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You can read the recommendations in the user guide, the technical guide or the installation guide for HONEYWELL W7751H3007. You'll find the answers to all your questions on the HONEYWELL W7751H3007 in the user manual (information, specifications, safety advice, size, accessories, etc.). Detailed instructions for use are in the User's Guide.

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Honeywell

Excel 10
W7751H3007 VAV ACTUATORS

HONEYWELL EXCEL 5000 OPEN SYSTEM INSTALLATION INSTRUCTIONS

BEFORE INSTALLATION

The W7751H Smart VAV Actuator consists of a factory-combined variable air volume (VAV) box controller and a direct-coupled damper actuator with de-clutch mechanism. The actuator/controller assembly is field-mounted to the VAV box damper shaft similar to the mounting of a standard actuator, and the controller wiring is terminated to the screw terminals accessible inside the detachable wiring box. See Fig. 2.

The W7751H's built-in actuator with de-clutch mechanism allows the installer to manually open or close its built-in VAV box damper without power or software tool.

The W7751H contains a Free Topology Transceiver (FTT) LowMark® compliant controller containing a Microbridge flow-through pressure sensor and communicates via the 78 kbaud LowWorks® Network.

The W7751H actuator mounts directly onto the VAV box damper shaft and has up to 6 Nm torque, 95 degree stroke, and 110 sec. timing at 50 Hz and 90 sec at 60 Hz.

If desired, the SSW2 Auxiliary Switch Kit (see "SSW2 Auxiliary Switch Kit for N05xx, N10xx Non-Spring Return Direct-Coupled Damper Actuators - Installation Instructions", Product Literature No. MU1B-0284GE51) can be attached to the W7751H. See also section "Optional Accessories" on page 9.

NOTE: Any hardware driven by the triac outputs must have a min. current draw, when energized, of 25 mA at 24 Vac and a max. current draw of 770 mA.



Fig. 1. Excel 10 Smart VAV Actuator

MAIN FEATURES

Legend for Fig. 2:

- 1) Universal shaft adapter
- 2) Mechanical end limits (manually adjustable in increments of 5.5°)
- 3) Air flow pick-up connector (-LO)
- 4) Air flow pick-up connector (+HI)
- 5) LowWorks service LED
- 6) De-clutch button
- 7) LowWorks service pin
- 8) Detachable wiring box
- 9) Anti-rotation bracket



Fig. 2. W7751H main features

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Manual abstract:

The actuator/controller assembly is field-mounted to the VAV box damper shaft similar to the mounting of a standard actuator, and the controller wiring is terminated to the screw terminals accessible inside the detachable wiring box. See Fig. 2. The W7751H's built-in actuator with de-clutch mechanism allows the installer to manually open or close its built-in VAV box damper without power or software tool. The W7751H contains a Free Topology Transceiver (FTT) LonMark® compliant controller containing a Microbridge flowthrough pressure sensor and communicates via the 78 kbaud LONWORKS® Network. The W7751H actuator mounts directly onto the VAV box damper shaft and has up to 6 Nm torque, 95 degree stroke, and 110 sec. timing at 50 Hz and 90 sec at 60 Hz. If desired, the SSW2 Auxiliary Switch Kit (see "SSW2 Auxiliary Switch Kit for N05xx, N10xx Non-Spring Return Direct-Coupled Damper Actuators Installation Instructions", Product Literature No.: MU1B-0284GE51) can be attached to the W7751H. See also section "Optional Accessories" on page 9. NOTE: Any hardware driven by the triac outputs must have a min. current draw, when energized, of 25 mA at 24 Vac and a max. current draw of 770 mA.

Fig. 1.

Excel 10 Smart VAV Actuator 1 2 MAIN FEATURES Legend for Fig. 2: 1) Universal shaft adapter 2) Mechanical end limits (manually adjustable in increments of 5.5°) 3) Air flow pick-up connector (-LO) 4) Air flow pick-up connector (-HI) 5) LONWORKS service LED 6) Declutch button 7) LONWORKS service pin 8) Detachable wiring box 9) Anti-rotation bracket 3 4 6 5 7 9 8 Fig. 2. W7751H main features ® U.

S. Registered Trademark Copyright © 2007 Honeywell Inc. · All rights reserved EN1B-0279GE51 R0707B EXCEL 10 W7751H SMART VAV ACTUATOR INSTALLATION The W7751H provides IP40 in all mounting orientations. IP40 IP40 10 1112 789 456 123 Fig. 4. Opening wiring box (1) 360° 360° 10 1112 789 456 123 Fig. 3. Permissible orientations providing IP40 Mount the W7751H on the damper shaft and allow clearance for wiring, servicing, and module removal. @@See Fig. 23 for mounting dimensions.

