

PIPE TRACE COMPANION CONTROL AND MONITORING PRODUCT SHEET



ProLine
RADIANT HEAT SOLUTIONS
Self-Regulating Cable for Pipe Trace Systems

ProLine Pipe Trace Companion and PTC Plus

Pipe Trace Companion – Control and Monitoring

ProLine pipe tracing systems are designed to be the very best in electrical heat trace control and monitoring for industrial applications.

ProLine's Pipe Trace Companion series controllers are advanced electronic thermostats designed for indoor and outdoor heat tracing in non-hazardous and general purpose areas, as well as for use in Class I, Division 2 / Zone II areas. The ProLine Pipe Trace Companion is available in single point or dual point microprocessor based heat trace controllers.

The Best in Monitoring

ProLine Pipe Trace Companion controllers not only control and monitor temperature but they also monitor your heat trace system for current and ground leakage. Pipe Trace Companion series controllers are compatible with every type of electric heat trace and tubing bundle available.

All Pipe Trace Companion Series Controllers are complete packages that come with a built-in Ground Fault Protection Device (GFPD), eliminating the need for separate ground fault breaker panels and their associated costs of installation. Temperature sensing is through the included 100-ohm, 3-wire platinum RTD, which you can mount on the pipe, or use for ambient sensing.



The Pipe Trace Companion

Reliable and Efficient

Pipe Trace Companion Controllers provide outstanding reliability to ensure that your time is spent producing, not troubleshooting. Comprehensive alarm packages provide quick fault detection, and the ground fault trip feature provides optimal performance and safety.

Pipe Trace Companion Series Controllers have a temperature range of -58°F to 932°F (-50°C to 500°C) within $\pm 3.6^\circ\text{F}$ ($\pm 2^\circ\text{C}$) using solid-state controls and microprocessor driven commands.

The digital temperature setpoints offer fast, precise settings over a wide range.

No mechanical thermostat can come close to matching the performance of ProLine's Pipe Trace Companion. The units are self-contained and easy to install with no special maintenance staff training or special tools required.

By combining control, system monitoring and testing requirements of a heat trace controller in a single package, Pipe Trace Companion Series Controllers offer you significant low-cost system upgrades and a controller that can be customized to meet your specific requirements.



The Pipe Trace Companion with indicator light.

Pipe Trace Companion Features and Benefits

Temperature Control

- 0°F to 511°F (0°C to 511°C) setpoint
- Non-ambiguous, digital temperature setpoint
- 100-ohm platinum RTD* sensor
- 3-wire, lead resistance compensation
- * Standard RTD rated to 200°C

System Fault Alarms

- Breaker off or tripped
- Heater continuity or low current
- Low temperature / high temperature
- Ground fault trip / sensor fault

Early Warning

- Monitoring system exercises dormant systems every 24 hours for early warning for shutdown prevention
- Status indicators show cause of alarms
- Separate fail-safe local and remote alarms

Remote Monitoring

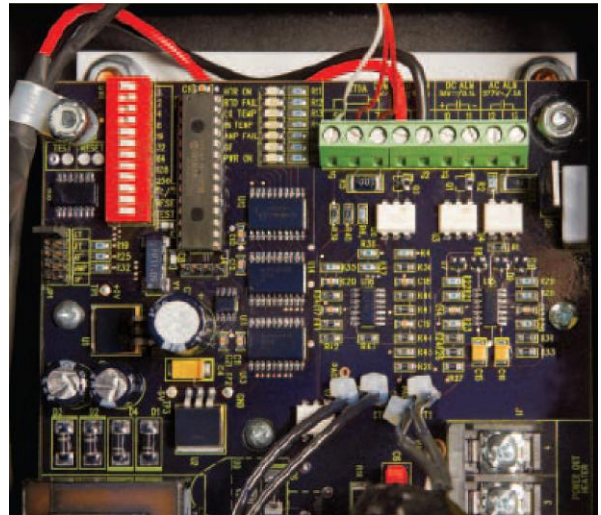
- Form C dry alarm contact for PLC or remote alarm indication
- LED Alarm indicator viewable on door

Hazardous / Non-hazardous Area Usage

- CSA approved for non-hazardous or Class I, Division 2, Groups A, B, C, D / Zone II hazardous area
- Operating range: -40°F to +122°F (-40°C to +50°C)
- 30 amps @120, 208 or 240, and 277 VAC rating
- Weatherproof, NEMA-4X enclosure
- Easy retrofit replacement for mechanical thermostat

Low Installation Cost

- Competitively priced
- Self contained. No control panel to build.
- Ground fault trip eliminates expensive ground fault circuit breaker.
- Standard model simplifies spare parts stocking



The Pipe Trace Companion circuit board.



