



- 60W, 125W, or 250W OUTPUT POWER
- LOW STORAGE, FAST RISING, LOW OVERSHOOT
- OUTPUT CURRENT 0~100% PROGRAMMABLE
- OUTPUT SHORT CIRCUIT PROTECTION
- HIGH POWER/VOLTAGE DENSITY
- HIGH EFFICIENCY
- ULTRA-THIN, DIGITAL CONTROL
- PROGRAMMABLE
- MONITORING PANEL
- OEM CUSTOMIZATION AVAILABLE

## INTRODUCTION

Wisman's MUC series high-voltage module is an extension of the MU series, which can be directly installed on devices with power requirements greater than 30W. The MUC series provides output power up to 250W. MUC series modules are especially suitable for systems with high energy, large capacity, high response rate or continuous high power demand.

## TYPICAL APPLICATIONS

Laser pulse, capacitor charging, pulse power supply, pulse generator, test equipment, ion pump, plasma generator, electrostatic precipitation, high voltage amplification bias, industrial testing, wire testing, cable testing.

## MUC SELECTION TABLE

kV	mA	P(W)	MODEL	INTER CAP(nF)	kV	mA	P(W)	MODEL	INTER CAP(nF)	kV	mA	P(W)	MODEL	INTER CAP(nF)	kV	mA	P(W)	MODEL	INTER CAP(nF)
0.125	480	60	MUC0.125*60	900	4	15	60	MUC4*60	13	15	4.00	60	MUC15*60	2.2	40	1.5	60	MUC40*60	0.75
	1000	125	MUC0.125*125	900		31.25	125	MUC4*125	13		8.33	125	MUC15*125	1.1		3.125	125	MUC40*125	0.75
	2000	250	MUC0.125*250	1800		62.5	250	MUC4*250	26		16.67	250	MUC15*250	0.75		6.25	250	MUC40*250	0.375
0.25	240	60	MUC0.25*60	900	6	10	60	MUC6*60	13	20	3.00	60	MUC20*60	1.32	45	1.33	60	MUC45*60	0.6
	500	125	MUC0.25*125	900		20.83	125	MUC6*125	13		6.25	125	MUC20*125	0.88		2.78	125	MUC45*125	0.6
	1000	250	MUC0.25*250	1800		41.67	250	MUC6*250	26		12.5	250	MUC20*250	0.75		5.56	250	MUC45*250	0.3
0.5	120	60	MUC0.5*60	430	8	7.5	60	MUC8*60	4.4	25	2.4	60	MUC25*60	1.1	50	1.2	60	MUC50*60	0.6
	250	125	MUC0.5*125	430		15.63	125	MUC8*125	2.2		5.00	125	MUC25*125	0.733		2.5	125	MUC50*125	0.6
	500	250	MUC0.5*250	850		31.25	250	MUC8*250	1.5		10.0	250	MUC25*250	0.5		5.00	250	MUC50*250	0.3
1	60	60	MUC1*60	19	10	6	60	MUC10*60	2.933	30	2	60	MUC30*60	0.825	55	1.09	60	MUC55*60	0.5
	125	125	MUC1*125	19		12.5	125	MUC10*125	1.467		4.17	125	MUC30*125	0.55		2.27	125	MUC55*125	0.5
	250	250	MUC1*250	38		25	250	MUC10*250	1.5		8.33	250	MUC30*250	0.5		4.55	250	MUC55*250	0.25
2	30	60	MUC2*60	19	12	5	60	MUC12*60	2.933	35	1.72	60	MUC35*60	0.75	60	1.00	60	MUC60*60	0.5
	62.5	125	MUC2*125	19		10.42	125	MUC12*125	1.467		3.57	125	MUC35*125	0.75		2.083	125	MUC60*125	0.5
	125	250	MUC2*250	38		20.83	250	MUC12*250	0.75		7.14	250	MUC35*250	0.375		4.167	250	MUC60*250	0.5

