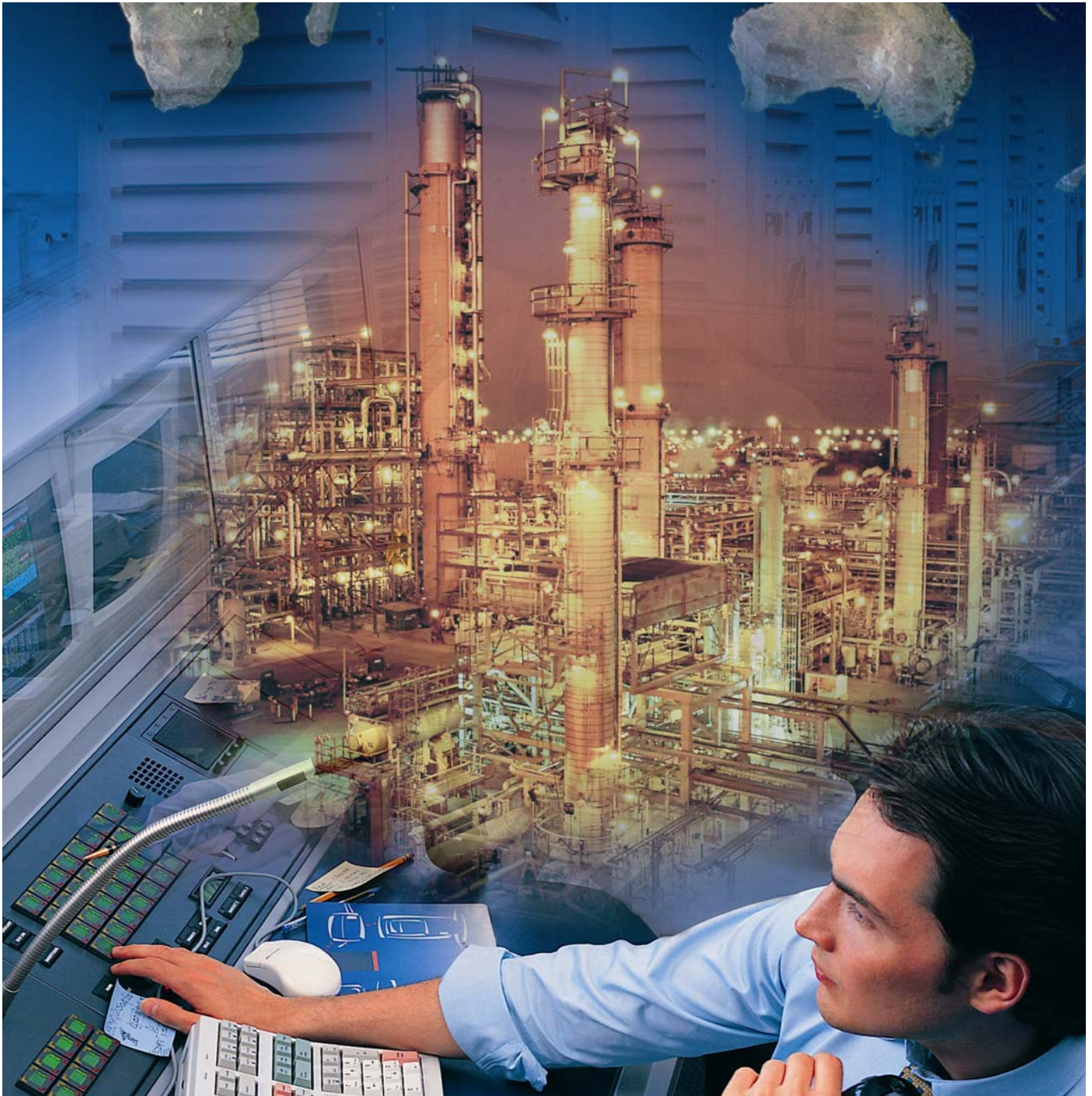


# GTEC

## Transfer Switches and Controls 63 – 1250 Amperes 2, 3 and 4 poles



## Transfer Switch Mechanism



- A powerful and economical solenoid powers GTEC Transfer Switches.
- Independent break-before-make action is used for 2-pole, 3-pole and 4-pole switches. On 4-pole switches, this action prevents the objectionable ground currents and nuisance ground fault tripping that can result from overlapping neutral designs.
- Mechanical interlock prevents simultaneous closing of normal and emergency contacts.
- Electrical interlocks prevent simultaneous closing signals to normal and emergency contacts and interconnection of normal and emergency sources.
- Long-life, high pressure, silver alloy contacts resist burning and pitting. Contacts are mechanically held in both normal and emergency positions for reliable, quiet operation.

