

---

## Zenith ZBTECT series

Bypass/Isolation Closed Transition  
Automatic and Manual Transfer Switches



- Ideal for mission critical loads (computer servers, HID emergency lighting, data acquisition equipment)
- Two source parallel time (“bumpless transfer”) of less than 100 milliseconds
- Bypass/Isolation for ease of ATS maintenance/testing without load loss of power
- Ratings 100 to 4000 amperes

| <b>Ratings &amp; Construction</b>             |   |     |
|---|---|-----|
| Ratings                                       | Voltage, Ampere and Pole configuration per Order Code   | Yes |
| Certifications                                | UL 1008, CSA C22.2  | Yes |
| Certifications                                | Third-party Seismic Certification to IBC 2006, 3.2g @ Ip = 1.5 (operation during event)   | Yes |
| Electrical Operator Mechanism                 | Momentarily energized, high-speed solenoid mechanism  | Yes |
| Mechanism                                     | Mechanically-held with highspeed transfer mechanism for make-before-break closed transition transfers   | Yes |
| Contacts                                      | ABB design and manufactured, silver tungsten alloy with separate arcing contacts on 600A and above ratings for high withstand and close-on capability   | Yes |
| Neutral Pole (4 pole only)                    | Identical construction to phase poles with fully rated main and arcing contacts. Operation via same mechanism as phase poles to prevent sustained connection of source neutrals in separately derived systems, as last-break/first-make transfer.   | No  |
| <b>Controller</b>                             |   |     |
| Construction                                  | Dual-processor based, with dedicated processor for high-speed Serial or Ethernet communications   | Yes |
| Source Sensing                                | Direct 120-690V sensing and software configuration of rated voltage and frequency without the need for potential transformers, step-down transformers or DIP switches   | Yes |
| Control Wiring                                | All customer connections at one location. All signals in/out relay-isolated via DIN-mounted relay/terminal blocks. All control wiring via factory-installed wiring harnesses.   | Yes |
| <b>Enclosure</b>                              |   |     |
| Type  | per Order Code  | Yes |
| <b>Display, Sensing &amp; Time Delays</b>     |   |     |
| Display                                       | ¼ VGA color graphical with embedded 'HELP' menus  | Yes |
| Annunciation                                  | High intensity LED for Source Availability (2), Source Connected (2), Transfer Inhibit (not in Auto)  | Yes |
| Source Fail/Restore                           | Independently adjustable pickup & dropout of 3-phase U/O voltage, U/O Freq, Volts Balance plus Phase Rotation   | Yes |
| Time Delays                                   | Gen start, Source 2 stabilize, Source 2 fail override, Retransfer to Source 1, Gen cool down, Independent settings for Fast Test, Time Delay for Generator Voltage Sag  | Yes |
| Remote Access                                 | All parameters locally (front USB port) or remotely (serial or Ethernet) Adjustable   | Yes |
| <b>Control Group Options (see order code)</b> |   |     |
| Group A                                       | All standard features, Field re-programmable I/O (4 inputs, 4 outputs), Control Switches (Test with Load, Test no load, Fast Test, Alarm Reset, Auto/Man Re-transfer Source 1, Auto/Man Transfer both sources, Preferred Source select, Commit/No Commit Transfer to Gen, Time Delay Bypass | No  |
| Group B                                       | All features from "A" plus: 10 User-configurable Analog & 10 Digital Alarms, 20-channel data logger, 10-channel waveform capture, Auto Load Shed (with voltage, frequency, and kW triggers)   | No  |
| Group C                                       | All features from "B" plus: 4 additional field programmable inputs (total 8 inputs, 8 outputs)  | No  |
| Group D                                       | All features from "C" plus: 4 additional field programmable inputs (total 12 inputs, 12 outputs) & ABB Flexlogic™ userconfigurable control logic  | No  |
| Group M                                       | Manual ATS configuration  | No  |
| <b>Additional Standard Features</b>           |   |     |
| Engine Exerciser                              | Configurable Periodic Exerciser (7 Event Daily, Weekly, 14 or 28 day) or Clock Exerciser Type (21 Event, 365 day Programmable)  | Yes |
| System Status Screen                          | Active state of switch, display of all time delays and alarm conditions   | Yes |
| Event Recorder                                | 256 Event, 1ms accuracy, clock sync via Network Time Protocol (NTP)   | Yes |
| Outage & Test Report Screen                   | Date/time stamping of: outage or test event, start signal sent, Gen start time, connection to Gen, Max Gen Volts & Freq dip, return of utility, re-transfer to normal   | Yes |
| External Power Supply                         | Standard 120VAC input for controller power and communication and 24 VDC input for remote control and annunciation when both sources de-energized  | Yes |
| Flexible Feature Assignment                   | Field reassignable I/O for any/all control features   | Yes |
| Fail to Sync and Extended Parallel Protection | Hardwired, independent controller   | Yes |
| <b>Optional Features (see order code)</b>     |   |     |
| Serial Communications                         | High speed, up to 115k Baud Modbus RTU  | No  |
| Ethernet Communications                       | Fast Ethernet, (10/100 Mbit), Modbus TCP/IP   | No  |
| Power Quality Metering                        | True RMS metering, including THD% (up to 8 <sup>th</sup> order)   | No  |
| Load Shed                                     | Ability to transfer to de-energized normal source or center position in event of generator overload   | No  |
| Integral Surge Protective Device (SPD)        | Load-connected medium or high exposure type   | No  |
| Integral Battery Charger                      | 3 or 10A, 12 or 24VDC type  | No  |
| Lugs  | Compression lugs in lieu of standard mechanical lugs on 100A-1200A switches   | No  |
| Lugs  | Mechanical or Compression lugs in lieu of standard rear-bus connection on 1600-4000A switches   | No  |