## MUC SELECTION EXAMPLE

MUC	6	*	250	VIP	5	VIM	5	TR	M1
Series Number	Maximum Output Voltage (kV)	Power Polarity P: Positive Polarity N: Negative Polarity	Maximum Output Power(W)	OPTION VP: Voltage Programming IP: current Programming VIP: Voltage and current Programming	OPTION 10:0 to 10Vdc= 0 to maximum output 5:0 to 5Vdc= 0 to maximum output	OPTION VM: Voltage Monitor IM: Voltage Monitor VIM: Voltage current Monitor	OPTION 10:0 to 10Vdc= 0 to maximum output 5:0 to 5Vdc= 0 to maximum output	OPTION TR: RS-232 AB: RS-485	OPTION M1: ≤6kV(60W/125W) M2: ≤6kV(250W) M3: >6kV, ≤30kV(60W/125W) M4: >6kV, ≤15kV(250W) M5: >15kV, ≤30kV(250W) M6: >30kV, ≤50kV M7: >30kV, ≤60kV



## MUC SPECIFICATIONS

A MICRO-MODULES

PARAMETER	DESCRIBE
Input Voltage Range	+23Vdc~30Vdc, Power derating voltage input: 60W/125W=11Vdc~30Vdc, 250W=15Vdc~30Vdc
Input Current	Disable current:<40mA; No load current:<1250mA; Full load current:<13A
Input AC Ripple Current	< 50mA
Output Voltage Range	0.125kV,0.25kV,0.5kV,1kV,2kV,4kV,6kV,8kV,10kV,12kV,15kV,20kV,25kV,30kV,35kV,40kV,45kV,50kV,55kV,60kV.
Ripple	<1%,At Full Load, Max output
Stability	<0.01%/8hr. <0.02%/day
VoltageLine Regulation	<0.01%,Nom. Input, Max output, Full Power
VoltageLoad Regulation	<0.01%.No Load to Full Load, Max output
Current Load Regulation	<0.01% ( no load to full load change).
Current lineRegulation	<0.01% (Nom. Input, Max output, Full Power)
Voltage programming	By externa20kΩpotentiometer control, positive: 0~5Vdc negative:5Vdc~0,Zin=10M Ω
Current programming	By external 20kΩ potentiometer control, 0~5Vdc Zin = 10MΩ
Voltage monitor	0~5Vdc, 0~100% output, Zout = 464Ω ±1%.
Current monitor	0~5Vdc, 0~100% output, Zout = 464Ω ±1%
Over-shoot	C Load, 0 output to Full output < 1% V pk
Rise time	In sync with output voltage.
Temperature	Operating:-40~+65°C,Storage :-55~+105°C
Temperature Coeicient	50PPm(25PPm option)
Thermal Shock	-55~+105°C
Humidity	0 to 95% non-condensing Humidity
Altitude	Sea level through 70,000

## MUC RISE TIME

C = uF, V=Volts, I=mA, T=ms	C = uF, V=kV, I=mA, F=Hz	C = uF, V=kV, I=mA, F=Hz	C = uF, E <sup>2</sup> =kV, J=Ws
$T = \frac{C \times V}{I}$	$I = C \times V \times F$	$F = \frac{I}{C \times V}$	$J = \frac{C \times E^2}{2}$

NOTES: Capacitance must include HVPS internal Capacitance.

## MUC PIN INFORMATION

### M1: ≤6kV(60W/125W)

PIN	SINGAL	PARAMETER
1,8	GND	Power Ground
2,9	Vin	Positive power input
3	Imon	0~5Vdc for 0to 100% rated output, Zout=464Ω.
4	Enable/Disable	GND=HV ON, OPEN=HV OFF
5	Signal GND	Signal GND
6	Vpin	+Output:0to5Vdc=0 toMAX. , -output:5Vdc~0=0toMAX.
7	VREF	+5Vdc reference voltage
10	NC	NC(option DGND)
11	I MODE	I mode
12	V MODE	Vmode
13	Ipin	0~5Vdc for 0to 100% rated output, Zin=10MΩ.
14	Vmon	0~5Vdc for 0to 100% rated output, Zout=464Ω.
15,16	Ground	HV ground
17,18	HV ouput	HV ouput

### M2: ≤6kV (250W)

PIN	SINGAL	PARAMETER
1,8	NC	NC
2,9	NC	NC
3	Imon	0~5Vdc for 0to 100% rated output, Zout=464Ω.
4	Enable/Disable	GND=HV ON, OPEN=HV OFF
5	Signal GND	Signal GND
6	Vpin	+Output:0to5Vdc=0 toMAX. , -output:5Vdc~0=0toMAX.
7	VREF	+5Vdc reference voltage
10	NC	NC(option DGND)
11	I MODE	I mode
12	V MODE	Vmode
13	Ipin	0~5Vdc for 0to 100% rated output, Zin=10MΩ.
14	Vmon	0~5Vdc for 0to 100% rated output, Zout=464Ω.
15,16	Ground	HV ground
17,18	HV ouput	HV ouput
19,20	Power input	+24Vdc power input
21,22	Ground	Power ground

