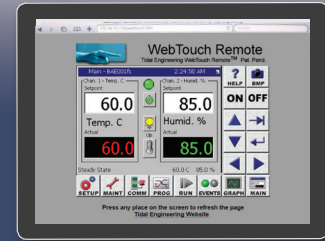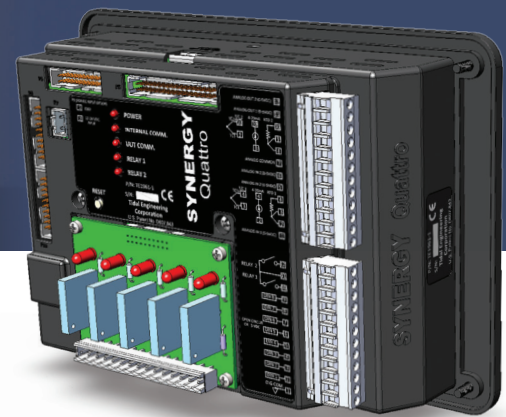# SYNERGY QUATTRO

Designed Specifically For Environmental Test Chambers

WebTouch Remote™

Maximize the capabilities of your environmental chambers.

A four channel process controller and data logger, Tidal's state of the art Synergy Quattro controller is engineered to offer all the features needed to maximize the capabilities of your environmental chambers and process ovens in a compact package. Designed to take complete command of the chamber's 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 Quattro features a fully functional data logger supporting all controller process inputs and control variables. Process inputs include RTD, thermocouples, voltage, current and up to 64 optional T-Type Thermocouples. It moreover allows users to program up to nine custom even outputs for special applications and optional features.
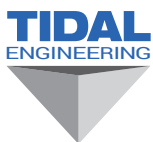
Boosting the Microsoft Windows™ CE operating system, this controller offers RS-232, Ethernet and GPIB communications capabilities for built in remote control/monitoring, chart printing, email alerts, and cloud data storage.

Popular on new equipment and retrofits, the Synergy Quattro Controller may be specified on most chamber models from industry leading chamber manufacturers and is easily retrofit into legacy equipment with Tidal Engineering supplied configuration files.

The Synergy Controller family, (Quattro, Nano, Micro 2, and Quattro Plus) equips engineers and organizations that operate, maintain, manufacture and manage environmental test chambers and process ovens with a range of controllers and the support they need to optimize their equipment and processes. Now in their fourth generation, Synergy Controller programming and configurations are backward compatible with prior generations.

Highlights

- 4-Channel Controller
- 100 MB Data Logger
- Ethernet and Serial are included
- E-Mail Data Delivery
- Text messaging
- WebTouch Remote™ Remote Control

TIDAL ENGINEERING

TIDAL ENGINEERING CORPORATION
Emery Avenue, Randolph, NJ 07869
973.328.1173 · info@tidaleng.com

Headquartered in Randolph, NJ, Tidal Engineering Corp. has been designing and building award-winning embedded hardware and software for environmental test and measurement and data acquisition applications since 1992. **Learn more at www.TidalEng.com**

Channels (1 to 4)
Process Variables: Temperature, Humidity, Altitude, Vibration, and Light

LCD
• Type: Color 320 X 240
• Backlight: LED
• Touch Screen Type: Resistive

Operating System and Processor
• Microsoft Windows™ CE 5
• Marvel, Xscale ARM, 312 MHz, 1 Core

Storage
• 1 GB Removable SD Flash Memory
• Removable USB Flash Disk
• 64 MB SDRAM

Communications
• 10/100 BaseT Ethernet
  – E-mail, Telnet, FTP, and WebTouch™
• RS - 232 Communications
• IEEE 488 (Optional, P/N TE1588)

USB Host (1), USB Device (1)
• USB Flash Memory for program & log files
• USB Mouse, Keyboard, Barcode scanner

Programming
• Windows-friendly program file names
• Step Types:
  – Set Point, Jump Loop, Auto Start, Hold, Pause, Command and Stop
• Program Storage:
  – Only limited by onboard storage
• Software Features
  – Real Time clock with battery backup
  – Automatic resume after power failure
  – Software configurable chamber type

Universal Inputs (2)
• RTD Inputs
  – Temp. Range: -200º C to 630º C
  – Accuracy: +/- 0.05 Ohms
  – 100 or 500 Ohm Pt., JIS or DIN
• Thermocouples
  – T/C Accuracy: +/- 1º C
  – Types E, B, J, K, R, S, and T
• Process Current Inputs
  – Resolution: 16 Bits, 4-20 mA , +/- 0.05%

