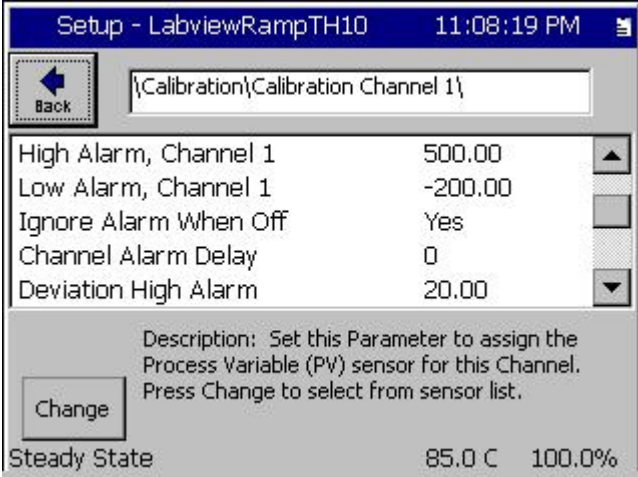## Synergy Controller Built-In Alarms

Introduction

The Synergy Controller software provides built-in alarms to protect the test chamber or process oven and unit-under-test from system failures and operator errors. These alarms are built into every system and are in addition to the User Programmable Alarms which can be created by the OEM and/or the end-user and are described in Application Note 26.
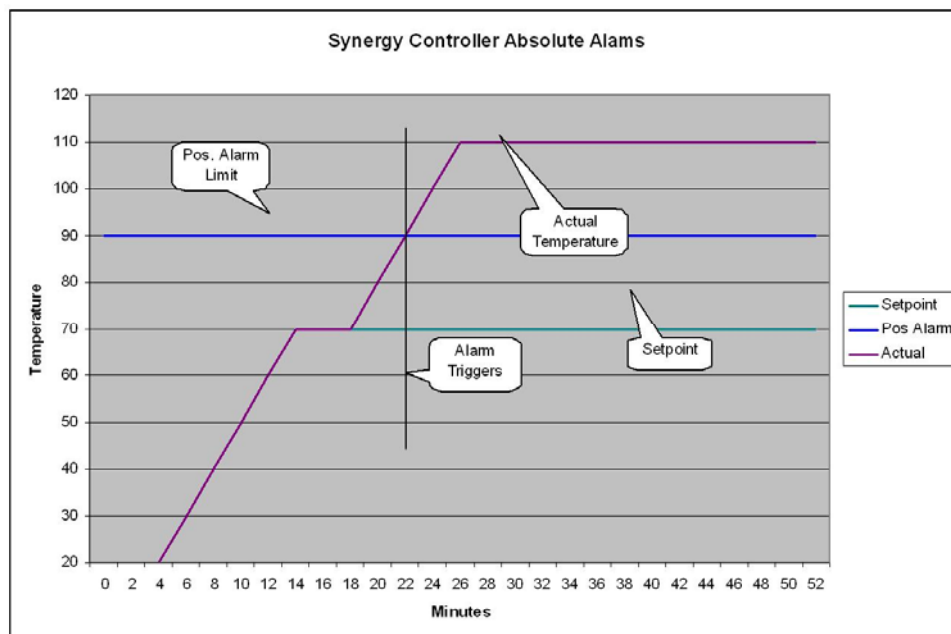
The absolute alarms are triggered when the Process Variable (PV) goes outside the absolute Low Alarm or High Alarm limits. The following screen and chart describes the absolute alarms available for each channel.

Channel Absolute Alarms

High Alarm, Channel n specifies the High limit for the channel.

Low Alarm, Channel n specifies the Low limit for the channel.

Ignore Alarm When Off parameter can be set to disable the High and Low Alarm when the channel is off, otherwise the alarms are enabled when the channel is off.

