### 1. INSTALLATION

Models UDC120T and UDC170T have different case sizes (refer to section 4, 5 & 8). Installation differences between the two models have been clearly shown.

**WARNING:**
Never remove covers or panels without referring to the installation section. An unlock code is required to prevent unauthorised entry to Configuration, & Setup modes. Press + or – to enter the unlock code, then press ☞ to proceed.

### 2. SELECT MODE

Select mode is used to access the configuration and operation menu functions. It can be accessed at any time by holding down + and pressing ☞ (or + and press ☞ if a required mode, press ☞ to enter. An unlock code is required to prevent unauthorised entry to Configuration, & Setup modes. Press + to increase, press – to decrease.

### 3. CONFIGURATION MODE

- **Note:** Parameters displayed depend on how instrument has been configured. Refer to user guide (available from your supplier) for further details. Parameters marked ** are repeated in Setup Mode.
- **Note:** The functions described in sections 2 thru 9 are common to all models.

#### 3.1. UDC120T & UDC170T Configuration Modes

- **Configuration Mode**
- **Setup Mode**

**CAUTION:**
- Do not remove upper or lower mounting plates. The installation section details the method of securing the units to the panel.
- To access modules 1, A or B, first detach the PSU and CPU boards from the front b. Plug the required option modules into the correct connectors, as shown below.
- Use a screwdriver to undo screws on the rear of the instrument to release the PSU board. The PSU board must always be removed to gain access to other options.
- **Note:** Option modules are automatically detected at power up.

#### 3.2. Parameter List & Description

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Lower Display</th>
<th>Adjustment Range &amp; Description</th>
<th>Default Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>IS Gain</strong></td>
<td>1 - 100</td>
<td>Linear (0-1000)</td>
<td>100</td>
</tr>
<tr>
<td><strong>SP Gain</strong></td>
<td>1 - 100</td>
<td>Linear (0-1000)</td>
<td>100</td>
</tr>
<tr>
<td><strong>Valve Time</strong></td>
<td>0.1 - 20 s</td>
<td>Linear (0-2000)</td>
<td>20</td>
</tr>
<tr>
<td><strong>Alarm 1 Delay</strong></td>
<td>0.1 - 20 s</td>
<td>Linear (0-2000)</td>
<td>20</td>
</tr>
<tr>
<td><strong>Alarm 2 Delay</strong></td>
<td>0.1 - 20 s</td>
<td>Linear (0-2000)</td>
<td>20</td>
</tr>
<tr>
<td><strong>Setpoint 1 / Setpoint 2 select</strong></td>
<td>1 - 2</td>
<td>Linear (1-2)</td>
<td>1</td>
</tr>
<tr>
<td><strong>Close functions</strong></td>
<td>1 - 2</td>
<td>Linear (1-2)</td>
<td>1</td>
</tr>
</tbody>
</table>

**Note:** Refer to user guide (available from your supplier) for further details. Parameters marked ** are repeated in Setup Mode.

### 4. WIRING DIAGRAMS

#### UDC120T Wiring Diagram

- Single strand wire gauge: Max 1.2mm (18SWG)
- Motor Travel (s): 0.05 - 5.00 s (5 sacc to 5 m/s 5 sacc)
- Process High Alarm (P_H): 0 - 1000 mV DC
- Process Low Alarm (P_L): 0 - 1000 mV DC
- Alarm 1 Range (P_L, P_H): 0 - 1000 mV DC
- Alarm 2 Range (P_L, P_H): 0 - 1000 mV DC
- Alarm High 1报警 (ALH): 0 - 1000 mV DC
- Alarm Low 1报警 (ALL): 0 - 1000 mV DC
- Alarm High 2报警 (ALH): 0 - 1000 mV DC
- Alarm Low 2报警 (ALL): 0 - 1000 mV DC
- LED alarm indicators: Red / Green

**Note:** The user guide (available from your supplier) for further details. Parameters marked ** are repeated in Setup Mode.

### 5. TROUBLESHOOTING

- **Issue:** Incorrect output levels.
- **Solution:** Check wiring connections and power supply.

**Note:** Refer to user guide (available from your supplier) for further details. Parameters marked ** are repeated in Setup Mode.

### 6. CONCLUSION

- **Note:** This controller uses Three-Point Stepping Control. This requires two identical outputs (2 Relays, 2 SSRs, 2 Triacs or 2 Dual Relays) for the valve Open 6. Close functions. See Output Usage 1-5 in Configuration Mode.

**Note:** Refer to user guide (available from your supplier) for further details. Parameters marked ** are repeated in Setup Mode.

**Note:** This controller uses Three-Point Stepping Control. This requires two identical outputs (2 Relays, 2 Triacs, 2 SSRs, 2 Triacs or 2 Dual Relays) for the valve Open 6. Close functions. See Output Usage 1-5 in Configuration Mode.

**Note:** Refer to user guide (available from your supplier) for further details. Parameters marked ** are repeated in Setup Mode.

### 7. APPENDIX

- **Note:** This controller uses Three-Point Stepping Control. This requires two identical outputs (2 Relays, 2 Triacs, 2 SSRs, 2 Triacs or 2 Dual Relays) for the valve Open 6. Close functions. See Output Usage 1-5 in Configuration Mode.