# Order Code – Abbreviated Product Configuration

See full Product Brochure, Publication DEA-405, for full configuration.

|          |          |   |   |   |   |   |   |   |    |    |    |    |    |    |          |
|----------|----------|---|---|---|---|---|---|---|----|----|----|----|----|----|----------|
| <b>Z</b> | <b>C</b> |   |   |   |   |   |   |   |    |    |    |    |    |    | <b>X</b> |
| 1        | 2        | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16       |

|          |  |
|----------|--|
| <b>1</b> | <b>Product Type</b>                      |
| Z2**     | Bypass/Isolation Vertical Construction   |
| Z3***    | Bypass/Isolation Horizontal Construction |
| <b>2</b> | <b>Operation</b>                         |
| C        | Closed Transition                        |
| <b>3</b> | <b>Amperage</b>                          |
| C        | 100                                      |
| D        | 150                                      |
| F        | 225                                      |
| G        | 260                                      |
| I        | 400                                      |
| J        | 600                                      |
| K        | 800                                      |
| L        | 1000                                     |
| M        | 1200                                     |
| N        | 1600                                     |
| O        | 2000                                     |
| P        | 2600                                     |
| Q        | 3000                                     |
| R        | 4000                                     |
| <b>4</b> | <b># of Poles</b>                        |
| 2        | 2 Pole                                   |
| 3        | 3 Pole                                   |
| 4        | 4 Pole                                   |
| <b>5</b> | <b>Application</b>                       |
| S        | Util-Gen                                 |
| U        | Util-Util                                |
| G        | Gen-Gen                                  |
| <b>6</b> | <b>Controller Language</b>               |
| 1        | English                                  |
| <b>7</b> | <b>NEMA Enclosure</b>                    |
| X        | None (Open)                              |
| H        | NEMA 1 w/Adapter Bay                     |
| I        | NEMA 3R w/Adapter Bay                    |
| J        | NEMA 3R/Heater & Thermostat/Adapter Bay  |
| K        | NEMA 4 w/Adapter Bay                     |
| L        | NEMA 12 w/Adapter Bay                    |
| M        | NEMA 4X w/Adapter Bay                    |
| <b>8</b> | <b>Control Group Options</b>             |
| A        | Group "A"                                |
| B        | Group "B"                                |
| C        | Group "C"                                |
| D        | Group "D"                                |
| M        | Group "M"                                |

