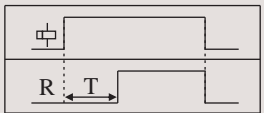


Synchronous Timer - Series EM 2000

- Time delay is independent of normal voltage & temperature fluctuations
- Large knob operating on a linear scale makes time setting easy
- Set time is indicated by a fixed pointer of the setting knob.
- Time left for completion of cycle is indicated by red pointer
- Wiring is quicker and easier as terminals are in the front of the unit
- All part subjected to wear & tear are made of 'Delrin' which has high resistance to wear & tear and thus ensures longer life.

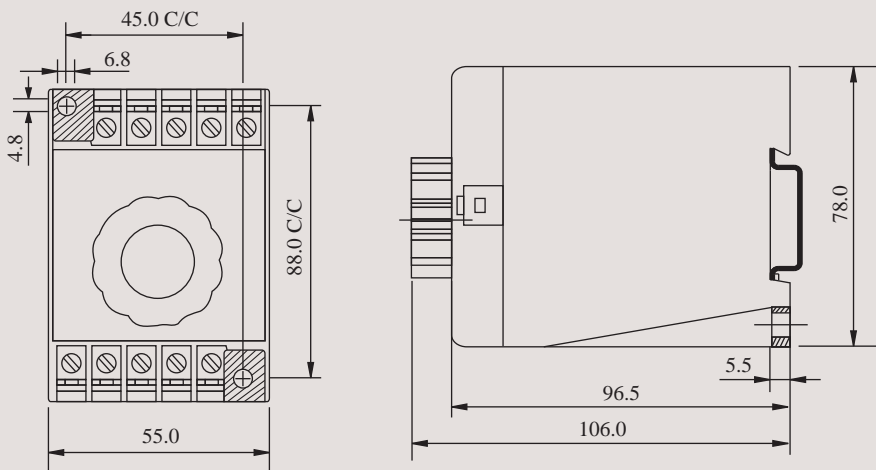


Mode	ON Delay	
Functional Diagram		
Supply Variation	- 20% to +10%	
Frequency Variation	95% to 105%	
Timing Range	1s to 120s	
Repeat Accuracy	± 2% of Full Scale Range at Constant Frequency	
Output	Output Contact	1 Delayed C/O or 2 Delayed C/O (Resistive)
	Contact Rating	5A @ 250 VAC (Resistive)
	Switching Frequency	1000 operations / hr. (Max.)
Operating Temperature	-5°C to 45°C	
Enclosure	Conforms to IP30 - IS 13947.	
Dimension (W x H x D) (in mm)	55 X 88 X 106	
Weight (unpacked)	260 g	
Mounting	Base/DIN Mounting & can be mounted on vertical plane with maximum inclination of 15° from vertical.	
Terminal Connection	1- 2.5 mm ² solid/stranded.	
Degree of Protection	IP20	

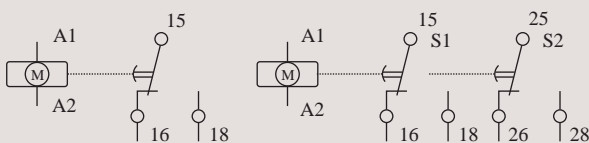
ORDERING INFORMATION

Timing Ranges	Voltage	Contact
C 1.0 - 30 Sec	3 110V AC 50 Hz	5 1 Del C/O
J 2.0 - 60 Sec	4 240V AC 50 Hz	6 2 Del C/O
Q 4.0 - 120 Sec	5 415V AC 50 Hz	

MOUNTING DIMENSION (mm)


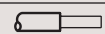


CONNECTION DIAGRAM



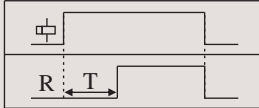
Note : Switch 2 operates before switch 1

TERMINAL TORQUE & CAPACITY

	Torque - 1.1 N.m (10 Lb.in) Terminal screw - M3.5
	Solid Wire - 2 X 0.2...2.5 mm ²
AWG	1 X 24 to 10