A MICRO-MODULES

**M3:>6kV,≤30kV (60W/125W)**

PIN	SINGAL	PARAMETER
1,8	GND	Power Ground
2,9	Vin	Positive power input
3	Imon	0~5Vdc for 0to 100% rated output,Zout=464Ω.
4	Enable/Disable	GND=HV ON,OPEN=HV OFF
5	Signal GND	Signal GND
6	Vpin	+Output:0to5Vdc=0 toMAX.,-output:5Vdc-0=0toMAX.
7	VREF	+5Vdc reference voltage
10	NC	NC(option DGND)
11	I MODE	I mode
12	V MODE	Vmode
13	Ipin	0~5Vdc for 0to 100% rated output,Zin=10MΩ.
14	Vmon	0~5Vdc for 0to 100% rated output,Zout=464Ω.
15,16	Ground	HV ground
17	HV ouput	HV ouput

**M5:>15kV,≤30kV(250W)**

PIN	SINGAL	PARAMETER
1,8	NC	NC
2,9	NC	NC
3	Imon	0~5Vdc for 0to 100% rated output,Zout=464Ω.
4	Enable/Disable	GND=HV ON,OPEN=HV OFF
5	Signal GND	Signal GND
6	Vpin	+Output:0to5Vdc=0 toMAX.,-output:5Vdc-0=0toMAX.
7	VREF	+5Vdc reference voltage
10	NC	NC(option DGND)
11	I MODE	I mode
12	V MODE	Vmode
13	Ipin	0~5Vdc for 0to 100% rated output,Zin=10MΩ.
14	Vmon	0~5Vdc for 0to 100% rated output,Zout=464Ω.
15,16	Ground	HV ground
17,18	Power input	+24Vdc power input
19,20	Ground	Power ground
21	HV output	HV output

**RS-232/RS-485 CONNECTOR**

PIN	SIGNAL	DESCRIBE
2A	TX/A	TXDTransmit data/RS-485A
9A	RX/B	RXD Receive data /RS-485B
10	D	SGND

**MUC WEIGHT AND DIMENSIONS**

MODEL	W(kg)	DIMENSIONS
M1	0.4	1.06" Hx4.5" Wx4" D (27mm x 114.3mm x101.6mm)
M2	0.75	1.06" Hx4.5" Wx8" D (27mm x 114.3mm x203.2mm)
M3	0.75	1.06" Hx4.5" Wx8" D (27mm x 114.3mm x203.3mm)
M4	0.75	1.06" Hx4.5" Wx8" D (27mm x 114.3mm x203.2mm)
M5	1.5	2.03" Hx4.5" Wx8" D (51.6mm x 114.3mm x203.2mm)
M6	3.3	2.5" Hx4.5" Wx14" D (63.5mm x 114.3mm x355.6mm)
M7	3.3	2.5" Hx4.5" Wx14" D (63.5mm x 114.3mm x355.6mm)

**M4:>6kV,≤15kV(250W)**

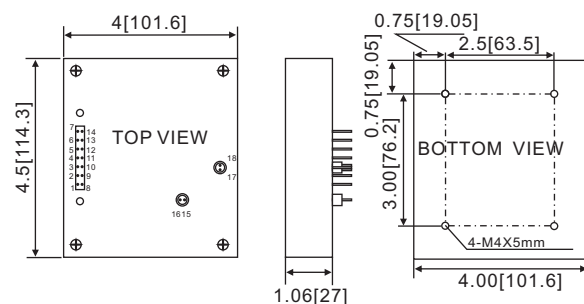
PIN	SINGAL	PARAMETER
1,8	NC	NC
2,9	NC	NC
3	Imon	0~5Vdc for 0to 100% rated output,Zout=464Ω.
4	Enable/Disable	GND=HV ON,OPEN=HV OFF
5	Signal GND	Signal GND
6	Vpin	+Output:0to5Vdc=0 toMAX.,-output:5Vdc-0=0toMAX.
7	VREF	+5Vdc reference voltage
10	NC	NC(option DGND)
11	I MODE	I mode
12	V MODE	Vmode
13	Ipin	0~5Vdc for 0to 100% rated output,Zin=10MΩ.
14	Vmon	0~5Vdc for 0to 100% rated output,Zout=464Ω.
15,16	Ground	HV ground
17,18	Power input	+24Vdc power input
19,20	Ground	Power ground
21	HV output	HV output

