GE Consumer & Industrial
Power Protection

Static Transfer Switches (STS) are designed to transfer the supply between two 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 centres, 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. As a 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 bidirectional thyristor switches for each phase equipped with a control and protection system. The 2 or 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 whichever source provides power within selectable limits. This transfer can be triggered by disturbance in the preferred source voltage, overcurrent in the source or manual or remote change of the preferred source. With both sources in limits and synchronised (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 synchronised power sources with phase error within the limits, transfer to an alternate source is made within 6ms delay. Lack of synchronisation 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.

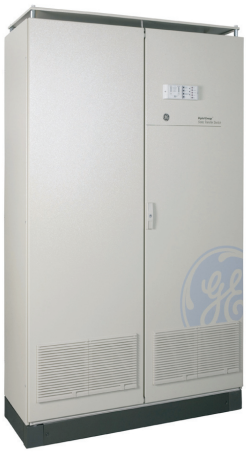
features & benefits

- 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 jeopardy to other users
- 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
- User friendly control panel for easy operation
- Neutral dimensioned for 200% of nominal current to handle imbalanced loads (800/1000A: 160%)

Digital Energy™ STS Series

400V 25-1000A 1/2/3/4-pole
Static Transfer Switches (STS)

GE imagination at work



STS-400-150-4P: 400Vac, 150A, 4-pole

technical specifications

Nominal current rating (A)	25	40	63	100	150	250	400	630	800	1000
Enclosures										
1-pole, Stand Alone *		G		A		B		-		
1-pole, 19 inch rackmount *		H*		-						
2-pole, Stand Alone *		G		A		B		-		
2-pole, 19 inch rackmount *		H*		-						
3-pole, floorstanding cabinet *		A			B		C	F	J	
3-pole, 19 inch rackmounted *		E			-					
4-pole, floorstanding cabinet *		A		B	C		F	D	J	
4-pole, 19 inch rackmount *		E		-						
Weight (kg), only for 3- and 4-pole (preliminary)	60	68	72	195	195	195	280	280	350	380
Colour	RAL 7032									
Input characteristics										
Nominal input voltage	400V ph-ph / 230V ph-N									
Input voltage window	-25% / +20%									
Nominal frequency	50Hz									
Frequency window	-9% / +6%									
Output characteristics										
Efficiency	> 99% at cos phi 0.8									
Crest factor acceptance	3.5									
Power factor (max. Cos phi)	0.5 - 1.0 (leading/lagging)									
Overload behaviour	1 hour, 5 sec, 400 ms, 200 ms, 20 ms									
Short circuit current withstand, kA (max 20 ms)	3.2			8		15	22.5	39	46	55
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 synchronised sources)	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 (sources not synchronised)	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 °C									
Humidity	< 95%, non-condensing									
Altitude	1000 m (above 1000 m 5% derating per 500 m; max. 3000 m)									
Cooling	redundant cooling fans									
Audible noise	< 55 db(A)									
EMC	EN 50022 level B, EN 60555-2-3									
Protection	IP 20 (floorstanding), IP 00 (for rackmounted models)									
Alarm / Status Contacts										
Dry contacts	300 Vdc or 250 Vac / 0.3 Adc or 4 Aac at 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									

Enclosures hxwxd, mm: A: 1100x800x400 B: 1900x800x500 C: 1900x1200x500 D: 2300x1200x600 E: 710x483x465
F: 2100x1200x600 G: 340x507x440 H: 113.5x483x415 J: 2300x1600x800 * manual bypass optional (133.5x483x197)

Specifications subject to change without prior notice

Certified Quality System
SQS
ISO 9001 / EN 29001
Reg. No. 10448

CE

GE imagination at work

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