## Specifications: Transfer Switch Mechanism

**Amperage Rating**  
**Voltage Rating**  
**Arc Interruption**

Transfer switches rated for 63 through 1250 continuous amps.  
Transfer switches rated up to 480 VAC, 50 Hz or 60 Hz  
Multiple leaf arc chutes cool and quench the arcs. Barriers prevent interphase flashover.

**Neutral Bar**

A full current-rated neutral bar is standard on enclosed 3-pole transfer switches.

**Auxiliary Contacts**

Two contacts (one for each source) are provided for customer use. Wired to terminal block for easy access. Rated at 5A continuous at 100 VAC or 2.5A continuous at 200 VAC.

**Operating Temperature**

-22°F (-30°C) to 140°F (60°C)

**Storage Temperature**

-40°F (-40°C) to 140°F (60°C)

**Humidity**

Up to 95% relative, non-condensing

**Altitude**

Up to 10,000 ft (3,000 m) without derating

**Total Transfer Time**

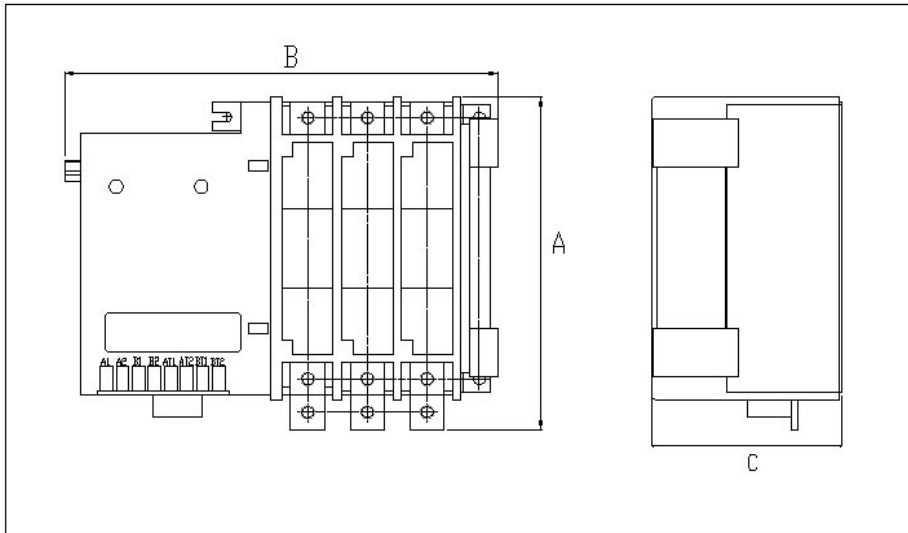
Will not exceed 100 msecs with normal voltage applied to the actuator and without programmed transition enabled.

