

VTV Analog Retransmit Outputs



Figure 1 Tenney Chamber with Circular Chart Recorder

Introduction

One of the optional features often selected for environmental chambers is the circular chart recorder. The chart recorder is a graphing device used to record chamber data such as temperature, humidity and pressure over time.

The VersaTenn V can provide up to two analog signals called Analog Retransmit 1 and 2 that can output these parameters as well as internal PID values. The outputs can either be graphed on the chart recorder or, in large equipment, the PID output values can be used to control external steam valve (heat) or chilled water (cool) components.

This application note will guide you through the setup for graphing and for custom external heat and cool systems.

Graphing Setup

To configure the outputs, press the setup button on the VTV touch screen and navigate to the Setup\Special Functions\Analog Retransmit 1 folder.

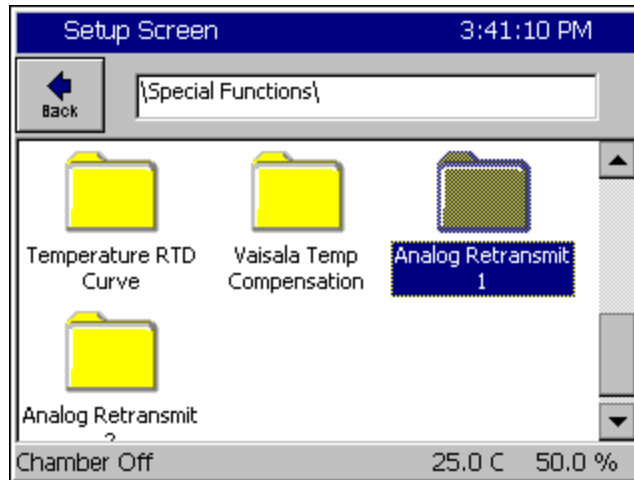


Figure 2 Analog Retransmit 1 Folder

Press the Analog Retransmit 1 folder to open the data output mapping options.

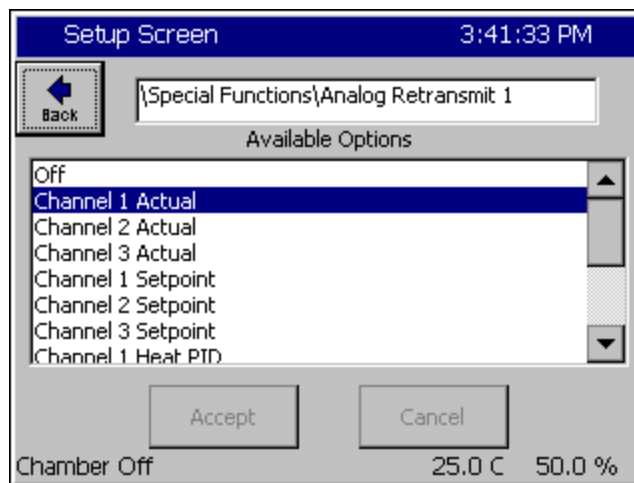


Figure 3 Data Output Selection

Select the desired output variable and press the Accept button.

To output a second variable repeat this process with the Analog Retransmit 2 folder.

Retransmit Output Scaling

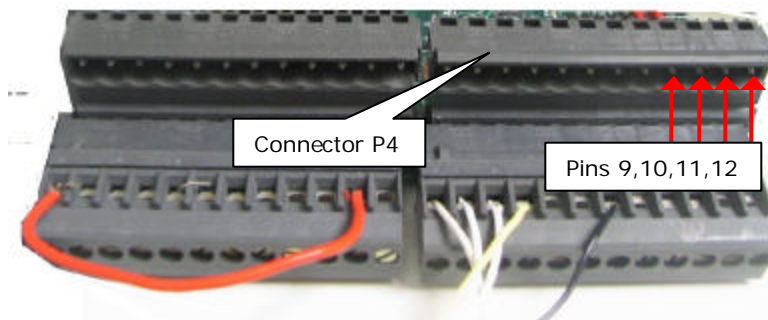
The analog retransmit outputs are 0 to 5 Volt DC. The options and scaling for the analog retransmit outputs are listed in the table below.

Data Options	Scaling
Off	0
Channel 1 Actual	-250C to +250C
Channel 2 Actual	0 to 100%
Channel 3 Actual	0 to 100%
Channel 1 Setpoint	-250C to +250C
Channel 2 Setpoint	0 to 100%
Channel 3 Setpoint	0 to 100%
Channel 1 Heat PID	0 to 100%
Channel 1 Cool PID	0 to 100%
Channel 2 Heat PID	0 to 100%
Channel 2 Cool PID	0 to 100%
Channel 3 Heat PID	0 to 100%
Channel 3 Cool PID	0 to 100%

Connections

The following table displays the connector and pin numbers for the VersaTenn V's two analog retransmit outputs.

Signal	Connector & Pin Number
Analog Retransmit 1	P4 -Pin 9
Return	P4 -Pin 10
Analog Retransmit 2	P4 -Pin 11
Return	P4 -Pin 12



Olympic Board Connectors P1, P2, P3 & P4

The analog retransmit outputs are accurate to +/-0.2% with loads down to 1K ohms. The analog retransmit output can drive loads down to 200 ohms and maintain +/-0.5% accuracy.

Mapping Output for Custom Heat & Cool Systems

The VersaTenn V's analog retransmit outputs can be used to control the environmental chambers heat or cool processes when an external steam valve

(heat) or chilled water system (cool) is used. For these systems, map the Channel 1 Heat PID to the external steam valve and the Channel 1 Cool PID to the chilled water system.

About Tidal Engineering

Headquartered in Randolph, NJ, Tidal Engineering Corporation has been designing and building award-winning embedded hardware and software for test and measurement and data acquisition applications since 1992. The company further provides product development services together with engineering support, and is recognized for technical expertise in such areas as Embedded IEEE 488, and turnkey SCADA (Supervisory Control and Data Acquisition) systems. Tidal's products are available exclusively through ADI American Distributors Inc., an ISO-9002 certified distributor of electronic and electromechanical components and assemblies.

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