



- HIGH STABILITY: 10PPM/HR
- ULTRA LOW NOISE 10PPM
- ULTRA LOW TEMPERATURE COEFFICIENT 10PPM/°C
- SIX-SIDED SHIELDED
- EXTERNAL POTENTIOMETER OR AN EXTERNAL VOLTAGE REFERENCE
- OEM CUSTOMIZATION AVAILABLE



A
MICRO-MODULES

INTRODUCTION

Wisman's MA series of high voltage 2~6W micro modules provide output voltage range from 0.3kV to 10kV. MA modules are compact six-sided shielded modules with ultra-low noise, high stability and ultra-low temperature coefficient. All models are provided with external potentiometer or an external voltage monitoring panel. This series modules have protection functions including over current protection, arc fault protection and short circuit protection.

TYPICAL APPLICATIONS

Mass spectrometry photomultiplier tubes (PMT), solid state detectors, Piezo crystal devices, ultrasonic transducers, microchannel plates (MCP), spectroscopy, scintillation counters, electron multiplier detectors, nuclear Instruments, electrophoresis, semiconductor testing, DNA sequencing, radiation counter, electron and ion beams, electrostatic chuck, high voltage, bias hipot testing, precision lenses, image intensifiers, semiconductor testing, chemical applications, laboratory applications, industrial application supplies.

MA SELECTION TABLE

| kV | mA | P(W) | Model | kV | mA | P(W) | Model | kV | mA | P(W) | Model | kV | mA | P(W) | Model |
|-----|------|------|---------|-----|------|------|---------|----|------|------|-------|----|------|------|--------|
| 0.3 | 6.7 | 2 | MA0.3*2 | 1.5 | 1.33 | 2 | MA1.5*2 | 3 | 0.67 | 2 | MA3*2 | 6 | 0.33 | 2 | MA6*2 |
| | 10 | 3 | MA0.3*3 | | 2 | 3 | MA1.5*3 | | 1 | 3 | MA3*3 | | 0.5 | 3 | MA6*3 |
| | 13 | 4 | MA0.3*4 | | 2.67 | 4 | MA1.5*4 | | 1.25 | 4 | MA3*4 | | 0.67 | 4 | MA6*4 |
| | 16.7 | 5 | MA0.3*5 | | 3.33 | 5 | MA1.5*5 | | 1.67 | 5 | MA3*5 | | 0.83 | 5 | MA6*5 |
| | 20 | 6 | MA0.3*6 | | 4 | 6 | MA1.5*6 | | 2 | 6 | MA3*6 | | 1 | 6 | MA6*6 |
| 0.5 | 4 | 2 | MA0.5*2 | 2 | 1 | 2 | MA2*2 | 4 | 0.5 | 2 | MA4*2 | 8 | 0.25 | 2 | MA8*2 |
| | 6 | 3 | MA0.5*3 | | 1.5 | 3 | MA2*3 | | 0.75 | 3 | MA4*3 | | 0.38 | 3 | MA8*3 |
| | 8 | 4 | MA0.5*4 | | 2 | 4 | MA2*4 | | 1 | 4 | MA4*4 | | 0.5 | 4 | MA8*4 |
| | 10 | 5 | MA0.5*5 | | 2.5 | 5 | MA2*5 | | 1.25 | 5 | MA4*5 | | 0.63 | 5 | MA8*5 |
| | 12 | 6 | MA0.5*6 | | 3 | 6 | MA2*6 | | 1.5 | 6 | MA4*6 | | 0.75 | 6 | MA8*6 |
| 1 | 2 | 2 | MA1*2 | 2.5 | 0.8 | 2 | MA2.5*2 | 5 | 0.4 | 2 | MA5*2 | 10 | 0.2 | 2 | MA10*2 |
| | 3 | 3 | MA1*3 | | 1.2 | 3 | MA2.5*3 | | 0.6 | 3 | MA5*3 | | 0.3 | 3 | MA10*3 |
| | 4 | 4 | MA1*4 | | 1.6 | 4 | MA2.5*4 | | 0.8 | 4 | MA5*4 | | 0.4 | 4 | MA10*4 |
| | 5 | 5 | MA1*5 | | 2 | 5 | MA2.5*5 | | 1 | 5 | MA5*5 | | 0.5 | 5 | MA10*5 |
| | 6 | 6 | MA1*6 | | 2.4 | 6 | MA2.5*6 | | 1.2 | 6 | MA5*6 | | 0.6 | 6 | MA10*6 |

