

# photomultiplier HV power supply module

## HVM2000 series data sheet (provisional)

### 1 description

The HVM2000 series is a range of high stability modular high voltage supplies designed for powering photomultipliers or other applications requiring up to 2000V at 1mA. The output voltage is adjustable down to 20V using one of three control modes: internal potentiometer, external potentiometer, or remote analogue control. Four versions are available offering a choice of +12V or +24V supply voltage, and +2000V or -2000V output voltage.

All versions incorporate voltage and current monitoring and are protected against input polarity reversal, output overload, output short-circuit and output flashover.

### 2 applications

The HVM2000 series is intended for use in industrial instrumentation and can support photomultiplier operation in the following modes:

- current measurement (analogue)
- pulsed light
- photon counting

### 3 features

- compact
- choice of three control modes
- low noise
- voltage and current monitor points
- internal reference voltage source

### 4 specifications

	unit	HVM2000/12N			HVM2000/24N			HVM2000/12P			HVM2000/24P		
		min	typ	max	min	typ	max	min	typ	max	min	typ	max
<b>supply voltage:</b>													
HVM2000/12	V												15
HVM2000/24	V												30
<b>control voltage:</b>													
HVM2000/12	V												6
HVM2000/24	V												11
<b>temperature (operating):</b>													
at 93% RH, non-condensing	°C												60
<b>supply voltage</b>	V	+11		+14	+22		+28	+11		+14	+22		+28
<b>control voltage</b>	V	0		+5	0		+10	0		+5	0		+10
<b>output voltage</b>	V	+20		-2000	-20		-2000	+20		-2000	+20		+2000
<b>output current</b>	mA	0		1	0		1	0		1	0		1
<b>reference voltage output (max 5mA):</b>													
fixed	V		5			10			5			10	
adjustable	V	0		5	0		10	0		5	0		10
<b>voltage monitor output:</b>													
for output voltage 0 - 2000V	V	0		2	0		2	0		2	0		2
<b>current monitor output:</b>													
for output current 0 - 1mA	V	0		5	0		10	0		5	0		10
<b>input current:</b>													
for zero output current*	mA		4			2			4			2	
for output current = 1mA	mA		320			160			320			160	
<b>line regulation</b>	%/V		0.01			0.01			0.01			0.01	
<b>load regulation:</b>													
for output current 0 - 1mA	%		0.01			0.01			0.01			0.01	
<b>temperature coefficient</b>	%/°C			0.05			0.05			0.05			0.05
<b>switch-on time (10-90%)*</b>	s			0.3			0.3			0.3			0.3
<b>switch-off time (90-10%)*</b>	s			10			10			10			10
<b>output voltage HF ripple*</b>													
for output current = 1mA	mV(p <sub>k</sub> -p <sub>k</sub> )			1			1			1			1
<b>weight</b>	g		100			100			100			100	

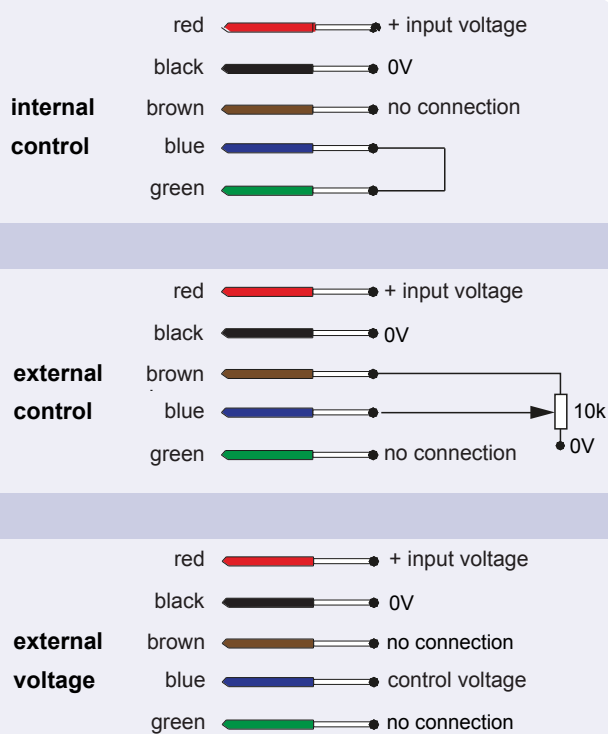
\*at HV = 1000V



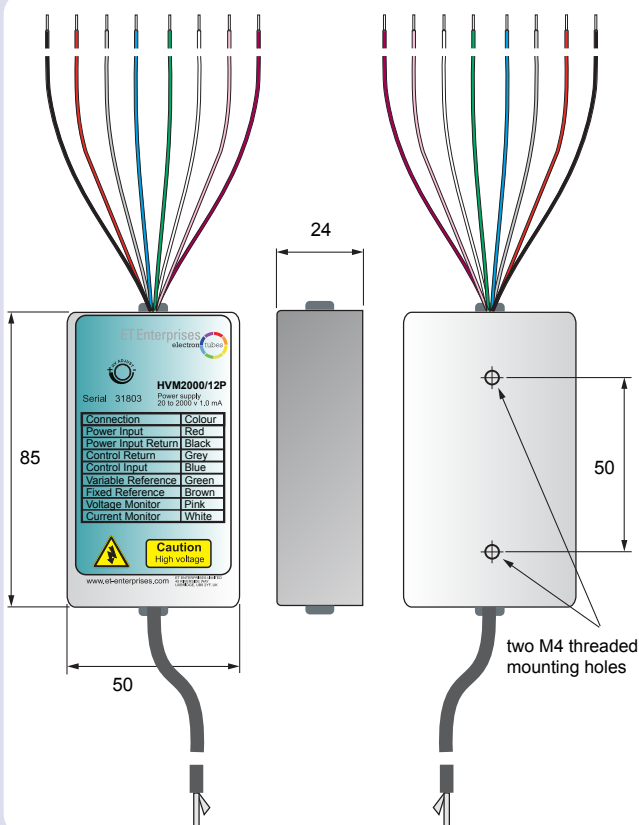
### 5 ratings

	unit	min	typ	max
<b>supply voltage:</b>				
HVM2000/12	V			15
HVM2000/24	V			30
<b>control voltage:</b>				
HVM2000/12	V			6
HVM2000/24	V			11
<b>temperature (operating):</b>				
at 93% RH, non-condensing	°C	-40		60

## 7 programming options



## 8 dimensions in mm



## 9 connections

flexible wires	colour
power input +ve	red
power input 0V	black
control input +ve	blue
control input 0V	grey
HV output (RG174 unterminated cable)	black
reference voltage output	
fixed	brown
adjustable	green
voltage monitor output	pink
current monitor output	white

## 10 ordering information

item	ordering code
negative output, 12V input	HVM2000/12N
negative output, 24V input	HVM2000/24N
positive output, 12V input	HVM2000/12P
positive output, 24V input	HVM2000/24P

## 11 warning

High voltages generated by these products present an electrical shock hazard and appropriate precautions must be taken. Installation must be by qualified personnel.

All units are despatched with the internal potentiometer set to zero.

Do not operate outside the quoted ratings of the HVM2000 or those of the photomultiplier. This may result in loss of performance or permanent damage or both.

It is important that the power input ground (black wire) is used as the return for current or voltage monitoring. The use of any other return could result in an error.