**Note:** Refer to user guide (available from your supplier) for further details. Parameters marked ** are repeated in Setup Mode.

### 8. REFERENCES

- **Note:** This controller uses Three-Point Stepping Control. This requires two identical outputs (2 Relays, 2 Triacs, 2 SSRs, 2 Triacs or 2 Dual Relays) for the valve Open 6. Close functions. See Output Usage 1-5 in Configuration Mode.

**Note:** Refer to user guide (available from your supplier) for further details. Parameters marked ** are repeated in Setup Mode.

### 9. APPENDIX

- **Note:** This controller uses Three-Point Stepping Control. This requires two identical outputs (2 Relays, 2 Triacs, 2 SSRs, 2 Triacs or 2 Dual Relays) for the valve Open 6. Close functions. See Output Usage 1-5 in Configuration Mode.

**Note:** Refer to user guide (available from your supplier) for further details. Parameters marked ** are repeated in Setup Mode.

### 10. CONCLUSION

- **Note:** This controller uses Three-Point Stepping Control. This requires two identical outputs (2 Relays, 2 Triacs, 2 SSRs, 2 Triacs or 2 Dual Relays) for the valve Open 6. Close functions. See Output Usage 1-5 in Configuration Mode.

**Note:** Refer to user guide (available from your supplier) for further details. Parameters marked ** are repeated in Setup Mode.

### 11. APPENDIX

- **Note:** This controller uses Three-Point Stepping Control. This requires two identical outputs (2 Relays, 2 Triacs, 2 SSRs, 2 Triacs or 2 Dual Relays) for the valve Open 6. Close functions. See Output Usage 1-5 in Configuration Mode.

**Note:** Refer to user guide (available from your supplier) for further details. Parameters marked ** are repeated in Setup Mode.

### 12. CONCLUSION

- **Note:** This controller uses Three-Point Stepping Control. This requires two identical outputs (2 Relays, 2 Triacs, 2 SSRs, 2 Triacs or 2 Dual Relays) for the valve Open 6. Close functions. See Output Usage 1-5 in Configuration Mode.

**Note:** Refer to user guide (available from your supplier) for further details. Parameters marked ** are repeated in Setup Mode.
4. SETUP MODE

Note: Configuration must be completed before adjusting Setup parameters. First select Setup mode from Select mode (refer to section 2). The MAIN LED will light while in Setup mode. Press up or down to scroll through the parameters, then press right to view their description. To exit from Setup mode, hold down and press to return to Select mode. Note: Parameters displayed depends on how instrument has been configured.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Lower Display</th>
<th>Upper Display</th>
<th>Adjustment range &amp; Description</th>
<th>Default Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remote Auxiliary Input Range</td>
<td>+R</td>
<td>+P</td>
<td>0 to 20 mA DC input</td>
<td>0.5</td>
</tr>
<tr>
<td>Remote Auxiliary Input Range</td>
<td>+R</td>
<td>+P</td>
<td>0 to 10 V DC input</td>
<td>0.5</td>
</tr>
<tr>
<td>Remote Auxiliary Input Range</td>
<td>+R</td>
<td>+P</td>
<td>0 to 5 V DC input</td>
<td>0.5</td>
</tr>
<tr>
<td>Remote Auxiliary Input Range</td>
<td>+R</td>
<td>+P</td>
<td>0 to 100 mV DC input</td>
<td>0.5</td>
</tr>
<tr>
<td>Remote Auxiliary Input Range</td>
<td>+R</td>
<td>+P</td>
<td>0 to 20 V DC input</td>
<td>0.5</td>
</tr>
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<td>Remote Auxiliary Input Range</td>
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<td>+R</td>
<td>+P</td>
<td>0 to 100 V DC input</td>
<td>0.5</td>
</tr>
</tbody>
</table>

5. AUTOMATIC TUNING MODE

First select Automatic tuning mode from Select mode (refer to section 2). Press up or down to scroll through the modes, then press right to exit. To exit from Automatic mode, hold down and press right to return to Select mode. Pre-tune is a single-shot routine and is thus disengaging when complete. If RIPs in Setup mode + R, Pre-tune will attempt it run at every power up. Refer to the full user guide (available from your supplier) for details on how parameters are adjusted.

6. PRODUCT INFORMATION MODE

First select Product Information mode from Select mode (refer to section 2). Press right to view each parameter. To exit from Product Information mode, hold down and press to return to Select mode. Note: These parameters are all read only.

7. MESSAGES & ERROR INDICATIONS

These messages indicate that an error has occurred. Press up or down to select a problem with the process variable input connection or signal. Do not continue measuring until the process is resolved.

8. OPERATOR MODE

The mode is entered on power on, or accessed from Select mode (refer to section 2). Note: All Configuration mode and Setup mode parameters must be set as required before starting Configuration or Setup mode. Press up or down to scroll through the parameters, then press right or left to select the required value.

Note: All Operator mode parameters in Display strategy 4 are read only (see d $SP$ in configuration mode), they can only be adjusted via Setup mode.

9. SERIAL COMMUNICATIONS

Refer to the full user guide (available from your supplier) for details.