INDUSTRIAL HEAT TRACE CONTROLS

IntelliTrace

Ambient Sensing

ITASC1D2 BASE PANEL

ITASC1D2-EXT EXTENSION PANEL

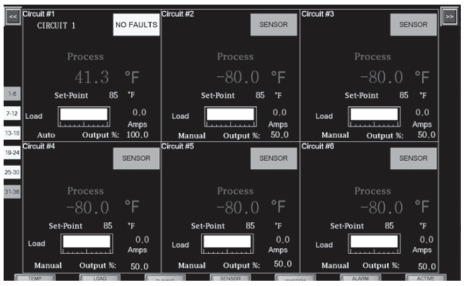
Line Sensing

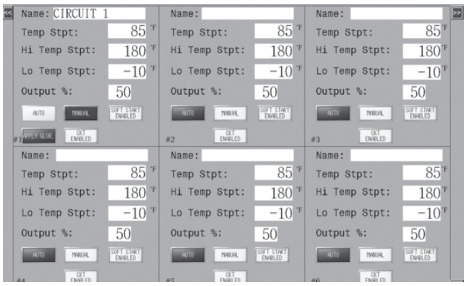
ITLSC1D2 BASE PANEL

ITLSC1D2-EXT EXTENSION PANEL

Heat Tracing Control Panel Class I, Div. 2, 2-72 Circuits

- Class I, Division 2 Hazardous Environments - Groups A,B,C,D
- 10” or 7” Touch Screen HMI
- SCR Control – PID, On/Off or Manual Control
- 2 - 48 Circuits, Expandable to 72 Circuits via Extension Panels
- NEMA 4 or NEMA 4X Enclosure
- User Selectable Soft Start Feature
- Customizable Sensor Mapping
- Full Communications
- Full Alarm & Monitoring Capabilities on GFEP, Temperature, Sensor, Current Load & Communications
- UL, cUL Listed





The 7” or 10” 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 circuits real time display screen as well as the Setup, Fault, Log or Communication Screen. All set point, alarm, security, time, loop 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 ITASC1D2 and ITLSC1D2 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 Class I, Division 2 environments.

The base panels will handle 2 - 48 circuits and may be increased up to 72 circuits with the Extension Panels. A 2 or 4 circuit extension panel may be added to a 6-48 circuit panel but not vice versa. 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 ITASC1D2 / ITLSC1D2 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 remote monitoring.

IntelliTrace

Ambient Sensing

ITASC1D2 BASE PANEL

ITASC1D2-EXT EXTENSION PANEL

Line Sensing

ITLSC1D2 BASE PANEL

ITLSC1D2-EXT EXTENSION PANEL

Heat Tracing Control Panel Class I, Div. 2, 2-72 Circuits

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 non-essential operating periods. The owner has the option to engage or disengage the Autocycle feature at any time.

Sensor Mapping

Models provide the owner with customizable I/O 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
- Enclosure Heater

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Line Sensing

ITLSC1D2 BASE PANEL
ITLSC1D2-EXT EXTENSION PANEL

Heat Tracing Control Panel Class I, Div. 2, 2-72 Circuits

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 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
Input:	100Ω Platinum 3-wire RTD
Output:	SCR, Zero cross fired
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:	Class 1, Division 2 Hazardous Areas
Temperature Rating	T4A (UL) (Derate to T3 & Groups B, C, D when using enclosure heater)

IntelliTrace

Ambient Sensing

ITASC1D2, ITLSC1D2 BASE PANELS

Heat Tracing Control Panel Class I, Div. 2, 2-72 Circuits

Ordering Information

To Order - Complete the Model Number using the Matrix provided.

Model | **Product Description**

ITLSCID2- or ITASCID2 ITLSC1D2/ITASC1D2 series Intelligent Line/Ambient Sensing Heat Trace Panel are designed for Industrial Applications and suitable for Class I, Division 2 Hazardous Areas.The ITLS/ITASC1D2 series offers the following standard features: NEMA 4 enclosure, Industrial 10" (7" for 2 and 4 Loop Models) HMI Controller, Two to Forty-Eight Circuits (Expandable to Seventy-Two Circuits via Extension Panels), Common Alarm Output, Hand/Off/Auto Operation, Thermostat Controlled Enclosure Heater, Current Monitoring, 30 mA Ground Fault Equipment Protection, ModBus RTU/RS485 or TCP/Ethernet Communications, Remote Monitoring Capability, UL & cUL Third Party Compliance. Additional features & options available, please see below for more details or the Data Sheet.

