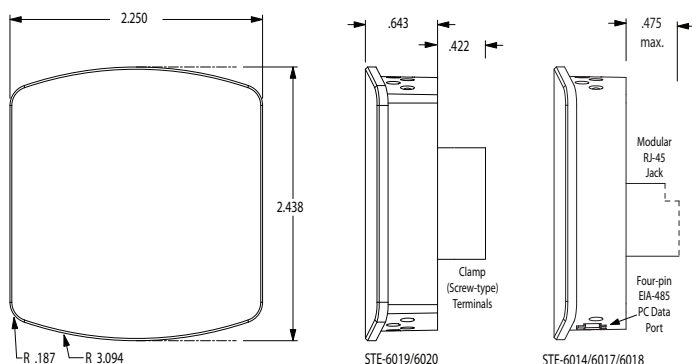


Installation Guide

Mounting

All dimensions are in inches



NOTE: Before July 2008, these models had numbered °F or °C dials.

Location and Cover Removal

Install the sensor on an inside wall where it can sense the average room temperature and be away from direct sunlight, heat sources, windows, air vents, and air circulation obstructions (curtains, furniture, etc.). It can be mounted on a hollow wall or (with a universal backplate HMO-6036) to a 2 x 4 inch handy box.

The cover is held to the black, back panel by three, small, round pegs that fit in the holes of the cover. The bottom peg is on a tab and snaps into the center bottom hole.

1. With a small Phillips screwdriver or hex wrench, press in and hold the tab button that snaps into the center hole on the bottom cover.
2. Carefully pull or pry the back panel from the front cover.

Handy Box Installation (Recommended)

1. Mount a universal backplate HMO-6036 to the handy box using the two screws provided.
2. Remove the cover from the back panel.
3. Attach the back panel to the backplate using the two screws provided.
4. Attach the cable to the terminal block or jack according to the appropriate wiring diagram on the next page.
5. Replace the cover.



Hollow Wall Installation

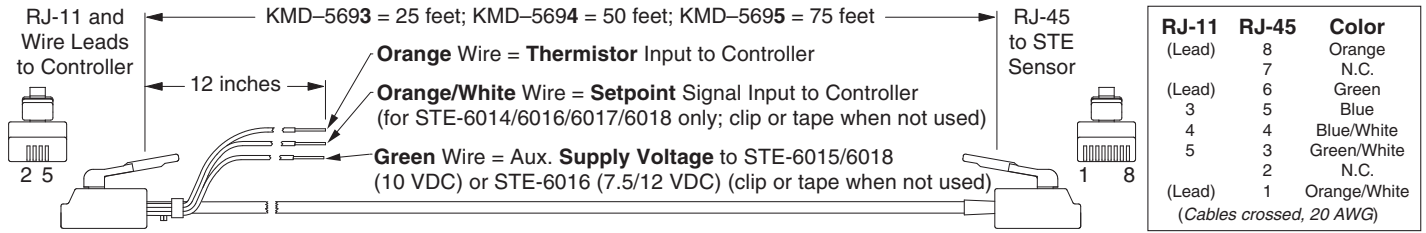
1. Remove the cover from the back panel.
2. Using the back panel as a template, drill two holes for mounting screws (7/64 inches or 3 mm in diameter and 1.4 inches, 1-13/32 inches, or 35.6 mm apart) and cut a center hole (size needed is dependent on model) for the terminal block or jack.
3. Attach the back panel to the wall using two #6 self-threading screws. (Plastic anchors are recommended, and the size of the holes will then need adjusting.)
4. Attach the cable to the terminal block or jack according to the appropriate wiring diagram on the next page.
5. Replace the cover.

Accessories

HMO-6036	Universal Backplate
KMD-569x	STE-6010/6014/6015/6016/6017/6018 to Controller Cable with RJ-45 to RJ-11 Connectors (-5693 = 25 ft.; -5694 = 50 ft.; -5695 = 75 ft.)
KMD-5624	PC Data Port (EIA-485) Cable
KMD-5576	EIA-485 to USB Communicator

Wiring

Connect wires as shown for the relevant model.