The W7751H is field-mounted to the VAV box damper shaft. @@@@See section "Wiring". The W7751H actuator is shipped in the fully counterclockwise (CCW) position (95 degrees). Mount the W7751H so that the actuator is parallel with the VAV box damper housing. Fig. 5. Opening wiring box (2) VAV box damper shaft CAUTION Equipment damage hazard. Mounting actuator unevenly with damper housing can damage actuator. Mount the actuator flush with the damper housing or add a spacer between the anti-rotation bracket and the VAV damper box housing (see Fig. 6).

VAV box damper housing spacer or washer Fig. 6. Mounting W7751H with washer/spacer Before mounting the W7751H onto the VAV box damper shaft, do the following: 1. Ensure that the diameter of the damper shaft is within the allowed limits (round: 8.

.16 mm, square: 6...13 mm).

EN1B-0279GE51 R0707B 2 EXCEL 10 W7751H SMART VAV ACTUATOR 2. Ensure that the damper shaft has a length of at least 40 mm. 3. Determine the direction (CW or CCW) in which the damper shaft rotates to open the damper (see Fig. 7). 4. Determine the angle of the damper opening (can be adjusted in increments of 5.5°). TYPE A DAMPER COOLING AIR FLOW CW TO OPEN, CCW TO CLOSE TYPE B DAMPER COOLING AIR FLOW CCW TO OPEN, CW TO CLOSE Fig. 8.

Setting the mechanical end limits Reconfiguring to Match Rotation Direction Using the LNS plug-in, the W7751H can be reconfigured to match the direction the damper shaft rotates to open the damper. Reconfigure the damper's direction of rotation to "open" or "closed," according to your needs. To change the damper direction from CW to CCW using the LNS plug-in, proceed as follows. 1. Open the configuration part of the plug-in and select the "Wiring" tab (see Fig. 9). Fig. 7. Determining direction of rotation The W7751H actuator is shipped in the fully counterclockwise (CCW) position (95 degrees). The installation procedure varies depending on the damper direction.

NOTE: Be aware that, until the W7751H is powered and the damper is driven open, starting the fan system with all the VAV box dampers closed can cause duct over-pressurization and damage. If Damper Rotates CW to Open If the damper rotates clockwise (CW) to open, mount the W7751H as follows: 1.

Manually open the damper. 2. Push down the declutch button of the W7751H, and while holding it down, manually rotate its shaft adapter fully to the clockwise position.

3. Mount the W7751H to the VAV damper box and shaft. 4. Set the mechanical end limits of the W7751H (see Fig. 8).

When the W7751H closes, the damper will thus rotate CCW until the mechanical end limits are reached. If Damper Rotates CCW to Open If the damper rotates counterclockwise (CCW) to open, mount the W7751H as follows: 1. Manually open the damper. 2. Push the declutch button of the W7751H, and while holding it down, manually rotate its shaft adapter fully to the counterclockwise position. 3. Mount the W7751H to the VAV damper box and shaft. 4. Set the mechanical end limits of the W7751H (see Fig. 8).

When the W7751H closes, the damper will thus rotate CW until the mechanical end limits are reached. Fig. 9. Wiring tab (default configuration) 2. Then deselect the output configuration (see Fig. 10). 3 EN1B-0279GE51 R0707B EXCEL 10 W7751H SMART VAV ACTUATOR fan startup. Use the de-clutch button to open the W7751H's box damper only after the W7751H has been powered down (this is to prevent overpressurization in the ductwork on fan startup). To use the de-clutch button, press and hold down the button (this disengages the motor). Turn the damper shaft until the damper is open and then release the button.

When power is restored to the W7751H, it synchronizes the damper actuator so that the damper is in the correct position on startup. Air Flow Pick-up Connect the air flow pick-up to the two connectors on the W7751H. See Fig. 12. AIRFLOW DELTA-P PICK-UP AIRFLOW DIRECTION -LOW Fig.

10. Deselecting the output configuration +HIGH 3. Now, configure the outputs so that the W7751H operates counterclockwise (CCW) (see Fig. 11). Fig. 12. Air flow pick-up connections NOTES: · · Use 6-mm outside diameter with 1-mm wall thickness plenum-rated 1219 FR (94V-2) pneumatic tubing. Always use a fresh cut on the end of the tubing that connects to the air flow pick-ups and the connectors on the W7751H. Connect the high pressure or upstream tube to the plastic restrictor labeled (+ HI) or P1 and the low-pressure or downstream tube to the restrictor labeled (- LO) or P2. See labeling in Fig. 12. NOTE: If controllers are mounted in unusually dusty or dirty environments, a 5-micron disposable air filter is recommended for the high-pressure line (marked as +) connected to the air flow pick-up. When twin tubing is used from the pick-up, split the pick-up tubing a short length to accommodate the connections.



