

Digital Energy™ STS

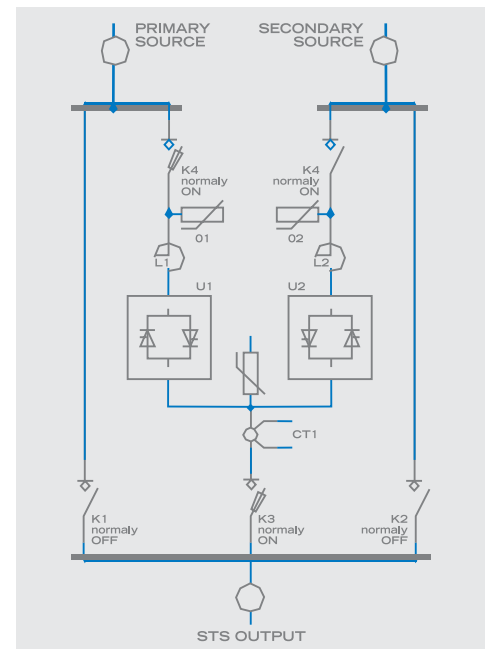
Static Transfer Switches

Static Transfer Switches (STS) are designed to transfer the supply between 2 independent AC power sources. Unlike traditional automatic transfer switches (ATS), a static transfer switch provides a fast load transfer (typically 1/4 of a cycle), which ensures uninterrupted operation of sensitive electronic equipment. Load retransfer to the preferred input source is virtually instantaneous (typically 0.1 ms). The basic applications of STS are in automatic systems in the power industry, power supply systems for petrochemical industry, computer and telecommunication centers, automatic and security systems of 'intelligent' buildings as well as other equipment which is sensitive to interruptions in the supply. The excellent overload capability and transfer algorithm enables fast fuse clearance in the event of a short-circuit. In consequence the voltage immediately returns to normal to supply the other loads. The built-in transient voltage surge suppression system for SCR switches provides additional protection against damage to the supplied equipment.

The static transfer switch consists of two (for each phase) bidirectional thyristor switches equipped with a control and protection system. The 4 pole types have an additional neutral line switch. After failure of the preferred source, the STS checks the state of the alternate power source and transfers the load to the source that provides power within selectable limits. This transfer can be triggered by: disturbance in the preferred source voltage, overcurrent in the source, manual or remote change of the preferred source.

With both sources in limits and synchronized (phase error within the acceptable range), manual or remote transfer is performed in less than 200 µs. Transfers initiated by fault conditions in the preferred source depend on the status of the alternate source. For synchronized power sources with phase error within the limits, switching to an alternate source is obtained within 6 ms delay. Lack of synchronization causes delay before transfer. It is possible to set the delay with dipswitches.

Through their complete life cycle, all GE Power Quality systems are fully supported by service teams which provide world-class, 24x7 preventive and corrective services, training and application expertise.



FEATURES & BENEFITS

- **Selectable voltage limits** for full flexibility to protect equipment against sags, swells and interruptions
- **Three redundant power supplies** providing maximum reliability
- **Fail-Safe CMOS logic** for fast and reliable control of the STS
- **Easy to install and to operate**
- **Redundant cooling** providing full functionality, even in case of a fan failure
- **Surge protection** to prevent damage to the STS and the supplied equipment
- **Blocked transfer in case of short circuit** preventing to jeopardize other user.
- **Manual bypass** for no-break operation of the load during maintenance
- **Dry contacts** to provide status and alarm information to other control systems
- **Rackmounted models** for easy integration into other systems
- **Userfriendly control panel** for easy operation
- **Neutral dimensioned for 200%** of nominal current to handle imbalanced loads



GE imagination at work

TECHNICAL SPECIFICATIONS

Nominal Current Rating	25A	40A	63A	100A	150A	250A	400A	630A
Enclosures								
3 pole, floorstanding cabinet *	A				B		C	F
3 pole, 19 inch rackmounted *	E				-			
4 pole, floorstanding cabinet *	A			B	C		F	D
4 pole, 19 inch rackmount *	E			-				
Weight (kg), preliminary	60	68	72	195	195	195	280	280
Color	RAL 7032							
Input characteristics								
Nominal input voltage	3 x 400V ph-ph							
Input voltage window	-25% / +20%							
Nominal frequency	50Hz							
Frequency window	-9% / +6%							
Output characteristics								
Efficiency	>99% at cos phi 0.8							
Crestfactor acceptance	3.5							
Powerfactor (max. Cos phi)	0.5 - 1.0 (leading/lagging)							
Overload behavior 125/400/800/1000/1500%	1 hour, 5sec, 400ms, 200ms, 20ms							
Short circuit current withstand (max 20ms)	3200A			8000A		15000A	25500A	39000A
Transfer time (manual triggering)	< 0.1 ms							
Transfer time (automatic transfer)	< 6 ms, typical: 3 ms							
Settings								
Overvoltage level setting	+ 6/9/13/16/20%, selectable by dipswitch							
Undervoltage level setting	- 8/12/16/24%, selectable by dipswitch							
Phase delay limit (for synchronized lines)	8/12/16/20/24 degrees, selectable by dipswitch							
Transfer blocked after output current exceeding limit	no blocking, 3/4.5/6/7.5/9 x nominal current, selectable by dipswitch							
Transfer time (lines not synchronized)	13/17/25/50 ms , selectable by dipswitch							
Delay for retransfer to preferred source	0.8/1/8/25 sec, selectable by dipswitch							
Ambient conditions								
Operating temperature	0-40 degr. Celcius							
Humidity	<95%, non condensing							
Altitude	1000 m (above 1000m 5% derating per 500m ; max: 3000m)							
Cooling	redundant cooling fans							
Audible noise	< 55 dBA							
EMC	EN50022 level B, EN60555-23							
Protection	IP20 (floorstanding), IP00 (for rackmounted models)							
Alarm / Status Contacts								
Dry contacts	300Vdc or 250Vac / 0.3A dc or 4A ac @220V							
Status information	manual transfer on, retransfer off, primary/secondary source OK, primary/secondary source on							
Disturbance alarms	primary/secondary source not healthy, sources not synchronized, manual control on							
Failure alarms	overload, overtemperature, fuse failure, internal STS failure							

* Dimensions of cabinets h x w x d (mm) A:1100x800x400 B:1900x800x500 C:1900x1200x500 D:2300x1200x600 E:710x483x465 F:2100x1200x600



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