Provisional

Ventostat TR

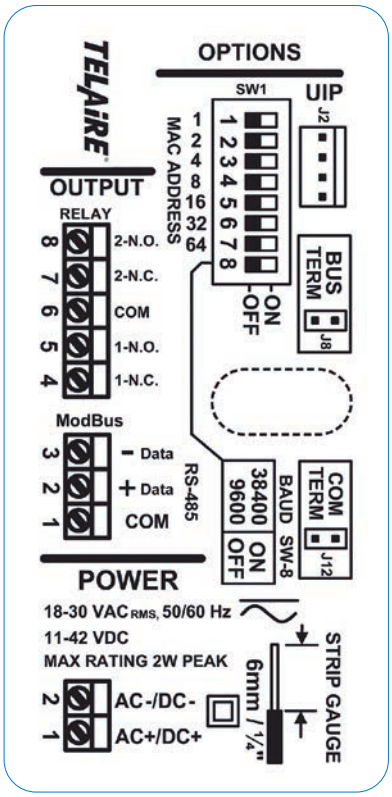
Early Warning of Battery Venting/Thermal Runaway

Telaire Ventostat TR Transmitter is designed to provide early warning of battery failure in industrial energy storage systems, which can lead to Thermal Runaway. If battery failure conditions are detected, the transmitter alerts the user so that proper countermeasures can be taken.

With its multi-measurement capabilities, including Carbon Dioxide (CO_2), Hydrogen (H), Relative Humidity (RH), Pressure and Temperature, the Ventostat TR allows for continuous monitoring of the surrounding environment and connection to automation systems, as well as local control of ventilation equipment using onboard relays.

Applications

- Detection of Thermal Runaway



Features

- Multi-measurement capabilities:
  - Carbon Dioxide (CO_2) – Patented, Absorption Infrared (IR) gas sensing engine provides high accuracy with dynamic pressure compensation
  - Hydrogen (H) – Pre-calibrated, cutting edge technology
  - Relative Humidity (RH)
  - Pressure
  - Temperature
- Mounting plate with two-piece terminal blocks allows for quick, easy wiring
- Standard Modbus output enables local and remote monitoring
- Relay – Output with programmable setpoints
- Sensors are shipped factory-calibrated
- Two-piece design allows unit to be replaced without the need for rewiring
- Modbus RTU Output

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Telaire Ventostat TR Specifications

Transmitter

Power Supply Requirements
- 18-30 VAC RMS, 50/60 Hz, or 11-42 VDC
- Polarity protected

Power Consumption
- Typical 0.8 W at nominal voltage of 24V AC RMS

Operating Conditions
- 32°F to 122°F (0°C to 50°C)
- 0 to 95% RH, non-condensing

Storage Conditions
- -40°F to 158°F (-40°C to 70°C)

Flammability Classification
- UL94 5VA

Modbus
- RTU
- Baud rates 38400 or 9600
- Additional programmable baud rates available.

Enclosure
- Standard modern wall-mount enclosure

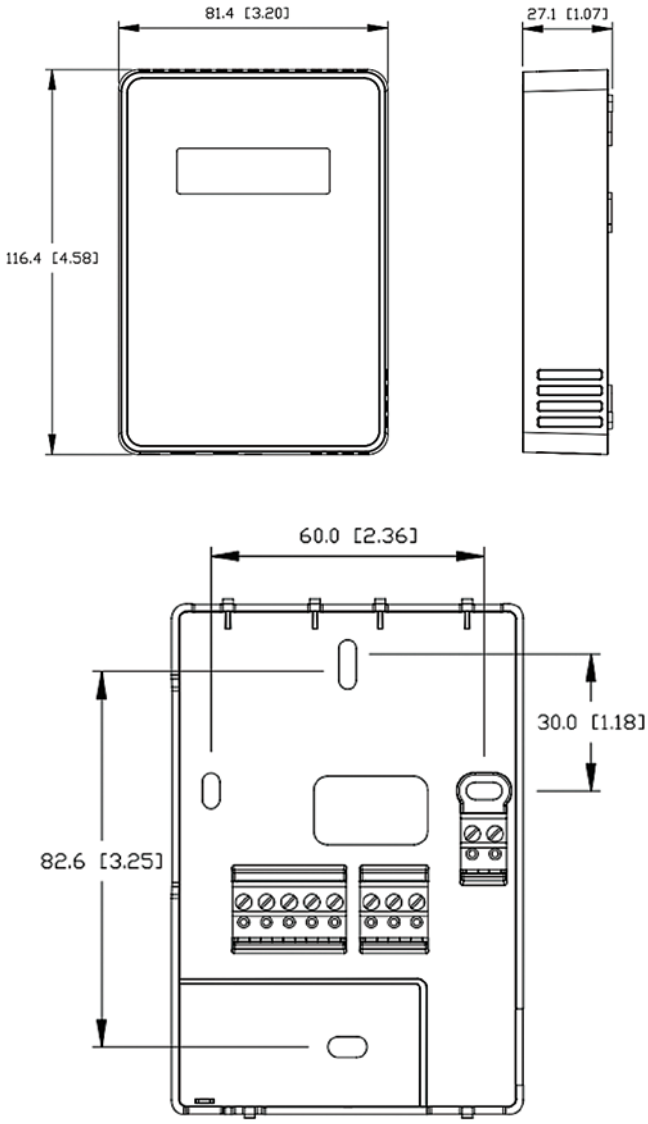
Relays (Hydrogen and CO_2 Response)
- Normally open and normally closed contact

Relay Setpoints and Hysteresis
- Adjustable setpoints allow you to match application

Rated Load (Typical)
- 350V, 120mA, 35Ω, 1-Form-C solid state relay

Certifications
- CE and RoHS, REACH, and WEEE compliant, UL 9540

Warranty
- 12 months on mechanical defects



Ventostat Wall Mound Dimensions

Telaire Ventostat TR Specifications *(cont.)*

Carbon Dioxide (CO_2)

Sensing Method
- Non-dispersive infrared (NDIR) absorption
- Gold-plated optics

CO_2 Measurement Range
- 0 to 50000 ppm

CO_2 Accuracy
- 400 - 1000 ppm, ± 75 ppm
  >1000 ppm, ± 10% of reading

Temperature Dependence
- 0.2% FS per °C (± 0.11% per °F)

Stability
- <5% of FS or <10% reading annual over life of sensor (10 years)

CO_2 Warm-up Time
- < 2 minutes (operational)
- 10 minutes (maximum accuracy)

Relative Humidity (RH) and Temperature

RH Sensing Element
- Capacitive polymer sensor

RH Range
- 0% to 99% RH (non-condensing)

RH Accuracy (25°C)
- ± 2.5% RH (20 to 80% RH)
- ± 3.5% RH (<20% and >80% RH)

Active Temperature Accuracy
- ± 0.8°C @ 22°C

Active Temperature Range
- 32°F to 122°F (0°C to 50°C)

Hydrogen (H2)

Range
- H2 Sensing Element: 0 - 50,000 ppm

Accuracy
- ± 5% of full scale or ± 4000 ppm

Warm-up Time
- < 1sec

Pressure

Pressure Sensing Element
- MEMS based sensor

Absolute Pressure Range
- 50kPa to 200kPa

Pressure Accuracy
- ± 2.0 %FSO

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www.telaire.com

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