**(source-to-source)**

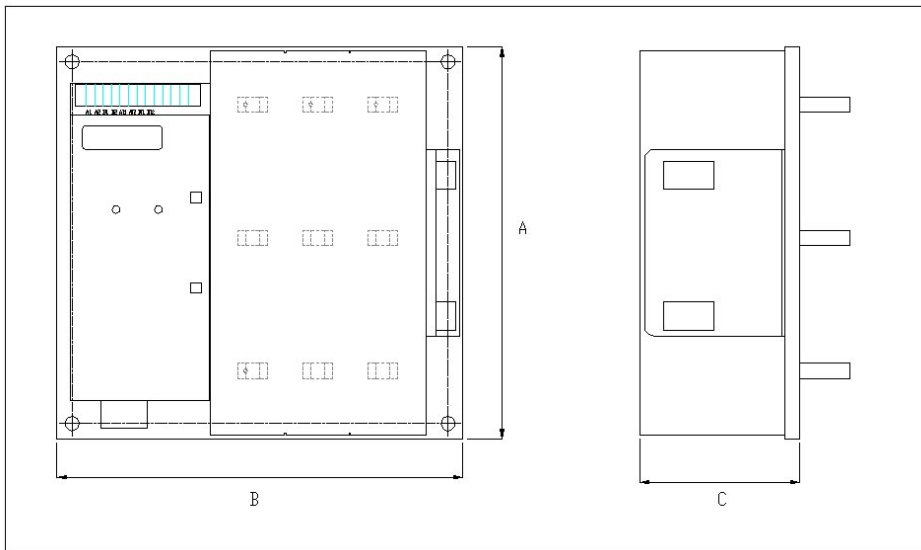
**Manual Operation Handles**

Transfer switches are equipped with a removable operating handle which allows operation during servicing in order to facilitate troubleshooting with sources of power disconnected.

**Dimensions for 63A – 500A, 2 and 3 pole Transfer Switch**



**Dimensions for 630A – 1250A, 2 and 3 pole Transfer Switch**

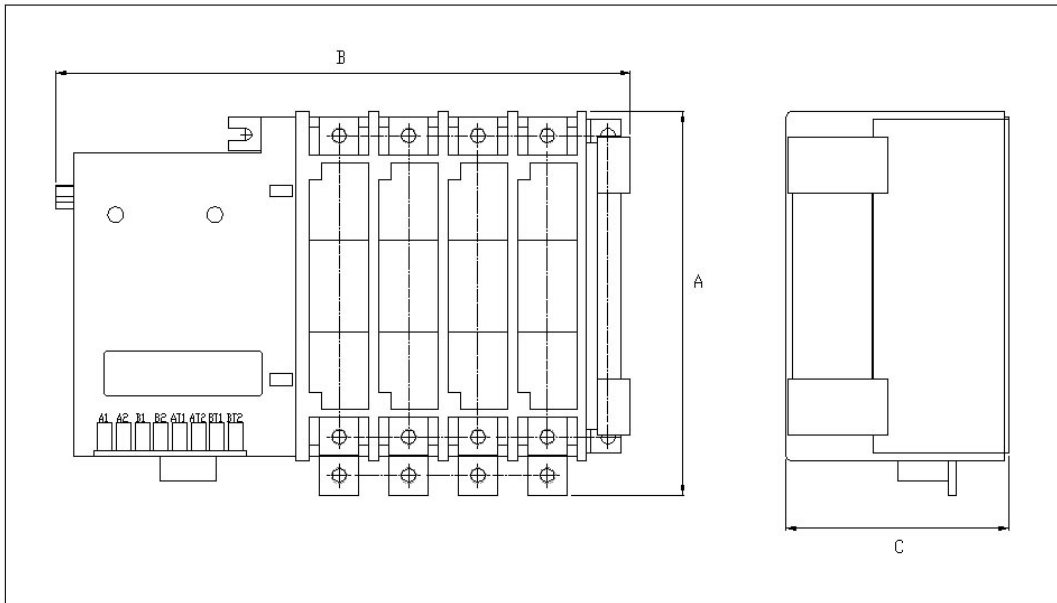


2-Pole Amp Rating	A Height - mm	B Width - mm	C Depth - mm	Weight - kg	Outline Drawing
63	193	192	112	4	306-5010
100-125	193	209	112	4.5	306-5011
160-200-225-250	194	219	112	6	306-5012
350-400-500	290	280	132	11	306-5013
630-800*	390	340	210	25	306-5014
1000-1250*	390	370	250	31	306-5015