STE-6014/6017/6018

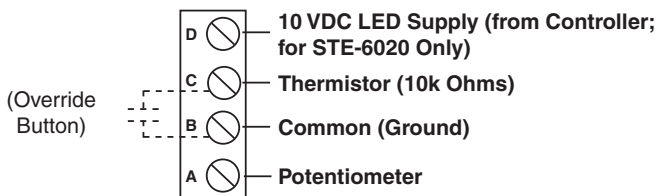
Connecting any of these models to a controller requires a special cable with (on the sensor end) an RJ-45 connector and (on the controller end) an RJ-11 connector with an additional three wires (as relevant to the model) for controller inputs. Purchasing preassembled cables from KMC is more **cost-effective** and **reliable** than creating custom cables in the field. Use one of the following cables:

- KMD-5693 = 25 feet
- KMD-5694 = 50 feet
- KMD-5695 = 75 feet

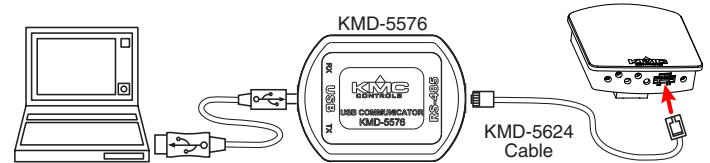
The three additional wire connections are:

- **Orange** is the **thermistor** input to the controller
- **Orange/white** is the **setpoint** signal input to the controller
- **Green** is the auxiliary **supply voltage** of 10 VDC to the STE-6018 LED (for the STE-6014/6017, clip or tape the unused wire)

STE-6019/6020



PC Port Connection



At the bottom of the STE-6014/6017/6018 case is an EIA-485 (formerly RS-485) computer port. This port provides a temporary connection to the digital network for network setup or troubleshooting.

To use the port to connect to a computer, a means of converting the EIA-485 signal to a USB or EIA-232 (formerly RS-232) signal will be needed. The exact connection depends on the computer and the operator workstation software. (See also the instructions included with those devices and software.)

- For **USB** (to WinControl or BACstage), use a KMD-5576 USB Communicator (see the illustration above).
- For **EIA-232 to BACstage**, use a third-party interface.
- For **EIA-232 to WinControl**, use a KMD-5559 CommTalk and KMD-5624 cable (or equivalent interface).

To access the network through the STE's sensor:

1. Connect the keyed, flat end of the KMD-5624 interface cable (included with the KMD-5576 but not the KMD-5559) to the port on the sensor.
2. Connect the other end of the cable to the interface device that converts the EIA-485 signal into an EIA-232 or USB signal.
3. Connect the suitable cable from the interface device to the computer's serial or USB port. Install any required software and configure the port as necessary.

Controller Configuration

Overview

Ensure that the corresponding 10,000 ohm pull-up resistors on the controller are selected (switched On). Consult the controller's setup instructions for information on switching on the pull-up resistors.

Controller configuration instructions are given for both WinControl and BACstage. See the relevant software section.

BACstage Software

Thermistor Input

1. In the BACstage software main menu, select *Objects > Inputs*.
2. Click *Edit*.
3. Type in a name in the *Description* field (up to 32 characters) and/or *Label* field (up to 16 characters).

NOTE: No two labels or descriptions in a controller can be identical.

4. Select *Object Type: Analog* if it is not the default.
5. Select *Device Type: KMC10K Type II*.
6. Select *Units: °F* or *°C*.
7. Click *End Edit*.
8. Click *Yes* for "Send Update Notification Now?"
9. In the BACstage software main menu, select *Device > Device Tables > KMC10K Type II Table*.
10. Click *Edit*.
11. Click *Defaults* (values will fill in).
12. Click *End Edit*.
13. Click *Yes* for "Send Update Notification Now?"
14. Click *OK*.

