IntelliTrace

Ambient Sensing

ITAS Base Panel

ITAS-EXT Extension Panel

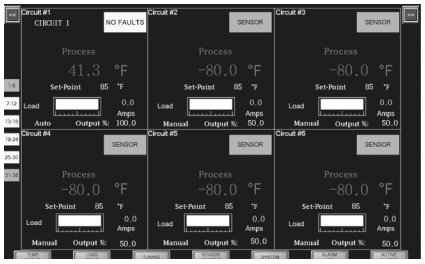
Line Sensing

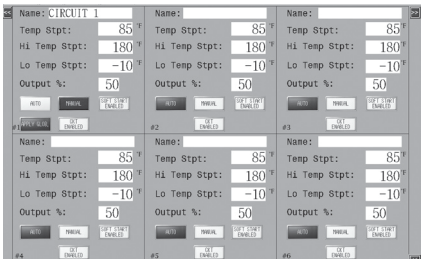
ITLS Base Panel

ITLS-EXT Extension Panel

Heat Tracing Control Panel for Ordinary Areas

- 10” or 7” Touch Screen HMI
- Up to 50A per Circuit @ 120 - 480 VAC
- 2 - 48 Circuits, Expandable to 72 Circuits via Extension Panels
- NEMA 4 or NEMA 4X Enclosure
- SCR Control
- Integral Circuit Panel with Circuit Breakers
- Heater Power & RTD Terminal Blocks
- Optional Main Breaker
- Soft Start Feature
- Full Communications
- Full Alarm and Monitoring Capabilities on GFEP, Temperature, Sensor, Current Load & Communications
- Customizable Sensor Mapping
- Optional Enclosure Heater
- UL, cUL





The 10” or 7” Touch Screen Computer provides real time display of process variable, set point, load current, load demand (%), operation mode type, alarm status and alarm type for any 2 or 6 circuits at a time as well as alarm status for all other circuits.

The Quick Launch buttons take you to any other 2 or 6-circuit real time display screen as well as the Setup, Fault, Log or Communication Screen. All set point, alarm, security, time, circuit identification, sensor mapping, tuning, communications and control type mode settings are easily accomplished through the intuitive & familiar Windows based menu screens. All of these functions are achievable locally or remotely via wired or wireless communications.

Description

The IntelliTrace ITAS and ITLS Series is a micro-processor based Control/Monitoring and Power Management system for Ambient Sensing, Line Sensing or a combination of Line and Ambient Sensing Heat Trace Applications and is suitable for use in ordinary areas.

The base panels will handle 2 - 48 circuits and may be increased up to 72 circuits with the Extension Panels. A 2 to 4 circuit extension panel may be added to a 6-48 circuit panel but not vice versa. Each Circuit can go up to 50A per Circuit @ 120 - 480 VAC. The SCR Control may be set to Automatic, which includes PID or On/Off control or to Manual, which spans a 0% to 100% control output.

The HMI is a 10” (25 cm) or 7” (17cm) user friendly touch screen computer. It displays the process variable, temperature setpoint, alarm status, current load, control mode, sensor failure manual override output for any 2 or 6 circuits at a time as well as the alarm status for all other circuits.

The standard enclosure is rated for NEMA 4 environments and an optional NEMA 4X 304 SS enclosure is available.

The ITAS / ITLS Control Panel Series provide alarms for high and low temperatures, current load, communications, sensor faults and ground fault leakage. There are several output/control behavior scenarios for the ground fault (GFEP) alarm condition. Choices include Trip and/or Latch options in which both, either or none may be enabled. Trip sets the output to zero %, while Latch requires a manual reset. Alarm events are automatically logged and stored for easy access.

Advanced standard features include a propretary soft start function, off duty Auto Cycle maintenance program, and either Modbus RTU/ RS485 or Ethernet communications.
An industry leading Sensor Mapping function, and remote monitoring.

