MICROPROCESSOR BASED TIMER Model 1050D

Features:

- 6 different timing ranges of 99.99sec, 999.9sec, 9999sec,99Mins59Secs, 9999Mins, 99Hrs59Mins
- Press to start/Power On start/Cyclic modes settable
- Delayed On/Off programmable by user from front panel
- Up/Down time counting user settable
- User settable starting On/Off time for cyclic mode
- Number of cycles settable for cyclic mode
- Non-volatile memory to save configuration and timing
- Configuration lockable by Password
- Front Reset/Start switch with parallel terminals at rear
- Aesthetically designed panel with membrane switches

Specifications:

- **Display** : 4 Digit 0.8" Red 7 segment LED display for Time
  4 Digit 0.56" Red 7 segment LED display for Set Time
  Red LED to indicate current status of Relay On/Off

- **Modes** : User settable from front panel
  - Power On start
  - Press to start (with battery backup selection using EEPROM)
  - Cyclic action

- **Number of Cycles** : 1-199 cycles settable for cyclic mode after which the timer stops
  Setting number of cycles to Zero disables number of cycles setting

- **Reset/Start** : Front Reset/Start switch with parallel terminals at rear to connect additional switch, if required.

- **Relay logic** : Settable delayed On/Off, 5 Amps/220V AC Dual Relay Contact outputs

- **Timing direction** : Up/Down time counting user settable

- **Memory** : Non-volatile EEPROM to save settings

- **Configuration Lock** : Open terminals 1&2 to lock all configuration except Set Limits

- **Supply** : 220V AC ± 15% @ 50/60Hz

- **Dimensions** : Front Fascia: 96mm x 96mm x 50mm. Cut Out: 91mm x 91mm

- **Weight** : 800 grams

Manufactured By: **COUNTRONICS**
New Delhi

Installation

- The panel cut out of 92mm x 92mm is required. The instrument is pushed in from the front and held tightly in the panel by screwing the two side clamps from the rear.
- To wire the equipment, refer to the pin-connections label on the top of the instrument or as detailed previously.
- Connect 220V AC mains to Pins as per rear label. Connect Earth terminal Pin 12 to Mains Earth. As this is a micro-controller based equipment, it is advisable to connect the Earth.
- If a separate Reset/Start switch needs to be wired, connect it across Pins marked as Reset

Directions for Usage

Set Point-1

- The lower display shows the value of Set Time-1. Directly use Increment and Decrement switches to make changes.
- SET-1 represents the delay time for Press to Start Mode and Power on start mode. For cyclic mode, it represents the ON time.
- Use Increment and Decrement switches to set the On Time.
- The range depends on the units of time previously selected.

Units of Time (On time for cyclic mode)

- On pressing Mode switch, UNIT is displayed. For Cyclic Mode UNT1 is displayed.
  For Press to Start Mode & Power on Start Mode   For cyclic mode:

- This represents the timing range. The current selection is displayed as SS.SS (0.01sec), SSS.S (0.1sec), SSSS (1sec), MM.SS (Mins:Secs), MMMM (Minutes), HH.MM (Hours:Mins)
- Use Increment and Decrement switches to set the required range.
- For cyclic mode, this range is valid On time.
- After the value has been set, press Mode switch and go to next setting.

Password Setting

- After previous setting, upper display shows "PASS" while lower display shows 0000
- If changes to configuration settings have to be made, set the Password to **"1234"** using Increment and Decrement switches.
- After changes have been made, press Mode switch to go to next setting

Power On Start/Press to Start/Cyclic mode selection (Correct Password required for making changes)
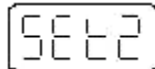
- After previous setting, on pressing Mode switch, MODE is displayed on top display, while "P-on" (Power on Start) or "PrSt" (Press to Start) or "CYC" (Cyclic Action) is displayed depending on previous setting on lower display.

  - o **Power On Start**: The timer resets and starts every time the power to the equipment is switched on. It can be reset during the timing also by pressing the Start/Reset switch.

- o **Press to Start**: On power on, the timer indicates its reset value but does not start counting. The timing can be started by pressing the Reset/Start switch. It can be reset/re-started during the timing by pressing the Reset/Start switch.