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NOTES: · The tubing from the air flow pick-up to the W7751H should not exceed 0.914 m in length.

Lengths much longer than this can degrade the flow sensing accuracy. Fig. 11. Configuring the W7751H to open CCW The damper direction has now been reconfigured. @@@@NOTES: · 24 Vac power connections. @@See Fig. 13. @@@@See Fig. 14. @@@@See Fig.

14. Do not connect the analog ground (terminal 5) to the earth ground. See Fig. 15. Fig.

14. @@@@15. @@@@Only one router is allowed with each Excel 10 Fig. 13. @@Pull the cable to each device on the LONWORKS® network and connect to communication terminals 11 and 12 of the W7751H.

Fig. 16 through Fig. 21 provide detailed wiring diagrams for the W7751H. See the installation diagrams for specific wiring. NOTE: Ensure that the wall module's Configuration DIP Switch is set as shown in Fig. 19. Switches 1 through 3 set the timing of the valve actuator to match the W7751H outputs (minimum of 0.1 s, with a max. time of 25.6 s).

Switch 4 determines IAC EQUIVALENT CIRCUIT 24VAC COM EARTH SET PT GND SENSOR SET PT BYP/RTN BYP/FAN LED/RTN SENSOR COM LED T7460E 24VAC WALL MODULE 1 2 3 4 5 6 7 8 9 10 11 12 COMM IN REHEAT VALVE ACTUATOR ML7984B PWM VALVE ACTUATOR PWM OUTPUT FROM CNTRL PWM 24VAC * TO ASSURE PROPER ELECTRICAL CONTACT, WIRES MUST BE TWISTED TOGETHER BEFORE INSERTION. Fig. 18.

W7751H discharge air sensing PERIPHERAL HEAT VALVE ACTUATOR ML7984B PWM VALVE ACTUATOR PWM OUTPUT FROM CNTRL PWM 24VAC 24 VAC CHECKOUT 24 VAC COM Step 1. Wiring Connections Inspect all wiring connections at the W7751H and the T7460 terminals, and verify compliance with installation diagrams. If any wiring changes are required, first be sure to remove power from the controller before starting work. Pay particular attention to: · Controller wiring: Be sure that each W7751H is wired (terminal 3 on the W7751H) to a verified earth ground using a wire run as short as possible with the heaviest gauge wire available, up to 2.0 mm² with a minimum of 1.0 mm² for each controller in the group. See Fig.

15. Verify that triac wiring to external devices uses the proper load power/24 Vac Hot terminal (terminal 1 on the W7751H). T6T5 C B W R T6T5 C B W R *** * TO ASSURE PROPER ELECTRICAL CONTACT, WIRES MUST BE TWISTED TOGETHER BEFORE INSERTION. COM CONFIGURATION DIP SWITCHES LOCATED ADJACENT TO INPUT TERMINAL BLOCK ON ML7948B LON LF20 DUCT TEMPERATURE SENSOR LED OUT1 OUT2 1234567 BYPASS WIRED FOR MODULATING OR STAGED REHEAT W7751H ON OFF 1 2 3 4 Fig. 19.

W7751H to PWM Valve Actuator NOTE: Ensure that all transformer wiring is as shown. Reversing terminations will result in equipment malfunction. ·

NOTE: All wiring must comply with applicable electrical codes and ordinances. See the installation diagrams for specific wiring. Step 2.

Startup Broadcasting the Service Message The Service Message allows a device on the LONWORKS® network to be positively identified. The Service Message contains the device's ID number and, therefore, can be used to confirm the physical location of a particular W7751H in a building. There are two methods for broadcasting the Service Message from the W7751H: 1. Operating the service pin on the W7751H: Insert a thin rod (e.g. paper clip) into the service pin hole (see Fig. 2) and push briefly; the Service Message will then be broadcast on the network. 7 EN1B-0279GE51 R0707B EXCEL 10 W7751H SMART VAV ACTUATOR NOT EARTH GROUND TRIAC EQUIVALENT CIRCUIT NOT EARTH GROUND TRIAC EQUIVALENT CIRCUIT 24VAC COM EARTH SET PT GND 24VAC COM EARTH SET PT GND SENSOR SENSOR LED OUT1 OUT2 BYPASS BYPASS LED OUT1 OUT2 W7751H LON W7751H LON WALL MODULE 1 2 3 4 5 6 7 8 9 10 11 12 COMM IN SERIES OR PARALLEL FAN WALL MODULE 1 2 3 4 5 6 7 8 9 10 11 12 COMM IN 24VAC 24VAC REHEAT VALVE ACTUATOR ML7984B PWM VALVE ACTUATOR PWM OUTPUT FROM CNTRL PWM 24VAC * OPTIONAL 24 VAC WIRING TO NEXT CONTROLLER M MMC325 PNEUMATIC TRANSDUCER DECREASE INCREASE 24 VAC COM 24 VAC 24 VAC COM T6T5 C B W R COM CONTACTOR (24 VAC) M B * * Alarms CARE is used to perform the ID Assignment task. Once ID Assignment has been performed and commissioning has been completed, check the LONWORKS service LED to determine if there are any alarms. Possible alarm causes can be determined by viewing the nvoAlarm e.

