



Therma-Fuser™ Systems

# BACnet WALL ADJUSTER

## INSTALLATION, OPERATION AND MAINTENANCE

**Models:** ADJ-B BACnet Wall Adjuster

Compatible with all BACnet E-Series  
Therma-Fuser™ Diffusers

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### DAMAGED FREIGHT CLAIM PROCEDURES

When the BACnet Wall Adjuster units are received, inspect for damage which may have occurred during shipment. If damage is evident, it should be noted on the carrier's freight bill. A written request for inspection by the carrier's agent should be made at once.

### STORAGE

Do not store for prolonged times at temperatures exceeding 130°F/ 56°C. Acceptable humidity level is 5-95% relative humidity non-condensing.

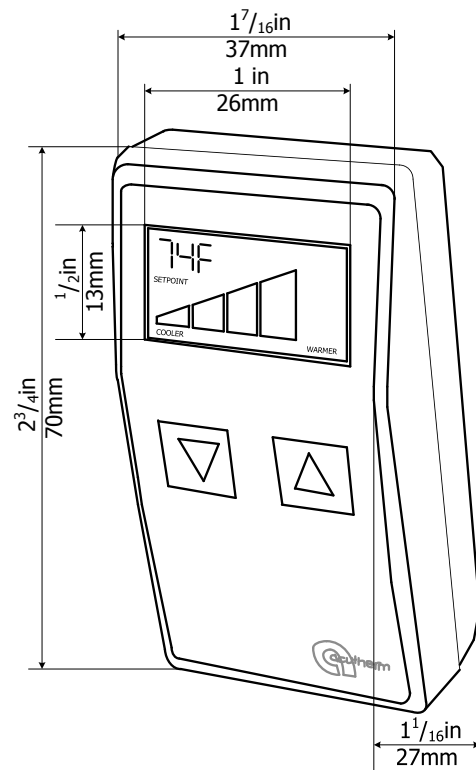
### INSTALLATION

#### BACnet Wall Adjuster Location

1. If using room temperature sensor in the diffuser then the Adjuster may be located on any wall near the diffuser.
2. If the room temperature sensor in the Adjuster is to be used (see Options) then locate on an interior wall, out of direct sun light within the space to be monitored.

#### BACnet Wall Adjuster Direct Wall Mount

1. Drill a  $\frac{3}{4}$ in/19mm diameter hole in the wall 2in/51mm below the center of where the top of the Adjuster is to be located (Fig. 2).
2. Pull the cable from the Master diffuser through the hole and through the Wall Plate (Fig. 3).
3. Insert the large tab on the bottom of the Wall Plate into the  $\frac{3}{4}$ in/19mm hole and secure to the wall using the three screws provided (Fig. 4).



**Fig. 1 – BACnet Wall Adjuster**

4. The tab on the Wall Plate will keep the cable from falling back into the wall.
4. Plug the connector into the Adjuster with the screw terminals up (Fig. 5).
5. If either of the connectors were removed to pull the cable then reconnect them as shown in Fig. 6.
6. Hang the Adjuster on the top tabs of the Wall Plate and then snap the bottom in place (Fig. 5).

#### BACnet Wall Adjuster Electrical Box Mount

1. Carefully remove the two screws holding the two halves of the Adjuster together.
2. Sandwich the Adapter Plate between the front and back halves of the Adjuster and reinstall the two screws.
3. Pull the cable from the Master diffuser through the electrical box and through the Wall Plate.
4. Plug the connector into the Adjuster with the

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screw terminals up (Fig. 5).

5. If either of the connectors were removed to pull the cable then reconnect them as shown in Fig. 6.
6. Insert the top tabs of the Wall Plate into the top of the Adjuster and then snap the bottom in place (Fig. 5).  
The tab on the Wall Plate will keep the cable secure to the Adjuster.
7. Secure the Adapter Plate to the electrical box with the screws provided.

### CONFIGURATION

#### Dip Switches

Dip switches are located on the back of the Adjuster (Fig. 8).

- 1a. If using room temperature sensor in the diffuser then dip switch number 1 must be in the ON position (Fig. 8).
- 1b. If the room temperature sensor in the Adjuster is to be used then dip switch number 1 must be in the OFF position (Fig. 8). The temperature sensor in the Adjuster is located on the bottom of the Adjuster (Fig. 7).

**Caution:** some models of diffusers do not have a room temperature sensor installed and the sensor in the Adjuster must be used. Keep dip switch 1 in the OFF position for these diffusers.

2. Dip switch number 2 is used to switch between °F and °C. Adjust dip switch 2 OFF for °F and ON for °C (Fig 8).
3. Dip switch number 3 should be ON for set point represented by warmer/cooler bars and OFF for a numeric display of set point.
4. Dip switch number 4 is reserved for future use. Keep switch 4 in the OFF position.