Channel Alarm Delay sets the number of seconds after the PV exceeds the absolute limits before the alarm is triggered.
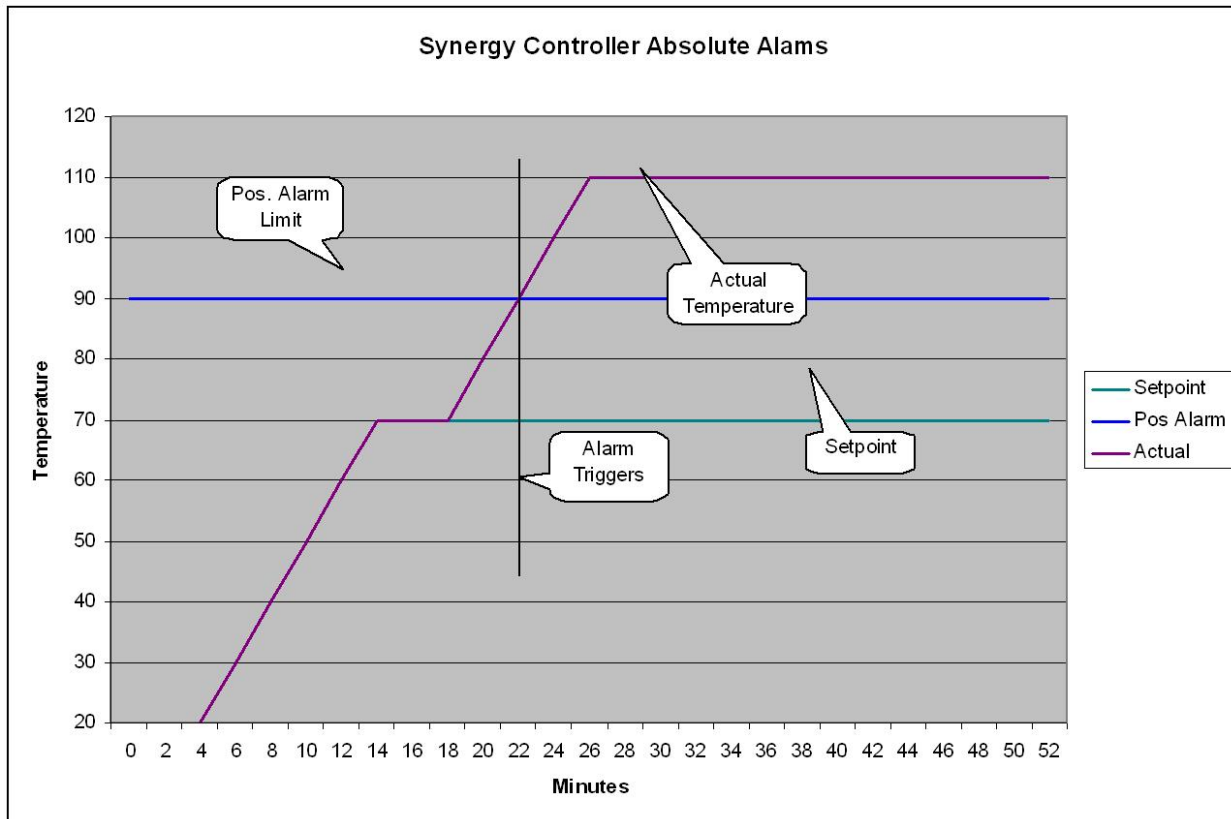
Channel deviation alarms are triggered when the Process Variable (PV) deviates from the Setpoint (SP) by the High and Low Deviation limits. The Deviation Alarm Delay provides a delay to ignore short deviations that can occur when the chamber can't follow a setpoint ramp or setpoint step or when the chamber door is open for a short time causing a short term deviation in the PV.
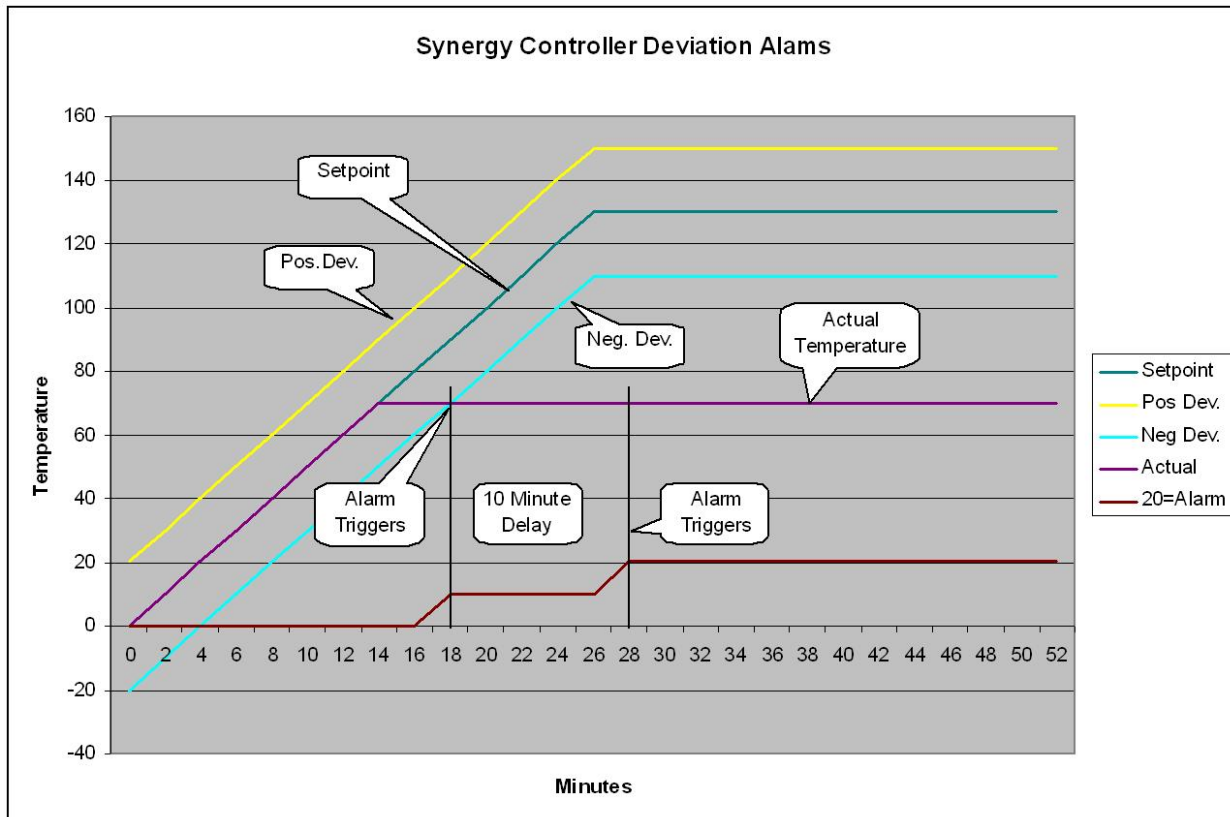

