ADVANCED THERMAL CONTROL & OPTIMIZATION

ATCOM CATALOG – HEAT TRACE CONTROL PANEL

DESCRIPTION

A modern design centered around one core concept: user friendliness – Gone are the days of cluttered screens, confusing acronyms, nuisance alarms, cumbersome softwares, tedious startups, and hundred-page user manuals.

The ATCOM panel is an independent control system, designed to fully manage heat trace applications for both freeze-protection and process-control. The main functionalities include Power Distribution, Sensor Monitoring, Alarming, and Data Delivery.

The panel is microprocessor based, controlling up to 54 circuits, available at 120-277VAC. A weather-proof touch screen allows the user to select between various circuit-control methods: Line-Temperature based, Ambient based, or Manual. Up to 4 field RTDs can be assigned to each circuit, giving the user a thorough overview of the application status.

Alarms are generated for temperature, current, and ground fault leakage. Users can modify setpoints via the HMI touch screen. Project-specific setpoints are preset for the user, in true turn-key nature.

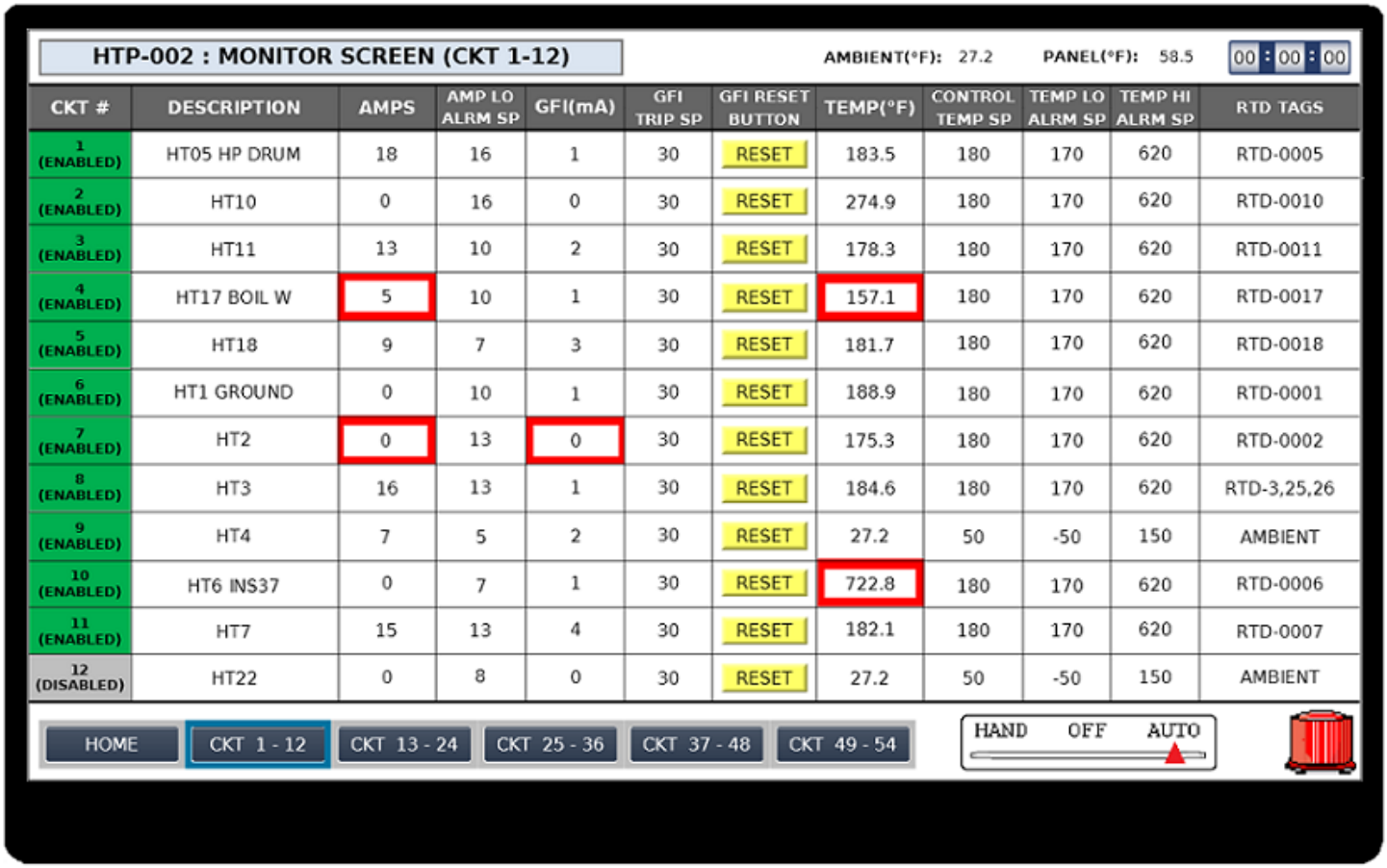
A free Remote-Access software is provided with the panel, allowing the user to access the HMI directly from their PC. Communication with the plant DCS is also available for data delivery.

