

Transfer Switches

GTEC

**63 - 1250 Amp
2 Pole, 3 Pole and 4 Pole**



Description

GTEC series transfer switches provide normal and generator set source monitoring, generator set starting, and load transfer functions for emergency, standby, and optional standby applications. GTEC transfer switches are continuously rated, so they can be applied in applications up to their nameplate rating.

The transfer switch power contacts are silver alloy composition with high-pressure design that can withstand thousands of switching cycles without burning, pitting, or welding. They require no routine contact maintenance and provide 100% continuous current ratings.

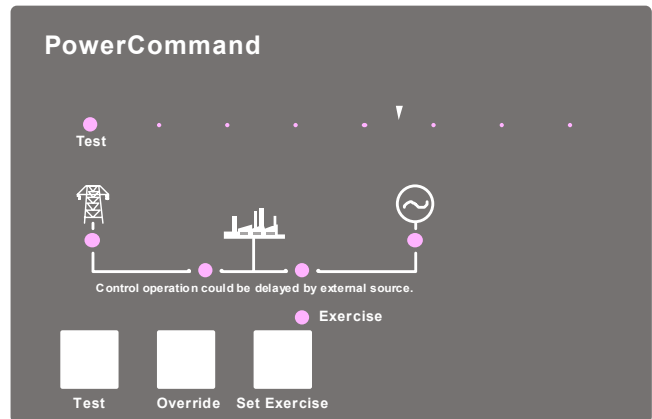
The transfer switch control is reliable and easy to understand, utilizing LED lamps for status indications, and push-button controls for operator functions. The control is field-programmable without the use of service tools.

Features

- **Microprocessor Control** - A fully featured microprocessor control is standard. All features, settings, and adjustments are software-enabled for ease of setup and accuracy.
- **Advanced Transfer Switch Mechanism** – True transfer switch mechanism with positive break before make action.
- **Manual Operation** - Handle furnished with the switch allows for manual operation of the switch with proper disconnection of power sources.
- **Positive Interlocking** - Mechanical interlocking prevents source-to-source connection through the power or control wiring.
- **Main Contacts** - Heavy-duty silver alloy contacts with multi-leaf arc chutes are rated for 100% load interruption.
- **Easy Service/Access** - Door-mounted controls, ample access space, and compatible terminal markings allow for easy access. User friendly controller is easily configurable in the field.
- **Product lines, Accessories and Services** - Cummins Power Generation offers a wide range of accessories and services to suit your requirements.
- **Certifications** - Cummins Power Generation GTEC Transfer Switches are certified to a wide range of standards, including standard IEC 60947-6-1 AC31B.
- **Warranty** - Cummins Power Generation offers single-source responsibility at both the factory and distributor levels for warranty, service, and parts support.

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.
- Integral exerciser clock
- Control is prototype-tested to withstand voltage surges per EN 60947-6-1.
- Gold Flashed generator start contacts



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.

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 through the control wiring.
- 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.

Short Circuit Capability Ratings

The transfer switches listed below must be protected by fuses. These switches are rated for circuits that are protected by fuses only. The reference table below has a listing of fuse types that must be used with the respective transfer switches. Short Circuit Ratings are stated in symmetrical RMS amperes.

FUSE PROTECTION		
Transfer Switch Ampere	Max WCR @ Volts with Current Limiting Fuses	Max Fuse, Size and Type
63	26,000 @ 480 VAC	RT16NT-00 63A
100 - 125	26,000 @ 480 VAC	RT16NT-00 125A
160 – 200 – 225 - 250	38,000 @ 480 VAC	RT16NT-2 250A
350 – 400 - 500	50,000 @ 480 VAC	RT16NT-3 500A
630 - 800	55,000 @ 480 VAC	RT16NT-4 800A
1000 - 1250	65,000 @480 VAC	RT16NT-4 1250A

Enclosures

The transfer switch and control are mounted in a single-door key-locking enclosure. Enclosures are IEC IP32 rated.

Enclosure Dimensions – IP32 Enclosure						
Amp Rating	Outline Drawing	Height mm	Width mm	Depth Door Closed mm	Depth Door Open mm	Weight kg
63	300-6004	800	600	226	800	46
100-125	300-6004	800	600	226	800	48
160-200-225-250	300-6005	1000	800	226	1000	57
350-400-500	300-6005	1000	800	226	1000	65
630 – 800	300-6006	1370	742	631	1348	175
1000 - 1250	300-6006	1370	742	631	1348	184

Current Ratings (Amps)

- ☐ 63
- ☐ 100
- ☐ 125
- ☐ 160
- ☐ 200
- ☐ 225
- ☐ 250
- ☐ 350
- ☐ 400
- ☐ 500
- ☐ 630
- ☐ 800
- ☐ 1000
- ☐ 1250

Voltage Ratings

- ☐ 110/190
- ☐ 115/200
- ☐ 120/208
- ☐ 127/220
- ☐ 139/240
- ☐ 220/380
- ☐ 230/400
- ☐ 240/416
- ☐ 255/440
- ☐ 277/480

Pole Configuration

- ☐ Poles - 2 (Solid Neutral)
- ☐ Poles - 3 (Solid Neutral)
- ☐ Poles - 4 (Switched Neutral)

Frequency

- ☐ 60 Hertz
- ☐ 50 Hertz

Application

- ☐ Utility to Genset

Enclosure

- ☐ None
- ☐ IP32: General purpose indoor

Control Voltage

- ☐ 12V, Genset Starting Voltage
- ☐ 24V, Genset Starting Voltage

Control Options

- ☐ External Exercise Clock
- ☐ Elevator Signal Relay
- ☐ Manual Restore Switch

Battery Chargers

- ☐ Battery Charger - 2 Amps, 12/24 Volts
- ☐ Battery Charger - 15 Amps, 12 Volts
- ☐ Battery Charger - 12 Amps, 24 Volts

Applications Modules

- ☐ Terminal Block - 10 points (not wired)

Auxiliary Relays

Relays are factory installed. All relays provide (2) sets of form C (DPDT) contacts rated 5A @ 380 VAC. Relay terminals accept (1) 0.75 mm to (2) 4 mm. wires per terminal.

- ☐ Aux. Relay - 24 VDC Coil - Installed, not wired (for customer use)
- ☐ Aux. Relay - 24 VDC Coil - Emergency Position - Relay energized when GTEC in Source 2 (Emergency) position
- ☐ Aux. Relay - 24 VDC Coil - Normal Position - Relay energized when GTEC in Source 1 (Normal) position
- ☐ Aux. Relay - 12 VDC Coil - Installed, not wired (for customer use)
- ☐ Aux. Relay - 12 VDC Coil - Emergency Position - Relay energized when GTEC in Source 2 (Emergency) position
- ☐ Aux. Relay - 12 VDC Coil - Normal Position - Relay energized when GTEC in Source 1 (Normal) position

Warranty

- ☐ Warranty, 12 months from commissioning to a maximum 18 months after date of sale.

Available Products and Services

A wide range of products and services is available to match your power generation system requirements. Cummins Power Generation products and services include:

- Diesel and Spark-Ignited Generator Sets
- Transfer Switches
- Bypass Switches
- Parallel Load Transfer Equipment
- Digital Paralleling Switchgear
- PowerCommand Network and Software
- Distributor Application Support
- Planned Maintenance Agreements

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



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Warning: Backfeed to a utility system can cause electrocution and/or property damage. Do not connect to any building's electrical system except through an approved device or after building main switch is open.