

# Programmable Timer & Counter

# Z-TRAUQ INC.

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## FEATURES

- Two inputs
- Two outputs (see below)
- Two set points
- Two 6 digit displays
- On-board sensor power supply
- Functions: Counter, Batch Counter, Totalizer, Chronometer, Frequncymeter, Tachometer, (zero speed) Timer (multi-function)
- Reset - local & remote, manual or automatic
- Inputs: NPN, PNP, Encoder, Dry Contact
- Programmable from 0.01 sec. to 999.99 hrs.
- Count up or down, add two channels or subtract ChB from ChA
- x1 / x2 / x4 with encoder type of counting
- Coefficient and decimal point position to precisely scale input (eg. feet/min , gal/hr etc.)
- Programmable alarm functions
- Password protection
- Standard RS-232 or optional RS-485 serial communication with MODBUS protocol

## SPECIFICATIONS:

### INPUTS

Counter Inputs: ChA, ChB - dry contact, incremental encoder, NPN and PNP  
 Reset and Pause Inputs: Dry contact  
 Input Type Selection: via DIP switches  
 Input Speed: 10kHz max.  
 Reset Function: Automatic or Manual  
 Inputs Functions: INC, DEC, INC/DEC, INC/INC, UP/DOWN, x1 / x2 / x4 encoder input

### OUTPUT FUNCTIONS

Completely separate programmable N.O or N.C.; maintained or momentary from 0.01 to 99.99 sec.

### OUTPUTS

Output Modules: You can field install any two of the following modules in the device:  
 -Relay: 3A @ 250Vac EMO-400  
 5A @ 250Vac EMO 700 & 900  
 -SSR: max 20mA @ 18Vdc  
 -Transistor: max 40mA @ 18Vdc

### DISPLAY

#### Actual Value Display - 6 Digits Red LED:

EZM 4450: 8mm  
 EZM 4950: 13mm  
 EZM 7750: 9mm  
 EZM-9950: 14mm

#### Set Value Display - 6 Digits Green LED:

EZM 4450: 8mm  
 EZM 4950: 8mm  
 EZM 7750: 9mm  
 EZM-9950: 9mm

LED indicators : SV1/SV2 (Set Values 1 & 2), OP1/OP2 (Control/Alarm outputs 1 & 2)

### SUPPLY

Supply Voltage: 100-240 Vac; 24Vac/Vdc  
 Power Consumption: Maximum 6VA

### CONDITIONS and PHYSICAL SPECIFICATIONS

Operating Temperature: -10 to +60°C  
 Humidity : 0 to 90%RH (non-condensing)  
 Protection Class: Nema 4X (IP65) front, IP 20 rear  
 Approvals:



Represented by:

Distributed by:



1/16 DIN **EZM-4450**  
48x48x105mm



1/8 DIN **EZM-7750**  
72x72x76mm

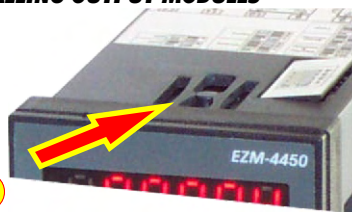


1/8 DIN **EZM-4950**  
48x96x76mm



1/4 DIN **EZM-9950**  
96x96x76mm

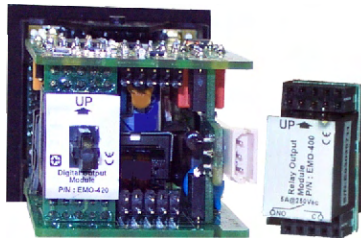
## INSTALLING OUTPUT MODULES



1

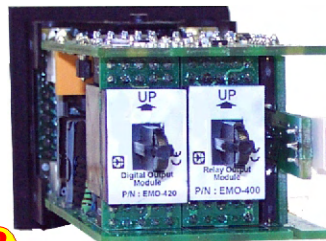
Remove power. Depress the locking pins located top and bottom and extract the unit from its case.

Wiring remains intact!



2

Slide output module(s) into cavity.

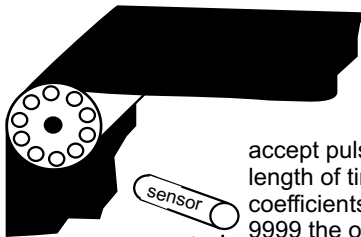


3

Possibility for 2 modules.  
 Re-insert unit into case.  
 No re-programming!

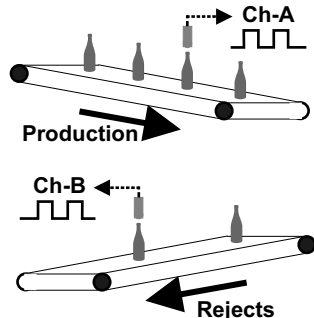
Count up on 1 channel or 2; add both channels; subtract one from the other - **Versatility beyond compare!**

## Used as a FREQUENCY METER (measurement, rate)



Pulses from a proximity switch or incremental encoder can be easily scaled to read meters/sec; feet/min or gal/hr, etc. The EZM can accept pulses per revolution or pulses per length of time. Then, two separate coefficients, one adjustable from 1 to 9999 the other 1 to 99.9999 make scaling child's play.

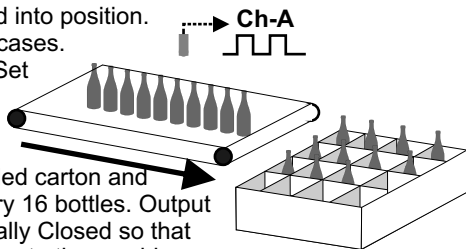
## Used as a TOTALIZER



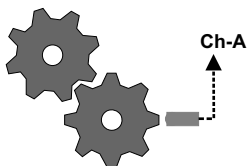
Pulses received on Channel A from a sensor increase the count displayed. Rejects are sent onto another conveyor where they are sensed by a second sensor whose pulses are registered on Channel B and deducted from the total. At the end of the production run, the total saleable units is displayed on the counter.

