Static Transfer Switch **MODEL SI**

i - STS

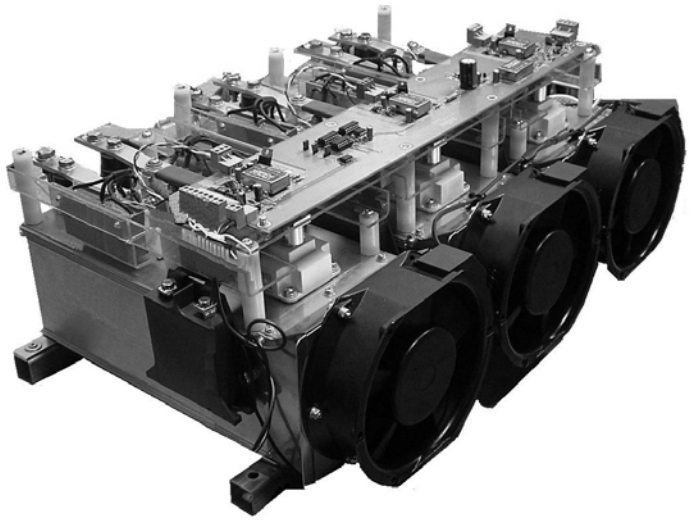
A Static Interrupter is able to cut off the current at any point at any level in an AC waveform to protect both the source and the load against damaging downstream load faults. These are typically utilized for low capacity sources (such as inverters or UPS) where it is important that a singular fault does not affect the source or other connected loads.

What does a Static Interrupter do?

Available as a stand-alone unit or incorporated as part of a Static Transfer Switch, the Static Interrupter provides enhanced capability for super critical loads where degeneration of the voltage cannot be tolerated. When used with a Static Transfer Switch the Static Interrupter will transfer the critical load to a stiff source (mains) so that the normal protective devices can operate before the voltage is adversely affected.

Once the faulty load is isolated, the source (UPS / inverter) continues to supply the remaining loads normally. These units will detect and isolate in microseconds, guaranteeing that the load voltage and upstream protection scheme stays intact.

Available as single or three phase, 3 or 4 pole configurations



Shown Three Phase (3-pole) 200 Ampere Interrupter
(for switchboard or end user equipment, Size, 400 mm x 400 mm x 200 mm)

Static Interrupters / Static Interrupting Transfer Switches are available for equipments ranging from 50 Amperes to 800 Amperes. They use either IGBTs, GTO,s, IGBTs or force commutated SCR techniques to actively cut-off the supply of the fault current.

Can be used as a static contactor, non fault soft switching (zero power) capability. No wear-out. Special Capacitor Switching versions available).

How does a Static Interrupter operate?

Transitions in the Static Transfer Mode are break-before-make, however, the break is more controlled and the transition of current and voltage is no longer based on zero current transitions, as in the case with standard Thyristor / SCR based static Transfer Switches. Break times are transparent to the load in respect to both voltage and current.

Fig.1

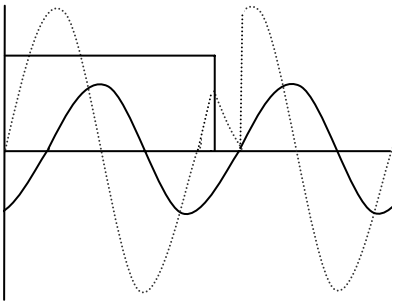


Fig.2

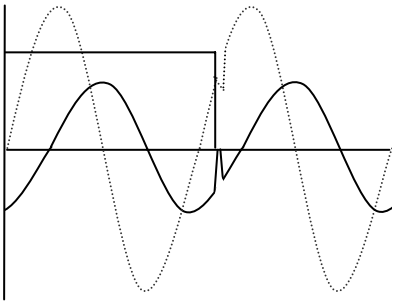


Fig 1. shows falling edge break signal (dark line), current (solid sine wave) and voltage (dotted sine wave) versus time from a typical thyristor module. We see a drop off in voltage because the transfer is not effected until current reaches zero.

Fig 2. shows the same falling edge break signal and current versus time, but from an IGBT module in a Static Interrupter. The break is effected as soon as the signal is received because the current is forced to zero by the Static Interrupter.

Typical usage would be where distributed loads are fed from the same source and a failure within one of the distributed loads is not allowed to affect the source. Often also utilized in parallel inverter systems to ensure redundancy and eliminate the single point of failure output bus in case of an inverter failure. Use on Grid systems where there are many users to isolate and localize faults.

i - STS Features	Benefits
Super Fast Switching and detection (<1 millisecond)	Increased reliability true protection
Low noise controlled fans	Low noise and maximum reliability
Break Before Make Transfers (< 1 msec break times)	Prevent paralleling of input sources, better load protection
Large Overload and Fault Capacity (No fuses)	Suitable for installations with fault capacity up to 20kA
Guaranteed to not pass through load faults	Will interrupt and isolate load fault (or in STS allow transfer to stiff source)
Synchronous and Non-Synchronous Transfers Allowed	Transfer at safely even if sources are asynchronous
Device/ SCR Open and Short Circuit Protection	No overlapping or loss of supply due to SCR or control failures
Redundant Controls and Triple Redundant Power Supply	More secure higher MTBF for your equipment/Redundant power monitoring

Specifications

Rating	50 - 800 Amperes RMS
Voltage Rating	85 - 264 V (150 – 440 V AC 3 phase)
Permissible Voltage Distortion	20% THDV
Frequency	50 or 60 or 400 Hz
Type	3 + N (1-Phase, 3-phase, 4-pole, or 3 phase, 3-pole)
Efficiency	98 % (3P)
Transfer Type	Thyristor and IGBT (IGCT or GTO depending on rating)
dV/dt	>1000 V/µsec
MTBF	> 800,000 Hrs
Fault rating	Up to 20 kA
Fault Current Setting	1:500% peak (cut-off / transfer lock-out, fully settable 120% – 500% peak)
Overload Capacity	Up to 120% for 30 seconds 200% for 0.5 second 1000% Amperes for 2 msec
Detection Digital	< 1 msec
Interrupting time	< 1 msec
Detectors	Peak current
Remote I/O	2 x Status indications (50 V DC, 1 Ampere, N/C) & 2 Control Inputs
Operating Temperature	0 - 50°C
Cooling Fan	forced
Noise	< 60 dB(A) typically
Compliance	AS3100 & ASNZ/IEC 62310-1 (for STSs) AS/NZ(IEC) 62310-1 & 2
Warranty	24 months

Subject to change without notice.

Static Transfer Switches

i - STS Manufacturing is a subsidiary of
STATIC POWER PTY. LTD.
ABN 42 101 765 913

Post to:
Box 2003
Research Delivery Centre
Research VIC 3095
Australia
Manufactured at:
5/39-45 Susan Street
Eltham VIC 3095
Australia

Phone: +613 9431 0494
Fax : +613 9431 0939
Email : sales@i-sts.com.au
Web : www.i-sts.com.au