Setpoint Input

1. In the BACstage software main menu, select *Objects > Inputs*.
2. Click *Edit*.
3. Type in a name in the *Description* field and/or *Label* field.
4. Select *Object Type: Analog* if it is not the default.
5. Select *Device > Device Tables > Table x (4 or 5)*.
6. Select *Units: °F* or *°C*.
7. Click *End Edit*.
8. Click *Yes* for "Send Update Notification Now?"
9. In the BACstage software main menu, select *Device > Device Tables > Table x*.
10. Click *Edit*.
11. Enter the following values in Table x:

NOTE: In the Adobe Acrobat file of this document, you can use the table on page 5 to copy and paste the 128 lines into the appropriate section of the BACstage *.BAC panel file (instead of typing in the values from the table below).

Index	°F Value	°C Value
1	54.0	12.2
2	54.3	12.4
3	54.6	12.6
4	54.9	12.7
5	55.2	12.9
6	55.5	13.1
7	55.8	13.2
8	56.1	13.4
9	56.4	13.6
10	56.7	13.7
11	57.1	13.9
12	57.4	14.1
13	57.7	14.3
14	58.1	14.5
15	58.4	14.7

NOTE: This table is NOT also for the STE-6012/6016.

16	58.8	14.9
17	59.1	15.1
18	59.5	15.3
19	59.9	15.5
20	60.3	15.7
21	60.7	15.9
22	61.1	16.2
23	61.5	16.4
24	61.9	16.6
25	62.3	16.8
26	62.7	17.1
27	63.2	17.3
28	63.6	17.6
29	64.1	17.8
30	64.5	18.1
31	65.0	18.3
32	65.5	18.6
33	66.0	18.9
34	66.5	19.2
35	67.0	19.4
36	67.5	19.7
37	68.1	20.1
38	68.6	20.3
39	69.2	20.7
40	69.8	21.0
41	70.4	21.3
42	71.0	21.7
43	71.6	22.0
44	72.2	22.3
45	72.9	22.7
46	73.5	23.1
47	74.2	23.4
48	74.9	23.8
49	75.6	24.2
50	76.3	24.6
51	77.1	25.1
52	77.8	25.4
53	78.6	25.9
54	79.4	26.3
55	80.3	26.8

56	81.1	27.3
57	82.0	27.8
58	82.9	28.3
59	83.8	28.8
60	84.8	29.3
61	85.8	29.9
62	86.8	30.4
63	87.8	31.0
64	88.9	31.6
65	90.0	32.2
66	90.0	32.2
67	90.0	32.2
68	90.0	32.2
69	90.0	32.2
70	90.0	32.2
71	90.0	32.2
72	90.0	32.2
73	90.0	32.2
74	90.0	32.2
75	90.0	32.2
76	90.0	32.2
77	90.0	32.2
78	90.0	32.2
79	90.0	32.2
80	90.0	32.2
81	90.0	32.2
82	90.0	32.2
83	90.0	32.2
84	90.0	32.2
85	90.0	32.2
86	90.0	32.2
87	90.0	32.2
88	90.0	32.2
89	90.0	32.2
90	90.0	32.2
91	90.0	32.2
92	90.0	32.2
93	90.0	32.2
94	90.0	32.2
95	90.0	32.2

96	90.0	32.2
97	90.0	32.2
98	90.0	32.2
99	90.0	32.2
100	90.0	32.2
101	90.0	32.2
102	90.0	32.2
103	90.0	32.2
104	90.0	32.2
105	90.0	32.2
106	90.0	32.2
107	90.0	32.2
108	90.0	32.2
109	90.0	32.2
110	90.0	32.2
111	90.0	32.2
112	90.0	32.2
113	90.0	32.2
114	90.0	32.2
115	90.0	32.2
116	90.0	32.2
117	90.0	32.2
118	90.0	32.2
119	90.0	32.2
120	90.0	32.2
121	90.0	32.2
122	90.0	32.2
123	90.0	32.2
124	90.0	32.2
125	90.0	32.2
126	90.0	32.2
127	90.0	32.2
128	90.0	32.2

12. Click *End Edit*.
13. Click *Yes* for "Send Update Notification Now?"
14. Click *OK*.

NOTE: This table is NOT also for the STE-6012/6016.