#### Menus

There are three parameters that can be accessed through the MENU button on the bottom of the Adjuster (Fig. 7); Temperature correction, minimum damper position, and maximum damper position.

1. To access the parameters press the MENU button on the bottom of the Adjuster. The screen should briefly display a 1 and then a two digit number.
2. The menu has parameters numbered 1 to 6 and pressing the UP and DOWN arrow buttons will cycle between them. Each press of the arrow will

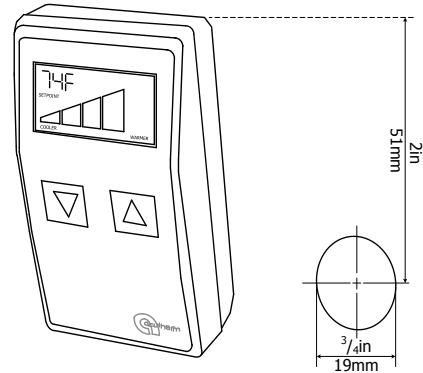


Fig. 2 – Drill hole

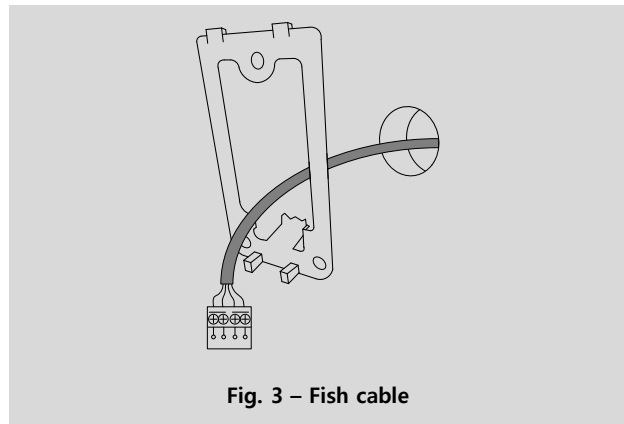


Fig. 3 – Fish cable

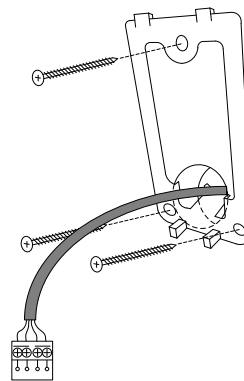


Fig. 4 – Secure wall plate

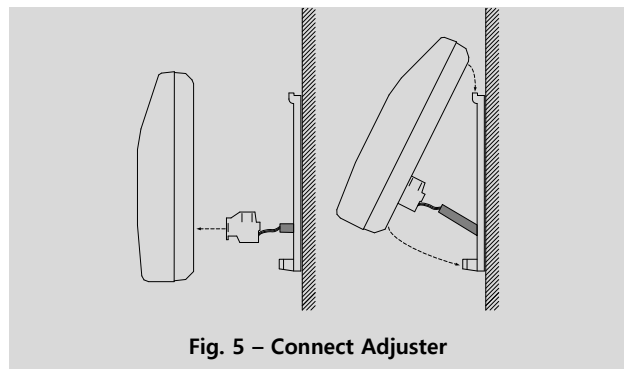


Fig. 5 – Connect Adjuster

briefly display the parameter number followed by a two digit number that is the parameter setting.

3. To change a parameter press and hold the MENU button for 2 seconds and the display will alternate between the parameter number and the parameter setting.
4. Pressing the UP and DOWN arrow buttons will change the parameter setting.
5. Pressing the MENU button once will exit the parameter setting. The display will flash the new setting three times.
6. Pressing the MENU button again will exit the menus.

**Parameters**

Parameter 1

- Temperature correction
- Used to calibrate the temperature sensor in the Adjuster
- Default: Set at factory
- Adjustable from 00-50° Fx10 / 00-28° Cx10

