

HPO-9005 Room Sensor Adapter Installation Guide

CONTENTS

Introduction	1
Mounting	1
Connections	1
Sample Wiring	2
STE-6011 or STE-1430 (Thermistor Only)	2
STE-6019 (Thermistor and Potentiometer)	2
Configuration	2
Temperature (Device Type II or III)	2
Setpoint Offset (Range and Multiplier)	3
Maintenance	4
Important Notices	4

INTRODUCTION



The **Room Sensor port 1** in KMC Conquest controllers is designed to automatically connect and configure a digital **STE-9000 Series NetSensor** or an **STE-6010**, **STE-6014**, or **STE-6017** analog (thermistor) sensor using a standard Ethernet patch cable.

The HPO-9005 room sensor adapter allows the use of other sensors and optional setpoint potentiometers to be used instead. This provides the means of reusing an existing suitable sensor and wiring in a retrofit or using a different kind of sensor (e.g., a flat plate sensor such as a STE-1430) for new installations. The sensor must be a **Type II or III, 10K ohm thermistor**. The setpoint adjustment must be a **0–10K ohm potentiometer**. The sensor or pot may have wire leads or (with user supplied wiring) screw terminals.

NOTE: Conquest controllers automatically configure Type **II** thermistors connected to the Room Sensor port. Type **III** thermistors require a quick configuration change using KMC Connect, KMC Converge, or TotalControl. See **Configuration on page 2**.

MOUNTING

The adapter's dimensions are $1-5/16 \times 11/16 \times 5/8$ inches (33 x 17 x 16 mm), and its weight is 1/3 ounce (9 grams).

If using the center hole **2** in the circuit board for surface mounting with a (#8) screw:

- Tighten the screw loosely (to avoid cracking the board or any of its connections).
- Fasten to a metal surface only after insulating the board appropriately.



CONNECTIONS

NOTE: The terminals are marked T (Temperature), GND (Ground/ Common), and SP (Setpoint) 3 under the terminal block on the bottom of the circuit board.



 Connect wires from the thermistor to the Temperature 4 and Ground/Common 5 terminals on the adapter. (See Sample Wiring on page 2.)



- Connect an optional 10K ohm setpoint potentiometer between the Ground/Common
 and Setpoint 6 terminals.
- Plug an Ethernet patch cable 7 into the RJ-45 jack on the adapter.



4. Plug the other end of the Ethernet cable into the ROOM SENSOR port 1 of the controller. (See Introduction on page 1.)

NOTE: The **total** length of wiring between the sensor and the Room Sensor port should be a maximum of 150 feet (45 meters).

SAMPLE WIRING

STE-6011 or STE-1430 (Thermistor Only)



STE-6019 (Thermistor and Potentiometer)



CONFIGURATION

Temperature (Device Type II or III)

KMC Conquest controllers **automatically** configure the Room Sensor port's Al1 (Space Sensor) 8 for Type II, 10K ohm thermistors 9. If a Type II thermistor is used, no configuration by the user is needed.

NOTE: For thermistors (in default Conquest applications), Al1 is mapped to AV1 (Space Temperature), and AV1 is used as the temperature reference for controlling the outputs.

Pip Input Objects	Description		
8 → [All] SPACE_SENSOR (Al2] SETPOINT_OFFSET (Al3] DISCHARGE_AIR	Space Sensor	*	
- (AI4) OUTDOOR_AIR - → (AI5) HUMIDITY	Device Type		
[AI3] HOWIDITY → [AI7] ECON_FDBK	9 KMC Type II Deg F	•	
	Termination		
[AI9] DUCT	Fixed Bias 0 to 12v	•	

To select a Type **III** thermistor device type:

1. Start KMC Connect, KMC Converge, or TotalControl. (KMC Connect screens are shown here.)



- 2. Click the + 10 in front of the controller.
- 3. Click the + 11 in front of Input Objects to expand the folder.
- 4. Double-click Al1 12 to open it.
- 5. Click the **drop-down box** 13 under Device Type.
- 6. Select KMC Type III Deg F (or C) 14.
- 7. Click Save Changes 15.
- 8. Click the X in the tab to close the tab.
 - **NOTE:** See the software help system for any additional information.

Setpoint Offset (Range and Multiplier)

For a setpoint adjustment with a 0-10K ohm potentiometer, Al2 provides an offset range of approximately plus or minus 1° (F or C, according to the application) 16. The present value is dependent on the position of the dial.