**M6,M7:>30kV,≤60kV (60W/125W/250W)**

PIN	SINGAL	PARAMETER
1,8	NC	NC
2,9	NC	NC
3	Imon	0~5Vdc for 0to 100% rated output,Zout=464Ω.
4	Enable/Disable	Disable:0~0.7Vdc, Enable:2.4Vdc~32Vdc
5	Signal GND	Signal GND
6	Vpin	+Output:0to5Vdc=0 toMAX.,-output:5Vdc-0=0toMAX.
7	VREF	+5Vdc reference voltage
10	NC	NC(option DGND)
11	I MODE	I mode
12	V MODE	Vmode
13	Ipin	0~5Vdc for 0to 100% rated output,Zin=10MΩ.
14	Vmon	0~5Vdc for 0to 100% rated output,Zout=464Ω.
15,16	Ground	HV ground
17	HV output	HV output
19,20	Power input	+24Vdc power input
21,22	Ground	Power ground

**MUC DIMENSIONS**

**M1:≤6kV(60W/125W)**

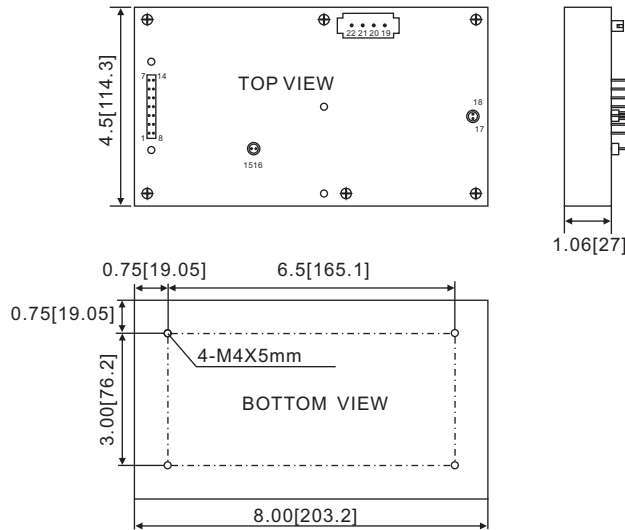


## MUC DIMENSIONS

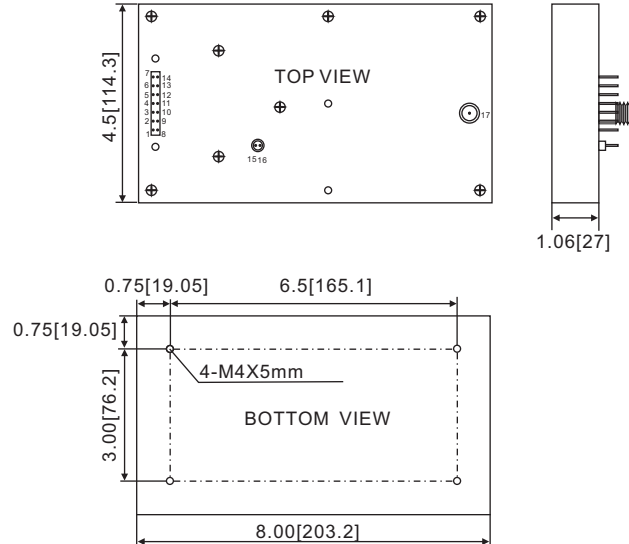
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### DIMENSIONS:inch[mm]

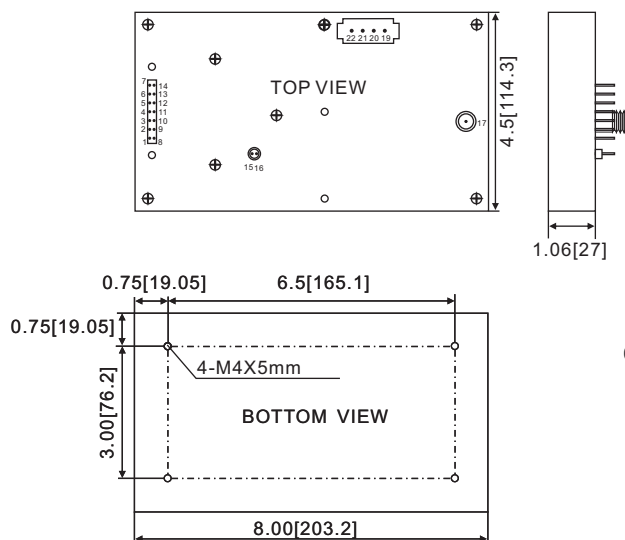
M2: ≤6KV (250W)