Parameter 2

- n/a

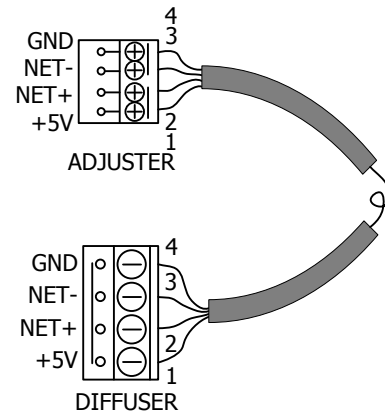
Parameter 3

- n/a

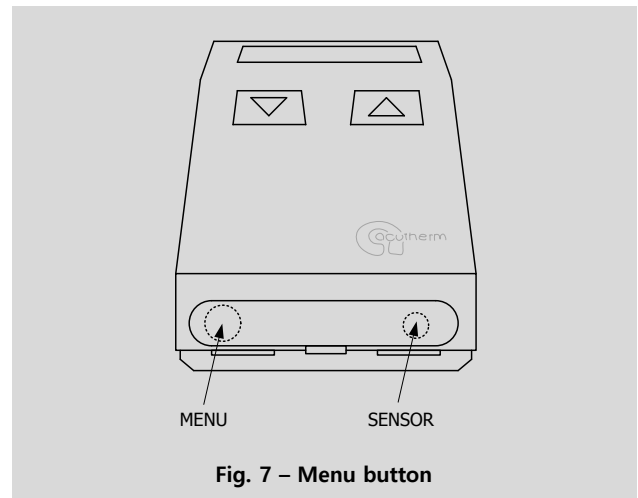
**BALANCING**

VAV systems are balanced for design air volume at maximum air flow and systems using Therma-Fuser VAV diffusers are no exception. When all the Therma-Fuser diffusers are set for maximum air flow by fully opening them, the system is really a constant air volume system and is balanced as a constant volume system. To open the diffuser for balancing:

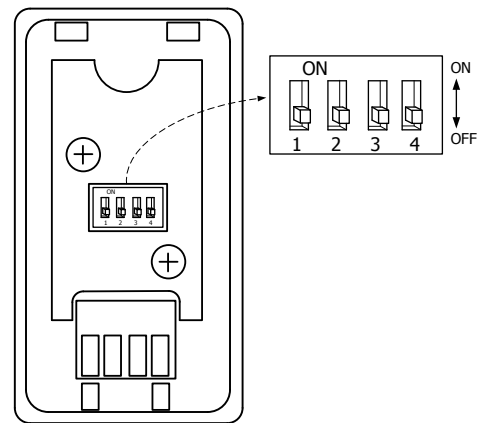
1. Press and hold both UP and DOWN arrow buttons for 2 seconds, the display will flash **or** for override and the diffuser will open.
2. When balancing is complete press either the UP or DOWN arrow and the diffuser will close and then re-open to control.



**Fig. 6 – Connector Wiring**



**Fig. 7 – Menu button**



Switch	Purpose	Off	On
1	Sensor	Adjuster °F	Diffuser °C
2	Units	Numeric	Bars
3	Display	Off	-
4	Not used		

**Fig. 8 – Adjuster Dip Switches**

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### OPERATION

The Adjuster provides the occupant easy access to the set points of the diffuser.

1. To make the room warmer press the UP arrow.
2. To make the room cooler press the DOWN arrow.

Note when operating in °C. Because the set point adjustment is in 0.5°C while the display is in 1°C, two presses of the button will be needed to change the display.

### DISPLAY INDICATORS

In addition to displaying the set point there are two indicators; INSTALL and PENDING.

1. INSTALL – short flash indicates message received.
2. PENDING – short flash indicates message transmitted.

### TROUBLESHOOTING

1. Inspect the wiring at the diffuser board and check for bad connections at terminals.
2. Check the incoming power at the diffuser board. Power across terminals 24VAC POWER (*see Fig. 10 Wiring Diagram*) should be 24VAC  $\pm$ 2VAC. If the power is out of tolerance:
  - a. Check for proper sizing of transformer and correct primary voltage.
  - b. Check for excessive voltage drop between transformer and master diffuser.
3. Inspect the wiring at the Adjuster and check for bad connections at terminals.
4. Check the incoming power at the Adjuster across terminals 1 & 4 (Fig. 6). Power should be 5VDC  $\pm$ 0.5VDC.
5. Check communication power at the Adjuster across terminals 2 & 4 and across 3 & 4 (Fig. 6). Communication power should be 2VDC  $\pm$ 0.2VDC
6. Check the Display Indicators on the Adjuster.
  - a. If the INSTALL indicator is on continuously then network communication has been lost or has the first communication has never been received.
  - b. If the PENDING indicator never flashes then the Adjuster is not transmitting.

### TWO YEAR WARRANTY

Acutherm warrants that its BACnet Wall Adjuster, exclusive of any options and accessories (whether factory or field installed) shall be free from defective material or workmanship for a period of two (2) years from the date of shipment and agrees to repair or replace, at its option, any parts that fail during said two (2) year period due to any such defects which would not have occurred had reasonable care and proper usage and all parts and controls remain unaltered. Acutherm makes NO WARRANTY OF MERCHANTABILITY OF PRODUCTS OR OF THEIR FITNESS FOR ANY PURPOSE OR ANY OTHER EXPRESS OR IMPLIED WARRANTY WHICH EXTENDS BEYOND THE LIMITED WARRANTY ABOVE. ACUTHERM'S LIABILITY FOR ANY AND ALL LOSSES AND DAMAGES RESULTING FROM DEFECTS SHALL IN NO EVENT EXCEED THE COST OF REPAIR OR REPLACEMENT OF PARTS FOUND DEFECTIVE UPON EXAMINATION BY ACUTHERM. IN NO EVENT SHALL ACUTHERM BE LIABLE FOR INCIDENTAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR DAMAGES FOR INJURY TO PERSONS OR PROPERTY. Acutherm shall not be responsible for freight to or from its plant in connection with the inspection, repair or replacement of parts under the terms of this limited warranty nor for cost of removal or installation.