(Tables for BACstage *.BAC panel file)

NOTE: In the Adobe Acrobat file of this document, you can select a table below to copy and paste the 128 lines into the appropriate device table section of the BACstage *.BAC panel file.

Fahrenheit Values

X1=54.0	X44=72.2	X87=90.0
X2=54.3	X45=72.9	X88=90.0
X3=54.6	X46=73.5	X89=90.0
X4=54.9	X47=74.2	X90=90.0
X5=55.2	X48=74.9	X91=90.0
X6=55.5	X49=75.6	X92=90.0
X7=55.8	X50=76.3	X93=90.0
X8=56.1	X51=77.1	X94=90.0
X9=56.4	X52=77.8	X95=90.0
X10=56.7	X53=78.6	X96=90.0
X11=57.1	X54=79.4	X97=90.0
X12=57.4	X55=80.3	X98=90.0
X13=57.7	X56=81.1	X99=90.0
X14=58.1	X57=82.0	X100=90.0
X15=58.4	X58=82.9	X101=90.0
X16=58.8	X59=83.8	X102=90.0
X17=59.1	X60=84.8	X103=90.0
X18=59.5	X61=85.8	X104=90.0
X19=59.9	X62=86.8	X105=90.0
X20=60.3	X63=87.8	X106=90.0
X21=60.7	X64=88.9	X107=90.0
X22=61.1	X65=90.0	X108=90.0
X23=61.5	X66=90.0	X109=90.0
X24=61.9	X67=90.0	X110=90.0
X25=62.3	X68=90.0	X111=90.0
X26=62.7	X69=90.0	X112=90.0
X27=63.2	X70=90.0	X113=90.0
X28=63.6	X71=90.0	X114=90.0
X29=64.1	X72=90.0	X115=90.0
X30=64.5	X73=90.0	X116=90.0
X31=65.0	X74=90.0	X117=90.0
X32=65.5	X75=90.0	X118=90.0
X33=66.0	X76=90.0	X119=90.0
X34=66.5	X77=90.0	X120=90.0
X35=67.0	X78=90.0	X121=90.0
X36=67.5	X79=90.0	X122=90.0
X37=68.1	X80=90.0	X123=90.0
X38=68.6	X81=90.0	X124=90.0
X39=69.2	X82=90.0	X125=90.0
X40=69.8	X83=90.0	X126=90.0
X41=70.4	X84=90.0	X127=90.0
X42=71.0	X85=90.0	X128=90.0
X43=71.6	X86=90.0	

Celsius Values

X1=12.2	X44=22.3	X87=32.2
X2=12.4	X45=22.7	X88=32.2
X3=12.6	X46=23.1	X89=32.2
X4=12.7	X47=23.4	X90=32.2
X5=12.9	X48=23.8	X91=32.2
X6=13.1	X49=24.2	X92=32.2
X7=13.2	X50=24.6	X93=32.2
X8=13.4	X51=25.1	X94=32.2
X9=13.6	X52=25.4	X95=32.2
X10=13.7	X53=25.9	X96=32.2
X11=13.9	X54=26.3	X97=32.2
X12=14.1	X55=26.8	X98=32.2
X13=14.3	X56=27.3	X99=32.2
X14=14.5	X57=27.8	X100=32.2
X15=14.7	X58=28.3	X101=32.2
X16=14.9	X59=28.8	X102=32.2
X17=15.1	X60=29.3	X103=32.2
X18=15.3	X61=29.9	X104=32.2
X19=15.5	X62=30.4	X105=32.2
X20=15.7	X63=31.0	X106=32.2
X21=15.9	X64=31.6	X107=32.2
X22=16.2	X65=32.2	X108=32.2
X23=16.4	X66=32.2	X109=32.2
X24=16.6	X67=32.2	X110=32.2
X25=16.8	X68=32.2	X111=32.2
X26=17.1	X69=32.2	X112=32.2
X27=17.3	X70=32.2	X113=32.2
X28=17.6	X71=32.2	X114=32.2
X29=17.8	X72=32.2	X115=32.2
X30=18.1	X73=32.2	X116=32.2
X31=18.3	X74=32.2	X117=32.2
X32=18.6	X75=32.2	X118=32.2
X33=18.9	X76=32.2	X119=32.2
X34=19.2	X77=32.2	X120=32.2
X35=19.4	X78=32.2	X121=32.2
X36=19.7	X79=32.2	X122=32.2
X37=20.1	X80=32.2	X123=32.2
X38=20.3	X81=32.2	X124=32.2
X39=20.7	X82=32.2	X125=32.2
X40=21.0	X83=32.2	X126=32.2
X41=21.3	X84=32.2	X127=32.2
X42=21.7	X85=32.2	X128=32.2
X43=22.0	X86=32.2	

