Description
The OE331-21-AVG General Broadcast Device Controller (GBD) provides a method of connecting up to a maximum of 6 Room Temperature Sensors so that they can then be averaged and globally broadcast by the GBD to one VCM controller on a local loop. This General Broadcast Device also includes the ability to read up to 6 Carbon Dioxide sensors and average or find the highest reading and then broadcast the reading to one VCM controller on a local loop. It also provides a 0-10 VDC proportional reset voltage on Analog #1 on the GBD. The GBD calculates and varies the signal depending on the level of CO₂ in the space as it rises from an adjustable minimum setting to an adjustable maximum level. Also, if desired, Analog Output #2 can provide a 10.0 VDC fixed signal whenever the CO₂ is above the minimum setpoint.

Up to a maximum of (2) GBD controllers can be tied together to provide from 7 to 12 Room Temperature Sensors or CO₂ Sensors inputs. Each GBD controller can be used for either temperature averaging or CO₂ averaging but not both on the same GBD controller. When both are required at least 2 GBD controllers, one configured for CO₂ control and the other configured for Temperature averaging must be used.

Mounting
The GBD Controller is provided with an integral backplate for mounting inside of a control enclosure. It is recommended that the GBD Controller be mounted in the HVAC unit control enclosure, or in a control enclosure in the building equipment room. An optional factory control enclosure for the GBD Controller is available.

<table>
<thead>
<tr>
<th>Technical Data</th>
<th>OE331-21-GPCPLUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power</td>
<td>24 Volt AC</td>
</tr>
<tr>
<td>Weight</td>
<td>1.5 lb.</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>8 VA Maximum</td>
</tr>
<tr>
<td>Operating Temp</td>
<td>10°F to 149°F</td>
</tr>
<tr>
<td>Operating Humidity</td>
<td>90% RH Non-Condensing</td>
</tr>
<tr>
<td>Network Connection</td>
<td>RS-485</td>
</tr>
<tr>
<td>Protocol</td>
<td>HSI Open Protocol Token Passing</td>
</tr>
<tr>
<td>Communications</td>
<td>RS-485 - 9600 Baud</td>
</tr>
</tbody>
</table>

Inputs Available:
- Type III-10kohm sensors
- 4-20ma sensors
- (6) available

Outputs Available:
- Usable Analog Output Qty: (2) Available
- AOUT1 Output Signal: 0-10 VDC Variable Signal
- AOUT2 Output Signal: 10 VDC Fixed Signal

WattMaster reserves the right to change specifications without notice.
General Broadcast Device

SS1017

DESCRIPTION: This is a modification of the original Averaging Broadcast Controller which provided a method to connect up to a maximum of 12 sensors to be averaged and globally broadcast to one VAV/CAV controller on a local loop. This General Broadcast Device also includes the ability to read Carbon Dioxide sensors and find the highest reading to be broadcast to one VAV/CAV or VCM controller. It also provides a proportional reset voltage on Analog #1 based on the level of CO₂ as it rises from an adjustable minimum setting to an adjustable maximum level.

Analog Output #2 provides a 10.0 vdc signal whenever the CO₂ is above the minimum setpoint.

Relay #1 is activated whenever the CO₂ rises above the minimum setting and de-activates when it falls 5 PPM below the setpoint.

Relay #2 is activated whenever the CO₂ rises above the maximum setting and de-activates when it falls 5 PPM below the setpoint.

LIMITATIONS: Only 6 sensors allowed controller. Requires a second controller board for sensors 7 to 12. The global analog broadcast channels are user selectable.

Celsius temperatures are not supported.

Unless verified by Mario, the VAV/CAV capable of receiving the averaging broadcast was custom code Y200301 version 2.02 or higher and not the standard SS1003 program.

Only the VCM can read the CO₂ for IAQ operations.

Any VAV/CAV or VCM per loop can have broadcast devices sending it data since the global receive channel is fixed at Global Analog #13 for temperature (if no space sensor installed) and #14 for CO₂ (if no sensor is installed).

HARDWARE: TUC-5R+ 1 Meg with no expansion capabilities supported.
PRISM version 2.7.0 or higher is required to program and monitor the GBC controllers.

APPLICATIONS: 6 or fewer Space Sensors or Carbon Dioxide Sensors

One SS1017 controller w/4 Sensors Installed.
Set the GBD controller to SEND on channel 13 for temperature or channel 14 for CO₂.

7 to 12 Space Sensors or Carbon Dioxide Sensors

Two SS1017 controllers with the 12 sensors spread among them as desired.
Set the first GBD controller to SEND on channel 13
Set the first GBD controller to RECEIVE on channel 24
Set the second GBD controller to SEND on channel 24

There are currently 22 assigned global analog channels, but not all globals are active on every system installation since some apply to Heat Pumps and some to Auto-Zone, etc.

NOTE: You cannot mix temperature sensors with carbon dioxide sensors on the same controller!
Conected The GBD To The Same Local Communications Loop As The Controller That Will Be Receiving the GBD Broadcast.

Communications Wire Must Be 2 Conductor Twisted Pair With Shield, Belden #82760 Or Equivalent. All Wiring Must Be Straight Through, R To R, T To T And SHLD To SHLD.

Available Inputs For Connection of CO₂ Sensor 4-20mA Signal See Page 2 For Detailed CO₂ Sensor Wiring
Available 0-10 VDC Proportional Output Signal
Available 10 VDC Fixed Output Signal

Notes:
1.) The GBD Can Either Be Used With CO₂ Sensors Or Space Temperature Sensors But Not Both On The Same GBD Device. Up to 2 GBD Devices Can Be Located On Each Local Loop.
2.) 24 VAC Must Be Connected So That All Ground Wires Remain Common.
3.) Set-up, Programming And Monitoring Of The GBD Device Requires The Use Of A Personal Computer And Prism Software.
4.) All Wiring To Be In Accordance With Local And National Electrical Codes And Specifications.