Deviation Alarm Setup

Deviation High Alarm specifies the High deviation limit for the channel.

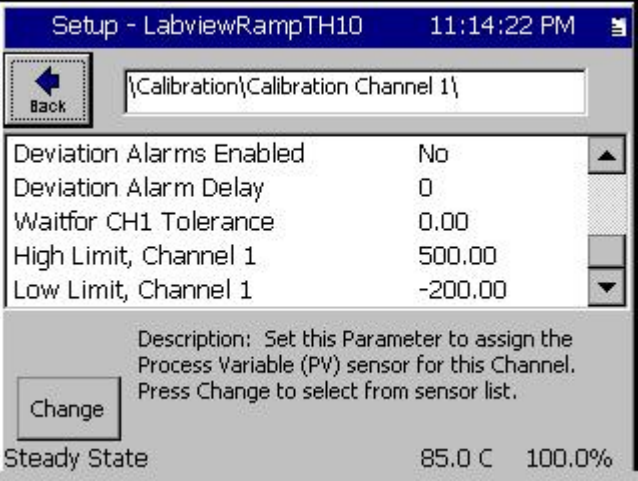**Deviation Low Alarm** specifies the Low deviation limit for the channel.

Deviation Alarms Enabled parameter is set to enable/disable Deviation Alarms.

Deviation Alarm Delay sets the number of seconds after the PV exceeds the deviation limit before the deviation alarm is triggered.

The chart below demonstrates the operation of the Synergy Deviation Alarm.

Other Parameters in the Channel Calibration Screen.

Setup - LabviewRampTH10 11:14:22 PM ← Back \Calibration\Calibration Channel 1\ Deviation Alarms Enabled No Deviation Alarm Delay 0 Waitfor CH1 Tolerance 0.00 High Limit, Channel 1 500.00 Low Limit, Channel 1 -200.00 Description: Set this Parameter to assign the Process Variable (PV) sensor for this Channel. Press Change to select from sensor list. Change Steady State 85.0 C 100.0%	Other Parameters in the Channel Calibration Screen. **Waitfor CHn Tolerance** specifies the tolerance for the Waifor condition in the Program mode. Set to 0 for legacy behavior. **High Limit, Channel n** sets the maximum setpoint for channel n. **Low Limit, Channel n** sets the minimum setpoint for channel n.

About the Synergy Controller Family

Tidal Engineering's Synergy Controllers, the Synergy Micro 2, Synergy Quattro, and the ¼ DIN Synergy Nano provide state-of-the-art usability and connectivity for environmental test control and data acquisition and combine the functions of a chamber controller and a data logger. These controllers are designed to improve test efficiency by supporting both factory automation and test and measurement protocols and standards.

Synergy Controller feature highlights includes:

→ Color touch screen
→ Ethernet, RS-232 and GPIB communications
→ Built in Data logger with USB drive support
→ Data Acquisition, up to 64 T-type thermocouples (Optional)
→ Built-in Web Server for remote control; WebTouch Remote ™ (Optional)
→ Compatible with Synergy Manager for PC based control, monitoring and programming.
→ Built-in FTP Server for factory automation and test and measurement applications

For more information regarding the controller please see the full Synergy Controller Technical Manual on our website at http://www.tidaleng.com/synergy.htm

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 is recognized for technical expertise in such areas as Embedded IEEE 488, and turnkey SCADA (Supervisory Control and Data Acquisition) systems.

Tidal Engineering Corporation
2 Emery Avenue
Randolph, NJ 07869
Tel: 973/328-1173
Fax: 973/328-2302
www.TidalEng.com
info@tidaleng.com