

# **THERMOELECTRIC CONTROLLERS**

We offer a range of high performance and innovative precision thermoelectric (TEC) controllers for the most demanding thermal control applications.



#### **TEC Controller Selections**



VTC1501-A



2-Channel VTC1502-A



3-Channel VTC1503-A



VTC2016-A







### **ABOUT OUR PRODUCT**

Featuring our innovative patent pending technology, these thermoelectric controllers offer outstanding precision and stability to meet even the most demanding cooling/heating applications. It delivers the highest power efficiency, fits perfectly in tight spaces, and is highly configurable and flexible using supplied software.

#### **Features**

- Superior power efficiency without requiring a heatsink on the controller
- Excellent temperature stability
- Our 6-channel controller is no bigger than most competitors 2-channel model
- Configurable and flexible using supplied software
- Support wide range of analog and digital temperature sensors
- Independent temperature control per channel, with support for either direct feedback (sensor) or indirect feedback (sensor + thermal model)
- DC bipolar output capability
- PID control with auto tuning capability
- Standalone operation or remote control via USB / RS485 / TTL UART

#### **VENTURE BIOTECH MODULES BUSINESS PRIVATE LIMITED (V-BMB)**



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## **Specifications**

|  | VTC1501<br>1-Channel  | VTC1502<br>2-Channel                                       | VTC1503<br>3-Channel | VTC2016<br>6-Channel |
|--|---|--|----------------------|----------------------|
| Input Voltage V <sub>in</sub>          | 12–36VDC  |  |                      |                      |
| Max input current, A                   | 20  | 30   |                      | 60                   |
| Limit Output Voltage                   | Configurable, up to ±V <sub>in</sub>                        |  |                      |                      |
| Limit Output Current                   | Configurable, up to ±16A per channel                        |  |                      |                      |
| Typical Cooling<br>Power Per Channel   | 288W (50% of output electrical power)                       |  |                      |                      |
| Power Control<br>Scheme                | Configurable<br>input current<br>limit                      | Configurable input current limit, dynamic power allocation |                      |                      |
| Temperature Stability                  | ±0.002°C (1 hour duration @25°C ambient temperature)        |  |                      |                      |
| Power Efficiency                       | 95% @ 50% load, 98% @ 100% load                             |  |                      |                      |
| Analog Temperature<br>Input            | 8x (PT100, PT1000, NTC, TMP61, TMP63, TMP64)                |  |                      |                      |
| Digital Temperature<br>Input           | 3x I2C bus (Digital temperature sensor TMP117, TMP1075 etc) |  |                      |                      |
| Fan Control                            | 3x for speed control & detection                            |  |                      |                      |
| GPIO (configurable for input / output) | 6x  |  |                      |                      |
| PID Control                            | Auto-tune, Manual-tune                                      |  |                      |                      |
| Interface                              | USB / RS-485 / TTL UART                                     |  |                      |                      |
| Dimensions, mm                         | 90 x 70 x 15  |  |                      | 120 x 90 x 15        |

#### **Connector Types**



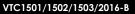
**Connector Type A** 

Terminal Block AWG 14-28



**Connector Type B** 

Molex 2002411212 AWG 12-16





**Connector Type C** 

Molex 2002411112 AWG 12-16

VTC1501/1502/1503/2016-C







#### **TEC Controller Starter Kit**

Temp Sensor Interconnection Cable x2 Fan Cable x3 Temp Sensor Extension Cable x10

VTC-SK-1

\*Variant B & C are available on special order in larger quantity

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