



Vorne Industries

Model 77/256M
Event Counter
User's Manual

Model 77/256M Event Counter

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1. INTRODUCTION TO THE DISPLAY

1.1 Operation

The Vorne 77/256M event counter displays the number of inputs received on a 2 to 6 digit display field. EEPROM technology makes it possible for the 77/256M to retain the last count in the event of a power loss, without battery back-up. The 77/256M can be equipped with an optional scale factor, presettable to any value between 0.0001 and 9999 via internal or external switches. The 77/256M will then increment the display by the product of the scale factor and the output count.

2. WIRING AND SPECIFICATIONS

2.1 Display

The display contains from 2 to 6 digits with 3.3" high LED characters. An optional decimal point in front of any digit position is available.

2.2 Input Type

S: SINKING INPUT - The input has an internal 10K pull-up resistor to +5 volts. Sinking this input to ground with a contact closure or open collector NPN transistor activates the input. The "S" sinking input is TTL or CMOS compatible with a minimum high of 3.5 VDC and a maximum low of 1.5 VDC.

QAD: QUADRATURE ENCODER input for up/down counting. Up to 100,000 CPM.

2.3 Output Voltage

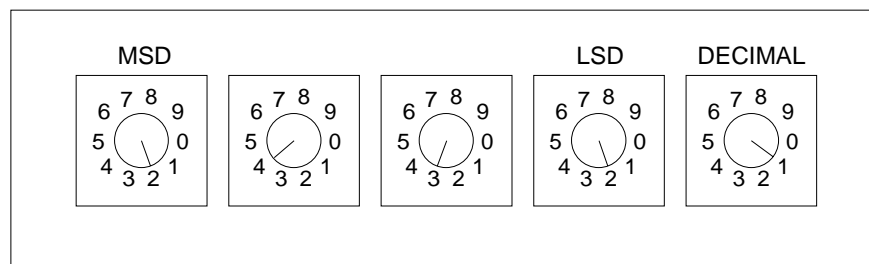
A regulated output voltage of 5 or 12 volts DC at 100 mA can be provided for auxilliary use.

2.4 Scale Factor Option Adjustment

The model 77/256M (with the scale factor option) displays the product of the input count and a presettable scale factor. The scale factor can be set to any number from 0.0001 to 9999 with five DIP switches located on the main logic board of the 77/256M.

To set the scale factor, orientate the unit looking at the side with 5 DIP switches. The four left-most DIP switches determine the four digits of the scale factor. The decimal location is determined by the fifth or right-most switch by multiplying the four digits of the scale factor by 10^{-n} , where n is the setting of the fifth switch. Positions 5 to 9 on this switch are not valid.

Example: if the switches are set from right to left as 2-4-3-2-1, then the scale factor will be 2432×10^{-1} or 243.2.



2.5 Count Rate

L: LOW SPEED - 3,000 CPM maximum with .01 second minimum on/off times.

H: HIGH SPEED - 100,000 CPM maximum with 250 microsecond minimum on/off times.

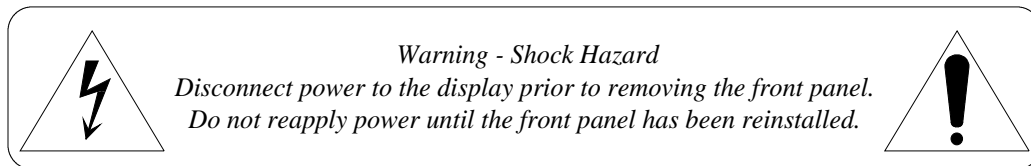
The count rate is field programmable to low or high speed by positioning a shorting jumper located inside the unit. Units are shipped with the jumper set to low speed if the count rate is not specified. Shielded wire for the input (Terminal 6) is recommended when the jumper is set to high speed but not required on low speed.

2.6 Power Requirements

120 vac +/- 15%, 15VA. AC hot and neutral are wired to terminals #1 and #2 (the polarity is not important). Terminal #3 is Earth ground only. The maximum power required is 15 Volt Amps.