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Advanced Features

Soft Start Feature
Certain HEATng cables exhibit inherent current inrush in colder temperatures. This inrush can cause nuisance breaker tripping. To limit inrush current on the overall system, a proprietary Soft Start algorithm is applied during system start-up. This will ONLY occur while the operation mode is set to AUTO. After the Soft Start program completes its cycle, the Control Mode of the system will either be PID or ON/OFF Control Mode, depending on what was selected by the user. The default setting of the Soft Start Feature for each circuit is "enabled". However, the Soft Start Feature may be disabled if so desired by the owner. The owner has the option to independently manage the Soft Start Feature on each circuit.

Auto Cycle Feature
During prolonged downtime periods, typically during the summer months, it is advisable to intermittently exercise the system circuits. This exercising of the circuits is accomplished via the Autocycle feature. On a sequential circuit basis, the Autocycle feature periodically monitors system performance between 1-999 hours. This provides a certain level of predictive maintenance of the system as Faults (Alarms) will present themselves accordingly. Problem areas may be addressed during non-essential operating periods. The owner has the option to engage or disengage the Autocycle feature at any time.

Sensor Mapping
With this feature, the ITLS or ITAS Models provide the owner with customizable Sensor Mapping. This becomes a very powerful and desirable feature when the owner needs added flexibility in controlling the circuit outputs beyond the standard single sensor input.

Sensor Mapping is the assignment of one or more Sensor Inputs to one or more output circuits.

More on Sensor Mapping

Ambient or Line Sensing - Single Sensor:
A single sensor (RTD) may be mapped (or linked) to multiple Output Circuits. This allows several circuits to be controlled by a single sensor.

Minimum, Maximum, Averaging

Several sensors may be mapped to a single output circuit. This allows a single circuit to be controlled by the Minimum or the Maximum or the Average temperature of all of the sensors mapped to that output circuit. This may be desirable on long runs or zones which realize varying temperatures or weather conditions at different times of the day.

Multiple Sensor Mapping

A single sensor may be used independently or combined with other sensors to control more than one circuit.

Combining Sensing Types

The owner may need to have multiple Line and/or Ambient Sensing control scenarios occurring simultaneously.

Touch Screen Computer:

- 2 or 6 Circuit displayed/screen
- Quick launch to any 2 or 6 circuit group, Setup Menu or System Screens
- Full User Setting Capabilities - Specific Circuit Naming/Identification, Baud rate, set points, units, alarms, etc.
- Remote Desktop Monitoring

Optional Features:

- NEMA 4X 304 SS Enclosure

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Technical Specifications

Panel Specifications

Supply Voltage:	208/120 VAC, 3-Phase 4-Wire 240/120 VAC, Single Phase 3-Wire 480/277 VAC, 3-Phase 4-Wire
Operating Environment:	-40 to +104°F (-40 to +40°C)* Enclosure heater required for Ambient Temperatures below 32˚F (0˚C)
Enclosure:	NEMA 4 or Optional NEMA 4X 304 SS
Enclosure Size:	See Table 1 Selection Size
Communications:	Modbus RTU/RS-485, Ethernet
Alarms:	Hi/Lo Temp, GFEP – 20 mA to 150 mA, Hi/Lo Current – 0.1 to 50A or of
Input:	100Ω Platinum 3-wire RTD
Output:	SCR, Zero cross fired
Current Maximum:	Up tp 50A per Circuit at 104°F (40°C)
Auto-Cycle:	1-999 hours/off
Failed Sensor Output Setting:	0 – 100%
Control Mode:	Auto, Manual (Hand), Off Auto: PID or ON/OFF with adjustable dead band Manual: 0% - 100% output, 1% increment
Load Management:	DOT (Demand On Transfer) timing, with Soft Start
Approvals:	UL, cUL Listed.
Area Classifications:	Ordinary Areas or optional feature for C1D2 with Z-Purge
Temperature Rating	T4A (UL) (Derate to T3 & Groups B, C, D when using enclosure heater)

IntelliTrace
Ambient/Line Sensing
ITAS/ITLS Base Panel
Heat Tracing Control Panel for Ordinary Areas

Ordering Information
To Order — *Complete the Model Number using the Matrix provided.*