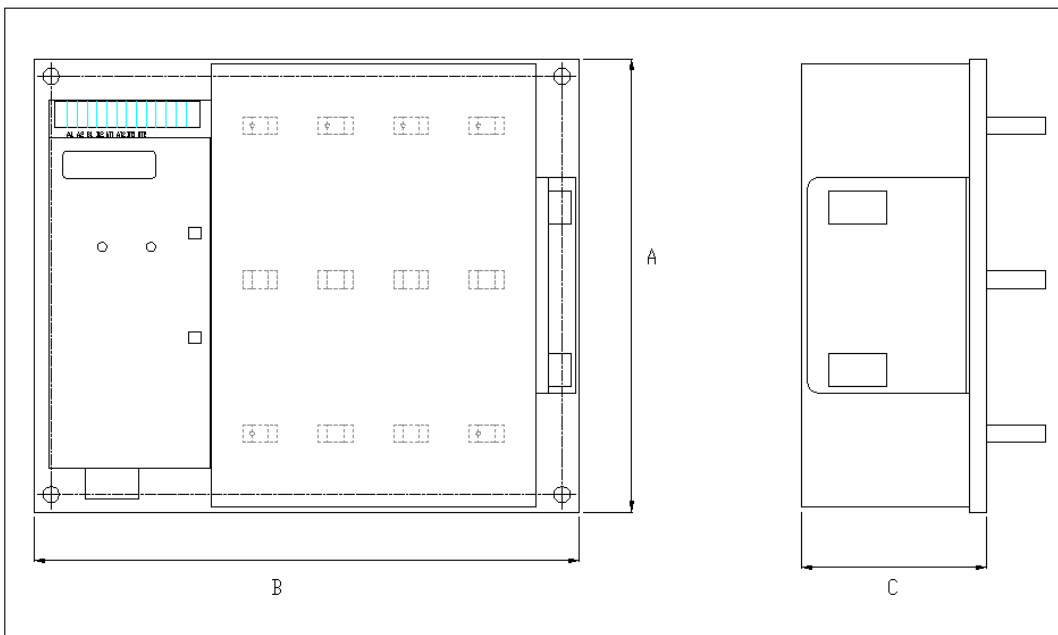
3-Pole Amp Rating	A Height - mm	B Width - mm	C Depth - mm	Weight - kg	Outline Drawing
63	193	214	112	5	306-4992
100-125	193	239	112	6.5	306-4990
160-200-225-250	194	254	112	8	306-4968
350-400-500	290	340	132	14	306-4970
630-800*	390	405	210	33	306-4983
1000-1250*	390	450	250	40	306-4985

\* 630 - 1250 Ampere Switches are Rear Connect, all others are Front Connect

### Dimensions for 63A – 500A, 4 pole Transfer Switch



### Dimensions for 630A – 1250A, 4 pole Transfer Switch



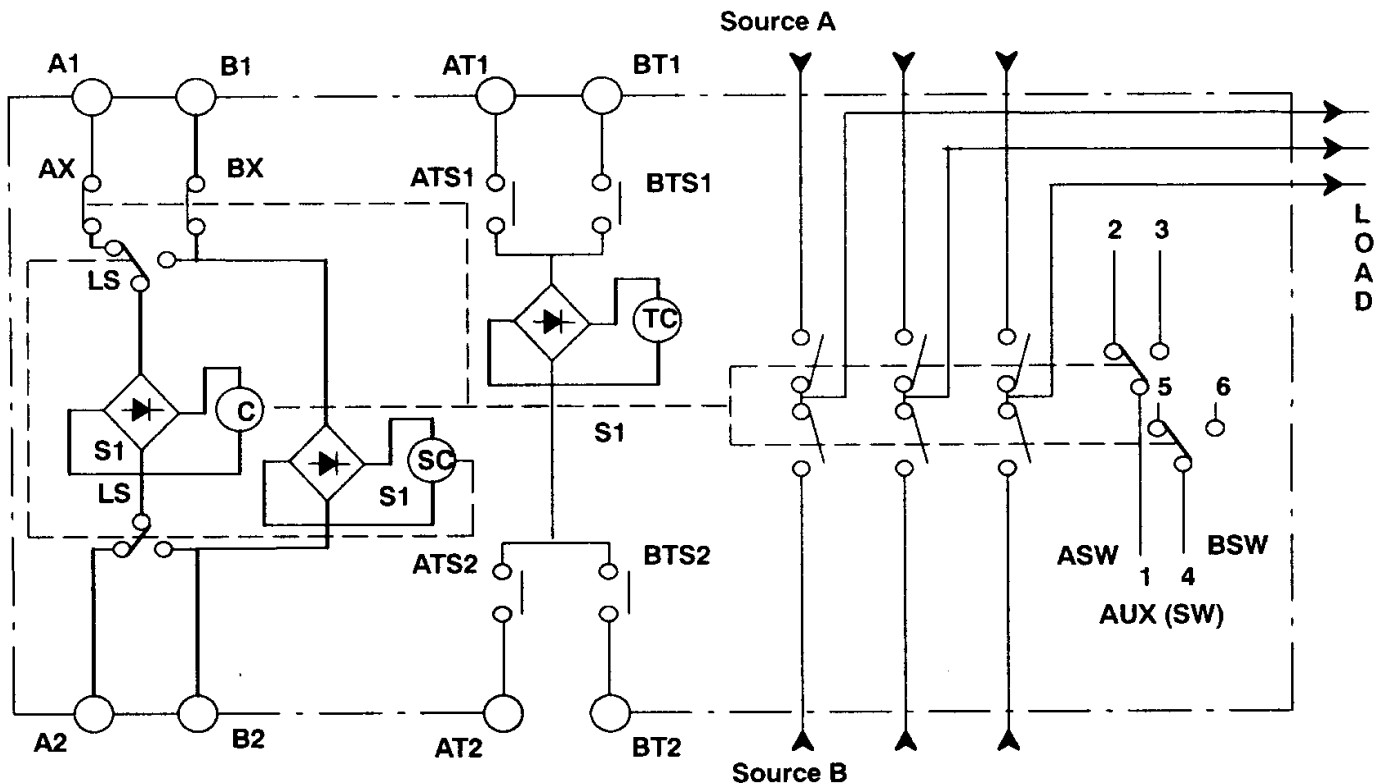
4-Pole Amp Rating	A Height - mm	B Width - mm	C Depth - mm	Weight - kg	Outline Drawing
63	193	235	112	6.5	306-4993
100-125	193	269	112	8	306-4991
160-200-225-250	194	269	112	10	306-4969
350-400-500	290	400	132	18	306-4971
630-800*	390	470	210	42	306-4984
1000-1250*	390	530	250	51	306-4986

