Zenith ZTS Series

Low-Voltage Automatic and Manual Transfer Switches

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Since its introduction, Zenith ZTS Series of transfer switches has become a hallmark of quality and performance. Reliability resulting from superior design and heavy duty construction has made the ZTS the industry standard for critical installations. Our emphasis on research and development, design improvements, materials, manufacturing methods, quality assurance and service yields products that have been proven in hundreds of thousands of applications.

Subsequent to the first ZTS units installed, our engineering staff has been dedicated to the improvement and expansion of our line.

- ZTS Automatic Transfer Switches 40-4000 Amps
- ZTSD Delayed Transition Transfer Switches 40-4000 Amps
- ZTSCT Closed Transition Transfer Switches 100-4000 Amps
- ZBTS Automatic Transition Bypass Switches 100-4000 Amps
- ZBTSD Delayed Transition Bypass Switches 100-4000 Amps
- ZBTSCT Closed Transition Bypass Switches 100-4000 Amps

All ZTS products meet or exceed industry requirements allowing specification and installation confidence.

- UL 1008 listed through 480 VAC
- CSA C22.2 No. 178 listed through 600 VAC
- IEC 947-6-1 listed through 480 VAC
- UL 1008 listed for Short Time rated 1600-3000A (Non-bypass) ATS for 0.50 sec and 1.0 sec time duration

- Codes and Standards
  - NFPA 70, 99, 101, 110
  - IEEE 446, 241, 602
  - NEC 517, 700, 701, 702
  - NEMA ICS-10
- Controls tested in accordance with:
  - IEEE 472 (ANSI C37.90A)
  - EN55022 Class B (CISPR 22) (Exceeds EN55011 & MILSTD 461 Class 3)
  - EN61000-4-2 Class B (Level 4)
  - EN61000-4-3 (ENV50140) 10 v/m
  - EN61000-4-4
  - EN61000-4-5, IEEE C62.41 (1.2 X 50μs, 0.5 to 4 kV)
  - EN61000-4-6 (ENV50141)
  - EN61000-4-11
  - EN55011 :2009+A1 :2010

- Equipment (Controls and Power Section) Seismic Test Qualified to:
  - IBC-2015
  - IEEE-693-2005
- Enclosures meet the requirements of:
  - UL 508, 50
  - ANSI C33.76
  - ICS 6
  - NEMA 250
- Quality System
  - ISO 9001 Registered

Specification Assistance

ABB offers a complete range of product guide specifications to help you determine your needs.

For more information, please consult your local ABB representative, our factory or our website

Zenith ZTS Series Automatic Transfer Switches

The Zenith ZTS Series is the building block of our transfer switch product line. This ruggedly built power contactor family of switches has been specifically designed for transfer switch duty with dependability, versatility and user friendliness of prime concern. ZTS switches are available in open type construction for switchboard installation or nema enclosed to the customer's specifications. The power panel components, consisting of power switching contacts, drive mechanism and terminal lugs, are mounted on a specially formed panel. Logic devices including microprocessor control auxiliary time delays and special accessory equipment are assembled on the door for ease of maintenance and separation from the power section. They are connected with a numbered wiring harness equipped with a disconnect plug that allows isolation of the control panel for maintenance.

ZTS Series Method of Operation

When Source 1 voltage fails or drops to a predetermined point (usually 80% of nominal), if required, a circuit is closed to start the engine generator set. When Source 2 reaches 90% of rated voltage and 95% of rated frequency, the drive solenoid is energized through the Source 2 coil control relay, causing the main contacts to disconnect the load from Source 1 and connect it to Source 2. After the drive solenoid has completed its electrical stroke and is seated, the Source 2 coil control relay opens to disconnect it. The transfer switch is now mechanically locked in the Source 2 position. When Source 1 voltage is restored to a predetermined point (usually 90% of nominal), the control voltage sensing energizes. The Source 1 side coil relay closes, and after the drive solenoid has completed its electrical stroke and is seated, the coil control relay opens to disconnect it. The transfer switch is now mechanically locked in the Source 1 position.

