

# FREQUENCY/TIMER/COUNTER

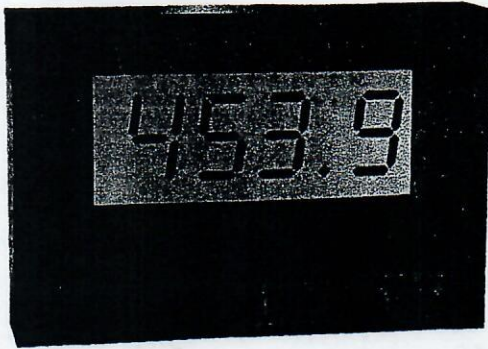
## 4 Digit Multi-Purpose LCD Counter

### "Flat Pack" No Panel Cut Out Required

#### (NEMA 3 or NEMA 4X)

**MODEL**

**522**



**FLAT PACK**

**Features**

- No Panel Cut-Out Required
- Elapsed Timer
- Start/Stop Timer
- Latched Overflow Indication
- High Contrast .5" LCD
- MTBFC: 80,000 Hours



**SANITARY**

**DESCRIPTION:** The 522 can be used as a frequency meter, timer or counter. In the Frequency Mode and Timer Mode, the time base is selected by two microswitches. SW2 selects one of eight primary frequencies. The other switch (SW1) divides the selected primary frequency from 1 to 10 million in steps of 10, (see table). In the Timer Mode, it can time either a pulse duration or time duration of two pulses (Start/Stop). In the counter mode, it will accumulate any pulse from 1 Volt to 150 Volts in Amplitude at up to 200KHz.

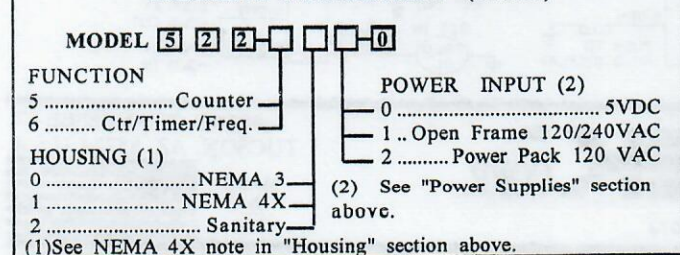
**CONTROL INPUTS:** Inputs such as Reset, Counter Hold and Display Hold make it ideal for basic counting.

**HOUSING:** Otek's Flat Pack requires no panel cut out. Just drill a 10mm (3/8") Ø hole, pass the wires through, attach the provided double-sided tape (to prevent rotation), align the flat pack, tighten the nut and make the connections to the wires. No connector or tools required! No behind the panel space needed! The case is U.L. approved ABS Polycarbonate 94VO rated. **NEMA 4X housing option does not have access to the adjustments (Counter function does not apply). If other than Otek's standard setting is required, please specify at the time of ordering.** Our New Sanitary case is wall, pipe or panel mount and can include 2 flat packs, please specify.

**SPECIFICATIONS AT 25°C**

Display .....	4 Digit .5" Reflective LCD
MTBF .....	80,000 Hours
Overflow .....	Latched & Indicated by Colon
Power .....	5VDC ±5% at 5 mA
Inputs .....	TTL/CMOS Sine, Square, Triangular to 150V Peak
Frequency Responses (10-90%) .....	DC to 1MHz
Operating Temperature .....	-10° to +60°C
Storage Temperature .....	-20° to +70°C
Frequency Stability .....	±.015%
Aging .....	10 PPM/Yr
Sanitary Case .....	NEMA 4X up to 250°F Steam Cleaning.
Cal. Tolerance .....	±100 PPM

**ORDERING INFORMATION (11/1/00)**



**POWER SUPPLIES:** Externally mounted. Two types are available, the "Open Frame" style accepts 120/240VAC and delivers 5VDC at up to 400mADC. The "Power Pack" is a wall plug in module available only for 120VAC input and delivers 5VDC at up to 100mADC.