\* 630 - 1250 Ampere Switches are Rear Connect, all others are Front Connect

## Electrical Performance

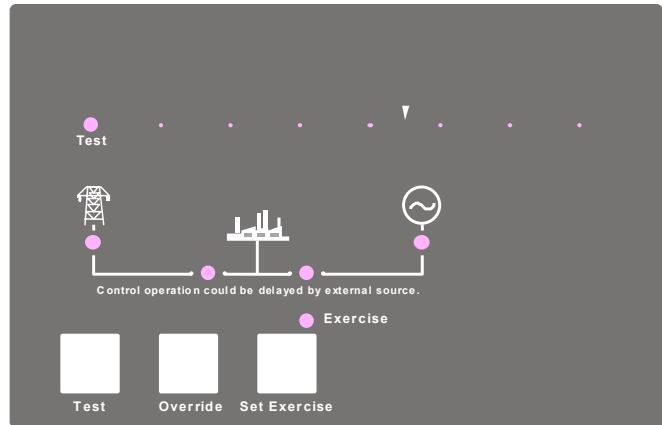
Rated Voltage	110-480 VAC					
Rated Current	63 A	100-125 A	160-200-225-250 A	350-400-500 A	630-800 A	1000-1250 A
Connection	Front	Front	Front	Front	Rear	Rear
No. of Poles	2, 3, 4 Pole	2, 3, 4 Pole	2, 3, 4 Pole	2, 3, 4 Pole	2, 3, 4 Pole	2, 3, 4 Pole
Overload Current (Making-Breaking Test)	95 A	188 A	375 A	750 A	1200 A	1875 A
Endurance Cycles @ Current (Operational Performance Capability)	5000 @ 63 A, 1000 @ 0 A	5000 @ 125 A, 1000 @ 0 A	5000 @ 250 A, 1000 @ 0 A	2500 @ 500 A, 500 @ 0 A	2500 @ 800 A, 500 @ 0 A	2500 @ 1250 A, 500 @ 0 A
Operating frequency	1 per minute					1 per 3 minutes
Withstand Current with Fuse (Conditional Short Circuit Test)	26 kA @ 480 VAC RT16NT-00 63A	26 kA @ 480 VAC RT16NT-00 125A	38 kA @ 480 VAC RT16NT-2 250A	50 kA @ 480 VAC RT16NT-3 500A	55 kA @ 480 VAC RT16NT-4 800A	65 kA @ 480 VAC RT16NT-4 1250A
Transfer Time	<100 ms					
Auxiliary Switches	1 Form C contact (N.O., N.C., Com) for Normal power and 1 for Emergency power.					
Accessories	Elevator Signal Relay, Programmable 7 Day Clock, Manual Restore, Auxiliary Relays, Battery Chargers.					

