

ZT3000 Series

Multi-Source Switching Systems



Introduction

The power needs of a facility may require more than a single standby genset, however, source type and availability, technical issues and budget needs may not allow for paralleling multiple engine generators or other more typical solutions.

It is with these requirements in mind that GE Zenith offers the ZT3000 series of multi-source switching systems. Based on GE Zenith's proven ZTS series of automatic transfer switches, the ZT3000 series integrates multiple power switching sections with field proven controls to meet and exceed the customers' requirements for reliable multi-source transfer.

Features and Benefits

The ZT3000 series is available in several basic configurations and may be configured from a list of transition types and accessories available with the ZTS series of products. The ZT3000 series is available in a common NEMA 1 enclosure (NEMA 3R, 4, 12 enclosure types are available) with units intercabled. Interbus (600-4000 amps) and separate enclosures (power interconnections supplied) are available. In addition, the ZT3000 may be specified to include service entrance rated configurations.

The ZT3000 series is designed with flexibility in mind. Systems may be configured to include:

- "First Up" Generator Sensing
- Prime Source Selection
- Service Entrance Protection/Connection
- Bypass/Isolation



GE Zenith ZT3100 Series: Three-Source Transfer Systems

The ZT3100 Series is designed to switch a single load between three available sources of power. Sources may be multiple utilities, generator sets or combinations of the two.

ZT3110

When the primary source (U1) fails, the master transfer switch (A1) connects the load to the secondary utility (U2). Should this source also fail, the engine generator (G) will start and the source selector transfer switch (A2) will connect the load to the genset (G) when it reaches proper operating parameters. (see Figure 1)

If either utility source (U1/U2) becomes available, the ZT3110 microprocessor controller will transfer the load to the available utility and then shut down the genset (G) until the next Source utility failure.

ZT3120 and ZT3130

In place of a second utility, a second generator set (G2) is installed to act as standby. Two transfer logic schemes can be selected depending on facility requirements. (see Figure 2)

The ZT3120 starts both engine gensets when a utility (u) failure occurs and the load is connected to the first available genset (G1). The second set (G2) will run on a standby timer for a period of 5 minutes to verify that the first set will continue to run and then shut down. If the connected genset (G1) fails, the second set (G2) will restart and assume the load until utility (U) restoration.

The ZT3130 operates in a similar mode, however, the configuration supplied with a prime genset selector switch which causes only one of the sets to start on utility (U) failure and act as the primary standby unit. Either unit may be selected. If the primary genset does not assume the load within a preset period (typically 10 seconds), the secondary genset will be started and the load transferred to it. The primary genset remains the first standby set and if it successfully starts and maintains operating parameters, the load will be transferred to it and the secondary genset will be shut down until the next failure.

