

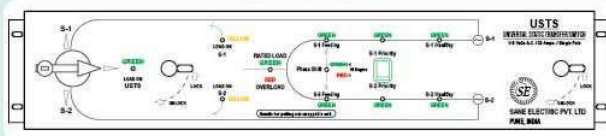
# Universal Static Transfer Switch (USTS)

Transfer supply between independent A.C. Power Sources

**HOT  
SWAPPABLE**

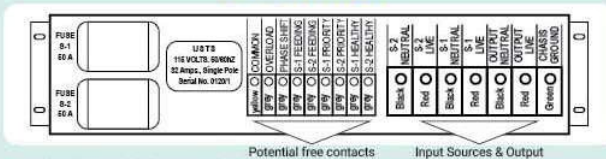


## Front Panel



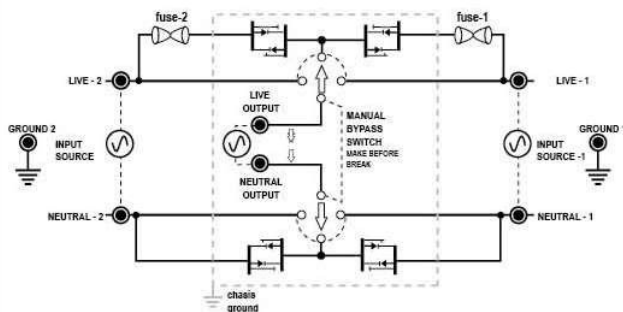
- Mimic Indications
- Eleven coloured LED's provide the status of the static transfer switch.
- Three position Manual operation switch with Key Lock, for safety.
- Priority Source selection switch.
- Two rotary handles to draw-out swappable unit.

## Back Panel



- Unbreakable Terminals for Input sources & load output provided.
- Eight potential free "NO" relay contacts with a common terminal, for sense outputs.
- Ground terminal & fuses.

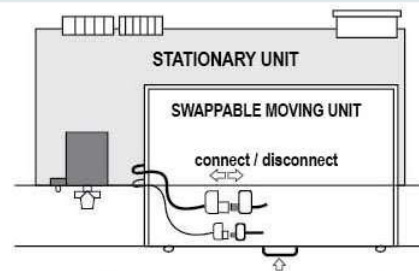
## Block Diagram of Double Pole USTS



Manual bypass circuit does not have any fuse protection as it bypasses USTS in all respects.

**APPLICATION : Data Centers / Call Centers / Process Control / Automation.**

- In case of failure of electronic control the load is transferred manually to any one source & the pluggable electronic control is replaced without disconnecting any connections to the unit.
- Manual load transfer also available for source change
- Make before Break (MTB) Transfer.
- Fuse protection for load & phase, over currents.
- **2U / 4U Enclosure** with attachments for depth adjustments in Open type panel mounting



## Fix & Hot Swappable units

The transfers for independent sine wave sources, can be between

- Mains to UPS
  - UPS to UPS
  - UPS to Generator
- or any combination thereof, synchronized or unsynchronized, in phase or out of phase.

## Introduction

The USTS transfers statically between Source - 1 & Source - 2, if any one of them goes faulty. Manual bypass switch can transfer load to any one of Source - 1 or Source - 2, in case of failure of 'Static Transfer Switch' or for maintenance of input sources. These are semiconductor switches, they transfer power to load in case of failure of one of the power sources and have user selectable functions.

The Interphase fuse (back panel) is in Live to Live connection of the two sources for inter source current, in case of electronic control failure.



## Electrical Specifications

|                            |   |
|----------------------------|---|
| Input Frequency            | 50 Hz or 60 Hz $\pm$ 5%   |
| Source voltage distortion  | Up to 10% THD   |
| Output Current             | 0 Amps to 13.8 Amps. Continuous duty, 16 Amps. Max.   |
|                            | 0 Amps to 27.5 Amps. Continuous duty, 32 Amps. Max.   |
|                            | 0 Amps to 56 Amps. Continuous duty, 63 Amps. Max.   |
| Overload limit             | Set at Max Rated current. (LED Indication only).  |
| Switching                  | Single Pole, Source neutrals and Output neutral are common & heavily shorted, inside the Enclosure. Double pole all Inputs & Output Lives & Neutrals are separately wired |
| Load power factor          | 0.5 to unity, leading or lagging  |
| Load Transfer              | Between sources synchronized or unsynchronized  |
| Transfer Time              | 6 milliseconds for synchronized and 16mSec. for unsynchronized transfer, By default.  |
|                            | These settings can be altered from 200 microseconds to a few Seconds as per customer requirement.   |
| Input & Output Connections | On Rear Panel.  |
| Fuses                      | Fuses are in series with Electronic Switches.   |
|                            | When Manually Switched, Output is taken, there are no fuses in the circuit.   |
| Alarm contacts             | Eight normally open alarm and static switch status contacts.  |
| Protections                | Input-OVP & UVP Indications, Inter phase short by suitable rated HRC Fuse.  |
| Efficiency                 | 97%   |
| Over load capability       | 125% for one minute.  |

## Mechanical Specifications

|                    |  |
|--------------------|--|
| Enclosure          | Electronic part is Hot Swappable. Moving unit provided with two handles. For removal of electronic part, Stationary unit has a key to be operated in the Manual by-pass Switch for safety.       |
|                    | Moving unit can be removed only when Manual by-pass switch is in 12o'clock or 6o'clock position.   |
|                    |  |
| Weight             | 14.5 Kg Max.(16 Amp./32 Amp.) And 25.5 Kg Max. (63 Amp.)   |
| Manual by-pass     | Make before break rotary switch provided.  |
| Installation       | 19" Rack Mounting, with attachments made for mounting in open type racks with depth variation from 800mm to 1000mm.  |
|                    |  |
| Cable entry        | Rear side  |
| Ingress protection | IP40   |
| Cooling            | Natural Cooling  |
| Dimensions         | 2U = 431 mm(W) x 88 mm(H) x 507 mm(D) for 16 Amp. / 32 Amp.  |
|                    | 4U = 431 mm(W) x 176 mm(H) x 507 mm(D) for 63 Amp.   |
| Input & Output     | Provided at back panel, six unbreakable 10 sq. mm (65 Amp. rated) terminals for both Source & output, for 16Amp/32 Amp and 16 Sq.mm(100 Amp. rated) terminal for both Source & output for 63Amp. |
| Ground terminal    | .6mm diameter nikel plated Ms Hex"Bolt" for grounding is provided at the back panel, heavy external earth ground to be connected to the bolt.  |

## Environmental Characteristics

|                     |                          |                       |                     |
|---------------------|--------------------------|-----------------------|---------------------|
| Cooling             | Natural cooling          | Storage temp. range   | -40 to 60 °C        |
| Ambient Temperature | 0 to 40°C                | Operating temp. range | 0 to 40 °C          |
| Relative Humidity   | 0 – 95%                  | Relative humidity     | 0 to 95%            |
| Heat dissipation    | 150 Watt (16 or 32 Amp.) | Operating altitude    | Up to 1500m (5000)  |
|                     | 300 Watts (63 Amp.)      | Audible noise         | <45db at 1.5 meter. |



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