NOTE: These tables are NOT also for the STE-6012/6016.

BAC-A1616BC BACnet Building Controller

Tables and Pull-Up Resistors

Select the 10K ohm pull-up resistor jumper position for the corresponding inputs. (See the Installation section of the BAC-A1616ABC Building Controller Installation and Operation Guide for the correct jumper position.)

Because the Building Controller has a 0–12 VDC total input range, different tables are required than in other (0–5 VDC) KMC controllers. Download the CSV table files from www.kmcccontrols.com and import the needed tables as described in the Tables section of the BAC-A1616ABC Building Controller Installation and Operation Guide. (You must log-in to see the zipped tables in Support > Technical > Tables on the web site.)

Thermistor Input

Analog Input 10 configuration screen. Fields highlighted with red circles: Object Name (AI_10), Device Type (KMC Type II Deg F), Description (STE-6010 Temperature), multiplier (1.800000), offset (32.000000), and Lookup Table (2).

1. In the desired Analog Input setup screen of the web page interface, select KMC Type II Degree Fahrenheit or KMC Type II Degree Celsius.
2. Select the Lookup Table for the Type II Thermistor.
3. For the Fahrenheit scale, the multiplier is 1.8 and the offset is 32. For Celsius, the multiplier is 1 and the offset is 0.
4. Click *Save*.

Setpoint Input

Analog Input 9 configuration screen. Fields highlighted with red circles: Object Name (AI_09), Device Type (no-device), Description (STE-6010 Pot Setpoint), multiplier (1.800000), offset (32.000000), and Lookup Table (4).

1. In the desired Analog Input setup screen of the web page interface, select No Device and the Lookup Table for the STE-6014 Rotary BBC table.
2. For the Fahrenheit scale, the multiplier is 1.8 and the offset is 32. For Celsius, the multiplier is 1 and the offset is 0.
3. Click *Save*.

Setpoint Variable

1. In the BACstage software main menu, select *Objects > Analog Values*.
2. Click *Edit*.
3. Type in a name in the *Description* field and/or *Label* field.
4. Click in the *Units* column and select °F (Fahrenheit) or °C (Celsius).
5. Click *End Edit*.
6. Click *Yes* for “Send Update Notification Now?”
7. Click *OK*.

Override Input (Not Applicable to STE-6014)

1. In the BACstage software main menu, select *Objects > Binary Values*.
2. Click *Edit*.
3. Type in a name in the *Description* field and/or *Label* field.
4. Click in the *Units* column and select *Off/On* (or *No/Yes*, *Stop/Start*, *Disabled/Enabled*, *Inactive/Active* according to preference).
5. Click *End Edit*.
6. Click *Yes* for “Send Update Notification Now?”
7. Click *OK*.

NOTE: For an additional sample application of programming override timers, adapt the information in the Application Note AN0504F Programming Override Timers section of the the Digital Designer’s Guide (SP-022).

WinControl Software

Thermistor Input

1. In the WinControl software main menu, select *Control > Inputs*.
2. Click *Edit*.
3. Type in a name in the *Description* field (up to 20 characters) and/or *Label* field (up to 8 characters).

NOTE: No two labels or descriptions in a controller can be identical.