In default Conquest applications, **Al2 is mapped** to **AV2 (with a multiplier AV12) for the setpoint offset** 17, and AV2 is the value used in room temperature control programming (not Al2 directly). AV2 = Al2 x AV12.

Network Manager 🛛 🗸 🔸	×	NM: BACnet (1) [81123] BAC-9311CE_Summit45 [AV2] STPT_OFFS
🕀 🕖 Network (local)	*	Save Changes Refresh Expand All
🕀 🗻 [81122] BAC-9311CE_Summit	_	General Properties
[81123] BAC-9311CE_Summit45 [27] Analog Value Objects [27] AV1] SPACE_TEMP [27] STPT_OFFSET [27] AV3] ACT_COOL_STPT [27] [AV4] ACT_HEAT_STPT [27] [AV5] OCC_L_STPT [27] [AV5] OCC_C_STPT [27] [AV5] OCC_C_STPT [27] [AV5] OCC_C_STPT [27] [AV5] OCC_C_STPT [27] [AV5] OCC_C_STPT	II	Object Instance Object Name STPT_OFFSET Present Value 1.50 Priority Nine Profile Name

The factory default for the multiplier (AV12) is

3 for °F applications (or 1.5 for °C applications), which gives a user setpoint adjustment range of approximately plus or minus 3° F.

NOTE: In the example shown, Al2 = 0.5 at that dial position (about halfway between the center position and the extreme CW position), which is multiplied by (the default) AV12 value of 3 to give the offset of 1.5 °F above (warmer than) the scheduled active setpoint.

To **adjust the setpoint range** by editing the present value of AV12:

1. Start KMC Connect, KMC Converge, or TotalControl. (KMC Connect screens are shown here.)

Network Manager 👻 🕈	×	NM: BACnet (1)			
🐂 🔯 🚛 🔚 🗙		[81123] BAC-9311CE_Summit45 [AV12] STBY-S			
Notification Service (4)		Save Changes Refresh Expand All			
Protocol Gateway Service (7)		 General Properties 			
System Monitor (2)					
Trend Service (3)	=	Object Instance			
🛱 🔤 BACnet (1)		1			
E United Street, (local) E International (local) E International (local) E International (local)		Object Name STBY-STPT_OFFSET			
18 🕀 🗻 [81122] BAC-9311CE_summit					
Analog Value Objects		Present Value Write Priority			
		3.00 -			
[AV2] STPT_OFFSET		Profile Name Unsupported Description			
[AV3] ACT_COOL_STPT					
AV5] OCC_CL_STPT					
AV6] OCC_HT_STPT		Standby or Setpoint Offset			
AV7] UNOCC_CL_STPT		1007 2007			
[AV8] UNOCC_HT_STPT		-			
[AV9] MIN_CL_STPT					
[AV10] MAX_HT_STPT					
AV11] MIN_STPT_DIFF		Event/Alarm Properties			
		 Status Properties 			

- 2. Click the + 18 in front of the controller.
- 3. Click the + 19 in front of Analog Value Objects to expand the folder.

4. Double-click AV12 20 to open it.

ACnet (1) BAC-9311CE_S	ummit45 [AV12] STE	BY-STP1	r_offset ×		
Save Changes Refresh E	pand All				
 General Properties 					
Object Instance		12	Out Of Se		
Object Name			Relinquish De	efault 21	
STBY-STPT_OFFSET				3	
Present Value	Write Priority		Units		
3.00		-	Degrees F	· ·	
Profile Name			COV Increment	nt	
Unsupported				1	
Description					
Standby or Setpoint Off	set	*			
Event/Alarm Properties					
 Status Properties 					

5. Edit the **Relinquish Default** value **21** to be the desired multiplier.

NOTE: If AV12 = 1, then AV2 = AI2.

- 6. Click Save Changes 22.
- 7. Click the **X** in the tab to close the tab.
 - **NOTE:** See the software help system for any additional information.

MAINTENANCE

No routine maintenance is required. Each component is designed for dependable, long-term reliability and performance. Careful installation will help ensure long-term reliability and performance.

IMPORTANT NOTICES

The material in this document is for information purposes only. The contents and the product it describes are subject to change without notice.

KMC Controls, Inc. makes no representations or warranties with respect to this document. In no event shall KMC Controls, Inc. be liable for any damages, direct, or incidental, arising out of or related to the use of this document.

The KMC logo is a registered trademark of KMC Controls, Inc. All rights reserved.

 TEL:
 574.831.5250

 FAX:
 574.831.5252

 EMAIL:
 info@kmccontrols.com