# BACnet WALL ADJUSTER INSTALLATION OPERATION AND MAINTENANCE

## WIRING DIAGRAM

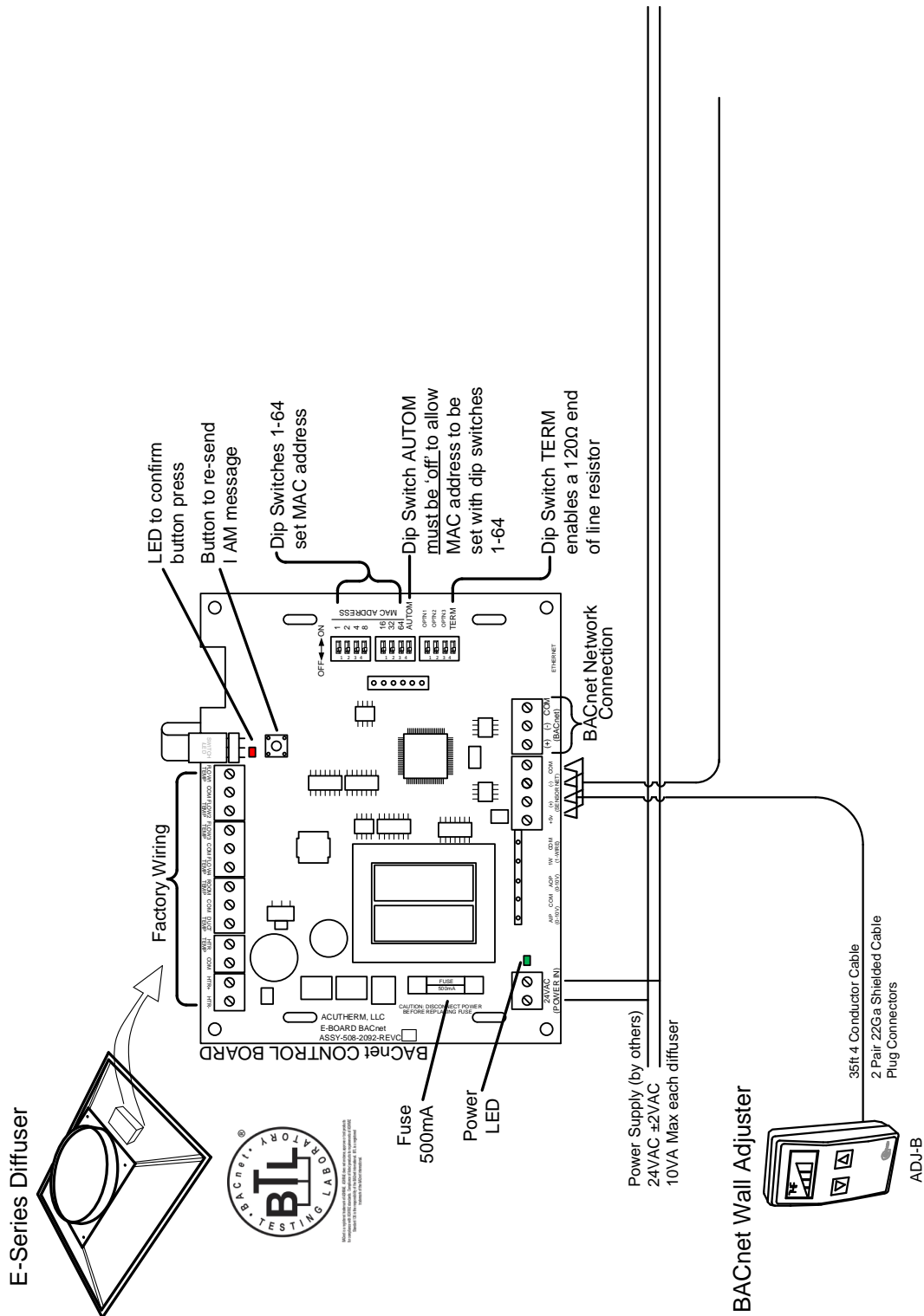


Fig. 9 – Wiring Diagram



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