# *IntelliTrace*

**Ambient Sensing** 

ITAS Base Panel ITAS-EXT Extender Panel

Line Sensing

# ITLS Base Panel ITLS-EXT Extender Panel

Heat Tracing Control Panel for Ordinary Areas

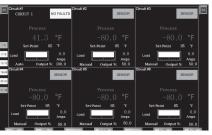
- · 10" or 7" Touch Screen HMI
- 40 Amps/Circuit @ 100 600
   VAC
- · 2 Circuits to 72 Circuits
- NEMA 4 or NEMA 4X Enclosure
- SCR Control
- Optional Wireless Temperature Sensing
- Integral Circuit Panel with Circuit Breakers
- Optional Main Breaker
- Soft Start Feature
- Full Communications
- Full Alarm and Monitoring Capabilities on GFEP, Temperature, Sensor, Current Load & Communications
- Customizable Sensor Mapping
- · Optional Enclosure Heater
- · UL, cUL
- · Optional CE













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 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 has a 40 Amperage capacity and accepts 100 to 600 VAC service. 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 proprietary soft start function, off duty Auto Cycle maintenance program and either Modbus RTU/RS485 or Ethernet communications. Optional features include an industry leading Sensor Mapping\*\* function, remote monitoring and wireless communications.





ITAS Base Panel
ITAS-EXT Extender Panel

ITLS Base Panel
ITLS-EXT Extender Panel

### Heat Tracing Control Panel for Ordinary Areas

#### Advanced Features

#### **Soft Start Feature**

Certain heating 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 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 down time periods, typically during the summer months, it 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 nonessential operating periods. The owner has the option to engage or disengage the Autocycle feature at any time.

#### Sensor Mapping\*\*

When factory enabled, the ITLS & ITLSC1D2 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.

\*\* Available only on ITLS & ITLS-EXT

#### 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
- Fully Customizable Sensor Mapping\*\*
- · Enclosure Heater





# HEAT TRACI

## **Heating Cable**



Line Sensing
ITLS Base Panel
ITLS-EXT Extender Panel

### Heat Tracing Control Panel for Ordinary Areas

#### **Technical Specifications**

#### **Panel Specifications**

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 Model Description Tables

Communications:.....Modbus RTU/RS-485, Ethernet

Alarms: ......Hi/Lo Temp, GFEP – 20 mA to 150 mA, Hi/Lo Current – 0.1 to 50A or off

Output: ......SCR, Zero cross fired

Current Maximum: ......40 Amps/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. Optional CE Certification

Area Classifications: ...... Ordinary Areas

Temperature Rating......T4A (UL) (Derate to T3 & Groups B, C, D when using enclosure heater)







#### **Technical Notes:**

- Refer to PK497 for Installation and Operation details
   Our standard SCCR is 5 kA. Consult sales if a different SCCR is needed.
   For CID2 Panels 120-264V customer supplied instrument power supply
- 4. See ITLS/ITAS-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 Panels but 2-4 circuit extension panels can be added to 6-8 Circuit Panels (up to 72 circuits)

# Heat Tracing Control Panel for Ordinary Areas Ordering Information To Order — Complete the Model Number using the Matrix provided.

