

MTM Series

PCB mount ultra compact, regulated, high voltage DC-DC converter, flat mounting



- 80 standard products
- ◇ Reference: see chart for complete reference
- ◇ Vin: 12Vdc, 15Vdc or 24Vdc
- ◇ Vout: 0 to 600V, 1000V, 1250V or 1500V
- ◇ Pout: 0.5W, 0.8W and 1W

General Description

◇ The MTM Series is the ideal solution for PMTs that need a bias voltage ranging from 0 to 1500V, with very small current.

Low cost	Tight line / load regulation	Arc and continuous short circuit protection
Miniature and lightweight	Voltage monitoring	Self restoring output voltage
Flat PCB mounting	Low ripple (<0,003% p. to p.)	Option: flying wire for HV output

Parameters	Specifications
Input voltage Vin (pins 1 & 2)	12Vdc \pm 0.5Vdc or 15Vdc \pm 0.5Vdc or 24Vdc \pm 1Vdc, according to type
Input current	At no load: 15mA At full load: from 65mA to 100mA
HV output Vout (pin 7 or lead - optional)	Programmable nominal voltage, refer to the Selection Guide for voltage ranges
Polarity	Fixed positive [MTP] or negative [MTN]
HV setting (pins 3, 4 & 5)	Via external potentiometer, minimum resistance 10k Ω or ∞ <ul style="list-style-type: none">• Option 1: via external voltage source 0/ 5V \pm0.5% at full scale, and input impedance >1MΩ• Option 2: via external voltage source 0/10V \pm0.5% at full scale, and input impedance >1MΩ
Max. output current Iout	Refer to the Selection Guide
Load voltage regulation	\pm 0,01% of full output voltage ffor no load to full load
Line voltage regulation	\pm 0,01% of full output voltage over specified input voltage range
Residual ripple	Between 10mV and 40mV peak-to-peak at full load
Temperature coefficient	100ppm/ $^{\circ}$ C for the maximum output voltage after starting and over temperature range 0 to 50 $^{\circ}$ C
Output HV monitoring (pin 6)	+1V/1kV max. or -1V/-1kV max. according to model polarity output impedance = 200k Ω \pm 1%



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Parameters	Specifications
Output reference voltage (pin 5)	<ul style="list-style-type: none">• Option 1: 5V \pm 0.5 %, TC:50ppm/°C, max. output current:1mA• Option 2: 10V \pm 0.5 %, TC:50ppm/°C, max. output current:1mA
Operating temperature	- 40°C to + 50°C
Storage temperature	- 40°C to + 70°C
Safeguards	<ul style="list-style-type: none">• Arc and short circuit protection• Protected against reverse Vin
Options	<ul style="list-style-type: none">• Flying wire for HV output instead of pin 7• Suitable for use with an external potentiometer

Main Applications

- Avalanche Photo Diodes (APD)
- Photodiodes (PD)
- Photomultipliers Tubes (PM)

Package Configuration

Case material	Tin steel plate Thickness 0.5 mm
Case dimensions LxHxW	MTF: 47.0 x 28.0 x 12.5 mm MTR: 47.0 x 28.0 x 12.5 mm
Pins	Through 0.46 round pins, length 3 mm, spacing: 2.54 mm, option: flying wire for HV output
PCB mounting (raised mounting models only)	Through 4 mounting tabs length: 5 mm, width: 1,5 mm, thickness : 0,5 mm
Weight	35g


Pin Connections

Line input	1. Vin 2. 0V supply
HV setting	3. 0V signal 4. Control input 5. Output reference
HV monitoring	6. Voltage monitoring
HV output	7. Vout

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Marking


Model: MT12N152331
Serial Nr: 01073664
 MADE IN FRANCE

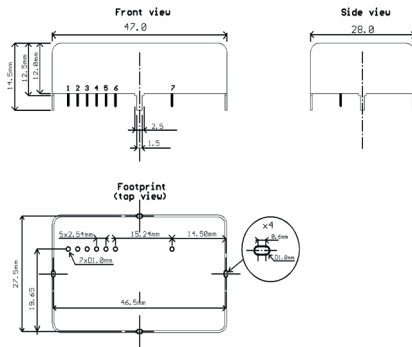
5 Bd de Cistelli 94100 France
 11 rue des Fossés
 33 (0)1 43 87 06 04
 http://www.sdshv.com

RoHS
 Compliant
 2002/95/EC

- HV OUT
- CE
- Vol Monitor.
- Réf output.
- Control inp.
- Ov Signal
- Sup.Ov
- Sup.12v