Process Voltage Inputs (2)
• Resolution: 16 Bits, 0-5 VDC, +/- 0.05%

Virtual Sensors
• Wet Bulb-Dry Bulb Humidity Sensing
• Vaisala HMM30C Humidity Sensor
• Multi-Sensor, Min., Max., Average
• Pressure (Torr) to Altitude (Kft)

Voltage Inputs (2)
• Resolution: 16 Bits 0-5 VDC, +/- 0.05% FS

Analog Aux Inputs (8) (optional)
• Resolution: 12 Bits, 0-5 VDC or 4-20 mA, +/- 0.2% FS

Analog Outputs (2)
• Resolution: 12 Bits
• Range 0-5 VDC, +/- 5mV
• Range 0-10 VDC, +/- 10mV (Optional TE1803)
• Range 4-20 mA, +/- 0.1% (Optional TE1803)
• Analog Output Functions:
  – All internal variables including SP, PV, PID.

Main Outputs (30)
• Open Collector: 24 VDC, 50 mA Max.

Relay Outputs (2)
• 240VAC, 125VDC Max, 5 Amps Max.

Event Outputs (6) Optional
• TE1151-6: Triac Outputs
• TE1708-6: Relay Outputs

Voltage Range: - 0.5 to +5.5 VDC

Digital Inputs (8)
• Voltage Range: - 0.5 to +5.5 VDC
• Ground: TRUE, Open Circuit: FALSE

Digital Aux Inputs (8) (Optional)
(Order TE2251-4 for this option)

Data Logging
• Capacity: 100 Mbytes
• Interval: 1 Second to 60 Minutes
• Data:
  – Process Variables
  – Process Setpoints
  – PID Variables
  – UUT T-Type Thermocouples

Alarm Types
• Low Program Memory
• Low Storage Card Memory
• Temp-Guard External Monitor
• Open Sensor
• High/Low Process Limit
• High/Low Deviation Limit
• User Programmable Alarms
• Internal communications failure

Power Requirements
• Dual Supply Capability
  – 100 to 240 VAC, 47 to 63 Hz
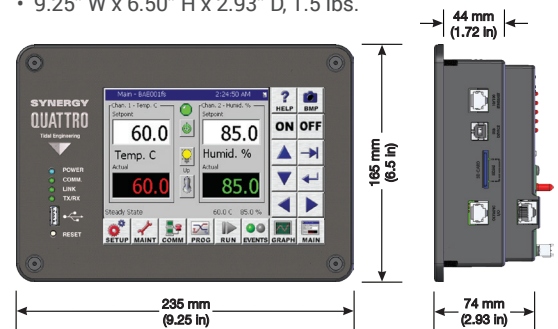 – 24 VDC
• 15 Watts

Operating Conditions
• Temperature:
  – 10° C to 30° C
• Humidity: 0 to 90% RH, Non-condensing

Warranty
• 3 Year Limited Warranty

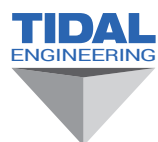## Size and Weight
• 9.25” W x 6.50” H x 2.93” D, 1.5 lbs.

Synergy Quattro Controller and Accessories Part Nos.
• TE1961 Synergy Quattro Controller
• TE1299-16 Synergy UUT Thermocouple Monitor
• TE2551-12 Triac Output Board, 12-Channel
• TE2551-6 Triac Output Board, 6-Channel
• TE1151-8 Triac Output Board, 8-Channel
• TE1708-6 Electro-Mechanical Relay Board, 6-Channel
• TE2251-1 Four 8-Channel Thermotron Outputs
• TE2251-2 Opto-22 Output Rack
• TE2251-4 Analog/Digital Input Expander
• TE2251-5 SSR Outputs, 5-Channel, 1.5 A
• TE1865 LabVIEW Driver
• TE1588 Synergy488 GPIB option
• TE1566-1 Synergy Lab Manager Software
• TE1567 Synergy WebTouch Remote Feature
• TE2013 Synergy Pressure Feature
• TE2042 Synergy Cascade Control Feature
• TE2175 Synergy Printer Feature
• TE2176 Synergy Server Feature

Delivering Test Results
The Synergy Controller platform improves lab efficiency by reducing costs for software development and training and providing innovative data logging and communications features.

"We share success stories and product highlights at TidalEng.com"
SYNERGY MAN & KID RETRO