Model	Product	Description					
OF ITLS	(Expand 30 mA 6 4XSS Er Etherne	able to Sever Fround Fault Inclosure, Cop Communica	nty-Two Circuits Equipment Prot oper Ground Ba	s*), Common Ala tection. ModBus	rm Output, Oper RTU/RS485 or T uminum), Remo	ator Interfa CP/Ethern	ustrial applications in Non-Hazardous Areas. ITLS/ITAS series offers the following standard features: omputer Touchscreen Controller Rated at 40A Per Circuit at 104°F (40°C) Ambient, Two to Forty-Eight Circuits terface, PID SCR Power, Hand/Off/Auto Operation Breaker for Instrument Power Included, Current Monitoring, errnet Communications, Lockout Capable Breakers, UL & cUL Third Party Compliance. Options Include: NEMA intering Capability, Thermostat Controlled Enclosure Heater, Heater Power and RTD Terminal Blocks, Wireless
	Code	Circuits					
	02 04 06 12 18	2 Circuits 4 Circuits 6 Circuits 12 Circuits 18 Circuits	3 3 4	<ul> <li>4 24 Circuits</li> <li>0 30 Circuits</li> <li>6 36 Circuits</li> <li>2 42 Circuits</li> <li>8 48 Circuits</li> </ul>			
	Ï		ine Voltage	- 10 01104115	Cat	le Voltag	tage
		1 2	208/120 VAC, 3 240/120 VAC, 8	3 Phase 4 Wire Single Phase 3 W 3 Phase 4 Wire	120 ire 120	V- 1 Pole V- 1 Pole	Pole or 208 V - 2 Pole Pole or 240 V - 2 Pole Pole or 480 V - 2 Pole
		[	Code Cabl	e Load Circuit B	reaker Rating (	Select Bre	Breaker Amperage and *1P/2P to Select Breaker Voltage 1(1P)=15A, 120V Breakers)
				e Thermal Magnet Thermal Magnet		3(*) 4(*) 5(*)	40A Thermal Magnetic
			Cod		onnect / Circuit	Breaker	cer Applicable Voltage
			0 1 2 3 4 5 6 7 8 9 X	50A Thern 70A Thern 80A Thern 100A Ther 125A Ther 150A Ther 175A Ther 225A Ther	nal Magnetic nal Magnetic nal Magnetic nal Magnetic mal Magnetic mal Magnetic mal Magnetic mal Magnetic mal Magnetic	is needed	None 277/480V 3P 120/208V 3P, 120/240V 1P, 277/480V 3P 277/480V 3P 120/240V 1P 120/208V 3P, 120/240V 1P 277/480V 3P 120/208V 3P 120/240V 1P, 277/480V 3P 120/208V 3P, 120/240V 1P, 277/480V 3P ded Contact Factory for Assistance)
			î				i-Condensation Heater Recommended at a Minimum)
					No Enclosure H		r-condensation reacer recommended at a minimum)
				1 Th 2 Th	Thermostat Con Thermostat Con	trolled En trolled En	l Enclosure Heater (Anti-Condensation Heater) I Enclosure Heater (Needed for 0°F, -18°C Minimum Ambient Temperature) I Enclosure Heater (Needed for -40°F/°C Minimum Ambient Temperature)
				0	ode Panel O	ptions	
					<ul><li>2 Panel W</li><li>3 Heater F</li><li>4 Z-purge</li><li>5 Panel Li</li></ul>	eathershe 'ower and system aht (on se	and RTD Terminal Blocks B Floor Stands for 12" Deep Panel
					Code	(must l	mber of 100 Ohm RTD Sensor Inputs ust be multiple of 6, up to 48 inputs, MAXIMUM 3 RTD's per heater circuit)
					1 2 3 4	12` 18 24	(Select if Ambient Sensing ITAS panel)  6 36 7 42 8 48 9 Other (Call Factory for Assitance)
					5	30	la Communications
						Code 1 2 3 9	Standard: ModBus RTU/RS485 or Modbus TCP/Ethernet ModBus TCP/Wireless BacNet
							Code Temperature Sensing Solutions
							1 Standard Wired Sensing 2 Wireless Sensing 3 Dry Contact Closure for Ambient Sensing Thermostat 4 Remote Snow Sensor Input (For ITAS ONLY i.e. SIT, GIT & CIT type sensors)
							Code Enclosure (Size determined by Table 1)
							1 NEMA 4 Single-Door Wall-Mount Steel Enclosure 24 X 20 X 10 2 NEMA 4 Single-Door Wall-Mount Steel Enclosure 30 X 30 X 10 3 NEMA 4 Single-Door Wall-Mount Steel Enclosure 42 X 36 X 12 4 NEMA 4 Single-Door Wall-Mount Steel Enclosure 42 X 36 X 16 5 NEMA 4 Single-Door Wall-Mount Steel Enclosure 60 X 36 X 12 6 NEMA 4 Single-Door Wall-Mount Steel Enclosure 60 X 36 X 16 7 NEMA 4X 304 Stainless Steel Wall-Mount Enclosure 24 X 20 X 10 8 NEMA 4X 304 Stainless Steel Wall-Mount Enclosure 30 X 30 X 10
							A NEMA 4X 304 Stainless Steel Wall-Mount Enclosure 42 X 36 X 12 B NEMA 4X 304 Stainless Steel Wall-Mount Enclosure 42 X 36 X 16 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

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**Typical Model Number** 



ITAS/ITLS 06

3(1P)