Circuits

Code		Code	
02	2 Circuits	**24**	24 Circuits
04	4 Circuits	**30**	30 Circuits
06	6 Circuits	**36**	36 Circuits
18	18 Circtuits	**48**	48 Circuits

Line Voltage / Cable Voltage

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

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

Code	
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)

Panel Options

Code		Code	
0	None	**4**	Loss of Power Relay
1	HMI Sunshield (Required if Panel is to belocated Outdoors)	**A**	Floor Stand Kit
2	Panel Weathershield	**X**	Other/Custom Features (Consult Sales for assistance)
3	Copper Ground Bar		

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

Code		Code	
1	6 (Select if Ambient Sensing ITAS panel)	**6**	36
2	12	**7**	42
3	18	**8**	48
4	24	**9**	Other (Call Sales for Assitance)
5	30		

Communications

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

Temperature Sensing Solutions

Code	
1	Standard Wired Sensing

Enclosure (Size determined by Table 1)

Code	
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

Model									
ITLSCID2- or ITASCID2-	06	3	1	3	1	1	1	5	**Typical Model Number**

IntelliTrace

Ambient Sensing

ITASC1D2-EXT, ITLSC1D2-EXT EXTENSION PANELS

Ordering Information

To Order - Complete the Model Number using the Matrix provided.

Heat Tracing Control Panel Class I, Div. 2, 2-72 Circuits

Model: ITLSCID2 - EXT or ITASCID2 - EXT

Product Description: ITLSC1D2-EXT/ITASCID2-EXT series Intelligent Line/Ambient Sensing Heat Trace Extension Panel are designed for Industrial Applications and suitable for Class I, Division 2 Areas. Intended To Be Used with ITLSC1D2/ITASCID2 Heat Trace Line/Ambient Sensing Main Panels to increase circuit count/service. ITLSC1D2-EXT/ITASCID2-EXT series offers the following standard features: NEMA 4 enclosure, Two to Forty-Eight Circuits, Common Alarm Output, Hand/Off/Auto Operation, Current Monitoring, Thermostat Controlled Enclosure Heater, 30 mA Ground Fault Equipment protection, ModBus Communication back to ITLSC1D2/ITASCID2 Main Panel, UL & cUL Third Party Compliance. Additional features & options available, please see below for more details or the Data Sheet.

Circuits

Code		Code	
02	2 Circuits	24	24 Circuits
04	4 Circuits	30	30 Circuits
06	6 Circuits	36	36 Circuits
18	18 Circtuits	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	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	Code	
0	None	4	Loss of Power Relay
2	Panel Weathershield	A	Floor Stands Kit
3	Copper Ground Bar	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, MAX. 3 RTD's/heater ckt.)	Code	
0	None	5	30
1	6 (Select if Ambient Sensing ITAS panel)	6	36
2	12	7	42
3	18	6	48
4	24	X	Other (Call Sales for assitance)

Code	Communications
9	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

Model									
ITLSCID2 - EXT or ITASCID2 - EXT	06	3	1	3	1	1	1	5	Typical Model Number

IntelliTrace

Ambient Sensing

ITASC1D2 BASE PANEL
ITASC1D2-EXT EXTENSION PANEL

Line Sensing

ITLSC1D2 BASE PANEL
ITLSC1D2-EXT EXTENSION PANEL

Heat Tracing Control Panel Class I, Div. 2, 2-72 Circuits

Spare / Replacement Parts List:

Part Number	Item 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 panels only)
0002-60054	SSR, 40 Amp rated
0029-00640	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
0135-30716	CIP 10" Display
0135-30716	CIP 7" Display
0023-15097-0001	6" (15 cm) Ribbon Cable with Connectors
0023-15097-0002	72" (180 cm) Ribbon Cable with Connectors

Table 1: Enclosure Size Selection

Table 1: IntelliTrace Panels Enclosure Size Selection - H x W x D in.		
Panel Size # of Circuits - Poles	**Single RTDM per Panel**	**Single RTD per Circuit**
2-1P	30x30x12	30x30x12
2-2P	30x30x12	30x30x12
4-1P	30x30x12	30x30x12
4-2P	30x30x12	30x30x12
6-1P	30x30x12	30x30x12
6-2P	30x30x12	30x30x12
12-1P	42x36x12	42x36x12
12-2P	42x36x12	42x36x12
18-1P	42x36x12	60x36x12
18-2P	60x36x12	60x36x12
24-1P	42x36x12	60x36x12
24-2P	60x36x16	60x36x16
30-1P	60x36x12	60x36x12
30-2P	60x36x16	62x48x18
36-1P	60x36x12	72x36x12
36-2P	60x36x16	62x48x18
42-1P	60x36x16	62x48x18
42-2P	84x40x18	90x48x20
48-1P	60x36x16	62x48x18
48-2P	84x40x18	90x48x20

Note: Table 1 is a general guideline for Enclosure Size Selection. Adding certain options could cause enclosure size to differ. If Panel dimensions are critical Consult Factory for exact selection.

Accessories

Part Number	Item Description
N/A	RTD Ext Wire, 3-wire, 16 ga, Cu, shielded, 50 FT
0135-30716	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