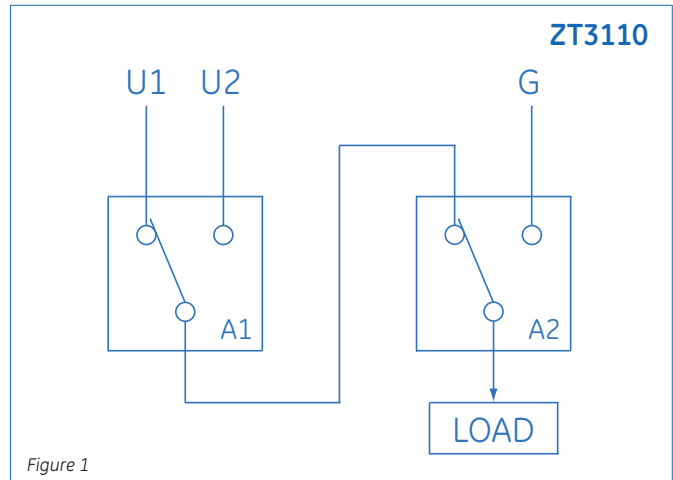


Figure 1

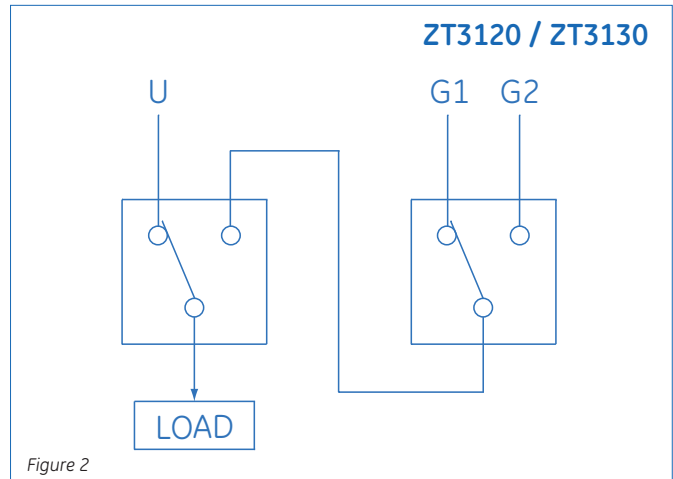


Figure 2

Ordering Information			
ZT3000 Series	Designation	Ampere Sizes	Poles
3110	3 source transfer system	40-4000	2, 3, 4
3120	3 source transfer system	40-4000	2, 3, 4
3130	3 source transfer system	40-4000	2, 3, 4

NOTES:

- 1 - Available in ZTS, ZTSD, ZBTS and ZBTSD configurations
- 2 - Available with SE (Service Entrance) option (600-4000 amps)
- 3 - Available in cable or bus connection (bus available 600-4000 amp ATS and all bypass sizes)
- 4 - 1600-4000 amp bypass systems are shipped in separate enclosure sections
- 5 - 1600-4000 amp systems are available only as interbus (no cable) from the factory if interconnection is requested

Accessories Included

Each base transfer switch includes the accessory package detailed below.

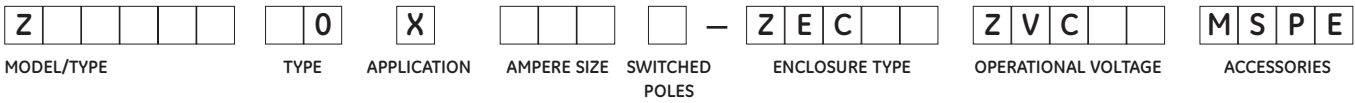
Module MSPE

6P	Microprocessor activated test switch (Momentary)	Q7	Inhibit transfer to normal (Source 1) - Relay (S.P.D.T.) (Need to specify voltage - 120 VAC, 24 VAC, 24 VDC - 120V default standard)
A1	Auxiliary Contact Energized on Normal (SPDT)	R1	Over Voltage – Normal Source
A1E	Auxiliary Contact Energized on Emergency (SPDT)	R8	Over Voltage – Emergency Source
A3	Auxiliary Contact – Closed in Emergency Position	R16	Phase Sequence Sensing
A4	Auxiliary Contact – Closed in Normal Position	R17	Under-voltage Sensing: Emergency (3 phase)
CDP	Programmable exerciser daily, 7/14/28/365 days user-selectable, with or without load	R50	In-phase monitor (if delayed transition units are not specified)
E	Engine Start Contact	S5P	Microprocessor activated auto/manual retransfer selector switch for transferring to Normal (Source 1) (includes microprocessor activated YN accessory)
E/LP	Event log of last 16 events	S13P	Microprocessor activated commit/no commit on transferring to Emergency (Source 2) (with enable/disable settings)
J2E	Over/Under Frequency – Normal Source	T	Time Delay – Retransfer to Normal (Adjustable)
J2N	Over/Under Frequency – Emergency Source	T3/W3	Pre-signal contact on transfer to Normal (Source 1) or Emergency (Source 2) during test
K/P	Frequency Indication on the controller	U	Time Delay – Engine Cooldown (Adjustable)
L1	Pilot Light – Transfer Switch in Normal Position	UMD	Pre and post transfer output adjustable time range. Functions in both directions. Includes 2 circuits. (Additional circuits available).
L2	Pilot Light – Transfer Switch in Emergency Position	VI	Voltage imbalance between phases (3 Phase only)
L3	Pilot Light – Emergency Power Available	W	Time Delay – Transfer to Emergency (Adjustable)
L4	Pilot Light – Normal Power Available	YEN	Time Delay Bypass Switch (T & W Timers)
P1	Time Delay – Engine Start (Adjustable)		
Q2	Peak Shave/Remote Load Test: Input for peak shave or remote load test; includes automatic return to normal if emergency source fails and normal is present; 120 VAC or 24 VDC		
Q3	Inhibit Transfer: Input circuit to inhibit transfer to emergency; 120 VAC or 24 VDC		

