

TECHNICAL SPECIFICATIONS

CAT.No.	7954				
SUPPLY CHARACTERISTICS					
Nominal Supply (±)	24 - 240 VAC / DC (50 to 60 Hz, ± 2 Hz)				
Limits	-15 % to +10 % of ±				
Power Consumption (Max.)	0.5 VA (@ 24/48 VAC), 4VA (@ 110 to 265 VAC/DC)				
RELAY OUTPUT CHARACTERISTICS					
Contact Arrangement	1 C/O (SPDT)				
Contact Rating	8A (Resistive) @ 240 VAC / 24 VDC				
Contact Material	AgSnO ₂				
Mechanical Life Expectancy	2 x 10 ⁷				
Electrical Life Expectancy	1 x 10 ⁵				
Switching Frequency (Max.)	1800 Operations / hr. @ rated load				
Status Indication on panel	Red LED - Relay ON				
FEATURE CHARACTERISTICS					
Modes Available	1. ON Delay (#) 2. Cyclic OFF/ON (Sym, Asym) (b) 3. Cyclic ON/OFF(Sym, Asym) (c) 4. Signal ON/OFF (d) 5. Signal Off Delay (E) 6. Interval (F) 7. Signal OFF/ON (G) 8. One Shot Output (H)				
Timing Ranges	h:m	m:s	hr	min	sec
	9:59	9:59	999	999	999
			99.9	99.9	99.9
Signal Sensing Time	20 ms Max. (DC High), 40 ms Max. (AC High), 100 ms Max. (Low)				
Signal Impedance	300 k				
Repeat Accuracy	± 0.5% of selected range				
Utilization Category	AC-15	Rated Voltage (Ue): 125/240 V, Rated Current (Ie) : 3/1.5 A			
	DC-13	Rated Voltage (Ue): 125/250 V, Rated Current (Ie) : 0.22/0.1 A			
Dimension (W X H X D) (in mm)	17.5 x 89 x 76				
Weight	85 g (unpacked)				
Variation in timing due to voltage change	± 0.2 %				
Variation in timing due to temperature change	± 1 %				
Operating Temperature	-10° C to + 55° C				
Storage Temperature	-20° C to + 65° C				
Humidity (Non - Condensing)	93 % Rh				
Mounting	Base / DIN-Rail (35 mm Sym.)				
Terminal capacity	1.5 mm ² (Pin type lugs)				
EMI/EMC					
Harmonic Current Emissions	IEC 61000-3-2	Ed. 3.2 (2009-04)	Class A		
ESD	IEC 61000-4-2	Ed. 2.0 (2008-12)	Level II		
Radiated Susceptibility	IEC 61000-4-3	Ed. 3.2 (2010-04)	Level III		
Electrical Fast Transient	IEC 61000-4-4	Ed. 3.0 (2012-04)	Level IV		
Surge	IEC 61000-4-5	Ed. 2.0 (2005-11)	Level IV		
Conducted Susceptibility	IEC 61000-4-6	Ed. 3.0 (2008-10)	Level III		
Voltage Dips & Interruptions(AC)	IEC 61000-4-11	Ed. 2.0 (2004-03)			
Voltage Dips & Interruptions(DC)	IEC 61000-4-29	Ed. 1.0 (2000-08)			
Conducted Emission	CISPR 14-1	Ed. 5.2 (2011-11)	Class B		
Radiated Emission	CISPR 14-1	Ed. 5.2 (2011-11)	Class B		
Safety					
Test Voltage Between I/P & O/P	IEC 60947-5-1	Ed. 3.0 (2003-11)	2 kV		
Impulse Voltage Between I/P & O/P	IEC 60947-5-1	Ed. 3.0 (2003-11)	Level IV		
Single Fault	IEC 61010-1	Ed. 3.0 (2010-06)	Level IV		
Insulation Resistance	UL 508	>50 kΩ			
Leakage Current	UL 508	<3.5 mA			
Degree of Protection	IP 20 for Terminal; IP-40 for Housing				
Pollution Degree	II				
Type of Insulation	Reinforced				
Environmental					
Cold Heat	IEC 60068-2-1	Ed. 6.0 (2007-03)			
Dry Heat	IEC 60068-2-2	Ed. 5.0 (2007-07)			
Vibration	IEC 60068-2-6	Ed. 7.0 (2007-12)	5g		
Repetitive Shock	IEC 60068-2-27	Ed. 4.0 (2008-02)	40g, 6ms		
Non-repetitive Shock	IEC 60068-2-27	Ed. 4.0 (2008-02)	30g, 15ms		

