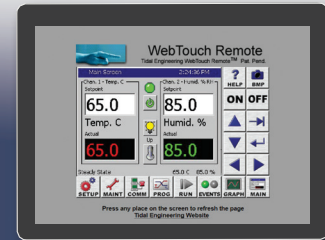# SYNERGY QUATTRO PLUS

Designed Specifically For Environmental Test Chambers

WebTouch Remote™

POWERED BY
NVIDIA TEGRA

Still unmatched in versatility and support, plus brighter, faster and more connected.

Tidal's Synergy Quattro Plus 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. It moreover allows users to program up to nine custom event outputs for special applications and optional features.
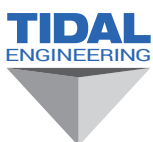
Delivering results, the Synergy Quattro Plus is a fully functional data logger supporting all controller process inputs and control variables. Process inputs include RTD, thermocouples, voltage, current and up to 64 optional T-Type Thermocouples. Boasting the Microsoft Windows™ Embedded Compact 7 operating 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.

NVIDIA processor and WEC 7 operating system updates in this second generation Synergy Quattro Plus Controller make the system even faster and provide the computing resources to support current and future features and functionality such as Cloud connectivity, TPM and Web-based remote control.

The Synergy Controller family, including the Synergy Quattro Plus, equips engineers and organizations that operate, maintain, and manufacture environmental test chambers and process ovens with the product range and the support they need to optimize their equipment and processes. Now in their fourth generation, Synergy Controller programming and configurations are backward compatible.

The Synergy Quattro Plus is part of a family of controllers that share common software and UI and can be applied across a wide range of applications.

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
- LCD Type: 10.1" 1024 x 600 TFT
- Backlight: LED
- Touch Screen Type: Capacitive

External Monitor
- HDMI Interface

Operating System and Processor
- Microsoft Windows™ Embedded Compact 7
- NVIDIA® Tegra™ 2, Dual Cortex™ A9, 1GHz

Storage
- 1 GB Removable SD Flash Memory
- Removable USB Flash Disk
- 512MB DDR2 (32 Bit)

Communications
- 10/100 BaseT Ethernet
  - Telnet, FTP, and Web Touch Server
  - E-Mail (SMTP), Text Messaging (SMS)
  - Printing/Plotting HPCL, PDF
- RS - 232 Communications
- IEEE 488 (Optional - Order TE1588)

USB Host (2), 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, 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

Analog Inputs
Universal Input (2)
- Wet Bulb-Dry Bulb Humidity Sensing
- Temp Comp. for Electronic Sensing
- RTD
  - Temp. Range: -200º C to 630º C
  - Accuracy: +/- 0.05 Ohms
  - 100 or 500 Ohm Pt., JIS or DIN
- T/C
  - T/C Accuracy: +/- 1º C
  - Types E, B, J, K, R, S, and T
- Analog Process Inputs (2)
  - Resolution: 16 Bits 4-20 mA <?xml

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 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 control variables including SP, PV, PID.

Main Outputs (24)
- Open Collector: 24 Vdc, 50 mA Max.
- Connectors:
  - (1) 34-Position Header, 0.1" x 0.1"
  - (2) 20-Position Header, 0.1" x 0.1"

Event Outputs (6) Optional
- TE2551-6: Triac Outputs
- TE1708-6: Relay Outputs

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

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
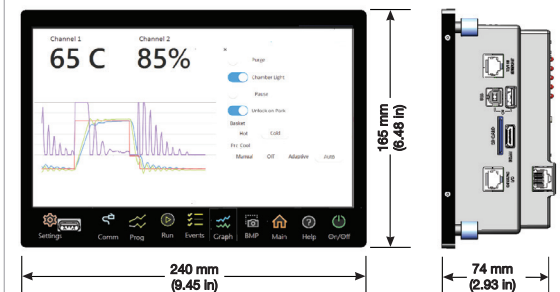 - 24 VDC
- 15 Watts

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

Warranty
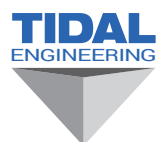- 3 Year Limited Warranty

Size and Weight
- 9.45" W X 6.48" H x 2.93" D X 1.5 lbs

Synergy Quattro Controller and Accessories Part Nos.
- TE1961-43 Synergy Quattro Plus Controller
- TE1299-16 Synergy UUT Thermocouple Monitor
- TE2551-12S: Super Switching Module
- TE1151-8 Triac Output Board, 8-Channel
- TE2251-6: Triac Output Board, 6-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
- 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
- TE2424 Synergy WiFi 802.11 b/g/n

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"We share success stories and product highlights at TidalEng.com"
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