g. in CARE. TO ASSURE PROPER ELECTRICAL CONTACT, WIRES MUST BE TWISTED TOGETHER BEFORE INSERTION. USE 1/4 IN. (6 MM) MIN. TUBING. BRANCH LINE MUST BE 6 FT. (1.8 M) OR LONGER. PNEUMATIC VALVE * Fig.

21. W7751H to pneumatic transducer NOTE: Reverse wires (INCREASE/DECREASE) to reverse action (DIRECT/REVERSE). Fig. 20. W7751H to PWM Valve Actuator and series or parallel fan T7460 Wall Module Override LED The remote override LED, located on either the T7460 Wall Module, will display the "manual override" mode of the W7751H.

Possible modes are: 1. LED = OFF. No override active. 2. LED = Continuously ON.

Bypass mode (timed occupied override). 3. LED = One flash per second. Continuous unoccupied override. 4. LED = Two flashes per second. Remote only, continuous occupied override. LONWORKS Service LED The LONWORKS Service LED on the front of the W7751H (see Fig. 2) provides a visual indication of the status of the device. When the W7751H receives power, the LED appears in one of the following allowable states: 1.

OFF = no power to the processor. 2. Continuous ON = processor is in initialized state. 3. Slow blink = controlling, normal state. 4. Fast blink = the W7751H has an alarm condition. When the W7751H has an alarm condition, it reports it to the central node on the LONWORKS® network (typically, the Excel 10 Zone Manager). Also, the W7751H variables, AlarmLogX, where X is 1 through 5, that store the last five alarms to occur in the controller, are available.

These points can be viewed using XBS or the corresponding LNS plug-in.

For a description of Excel 10 Alarms, refer to Table 12 of Excel 10 W7751B,D,F,H,J Variable Air Volume Controller Application Guide (Product Literature No.: 74-2949) NOTE: The node can be reset by switching the node to MANUAL and then to the normal operating mode. Step 3. I/O Tests The W7751H controller must be configured using the LNS plug-in. Once this is done, the W7751H can be commanded to the "manual" mode, and each output and input can be exercised/viewed to verify proper wiring connections and equipment operation.

W7751H Actuator Checkout To check out the W7751H actuator, determine the direction the damper shaft moves to open the damper (CW or CCW). See Fig.

7. Connect the W7751H with the laptop PC. To do this, the W7751H must be wired, powered, and connected to the portable PC via the LonTalk adapter. The LonTalk® Adapter connects to the W7751H either directly via the LONWORKS network or via the T7460-LONJACK (accessory available with the T7460 and T7560 Wall Modules).



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Using the LONWORKS® EN1B-0279GE51 R0707B 8 EXCEL 10 W7751H SMART VAV ACTUATOR tool, you should then drive the W7751H actuator fully open and then closed. @@If the damper is open, it should begin to close. @@@@@change-over switch B (S1/S5 opens and S1/S6 closes when shaft adapter moves CW past 85°; reverts to original state when shaft adapter moves CCW past 85°). Step 4. Verify Sequences of Operation For the detailed descriptions of the sequences of operation, see Excel 10 W7751B,D,F,H,J Variable Air Volume Controller Application Guide (Product Literature No.: 74-2949). S5 / S6 Optional Accessories Spare Parts Kit Order no.: A7211.2071.

Contains: · 1 anti-rotation bracket + screws · 2 universal terminal blocks · 2 strain-relief clamps · 2 grommets* · 2 adjustable end stops *In order to guarantee IP54, only original Honeywell grommets may be used. SSW2 Auxiliary Switch Kit Fig. 22. Internal end switches of SSW2 (max. 230 V, 5 A) NOTE: Both internal end switches must be connected to the same power source. 9 EN1B-0279GE51 R0707B 41 142 85 76 103 Fig. 23. Dimensions (in mm) Manufactured for and on behalf of the Environmental and Combustion Controls Division of Honeywell Technologies Sàrl, Ecublens, Route du Bois 37, Switzerland by its Authorized Representative: Automation and Control Solutions Honeywell GmbH Böblinger Straße 17 71101 Schönaich Germany Phone: (49) 7031 63701 Fax: (49) 7031 637493 <http://europe.hbc.honeywell.com> Subject to change without notice. Printed in Germany EN1B-0279GE51 R0707B 105 .



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