

Specification Requirements
HSU 1500 Series
Bypass Switch

Model Numbers:
HSU-1500
HSU-1500 R
HSU-1500 Dual
HSU-1500 Dual R

Theory of Operation

The Bypass Switch shall provide a means of (Wrap Around) bypassing the UPS during normal and or abnormal operation. The Bypassing of any type of UPS shall provide a means of supplying utility power directly to the load when the bypass is placed in the BYPASS position. This bypass will provide a means of service, removal or repair of the equipment without interruption or shutting down the load. The Bypass shall be a Break-Before -Make design.

The Bypass switch shall be equipped with indicator LED's that provide status of the utility, UPS, Bypass and Auto. The Bypass/Auto control of the device shall be by a single low voltage control rocker switch.

This control rocker switch will be isolated from the Utility and shall not be used to transfer current of voltage during any operation of the Bypass Switch.

The bypass uses a voltage monitoring circuit that predetermines, samples, and measures the utility and UPS voltage. The circuit uses this to control to switching of the main relays. The threshold detection is always preset. This circuitry also provides a parallel interlock to the main relays in addition the isolating to prevent back feed of any alternate source.

The bypass does not allow any transfer of alternate sources of power unless that source is present.

1.0 Electrical Specifications

The bypass switch shall be available in a wall mount or rack mount configuration. Each configuration is available in a single or dual switch configuration. A hot swap bypass switch shall be provided and wired to function within the UPS system. The bypass switch shall have the following characteristics:

- Voltage: 120/220/240VAC
- Rating:
 - 30 amps continuous UPS/Line
 - 30 amps continuous Generator/UPS
- Bypass Transfer: Automatically to line in 20ms, '0' crossing at full load
- Relays: AC internal Load relay at 'Zero Crossing' with parallel function DC relay For interlocking and protection failsafe mode to N/C for AC power direct to load when failure occurs or in Bypass position.
- Protection: Internal Snubber circuit for spike attenuation during transfer at 'Zero' crossing. External circuit breaker required.
- Connections: Flush mounted Anderson Power connector. With locked and keyed.
- Controls: 2 configurations – Single and Dual
 - One button for UPS/Auto/Bypass (single and dual)
 - One button for Generator/UPS (dual only)
- The Bypass switch case shall be constructed of aluminum.

2.0 Mounting Configuration

The bypass switch shall be available in 4 configurations:

- Wall mount single bypass – 1 standard AC source
- Wall mount dual bypass – 1 standard and 1 alternate AC source (e.g. generator)
- Rack mount single bypass – 1 standard AC source
- Rack mount dual bypass – 1 standard and 1 alternate AC source (e.g. generator)

4.0 Control & Indications

- **Control:** Rocker On/Off switch indicating 'Auto' and Bypass
- **Indicators:** LED for Line Available, Bypass, Ups On Line, UPS Available

5.0 Reliability

Calculated MTBF shall be 120,000 hours based on component ratings. When bypass switch is installed, system MTBF shall increase to 160,000 hours.

6.0 Warranty

A standard (2) two year manufacturer warranty shall be provided for all electronic components.