OP654-V02

# TS2M1-1-16A-230V/ TS1W1-1-20A-230V

## Operating Instructions



## SPECIFICATIONS

| | |
|---|---|
| **SUPPLY** | |
| Voltage | 230V AC ± 10% |
| Frequency | 50-60Hz |
| Power Consumption | Approx. 9 Watts at 252 VAC |
| Battery Backup (Replaceable by user) | TS2M1-1-16A-230V : 10 years<br>TS1W1-1-20A-230V : 10 years |
| **RELAY OUTPUT** | |
| Type of contact | TS2M1-1-16A-230V : 1C/O (SPDT)<br>TS1W1-1-20A-230V : 1NO & Neutral |
| Contact rating (resistive load) | TS2M1-1-16A-230V : 16A (NO) & 16A (NC) @ 250V AC<br>TS1W1-1-20A-230V : 20A (NO) @ 250V AC |
| Contact material | $AgSnO_2$ |
| Max. Switching Current | TS2M1-1-16A-230V : 16A<br>TS1W1-1-20A-230V : 20A |
| Electrical life | TS2M1-1-16A-230V : $5x10^4$ Operations<br>TS1W1-1-20A-230V : $1x10^5$ Operations |
| Mechanical life | $1x10^7$ Operations |
| **FUNCTIONAL** | TS2M1-1-16A-230V<br>TS1W1-1-20A-230V |
| Operation Period | 1 week |
| Weekly Program | Total 50 ON Steps and 50 OFF Steps<br>2 Programs x 25 steps<br>3 Programs x 16 steps<br>4 Programs x 12 steps<br>5 Programs x 10 steps<br>6 Programs x 08 steps<br>7 Programs x 07 steps<br>8 Programs x 06 steps |
| Display | Text LCD (Without Backlight) |
| Character Height | 5.07mm(HH:MM) & 3.39mm(SS) |
| Minimum setting unit | 1 second |
| Holiday Settings | 16 Dates max. |
| Clock | 12-hr(AM/PM) and 24-hr selection |
| Keys | 5 Keys with 1 recessed reset button |
| Relay Operating Mode | Auto / Permanent Override ON / Permanent Override OFF |
| RTC accuracy | 15 mins a year @ 25ºC |

| **ENVIRONMENTAL** | |
|---|---|
| Temperature Range | Operating : 0º to 50ºC |
| | Storage : -20º to 70ºC |
| Humidity | 10% to 95% RH |
| Protection class | II |
| **MECHANICAL : TS2M1-1-16A-230V** | |
| Mounting | Din Rail |
| Type of connection | Terminal screw-16A rating |
| No of Terminals | 5 (L, N, NO, COM, NC) |
| Dimensions | 60mm x 35mm x 90mm |
| Type of protection | IP20 |
| Weight | 105 g |
| **MECHANICAL : TS1W1-1-20A-230V** | |
| Mounting | Wall Mount |
| Type of connection | Pin Type - 20A rating |
| No of Terminals | 4 (LOAD, NEUT, LINE,NEUT) |
| Dimensions | 60mm x 60mm x 48.50mm |
| Type of protection | IP20 |
| Weight | 100 g |

## ORDER CODE INFORMATION

| Product | Certification | |
|---|---|---|
| | CE | cULus LISTED |
| **TS2M1-1-16A-230V** | – | – |
| **TS1W1-1-20A-230V** | – | – |
| **TS2M1-1-16A-230V-CE** | ✓ | – |
| **TS1W1-1-20A-230V-CE** | ✓ | – |

## SAFETY PRECAUTIONS

All safety related codifications, symbols and instructions that appear In this operating manual or on the equipment must be strictly followed To ensure the safety of the operating personnel as well as the instrument.

If the equipment is not used in manner specified by the manufacturer it might impair the protection provided by the equipment. If there is physical damage to the unit then do not use it.

Read complete instructions prior to installation and operation of the unit.

The timer functions and set program are backed up by a battery. If the life of the battery expires, the display will become irregular or may fail to function. The battery can be replaced by the user. Contact your SELEC representative before doing so.

Serious injury may occasionally occur due to fire or explosion of a battery, or leakage from a battery. Never attempt to short the positive and negative terminals, recharge, disassemble, deform by applying excessive pressure, or expose the battery to fire.

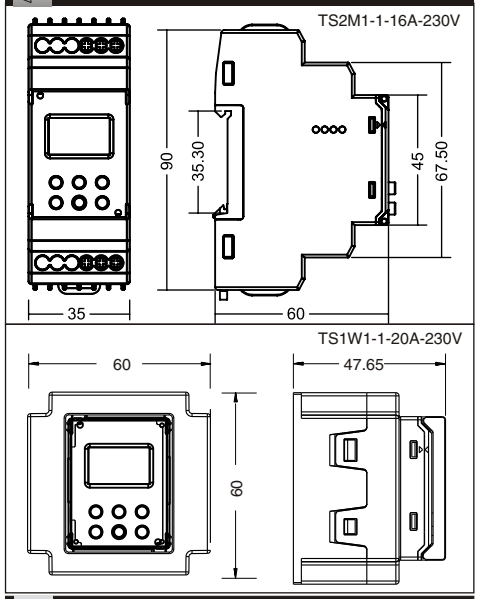
### ⚠ CAUTION :