Drive Mechanism

All Zenith ZTS switches employ the simple "over-center" principle to achieve a mechanically locked position in either Source 1 or Source 2 and the high speed drive assures contact transfer in 100ms or less. High contact pressure and positive mechanical lock allow for high withstand and closing ratings, far exceeding UL requirements. All ZTS units are listed with UL time-based rating, coordinated breaker and current limiting fuse ratings. Open and Delayed Transition ATS mechanism does not allow both sources to be connected at the same time.

Neutral Switching

The Zenith ZTS Series is available in true four pole designs for multi-source power systems that require neutral switching. The neutral contact is on the same shaft as the associated main contacts. This ensures positive operation, and avoids any possibility that the neutral contact will fail to open or close, as is possible when the neutral pole is an add-on accessory. The neutral contacts are identical to the main contacts, having the same current carrying and high withstand/closing ratings as the mains. They are designed to break last and make first to reduce the possibility of transients while switching the neutral.

Safe Manual Operation

The ZTS manual operator consists of a large, easy-to-use handle that fits securely for manual operation during installation and maintenance or in an emergency. The ZTS may be provided with an operator inhibit switch to disconnect the electrical drive prior to maintenance. Fully enclosed wrap-around arc covers shield the main contacts and mechanical components, preventing operator exposure during manual operation.

Zenith ZTS Series Automatic Transfer Switches

Transferring Large Motor or Highly Inductive Loads
Some loads, especially large motors, receive severe mechanical stress if power is transferred out of phase while the motor is still rotating. Also, back EMF generated by a motor may result in excess currents that can blow fuses or trip circuit breakers. ABB offers four solutions to these problems:

Universal Motor Disconnect (UMD): This load control disconnects a large motor via its control circuit for an adjustable period of time prior to transfer in either direction. For switching multiple motors, Accessory UMD disconnects the motors prior to transfer and brings them back on line sequentially.

Accessory R50: This is an in-phase monitor that compares the phase angle between both sources of power and prevents transfer until the two are approximately in phase (within a selfadjusting range). A high speed transfer action, coupled with the MX series microprocessor control logic, ensure closures at or near zero degree phase difference.

Series ZTSD: ABB offers delayed transition switching on transfer switches rated 40 amperes and above–the Zenith ZTSD Series. This programmed center-off position allows for the full decay of rotating motors or transformer fields. It can also be used for load shedding of selected circuits or other applications which require a means to disconnect the load from either source. Major UPS system manufacturers recommend delayed transition switches for proper restart sequencing of their systems.

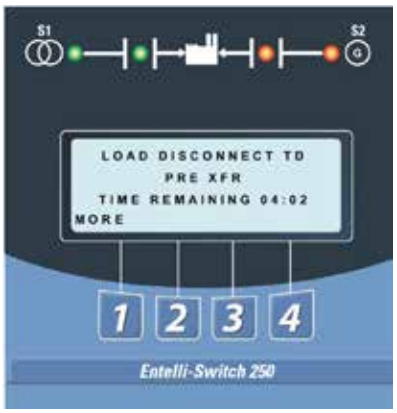
Series ZTSCT: Zenith series of closed transition switches combine ZTSD operation during a source failure with a highly engineered control system that allows momentary paralleling (100 ms) of two acceptable sources, thereby limiting the impact of transfer on the load.

Electrical Ratings
- Ratings 40 to 4000 amperes
- 2, 3 or 4 Poles
- Open type, NEMA 1, 3R, 4, 4X and 12
- Available to 600 VAC, 50 or 60 Hz
- Suitable for emergency and standby applications on all classes of load, 100% tungsten rated through 400 amps
- UL 1008 listed at 480 VAC
- CSA C22.2 No. 178 certified at 600 VAC
- IEC 947-6-1 listed at 480 VAC

Performance Features
- Contact transfer speed less than 100 milliseconds
- High close-in and withstand capability
- Temperature rise test per UL 1008 conducted after overload and endurance tests - exceeds UL requirements
- Available in ZTS (utility-generator), ZTSU (utilityutility), ZTSG (generator-generator) and ZTSM (manual) configurations
- Short Time rated 1600-3000A (Nonbypass) ATS for 0.50 sec and 1.0 sec time duration