Model **Product Description**

ITAS or ITLS ITLS/ITAS IntelliTRACE Line/Ambient Sensing Heat Trace Panels are designed for Industrial Applications in Non-Hazardous Areas with an option for C1D2 Hazardous Areas. IT series offers the following standard features: NEMA 4 enclosure, Industrial 10" (7" for 2 and 4 Loop Models) HMI Controller Rated up to 50A per Circuit @ 120 - 480 VAC at 104°F (40°C) Ambient, Two to Forty-Eight Circuits (Expandable to Seventy-Two Circuits via Extension Panels), Common Alarm Output, Operator Interface, PID SCR Power, Main Circuit Breaker/Disconnect, Hand/Off/Auto Operation Breaker for Instrument Power Included, Current Monitoring, Heater Power & RTD Terminal Blocks, Thermostat Controlled Enclosure Heater, 30 mA Ground Fault Equipment Protection, ModBus RTU/RS485 or TCP/Ethernet Communications, Lockout Capable Breakers, UL & cUL Third Party Compliance. Additional features & options available, please see below for more details or the Data Sheet.

Code **Circuits**

02	2 Circuits	**24**	24 Circuits
04	4 Circuits	**30**	30 Circuits
06	6 Circuits	**36**	36 Circuits
12	12 Circuits	**42**	42 Circuits
18	18 Circuits	**48**	48 Circuits

Code	Line Voltage	Cable Voltage
1	208/120 VAC, 3 Phase 4 Wire	120 V- 1 Pole or 208 V - 2 Pole
2	240/120 VAC, Single Phase 3 Wire	120 V- 1 Pole or 240 V - 2 Pole
3	480/277 VAC, 3 Phase 4 Wire	277 V- 1 Pole or 480 V - 2 Pole

Code **Cable Load Circuit Breaker Rating** **(Select Breaker Amperage and *1P/2P to Select Breaker Voltage 1(1P)=15A, 120V Breakers)**

0(*)	None	**3(*)**	30A Thermal Magnetic
1(*)	15A Thermal Magnetic	**4(*)**	40A Thermal Magnetic
2(*)	20A Thermal Magnetic	**5(*)**	50A Thermal Magnetic

Code	Main Disconnect / Circuit Breaker	Typical Voltage
0	None	None
1	30A Thermal Magnetic	277/480V 3P
2	50A Thermal Magnetic	120/208V 3P, 120/240V 1P, 277/480V 3P
3	70A Thermal Magnetic	277/480V 3P
4	80A Thermal Magnetic	120/240V 1P
5	100A Thermal Magnetic	120/208V 3P, 120/240V 1P
6	125A Thermal Magnetic	277/480V 3P
7	150A Thermal Magnetic	120/208V 3P
8	175A Thermal Magnetic	120/240V 1P, 277/480V 3P
9	225A Thermal Magnetic	120/208V 3P, 120/240V 1P, 277/480V 3P
X	Other (Consult Sales for assistance)	

Code **Enclosure Heater** (Anti-Condensation Heater Required at a Minimum)

1	Thermostat Controlled Enclosure Heater (Anti-Condensation Heater)
2	Thermostat Controlled Enclosure Heater (Needed for 0˚F, -18˚C Minimum Ambient Temperature)
3	Thermostat Controlled Enclosure Heater (Needed for -40˚F/˚C Minimum Ambient Temperature)

Code **Panel Options**

0	None	**5**	Panel Light (on seperate breaker)
1	HMI Sunshield (Required if Panel is located Outdoors)	**A**	Floor Stand Kit
2	Panel Weather Shield	**B**	SCCR 65 kAIC (Replace breakers with fuses)
3	Copper Ground Bar	**C**	Z-Purge System, Indication Only for C1D2 Hazardous Areas
4	Loss of Power Relay	**X**	Other/Custom Features (Consult Sales for assistance)

Code	Number of 100 Ohm RTD Sensor Inputs (must be multiple of 6, up to 48 inputs, MAXIMUM 3 RTD's per heater circuit)		
1	6 (Select if Ambient Sensing ITAS panel)	**6**	36
2	12	**7**	42
3	18	**8**	48
4	24	**X**	Other (Consult Sales for assistance)
5	30		