UL Approved
Ordinary & C1D2 Areas
Master Contract 20161229-E489368

ATCOM CATALOG – HEAT TRACE CONTROL PANEL

MAIN FEATURES

- **NEMA 4/4X Enclosure**
- **Power Distribution**
  - *Main Breaker*
  - *Panel Board*
  - *Circuit Breakers*
- **12-54 Circuit Count**
- **30-40A per Circuit @ 120-277VAC**
- **Ground Fault Circuit Tripping**
- **SSR Circuit Control**
  - *Line-Temperature Based*
  - *Ambient Based*
- **Main Disconnect Handle**
- **16” Weatherproof HMI Touch-Screen**
- **Sensor Monitoring & Alarming**
  - *Current*
  - *Ground Fault Leakage*
  - *Temperate*
  - *Communications*
- **Remote Access**
- **DCS Data Delivery**
- **Optional Heater/AC**
- **UL 508A Approved**
- **Optional C1D2**
  - *Type Z Air Purge & Pressurization*



HTP-002 : MONITOR SCREEN (CKT 1-12)

AMBIENT(°F): 27.2 PANEL(°F): 58.5 00 : 00 : 00

CKT #	DESCRIPTION	AMPS	AMP LO ALRM SP	GFI(mA)	GFI TRIP SP	GFI RESET BUTTON	TEMP(°F)	CONTROL TEMP SP	TEMP LO ALRM SP	TEMP HI ALRM SP	RTD TAGS
1 (ENABLED)	HT05 HP DRUM	18	16	1	30	RESET	183.5	180	170	620	RTD-0005
2 (ENABLED)	HT10	0	16	0	30	RESET	274.9	180	170	620	RTD-0010
3 (ENABLED)	HT11	13	10	2	30	RESET	178.3	180	170	620	RTD-0011
4 (ENABLED)	HT17 BOIL W	5	10	1	30	RESET	157.1	180	170	620	RTD-0017
5 (ENABLED)	HT18	9	7	3	30	RESET	181.7	180	170	620	RTD-0018
6 (ENABLED)	HT1 GROUND	0	10	1	30	RESET	188.9	180	170	620	RTD-0001
7 (ENABLED)	HT2	0	13	0	30	RESET	175.3	180	170	620	RTD-0002
8 (ENABLED)	HT3	16	13	1	30	RESET	184.6	180	170	620	RTD-3,25,26
9 (ENABLED)	HT4	7	5	2	30	RESET	27.2	50	-50	150	AMBIENT
10 (ENABLED)	HT6 INS37	0	7	1	30	RESET	722.8	180	170	620	RTD-0006
11 (ENABLED)	HT7	15	13	4	30	RESET	182.1	180	170	620	RTD-0007
12 (DISABLED)	HT22	0	8	0	30	RESET	27.2	50	-50	150	AMBIENT

HOME | CKT 1 - 12 | CKT 13 - 24 | CKT 25 - 36 | CKT 37 - 48 | CKT 49 - 54

HAND OFF AUTO

PANEL SELECTION

A-Series: Microprocessor Operated
B-Series: Mechanically Operated

The PLC technology in the **A-Series** panel is what enables sensor monitoring & alarming, which detects heat-trace issues before potential damage occurs. The **B-Series** is a lower cost alternative, which is mainly on/off, with a few additional options.

Advanced Series

PLC operated. Individual circuit control. Line & ambient sensing. Alarming of temperature, current, & ground-fault.