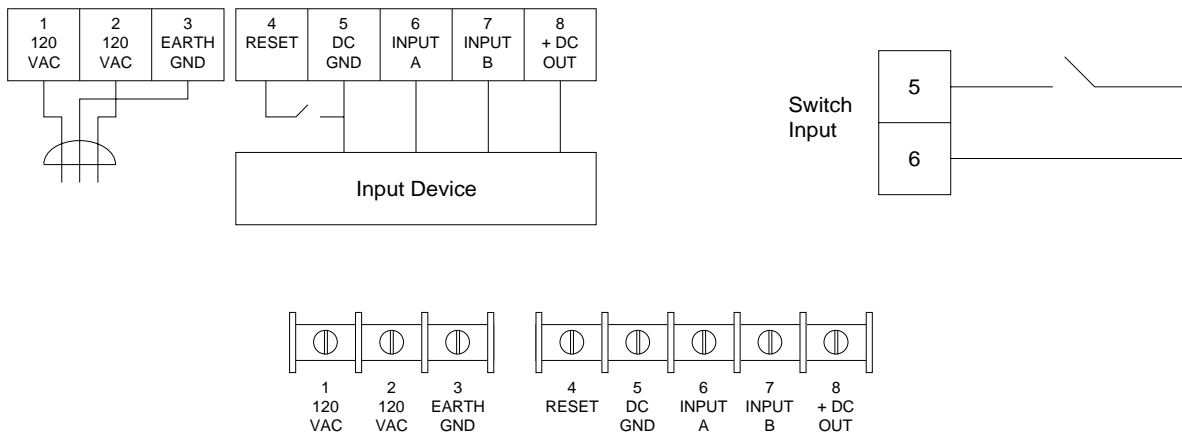
2.7 Accessing the Logic Board

All wiring points are located on the logic board of the 77/256M. This board is mounted to the front panel of the display. For access, remove the six #8 screws which hold the front panel to the rest of the enclosure.



2.8 Wiring

Screw terminal strip, mounted on a PC board inside the enclosure.

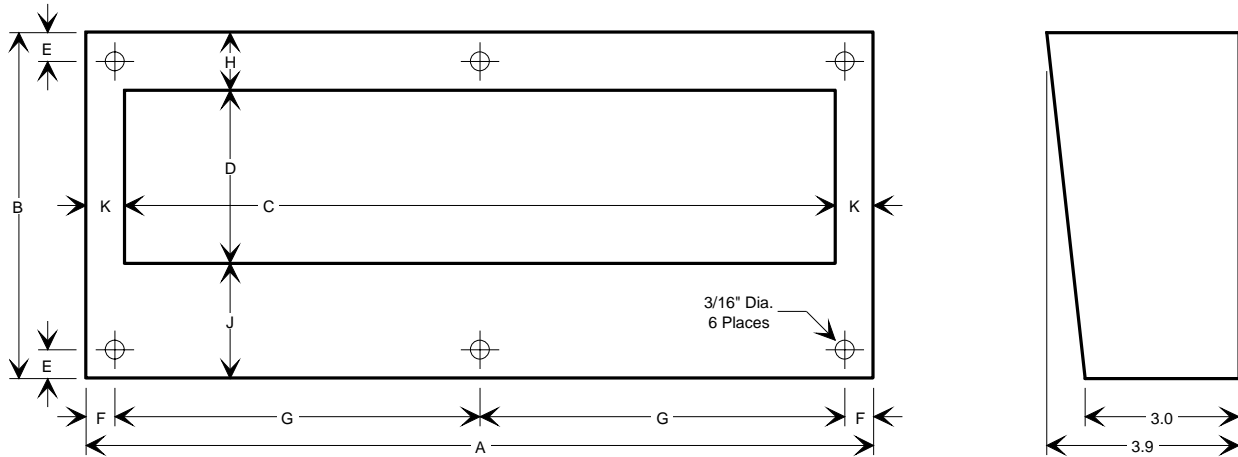


SAFETY GROUND : On AC power units, use a 3 wire grounded power terminal with the earth ground tied to terminal 3.