Each system, as applicable to its sequence of operation, will be provided with the necessary control logic and selector switches to accomplish the following (as applicable):

- Load shed to neutral position (secondary load transfer switches)
- Prime standby source selection
- Interlocks

ZT3000 Series Ordering Information



Z T S O O O
Standard (Open Transition)

1 0
Model 3110

X
3 Source

0 0 4
40 amps

B
2 Poles **

0 1
Type 1 Enclosed

A B
Consult Table Below

Z T S D O O
Delayed Transition

2 0
Model 3120

0 0 8
80 amps

E
3 Poles

1 2
Type 12 Enclosure *

Z B T S O O
Standard (Open Transition) w/Bypass

3 0
Model 3130

0 1 0
100 amps

F
4 Poles

3 R
Type 3R Enclosure

Z B T S D O
Delayed Transition w/Bypass

0 1 5
150 amps
** Not available in 1600-4000 amp versions

4 0
Type 4 Enclosure *

0 2 2
225 amps

* Not available in 3000, 4000 amp versions

0 2 6
260 amps

0 4 0
400 amps

0 6 0
600 amps

0 8 0
800 amps

1 0 0
1000 amps

1 2 0
1200 amps

1 6 0
1600 amps

2 0 0
2000 amps

3 0 0
3000 amps

4 0 0
4000 amps

Switch Types

- Standard Transition:** Unless otherwise noted, standard bypass/isolation switch with quick transfer will be supplied.
- Delayed Transition:** When ordered as the ZTSD, the delayed transition switch offers time delay during transfer from one position to the other. This is primarily for transfer of large motor or inductive loads.
- Bypass/Isolation:** When ordered as the ZBTS, the bypass transition switch offers a draw-out mechanism, with electrical and mechanical interlocks for secure removal after load bypass. In this way the transfer switch and/or the control panel may be tested, isolated and removed for maintenance without load interruption.

Example

ZTS00020X004F-ZEC01ZVC40MSPE

This number string shows the correct format for a ZT3000 Series Automatic Transfer Switch Model 3120, 3 Source, 40 amps, 4 pole, NEMA Type 1 enclosure, 120/208V 3φ, 4 wire, 60 Hz system with the standard group of accessories.

UL 1008 Withstand and Closing Ratings

Please refer to GE Zenith Controls Bulletin TB-1102.

A	B	Voltage	Phase	Config.	Hz
1	0	120	1	2 wire	60
2	0	120/240	1	3 wire	60
2	1	120/208	1	3 wire	60
3	0	240	3	3 wire	60
3	1	208	3	3 wire	60
3	2	220	3	3 wire	50
3	3	120/240	3	4 wire	50
3	4	110/220	3	4 wire	60
3	5	139/240	3	4 wire	60
3	8	120/240	3	4 wire	60
4	0	120/208	3	4 wire	60
4	1	127/220	3	4 wire	60
4	2	127/220	3	4 wire	50
5	0	480	3	3 wire	60
5	1	440	3	3 wire	60
5	2	440	3	3 wire	50
5	5	460	1	3 wire	50
5	7	480	1	2 wire	60
5	8	254/440	3	4 wire	60
6	0	575	3	3 wire	60
6	1	347/600	3	4 wire	60
7	0	277/480	3	4 wire	60
7	1	277	1	2 wire	60
7	4	266/460	3	4 wire	60
7	5	460	3	3 wire	60
8	0	120/240	2	4/5 wire	60
8	2	380	1	2 wire	50
9	0	240/416	3	4 wire	60
9	1	220/380	3	4 wire	60
9	2	220/380	3	4 wire	50
9	3	240/416	3	4 wire	50
9	7	380	3	3 wire	60

Note: Operating voltage must be specified at time of order. Only the most common voltages are shown above.



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