



- **OUTPUT VOLTAGES FROM 0.3KV TO 30KV**
- **LOW NOISE,HIGH STABILITY**
- **BOTH EXTERNAL VR&VOLTAGE FOR OUTPUT CONTROL**
- **ARC & CONTIUOUS SHORT CIRCUIT PROTECTION.**
- **LOCAL AND REMOTE CONTROL.**
- **OEM CUSTOMIZATION AVAILABLE.**

Wisman's MT Series modular high voltage power supplies offer positive or negative output voltages from 0.3KV to 30kV. High voltage can be linearly ramped up. The MT incorporates local and remote programming, voltage and current monitoring, overload, arc and short circuit protection.

TYPICAL APPLICATIONS:

High Voltage Testing Electron Beam /Ion Beam
 MASS Spectrometry Electrostatics Chuck (ESC)
 PMT,MCP,Radiation counter

OPTIONS:

LR Low Ripple

SPECIFICATIONS:

Input:

See "MT MODEL RATINGS " table

Output:

See "MT SELECTION " table

Output Voltage Control:

Remote control: By external potentiometer 5kΩ or external control voltage(Vcon-in 0 to +5Vdc).

Local control: By internal potentiometer 25kΩ.

Output Voltage Accuracy:

$\pm 2\%/V_{con-in}=5.00V$.

Voltage Regulation:

Load: 0.01% of output voltage no load to full load.

Line: 0.01% for $\pm 10\%$ change in input voltage.

Current Regulation:

Load: 0.01% of output current from 0 to rated voltage.

Line: 0.01% of rated current over specified input range.

Ripple(%p-p):

See "MT SELECTION " table

Temperature Coefficient:

80ppm /°C

Stability:

0.01% per 8 hours after 1/2 hour warm-up

Voltage and Current Monitors:

+5V/ rated output for both voltage /current, 1kΩ output impedance $\pm 2\%$ F.S Accuracy .

Reference Voltage:

5V $\pm 1\%$,Line regulation: 0.015%/V.

Protection:

Overload, arc & continuous output short circuit.

Humidity :

20% to 80% RH (no condensation).

Dimensions:

See " SIZE TABLE "

Output cable:

HV flying lead 50cm (1.6 feet) ,HV GND flying lead 50cm (1.6 feet) for units 0.3kV to 6kV.

Shield cable 50cm (1.6 feet) for LR (10 to 30kV).

Input terminal:

8 pin connector

Mating connector and pins are assorted

Recommendations :

60W models : wire for pin①,② are AWG18, and wire for pin ③ to ⑧ are AWG22 to18.

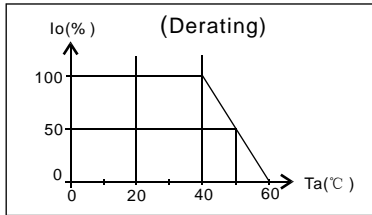
Other models : wire for pin①,② are AWG22, and wire for pin③ to ⑧ are AWG22 or 24.



Temperature range :

Operating : 0 to 60 °C (Derating:40 to 60 °C).

Storage: -20 °C to 60 °C.

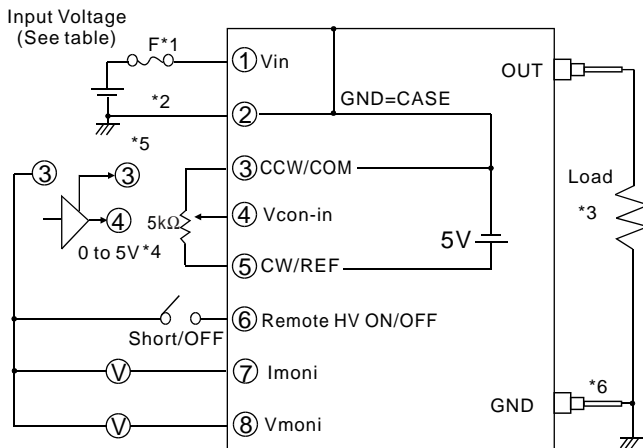


ACCESSORY:

CN8ML Assembled input connector (5W,10W and 30W models)(connector with 25cm flying leads)

CN8VH Assembled input connector (60W models) (connector with 25cm flying leads)

CONNECTION DIAGRAM:



- *1 Please implement 4A fuse for 60W model or UL certified 2A fuse for other models on Vin terminal since this power supply does not install an input fuse.
- *2 GND pin ② must be properly grounded.
- *3 Return line from the load must be connected to GND or pin②.
- *4 Input impedance of Vcon-in pin④ is $\cong 100k\Omega$
- *5 Potentiometer of T.C $\cong 100PPM/^{\circ}C$, PC $\cong 1/4W$ is recommended.
- *6 No lead wire for units from 10kV to 30kV.