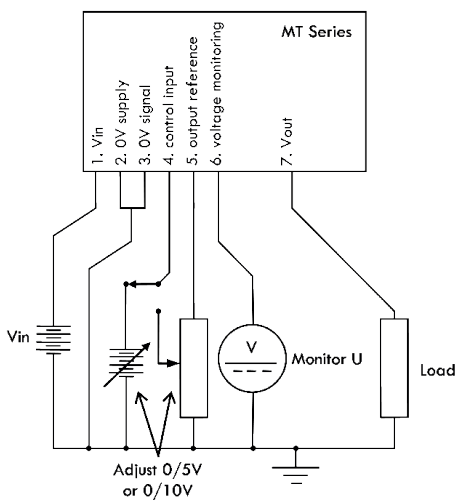
MTM model
(flat mounting)

Mechanical Dimensions

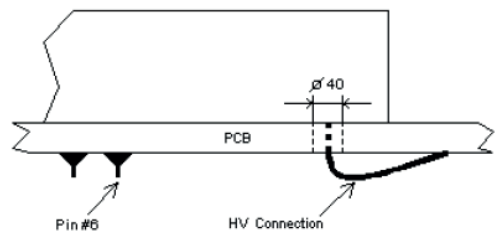


MTM model
(flat mounting)

Functional diagram



Option: flying wire for HV output



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MTM Series overview

		Vin (Vdc)		
		12	15	24
Vout (Vdc)	600	(0.5W) MT12x601831x	(0.8W) MT15x601132x	(1W) MT24x601172x
	1000	(0.5W) MT12x102501x	(0.8W) MT15x102801x	(1W) MT24x102102x
	1250	(0.5W) MT12x122401x	(0.8W) MT15x122641x	(1W) MT24x122801x
	1500	(0.5W) MT12x152331x	(0.8W) MT15x152531x	(1W) MT24x152671x

* Other output voltages and currents are available upon request.

Ordering information

Model	Name of the series	MTM
Vin	12Vdc nominal	12
	15Vdc nominal	15
	24Vdc nominal	24
Polarity	Positive output voltage	P
	Negative output voltage	N
Vout	Output voltage	See ordering code
Iout	Output current	See ordering code
Control	05Vdc	5
	10Vdc	10
Case	Flat mounting	MTM Series
Option	Flying wire to collect the HV output	W

Output voltage and current code

- The power supply units have a 6-digit ordering code;
- The first 3 digits concern the output voltage in V
 - The first 2 digits indicate the output voltage value
 - The last digit indicates the multiplier
- The last 3 digits concern the output current in μA
 - The first 2 digits indicate the nominal output current value
 - The last digit indicates the multiplier

Ordering example

• The ordering code of a +1500V@1W psu under 24Vdc in the flat configuration, with 0/5V analog command for setting, and with the optional flying wire for the HV output is : MT24P152671-5FW.



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MTM Series selection guide

Vout	Iout/Pout	Vin	Polarity	Control	Model	
1500V	0.67mA/1.0W	24V	+	0/10V	MTM24P152671-10*	
				0/5V	MTM24P152671-5*	
			-	0/10V	MTM24N152671-10*	
				0/5V	MTM24N152671-5*	
	0.53mA/0.8W	15V	+	0/10V	MTM15P152531-10*	
				0/5V	MTM15P152531-5*	
			-	0/10V	MTM15N152531-10*	
				0/5V	MTM15N152531-5*	
	0.33mA/0.5W	12V	+	0/5V	MTM12P152331-5*	
			-	0/5V	MTM12N152331-5*	
	1250V	0.80mA/1.0W	24V	+	0/10V	MTM24P122801-10*
					0/5V	MTM24P122801-5*
-				0/10V	MTM24N122801-10*	
				0/5V	MTM24N122801-5*	
0.64mA/0.8W		15V	+	0/10V	MTM15P122641-10*	
				0/5V	MTM15P122641-5*	
			-	0/10V	MTM15N122641-10*	
				0/5V	MTM15N122641-5*	
0.40mA/0.5W		12V	+	0/5V	MTM12P122401-5*	
			-	0/5V	MTM12N122401-5*	
1000V		1.00mA/1.0W	24V	+	0/10V	MTM24P102102-10*
					0/5V	MTM24P102102-5*
	-			0/10V	MTM24N102102-10*	
				0/5V	MTM24N102102-5*	
	0.80mA/0.8W	15V	+	0/10V	MTM15P102801-10*	
				0/5V	MTM15P102801-5*	
			-	0/10V	MTM15N102801-10*	
				0/5V	MTM15N102801-5*	
	0.50mA/0.5W	12V	+	0/5V	MTM12P102501-5*	
			-	0/5V	MTM12N102501-5*	
	600V	1.67mA/1.0W	24V	+	0/10V	MTM24P601172-10*
					0/5V	MTM24P601172-5*
-				0/10V	MTM24N601172-10*	
				0/5V	MTM24N601172-5*	
1.33mA / 0.8W		15V	+	0/10V	MTM15P601132-10*	
				0/5V	MTM15P601132-5*	
			-	0/10V	MTM15N601132-10*	
				0/5V	MTM15N601132-5*	
0.83mA/0.5W		12V	+	0/5V	MTM12P601831-5*	
			-	0/5V	MTM12N601831-5*	

* Specify -W for wire option