Code **Communications**

1	Standard: Modbus RTU/RS485 or Modbus TCP/Ethernet
2	Modbus TCP/Wireless
9	Other (Consult Sales for assistance)

Code **Temperature Sensing Solutions**

1	Standard Wired Sensing

Code **Enclosure** (Size determined by Table 1)

1	NEMA 4 Steel, Wall-Mount Enclosure 30 X 30 X 12
2	NEMA 4 Steel, Wall-Mount Enclosure 42 X 36 X 12
3	NEMA 4 Steel, Wall-Mount Enclosure 60 X 36 X 12
4	NEMA 4 Steel, Wall-Mount Enclosure 60 X 36 X 16
5	NEMA 4 Steel, Wall-Mount Enclosure 72 X 36 X 12
6	NEMA 4 Steel, Floor-Mount Enclosure 62 X 48 X 18
7	NEMA 4 Steel, Free Standing Enclosure 84 x 40 x 18
8	NEMA 4 Steel, Free Standing Enclosure 90 x 48 x 20
A	NEMA 4X 304 Stainless Steel, Wall-Mount Enclosure 30 X 30 X 12
B	NEMA 4X 304 Stainless Steel, Wall-Mount Enclosure 42 X 36 X 12
C	NEMA 4X 304 Stainless Steel, Wall-Mount Enclosure 60 X 36 X 12
D	NEMA 4X 304 Stainless Steel, Wall-Mount Enclosure 60 X 36 X 16
E	NEMA 4X 304 Stainless Steel, Wall-Mount Enclosure 72 X 36 X 12
F	NEMA 4X 304 Stainless Steel, Floor-Mounted Enclosure 62 X 48 X 18
G	NEMA 4X 304 Stainless Steel, Free Standing Enclosure 84 X 40 X 18
H	NEMA 4X 304 Stainless Steel, Free Standing Enclosure 90 x 48 x 20

ITAS/ITLS 06	**3**	**3(1P)**	**5**	**1**	**3**	**1**	**1**	**1**	**5**	**Typical Model Number**

IntelliTrace

Ambient/Line Sensing

ITAS/ITLS-EXT Extension Panel

Heat Tracing Control Extension Panel for Ordinary Areas

Ordering Information

To Order — *Complete the Model Number using the Matrix provided.*

Model **Product Description**

ITAS-EXT or ITLS-EXT

ITLS-EXT/ITAS-EXT series Intelligent Line/Ambient Sensing Heat Trace Extension Panel are designed for Industrial Applications in Non-Hazardous Areas with an option for C1D2 Hazardous Areas. Intended to be used with ITLS/ITAS Heat Trace Line/Ambient Sensing Main Panels to increase circuit count/service. ITLS-EXT series offers the following standard features: NEMA 4 enclosure, PID SCR Power Controller Rated up to 50A per Circuit @ 120 - 480 VAC at 104°F (40°C) Ambient, Two to Forty-Eight Circuits, Common Alarm Output, Hand/Off/Auto Operation, Main Circuit Breaker/Disconnect, Current Monitoring, Heater Power & RTD Terminal Blocks, Thermostat Controlled Enclosure Heater, 30 mA Ground Fault Equipment protection, ModBus Communication back to ITLS/ITAS Main Panel, UL & cUL Third Party Compliance. Additional features & options available, please see below for more details or the Data Sheet.

Code **Circuits**

02	2 Circuits	**24**	24 Circuits
04	4 Circuits	**30**	30 Circuits
06	6 Circuits	**36**	36 Circuits
12	12 Circuits	**42**	42 Circuits
18	18 Circuits	**48**	48 Circuits

Code **Line Voltage** **Cable Voltage**

1	208/120 VAC, 3 Phase 4 Wire	120 V- 1 Pole or 208 V - 2 Pole
2	240/120 VAC, Single Phase 3 Wire	120 V- 1 Pole or 240 V - 2 Pole
3	480/277 VAC, 3 Phase 4 Wire	277 V- 1 Pole or 480 V - 2 Pole