## Transfer Switch Internal Wiring



# Microprocessor-based Control

- Simple, easy-to-use control provides transfer switch information and operator controls
- LED lamps for source availability and source connected indication, exercise mode, and test mode. LED status lamps also provided for control set-up and configuration.
- Control pushbuttons to initiate test, override time delays, and set exercise time.
- Field-configurable for phase check or programmed transition operation.
- Control is prototype-tested to withstand voltage surges per EN 60947-6-1.
- TS 1310 for Line to Line sensing applications.
- TS 1311 for Line to Neutral sensing applications.



## Control Functions

**Voltage Sensing:** All phases on the normal source, and single phase on generator source. Normal Source Pickup: adjustable 90-95%, Dropout: adjustable 70-90% of nominal voltage; Generator Source Pickup: 90%, dropout: 75% of nominal voltage.

**Frequency Sensing:** Generator Source Pickup: 90% of nominal frequency; Dropout: 85% of nominal frequency.

**Operating Modes:** Open transition with programmed transition (adjustable 0-10 seconds); Open transition with phase check monitor and delayed transition backup; Exercise mode; and Test mode.

**Phase Check:** Configurable for initiation of transfer functions when sources are in phase, and including ability to enable a programmed transition backup to the function so that if sources are not in-phase within 120 seconds the system will retransfer with programmed transition function.

**Exerciser Clock:** Switch is furnished with an integral engine exerciser configurable for operation on a 7, 14, 21, or 28-day cycle with a fixed exercise period duration of 20 minutes. A 12-hr exerciser time offset allows for the convenient setting of exercise time without the need to activate the timer at the exact time that you need to schedule the generator exercise for. Software selectable capability allows for the exercising of the generator with or without load.

## Time-Delay Functions

**Engine Start:** Prevents nuisance genset starts due to momentary power system variation or loss. Adjustable: 0-10 seconds; default: 3 seconds.

**Transfer Normal to Emergency:** Allows genset to stabilize before application of load. Prevents power interruption if normal source variation or loss is momentary. Allows staggered transfer of loads in multiple transfer switch systems. Adjustable 0-300 seconds, default 5 seconds.

**Retransfer Emergency to Normal:** Allows the utility to stabilize before retransfer of load. Prevents needless power interruption if return of normal source is momentary. Allows staggered transfer of loads in multiple transfer switch systems. Adjustable 0-30 minutes, default 10 minutes.

**Genset Stop:** Maintains availability of the genset for immediate reconnection in the event that the normal source fails shortly after transfer. Allows gradual genset cool down by running unloaded. Adjustable 0-30 minutes, default 10 minutes.

**Programmed Transition:** Controls the speed of operation of the transfer switch power contacts to allow load generated voltages from inductive devices to decay prior to connecting a live source. Adjustable 0-10 seconds, default 0 seconds.

**Elevator Signal:** Provides an adjustable transfer pending time delay to prevent interruption of power during elevator operation or as a load disconnect signal. Can be enabled to time out after transfer for the same duration as the pre-transfer setting. Adjustable: 0-300 seconds. (Requires optional elevator signal relay for use.)