Design and Construction Features
- Double throw, interlocked operation
- Electrically operated, mechanically held by a simple, over-center mechanism
- Segmented silver tungsten alloy contacts with separate arcing contacts on 225 amp and above
- Arc quenching grids, enclosed arc chambers, and wide contact air gap for superior source-to-source isolation on all units
- Control circuit disconnect plug and drive inhibit switch for safe maintenance
- Components accessible for inspection and maintenance without removal of the switch or power conductors
- Mechanical indicator and contact chamber cover designed for inspection, safety and position designation
- Open Transition ATS perform break before make operation on all phases

MX250 Series Microprocessor Controller



Enhanced Display and Settings
LEDs are used in a recognizable line configuration for continuous monitoring of switch position. The LCD display shows source availability, exercise time delay operation and system source condition. A simplified adjustment is featured for voltage, frequency and time delay settings.

The control operates off a close differential 3-phase under-voltage sensing of Source 1, factory standard setting 90% pickup, 80% dropout; under-frequency sensing of Source 1 factory setting 95% pickup; 3-phase voltage and frequency sensing of Source 2, factory standard setting 90% pickup voltage, 95% pickup frequency. All factory settings are operator adjustable.

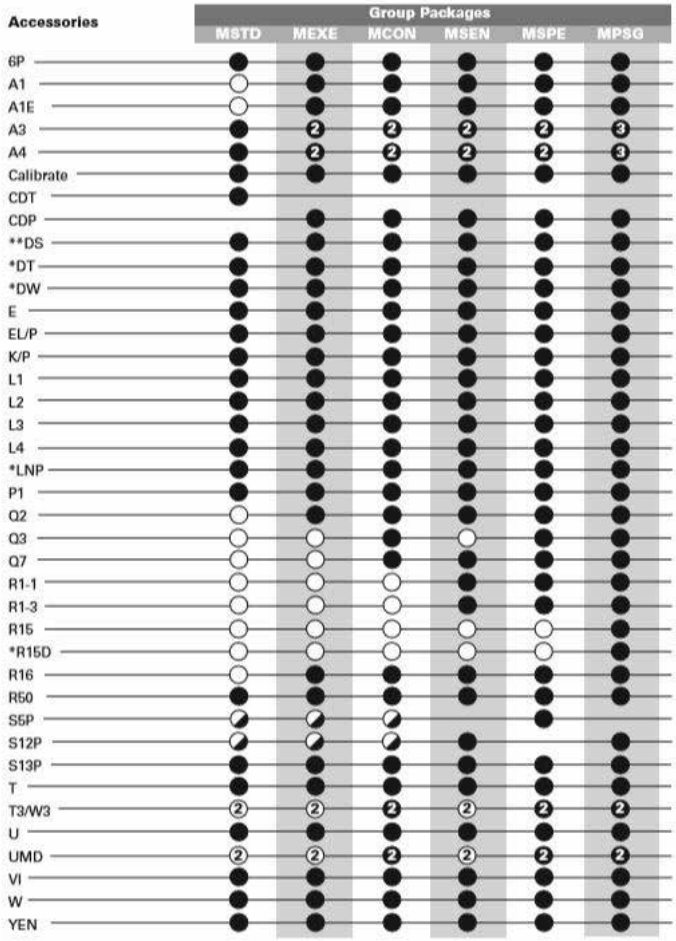
A test function is standard (fast test/load/no load) to simulate Source 1 failure - automatically bypassed should Source 2 fail.

