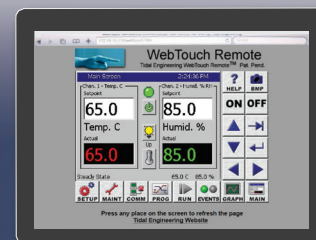


# SYNERGY QUATTRO 3

Designed Specifically For Environmental Test Chambers



WebTouch Remote™



**NXP** POWERED BY  
i.MX 6

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

Tidal's Synergy Quattro 3 controller is engineered to offer all the features needed to maximize the capabilities of your environmental chambers and process ovens in a complete 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.

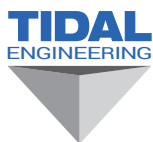
**Delivering results,** the Synergy Quattro 3 is a fully functional data logger supporting all controller process inputs and control variables. Process inputs include RTD, thermocouples, voltage, current and up to 64 optional T-Type Thermocouples. Running the Microsoft Windows™ Embedded operating system, 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.

**The NXP® i.MX 6 processor** in this third generation Synergy Quattro 3 Controller is faster and provides 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 3, 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 designed for backward compatibility and obsolescence management.



The Synergy Quattro 3 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 CORPORATION**  
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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](http://www.TidalEng.com)**

## Channels (4)

- Process Variables: Temperature, Humidity, Altitude, Pressure, Vibration, and Light

## LCD

- LCD Type: Color, 320 x 240 TFT
- Backlight: LED
- Touch Screen Type: Resistive

## External Monitor

- HDMI Interface

## Operating System and Processor

- Windows® Embedded Compact 2013
- NXP i.MX 6 Dual Arm Cortex™-A9, 1GHz

## Storage

- 1 GB Removable SD Flash Memory
- Removable USB Flash Disk
- 512MB DDR3 (64 Bit)

## Communications

- 10/100 BaseT Ethernet
  - Email, Telnet, FTP, and Web Touch
  - ModbusTCP, 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: -200° C to 630° C
  - Accuracy: +/- 0.05 Ohms
  - 100 or 500 Ohm Pt., JIS or DIN
- Thermocouple:
  - T/C Accuracy: +/- 1° 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)

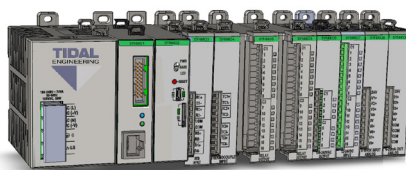
- Ground: TRUE, Open Circuit: FALSE
- Voltage Range: -0.5 to +5.5 VDC

## Power Requirements

- Dual Supply Capability
  - 100 to 240 VAC, 47 to 63 Hz
  - 24 VDC
- 15 Watts

## Operating Conditions

- Temperature: 10° C to 30° C
- Humidity: 0 to 90% RH, non-condensing



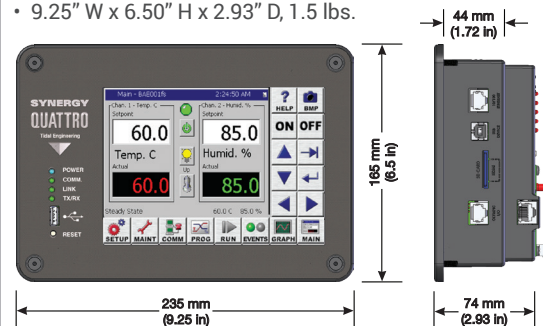
NEW DIN Rail Mounted Synergy Modular IO

## 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.

- TE1961-33: Synergy Quattro 3 Controller
- TE1299-16: Synergy UUT Thermocouple Monitor
- TE1499-16: Synergy Current 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
- TE2251-2: Opto-22 Output Rack
- TE2251-4: Analog/Digital Input Expander
- TE2251-5: SSR Outputs, 5-Channel
- TE1865: LabVIEW Driver
- TE1588: Synergy488 GPIB option
- TE2367-6: Synergy CAN Bus Adapter
- TE1566-1: Synergy Lab Manager Software
- TE2013: Synergy Pressure/Altitude Feature
- TE2042: Synergy Cascade Control Feature
- TE2271: Synergy Premium Connectivity Subscription
  - TE1567: Synergy Web Touch Remote
  - TE2175: Synergy Printer & WebChart
  - TE2176: Synergy Server
  - TE2177: Synergy Network Share
  - TE2373: ModbusTCP Server
- TE2406-XX: Synergy Modular IO Stack



TE2348-3 Synergy Quattro 3 Base Unit



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

SYNERGY MAN & KID RETRO

