



Using Another Controller's Sensors in a FlexStat

In kindergarden, we learned that sharing is good, and FlexStats can learn to share sensors with other controllers on the same network. For example, an outside air temperature sensor is wired to AI3 of a remote networked controller (not a FlexStat) with Device Instance 2010. The program below polls the outside air temperature every minute and assigns the value to AV23 in the local FlexStat.

1. In BACstage or TotalControl add the following Control Basic program to the FlexStat and configure it to auto-run:

```
IF INTERVAL( 0:01:00 ) THEN
  AV23@8 = 2010.AI3
```

2. Restart the FlexStat.

NOTE: In FlexStats, an OAT sensor is connected to AI4, and AI4 is mapped via Control Basic to AV23 for reference whenever the OAT value is needed. The example above assumes the remote sensor is connected to AI3 of a different model of controller. For other types of sensor inputs, see the values in the chart below.

FlexStat Sensors		
Sensor	Input	Mapped AV
Space Temperature	AI1	AV40
Space Humidity	AI5	AV22
Space CO2	AI10	AV78
OAT	AI4	AV23
MAT	AI3	(None, see below)
DAT or FST	AI2	(None, see below)

NOTE: It may take a minute or two before the remote temperature starts displaying correctly.

If the FlexStat does **not** have a mapped AV for a desired input (e.g., MAT), see the "Using Another Controller's Sensors" section in the FlexStat Applications Guide. See that document for additional information about custom programming FlexStats.

These FlexStat Tech Tips are excerpts from KMC Controls' Comfort Zone newsletter issues. See the FlexStat Application Guide for more detailed information on these subjects.

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sudden changes, and bigger values (more stable) cause sensor readings to react more slowly to sudden changes or noise.

When setting up an analog input, KMC controllers include filtering as a factory default. The default should usually not be changed (particularly not reduced). However, areas subject to sudden swings of value (e.g., room temperature or static pressure) caused by such factors as door openings and closings may benefit from adjusting the filter weight.

Temporarily reducing filter weight to provide quicker responses might also be helpful for some diagnostic and commissioning purposes. But the defaults should be restored for normal operation.

How does filter weight work? Sensors are analog, and their analog signals are digitized inside the controller. After the analog signal is converted to a digital value, the value is processed through two types of filtering, and the resulting value is appropriately scaled.

Although knowing “what’s under the hood” is not necessary for adjusting filter weight, a detailed description of the filter weight process in the FlexStat, including sample graphs, can be read in the FlexStat Application Guide (Rev. M). (Details differ among controllers, but the principles are the same.)

“Success in almost any field depends more on energy and drive than it does on intelligence. This explains why we have so many stupid leaders.

(Sloan Wilson)



Weighing the Options in Filter Weight

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by **Kurt Wilkes**,
Training Manager

You have probably noticed the term “Filter Weight” while configuring KMC BACnet and KMDigital controllers (WinControl calls it “Average” instead of

“Filter Weight”). But do you know what it does?

Filter weight smooths (dampens) input value readings, reducing sensitivity to signal noise and erroneous spikes. Smaller filter weight values (more sensitive) cause the sensor readings to react more quickly to

#	Description	Name	Present Value	Units	Device Type	Out Of Service	Object Type	More
1	STE-6012 Temp	AI_1	76.61197	°F	KMC10K Type II	<input type="checkbox"/>	Analog	...
2	STE-6012 Se							
3	STE-6018 TE							
4	STE-6018 Se							
5								
6								
7								
8		AI_8	4.995117	°F		<input type="checkbox"/>	Analog	...

#	Delay	Event Enable	Notification Class	Notify Type	High Limit	Low Limit	Deadband	Limit Enable	Filter Weight
1	0	Disabled	1	Alarm	0	0	0	Disabled	6

Displaying Current Setpoint in FlexStat

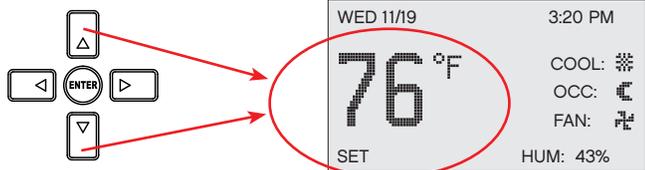
by Mark Stucky, Technical Writer

Tech Tips



What is the room temperature currently supposed to be? KMC's BAC-10000 Series FlexStat provides multiple ways of finding out.

From the Home (temperature display) screen, press the Up or Down arrow button ONCE to view the current setpoint. (Pressing

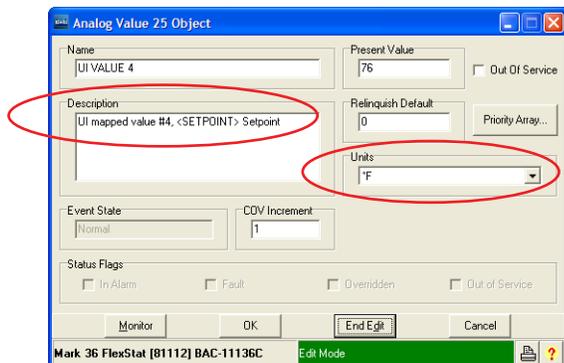


it more than once will change the setpoint and start the override mode.) The setpoint will display for approximately ten seconds.



But sometimes pushing buttons is just too much work. To permanently display the setpoint in the field at the lower right of the home screen, use BACstage or TotalControl to do the following:

1. Change AV25 Description to "UI mapped value #4, <SETPOINT> Current Setpoint" and configure units for °F (or °C as needed).



2. Write the following Control Basic program to assign the current setpoint present value (AV27) to AV25 and configure it to auto-run:

```
AV25 = AV27
```

3. Restart the FlexStat.

NOTE: If several readings (objects) are configured to show in the field, the field will sequentially show each one. For models with humidity sensors (which display HUM: xx%), changing AV22's description to "UI mapped value #1, <HUMIDITY> space humidity" will make the length and spacing of the alternating setpoint and humidity objects display more consistently.



You can also view and manipulate the setpoint (AV27) when creating web graphics pages in TotalControl or BACstage. See the FlexStat's Application Guide and the Help systems in TotalControl or BACstage for more information on creating custom web pages.

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