A – 36 – 120 – A – 2 – XS

Circuit Count
##: Between 12 to 54

Heat Trace Voltage
120: 120 VAC
208: 208 VAC
240: 240 VAC
277: 277 VAC
CMB: Combination

Line Voltage
A: 208Y/120V 3Phase
B: 240Y/120V 1Phase
C: 480Y/277V 3Phase

Field RTD Count
0: No Field RTDs (Ambient Only)
1: Single RTD Per CKT
2: Multiple RTDs Per CKT

Options (combinable)
0: No Options
4: 40A BRKs *(default = 30A)*
X: Nema 4X Stainless Steel
Z: C1D2 - Type Z Air Purge
H: Enclosure Heater
A: Enclosure AC
S: Sun-Shield for HMI
M: Multi-Panel Alarm Manager

Note 1: *Main BRK size determined by engineering (typically 225A for a 36 circuit system).*
Note 2: *Enclosure size determined by engineering (typically 60"x44"x12" for a 36 circuit system).*
Note 3: *Up to 4 Line-Sensing RTDs per circuit.*

Basic Series

Mechanically operated.

B – 36 – 120 – A – 2 – 4A

Circuit Count
##: Between 12 to 54

Heat Trace Voltage
120: 120 VAC
208: 208 VAC
240: 240 VAC
277: 277 VAC
CMB: Combination

Line Voltage
A: 208Y/120V 3Phase
B: 240Y/120V 1Phase
C: 480Y/277V 3Phase

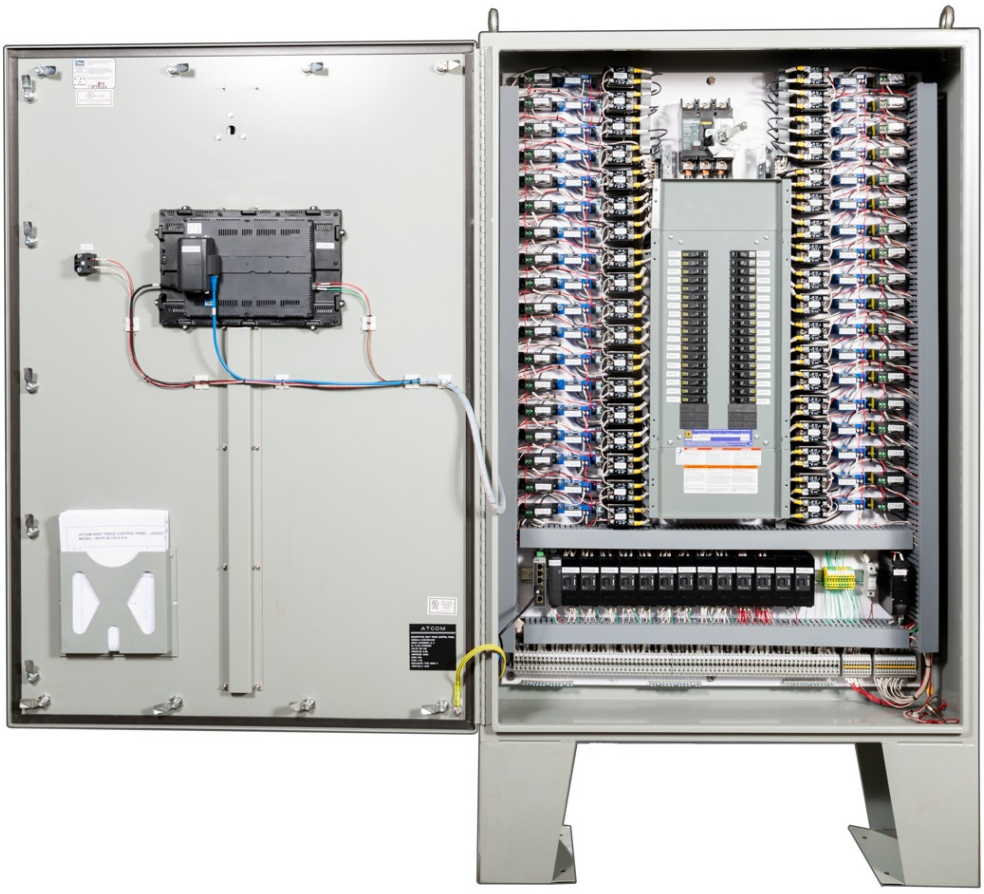
Control Method
1: Main Disconnect Handle Only (ON/OFF)
2: HOA Switch (Hand/OFF/Auto) with Ambient T.S.