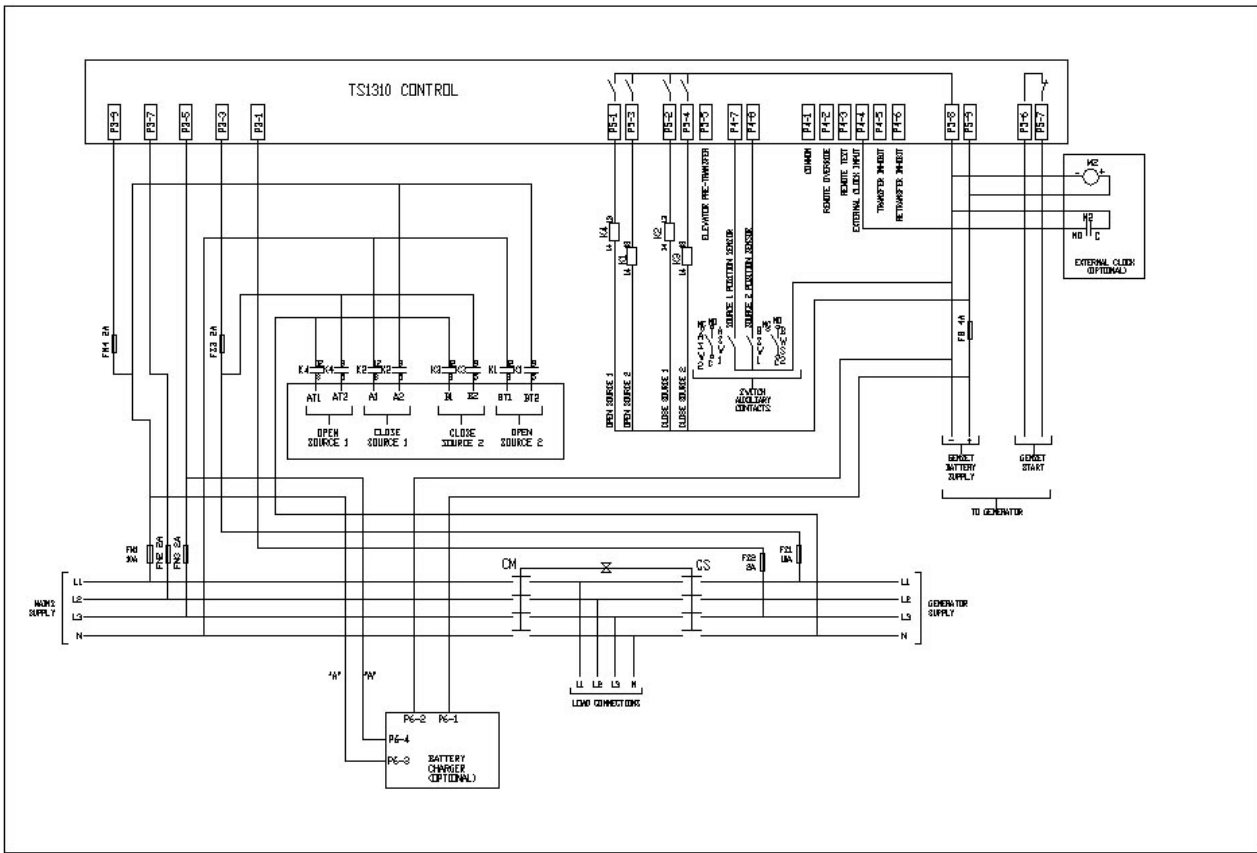
## Options

**Elevator Signal Relay:** Provides a relay output contacts for the signal relay function. Contact rating is 5A @ 380VAC.

