



## MA4000 Series

Surge protection for AC and DC power supplies in harsh environments

- AC or DC application
- Straightforward and simple installation — wall mounting
- Remote monitoring plus dual redundancy
- ATEX Category 3G certified
- 10 year product warranty



**MA4000 Series surge protection devices** prevent surges and transient overvoltages conducted through power circuits from damaging electronic systems such as control panels, distributed I/O, motor and pump controls and many other remotely mounted pieces of equipment.

**The MA4000 Series is available in a range of voltage options** (24Vdc, 48Vdc, 110Vac and 230Vac) making it universally suitable for protecting power supplies in hostile environments. These 20kA rated, single phase devices provide protection for ac or dc power supplies with no restriction to the amount of load current.

**Fully automatic in operation**, MA4000 devices react immediately, clamping voltage surges without causing undue leakage losses under normal conditions. No operator intervention is required, MA4000 devices reset automatically and are maintenance free. The MA4000 is designed to protect and survive the level of transient associated with the industrial environment, extending the life of equipment

which could otherwise be stressed or damaged if not properly protected.

**Connected in parallel via flying leads**, MA4000 devices are easily connected to the power supply. The robust, IP54 (NEMA 13) rated enclosure is simply 'wall mounted' via the four fixing points provided.

**Remote monitoring** is provided, as standard, which can be utilised to provide indication of the status of an MA4000 unit. These wires have a normally closed contact which will open to indicate that reduced protection is present. However, continuity of protection is ensured via the redundancy capability of the MA4000 range. Additionally, thermal fusing, incorporated into each MA4000 unit, ensures a high level of safety.

**The MA4000 Series is self-certified** to ATEX 94/9/EC for mounting into Zone 2, Category 3G hazardous areas, especially useful for protecting the next generation of Hazardous Area mounted control systems. Also, the MA4000's aluminium case is silica filled, a

requirement of Ex q certification. The MA4000 also has a 10 year product warranty.

## SPECIFICATION

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

### Maximum surge current

20kA

### Leakage current

0.3mA

### Lines protected AC

L-N, L-E, N-E

### Lines protected DC

V+, V

### Ambient temperature limits

-30°C to +60°C (working)

-22°F to +140°F (working)

### Humidity

95% RH (non-condensing)

### Enclosure

IP54 (NEMA 13)

### Connections

AC Live, Neutral, Earth remote monitor 1 & 2

DC +ve, -ve, Earth remote monitor 1 & 2

Wire size: 5 x 2.5mm<sup>2</sup> (12 AWG)

Lead length: 450mm (1.5 ft)

### Mounting

Surface mount with 4 x 6mm (0.24") slots

### Remote contacts

NC 250Vac, 2A rated

### Weight

1Kg (2.2lb)

### Dimensions

See figure 1

### ATEX compliance

BS EN 50014 : 1998

BS EN 50021 : 1999

IEC 60079-0 : 1998

IEC 60079-15 : 2001

### EMC compliance

BS EN 61643-1

BS EN 61000-6-2 : 2001,

referencing particularly -

IEC 61000-4-2 : 2000

IEC 61000-4-4 : 2001

IEC 61000-4-5 : 2000

## INSTALLATION

MA4000 Series devices can be easily mounted using the four fixing points provided on the enclosure. Flying leads are provided for easy connection to the power supply cable (see figure 2 for further information).

The MA4000 device should be mounted close to the equipment it is protecting and should be bonded directly to the equipment with as short a length of cable as possible.

