ACCUTRACE

Multizone Heat Trace Control Panel

DESCRIPTION

Valin's AccuTrace[™] control panel incorporates the latest technology and is packed with features designed to help optimize your heat trace system.

The AccuTrace[™] panel utilizes PID algorithms designed to maintain temperature in the most challenging applications, for both ambient sensing and line sensing. The panel has 30-amp Solid State Relay controls and GFEP (30mA) trip protection. a multitude of alarms, including high temp, low temp, high current, low current, sensor failure and Ground Fault Equipment Protection, creating a package of unrivaled performance.

For extreme cold starts and long circuit lengths, the AccuTrace[™] panel employs a soft start feature, reducing the inrush current. This helps mitigate potential high current alarms that are a known problem during startups.

The AccuTrace[™] multiloop has a 10", full color, easy-tonavigate touch screen display. The control interface is intuitive and simple to program, allowing for fast, accurate setup and commissioning. We also offer 3 levels of password protection, to further ensure the highest security while allowing quick access in the field, as appropriate.



Input

 Sensor Type 3-wire RTD, 100 Ω PT, 0.00385 Ω/Ω/°C,20 Ω balanced lead wire (-200°C – 850°C)

Control Modes

- Auto PID
- On/Off-Control mode. Dead band, (°F) Range: +/- 100°F
- Manual-Range: 0 100%
- Soft Start

Settings

- Alarm Types: Low & High Temperature, Low & High Current, High GFEP, Sensor Failure
- Alarm Access: Via Modbus. General Alarm contact option available.
- Output on Sensor Failure, Range: 0–100%, Auto Transfer to Manual Mode
- 3 Levels of password protected security

Display, HMI, Indication

- 10" Full Color Resistive Touch Screen
- Resolution 800 x 480px
- Optional sunshade protection*

Alarms

- Temperature (PV) Range: 0°F to 720°F (-18°C to 382°C)
- Low Temperature Alarm, Range: 0°F to 720°F, Off (-18°C to 382°C, Off)
- High Temperature Alarm, Range: 0°F to 720°F, Off (-18°C to 382°C, Off)
- Low Current Alarm, Range: 1A 30A, Off
- High Current Alarm, Range: 1A 30A, Off
- GFEP, Range: 20mA 80mA
- GFEP Alarm Condition, Alarm and Trip at GFEP Setpoint

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FEATURES

Output

- SSR Power Switching
- 4-48 circuits
- Up to 30 Amps per Circuit

Communications

- Modbus TCP
- Other protocols available upon request (contact factory)

Operating & Environmental

- Operating Temperature: -4°F to 104°F
- Power Supply: Up to 480VAC, 50/60Hz
- Enclosure rating: UL type 3R, 4, 12 (4X optional)
- Approvals: UL508A for ordinary areas, UL/cUL NNNY Class I, Division II optional with purged pressurization system.



ADVANCED CONFIGURATION OPTIONS

Remote Terminal Unit (RTU) Expansion Panel

Each AccuTrace[™] RTU expansion panel adds an additional 4 loops of heat trace circuits to the system. They are controlled via Modbus communications by the AccuTrace[™] multiloop panel, so an additional HMI is not necessary for the expansion unit, lowering cost.

Purged Enclosure

Selecting the purged enclosure option will allow the AccuTrace[™] multiloop to be installed and operated in hazardous areas rated Class I Div II Groups A, B, C, and D.

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CONTROL METHODS

The AccuTrace[™] multiloop is capable of PID control, on/off control, and manual control for 32 loops locally, and up to 224 loops remotely through the use of the RTU Expansion Panels. Each circuit may be rated up to 30A.

Auto PID Mode

A closed loop control method that will control the power output to the heat trace circuit based on a PID algorithm. The proportional, integral, and derivative variables can be modified via the touchscreen HMI for process optimization.

Manual Mode

An open loop control method that sets the power output to a user-specified percentage. As a safety feature, manual mode is also the failover mode from Auto PID or On/Off if the temperature sensor fails. This way, the integrity of the process may be automatically maintained.

On/Off Mode

A closed loop control method that utilizes Deadband hysteresis values to determine the power output. The output will turnoff once the process temperature reaches the deadband's low setpoint and turns on when the process temperature reaches the deadband's low setpoint.

Monitoring

The AccuTrace[™] monitors system temperature, load current, communications status, GFEP, and errors such as sensor failures and open circuits. Process values may be viewed locally at the panel mounted HMI, or remotely through Modbus RTU communications. Alarms for errors or high/low status conditions may be accessed at the local HMI and via Modbus communications. RTU (Remote Terminal Unit) expansion panels act as slave devices and are monitored through the master AccuTrace[™] panel.

Communications

The AccuTrace[™] multiloop utilizes Modbus TCP protocol for device communications. These connections are made via the Ethernet Rail Switch. This switch features store and forward switching mode, Ethernet (10Mbps) and fast-Ethernet (100Mbps). RTU (Remote Terminal Unit) expansion panels are monitored using this communications protocol.



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ACCUTRACETM

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SYSTEM COMPONENTS (EXPLODED VIEW)

1 **Ethernet Switch**

The AccuTrace[™] Ethernet Rail Switch features four 10/100BaseTX RJ-45 Ports and one 100BaseFX Single mode 15km Fiber Port with ST Connectors. Maximum Throughput up to 1.0 Gb/s with Store-and-forward Technology. RJ-45 Ports Support Full/Half Duplex Operation.





3

SSR Power Switching

Power switching is accomplished through solid state relays (SSR's) which allows for the Soft Start feature of AccuTrace[™]. Soft Starting gradually ramps the output to the circuits during start-up, mitigating high-current Events that could be potentially harmful to the system.

AccuTrace[™]'s touchscreen HMI is a panel mounted display for

user programming and monitoring. The display type is TFT Color LCD / Resistive Film (analog) with 800 x 480 px (WVGA) resolution. The touchscreen feature of this HMI provides ease

Back Panel

Side Mods and Swing Out Panel





Power Enclosure Module

The AccuTrace[™] multiloop panel possesses a modular design, where additional heat trace control loops may be added through the use of the power enclosure modules. Each module can control up to 4 heat trace circuits. These enclosures contain Ground Fault Equipment Protection (GFEP) for the heat trace circuits, so no additional protection is required. The enclosures also house the terminals for customer wiring for power outputs and RTD inputs.

Panel Door

VALIN



Swing-out Panel Board

10" Touchscreen HMI

of use and clear process information.

The interior swing-out panel board provides protection from high voltage equipment on the back panel, allowing for safe access to circuit breakers. Circuit breakers may be 1 or 2 pole and are rated up to 30A.

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ORDERING INFORMATION

To Order - Complete the Model Number using the Matrix Provided.



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