

# Matrix Telecom Static Transfer Switch, INV-STS-050



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### STS AC Input voltage range

|                     |                                                       |
|---------------------|-------------------------------------------------------|
| 110/115/120 Vac     | 89 to 138Vac                                          |
| 208/220/230/240 Vac | 176 to 276Vac                                         |
| Frequency           | 50/60 Hz $\pm 2.5\%$ (synchronize range of inverters) |

### STS AC Output

|                             |                                                                                                                                                                                       |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Nominal Output Voltage      | Same as utility voltage or inverter output                                                                                                                                            |
| Permissible Frequency Range | Max. $\pm 2.5\%$ (inverter synchronization)                                                                                                                                           |
| Transfer Time               | Typical 1/4 cycle                                                                                                                                                                     |
| Rated Current (Inom)        | 50A                                                                                                                                                                                   |
| Operation Methods           | Inverter priority / Mains priority                                                                                                                                                    |
| Overload protection         | 20s @ 120% Inom<br>5s @ 160% Inom<br><br><i>Note: The STS will not transfer from Off-line mode to On-line mode if the load exceeds the estimated capacity of the inverter system.</i> |

### Over Temperature Operation

|               |                                                                                                                                                                                                                                                                                                                                                   |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| On-line mode  | When the temperature of heat sink in the STS is too high, the static switch will power the load through the internal bypass relay. If the temperature reaches a critical threshold, the bypass relay will be open, and the load will be disconnected. The system will return to normal operation when the temperature drops to acceptable levels. |
| Off-line mode | When the temperature of heat sink in STS is over 85°C, the static switch will transfer to on-line mode.<br><br>Over temperature protection is then the same as on-line mode.                                                                                                                                                                      |

### Static Switch Transfer Voltages

|                                |          |          |          |          |
|--------------------------------|----------|----------|----------|----------|
| INV-4810, INV-4815 Inverters   |          |          |          |          |
| Nominal Output Voltage         | 110V     | 115V     | 120V     |          |
| Over Voltage: Range            | 117~127V | 122~132V | 127~138V |          |
| Default Value                  | 127V     | 132V     | 138V     |          |
| Under Voltage: Range           | 89~105V  | 93~110V  | 100~114V |          |
| Default Value                  | 89V      | 93V      | 100V     |          |
| INV-4810E, INV-4815E Inverters |          |          |          |          |
| Nominal Output Voltage         | 208V     | 220V     | 230V     | 240V     |
| Over Voltage: Range            | 220~240V | 233~252V | 244~264V | 254~276V |
| Default Value                  | 240V     | 252V     | 264V     | 276V     |
| Under Voltage: Range           | 176~198V | 176~209V | 185~218V | 193~228V |
| Default Value                  | 176V     | 176V     | 185V     | 193V     |

### Environmental Requirements

|                             |                                                                                  |
|-----------------------------|----------------------------------------------------------------------------------|
| Operating temperature range | -20°C to 70°C (-4°F to 158°F)<br>-5°C to 50 °C (23°F to 122°F), full performance |
| Storage temperature         | -40°C to 85°C (-40°F to 185°F)                                                   |
| Operating humidity          | 90% Relative Humidity (non condensing)                                           |
| Operating Attitude          | 1500m                                                                            |
| Audible noise               | 55dB ETS 300 753, class 3.1                                                      |

## Mechanical

|                     |                                          |
|---------------------|------------------------------------------|
| Dimension (D, W, H) | 270mm, 215mm, 43.8mm (10.6", 8.5", 1.7") |
| Weight              | 2.1 kg (4.6lb)                           |
| Heat dissipation    | Forced air cooling                       |
| Front Panel LEDs    |                                          |
| Power On            | Green                                    |
| Warning             | Yellow                                   |
| Fault               | Red                                      |

## Compliances

|                                                                                  |                     |
|----------------------------------------------------------------------------------|---------------------|
| Safety:                                                                          | EN60950-1 / UL-1778 |
| EMC - General                                                                    |                     |
| Static transfer systems (STS) - Electromagnetic compatibility (EMC) requirements | IEC 62310-2         |
| EMC - immunity                                                                   |                     |
| Electrostatic Discharge                                                          | EN 61000-4-2        |
| Radiated radio frequency                                                         | EN 61000-4-3        |
| Electrical fast Transients                                                       | EN 61000-4-4        |
| Surge                                                                            | EN 61000-4-5        |
| Conducted Radio Frequency                                                        | EN 61000-4-6        |
| EMC – emissions                                                                  |                     |
| Emissions (AC)                                                                   | EN 55022 (Class B)  |
| Harmonics                                                                        | EN 61000-3-2        |
| Static transfer systems (STS) - Electromagnetic compatibility (EMC) requirements | IEC 62310-2         |

## Certifications

|        |         |
|--------|---------|
| Europe | CE-mark |
| USA    | UL      |

## Schematic of Static Bypass Switch (shown in mains priority mode)