**LEAD COLOR**

**TERMINAL DESCRIPTION**

WHITE	<b>RUN/STOP:</b> In the timer mode, the 522 will measure the elapsed time between two positive going pulses at this lead.
BLUE	<b>COUNT-IN:</b> In the timer mode, connect to Orange.
VIOLET	<b>COUNTER HOLD:</b> Normally connected to Red. To hold the counter, or when using the <u>run/stop</u> function, connect to Black.
RED	<b>VCC:</b> Connect to 5VDC ±5% capable of supplying 5mA.
GREEN	<b>DISPLAY HOLD IN:</b> In the frequency mode, connect to Brown. In timer/counter mode, the 522 will hold when left open. Connect to Black for normal operation.
BLACK	<b>GROUND:</b> VCC return path and - input.
ORANGE	<b>FREQUENCY OUT:</b> Selected time base output. Connect to Blue for timer mode operation.
YELLOW	<b>RESET IN:</b> To reset counter/timer, connect to Black. In frequency mode, connect to Gray.
BROWN	<b>DISPLAY HOLD-OUT:</b> Leave open in timer/counter mode. Connect to Green in frequency mode.
GRAY	<b>RESET OUT:</b> Leave open in counter/timer mode; connect to Yellow in frequency mode.

**TIME BASE SELECTION**

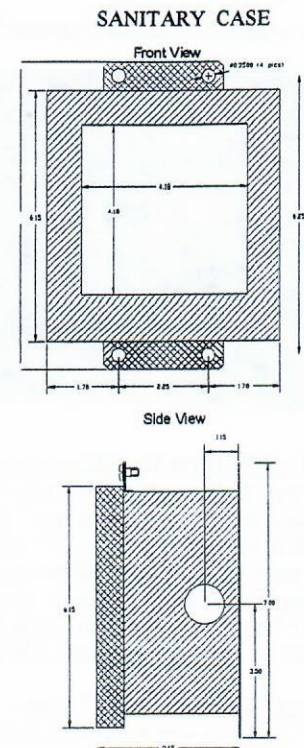
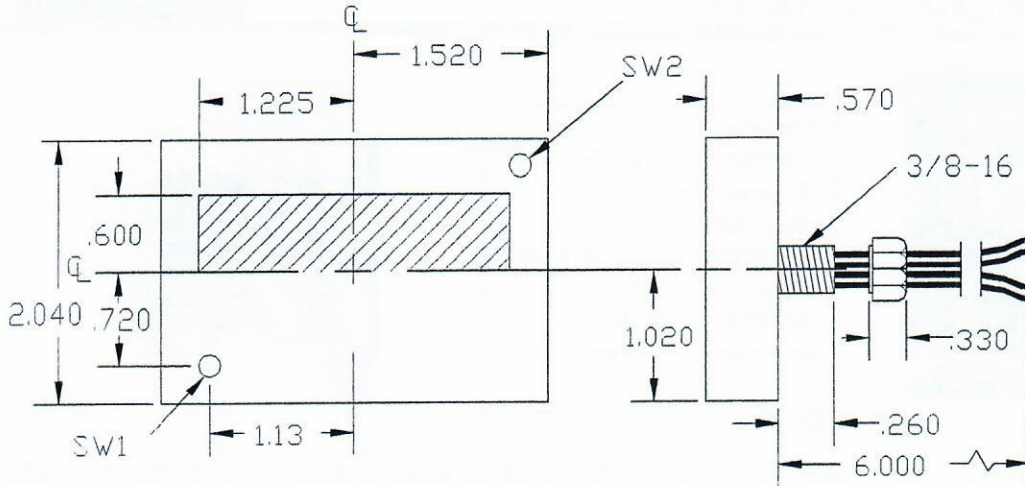
F #87MC270.DWG