Pipe Trace Companion

Temperature Range

Range	58°F to +932°F (-50°C to +500°C)
Hysteresis	±3.6°F (±2°C)
Absolute Accuracy	4.5°F (2.5°C)
Repeatability	±1.8°F (±1°C)
RTD *	100-ohm platinum, 3-wire 20 ohms maximum lead resistance

Heater Switching

Configuration	Single-pole 120 VAC and 277 VAC Dual-pole 208-240 VAC and 277 VAC Dual SCR per phase
Ratings	Single-pole 120 VAC and 277 VAC @ 30 amps Dual-pole 208-240 VAC and 277 VAC @ 30 amps
Protection	Control power from heater voltage protected by 2A fuse MOV transient protection

Control Power

Power	Control power from heater voltage
Requirements	Single-pole 120 VAC and 277 VAC, 10VA Dual-pole 208-240 VAC and 277 VAC, 10VA
Protection	Control power from heater voltage protected by 2A fuse MOV transient protection and RC snubber

User Interface

Heater Setpoint	12 position dip switch
Reset/Heater Test	Dip switch
Panel Indicators	Power on Heater on Low temperature alarm High temperature alarm Current fail alarm Ground fault trip alarm RTD fail alarm

Environment

Approvals	CSA NRTL/C US / C and FM Class I, Division 2, Groups A, B, C, D Class I, Zone II, Groups IIC
Operating Range	-40°F to +122°F (-40°C to +50°C) Heater current derated

User Definable Options

Heater Setpoint	Low temperature alarm setpoint: 0°C to 511°C, 1°C steps High temperature alarm setpoint: 0°F to 511°C, 1°F steps
Temperature Units	0°F or 0°C
Current Fail Alarm Setpoint	0.0A - 30.0A, 0.1 A steps
Ground Fault Trip Alarm Setpoint	0mA - 511mA, 1mA steps

Enclosure

Type	NEMA-4X steel, powder coat painted (black)
Size	Single-pole: 8"H x 6"W x 4"D Dual-pole: 10"H x 8"W x 4"D
Features	Quick release latches to open door One ¾-inch conduit knockout for power wiring. Two ⅜ or ½-inch conduit knock outs for RTD wiring One ⅜ or ½-inch conduit knock outs for RTD and signal wiring. One 0.610-inch knockout for RS232 communication

Alarms

Low Temperature	Actual temperature < low temperature alarm setpoint
High Temperature	Actual temperature > high temperature alarm setpoint
Current Fail	Heater current < current fail alarm setpoint. Switch shorted
Ground Fault Trip	Ground fault current > ground fault trip alarm setpoint
RTD Fail	RTD open, RTD short
Hardware	No incoming voltage
System Check	Switch shorted
Current	Fail alarm
Configuration	NC contacts
Alarm Output	AC contact: 12-240 VAC @ .5A maximum
Rating	DC contact: 30VDC/0.1A, 500mW maximum LED indicator: 6VDC/50mA Form C contact: 12-277 VAC/0.5A, 30VDC/0.1A

Alarm Function

Temperature	Low temperature alarm High temperature alarm
Current	Current fail alarm
Ground Fault	Ground fault trip
Hardware	RTD open, RTD short, switch shorted

Pipe Trace Companion Plus

The Pipe Trace Companion Plus offers a low-cost solution for two-circuit heat control and monitoring. This advanced system monitors the heat process for current and ground leakage.

The Pipe Trace Companion Plus is designed for indoor or outdoor use in non-hazardous or Class I, Division 2, Groups A, B, C, D or Zone II hazardous areas.