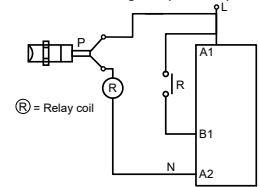


TS7954

Digital Timer - 8 Functions

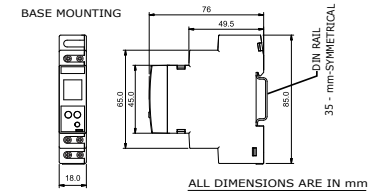
CAUTIONS:

1. Always follow instructions stated in this product.
2. Before installation, check to ensure that the specifications agree with the intended application.
3. Installation to be done by skilled electrician.
4. Automation & Control devices must be properly installed so that they are protected against any risk of involuntary actuations.
5. Using of AC 2 wire Type Proximity Sensor: Please add input relay to prevent false signal sensing due to current leakage of proximity sensor as below.



Use relay coil Voltage of the same Voltage using for Proximity sensor. [Relay coil current should not exceed the maximum current Specified by Proximity sensor.]

OVERALL DIMENSIONS:



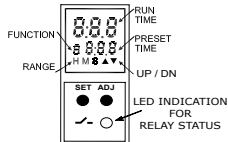
TERMINAL DETAILS:

 Ø 3.5 mm	0.4 N.m (3.5 Lb.in) Terminal screw - M2.5
 AWG	1 x 0.3 to 2.5 mm ² Solid Wire 22 to 14

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FEATURES:

- Available with 8 functions
- Wide operating voltage : 24 to 240 VAC / DC
- Multi Range : 0.1 s to 999 h
- Up/Down counting modes
- 3Digit LCD for preset Timer and Run Time
- Clear LED indication of Relay status
- Key lock Function
- Conforms to EMI/EMC as per IEC standards
- Compact size (17.5 mm single width module)



1. PRESET TIME : The Timer Duration selected by the user.
2. RUN TIME : In Down counting (▼) mode it indicates the remaining while in Up counting (▲) mode it indicates the elapsed time.
3. Up/Down (▲▼) blinks during the .Timer Duration(T).

THE KEYS:

KEY	OPERATION	RESULT
	Apply Power & Hold Program Mode the key for >3 sec.	
OR		
	Press both >3 sec program after power on	
	Press in program mode	
	Press in program mode Edit blinking parameter	
	Press for >3 sec. During Timer operation Reset Timer	
	Press for >3 sec. during Timer operation Select, Edit parameter Lock/Unlock Preset Time	
	Press during timer operation Edit Preset Time during Timer operation	

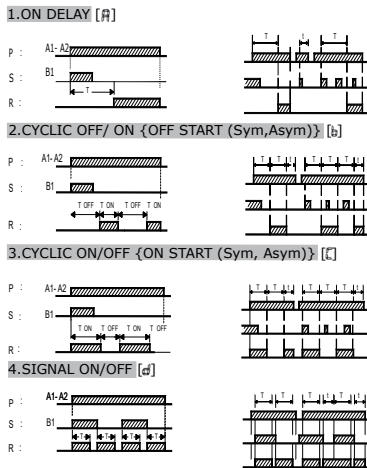
PROGRAMMING INSTRUCTIONS:

Apply power & hold the SET key for >3 sec. OR press both ADJ & SET key for >3 sec. After power ON. Now follow the steps given below

