor mounting or ‘D’-suffixed units for G- or top-hat section DIN-rail mounting, ideally suited to protecting panel-mounted equipment.

With their unique ‘three-stage’ combination of protection elements, the units suppress conducted RFI and voltage surges – so helping the associated equipment comply with this aspect of the European ‘CE’ marking standards. The circuit elements are: first, surge clipping components to absorb transients 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.

The units operate in both signal directions and therefore reduce both electromagnetic emissions and the susceptibility of the associated equipment to emissions from other sources.

Designed and manufactured in accordance with the ISO9001 standard, the performance of all units is tested before dispatch and exceeds the requirements of IEC61000-4-5, level 4. The casings of the DIN-rail mounting units are made from Polyamide-PA with screw-clamp terminals for input and output connections. Mounting them onto either ‘top-hat’- or G-type DIN-rail is done by one simple manual operation. The standard I package is a self-contained unit in a plastic enclosure with screw terminals inside.

INDUSTRIAL CONTROL SYSTEMS



Industrial control systems utilising programmable logic controllers (plc) and industrial computers are particularly vulnerable to surges 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, protection against the extreme voltage surges caused by lightning activity and the switching of large electrical motors demands the extra protection provided by the DIN-rail mounting MA05/D. Typically used in the controls section of a motor control cubicle (MCC), the MA05/D provides voltage surge and RFI protected power.

COMPUTER/OEM EQUIPMENT



Increased reliance on computers in industry and the workplace, coupled with an increasingly 'noisy' electrical supply and a higher incidence of lightning activity has led to a higher risk of downtime and disruption. This has led to the need to manufacture equipment that is resistant to voltage surges and radio frequency interference (RFI), as laid down in the EMC directives. The MA05/I units are designed to be easily incorporated into OEM equipment such as industrial computers, mobile telephone base stations, closed circuit tv (cctv) systems and can help with EMC compliance and 'CE' marking.

SPECIFICATIONS

(all figures typical at 25°C unless otherwise stated)

Maximum surge current

6.5kA (8/20µs)

Maximum leakage current

<0.3mA at working voltage

Rated load current

5A or 10A at 30°C

Maximum continuous operating voltage

MA05/*/1 132V

MA05/*/2 253V

MA10/*/1 132V

MA10/*/2 253V

Continuous operating current (rated)

MA05/*/1 5A

MA05/*/2 5A

MA10/*/1 10A

MA10/*/2 10A

Continuous operating current (derated)

MA05/*/1 1A/10°C above 35°C

MA05/*/2 1A/10°C above 35°C

MA10/*/1 2A/10°C above 45°C

MA10/*/2 2A/10°C above 45°C

Limiting voltage (V)

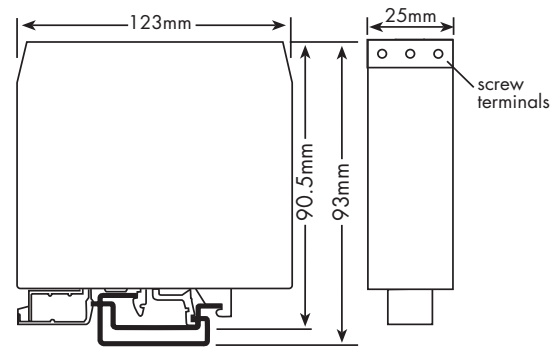
MA05/*/1 <400V

MA05/*/2 <800V

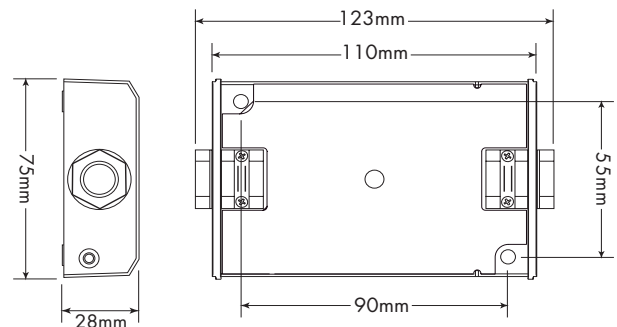
MA10/*/1 <400V

MA10/*/2 <800V

DIMENSIONS



MA05/D Dimensions



MA05/I Dimensions

Maximum fusing rating[†]

MA05/*/1 5A

MA05/*/2 5A

MA10/*/1 10A

MA10/*/2 10A

Temperature range

-25°C to +85°C

Maximum attenuation (typical)

73dB (series mode)

70dB (common mode)

Bandwidth 50/60Hz

Casing

Polyamide-PA, with G- or T-section DIN-rail mounting foot (D models)

ABS plastic (I models) plastic ABS - V0 IP50 rated

Connectors

Screw-clamp (D and I models)

Weight

100g (D models)

160g (I models)

Warning

These units must be protected by an external fuse

[†]Fusing: Fuse rating may need to be reduced depending on power supply capability or equipment fitted downstream of SPD