Based on the outstanding reliability of ProLine Radiant's control systems, the Pipe Trace Companion Plus offers advanced monitoring features, including an LCD display along with convenient programming capabilities. The unit can be programmed by a 12-point dipswitch located on the printed circuit board, or by laptop programming. Specialized software is downloaded into compatible PC devices for field communication to the thermostat unit.

Pipe Trace Companion Plus Features and Benefits

Temperature Control

- 0°F to 511°F (0°C to 511°C) setpoint
- Non-ambiguous, digital temperature setpoint
- 100-ohm platinum RTD* sensor
- 3-wire, lead resistance compensation

System Fault Alarms

- Breaker off or tripped
- Heater continuity or low current
- Low temperature / high temperature
- Ground fault trip / sensor fault

Early Warning

- Monitoring system exercises dormant systems every 24 hours for early warning to prevent shutdown
- Status indicators show cause of alarms
- Separate fail-safe local and remote alarms

Remote Monitoring

- Form DC or AC alarm output for PLC or remote alarm indication
- Form C dry contact alarm output
- LCD display on the front door

Hazardous / Non-hazardous Area Usage

- CSA approved for non-hazardous or Class I, Division 2, Groups A, B, C, D / Zone II hazardous area
- Operating range: -40°F to +122°F (-40°C to +50°C)
- 30 amps @120/277 VAC rating
- Weatherproof, NEMA-4 enclosure
- Easy retrofit replacement for mechanical thermostat

Low Installation Cost

- Competitively priced
- Self contained. No control panel to build.
- Ground fault trip eliminates expensive ground fault circuit breaker.
- Standard model simplifies spare parts stocking



The Pipe Trace Companion Plus.



Pipe Trace Companion Plus

Temperature Range

Range	58°F to +932°F (-50°C to +500°C)
Hysteresis	±3.2°F (±2°C)
Absolute Accuracy	4.5°F (2.5°C)
Repeatability	±1.8°F (±1°C)
RTD *	100-ohm platinum, 3-wire 20 ohms maximum lead resistance

Heater Switching

Configuration	Single-pole one SCR per heater, or dual pole, one SCR per phase
Ratings	120/277 VAC @ 30 amps 208/240 VAC @ 30 amps 250 amp 1/2 cycle inrush
Protection	50 or 60 HZ

Control Power

Power	Control power from heater voltage
Requirements	120/208/240/277 VAC, 10VA
Protection	Control power from heater voltage protected by 2A fuse; MOV transient protection and RC snubber

User Interface

Heater Setpoint	12-position dip switch
Reset/Heater Test	Dip switch
Panel Indicators	Power on Heater on Low temperature alarm High temperature alarm Current fail alarm Ground fault trip alarm RTD fail alarm
LCD Display	Heater status and setpoint values
RS232 Port	Compatible PDA or laptop programming

Environment

Approvals	CSA C US; Class I, Division 2, Groups A, B, C, D; Class I, Zone II, Groups IIC
Operating Range	120/277V: -40°F to 122°F (-40°C to 50°C) LCD display: -4°F to 122°F (-20°C to 50°C); Heater current derated

User Definable Options

Heater Setpoint	Low temperature alarm setpoint: 0°C to 511°C, 1°C steps High temperature alarm setpoint: 0°F to 511°C, 1°F steps
Temperature Units	0°F or 0°C
Current Fail Alarm Setpoint	0.0A - 30.0A, 0.1 A steps
Ground Fault Trip Alarm Setpoint	0mA - 511mA, 1mA steps

Enclosure

Type	NEMA-4 steel, powder coat painted (black)
Size	Dual-pole: 10"H x 8"W x 4"D
Features	Quick release latches to open door One ¾-inch conduit knockout for power wiring. Two ⅜ or ½-inch conduit knockouts for RTD wiring One ⅜ or ½-inch conduit knockout for signal wiring. One 0.610-inch knockout for RS232 communication