- o **Cyclic Mode**: The timing resets and starts on Power on. Depending on Delayed Off/On setting, the on/off time is started. After the time ends, the alternate cycle starts. The on and off times then repeat endlessly in alternate cycles.
- Use Increment and Decrement switches to set the required range.
- After the value has been set, press Mode switch and go to next setting
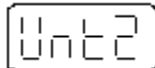
Set Point-2
- If cyclic action has been previously selected, SET2 is displayed on upper display while lower display indicates the value of Set-2.

$$SEt2$$

- This selection is automatically skipped for Power On Start/Press to Start modes.
- This time represents the Off time for cyclic action
- Use Increment and Decrement switches to set the Off Time.
- The range depends on the units of time previously selected.
- After the value has been set, press Mode switch and go to next setting.
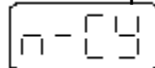

Units of Off time (for cyclic mode only)
- After previous setting, on pressing Mode switch, UNT2 is displayed. This selection is displayed only if Cyclic Mode has been selected.

$$Unt2$$

- This represents the Off time timing range for cyclic mode. The current selection is displayed on the top 4 Red LEDs marked as 99.99seconds, 999.9 seconds, 99Mins59Sec, 99Hrs59Mins
- Use Increment and Decrement switches to set the required range.
- After the value has been set, press Mode switch ◉ and go to next.

*Number of Cycles (For Cyclic Mode only)*
- After previous setting, on pressing Mode switch, "N-CY" (Number of cycles) is displayed for cyclic mode on upper display while lower display shows the number of cycles.

$$n-CY$$

- This represents the number of cycles for which the timer will continue in cyclic mode after which it stops.
- Use Increment and Decrement switches to set from 0-199.
- *Setting the number of cycles to Zero causes the timer to run continuously i.e. for any number of cycles (infinite)*
- After the value has been set, press Mode switch and go to next setting.

*Battery back-up selection (Correct Password required for making changes)*

- If 'Press to Start' mode is selected, then this selection is displayed, else the display directly skips to next selection.
- "bb-Y" (Battery backup-Yes) or "bb-n" (Battery backup-No) is displayed

$$\boxed{bb\text{-}Y} \qquad \boxed{bb\text{-}n}$$
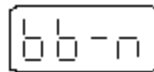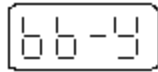
  - o **Battery BackUp-Yes:** In Press to Start mode, the timer starts on power on from the point of power failure.
  - o **Battery BackUp-No:** In Press to Start mode, the timer always starts from Zero
- Use increment and decrement switches to toggle between selections.
- After the selection has been made, press Mode switch to go to next setting

*Delayed On/Delayed Off selection (Correct Password required for making changes)*

- After previous setting "d-on" (Delayed On) or "d-of" (Delayed Off) is displayed.

$$\boxed{d\text{-}on} \qquad \boxed{d\text{-}oF}$$
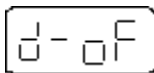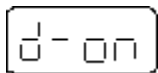
  - o **Delayed On**: In Press to Start/Power on start modes, the relay remains off during the delay time and after the set time is completed, the relay turns on. For cyclic mode, at power on, first the Off time is completed and then the on time.
  - o **Delayed Off**: In Press to Start/Power on start modes, the relay turns on during the delay time and after the set time is completed, the relay turns off. For cyclic mode, at power on, first the On time is completed and then the off time.
- Use Increment and Decrement switches to set the relay logic.
- After the value has been set, press Mode switch and go to next setting.

Up/Down Timing selection (Correct Password required for making changes)

- After previous setting, "Up" (Up counting) or "dn" (Down Counting) is displayed.

$$\boxed{uP} \qquad \boxed{dn}$$
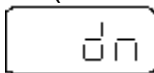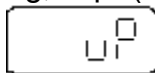
- This represents whether the time will increment from Zero to the Set time (for Up counting) or Decrement from the Set Limit to Zero (for Down counting).
- Use Increment and Decrement switches to set the timing direction.
- After the value has been set, press Mode switch to return to timing display.

Resetting/Starting the timer

- For Power On Start/Cyclic modes, the timer resets and starts on power on.
- For Press to Start mode, the timer is started by pressing the Reset/Start switch.
- For all modes, the time can be reset/re-started during the timing by pressing the Reset/Start switch
- Whenever the Reset/Start switch is pressed the display blinks to confirm pressing the switch.