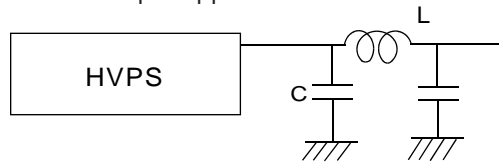
OPERATION NOTES:

Do not touch the HV output cable right after turning off the power supply , because there might be residue voltage. Make sure the voltage is 0V before touching the output. Make sure to ground the GND terminal, pin ② , for extra safety, although this series is designed with various safety features as built-in type HV module. Avoid continuous short circuit.

OUTPUT RIPPLE:

Switching frequency of MT series is about 50kHz to 80kHz. If ripple (noise or hum) of different frequency is shown, it might be from outside. Have another solution like keep away from noise source.

Reduce output ripple



L is about 1mH to 10mH

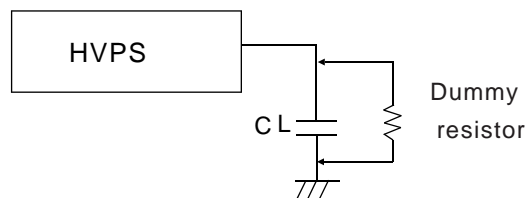
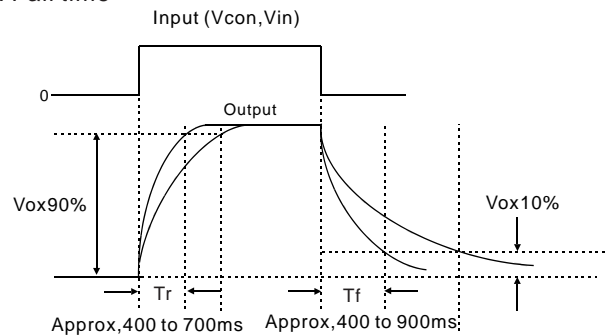
C is about 0.001uF to 0.1uF.(Check the rated voltage)

RESPONSE:

Typical value at rated load

Tr : Rise time

Tf : Fall time

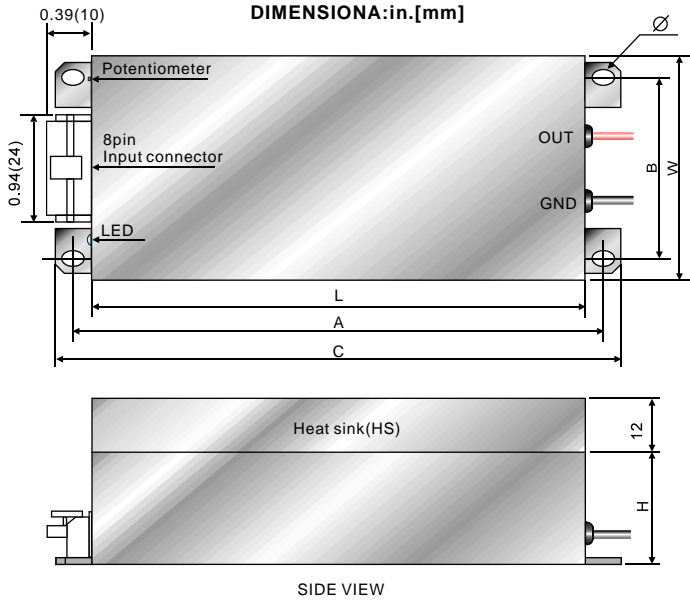


Tr, Tf shall be slow with capacitive load.

A dummy resistor shall work for quick fall time.

MT MODEL RATINGS TABLE

MODEL	INPUT VOLTAGE	INPUT CURRENT
MT*5	12-15Vdc±10%	0.8A typ. @12V
MT*10	+24Vdc ± 10%	0.7A typ.
MT*30		1.7A typ.
MT*60		3.4A typ.



