

SYNERGY MICRO 2

Designed Specifically For Environmental Test Chambers

A FOUR CHANNEL PROCESS CONTROLLER AND DATA LOGGER



Tidal Engineering's state-of-the-art controller system is engineered to offer all the features needed to maximize the capabilities of your environmental test chambers. Designed to take total command of the chambers' conditioning systems, its algorithms automatically select

heating/cooling modes as required, and totally control programming of temperature, vibration, altitude, and humidity versus time.

The Synergy Micro 2 features a full function data logger supporting numerous process inputs and control variables. Process variables include RTD, voltage, and current. It moreover allows users to program up to six custom event outputs for special applications and optional features. Boasting the Microsoft Windows™ CE operating system, this feature-rich instrument's sophisticated communications capabilities also include built-in remote control/monitoring. The Synergy Micro 2 Controller may be specified on most chambers from industry leading chamber manufacturers and is easily retrofit into legacy equipment.



Operate the touch screen with any web browser.

TIDAL ENGINEERING CORPORATION
2 Emery Avenue, Randolph, NJ 07869
973.328.1173 • Fax: 973.328.2302
www.TidalEng.com • info@tidaleng.com

SYNERGY MICRO 2

FEATURES:

Channels

- Channels: 1 to 4 Process Variables
 - Temperature
 - Humidity
 - Pressure; Altitude or Vacuum
 - Vibration
 - Velocity

LCD

- Type: Color STN; Resolution: 320 x 240
- Size: 5.7" Diagonal
- Backlight: LED

Operating System

- Microsoft Windows™ CE .NET 5.0
- Touch screen Graphical User Interface

Communications

- 10/100 Base-T Ethernet Networking
- WebTouch Remote™ (Pat. Pending)
 - Web Server Software for Remote Control/Monitoring with Web Browser
- E-mail, Text Message
 - Alarms and Test Data
- FTP Server
 - Profiles, Log Files, etc.
- RS-485 Communications
- RS-232 Communications
- IEEE 488 (GPIB) Communications

Storage

- 2 GB Flash
- 64 MB SDRAM
- Removable USB Flash Disk

Universal Serial Bus (USB)

- USB Flash Memory for Program and Log Files and Upgrades
- USB Mouse
- USB Keyboard
- USB Barcode Scanner

Processors

- Main Processor:
 - Marvel PXA270
- I/O Processor:
 - Rabbit Semiconductor R2000

Programming

- Windows-Friendly Program File Names
- Step Types:
 - Set Point, Jump Loop, Auto Start, Hold, and Stop
- Number of Programs:
 - Only Limited by Onboard Storage

Software Features

- Built-In Context Sensitive Help System
- E-mail, Text Message
 - Alarms and Test Data
- Real-Time Color Graph Display
- 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 and 500 Ohm Pt. RTD, JIS or DIN
- Machine Diagnostics Inputs (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
- Current Outputs (2): (Optional)
 - 4-20 mA or 0-20 mA
- Analog Output Functions:
 - Channel 1, 2, 3 & 4
 - Setpoint, Actual, Heat PID, Cool PID
- Digital Outputs

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: (Optional)
 - Up to 6 User-Programmable

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 Minutes
- Capacity
 - 100 MB
- Data:
 - Process Variables
 - Process Setpoints
 - PID Variables
 - UUT T-Type Thermocouples
 - Alarms and Profiles

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
- Controller Powered

Alarms

- Low Program Memory
- Low Storage Card Memory
- TempGard Over-Temperature
- Open Sensor
- High/Low Process Limit
- High/Low Deviation Limit
- User Programmable Alarms
- Internal Communications Failure



Electrical/Mechanical

- Mounting Options:
 - Flush Mount
 - Front Mount
 - Articulating Mounting Arm
- Power Requirements:
 - 100 to 240 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 3.25" D
- Weight: 3.5 lbs.

Synergy Part Numbers

- Synergy Micro 2 Controller
 - P/N TE2174-1
- Synergy Micro 2 Controller, Console
 - P/N TE2174-5
- Synergy Web Touch Remote
 - P/N TE1567
- Synergy Lab Manager Software
 - P/N TE1566-1
- Synergy UUT Thermocouple Monitor
 - P/N TE1299-16
- Synergy Retransmit Signal Conditioner
 - P/N TE1803
- 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
- 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 environmental test and measurement and data acquisition applications since 1992.

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