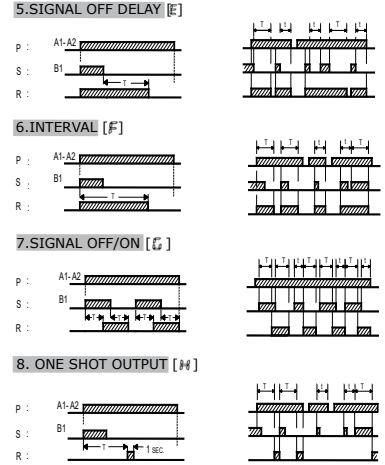
KEY	DISPLAY	RESULT
	F 5:39 HM	Press ADJ Key to select desired function (e.g F)
	F 5:39 HM	Confirms function then range indicator blinks
	F 5:39 HM	Press ADJ Key to select range (e.g. HM range 'HM')

	F 5:39 HM	Confirms range selection. 1st digit of preset time blinks. (For modes 'B' & 'C' two preset times 'on' & 'off' to be set)
	F 8:39 HM	Press ADJ key to adjust desired preset time digit (e.g. from 5 to 8)
	F 8:39 HM	Press Set to confirm 1st digit selection now 2nd digit blinks
	F 8:09 HM	Change with ADJ Key (e, g, from 3 to 0)
	F 8:09 HM	Confirms 2nd digit selection ,now 3rd digit of preset Time blinks.
	F 8:06 HM	Change with ADJ Key (e, g, from 9 to 6)
	F 8:06 HM	Now UP/DOWN Indicator blinks
	F 8:06 HM	Change with ADJ Key (e, g, from DOWN to UP)
	00.0 HM	Confirms counting mode . Program Over. Timer starts working normally.

TIMING DIAGRAMS:



T : PRESET TIME T : PERIOD < T P : POWERS : SIGNAL R : RELAY



T : PRESET TIME T : PERIOD < T P : POWERS : SIGNAL R : RELAY

FUNCTIONAL DESCRIPTION:

1. ON DELAY [R]

The Timer starts when both power (p) and signal (s) are applied .The relay is energized at the end of preset Timer (T) and remains on till power is removed.
2. CYCLIC OFF/ ON {OFF START (Sym,Asym)} [b]

T-ON and T-OFF can be same or different .The relay keeps on changing its status till the power is removed.
3. CYCLIC ON/OFF {ON START (Sym, Asym)} [c]

This function is quite similar to the function "b" but Initially he relay is ON for period T-ON after the power is applied.
4. SIGNAL ON/OFF [d]

The output relay is turned ON for preset Time (T) When ever the signal (S) is applied or removed .(Refer Note :2)

5. SIGNAL OFF DELAY [E]

Output relay become on when signal (S) is applied. The Timer duration (S) is removed .At the end of timer Duration (T) the output relay goes OFF. Signal (S) ,if Applied during the timer duration (S) will re -trigger the timer and the total duration will be extended.

6. INTERVAL [F]

When Signal (S) is applied ,The Timer Starts and the Output trelay is energized .The output relay be comes OFF at the end of timer duration (T).

7. SIGNAL OFF/ON [G]

When Signal (s) is applied or removed ,The relay changes .Its state after timer duration (T) (Refer Note: 2)

8. ONE SHOT OUTPUT [H]

When Signal (s) is applied ,the timer duration (T) Starts. At the end of Timer duration (T), the relay gets energized for approximately 1 sec.(Refer Note:2)

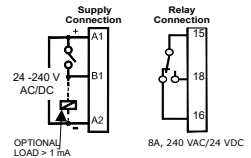
1. For power -on operation the terminal B1 and A1 must.

2. In case of all modes except mode G a change in Signal (s) status during the Timing Duration (T), does not affect output status but resets timing and re-triggers timing.

3. Output de-energises when device enters PROGRAM MODE and starts new cycle after coming out of PROGRAM MODE.

4. Loads which have current requirement 1mA, can only be used as Optional Load . For e.g Contactor coil ,AC Relay Coil, etc,

CONNECTIONS:



Note:

Product innovation being a continuous process. We reserve the right to alter specification without any prior notice.