MT SELECTION TABLE 5W 10W

5W			10W		Ripple(%p-p)	
kV	mA	Model	mA	Model	Standard	LR
0.3	16.67	MT0.3*5	33.33	MT 0.3*10	0.05	0.005
0.6	8.33	MT0.6*5	16.67	MT 0.6*10	0.05	0.005
1	5.00	MT1 *5	10.00	MT 1*10	0.05	0.005
1.5	3.33	MT1.5*5	6.67	MT 1.5*10	0.05	0.005
3	1.67	MT3*5	3.33	MT 3*10	0.05	0.005
6	0.83	MT6*5	1.67	MT 6*10	0.05	0.005
10	0.50	MT10*5	1.00	MT 10*10	0.08	0.001
15	0.33	MT15*5	0.67	MT 15*10	0.08	0.001
20	0.25	MT20*5	0.50	MT 20*10	0.08	0.003
25	0.20	MT25*5	0.40	MT 25*10	0.08	0.003
30	0.17	MT30*5	0.33	MT 30*10	0.08	0.003

MT SIZE TABLE

Output voltage	L	W	H	A	C	B	Φ	Weight(g) [With HS]
up to 6kV (except 60W type)	4.33 (110)	1.97 (50)	0.98 (25)	4.65 (118)	4.96 (126)	1.57 (40)	0.14x0.19 (3.5 x 5)	300
up to 6kV (60W type)	4.33 (110)	3.94 (100)	0.98 (25)	4.65 (118)	4.96 (126)	2.76 (70)	0.18x0.24 (4.5 x 6)	600 [760]
10,15,20kV (except 60W type)	5.31 (135)	1.97 (50)	1.18 (30)	5.71 (145)	6.10 (155)	1.57 (40)	0.14x0.19 (3.5 x 5)	450
10,15,20kV (60W type)	5.31 (135)	3.94 (100)	1.18 (30)	5.71 (145)	6.10 (155)	2.76 (70)	0.14x0.19 (3.5 x 5)	1200 [1430]
25,30kV (except 60W type)	7.09 (180)	1.97 (50)	1.18 (30)	7.48 (190)	7.87 (200)	1.57 (40)	0.14x0.19 (3.5 x 5)	580
25,30kV (60W type)	7.09 (180)	3.94 (100)	1.18 (30)	7.48 (190)	7.87 (200)	2.76 (70)	0.18x0.24 (4.5 x 6)	1200 [1430]

MT SELECTION TABLE 30W 60W

30W			60W		Ripple(%p-p)	
kV	mA	Model	mA	Model	Standard	LR
0.3	100.0	MT0.3*30	200.0	MT 0.3*60	0.05	0.005
0.6	50.0	MT0.6*30	100.0	MT 0.6*60	0.05	0.005
1	30.0	MT1 *30	60.0	MT 1*60	0.05	0.005
1.5	20.0	MT.5*30	40.0	MT 1.5*60	0.05	0.005
3	10.0	MT3*30	20.0	MT 3*60	0.05	0.005
6	5.0	MT6*30	10.0	MT 6*60	0.05	0.005
10	3.0	MT10*30	6.0	MT 10*60	0.08	0.001
15	2.0	MT15*30	4.0	MT 15*60	0.08	0.001
20	1.5	MT20*30	3.0	MT 20*60	0.08	0.003
25	1.2	MT25*30	2.4	MT 25*60	0.08	0.003
30	1.0	MT30*30	2.0	MT 30*60	0.08	0.003

LR SIZE TABLE

Output voltage	L	W	H	A	C	B	Φ	Weight(g) [With HS]
up to 6kV (except 60W type)	4.33 (110)	1.97 (50)	0.98 (25)	4.65 (118)	4.96 (126)	1.57 (40)	0.14x0.19 (3.5 x 5)	300
up to 6kV (60W type)	4.33 (110)	3.94 (100)	0.98 (25)	4.65 (118)	4.96 (126)	2.76 (70)	0.18x0.24 (4.5 x 6)	600 [760]
10,15kV (except 60W type)	6.3 (160)	3.94 (100)	1.5 (38)	6.7 (170)	7.09 (180)	2.75 (70)	0.18x0.24 (4.5 x 6)	1000
10,15kV (60W type)	6.3 (160)	7.87 (200)	1.5 (38)	6.7 (170)	7.09 (180)	5.51 (140)		2000
20,25,30kV (except 60W type)	7.3 (185)	3.94 (100)	1.7 (43)	7.7 (195)	8.07 (205)	3.54 (90)		1500
20,25,30kV (60W type)	7.3 (185)	9.45 (240)	1.7 (43)	7.7 (195)	8.07 (205)	7.09 (180)		3000

Note:

* Specify "P" for positive polarity or "N" for negative polarity .