More Enhanced Features
- Available in all transfer modes: ~ Open, Delayed & Bypass/Isolation ~ Closed (with newly integrated transition control)
- User-friendly programmable engine exerciser, used for the engine generator with or without load, at any interval in a one-year period
- Controller can be configured to any voltages for worldwide application
- Real-time display of ATS status, including active timer(s)
- Multiple levels of user-defined password protection
- Serial communications allowing connectivity with other ATS's, paralleling switchgear, and SCADA systems
- Time-tested synchronous logic automatically measures phase angle and frequency allowing disturbance-free transfer
- Unsurpassed statistical ATS/System monitoring available in real-time
- T3/W3 elevator pre-signal. Automatically bypassed if the selected source fails, minimizing time an elevator is without power
- Universal Motor Disconnect (UMD) sends a pre-signal, post-signal or both to any motor control center. Not bypassed in an outage, the UMD ensures safety in the event of a single phase loss
- Voltage unbalance detection standard
- Extensive 2/5/10 Warranty

Performance Features
- UL, CSA and IEC listed
- Ringing wave immunity per IEEE 472 (ANSI C37.90A)
- Conducted and Radiated Emissions per EN55022 Class B (CISPR 11) (Exceeds EN55011 & MILSTD 461 Class 3)
- ESD Immunity test per EN61000-4-2 Class B (Level 4)
- Radiated RF, electromagnetic field immunity test per EN61000-4-3 (ENV50140) 10v/m
- Electrical fast transient/burst immunity test for EN61000-4-4
- Surge immunity test per EN61000-4-5 (IEEE C62.41) (1.2 x 50µs, 0.5 to 4 kV)
- Conducted immunity test per EN61000-4-6 (ENV50141)
- Voltage dips and interruption immunity EN55011 :2009+A1 :2010

Technical Benefits
- Separate line voltage components for controller isolation
- Inputs optoisolated for high electrical immunity to transients and noise
- Built-in electrical operator protection
- Simplified maintenance – major components are easily replaceable
- Close differential under-voltage sensing of the normal source
- Voltage and frequency sensing of the emergency source (all settings are adjustable)

Zenith ZTS Series Accessory Group Matrix



● Standard Accessory included in the group package.
○ Optional Accessory not included but can be added to group package.
◪ Optional Accessory. Can not be used with accessory having the same symbol.
— N/A
②② Denotes an Accessory with 2 circuits as a standard.
③ Denotes an Accessory with 3 circuits as a standard.

* Delayed Transition Units Only.
** Optional for 40-400 Amp

Zenith ZTS Series Automatic Transfer Switches

6P
Microprocessor activated test switch (Momentary)
6A
Hardwired test switch (Maintained)
6AP
Microprocessor activated test switch (Maintained)
6B
Hardwired test switch (Maintained Auto - Momentary Test) Key operated
6C
Hardwired test switch (Maintained Auto - Maintained Test) Key operated
A1
Auxiliary Contact S.P.D.T. - Normal (Source 1) Failure
A1E
Auxiliary Contact S.P.D.T. - Emergency (Source 2) Failure
A3
Auxiliary Contact - closed in emergency (Source 2) Additional available (10 max.) on ZTS Series and need to be specified
A4
Auxiliary Contact - closed in normal (Source 1) Additional available (10 max.) on ZTS Series and need to be specified
AB3
Auxiliary Contact - closed in bypass emergency (Source 2) (S.P.D.T.) (Standard up to 400A) Additional available (10 max.) on ZBTS Series and need to be specified
AB4
Auxiliary Contact - closed in bypass normal (Source 1) (S.P.D.T.) (Standard up to 400A) Additional available (10 max.) on ZBTS Series and need to be specified
CALIBRATE
Microprocessor activated calibration feature
CDP
Programmable exerciser daily, 7/14/28/365 days user-selectable, with or without load
CDT
Exerciser no load timer
CTAP
Chicago transfer alarm panel mounted in door of enclosure. Includes 3 aux. contacts and fuse.
DS
Disconnect Switch. Disconnects source voltage to transfer power panel.
DT (DELAYED TRANSITION ONLY)
Time Delay from Neutral Switch position to Source 1 on retransfer
DW (DELAYED TRANSITION ONLY)
Time Delay from Neutral Switch position to Source 2 on retransfer E Engine Start Relay
ECM
Ethernet Communication Adapter. Requires MCM (Modbus) Accessory.
EL/P
Event log of last 16 events
F
Fan contact, closed when engine runs.
HT(1)(2)
Heater and Thermostat 208/240V (1) 380/600V (2) mounted and interwired in enclosure. (requires larger enclosure for 40-200A)
K
Frequency Meter (Analog) - Door mounted
K/P
Frequency Indication on the controller
LNP
Center-off position LCD-Indicator
L1
LED light indicates Switch in Source 2 position
L2
LED light indicates Switch in Source 1 position
L3
LED light indicates Source 1 available
L4
LED light indicates Source 2 available
ZNET901A
Modbus Annunciator
M1
Single Phase Amp Meter (Analog)
M2
Three Phase Amp Meter (Analog)
M90
EPM2200 True RMS Digital Meter with display (Amps, Volts, Power, Energy, Power Factory and Frequency). 3 Line LED Display. 50/60 Hz Universal Operation. 1 or 3 phase. Standard Modbus RTU RS485 communications capability. 40 - 1200 Amps.
M90A
Adds Pre-Wiring for Enervista Viewpoint Monitoring of M90 Accessory & ATS Status using Modbus RS485 Serial Communications
M90B
Adds Pre-Wiring for Enervista Viewpoint Monitoring of M90 Accessory & ATS Status using Ethernet TCP/IP Communications