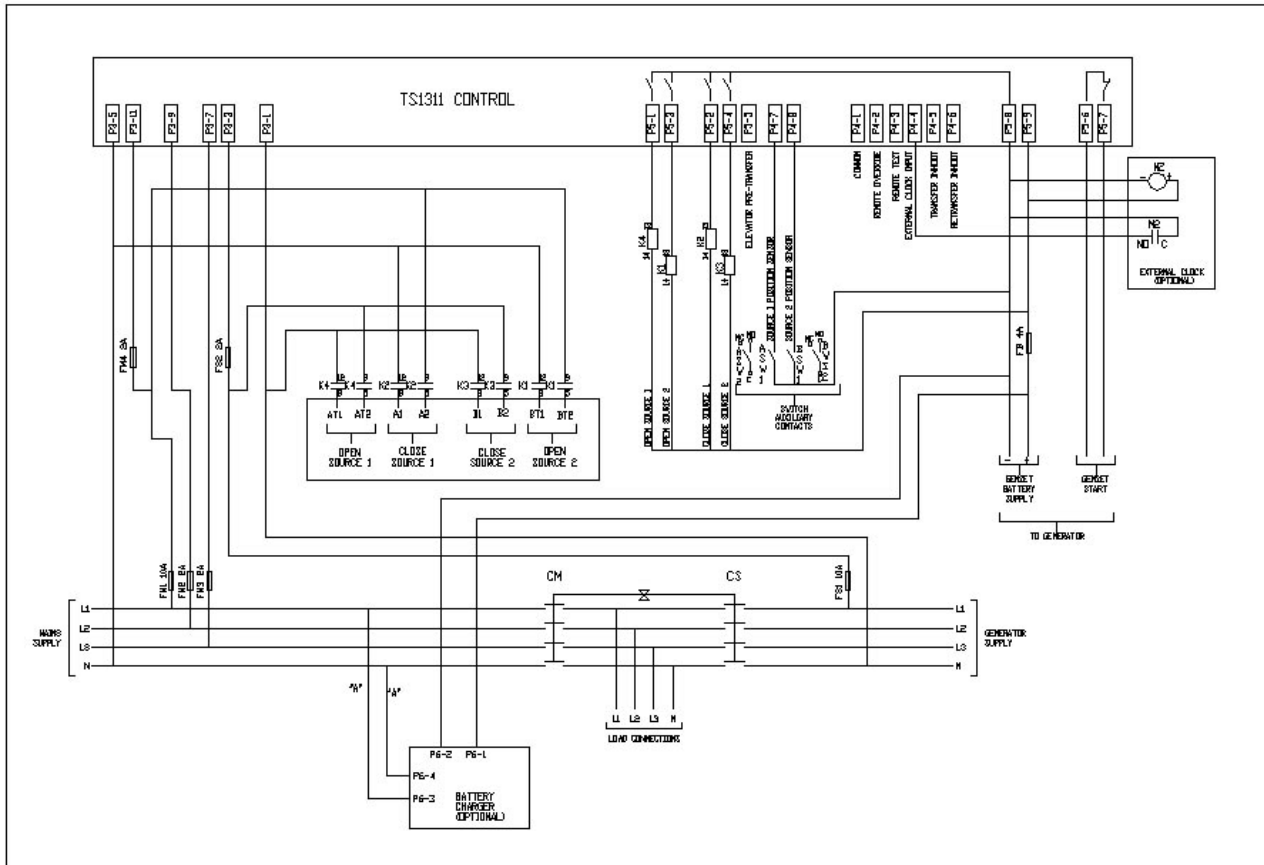
**Programmable Exerciser Clock:** Provides a fully-programmable 7-day clock to provide greater flexibility in scheduling exercise periods than standard integral exerciser. Peaking function feature allows for generator operation during periods of high utility rates.

**Manual Restore:** Provides a key switch on the front door to allow the operator to control when the switch transfers to the normal source.

## Typical Wiring Diagram using the TS1310 Control (Line to Line Voltage Sensing)



## Typical Wiring Diagram using the TS1311 Control (Line to Neutral Voltage Sensing)



## A Global Partner for all your Power Needs

Cummins Power Generation is a multi-national corporation focused on providing power solutions to customers throughout the globe. With manufacturing facilities around the world, we engineer, develop and manufacture a wide array of power products that include Generators, Paralleling Switchgear, Transfer Switches and Controls to suit the needs of the global power market.

At Cummins Power Generation we offer you the peace of mind that comes from knowing you are purchasing a product that is manufactured following the stringent standards of a company that has been in the business of manufacturing transfer switches since the mid 1950's. Our installed product base of hundreds of thousands of transfer switches coupled with a distributor network unmatched by any other manufacturer, makes us the global leader for your critical power needs.

Cummins Power Generation is part of Cummins Inc., a global power leader that serves its customers through more than 680 Company-owned and independent distributor locations in 137 countries and territories. Cummins also provides service through a vast dealer network of more than 5,000 facilities in 197 countries and territories.

## Warranty

All components and subsystems are covered by an express, limited warranty effective 12 months from date of commissioning to a maximum of 18 months from date of sale.

## Certifications

Transfer switches meet or exceed leading code requirements:



**CE** - All switches bear the CE mark.

**IEC** - All switches meet IEC 947-6-1 requirements

## See your distributor for more information



**Cummins Power Generation**  
**Manston Park, Columbus Avenue**  
**Manston, Ramsgate**  
**Kent CT12 5BF, UK**  
**Tel. +44 (0) 1843 255000**  
**Fax: +44 (0) 1843 255902**  
**Email: [cpg.uk@cummins.com](mailto:cpg.uk@cummins.com)**  
**[www.cumminspower.com](http://www.cumminspower.com)**

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