1. This equipment, being built-in-type, normally becomes a part of main control panel and in such case the terminals do not remain accessible to the end user after Installation and internal wiring.
2. Conductors must not come in contact with the internal Circuitry of the equipment or else it may lead to a safety hazard that may in turn endanger life or cause electrical shock to the operator.
3. Circuit breaker or mains switch must be installed between power source and supply terminals to facilitate power 'ON' or 'OFF' function. However this switch or breaker must be installed in a convenient position normally accessible to the operator.
4. Inductive loads should be equipped with interference suppressors like varistors, RC snubbers.
5. Use of contactors is recommended if load exceeds the contact rating.

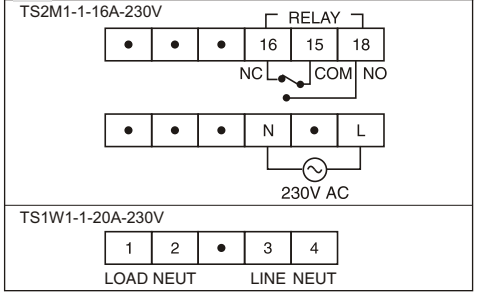
### ⚠ WARNING :

1. To prevent risk of electric shock power supply to the equipment must be kept OFF while doing to the wiring arrangement. Use lugged terminals to Meet M3 screws.
2. Wiring shall be done strictly according to the terminal layout with shortest connections. Conform that all connections are correct.
3. To eliminate electromagnetic interference use of short wire with adequate ratings and twists of the same in equal size shall be made.

## MECHANICAL INSTALLATION



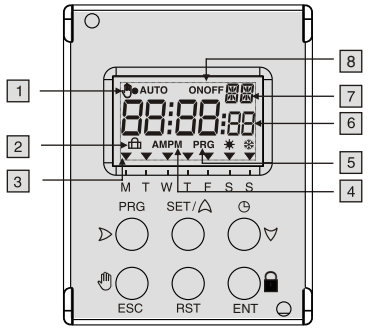

## TERMINAL CONNECTIONS




## OPERATION FUNCTIONS

| FUNCTION | DESCRIPTION |
|---|---|
| Adjusting Clock | Allows current date & time settings through day, hrs (24-hr indication and 12-hr indication), minutes, seconds settings |
| Weekly Timer Operation | Controls the output according to the set time of ON and OFF for specified days of the week |
| Holiday setting | Sets holidays without having to revise the existing program.<br>Can be set 0 to 16 dates max. |
| Permanent Override ON / Permanent Override OFF | Allows the output to be forcibly turned ON/OFF regardless of the control output setting. |
| Keypad Lock | Allows each key to lock / unlock. When key is locked programming parameters of that key cannot be edited. |
| Programmable No of steps | Allows to modify No of steps per program (Minimum Value = 6, Maximum Value = 25) |
| Enable / Disable program | Allows to enable / disable particular program |

