



Vorne Industries

Model 77/705
Elapsed Timer with 3" Display
User's Manual

1. INTRODUCTION TO THE DISPLAY

1.1 Operation

The model 77/705 displays elapsed time in any time unit (milliseconds, seconds, minutes, hours, or any combination) with optional decimal points or colons in front of any digit position. There are three control inputs; a start input, a stop input, and a reset input. The timer can be ordered from the factory to operate in one of two standard modes:

Mode A) The display will accumulate time when the start input (Input A) is held closed, and will hold the time when the start input is open. A momentary contact closure on the reset terminal will reset the timer to zero.

Mode B) The display will accumulate time as soon as a momentary start input (Input A) is applied, and hold that time when a momentary stop input (Input B) is applied. A momentary contact closure to ground on the reset terminal will reset the timer to zero.

Operation of the elapsed timer is flexible (software controlled by microprocessor); thus “custom” operation formats are easily accommodated.

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 or colon in front of any digit position is available.

2.2 Inputs

The start, stop, and reset inputs are all active low, as they are internally pulled up to 5 Volts. Normally the inputs are debounced for 10 mS. For models which time in milliseconds, the start and stop inputs are debounced for 250 uS, so as not to disturb timing accuracy.

2.3 Output Voltage

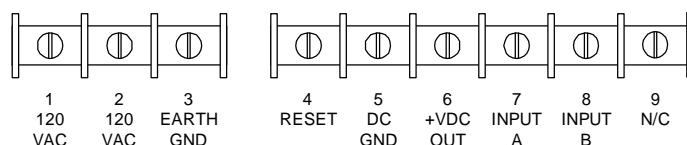
Either 5.0 or 12.0 Volts DC (regulated) at 100 mA is available at terminal number 6 for operating external devices.

2.4 Power Requirements

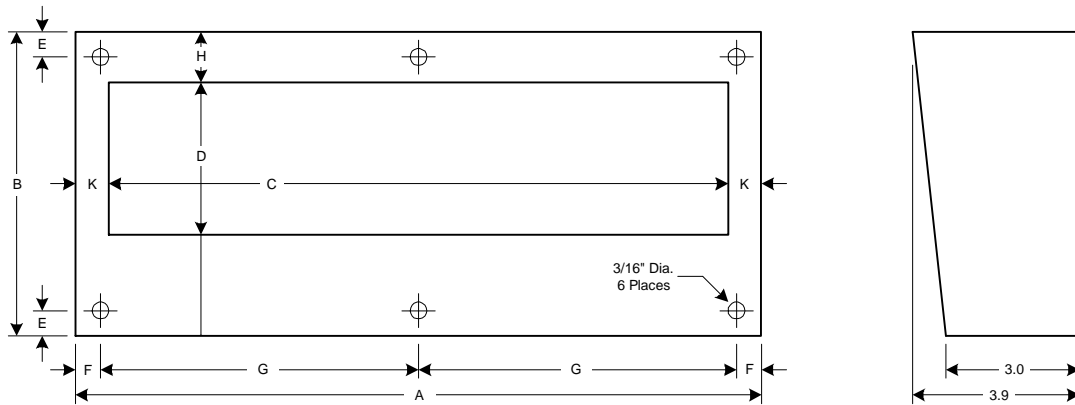
120 VAC $\pm 15\%$, 15VA. AC hot and neutral are wired to terminals #1 and #2 (polarity not important). Terminal #3 is Earth ground only.

2.5 Wiring

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



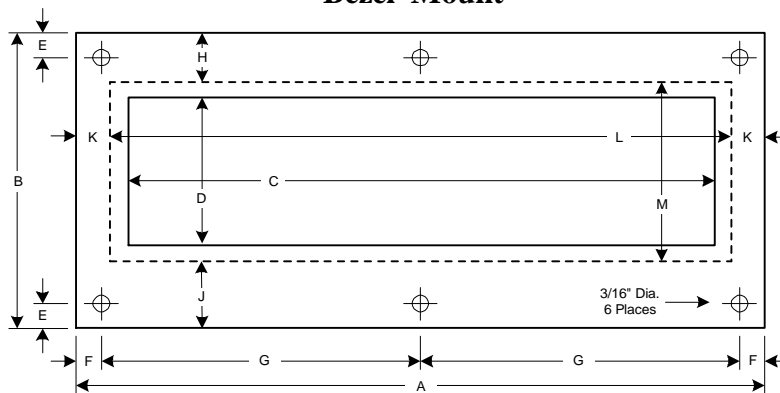
2.6 Dimensions



	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



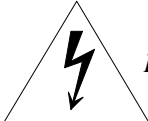
--- Dotted line indicates approximate panel cutout.

	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.


2.7 Accessing the Logic Board

All wiring points are located on the logic board of the 77/705. 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.



Warning - Shock Hazard

*Disconnect power to the display prior to removing the front panel.
Do not reapply power until the front panel has been reinstalled.*





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