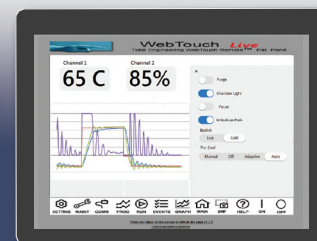# SYNERGY QUATTRO PLUS

Designed Specifically For Environmental Test Chambers

WebTouch Remote™

POWERED BY i.MX 6

Still unmatched in versatility and support, plus larger, brighter, and faster.

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. Running the Microsoft Windows™ Embedded operating system, this controller offers RS-232, Ethernet, CAN bus, and GPIB communications capabilities for built in remote control/monitoring, chart printing, email alerts, and cloud data storage.

NXP® i.MX 6 processor in this large screen format provides Synergy Quattro Plus Controller users with the ultimate tool for programming, evaluating and analyzing climatics testing results. Avanced functionality such as Cloud connectivity, TPM and Web-based remote control improve efficiency.

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. Synergy Controller programming and configurations are backward compatible to manage obsolescence.

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.
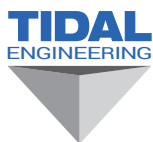
Channels (4)
- Process Variables: Temperature, Humidity, Altitude, Pressure, Vibration, and Light

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

External Monitor
- HDMI Interface

Operating System and Processor
- Windows® Embedded Compact 2013
- NXP i.MX 6 DualArm Cortex™-A9, 1GHz

Storage
- 2 GB Removable SD Flash Memory
- Removable USB Flash Disk
- 512MB DDR2 (64 Bit)

Communications
- 10/100 BaseT Ethernet
  - Email, Telnet, FTP, and Web Touch
  - Modbus TCP, Network Share
- 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
  - Command Step, 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

Data Logging
- Capacity: 100 Mbytes/file
- Interval: 1 Second to 60 Minutes
- Data:
  - Process Variables & Setpoints
  - PID Variables & Constants
  - UUT Temperatures

Alarm Types
- Temp-Guard Fail-Safe Monitor
- High/Low Process & Deviation Limits
- User Programmable Alarms

Universal Inputs (2)
- RTD:
  - Temp. Range: -200º C to 630º C
  - Accuracy: +/- 0.05 Ohms
  - 100 or 500 Ohm Pt., JIS or DIN
- Thermocouple:
  - T/C Accuracy: +/- 1º C
  - Types E, B, J, K, R, S, and T
- Process Current:
  - 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)

Aux Voltage Inputs (8) (optional)
- Resolution: 12 Bits
- Voltage: 0-5 VDC +/- 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: SP, PV, PID.

Main Outputs (32)
- (30) Open Collector: 24 VDC, 50mA Max.
- (2) RELAY: 200V, 5A Max.

Digital Inputs (8) (16 w/TE1858-4)
- Ground: TRUE, Open Circuit: FALSE
- Voltage Range: - 0.5 to +5.5 VDC

Power Requirements
- Dual Supply Capability
  - 100 to 240 VAC, 47 to 63 Hz
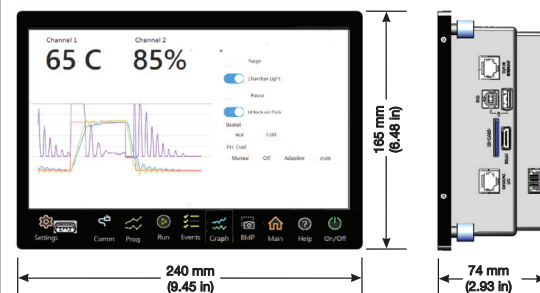 - 24 VDC
- 25 Watts

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 Plus Controller & Accessories Part Nos.
- TE1961-43: Synergy Quattro Plus Controller
- TE1299-16: Synergy UUT Thermocouple Monitor
- TE1499-16: Synergy Current/Power Monitor
- TE2551-12S: Super Switching, 12-Channel
- 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
- TE2251-4: 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/Altitude Feature
- TE2042: Synergy Cascade Control Feature
- TE2271: Synergy Premium Connectivity Subscription
  - TE1567: Synergy Webtouch Remote
  - TE2175: Synergy Printer & WebChart
  - TE2176: Synergy Server
  - TE2177: Synergy Network Share
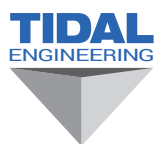 - TE2373: ModbusTCP Server
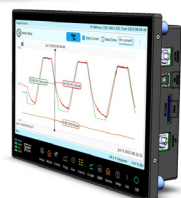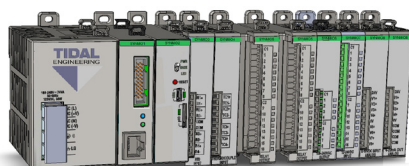
NEW DIN Rail Mounted Synergy Modular IO
- TE2406-XX Synergy Modular IO Stack
- TE2438-4 Synergy Quattro Plus Base

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

SYNERGY MAN & KID RETRO

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