|                             |   |
|-----------------------------|---|
| <b>9</b>                    | <b>Voltage Code*</b>  |
| 70                          | 277/480V, 3PH, 4W, 60Hz   |
| 20                          | 120/240V, 1PH, 3W, 60Hz   |
| 40                          | 120/208V, 3PH, 4W, 60Hz   |
| 92                          | 220/380V, 3PH, 4W, 50Hz   |
| 50                          | 480V, 3PH, 3W, 60Hz   |
| 38                          | 120/208/240V, 3PH, 4W, High-Leg Delta, 60Hz   |
| 30                          | 240V, 3PH, 3W, 60Hz   |
| 31                          | 208V, 3PH, 3W, 60Hz   |
| 61                          | 347/600V, 3PH, 4W, 60Hz   |
| <b>10</b>                   | <b>Lug Options</b>  |
| X                           | Std lugs or Rear bus (per chart below)<br>(see full product brochure for lug option details)      |
| <b>11</b>                   | <b>Metering &amp; Accessories*</b>  |
| X                           | None  |
| A                           | Load Shed   |
| D                           | PQ Metering   |
| <b>12</b>                   | <b>Communications</b>   |
| X                           | None  |
| S                           | CCM S-Modbus RTU (Serial) communication module  |
| E                           | CCM E Modbus TCP/IP (Ethernet) communication module plus Modbus RTU (Serial) communication module |
| <b>13</b>                   | <b>Ground Bus*</b>  |
| X                           | None  |
| 1                           | Ground bus-Mech Lugs (Qty. 3) #14-1/0-GB1   |
| 2                           | Ground bus-Mech Lugs (Qty. 6) #8-1/0-GB2  |
| <b>14</b>                   | <b>SPD (Load-Side Connected)*</b>   |
| <b>100A - 1200A Rating</b>  |   |
| X                           | None  |
| A                           | 65kA  |
| B                           | 80kA  |
| C                           | 100kA   |
| <b>1600A - 4000A Rating</b> |   |
| X                           | None  |
| D                           | 100kA   |
| E                           | 150kA   |
| F                           | 200kA   |
| G                           | 300kA   |
| <b>15</b>                   | <b>Battery Charger*</b>   |
| X                           | None  |
| 1                           | Battery Charger-12 Volt-3 Amp   |
| 2                           | Battery Charger-12 Volt-10 Amp  |
| <b>16</b>                   |   |
| X                           |   |

**Note**

- \*See full product brochure for other options
- \*\*1600-3000 Amperage Excluded
- \*\*\*Applicable to 1600-3000 Amperage

## ZBTECT Model, Dimensions and Weights

| Ampere Rating | Poles | NEMA 1 Enclosed |             |             | Reference Figure | Weight      |             | Application Notes |            |
|---------------|-------|-----------------|-------------|-------------|------------------|-------------|-------------|-------------------|------------|
|               |       | Height (A)      | Width (B)   | Depth (C)   |                  | Open Type   | NEMA 1      |                   |            |
| 100, 150      | 2, 3  |                 |             |             |                  | 730 (331)   | 1280 (580)  | 1-7, 9            |            |
| 225, 260, 400 | 4     | 90 (2286)       | 36 (914)    | 28.5 (724)  |                  | 840 (381)   | 1385 (628)  |                   |            |
| 600           | 3     | 90 (2286)       | 36 (914)    | 28.3 (737)  | A                | 730 (331)   | 1435 (651)  |                   |            |
|               | 4     | 90 (2286)       | 40 (1016)   | 28.3 (737)  |                  | 840 (381)   | 1540 (699)  |                   |            |
| 800, 1000     | 3     | 90 (2286)       | 40 (1016)   | 28.3 (737)  |                  | 835 (379)   | 1485 (674)  |                   |            |
| 1200          | 4     | 90 (2286)       | 46 (1168)   | 28.3 (737)  |                  | 980 (444)   | 1590 (721)  |                   |            |
| 1600, 2000    | 3     | 80 (2023)       | 40.6 (1031) | 64.6 (1640) | B                | 1978 (897)  | 4044 (1835) |                   | 1-6, 10    |
| 2600          | 4     | 80 (2023)       | 46.1 (1171) | 64.6 (1640) |                  | 2275 (1032) | 4431 (2010) |                   |            |
| 3000          | 3     | 80 (2023)       | 40.6 (1031) | 64.6 (1640) | B                | 2572 (1166) | 4456 (2021) |                   | 1-6, 8, 10 |
|               | 4     | 80 (2023)       | 46.1 (1171) | 64.6 (1640) |                  | 3049 (1383) | 4977 (2258) |                   |            |
| 4000          | 3     | 90 (2286)       | 47.5 (1206) | 80.8 (2051) | C                | 4380 (1986) | 4730 (2145) |                   |            |
|               | 4     | 90 (2286)       | 54 (1372)   | 80.8 (2051) |                  | 5580 (2531) | 5930 (2690) |                   |            |

