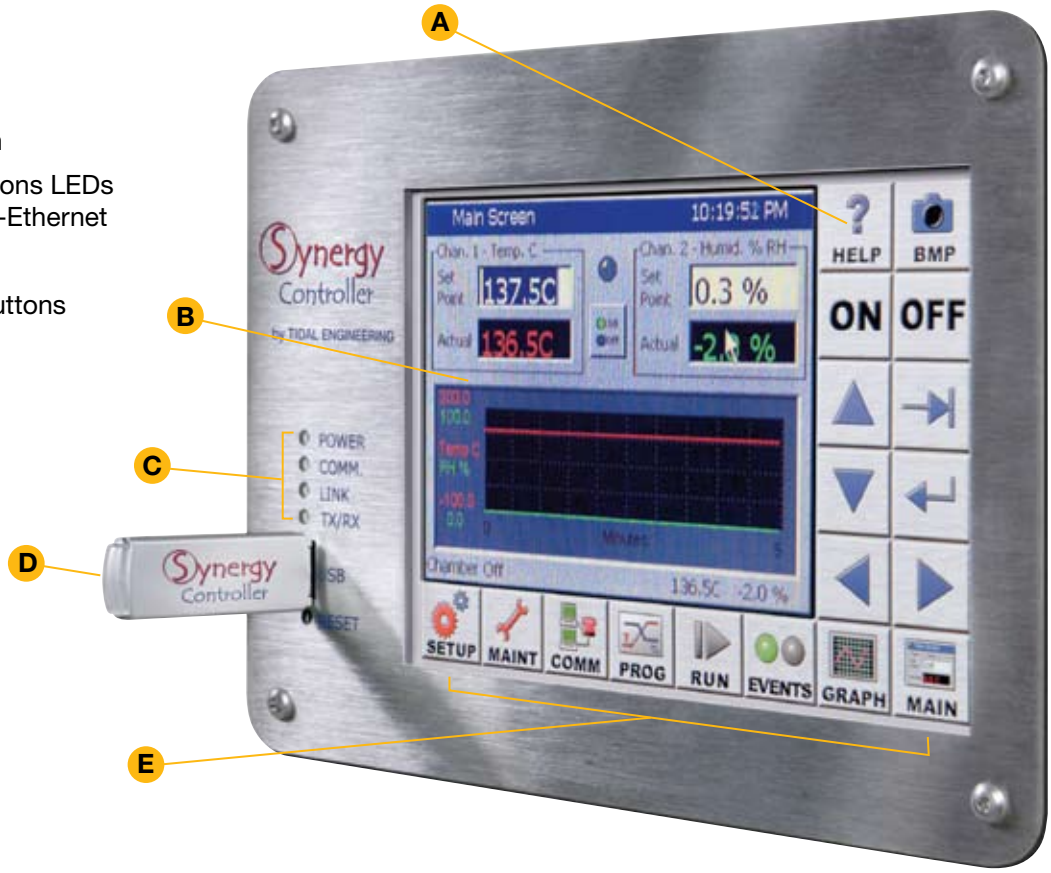
SYNERGY CONTROLLER

Designed Specifically For Environmental Test Chambers

A MICROPROCESSOR BASED TWO-CHANNEL INSTRUMENT

- **A** Help Button
- **B** Touch Screen
- **C** Communications LEDs GPIB-RS232-Ethernet
- **D** Flash Disk
- **E** Navigation Buttons



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.

SYNERGY CONTROLLER
Front Mounted

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SYNERGY CONTROLLER

FEATURES:

Channels
Channels: 1 or 2 Process Variables
- Temperature
- Temperature/Humidity
- Temperature/Temperature
- 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 /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
I/O Processor:
- Rabbit Semiconductor R2000
Touch Screen Controller:
- 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):
- Temperature Range: -200° C to 630° C
- Accuracy: +/- 0.05 Ohms
- 100 Ohm Pt. RTD, JIS or DIN
Machine diagnostics interface (8)
- Range: 0-5 VDC; Accuracy: +/- 10 mv
- Resolution: 10 bits

Analog Outputs
Voltage Outputs (2):
- 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 Outputs
Total Digital Outputs: (32)
Triac Outputs: (30) (optional)
- Output Rating: 5 A, 250 VAC
Relay Outputs: (2)
- Contact Rating: 3 A, 250 VAC
Event Outputs: Up to 6 user Programmable (optional)

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 TE 1530
Synergy Web Touch Remote
P/N TE 1567
Synergy Lab Manager Software
P/N TE 1566
Humidity Sensor
P/N TE 1486
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

Synergy Web Touch Remote

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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