Alarms

Low Temperature	Actual temperature < low temperature alarm setpoint
High Temperature	Actual temperature > high temperature alarm setpoint
Current Fail	Heater current < current fail alarm setpoint. Switch shorted
Ground Fault Trip	Ground fault current > ground fault trip alarm setpoint
RTD Fail	RTD open, RTD short
Hardware	No incoming voltage
System Check	Switch shorted
Current	Fail alarm
Configuration	NC contacts
Alarm Output	AC contact: 12-240 VAC @ 0.5A maximum
Rating	DC contact: 30VDC/0.1A, 500mW maximum LED indicator: 6VDC/50mA Form C contact: 12-277 VAC/0.5A, 30VDC/0.1A

Alarm Function

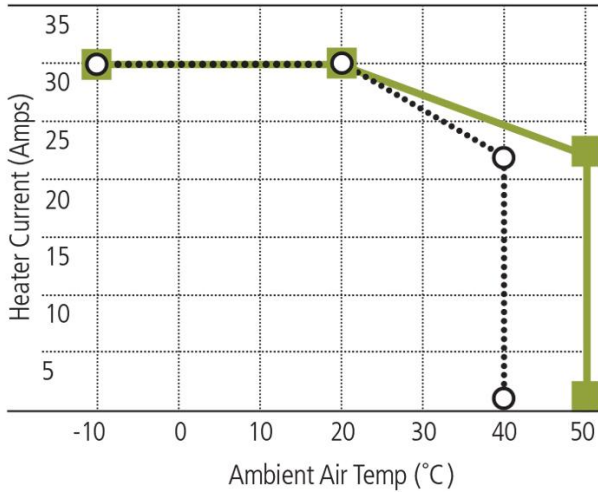
Temperature	Low temperature alarm High temperature alarm
Current	Current fail alarm
Ground Fault	Ground fault trip
Hardware	RTD open, RTD short, switch shorted

Pipe Trace Companion

Heater Current Ratings

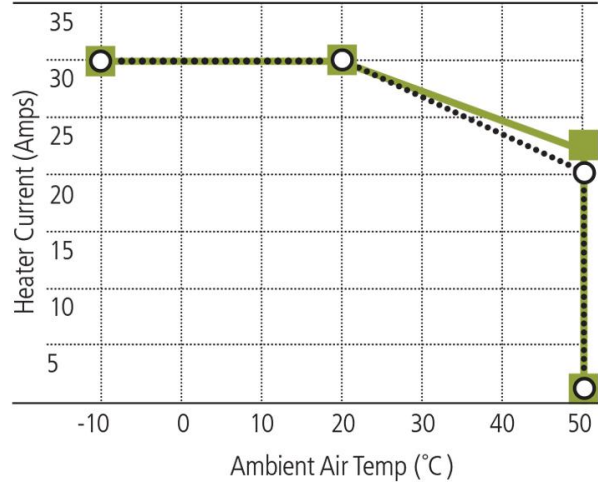
120 VAC/208-240 VAC Heater Current Rating

■ 1-Pole Switching ○ 2-Pole Switching



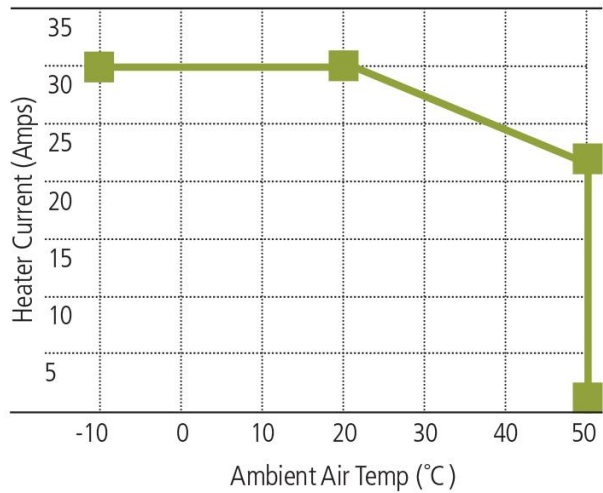
277 VAC Heater Current Rating

■ 1-Pole Switching ○ 2-Pole Switching



Pipe Trace Companion Plus

Heater Current Ratings



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