3

# *IntelliTrace*

#### **Ordering Information**

**Ambient Sensing** 

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

# ITAS/ITLS-EXT Extender Panel

## Heat Tracing Control Extension Panel for Ordinary Areas

		Description	
ITAS-EXT or ITLS-EXT	Ambient Two to F	S-EXT series Into Sensing Panel to orty-Eight Circui	elligent Line/Ambient Sensing Heat Trace Extension Panel. Designed for Industrial applications in Non-Hazardous Areas. Intended To Be Used with ITLS/ITAS Heat TraceLine/ o increase circuit service. ITLS-EXT series offers the following standard features: NEMA 4 enclosure, PID SCR Power Controller Rated at 40A Per Circuit at 104°F (40°C) Ambier its, Common Alarm Output, Hand/Off/Auto Operation, Current Monitoring, 30 mA Ground Fault Equipment protection, ModBus RTU/RS485 or TCP/Ethernet Communications, ampliance. Options Include: NEMA 4XSS Enclosure, Copper Ground Bar (Standard is Aluminum), Remote Monitoring Capability, Thermostat Controlled Enclosure Heater, Heate
	UL & CU Power a	L Third Party Co nd RTD Terminal	omphance. Options include: NEMA 4XSS Enclosure, Copper Ground Bar (Standard is Aluminum), Hemote Monitoring Capability, Thermostat Controlled Enclosure Heater, Heate I Blocks, Wireless Ethernet Communications, CE Third Party Compliance.
	Code	Circuits	
	02 04 06	2 Circuits 4 Circuits 6 Circuits	<ul> <li>24 24 Circuits</li> <li>30 30 Circuits</li> <li>36 36 Circuits</li> </ul>
	12	12 Circuits	42 42 Circuits
	18	18 Circuits  Code Lin	48 48 Circuits  ne Voltage Cable Voltage
		1 208	8/120 VAC, 3 Phase 4 Wire 120 V- 1 Pole or 208 V - 2 Pole
		2 240 3 480	0/120 VAC, Single Phase 3 Wire 120 V- 1 Pole or 240 V - 2 Pole 0/277 VAC, 3 Phase 4 Wire 277 V- 1 Pole or 480 V - 2 Pole
		Code	
		0(*	*) None 3(*) 30A Thermal Magnetic
		1(* 2(*	
		l i	Code Main Disconnect / Circuit Breaker Applicable 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 (If Main Disconnect is needed Contact Factory for Assistance)
			Code Enclosure Heater (Anti-Condensation Heater Recommended at a Minimum)
			0 No Enclosure Heater 1 Thermostat Controlled Enclosure Heater (Anti-Condensation Heater)
			Thermostat Controlled Enclosure Heater (Anti-Condensation Heater) Thermostat Controlled Enclosure Heater (Needed for 0°F, -18°C Minimum Ambient Temperature) Thermostat Controlled Enclosure Heater (Needed for -40°F/°C Minimum Ambient Temperature)
			Code Panel Options
			2 Panel Weathersheild 8 Loss of Power Relay 3 Heater Power and RTD Terminal Blocks A Floor Stands for 10" Deep Panel 4 Z-purge system B Floor Stands for 12" Deep Panel
			5 Panel Light (on separate dreaker)   G Floor Stands for 16" Deep Panel
			6 Powered Receptacle (on separate breaker) X Other (If multiple options needed contact factory) 7 Copper Ground Bar
			Code Number of 100 Ohm RTD Sensor Inputs (must be multiple of 6, up to 48 inputs, MAX. 3 RTD's/heater ckl
			1 6 (Select if Ambient Sensing ITAS panel) 6 36 7 42
			4 24 9 Other (Call Factory for Assitance) 5 30
			Code Communications
			1 Standard: ModBus RTU/RS485 or Modbus TCP/Ethernet 2 ModBus TCP/Wireless
			3 BacNet
			9 Other
			Code Temperature Sensing Solutions  1 Standard Wired Sensing
			2 Wireless Sensing
			3 Dry Contact Closure for Ambient Sensing Thermostat 4 Remote Snow Sensor Input (For ITAS ONLY i.e. SIT, GIT & CIT type sensors)
			Code Enclosure (size determined by table 1)
			1 NEMA 4 Single-Door Wall-Mount Steel Enclosure 24 X 20 X 10 2 NEMA 4 Single-Door Wall-Mount Steel Enclosure 30 X 30 X 10
			3 NEMA 4 Single-Door Wall-Mount Steel Enclosure 42 X 36 X 12
			4 NEMA 4 Single-Door Wall-Mount Steel Enclosure 42 X 36 X 16 5 NEMA 4 Single-Door Wall-Mount Steel Enclosure 60 X 36 X 12
			6 NEMA 4 Sinğle-Door Wall-Mount Steel Enclosure 60 X 36 X 16
			7 NEMA 4X 304 Stainless Steel Wall-Mount Enclosure 24 X 20 X 10 8 NEMA 4X 304 Stainless Steel Wall-Mount Enclosure 30 X 30 X 10
			A NEMA 4X 304 Stainless Steel Wall-Mount Enclosure 42 X 36 X 12
			B NEMA 4X 304 Stainless Steel Wall-Mount Enclosure 42 X 36 X 16 C NEMA 4X 304 Stainless Steel Wall-Mount Enclosure 60 X 36 X 12
	- 1		D NEMA 4X 304 Stainless Steel Wall-Mount Enclosure 60 X 36 X 16

<sup>\*</sup>Designed to be paired with an ITAS Panel



# **IntelliTrace**

**Ambient Sensing** 

# ITAS/ITLS Base Panel ITAS/ITLS-EXT Extender Panel

# Heat Tracing Control Panel for Ordinary Areas

#### Model Number Note

-XXXX Indicates that the design has varied from the order table parameters. This could include one or more of the following non-standard considerations: Special Software or Configuration, Private Branding, Remote Monitoring/Touch-Screen Computer, Sunshield or other Protective Covering, Third Party Approval, Floor Stands, Mounting Options, Special Materials (316 SS) or Coatings, Additional Venting or Cooling, Special Indication or Alarms.

