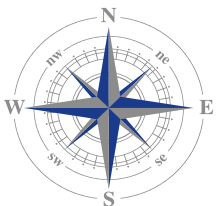


Heat Trace Systems

When you need to keep your product flowing, find the solution with GPS



GPS
Global Production Solutions, Inc



Meets and exceeds 2014 NEC 250.167(B) code for ground fault detection on grounded DC systems

DISTRIBUTION . . . CONTROL . . . MONITORING

GPS HEAT TRACE SYSTEM

Distribution . . . Control . . . Monitoring

The GPS Heat Trace System provides solutions to a large range of Industrial Markets. Designed primarily (but not exclusively) for the Oil and Gas Industry, the GPS Heat Trace System provides centralized Control and Monitoring for all of your Process Temperature Maintenance, Freeze Protection, and Winterization needs.

Markets:

Oil and Gas / Power Generation / Transport and Storage / (Petro)Chemical Industries

Description:

The System uses three monitors for ground fault leakage current in 36 Single -Phase channels. Each channel has a dedicated breaker with shunt-trip relay programming (by customer) and factory specified high-precision Current Transformer (CT). The relays measure the ground current leakage (via the CTs) and generates both a pre-alarm, and alarm based on programmed levels.

Each relay has a hard-wired, 3 color status light for all three status lights. If All channels on that relay are nominal, the green LED will illuminate. If ANY of the channels are in pre-alarm (with no alarms) the amber LED will illuminate. If ANY of the channels are in alarm, the Relay will trip that channels breaker and the red LED will illuminate.

All pre-alarm and alarm events will be individually annunciated and logged by the touchscreen, and CT measurements will be displayed per channel. All monitored data is available via Modbus TCP/IP to customer SCADA/ Building Management Systems.

The system is equipped with a set/reset thermal switch mounted on the outside of the panel. This switch measures ambient temperature and will enable the heat trace if the temperature falls below the set point and disable if temperature rises above the reset point. Once enabled, the heat trace will be added in three (3) stages to reduce the effects of inrush current. The first stage will be enabled immediately, with the following two stages introduced separately via dedicated settable timing relays.

Options:

- **Web-Based Configurations of Relays** - Allows the customer to configure each device and channel via the built-in web server to aid in commissioning and allows PDF exporting of configurations.
- **Advanced Programming** - Includes extra programming to add advanced features like data logging, event based email/txt (with internet access), custom screens, custom system web-page (for LAN/ Wan monitoring), and other requested services.
- **Factory Mounting** - The enclosure can be mounted on a steel stand bolted to a concrete slab base at the factory.



User Friendly Touchscreen/RTU



Modular Replacement reduces downtime



Applications:

- * Longline Heating
- * Tank Heating
- * Process Temperature Maintenance
- * Frost Heave Prevention
- * Flow Assurance
- * Pipe Freeze Protection
- * Tank Insulation

Sample Screen Shots

Color Touchscreen/RTU:

Data from the relays is read (through the communication device) by the touchscreen/RTU and displayed on a 10" ,outdoor rated, color touchscreen. Screens include:

- **System Overview Screen:** Displays status of all 36 channels including real time load, pre-alarm, and alarm status.
- **Group Overview Screen:** Displays status of channels in the group including available controller data (health and alarm status).
- **Alarm Screen:** Displays current and historical alarms with timestamp.
- **Data Logging (Option):** Displays trends of logged data (channel load overtime).
- **Callout Configuration (Option):** Displays current call-out settings and allows user to configure email addresses and phone numbers to receive the call-out.

SCADA / Building Management Interface:

All concentrated data is made available to customer SCADA / Building Management system via Ethernet (via Modbus TCP / IP, port 502) or serial interface (via Modbus RTU 485 / 232). In addition to summary relay status, each individual channel data includes, but is not limited to :

- Channel Description (from configuration)
- Channel Load Level
- External Test Status
- Internal Test Status
- State Status
- Alarm Status
 1. No Alarm
 2. Pre-Warning
 3. Device Error
 4. Isolation Fault (Amber)
 5. Programmable Fault (red)
- Range Validity
- Unit Configuration

Enclosure:

1. 65x30x16 NEMA 3R enclosure - wall mount (optional factory mounting of enclosure on steel stand with concrete slab available).
2. Thermostatically operated exhaust fan (on top) with stainless steel inlet filters.
3. Thermostatically operated heater strips (located near the cold sensitive equipment).
4. Three (3) summary green / amber / red LED status lamps
5. Three (3) circuit group reset pushbutton (1-12, 13-24, 25-36)

Power Distribution:

1. 200A Circuit Breaker.
2. Phases are distributed to three (3) three-phase contactors.
3. Each contactor feeds twelve (12) circuit breakers.
4. Each circuit passes through a current transformer (CT) to a terminal block located at the bottom of each enclosure.
5. Each neutral circuit passes through the same CT as its corresponding line circuit to a terminal block located at the bottom of the enclosure.
6. Each individual circuit has a dedicated ground terminal block.



System Overview Screen



Group Overview Screen



Alarm Screen



Settings Screen



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