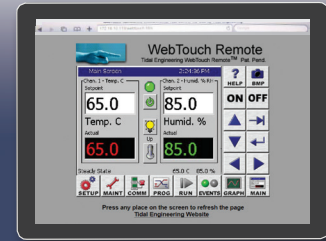


SYNERGY NANO 2

Designed Specifically For Environmental Test Chambers



WebTouch Remote™



POWERED BY
NVIDIA TEGRA

Maximize the capabilities of your environmental chambers.

A four channel 1/4 DIN process controller and data logger, Tidal's Synergy Nano 2 controller is engineered to offer all the features needed to maximize the capabilities of your environmental chambers and process ovens in a 1/4 DIN 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.

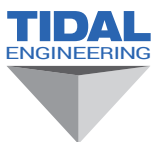
Delivering results, the Synergy Nano 2 is a fully functional data logger supporting all controller process inputs and control variables. Process inputs include RTD, thermocouples, voltage, current and up to 64 optional T-Type Thermocouples. Boosting the Microsoft Windows™ Embedded Compact 7 operating 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 the second generation Synergy Nano 2 Controller make the system very responsive and provide the computing resources to support current and future features and functionality like Cloud connectivity, TPM, and Internet based remote control.

The Synergy Controller family, including the Synergy Nano 2 equips the 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 Nano 2 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**

Channels (1 to 4)

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

LCD

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

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
 - E-mail, Telnet, FTP, and WebTouch™
- RS - 232 Communications
- IEEE 488 (Optional, P/N 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

Universal Inputs (2)

- RTD Inputs
 - Temp. Range: -200° C to 630° C
 - Accuracy: +/- 0.05 Ohms
 - 100 or 500 Ohm Pt., JIS or DIN
- Thermocouples
 - T/C Accuracy: +/- 1° 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)

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 (6)

- DC Outputs: Model TE1858-1
 - 0 to 24 VDC max., 50 mA, Open Collector
- Relay Outputs: Model TE1858-2
 - Contact Rating: 1.5 A, 250 VAC
- SSR Outputs: Model TE1858-3
 - Contact Rating: 1 A, 250 VAC

Auxiliary Outputs (6)

- 0 to 24 VDC max., 50 mA, Open Collector

Event Outputs (6) Optional

- TE2251-6: Triac Outputs, 3A, 100-240VAC
- TE1708-6: Relay Outputs, 6A, 100-240VAC

Super Switching Module Outputs (30)

- TE2551-12S Super Switching Module
- Output Rating 3A, 250 VAC, Fused

Digital Inputs (4) (16 w/TE1858-4)

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

Data Logging

- Interval: 1 Second to 60 Minutes
- Data:
 - Process Variables
 - Process Setpoints
 - PID Variables
 - PID Constants
 - 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

Compliance

- Touch Safe Terminals
- IP-65 and Nema 4X

Power Requirements

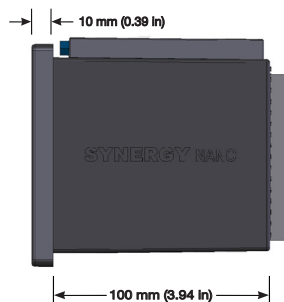
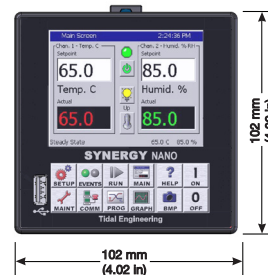
- 100 to 240 VAC, 47 to 63 Hz
- 10 Watts

Operating Conditions

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

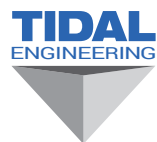
Size and Weight

- 3.78" W x 3.78" H x 3.94" D, 1.5 lbs.



Synergy Nano 2 Controller Part Numbers:

- TE1858-21: DC Outputs
- TE1858-22: Relay Outputs
- TE1858-23: SSR Outputs
- TE1858-24: with Micro 2 Olympic Board
- TE1858-25: with Quattro Olympic Board
- TE1566: Synergy Lab Manager Software
- TE1299-16: Synergy UUT Thermocouple Monitor
- TE2251-6: Triac Output Board, 6-Channel
- TE2551-12S: Super Switching Module
- TE1708-6: Relay Output Board, 6-Channel
- TE1865: Synergy LabVIEW Driver
- TE1588: Synergy488 GPIB option
- TE1803: Signal Conditioner, 5V, 10V, 4-20mA



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

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