2.9 Dimensions

(Not to scale)

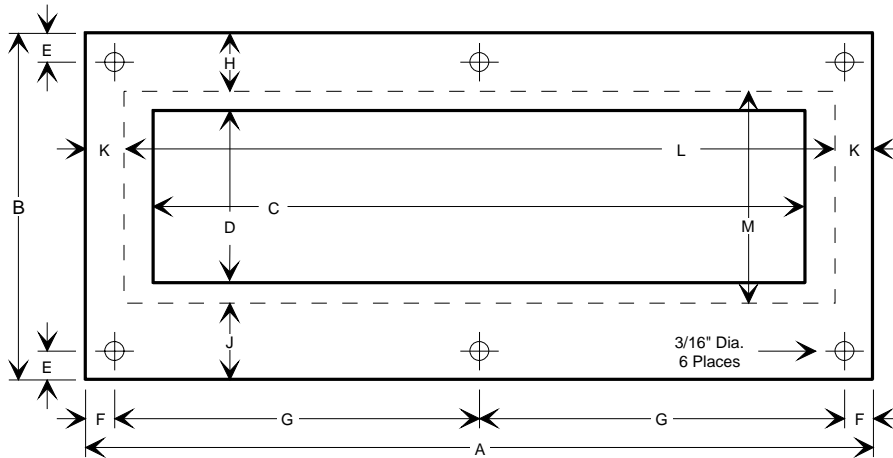
Stand Alone Enclosure



	A	B	C	D	E	F	G	H	J	K
3 digit	10.85	7.10	9.15	3.80	.35	.55	4.87	1.05	2.25	.85
4 digit	13.60	7.10	11.90	3.80	.35	.55	6.25	1.05	2.25	.85
5 digit	16.35	7.10	14.65	3.80	.35	.55	7.63	1.05	2.25	.85
6 digit	19.10	7.10	18.40	3.80	.35	.55	9.00	1.05	2.25	.35

All dimensions in inches.

Bezel Mount



--- Dotted line indicates approximate panel cutout

	A	B	C	D	E	F	G	H	J	K	L*	M*
3 digit	11.75	7.0	9.15	3.80	.30	1.0	4.87	.45	.65	.45	10.85	5.90
4 digit	14.50	7.0	11.90	3.80	.30	1.0	6.25	.45	.65	.45	13.60	5.90
5 digit	17.25	7.0	14.65	3.80	.30	1.0	7.63	.45	.65	.45	16.35	5.90
6 digit	20.0	7.0	18.40	3.80	.30	1.0	9.00	.45	.65	.45	19.10	5.90

All dimensions in inches.

* Dimensions of panel cutout.



Supplement to 77/256M Manual for 120 VAC Count/Reset Input Applications

Note: 77/256M units with AC inputs shipped after August 5, 1999 (Serial Number 214272 and later) must be wired differently than previous units.

This sheet supplements the following sections of the 77/256M Event Counter Users manual with information that pertains to 120 VAC count/reset input applications - 2.2 Input Type, 2.5 Count Rate, and 2.8 Wiring.

2.2 Input Type

AC: 120 VAC INPUT - The AC inputs available on terminal strip P5 (terminals 12 to 14) accept a 120 VAC signal that is opto-isolated from the low voltage circuitry. A momentary contact closure between the AC input terminal and the AC line terminal (Terminal Strip P1 terminal 2) activates the input. For applications using the AC inputs, the Sink/Source jumper (J6) must be set to "sinking".

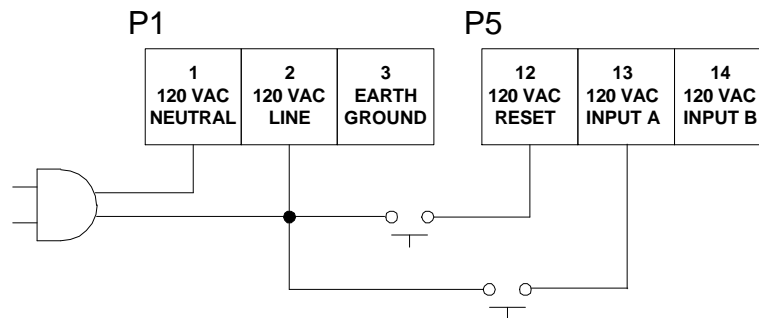
2.5 Count Rate

AC inputs are limited to a maximum speed of 1,200 CPM with .025 second minimum on/off times. For applications using the AC inputs, the count rate jumpers (J3 and J4) must be set to "LO".

2.8 Wiring

Make sure that jumper J6 is set to "sinking", and jumpers J3 and J4 are set to "LO". A wiring diagram is shown below.

WARNING
The wiring for the 120 VAC count input and 120 VAC reset input has changed. Wiring 120 VAC to terminals 4 through 8 can damage the 77/256M unit.





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