4. Click *Units* (which opens the Configure Inputs screen).
5. Select *Type: Analog* if it is not the default.
6. Select *Deg F (or C) KMC10K Type II*.
8. Optionally, change *Format* from 0 to the desired number of temperature decimal places.
9. Optionally, change the *Average* to the desired number of thermistor readings averaged before displaying the result.
10. Click *OK*.
11. Click *End Edit*.
12. Click *OK*.

Setpoint Input

1. In the WinControl software main menu, select *Control > Inputs*.
2. Click *Edit*.
3. Type in a name in the *Description* field and/or *Label* field.
4. Click *Units* (which opens the Configure Inputs screen).
5. Select *Type: Analog* if it is not the default.
6. Select *Table*.
7. Click *OK*.
8. Click *End Edit*.
9. Click *OK*.
10. In the WinControl software main menu, select *Control > Tables*.
11. Click *Unused* in the first available column.
12. Select *Deg. F. (or Deg. C)*
13. Click *OK*.
14. Enter the following values under Table x and Deg. F (or C):

	Table x [1 or next available number]	Deg. F	Deg. C
1	0.00	54	12.2
2	0.32	58	14.4
3	0.77	62	16.7
4	1.14	66	18.9
5	1.47	70	21.1
6	1.74	74	23.3
7	1.97	78	25.6
8	2.16	82	27.8
9	2.31	86	30.0
10	2.42	90	32.2
11	5.00	90	32.2

15. Click *OK*.

Setpoint Variable

1. In the WinControl software main menu, select *Control > Setpoint/Variables*.
2. Click *Edit*.
3. Type in a name in the *Description* field and/or *Label* field.
4. Click *Units* (which opens the Configure Variables screen).
5. Select *Type: Analog* if it is not the default.
6. Select *Degrees Fahrenheit* (or *Celsius*).
7. Set *Format* to 0.
8. Click *OK*.
9. Click *End Edit*.
10. Click *OK*.

Override Input (Not Applicable to STE-6014)

1. In the WinControl software main menu, select *Control > Setpoint/Variables*.
2. Click *Edit*.
3. Type in a name in the *Description* field and/or *Label* field.
4. Click *Units* (which opens the Configure Variables screen).
5. Select *Type: Digital*.
6. Select *Off/On* (or *No/Yes, Stop/Start, Dis/Enabled* according to preference).
7. Click *OK*.
8. Click *End Edit*.
9. Click *OK*.

Maintenance

Careful installation will also ensure long-term reliability and performance. Remove dust as necessary from holes in top and bottom. Clean with a soft, damp cloth and mild soap.

Models and Specifications

Model Number	Interface Features		Cable Connections		
	Override Button	LED Status Indicator	Screw Clamp Terminals	RJ-45 Connector	EIA-485 Data Port
STE-6014-10				X	X
STE-6017-10	X			X	X
STE-6019-10	X		X		
STE-6018-10	X	X		X	X
STE-6020-10	X	X	X		

Connections

Clamp (screw-type) terminals or modular RJ-45 jack (see Models chart)

Weight

Approx. 1.25 oz. (35 grams)

Sensor

Type

Type II thermistor

Accuracy

± 0.36° F (± 0.20° C)

Resistance

10,000 ohms @ 77° F (25° C)

Front Button

(STE-6017/6018/6019/6020)

One momentary push button, shunts temperature sensor to signal override condition

Power Requirement

(LED Indicator on STE-6018/6020) 10 VDC (12 VDC max); 5 mA max. current draw at 12 VDC

Environmental Limits

Operating

34° to 125° F (1.1° to 51.6° C)

Shipping

-40° to 140° F (-40° to 60° C)

Humidity

0 to 95% RH non-condensing

NOTE: For additional specifications, see the STE-6000 Series Room Temperature Sensors/Transmitters Data Sheet.

KMC Controls, Inc.

19476 Industrial Drive, New Paris, IN 46553

574.831.5250

www.kmcccontrols.com

info@kmcccontrols.com