#### Technical Notes

- 1. Refer to PK497 for Installation and Operation details
- 2. Our standard SCCR is 5 kA. Consult sales if a different SCCR is needed.
- 3. For CID2 Panels 120-264V customer supplied instrument power supply
- See ITLS/ITAS-EXT to increase circuits up to 8 loops for 2-4 Circuit Panels and up to 72 Circuits for 6-48 Circuit Panels.
- 6-48 Circuit Extension Panels can not be added to 2-4 Circuit Panels but 2-4 circuit extension panels can be added to 6-8 Circuit Panels (up to 72 circuits)

#### Table 1: Enclosure Size Selection

Circuits -	Enclosure Size - H x W x D In (cm)				
Poles	2 Inputs / Output	3 Inputs / Output			
2 Loop 1P	24x20x10	24x20x10			
2 Loop 2P	24x20x10	24x20x10			
4 Loop 1P	24x20x10	24x20x10			
4 Loop 2P	24x20x10	24x20x10			
6 Loop 1P	24x20x12	24x20x12			
6 Loop 2P	30x30x10	30x30x10			
12 Loop 1P	30x30x10	30x30x10			
12 Loop 2P	42x36x12	42x36x12			
18 Loop 1P	42x36x12	42x36x12			
18 Loop 2P	60x36x12	60x36x12			
24 Loop 1P	42x36x12	42x36x12			
24 Loop 2P	42x36x16	42x36x16			
30 Loop 1P	60x36x12	60x36x12			
30 Loop 2P	60x36x16	60x36x16			
36 Loop 1P	60x36x12	60x36x12			
36 Loop 2P	60x36x16	60x36x16			
42 Loop 1P	60x36x16	60x36x16			
42 Loop 2P	Consult factory	Consult factory			
48 Loop 1P	60x36x16	60x36x16			
48 Loop 2P	Consult factory	Consult factory			

#### Spare/Replacement Parts for ITAS & ITAS-EXT

Part Number	Description
N/A	SSR/GFI Power Control Assy, with Heat Sink
0135-02273	Control Module Board Assembly
0135-02262	RTD Sensor Input Board Assembly
0135-02263	Digital Distribution Comm Board Assembly (-EXT
0002-60054	panels only)
0029-00640	SSR, 40 Amp rated
	SSR Thermstrate Material
0025-05312	Common Alarm Relay
0025-05309	Common Alarm Relay (CID2 Panels Only)
0081-10063	Power Supply 5VDC 6A 30W DIN Rail Mount
0081-10047	Power Supply 24VDC 2.5A 60W DIN Rail Mount
0108-70509	ITLS/ITAS-10" Display
0108-70507	ITLS/ITAS-7" Display
0017-43753	15A 1P Circuit Breaker (120V or 277V)
0017-43754	20A 1P Circuit Breaker (120V or 277V)
0017-43755	30A 1P Circuit Breaker (120V or 277V)
0017-43756	40A 1P Circuit Breaker (120V)
0017-43757	50A 1P Circuit Breaker (120V)
0017-43758	15A 2P Circuit Breaker (208/240V or 480V)
0017-43759	20A 2P Circuit Breaker (208/240V or 480V)
0017-43760	30A 2P Circuit Breaker (208/240V or 480V)
0017-43761	40A 2P Circuit Breaker (208/240V)
0017-43762	50A 2P Circuit Breaker (208/240V)
0023-15097-0001	6" (15 cm) Ribbon Cable with Connectors
0023-15097-0002	72" (180 cm) Ribbon Cable with Connectors

#### Accessories for ITAS & ITAS-EXT

Part Number	Description				
N/A	Power Transformers				
PCN 317315	RTD, Aluminum, NEMA 4				
PCN 317340	RTD, Expl. Resist., Cast Iron/Alum., NEMA 4				
PCN 308144	RTD Ext Wire, 3-wire, 16 ga, Cu, shielded, 50 FT				
PCN 308152	RTD Ext Wire, 3-wire, 16 ga, Cu, shielded, 200 FT				