Available Relay #1
24 VAC Output Closes On Rise Above Minimum CO₂ Setpoint
24 VAC Pilot Duty Relay (By Others)

Available Relay #2
24 VAC Output Closes On Rise Above Maximum CO₂ Setpoint
24 VAC Pilot Duty Relay (By Others)

OE331-21-AVG
GBD Device Wiring
When Used For CO₂ Applications

Communications Wire Must Be 2 Conductor Twisted Pair With Shield, Belden #82760 Or Equivalent. All Wiring Must Be Straight Through, R To R, T To T And SHLD To SHLD.

Available Inputs For Connection of CO₂ Sensor 4-20mA Signal See Page 2 For Detailed CO₂ Sensor Wiring
Available 0-10 VDC Proportional Output Signal
Available 10 VDC Fixed Output Signal

Notes:
1.) The GBD Can Either Be Used With CO₂ Sensors Or Space Temperature Sensors But Not Both On The Same GBD Device. Up to 2 GBD Devices Can Be Located On Each Local Loop.
2.) 24 VAC Must Be Connected So That All Ground Wires Remain Common.
3.) Set-up, Programming And Monitoring Of The GBD Device Requires The Use Of A Personal Computer And Prism Software.
4.) All Wiring To Be In Accordance With Local And National Electrical Codes And Specifications.
Up to (6) CO₂ Sensors Can Be Used On The GBD. They Can Be Wired To AIN1, AIN2, AIN3, AIN4, AIN5 And AIN7 As Desired. Only 4-20mA CO₂ Sensor(s) May Be Used.

250 Ohm-1% Resistor Supplied With CO₂ Sensor(s) Must Be Wired As Shown For Each Sensor Used.

Warning:
24 VAC Must Be Connected So That All Ground Wires Remain Common. Failure To Do So Will Result In Damage To The Controllers.

Notes:
1.) The GBD Can Either Be Used With CO₂ Sensors Or Space Temperature Sensors But Not Both On The Same GBD Device. Up to 2 GBD Devices Can Be Located On Each Local Loop.

2.) 24 VAC Must Be Connected So That All Ground Wires Remain Common.

3.) Set-up, Programming And Monitoring Of The GBD Device Requires The Use Of A Personal Computer And Prism Software.

4.) All Wiring To Be In Accordance With Local And National Electrical Codes And Specifications.
OE331-21-AVG
GBD Device Wiring

When Used For Space Temperature Sensor Averaging Applications

Notes:

1.) The GBD Can Either Be Used With CO2 Sensors Or Space Temperature Sensors But Not Both On The Same GBD Device. Up to 2 GBD Devices Can Be Located On Each Local Loop.

2.) 24 VAC Must Be Connected So That All Ground Wires Remain Common.

3.) Set-up, Programming And Monitoring Of The GBD Device Requires The Use Of A Personal Computer And Prism Software.

4.) All Wiring To Be In Accordance With Local And National Electrical Codes And Specifications.

Available Inputs For Connection of Space Temperature Sensors. See Page 4 For Detailed Space Temperature Sensor Wiring.

Communications Wire Must Be 2 Conductor Twisted Pair With Shield, Belden #82760 Or Equivalent. All Wiring Must Be Straight Through, R To R, T To T And SHLD To SHLD.

Connect The GBD To The Same Local Communications Loop As The Controller That Will Be Receiving the GBD Broadcast.

Line Voltage 24 VAC Transformer 20VA Minimum
Up to (6) Temperature Sensors Can Be Used On The GBD. They Can Be Wired To AIN1, AIN2, AIN3, AIN4, AIN5 and AIN7 As Desired.

Typical Wiring Shown For Input AIN3. Wiring For Other Inputs Is Identical.

Warning:
24 VAC Must Be Connected So That All Ground Wires Remain Common. Failure To Do So Will Result In Damage To The Controllers.

Notes:
1.) The GBD Can Either Be Used With CO2 Sensors Or Space Temperature Sensors But Not Both On The Same GBD Device. Up to 2 GBD Devices Can Be Located On Each Local Loop.

2.) 24 VAC Must Be Connected So That All Ground Wires Remain Common.

3.) Set-up, Programming And Monitoring Of The GBD Device Requires The Use Of A Personal Computer And Prism Software.

4.) All Wiring To Be In Accordance With Local And National Electrical Codes And Specifications.

OE331-21-AVG
GBD Device Wiring
When Used For Space Temperature Sensor Averaging Applications
This Switch Should Be In The OFF Position As Shown

Address Switch Shown Is Set For Address 1

Address Switch Shown Is Set For Address 13

The Address For Each Controller Must Be Unique To The Other Controllers On The Local Loop And Be Between 1 and 60

Caution
Disconnect All Communication Loop Wiring From The Controller Before Removing Power From The Controller. Reconnect Power And Then Reconnect Communication Loop Wiring.

Notes:
1.) The GBD Can Either Be Used With CO2 Sensors Or Space Temperature Sensors But Not Both On The Same GBD Device. Up to 2 GBD Devices Can Be Located On Each Local Loop.
2.) 24 VAC Must Be Connected So That All Ground Wires Remain Common.
3.) Set-up, Programming And Monitoring Of The GBD Device Requires The Use Of A Personal Computer And Prism Software.
4.) All Wiring To Be In Accordance With Local And National Electrical Codes And Specifications.

Note:
The Power To The Controller Must Be Removed And Reconnected After Changing The Address Switch Settings In Order For Any Changes To Take Effect.