1.0 CONTROL CONFIGURATION GROUPS

2.0 STANDARD CONTROL INTERFACE SIGNALS

3.0 NETWORKING AND METERING OPTIONS

4.0 NON-STANDARD CONTROLS

5.0 SEQUENCE OF OPERATIONS

6.0 STANDARD INDICATORS, PUSHBUTTONS, AND ANNUNCIATION
**10.0 PROGRAMMABLE ENGINE EXCERNER**

A Programmable Engine Excerner is provided as a standard control feature on all ZEIT transfer switches. Two (2) different types of exciters are configurable in the controller.

- **Periodic Excerner**
  - If enabled, the ATS will perform a test function on a periodic basis, depending on the programmable time settings. The excerner types are:
    - **Type 1:** Fed programmable as "Daily" 1-24 hr, with 28 days
    - **Type 2:** Fed programmable as "Daily" 1-24 hr, with 28 days
  - **Operation Description:** Each test event will automatically re-initiate every day, week, 14 days, or 28 days in accordance with the excerner setting.
  - **Ranges:**
    - Voltage excerner range: 95% to 110%; 45% to 60%
    - Underfrequency range: 45.1 to 60.0 Hz
    - Overfrequency range: 45.0 to 59.9 Hz

- **Clock Excerner**
  - If enabled, the ATS will perform a test function at a specific time set in the controller.
  - The test type is user programmable as "Daily".
  - **Operation Description:** Each test event will be initiated at the date/time set for each event.
  - **Ranges:**
    - Voltage excerner range: 95% to 110%; 45% to 60%
    - Underfrequency range: 45.1 to 60.0 Hz
    - Overfrequency range: 45.0 to 59.9 Hz

**8.0 NORMAL/PREFERRED & EMERGENCY/ALTERNATE SOURCE RETURN SETTINGS**

**PARAMETER**

<table>
<thead>
<tr>
<th>ITEM/SYMBOL</th>
<th>LOCATION ON DISPLAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC CONNECTION PLUG</td>
<td>Home&gt;Setpoint&gt;Control or Green 'CONTROL' Pushbutton</td>
</tr>
<tr>
<td>AUX</td>
<td>SAME AS ABOVE</td>
</tr>
</tbody>
</table>

**9.0 TIME DELAY SETTINGS**

**DESCRIPTION**

- **Pressure Switch**
  - **Location:** Home>Setpoint>Control or Green 'CONTROL' Pushbutton
  - **Description:** Enables user selection of the preferred source, S1 or S2.

- **Time Delay**
  - **Range:** 0 sec to 30 min 59 sec
  - **Default:** 0 sec
  - **Range:** 5% to 20% phase-to-phase
  - **Default:** 10%

- **9.5 FAIL TO SYNC AND EXTENDED PARALLEL PROTECTION**
  - **Description:**
    - **Fail to Sync Alarm:** When transferring between energized sources in a closed transition mode, control will initiate a transfer out of 30 mili-seconds. An acoustic signal and a visual light will be initiated at the source that was last closed. This signal will remain active until one of the sources is opened. The back-up signal circuitry utilizes an LED and a back-up control system that is in a complete independent of, and redundant to, the microprocessor system.
    - **Extensive Parallel Protection:** In a closed transition transfer, the time period that both sources are connected to the load for purposes of preventing protection is provided to protect against excessive parallel of both sources during a closed transition transfer.
    - **Open Last Close Protection:** If the control fails to open the source that is in the attempt to transfer out of 30 ms, an acoustic signal and the source that was last closed will be blocked from initiating this action, the source lock out will be opened. The microprocessor will indicate the close last closed transition has been started.
    - **Backup Shift Protection:** A control will be provided to prevent the transfer trip the upstream generator circuit breaker if both sources remain closed for 70ms. The control will remain active until one of the sources is opened.

**12.0 DRAWING LEGEND**

- **3 METER TRANSFER**
  - **Description:** A transfer is not initiated, the ATS will automatically select the source that was last closed, the ATS will operate as a closed transfer.

- **TRANSFER TO NORMAL RELAY**
  - **Description:** Initiates a transfer with load, using fixed (small) time delay setting.

- **TRANSFER TO EMERGENCY RELAY**
  - **Description:** Initiates a transfer with load, using same time delay settings as those for actual outage condition.

- **TRANSFER MODE SELECT (TMS) SWITCH**
  - **Description:** Provides user selection of the transfer mode. If set to "MANUAL S2 TO S1 ONLY (S5)" the switch will not automatically return to preferred source. If set to "AUTO" the switch will automatically connect to the sources upon expiration of associated time delays.

- **FAIL TO SYNC ALARM**
  - **Description:** The source is healthy and the source that was last closed will be blocked from initiating this action, the source lock out will be opened. The microprocessor will indicate the close last closed transition has been started.
## ZTE Series Catalog Number Scheme, User Configurable I/O

### Product Type

<table>
<thead>
<tr>
<th>Digit #1</th>
<th>Product Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z1</td>
<td>ATS</td>
<td></td>
</tr>
<tr>
<td>Z2</td>
<td>Bypass ATS</td>
<td></td>
</tr>
</tbody>
</table>

### Operation

- **Digit #3**:
  - A: Open Transition
  - D: Delayed Transition
  - C: Closed Transition

### Ampere Rating

- **Digit #4**:
  - A: 400A
  - B: 800A
  - C: 1000A
  - D: 1500A
  - E: 2000A
  - F: 3000A
  - G: 4000A
  - H: 5000A
  - I: 6000A
  - J: 8000A
  - K: 10000A
  - L: 12000A
  - M: 16000A
  - N: 20000A
  - O: 24000A
  - P: 30000A
  - Q: 40000A
  - R: 50000A
  - S: 60000A
  - T: 80000A
  - U: 100000A
  - X: 120000A
  - Y: 150000A
  - Z: 200000A

### Pole Configuration

- **Digit #5**:
  - 1 Pole
  - 2 Pole
  - 3 Pole
  - 4 Pole

### Application/Source Types

- **Digit #6**:
  - A: Application
  - B: Building
  - C: Enclosure Type
  - D: Series

### Voltage Rating

- **Digit #7**:
  - A: Application
  - B: Building
  - C: Enclosure Type
  - D: Series

### Control Option Package

- **Digit #8**:
  - A, B, C, D, or E: See Sheet #1 for description

### Volt Options

- **Digit #9**:
  - A: Volt Factory Code. See ATS Nameplate for rated voltage

### Lug Options

- **Digit #10**:

### Metering Options

- **Digit #11**:
  - A: Thru A or X: See Sheet #1 for further details

### Communications Option Code

- **Digit #12**:
  - A: Thru X or E: See Sheet #1 for further details

### Ground Bus Option Code

- **Digit #13**:
  - A: Thru X or E: See O&M Manual for details

### User Configurable Analog Alarms

- **Digit #14**:
  - A: Thru X or A: See O&M Manual for details

### User Configurable Digital Alarms

- **Digit #15**:
  - A: Thru X or A: See O&M Manual for details

### User Configurable Inputs

- **Digit #16**:
  - A: Thru X or A: See O&M Manual for details

### User Configurable Outputs

- **Digit #17**:
  - A: Thru X or A: See O&M Manual for details

### User Configurable Option Code

- **Digit #18**:
  - A: Thru X or A: See O&M Manual for details

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