Code **Cable Load Circuit Breaker Rating** (Select Breaker Amperage and *1P/2P to Select Breaker Voltage 1(1P)=15A, 120V Breakers)

0(*)	None	**3(*)**	30A Thermal Magnetic
1(*)	15A Thermal Magnetic	**4(*)**	40A Thermal Magnetic
2(*)	20A Thermal Magnetic	**5(*)**	50A Thermal Magnetic

Code **Main Disconnect / Circuit Breaker** **Typical Votlage**

0	None	None
1	30A Thermal Magnetic	277/480V 3P
2	50A Thermal Magnetic	120/208V 3P, 120/240V 1P, 277/480V 3P
3	70A Thermal Magnetic	277/480V 3P
4	80A Thermal Magnetic	120/240V 1P
5	100A Thermal Magnetic	120/208V 3P, 120/240V 1P
6	125A Thermal Magnetic	277/480V 3P
7	150A Thermal Magnetic	120/208V 3P
8	175A Thermal Magnetic	120/240V 1P, 277/480V 3P
9	225A Thermal Magnetic	120/208V 3P, 120/240V 1P, 277/480V 3P
X	Other (Consult Sales for assistance)	

Code **Enclosure Heater** (Anti-Condensation Heater Required at a Minimum)

1	Thermostat Controlled Enclosure Heater (Anti-Condensation Heater)
2	Thermostat Controlled Enclosure Heater (Needed for 0˚F, -18˚C Minimum Ambient Temperature)
3	Thermostat Controlled Enclosure Heater (Needed for -40˚F/˚C Minimum Ambient Temperature)

Code **Panel Options**

0	None	**A**	Floor Stand Kit
2	Panel Weather Shield	**B**	SCCR 65 kAIC (Replace breakers with fuses)
3	Copper Ground Bar	**C**	Z-Purge System, Indication Only for C1D2 Hazardous Areas
4	Loss of Power Relay	**X**	Other/Custom Features (Consult Sales for assistance)
5	Panel Light (on separate breaker)		

Code **Number of 100 Ohm RTD Sensor Inputs (must be multiple of 6, up to 48 inputs, MAX. 3 RTD's/heater ckt.)**

0	None	**5**	30
1	6 (Select if Ambient Sensing ITAS panel)	**6**	36
2	12	**7**	42
3	18	**8**	48
4	24	**X**	Other (Consult Sales for assistance)

Code **Communications**

1 ModBus RTU/RS485 (Communication with main panel)

Code **Temperature Sensing Solutions**

1 Standard Wired Sensing

Code **Enclosure (size determined by table 1)**

1	NEMA 4 Steel, Wall-Mount Enclosure 30 X 30 X 12
2	NEMA 4 Steel, Wall-Mount Enclosure 42 X 36 X 12
3	NEMA 4 Steel, Wall-Mount Enclosure 60 X 36 X 12
4	NEMA 4 Steel, Wall-Mount Enclosure 60 X 36 X 16
5	NEMA 4 Steel, Wall-Mount Enclosure 72 X 36 X 12
6	NEMA 4 Steel, Floor-Mount Enclosure 62 X 48 X 18
7	NEMA 4 Steel, Free Standing Enclosure 84 X 40 X 18
8	NEMA 4 Steel, Free Standing Enclosure 90 X 48 X 20
A	NEMA 4X 304 Stainless Steel, Wall-Mount Enclosure 30 X 30 X 12
B	NEMA 4X 304 Stainless Steel, Wall-Mount Enclosure 42 X 36 X 12
C	NEMA 4X 304 Stainless Steel, Wall-Mount Enclosure 60 X 36 X 12
D	NEMA 4X 304 Stainless Steel, Wall-Mount Enclosure 60 X 36 X 16
E	NEMA 4X 304 Stainless Steel, Wall-Mount Enclosure 72 X 36 X 12
F	NEMA 4X 304 Stainless Steel, Floor-Mount Enclosure 62 X 48 X 18
G	NEMA 4X 304 Stainless Steel, Free Standing Enclosure 84 x 40 x 18
H	NEMA 4X 304 Stainless Steel, Free Standing Enclosure 90 x 48 x 20

