Solo-Control® Model CC-150 Air Volume Control System Wall Control Unit

**Design & Materials**
A. 10 position LED array for indicating damper blade position.
B. Push button actuation to open and close the damper.
C. Set-up mode (hidden) access button to adjust min and max open damper positions.
D. Pigtail power supply cable for connection to the motor wiring.
E. 15ft (4.6m) wire length for connection to 24V power supply. (24V design only)
F. Battery door and battery compartment for 6 AA batteries. (batteries not needed for 24V model)
G. Single gang steel outlet box.
Solo-Control® Model CC-150 Air Volume Control
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Please read completely before installing this equipment.

Receipt Inspection
Check material received against packing list. Claims resulting from factory errors must be made within 2 weeks after receipt of goods. Battery powered designs should have one pigtail wire with a male connector hanging outside of the outlet box. 24V models should have the same pigtail cable plus a wire bundle with bare copper ends (for transformer connection) also hanging out of the outlet box.

Installation
1. Prior to installation check to make sure that wiring and connector have not been damaged in shipment.
2. Secure damper in position in the duct by using screws or rivets in the openings in the bearing bracket sides. (2 screws per side). Preferred installation method is via #10 speed screws. Do not rack or distort damper.
3. Make a ½” dia. penetration in duct work at the desired location. Route the motor wiring outside the duct work to the wall control unit location. Wrap Heyco bushing around the wiring and insert in duct opening to seal the airstream.
4. Mount outlet box (supplied by MAT) at desired location.
5. Connect female connector from damper motor wiring to male connector coming from the outlet box. (See figure 1)
6. For 24V models, connect wire leads (from outlet box) to customer supplied transformer.
7. Prior to closing the wall opening, TEST the unit to verify smooth damper operation and system connectivity:
   a. Bring the wall control unit to the outlet box but do not install
   b. Connect the 90° motor cable connector to the PCB as shown in figure 2.
   c. Power up the wall control unit:
      i. For 24V models, connect the 90° 24V power supply connector (marked in red) to the PCB as shown in figure 3.
      ii. For battery powered designs, load the batteries into the battery compartment and slide the door until it locks into place as shown in figure 4.
   d. Upon receiving power, the damper will begin a calibration routine - opening & closing a few times. This will be indicated by the LED lights on the wall control unit scrolling back and forth. Watch the routine and make sure that the damper opens and closes completely without interference from the duct work. Once the calibration routine is complete, the damper will stop in a preset full open position.
   If the damper does not begin the calibration routine and the lights on the keypad are blinking red & green, then there is an open circuit condition. Check the following:
      i. Ensure the 90° motor connector is fully inserted into the female connector on the PCB
      ii. If you are using extension cord cables, make sure these connections are secure
      iii. Remove the blue cap on the damper motor and confirm the spade connectors are securely attached to the motor terminals
      iv. Ensure none of the wires been spliced
   Once corrected, the damper will run the calibration routine. After this is complete, proceed to step 8
8. Disconnect the 90° connector(s) from the PCB and set the wall control unit aside.
10. When ready to install the wall control unit, reconnect as noted in steps 7b, 7c, and 7d
11. Carefully load the wall control unit into the outlet box by pushing the wiring up and to the back, away from the battery compartment.
12. Screw the wall control unit into place using screws supplied by MAT.
   The unit is now ready for operation.

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Figure 1

Step 1 - Make connection.
Female connector from damper motor

Step 2 - Slide coupling forward over male connector

Step 3 - Snap coupling over connectors as shown
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Figure 2

Plug in the motor cable connector here

Figure 3 (24V Model only)

Plug in the 24V power supply cable here

Caution: Do not plug the 24V power supply into the bottom connector. It will destroy the PC Board

Figure 4 (Battery Model only)

