

MA4000 Range

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 range of 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 range 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 range is self-certified to ATEX 2014/34/EU 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.

MA4000 Range

January 2017

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 2.5mm² (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 range of 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 | Limiting voltage* (6kV/3kA) voltage | Maximum continuous operating | Line frequency | Phase types |
|--------------------|-----------------|-------------------------------------|------------------------------|----------------|---------------------|
| | (V) | (V) | (V) | | |
| AC versions | | | | | |
| MA4020-110 | 110Vac | 470 | 130 | dc to 60Hz | Single phase 2 wire |
| MA4020-230 | 230Vac | 790 | 265 | dc to 60Hz | Single phase 2 wire |
| DC versions | | | | | |
| MA4020-024 | 24Vdc | 210 | 38 | dc 2 wire | |
| MA4020-048 | 48Vdc | 240 | 65 | dc 2 wire | |

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

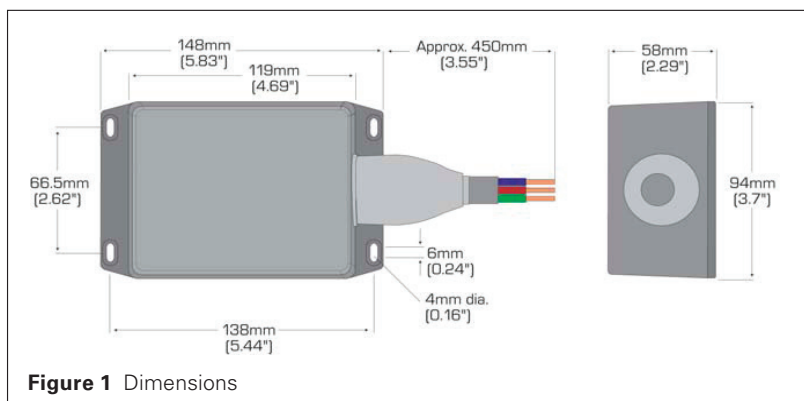


Figure 1 Dimensions

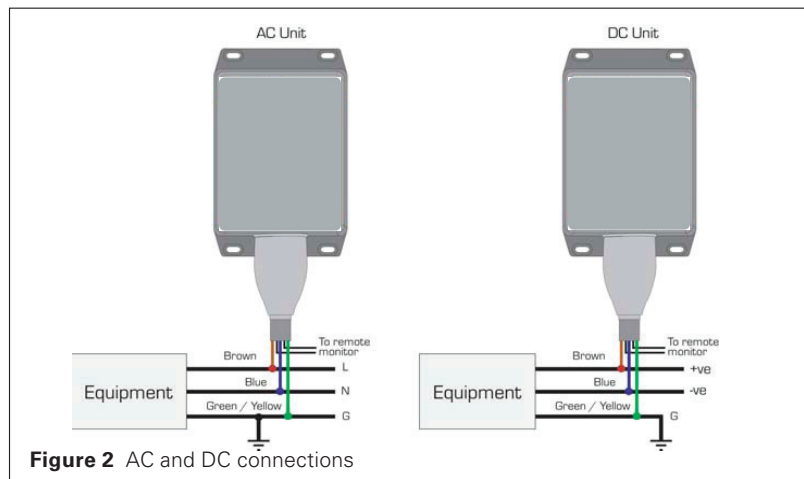


Figure 2 AC and DC connections

APPROVALS

| Standard/Authority | Certificate No. | Approved for | Product |
|--|------------------|---|--|
| ATEX Directive 2014/34/EU 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 |



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Publication No. EPS 901-105 Gev G 230117
January 2017

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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.