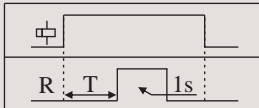
Basic Operating Modes / Functions

Φ : SUPPLY, S: SIGNAL, R: RELAY OUTPUT,
 T: SET TIME, TP: PAUSE TIME, T_{ON}: ON TIME, T_{OFF}: OFF TIME, T₁,T₂,T₃: POWER DOWN REGION



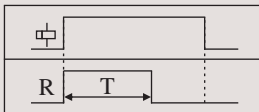
• **ON DELAY (DELAY ON ENERGIZATION):**

On application of supply voltage to the timer, the preset delay time period starts. On completion of the preset time, the output is switched ON and remains ON till the supply voltage is present



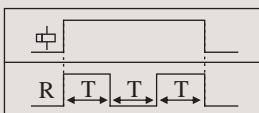
• **ONE SHOT (PULSE):**

On application of supply voltage to the timer, the preset delay time period starts. On completion of the preset time, the output is switched ON for a period of one second after which it is switched OFF.



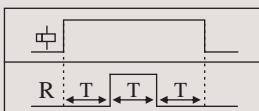
• **INTERVAL (IMPULSE ON):**

On application of supply voltage to the timer, the output is instantly switched ON for the preset time period. On completion of the preset time, the output is switched OFF.



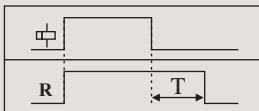
• **CYCLIC ON/OFF (SYMMETRIC):**

On application of supply voltage, the output is initially switched ON for the preset time duration (T) after which it is switched OFF for the same time duration (T). This cycle repeats and continues till the supply is present.



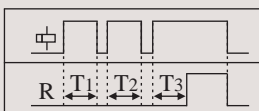
• **CYCLIC OFF/ON (SYMMETRIC):**

On application of supply voltage, the output is initially switched OFF for the preset time duration (T) after which it is switched ON for the same time duration (T). This cycle repeats and continues till the supply is present.



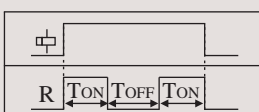
• **TRUE OFF DELAY (POWER OFF DELAY):**

On application of supply voltage, the output relay energizes instantly. On removal of supply voltage to the timer, the preset delay time period starts. On completion of the preset time, the output is switched OFF.



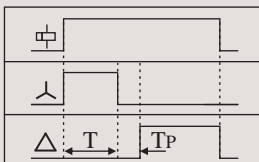
• **ON DELAY RETENTIVE (NO VOLT):**

On application of supply voltage to the timer, the preset delay time period starts. On completion of the preset time, the output is switched ON and remains. If power fails during preset time duration, the elapsed time is retained by timer. Upon resumption of power, the remaining cycle continues.



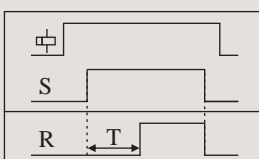
• **ASYMMETRIC ON-OFF / CYCLIC ON-OFF (ASYMMETRIC):**

On application of supply voltage, the output is initially switched ON for the preset 'ON' time duration (T) after which it is switched OFF for the preset 'OFF' time duration (T). This cycle repeats and continues till the supply is present. The ON time & OFF time are set independently.



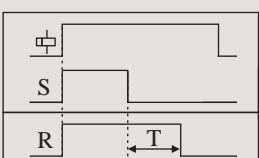
• **STAR DELTA:**

On application of supply voltage, the output Star relay energizes instantly. On completion of the preset delay time, the output Delta relay energizes after a fixed pause time. This pause time (60, 90, 120, 150 ms) provides the shortest possible 'current off' pause and simultaneously ensures smooth change over.



• **SIGNAL ON DELAY:**

On application of input signal to the timer, the preset delay time period starts. On completion of the preset time, the output is switched ON and remains ON till the input signal is present.



• **SIGNAL OFF DELAY:**

On application of input signal, the output relay energizes instantly. On removal of input signal to the timer, the preset delay time period starts. On completion of the preset time, the output is switched OFF.