## ORDERING INFORMATION

### AC versions

MA4020-F-110-1-D-R (110Vac version)

MA4020-F-230-1-D-R (230Vac version)

### DC versions

MA4020-F-024-1-D-R (24Vdc version)

MA4020-F-048-1-D-R (48Vdc version)

Model	Working voltage (V)	Limiting voltage* (6kV/3kA) voltage (V)	Maximum continuous operating (V)	Line frequency	Phase types
<b>AC versions</b>					
MA4020-110	110Vac	470	130	dc to 60Hz	Single phase 2 wire
MA4020-230	230Vac	790	265	dc to 60Hz	Single phase 2 wire
<b>DC versions</b>					
MA4020-024	24Vdc	210	38	dc 2 wire	
MA4020-048	48Vdc	240	65	dc 2 wire	

\* 8/20µs waveform (cable length 150mm)

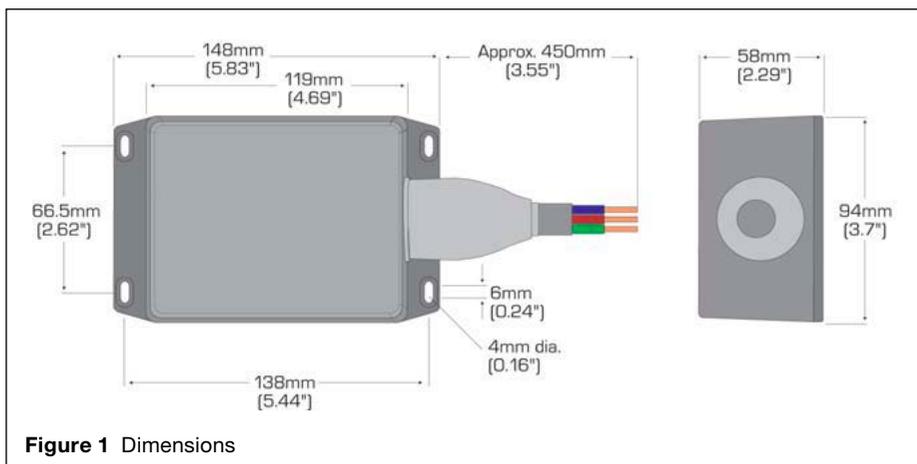


Figure 1 Dimensions

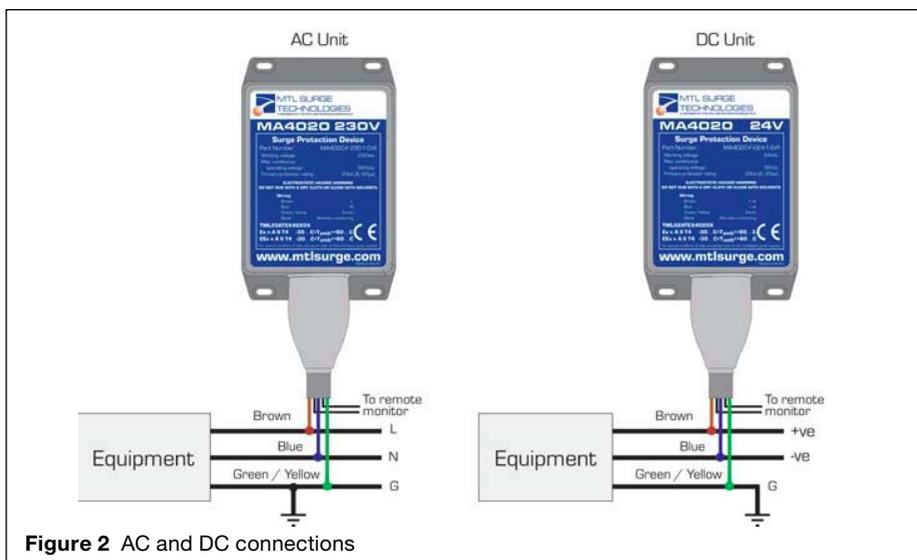


Figure 2 AC and DC connections

## APPROVALS

Standard/Authority	Certific No.	Approved for	Product
ATEX Directive 94/9/for Zone 2 Category 3G	ECTML02ATEX4020X	Ex n A II T4 (-30°C<Tamb<+60°C) EEx n A II T4 (-30°C<Tamb<+60°C)	MA4020-024 MA4020-048 MA4020-110 MA4020-230

The given data is only intended as a product description and should not be regarded as a legal warranty of properties or guarantee. In the interest of further technical developments, we reserve the right to make design changes.



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