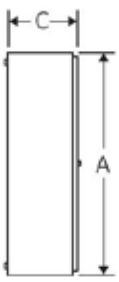
Zenith ZTS Series Automatic Transfer Switches

M91
EPM6000 True RMS Digital Meter with display (Amps, Volts, Power, Energy, Power Factory and Frequency, THD). Certified energy and demand metering. Meets ANSI C12.20 and IEC 687 Accuracy Classes. Front IrDA Port Laptop Connection. Standard Modbus RTU RS485 or DNP 3.0 communications capability.
M91A
Adds Pre-Wiring for Enervista Viewpoint Monitoring of M91 Accessory & ATS Status using Modbus RS485 Serial Communications
M91B
Adds Pre-Wiring for Enervista Viewpoint Monitoring of M91 Accessory & ATS Status using Ethernet TCP/IP Communications
MCM
Modbus RTU Communication Module
N1
Running Time Indicator - Door mounted
N2
Operation Counter - Door Mounted
P1
Engine Start Timer (adjustable to 6 sec.)
P2
Engine Start Timer (adjustable to 300 sec.)
Q2
Peak shave/remote load test/area protection - Input Relay (Need to specify voltage - 120 VAC, 24 VAC, 24 VDC - 120V default standard)
Q3
Inhibit transfer to emergency (Source 2) Load add Input Relay (Need to specify voltage - 120 VAC, 24 VAC, 24 VDC - 120V default standard)
Q7
Inhibit transfer to normal (Source 1) - Input Relay (Need to specify voltage - 120 VAC, 24 VAC, 24 VDC - 120V default standard)
R1-1/R1-3
Over Voltage sensing for normal (Source 1) single (R1-1) or three (R1-3) phase
R15/R15D
Load Shed. Should Source 2 become overloaded, an external signal can be given to ATS to transfer to the Neutral or dead Normal (Source 1) position.
R16
Phase rotation sensing of Normal (Source 1) and Emergency (Source 2)
R50
In Phase monitor between Normal (Source 1) and Emergency (Source 2) to allow transfer
S5P
Microprocessor programmable auto/manual retransfer selection for transferring to Normal (Source 1) (includes controller softkey for YN accessory)
S12P
Microprocessor programmable auto/manual transfer selection for transferring to Normal (Source 1) and Emergency (Source 2) (includes controller softkey for YN & YE accessory)
S13P
Microprocessor activated commit/no commit on transferring to Emergency (Source 2) (with enable/disable settings)
S14
Keyed selector switch for retransfer to normal-test-auto
SW1
Auto/Off/Start Engine control selector - Door mounted (keyed or non-keyed operation available)
SW2
Auto/Off Engine control selector - Door mounted (keyed or non-keyed operation available)
SW3
Source Priority Selector Switch - Door mounted Allows selection of Source 1 or Source 2 to be the Prime Source. Transfer Switch will transfer to selected Prime Source if that Source is available. (keyed or non-keyed operation available)
T
Retransfer to Normal (Source 1) adjustable time delay
T3/W3
Pre-signal contact on transfer to Normal (Source 1) or Emergency (Source 2) during test
U
Engine stop /cool adjustable cool down timer
UMD/A62
Pre and post transfer output adjustable time range. Functions in both directions. Includes 2 circuits. (Additional circuits available).
VI
Voltage imbalance between phases (3 Phase only)
W
Adjustable time delay on transfer to Emergency (Source 2)
YEN/ YER
Bypass transfer timers function (soft key switch in microprocessor)