		SWITCH 'A' SELECTION									
		0	1	2	3	4	5	6	7	8	9
SWITCH 'B' SELECTION	0	N/U	100KHZ	10KHZ	1KHZ	100HZ	10HZ	1HZ	1/10HZ	SAME FUNCTION AS SW 'A' ZERO	SAME FUNCTION AS SW 'A' ONE
	1	100KHZ	10KHZ	1KHZ	100HZ	10HZ	1HZ	1/10HZ	1/100HZ		
	2	N/U	50KHZ	5KHZ	500HZ	50HZ	5HZ	0.5HZ	0.05HZ		
	3	N/U	33.3KHZ	3.33KHZ	333HZ	33.3HZ	3.33HZ	0.333HZ	0.033HZ		
	4	N/U	25KHZ	2.5KHZ	250HZ	25HZ	2.5HZ	0.25HZ	0.025HZ		
	5	200KHZ	20KHZ	2KHZ	200HZ	20HZ	2HZ	0.20HZ	0.02HZ		
	6	166.6KHZ	16.6KHZ	1.66KHZ	166HZ	16.6HZ	1.66HZ	0.166HZ	0.0166HZ		
	7	83.3KHZ	8.33KHZ	833.3HZ	83.3HZ	8.33HZ	0.833HZ	0.083HZ	0.0083HZ		
8	SAME FUNCTION AS SW 'B' ZERO										
9	SAME FUNCTION AS SW 'B' ONE										

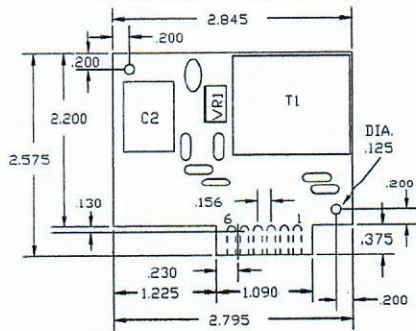
COUNTERS, TIMERS, RATE

# 522 FLAT PACK MECHANICALS & TYPICAL CONNECTIONS

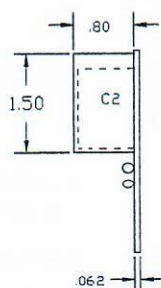
## FLAT PACK W/WIRES



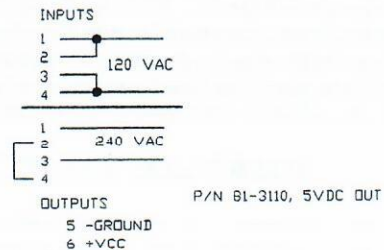
OPEN FRAME STYLE  
P/N 81-3110, 5VDC OUTPUT



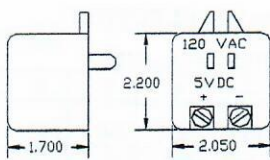
MECHANICALS FOR POWER SUPPLIES  
SIDE VIEW



OPEN FRAME  
POWER SUPPLY  
TYPICAL CONNECTIONS



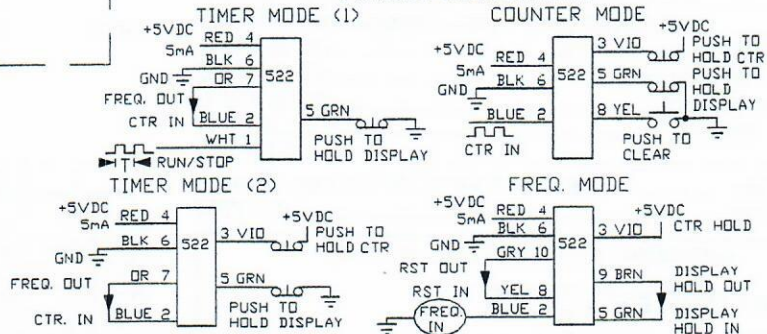
POWER PACK STYLE



ORDER P/N 75-3110 FOR 5VDC

FH87MC522.DWG

TYPICAL CONNECTIONS



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