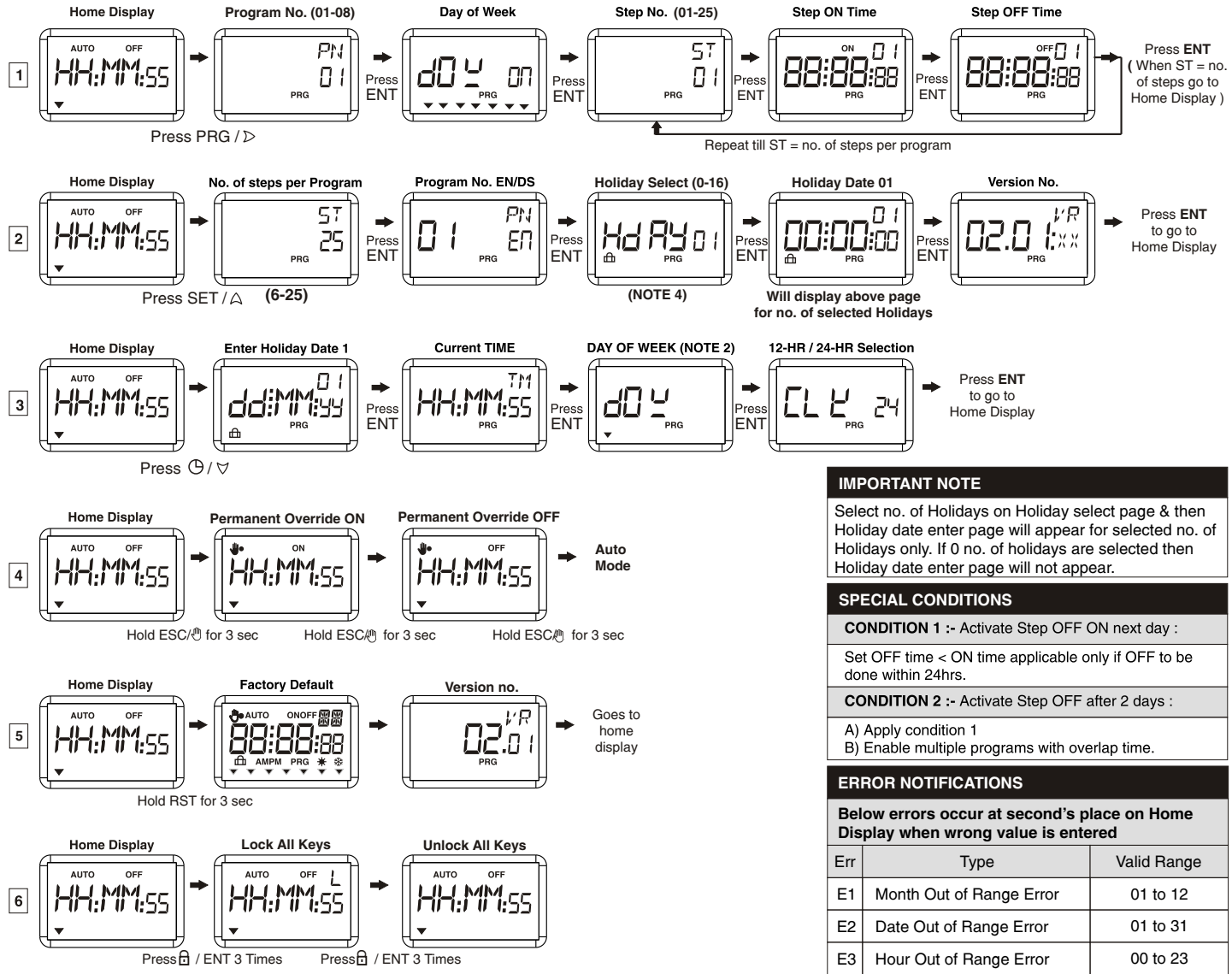
## FRONT PANEL DESCRIPTION




| | |
|---|---|
| 1 | Auto : Automatic mode |
| | ✋● : Permanent override |
| 2 | Holiday |
| 3 | Day of Week indication |
| 4 | AM/PM Indication |
| 5 | PRG Mode indication (when in programming mode only) |
| 6 | Hours/minutes/seconds indication (HH:MM:SS) |
| 7 | LB → Lock All & Battery mode<br>L → Lock All & Auxiliary mode<br>B → Unlock All & Battery mode |
| 8 | Relay ON/OFF indication |

## SETTING THE TS2M1-1-16A-230V/TS1W1-1-20A-230V PARAMETER

**Note: To change parameters value use"▷ / △/ ▽" : To set value use "ENT" : To come out of programming use "ESC" (NOTE 1, 3 & 5)**




### IMPORTANT NOTE

Select no. of Holidays on Holiday select page & then Holiday date enter page will appear for selected no. of Holidays only. If 0 no. of holidays are selected then Holiday date enter page will not appear.

### SPECIAL CONDITIONS

**CONDITION 1 :-** Activate Step OFF ON next day :

Set OFF time < ON time applicable only if OFF to be done within 24hrs.

**CONDITION 2 :-** Activate Step OFF after 2 days :

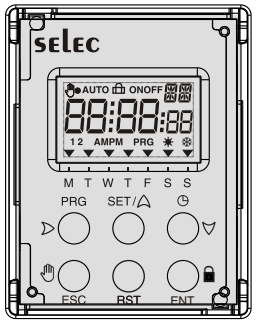
A) Apply condition 1
B) Enable multiple programs with overlap time.

### ERROR NOTIFICATIONS

**Below errors occur at second's place on Home Display when wrong value is entered**

| Err | Type | Valid Range |
|---|---|---|
| E1 | Month Out of Range Error | 01 to 12 |
| E2 | Date Out of Range Error | 01 to 31 |
| E3 | Hour Out of Range Error | 00 to 23 |
| E4 | Step Hour Out of Range Error | 00 to 23 |

### FRONT PANEL VIEW




### KEY OPERATIONS

| To Enter Programming | Press key |
|---|---|
| Set Control programs and Steps | PRG / ▷ |
| Set Clock – Current Date &Time | ◷ / ▽ |
| Set System Settings | SET / △ |
| Factory Default | RST |
| To Exit programming | |
| Run Mode | Press & hold key for 3 secs |
| Mode Select- switch mode between a) Auto b) Permanent Override ON c) Permanent Override OFF | / ESC |
| To Modify Parameter in Programming(PRG) Mode | Press key |
| **NOTE 1** : To modify parametric values. | ◁ /▷/△ /▽ |
| **NOTE 2**: To Modify Day of Week. | ◁ /▷ - Select Day of Week. △ /▽ - Toggle On / Off. |
| **NOTE 3**: To confirm selection / programming. | ENT Key |
| **NOTE 4** : To select Holiday dates | △ /▽ - Select no.of holidays Press ENT to go to Holiday date select (Note1 to edit) |
| **NOTE 5** : Program Out | ESC Key or automatic 60sec program out on key inactivity. |

(Specifications are subject to change, since development is a continuous process.)


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