Options (combinable)
0: No Options
4: 40A BRKs *(default = 30A)*
A: LED Alarms for HT BRKs
X: Nema 4X Stainless Steel

Note 1: *Main BRK size determined by engineering (typically 225A for a 36 circuit system).*
Note 2: *Enclosure size determined by engineering (typically 42"x36"x10" for a 36 circuit system).*

TECHNICAL SPECIFICATIONS

Operating Temperature	-4 to 104°F *(enclosure heater recommended for sub-freezing temperatures)*
Area Classification	Ordinary or Optional Class 1 Div 2
Enclosure Rating	NEMA 4 Steel or Optional NEMA 4X Stainless Steel
Enclosure Mounting	Wall Mount or Floor Mount
Line Voltage	120 – 480VAC, 3-Phase
Main Breaker Rating	600VAC, 3-Phase, 225A, Thermal Magnetic
Short Circuit Current Rating	10kA
Max Current Output	40A per circuit
Output Control Method	HOA (Hand / Off / Auto) *Hand: manual control* *Auto: temperature based control*
Temperature Input	100 Ohm Platinum 3-Wire RTD
Alarms	Temperature, Current (0.1 - 40A), Ground Fault Leakage (1 - 500mA)
Communication	Modbus TCP/IP, Direct TCP/IP (Ethernet)
Approvals	UL 508A



ADDITIONAL DETAILS

- **Power Distribution**: Power is provided to the panel from a transformer with line voltages ranging 120-277VAC. It is then received at the thermal-magnetic Main Breaker, which is typically 3-phase, 600V, 225A rated. The Main Breaker will have a Disconnect Switch protruding through the enclosure door, allowing the user to safely turn the system on/off before opening the panel. Power is then delivered to the Panel Board, where it is then distributed to the heat trace Circuit Breakers.

- **PLC & Touchscreen**: The PLC software is written and supported by the ATCOM engineering team. The HMI is a 16" touchscreen, door-mounted and weather-proof. The screens are easily navigable, allowing the user to see the live operating data of their heat trace, as well as investigate alarms, change control methods, etc.
    - **Remote Access**: Aside from the physical touchscreen, the user may access the system via a free PC VNC software. This will simulate an exact replica of the touch-screen directly on the computer. Both the PLC & PC must be on the plant LAN to achieve this.

- **Sensor Monitoring**: The panel will monitor the following heat-trace data in real time:
    - **Current**: Amperage from the HT circuit breakers is recorded via Current Transducers. This value will indicate if the heat trace is running as expected, or if there is a malfunction.
    - **Temperature**: Field RTD sensors will be terminated in the panel for line-temperature readings. Up to four RTDs can be assigned to a HT circuit. This will allow for detailed monitoring of individual lines.
    - **GFI:** (Ground Fault Interrupt): GFI is recorded in the value of milli-amp current; this is accomplished via a different type of current transducer in the panel.

- **Alarms**: All the above sensor points will have a low/high alarm that will appear in the form of a flashing red beacon on the user interface. The GFI alarm will also cause the circuit to trip, for the protection of the equipment. The user may acknowledge this trip via the touchscreen and reset the circuit.

- **Control Methods**: The user may select from a variety of methods to control their heat trace.
    - **Hand**: Force all circuits ON.
    - **Off**: Force all circuits OFF.
    - **Auto**: The circuits will be individually controlled based on their temperature setpoints. This will be accomplished via solid state relays in the panel, in conjunction with RTD sensors.

- **Data Delivery**: The system data can be sent to the plant DCS via Modbus TCP/IP or direct Ethernet protocol.

- **Multi-Panel Alarm Manager**: In situations where a customer site may have multiple ATCOM panels in operation, it will be advantageous to have a central location where all the alarms are brought in and organized. Sometimes, this is accomplished by the DCS, but it can be costly to do so. ATCOM offers a miniature alarm panel that communicates with the other panels via Ethernet protocol, and manages the alarms. This panel is PLC based, which is more secure than having a standard PC software.