MA SELECTION EXAMPLE

| | | | | | | | | | | |
|---------------|-----------------------------|---|--------------------------|-------------------------------------|---|-----------------------------------|---|--|---|---|
| MA | 10 | * | 6 | VP | 10 | VM | 10 | LS | / | 24 |
| Series Number | Maximum Output Voltage (kV) | Output Polarity P:positive N:negative | Maximum Output Power (W) | Option Programming Voltage given | Option Programming Proportion 10:0~+10Vdc=0 to max. output 5:0~+5Vdc=0 to max. Output | Option Monitor Voltage display | Option Monitor Proportion 10:0~+10Vdc=0 to max. output 5:0~+5Vdc=0 to max. Output | Option Start Way LS: GND=ON OPEN=OFF IM10:0~+10Vdc=0 to max. Output IM5:0~+5Vdc=0 to max. Output | | Option Input Voltage 24:+24Vdc input 15:+15Vdc input 12:+12Vdc input |

MA SPECIFICATIONS

ISO9001:2015

Page 2 of 2

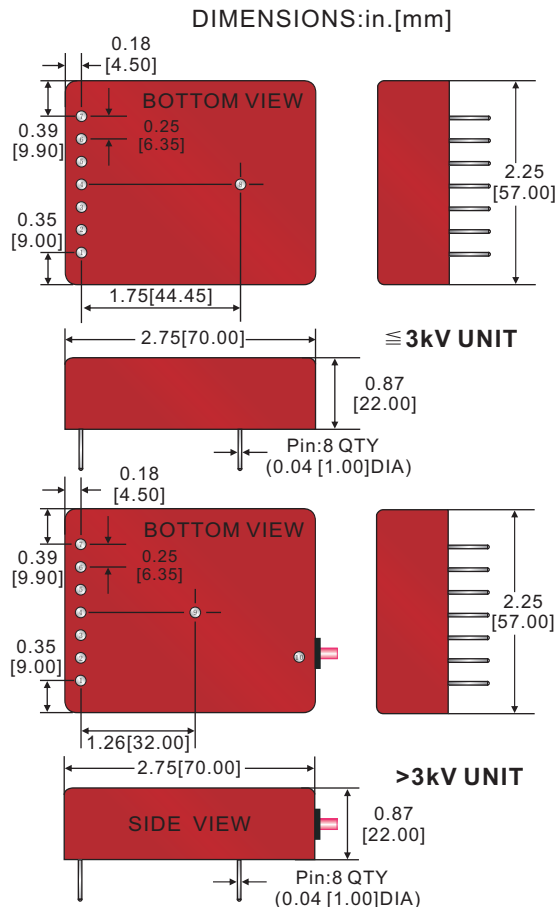
A MICRO-MODULES

| PARAMETER | DESCRIBE |
|-------------------------|--|
| Input Voltage | 24Vdc±2%, Maximum input current:500mA. 15Vdc±2%, 12Vdc±2% available. |
| Output | 0.3kV, 0.5kV, 1kV, 1.5kV, 2kV, 2.5kV 3kV, 4kV, 5kV, 6kV, 8kV, 10kV Multiple high voltage output options. |
| Stability | 0.001%/hr after 30 minute warm-up period. |
| Temperature Coefficient | <10ppm /°C. |
| Ripple | 0.001% p-p of maximum output voltage at the rated output voltage. |
| Voltage remote control | By external 20kΩ potentiometer or external voltage control(Vp-in) 0~+10Vdc. Zin = 100kΩ. |
| Voltage Monitor | 0~+10Vdc=0 to 100% rated output. Zout = 20kΩ. Accuracy=±1% . |
| Current remote control | By external 20kΩ potentiometer or external voltage control(lp-in) 0~+10Vdc. Zin = 100kΩ. |
| Current Monitor | 0~+10Vdc=0 to 100% rated output. Zout = 20kΩ. Accuracy=±1% . |
| Voltage Line Regulation | ±0.001% for ±2% change in input voltage. |
| Voltage Load Regulation | ±0.01% (no load to full load) |
| Operating Temperature | 0°C~+50 °C (-55°C~+125°C can be customized). |
| Storage Temperature | -40°C~+85°C. |
| Humidity | 0%~90% RH, non-condensing. |
| Cooling | Convection cooled. |
| Dimensions | 0.87" H x 2.25" W x 2.27" D (22mm x 57mm x 70mm). |
| Weight | 150g. |

MA PIN INFORMATION

| PIN | DESCRIPTION | PIN | DESCRIPTION |
|-----|---|-----|---|
| 1 | OPTION(LS or IM) | 1 | OPTION(LS or IM) |
| 2 | +10Vdc Reference | 2 | +10Vdc Reference |
| 3 | Control Voltage Input | 3 | Control Voltage Input |
| 4 | Output Voltage Monitor | 4 | Output Voltage Monitor |
| 5 | Power Input+24Vdc±2%,Option +15Vdc±2%, +12Vdc±2%. | 5 | Power Input+24Vdc±2%,Option +15Vdc±2%, +12Vdc±2%. |
| 6 | Signal Ground | 6 | Power/Signal Ground |
| 7 | Power/High Voltage Ground | 7 | Power Ground |
| 8 | High Voltage Output | 9 | High Voltage Ground |
| | | 10 | High Voltage Output |

MA DIMENSIONS



MA CONNECTION DIAGRAM