ITAS/ITLS-EXT-	**06**	**3**	**3(1P)**	**5**	**1**	**3**	**1**	**1**	**1**	**5**

Typical Model Number

*Designed to be paired with an ITAS Panel

IntelliTrace

Ambient/Line Sensing

ITAS Base Panel

ITAS-EXT Extension Panel

Heat Tracing Control Panel for Ordinary Areas

Technical Notes:

1. If additional RTD Inputs are needed, please Contact Sales.
2. Refer to PK497 for Installation & Operation Details.
3. Standard Panel Short Circuit Ratting (SCCR) is 5 kAIC. Contact Sales if a different rating is needed.
4. See ITLSC1D2-EXT/ITASC1D2-EXT to increase circuits up to 8 circuits for 2-4 Circuit Panels & up to 72 Circuits for 6-48 Circuit Panels.
5. 6-48 Circuit Extension Panels can not be added to 2-4 Circuit Main Panels but 2-4 Circuit Extension Panels can be added to 6-48 Circuit Main Panels (up to 72 Circuits).

Model Number Note:

An “X” in the Panel Model Number indicates the design has deviated from standard order table parameters and is considered custom. Contact Sales for pricing and feasibility. Custom options may include special tagging, labeling, materials, venting, cooling, indications, alarms, or third-party approvals. Please note that custom panels typically require additional lead time for engineering, procurement, manufacturing, and quality assurance testing.

Table 1 Enclosure Size Selection

Table 1: IntelliTrace Panels Enclosure Size Selection (H"x W"x D")		
Panel Size: # of Circuits - Pole	**Single RTDM per Panel**	**Single RTD per Circuit**
2-1P	30 x 30 x 12	30 x 30 x 12
2-2P	30 x 30 x 12	30 x 30 x 12
4-1P	30 x 30 x 12	30 x 30 x 12
4-2P	30 x 30 x 12	30 x 30 x 12
6-1P	30 x 30 x 12	30 x 30 x 12
6-2P	30 x 30 x 12	30 x 30 x 12
12-1P	42 x 36 x 12	42 x 36 x 12
12-2P	42 x 36 x 12	42 x 36 x 12
18-1P	42 x 36 x 12	60 x 36 x 12
18-2P	60 x 36 x 12	60 x 36 x 12
24-1P	42 x 36 x 12	60 x 36 x 12
24-2P	60 x 36 x 16	60 x 36 x 16
30-1P	60 x 36 x 12	60 x 36 x 12
30-2P	60 x 36 x 16	60 x 48 x 18
36-1P	60 x 36 x 12	72 x 36 x 12
36-2P	60 x 36 x 16	62 x 48 x 18
42-1P	60 x 36 x 16	62 x 48 x 18
42-2P	84 x 40 x 18	90 x 48 x 20
48-1P	60 x 36 x 16	62 x 48 x 18
48-2P	84 x 40 x 18	90 x 48 x 20
Note: Table 1 is a general guideline for Enclosure Size Selection. If additional RTD Inputs are needed, please contact Sales. Adding certain options could cause enclosure size to differ. If Panel dimensions are critical Consult Factory for exact selection.		

Accessories for ITAS & ITAS-EXT

Part Number	Description
Contact Sales	Power Transformers
317315	RTD Aluminum, NEMA 4
317340	RTD, Expl. Resist., Cast Iron/Alum., NEMA 4
308144	RTD Ext Wire, 3-wire, 16 ga, Cu, shielded, 50 FT
317342	RTD Ext Wire, 3-wire, 16 ga, Cu, shielded, 200 FT
0076-15392	HMI Sunscreen, Painted Steel (ITLS/ITAS-6-72)
0076-12009	Floor Stand Kit, 12" (30 cm) Deep, Steel
0076-12050	Floor Stand Kit, 12" (30 cm) Deep, 304 SS
Contact Sales	Floor Stand Kit, 12" (30 cm) Deep, 316 SS