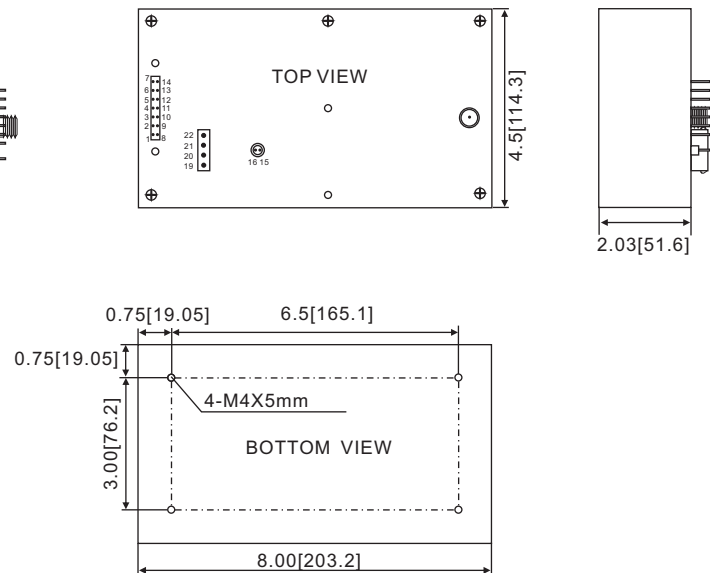
M3: >6kV, ≤30kV (60W/125W)



M4: >6kV, ≤15kV (250W)



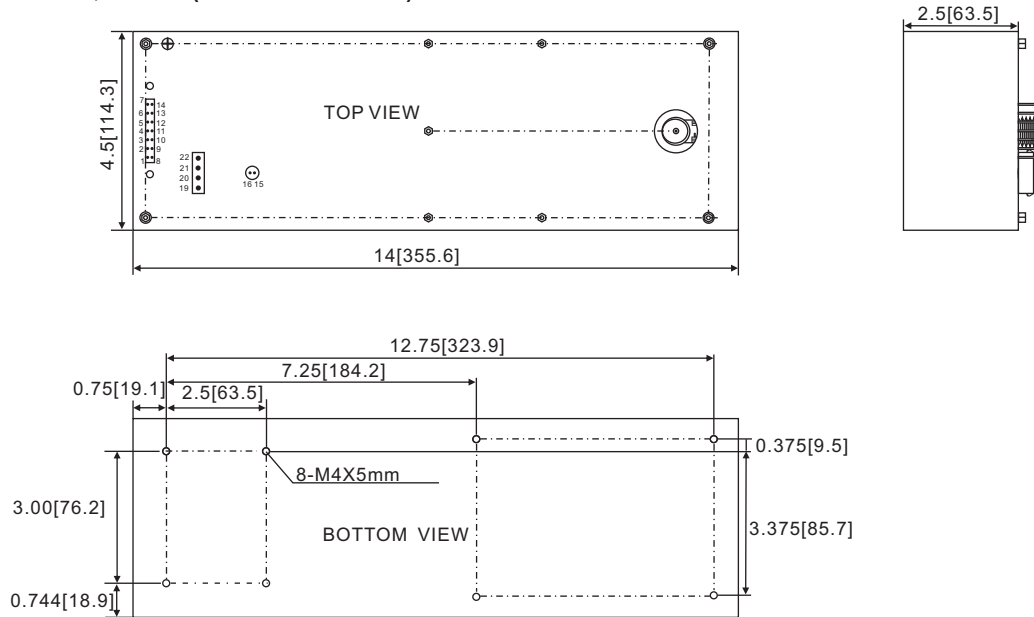
M5: >15kV, ≤30kV (250W)



## MUC DIMENSIONS

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MICRO-MODULES

M6: >30kV, ≤50kV (60W/125W/250W)



M7: >30kV, ≤60kV (250W)