Zenith ZTS Series Dimensional Specifications / Power Connection Terminals

ZTS Model, Dimensions and Weights

Ampere Rating	Poles	NEMA 1 Height (A)	NEMA 1 Width (B)	NEMA 1 Depth (C)	Reference Figure	Weight Open Type	Weight NEMA 1	Application Notes
40, 80, 100, 150	2, 3	24 (61)	18 (46)	11 (28)	A	21 (10)	57 (26)	1 - 7, 11-14
	4						60 (27)	
225, 260, 400	2, 3	46 (117)	24 (61)	14 (36)		70 (32)	165 (75)	1 - 7, 12-14
	4					75 (34)	170 (68)	
600	2, 3	74 (188)	40 (102)	19.5 (50)	B	166 (75)	380 (172	1 - 8, 12-14
	4					185 (84)	430 (195)	
800, 1000, 1200	2, 3					190 (86)	455 (206)	1 - 8, 12-13
	4					210 (95)	540 (245)	
1600, 2000	3	90 (229)	35.5 (90)	48 (122)	C	740 (336)	1375 (624)	1-13
	4					830 (376)	1480 (671)	
3000	3					740 (336)	1375 (624)	
	4					830 (376)	1480 (671)	
4000	3	90 (229)	46.5 (118)	60 (152)		770 (349)	1595 (723)	
	4					1025 (465)	1850 (839)	



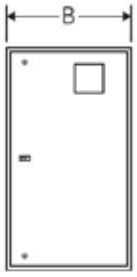


Figure A

Figure B

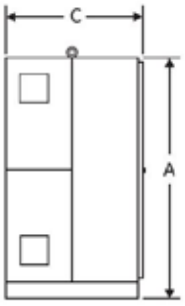


Figure C

AL-CU UL Listed Solderless
Screw-Type Terminals for External Power Connections

Switch, Size, Amps	Normal, Emergency & Load Terminals: Cables/Pole	Normal, Emergency & Load Terminals: Wire Ranges	Switch, Size, Amps	Normal, Emergency & Load Terminals: Cables/Pole	Normal, Emergency & Load Terminals: Wire Ranges
40-80	1	#8 to 3/0	600	2	#2 to 600 MCM
100, 150	1	#6 to 250 MCM	800, 1000, 1200	4	#2 to 600 MCM
225, 260, 400	1	#4 to 600 MCM	1600, 2000, 3000, 4000	*	
	2	1/O to 250 MCM			

Notes:
* Line and load terminals are located in rear and arranged for bus bar connection. Terminal lugs are available as an accessory. Contact ABB for more details.
1. Special terminal lugs and neutral bars are available at additional cost. Contact factory and advise cable sizes and number of conductors per pole.
2. Fully rated neutral provided on 3 phase, 4 wire system.
3. Special lug arrangements may require different enclosure dimensions. For certified drawings, contact ABB.

Application Notes:

1. Metric dimensions (cm) and weights (Kg) shown in parenthesis adjacent to English measurements in inches and pounds.
2. Includes 1.25" door projection beyond base depth. Allow a minimum of 3" additional depth for projection of handle, light, switches, pushbuttons, etc.
3. All dimensions and weights are approximate and subject to change without notice.
4. Special enclosures (NEMA 3R, 4, 12, etc.) dimensions and layout may differ. Consult ABB for details.
5. Normal and emergency may be ordered inverted on any switch. The load may be inverted 600-1200 amps. Consult ABB for details.
6. Special lug arrangements may require different enclosure dimensions. For certified drawings, contact ABB.
7. Packing materials must be added to weights shown. Allow 15% additional weight for cartons, skids, crates, etc.
8. Add 4" in height for removable lifting lugs.
9. Lug adapters for 3000-4000 amp limits may be staggered length for ease of entrance. Consult ABB for details.
10. Louvers must be clear for airflow with standard cable connections.
11. A ZTS 40-150A, when ordered with the following options, will require a larger enclosure: UMD, Digital Meter, HT, HH, K, LDS, L11, N1, N2, OCVR-1SG, OCVR-1SS, P2, SPD, BCI, R26(D). Please contact ABB for dimensions.
12. For Delayed and Closed Transition dimensions and weights, refer to Publication PB-5067 and PB-5069.
13. For Bypass/Isolation dimensions and weights, refer to Publication PB-5068.
14. AZTS, when ordered with compression lugs suitable for use with copper cables, will require a larger enclosure. For 40-225A, the enclosure is 46" x 24" x 14" (HxWxD). For 260-400A, the enclosure is 66" x 24" x 19.75" (HxWxD). For 600A, the enclosure is 74" x 40" x 19.75" (HxWxD). For certifed drawings, please contact ABB.

Zenith ZTS Series Ordering Information

Example

ZTSCT0B00040F-ZEC01ZVC40MSTD

This number string shows the correct format for a ZTS Model Automatic Transfer Switch with closed transition, an Entelli-Switch 250 microprocessor control unit, Utility - Generator, 400 amps, 4 pole, NEMA Type 1 enclosure, 120/208V 3ϕ, 4 wire, 60 Hz system with the standard group of accessories.

Z	T	S	C	T	0	B	0	0	0	4	0	F	-	Z	E	C	0	1	Z	V	C	4	0	M	S	T	D
1						2		3		4		5		6					7					8				

1	Model/Type
ZTS000	Standard (Open Transition)
ZTSD00	Delayed Transition
ZTSCT0	Closed Transition
ZBTS00	Standard (Open Transition) w/Bypass
ZBTSD0	Delayed Transition w/Bypass
ZBTSCT	Closed Transition w/Bypass
2	**Control panel**
B0	Entelli-Switch 250, Microprocessor, Control Unit
B1	Horizongal bypass unit with MX250
B4	High withstand panel with MX250 [2)]
3	**Application**
0	Utility - Generator
U	Utility - Utility
M	Manual
G	Gen to Gen
4	**Ampere size**
004	40 amps
008	80 amps
010	100 amps
015	150 amps
022	225 amps
026	260 amps
040	400 amps
060	600 amps
080	800 amps
100	1000 amps
120	1200 amps
160	1600 amps
200	2000 amps
260	2600 amps [1)]
300	3000 amps
400	4000 amps
5	**Switched poles**
B	2 Poles
E	3 Poles
F	4 Poles
6	**Enclosure type**
01	Type 1 Enclosure
12	Type 12 Enclosure
3R	Type 3R Enclosure
40	Type 4 Enclosure
4X	Type 4X Enclosure
00	Open Style Unit

7	Operational voltage
AB	Consult table below
8	**Accessories**
MSTD	
MEXE	
MCON	
MSEN	
MSPE	
MPSG	
MANO	
Then choose additional accessories	

[1)] Available only on Bypass configuration
[2)] Available for 1600-3000A Non-bypass product ONLY.

A	B	Voltage	Phase	Config.	Hz
1	0	120	1	2 wire	60
2	0	120/240	1	3 wire	60
2	2	110/220	1	3 wire	50
3	0	240	3	3 wire	60
3	1	208	3	3 wire	60
3	2	220	3	3 wire	50
3	5	139/240	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
6	3	575	1	2 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	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.

Zenith ZTS Series Ordering Information

Switch Types

- **Standard:** Unless otherwise noted, the standard 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.
- **Closed Transition:** When ordered as the ZTSCT, the closed transition switch offers two basic modes of operation. During a failure of one source or an out of specification condition, the ZTSCT Model operates as a standard delayed transition switch (ZTSD Model). This sequence allows clear separation of an unreliable source from an available one.
- **Bypass:** 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.

UL 1008 Withstand and Closing Ratings

Please refer to Publication TB-1102.

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PB-5066, 19-09