## Used as a BATCH counter

Sixteen bottles per case are counted before an empty case is moved into position. The order calls for 500 cases. Set Value 1 = 500 and Set Value 2 = 16. We program Output 2 to energize for 0.50 sec. This will advance the filled carton and position a new one every 16 bottles. Output 2 is programmed Normally Closed so that this contact will cut power to the machine once the count reaches 500 cases.



## Used as a TACHOMETER (also zero speed switch)



Position a sensor to pickup a cog. Set under speed and over speed values for SET1 and SET 2 respectively. Outputs can be programmed to close momentarily or latch if the machine doesn't run within the set limits.

## Output Modules (max two in any combination)

EMO-400 EMO-700 EMO-900 Relay	EMO-410 EMO-710 EMO-910 SSR Driver	EMO-420 EMO-720 EMO-920 Transistor
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## Ordering Information

Complete the model number with the appropriate suffix from the left hand most column.  
eg. EZM 4450-10010/01.02 is a 48 x 48mm counter/timer with supply voltage of 100 - 240vac, universal input, RS232, one relay and one SSR output.

A	BC	D	E	/	FG	HI
	00		0	/		

EZM-4450  
EZM-4950  
EZM-7750  
EZM-9950

A	Supply Voltage			
1	100-240Vac 50/60Hz			
2	24Vac/Vdc			
9	Custom (please specify)			
D	Serial Interface	Product Code		
1	RS-232 (MODBUS)	Standard feature		
2	RS-485 (MODBUS)	Optional		
FG	Output Module-1	for 48mm high units	for 72mm high units	for 96mm high units
01	Relay	EMO-400	EMO-700	EMO-900
02	SSR	EMO-410	EMO-710	EMO-910
03	Transistor	EMO-420	EMO-720	EMO-920
HI	Output Module-2			
01	Relay	EMO-400	EMO-700	EMO-900
02	SSR	EMO-410	EMO-710	EMO-910
03	Transistor	EMO-420	EMO-720	EMO-920

Please use these product codes when ordering modules separately.

## Function Selection

Via DIP Switches under the flap on the top of EZM.

OFF ON 1 <input type="checkbox"/> <input type="checkbox"/> 2 <input type="checkbox"/> <input type="checkbox"/> 3 <input type="checkbox"/> <input type="checkbox"/>	<b>Counter and Totalizer</b>	OFF ON 1 <input type="checkbox"/> <input type="checkbox"/> 2 <input type="checkbox"/> <input type="checkbox"/> 3 <input type="checkbox"/> <input type="checkbox"/>	<b>Frequencymeter and Tachometer</b>	OFF ON 4 <input type="checkbox"/> <input type="checkbox"/>	<b>NPN</b>
OFF ON 1 <input type="checkbox"/> <input type="checkbox"/> 2 <input type="checkbox"/> <input type="checkbox"/> 3 <input type="checkbox"/> <input type="checkbox"/>	<b>Batch Counter</b>	OFF ON 1 <input type="checkbox"/> <input type="checkbox"/> 2 <input type="checkbox"/> <input type="checkbox"/> 3 <input type="checkbox"/> <input type="checkbox"/>	<b>Chronometer</b>	OFF ON 4 <input type="checkbox"/> <input type="checkbox"/>	<b>Dry Contact</b>
OFF ON 1 <input type="checkbox"/> <input type="checkbox"/> 2 <input type="checkbox"/> <input type="checkbox"/> 3 <input type="checkbox"/> <input type="checkbox"/>	<b>Timer</b>			OFF ON 4 <input type="checkbox"/> <input type="checkbox"/>	<b>PNP</b>

## Timer (multi-function)

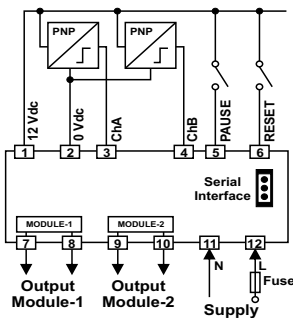
### Delay on Energization:

This is the most common time delay function and is typically used to stagger the starting pattern of two motors. Timing begins when the supply voltage is applied and output 2 is energized when the set value (SET2) is reached. Timing stops and output remains energized until power is removed or Reset is pressed. Reconnecting the supply voltage will also start a new sequence. If two outputs, then output 1 reacts to SET1 value. The *reset button* can be disabled during programming. Pro 06=1, Pro 14, 15, 16 and 17=0, Pro 21=1. For other functions and their recipes, please consult the owner's manual.

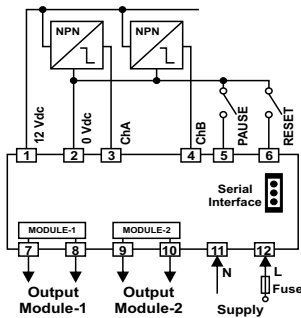


## Electrical Connections (consult owner's manual for precise details)

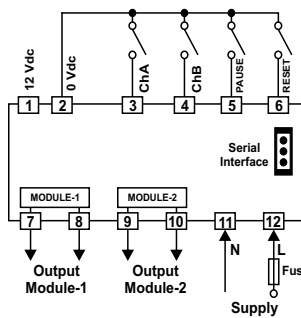
### PNP Connection



### NPN Connection



### Dry Contact (Button, Switch)



### Incremental Encoder