### Application Notes

- Metric dimensions (cm) and weights (Kg) shown in parenthesis adjacent to English measurements in inches and pounds.
- Includes 1.25" door projection beyond base depth. Allow a minimum of 3" additional depth for projection of handle, light, switches, pushbuttons, etc.
- All dimensions and weights are subject to change without notice.
- NEMA3R, 4, 4X and 12 enclosure dimensions may differ than NEMA1 shown above. Consult the factory for details.
- Special lug arrangements may require different enclosure dimensions. See full product brochure (DEA-405) for details.
- Packing materials must be added to weights shown. Allow 15% additional weight for cartons, skids, crates, etc.
- Add 4" in height for removable lifting lugs.
- Lug adapters for 3000-4000A limits may be staggered length for ease of entrance. Consult the factory for details.
- 100-1200A standard configuration is top cable entry. 14" adapter bay is required for bottom cable entry. Consult the factory for details.
- 1600-4000A switches have ventilation louvers on both sides and rear of enclosure. Louvers must be clear for airflow with standard cable connections.

### ZBTECT Model – Closed Transition Transfer/Bypass-Isolation Switches

The ZTECT Closed Transition Transfer Switch may be applied with a bypass-isolation switch for the utmost in reliability and versatility. The ZBTECT Model provides the ability to withdraw the transfer switch unit for maintenance or inspection. Reference the ZTECT unit features and operation discussion for more details.

### ABB Zenith Controls, Inc.

305 Gregson Drive  
Cary, NC 27511

**24-hour support:**  
ABB Technical Services  
+1 (800) 637-1738

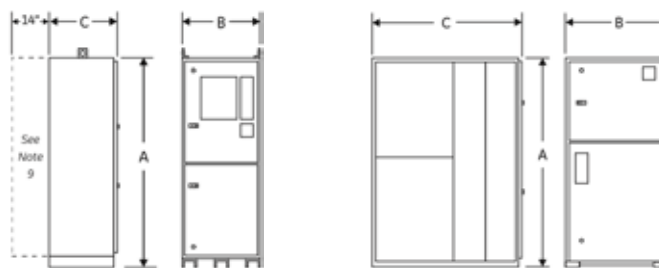


Figure A

Figure B

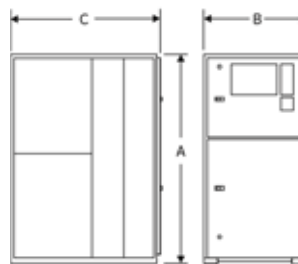


Figure C

### AL-CU UL Listed Mechanical Lugs

| Switch Size Amps             | Normal, Emergency & Load Terminals |               |
|------------------------------|------------------------------------|---------------|
|                              | Cables/Pole                        | Wire Ranges   |
| <b>ZBTECT</b>                |                                    |               |
| 100, 150, 225, 260, 400      | 1                                  | #4 to 600 MCM |
| 600                          | 2                                  | #2 to 600 MCM |
| 800, 1000, 1200              | 4                                  | #2 to 600 MCM |
| 1600, 2000, 2600, 3000, 4000 | *                                  | *             |

### Notes

\*Line and load terminals are located in rear and arranged for bus bar connection. Terminal lugs are available as an accessory. See full product brochure (DEA-405) for option details.

- Fully rated neutral provided on 3 phase, 4 wire system

### UL 1008 Withstand and Closing Ratings

Please refer to ABB Publication TB-1102.

