Tidal's state-of-the-art controller system is engineered to offer all the features needed to maximize the capabilities of your environmental chambers. Designed to take complete command of the chambers’ conditioning systems, its logic circuits automatically select heating/cooling (Channel 1), and humidity (Channel 2) modes as required, and totally control programming of temperature and humidity versus time. It moreover allows users to program up to six custom outputs for special applications and optional features. Temperature is measured using a 100-Ohm platinum RTD, and an electronic sensor is used for humidity measurement. Boasting built-in 10/100 Base-T Ethernet network connectivity and the Microsoft Windows™ CE.NET 4.2 operating system, this feature-rich system’s sophisticated communications capabilities also include built-in, Web-based remote control/monitoring. Designed as a drop-in replacement for the most popular controllers, including Tenney's Versa Tenn III, The Synergy Controller is easy to retrofit.
FEATURES:

Channels
- Channels: 1 or 2 Process Variables
- Temperature
- Temperature/Humidity
- Temperature/Thermocouple
- Temperature/Altitude
- Temperature/Vibration

LCD
- Type: Color STN
- Resolution: 320 x 240
- Size: 5.7” Diagonal
- Backlight: CCFL

Operating System
- Microsoft Windows™ CE .NET 4.2
- Touch screen based Graphical User Interface

Communications
- 10/100 Base-T Ethernet networking
- RS - 485 Communications
- RS - 232 Communications
- IEEE 488 Communications (optional)
- Webtouch Remote™ (Pat. Pending)
- Web Server software for Internet monitoring and controlling (optional)

Storage
- 16 MB DiskOnChip® Flash
- 3-1/2 floppy drive (IBM formatted)
- Program and test data retrieval
- 32 MB SDRAM

Processors
- Main Processor:
  - National Semiconductor x86
  - Pentium Class
  - Rabbit Semiconductor R2000
- I/O Processor:
  - Microchip PIC16F876

Peripherals
- Universal Serial Bus (USB)
  - for mouse or USB Flash Memory
  - VGA Monitor
  - Keyboard and Mouse PS/2

Programming
- Windows-friendly program file names
- Program creation wizard
- Step Types:
  - Set Point, Jump Loop, Auto Start, Hold, Stop
- Number of programs:
  - Only limited by onboard storage

Software Features
- Built-in context sensitive help system
- International language support
- Real-time color graph displays
- Built-in TCP/IP networking
- Real Time clock with battery backup
- Automatic resume after power failure
- Software configurable chamber type

Analog Inputs
- Process Voltage Inputs (4):
  - Range: 0-5 VDC
  - Accuracy: +/- 0.5 mV
- Resolution: 16 bits
- RTD Inputs (2):
  - Resolution: +/- 0.05 Ohms
  - 100 Ohm Pt. RTD, JIS or DIN
- Machine diagnostics interface (8)
- Range: 0-5 VDC
- Accuracy: +/- 0.5 mv
- Resolution: 12 bits
- Analog Output Functions:
  - Channel 1, 2 & 3
  - Setpoint, Actual, Heat PID, Cool PID

Digital Inputs
- Digital Inputs: (16)
- Ground: TRUE
- Open Circuit: FALSE
- Voltage Range: 0.5 to +5.5 VDC

Data Logging
- Interval: 1 Second to 60 Seconds
- Data: Process Variables, Setpoints, PID variables
- UUT T-Type thermocouple temperature
- (See Synergy UUT below)

Synergy UUT Thermocouple Monitor
- T-Type Thermocouples: (16)
- Total Supported Modules/Sensors: 4/64
- Temperature Range: -200°C to +400°C
- Power: 9 to 28 VDC, 3 Watts

Alarms
- Low Program Memory
- Low Space Storage Card
- Temp-Guard External Temperature Monitor
- Open Sensor RTD 1
- Open Sensor RTD 2
- Voltage Sensor Ch 2 – Humidity (Analog Input 1)
- Voltage Sensor (Analog Input 2 thru 4)
- High Temperature/Low Temperature
- High Humidity/Low Humidity
- Internal communications failure

Electrical/Mechanical
- Mounting Options:
  - Flush Mount
  - Front Mount
- Power Requirements:
  - 85 to 264 VAC
  - 47 to 63 Hz
  - 25 Watts
- Operating Conditions:
  - Temperature: 10°C to 30°C
  - Humidity: 0 to 90% RH, Non-condensing
- Size: 9.50” W X 6.75” H X 5.50” D
- Weight: 8.5 lbs.

PART NUMBERS:
- Synergy Controller
  - P/N TE1530
- Synergy Web Touch Remote
  - P/N TE1567
- Synergy Lab Manager Software
  - P/N TE1566
- Humidity Sensor
  - P/N TE1486
- Synergy UUT Thermocouple Monitor
  - P/N TE1299-16
- Triac Output Board, 12 Channel
  - P/N TE1151-12
- Triac Output Board, 6 Channel
  - P/N TE1151-6
- Triac Output Board, 5 Channel
  - P/N TE1151-5
- Universal Output Board, 6 Channel
  - P/N TE1616-6
- Relay Output Board, 6 Channel
  - P/N TE1708-6

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.