Slide door to the right to open

Load batteries as shown

Replace battery door and slide to the left to lock in place
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Set-up Mode
1. The Solo-control® wall unit is pre-programmed with min and max open damper positions of 20% open and 80% open, respectively. If you wish to change these settings, you can enter set-up mode. If you do not wish to change these positions, proceed to the "Damp er Operation" section.
2. To enter set-up mode, press and hold the hidden button (shown in Figure 5) for 8 seconds. After 8 seconds, the lights on the keypad will all turn red, indicating the unit is in set-up mode. The damper will run a calibration routine.
3. After the calibration routine is complete, the damper will stop at the pre-programmed max open position. If you do not want to adjust the max open damper position, proceed to step 5.
4. To adjust the max open damper position so it is "less open", push the button with the arrow pointing down. To adjust the max open position so it is "more open", push the button with the arrow pointing up. The damper will toggle 5% (of its total open-to-close travel) for every push of the button. To indicate 5% movement, each LED will first light up in a flashing mode. When the same button is pushed again, the LED will either turn solid, or turn off, depending on the direction of damper travel.
NOTE: If the Solo-Control™ damper is used to replace a balancing damper, the max open position should be set to the fixed position of the balancing damper it replaces to maintain local zone balance.
5. Once you have reached the desired max open position (or you chose not to adjust the max open position), push the hidden button. The lights on the keypad will blink green and the damper will return to its last position setting. If you do not want to adjust the min open damper position, proceed to step 7.
6. To adjust the min open damper position so it is "more open", push the button with the arrow pointing up. To adjust the min open damper position so it is "less open", push the button with the arrow pointing down. The damper will open 5% (of its total open-to-close travel) for every push of the button. To indicate 5% movement, each LED will first light up in a flashing mode. When the same button is pushed again, the LED will either turn solid, or turn off, depending on the direction of damper travel. NOTE: attention should be given to minimum ventilation requirements when setting the min. open damper position.
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7. Once you have reached the desired min open position (or you chose not to adjust the min open position), push and hold the hidden key for 8 seconds. After 8 seconds, the lights on the keypad will turn green indicating the unit has left set-up mode and is in the operation mode. The damper will travel to its max open position and stop. NOTE – If you do not want to exit set-up mode because you want to return to the max open position to alter its position, press the hidden button again but do not hold it. The damper will return to the max open position. Proceed to step 4.
8. To conserve energy the LEDs on the keypad will turn off after five minutes with no keypad activity. To awake the wall unit from sleep mode, push any button. Note: if the system experiences no keypad activity for 20 minutes when in set-up mode, it will revert to operation mode.
9. See Operating Instructions for additional information.

Damper Operation
1. The Solo-Control® damper system is designed to allow the room occupant to adjust the amount of conditioned air coming into his/her space. It does not regulate to a temperature set point nor does it turn the A/C or heating unit on or off.
2. The Solo-Control® wall unit opens and closes the damper when the up or down arrow buttons are pressed. Pushing the up arrow (↑), will open the damper, thereby increasing airflow. Pushing the down arrow (↓) will close the damper, decreasing airflow.
3. For each push of a button, the damper opens (or closes) 10% of its total travel. Each 10% increment is indicated by a green light on the keypad turning on or off.
4. When the damper has reached its max open (or min open) position and the up arrow (↑) button (or down arrow (↓) button) is pushed one more time, the next light will turn red to communicate that the damper cannot open or close anymore.
5. To conserve power, the LEDs on the keypad will turn off after 15 seconds of no keypad activity. The wall unit can be awakened by pushing either arrow button.
6. For Battery Powered Units:
   a. Low battery – when the batteries are low, the LEDs on the keypad will begin flashing (when the wall control is awake). The batteries should be replaced. When new batteries are installed, the unit will run a calibration routine. This will be indicated by green LED lights on the keypad rolling back and forth. Once calibration is complete, the damper will return to its last known position.
   b. Cycle time recalibration – as the batteries drain, the wall control unit will recalibrate damper position at designated voltage levels. This will be indicated by green LED lights on the keypad rolling back and forth. Once calibration is complete, the damper will return to its last known position.
NOTE: To accurately maintain damper position registration, the wall control unit will periodically recalibrate by cycling the damper.
When complete, the damper will return to its last position setting.