IntelliTrace

CIPBASE CIP-EXT EXTENSION PANEL

Commercial Heat Tracing Control Panel for Ordinary Areas





- · 10" or 7" Touch Screen HMI
- · 40 Amps/Circuit @ 100 to 480 VAC
- · 2 Circuits to 72 Circuits
- NEMA 4 or NEMA 4X Enclosure
- · SCR Control
- · 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 CIP Series is a microprocessor 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.

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 480 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 CIP Control Panel Series provide alarms for high and low temperatures, current load, communications, The base panels will handle 2 - 48 circuits and may be 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.



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ADVANCED FEATURES

Soft Start Feature

Certain heating cables exhibit inherent current in rush 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 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 nonessential operating periods. The owner has the option to engage or disengage the Autocycle feature at any time.

Sensor Mapping

The CIP Control Panels 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
- · Fully Customizable Sensor Mapping
- · Enclosure Heater



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TECHNICAL SPECIFICATIONS

Panel Specifications

Supply Voltage: 100 - 480 VAC, 3 phase

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, BACnet

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)



IntelliTrace **CIP**BASE

- 1. Refer to PK497 for Installation and Operation details
 2. Our standard SCCR is 5 kA. Consult sales if a higher SCCR rating is needed.
 3. See CIP-EXT to increase circuits up to 8 circuits for 2-4 Circuit Panels & up to 72 Circuits for 6-48 Circuit Panels.
 4. 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)

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

Commercial Heat Tracing Control Panel for Ordinary Areas

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02 04 06	2 Circuits 4 Circuits 6 Circuits	: 3	30	24 Circuit 30 Circuit 36 Circuit	S				_					
12	12 Circuit	ts 4	42	42 Circuit	S									
18	18 Circuit	ts 4	48	48 Circuit		able Volta								
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	2	240/120 VAI 480/277 VAI	240/120 VAC, Single Phase 3 Wire 480/277 VAC, 3 Phase 4 Wire			120 V- 1 Pole or 240 V - 2 Pole 277 V- 1 Pole or 480 V - 2 Pole								
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						2	12 18			31	7 8	42 48		
						3 4	24				9	Other (Call Factory for Assitance)		
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Ordering Information
To Order — Complete the Model Number using the Matrix provided.

CIP-EXT EXTENSION PANEL

Commercial Heat Tracing Control Panel for Ordinary Areas

Model	Product Description
CIP-EXT	CIP-EXT series Intelligent Line/Ambient Sensing Heat Trace Extension Panel. Designed for Commercial applications in Non-Hazardous Areas. Intended To Be Used with CIP Heat Trace Line/Ambient Sensing Panel to
ı	increase circuit service. CIP-EXT series offers the following standard features: NEMA 4 enclosure, PID SCR Power Controller Rated at 40A Per Circuit at 104°F (40oC) Ambient, Two to Forty-Eight Circuits, Common
	Alarm Output, Hand/Off/Auto Operation, Current Monitoring, 30 mA Ground Fault Equipment protection, ModBus RTU/RS485 or TCP/Ethernet Communications, UL & CUL Third Party Compliance. Options Include:

Code	Circuits											
02	2 Circuits		24	24 Circuit								
04	4 Circuits		30	30 Circuit								
06 12	6 Circuits 12 Circuit		36 42	36 Circuit 42 Circuit								
18	18 Circuit		48	48 Circuit								
	Code	Line Volta	age			able Volta	age					
	1	208/120 \		ase 4 Wire			ole or 208 V	- 2 Pole				
	2	240/120 \	AC, Single	e Phase 3 Wi	re 1	20 V- 1 Po	ole or 240 V	- 2 Pole				
	3	480/277 \		ase 4 Wire			ole or 480 V					
	1	Code	Cable Lo	oad Circuit F	Breaker R	ating (Sele	ect Breaker	Ampera	ge and *1P/2P to	Select Br	eaker V	/oltage 1(1P)=15A, 120V Breakers)
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			8	175A The	rmal Mağı	netic	120/24	OV 1P, 27	7/480V 3P			
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					2		Veathershiel	d		8		Loss of Power Relay
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						2	12	t II 7 II II DIC	int conoing panoi)	7		42
						3	18			8		48
						4	24			9		Other (Call Factory for Assitance)
							Code	Comr	nunications			
							9	Stand	ard: MODBUS RTU	'RS-485 (C	Commur	nication with Main Panel)
								Code	Temperature S	ensing S	olutions	3
								1	Standard Wired	Sensing		
								4	ETI Internal Sno	w Switch	(Snow0	Owl, GIT-1, SIT-6E)
								5				out (CS-ASM, CS-PSM, CS-GSM)
												rmined by Table 1)
												Vall-Mount Steel Enclosure 24 X 24 X 12
												Vall-Mount Steel Enclosure 30 X 30 X 12
												Vall-Mount Steel Enclosure 42 X 36 X 12 Vall-Mount Steel Enclosure 60 X 36 X 12
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Technical Notes

- 1. Refer to PK497 for Installation and Operation details
- 2. Our standard SCCR is 5 kA. Consult sales if a higher SCCR rating is needed.
- 3. See CIP/CIP-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

Panel Size	Enclosure Size - H		
	1 RTD's/Circuit	2 RTD's/Circuit	3 RTD's/Circuit
2-1P	24x24x12	24x20x10	Consult Factory
2-2P	24x24x12	24x20x10	Consult Factory
4-1P	24x24x12	24x20x10	Consult Factory
4-2P	30x30x12	30x30x10	Consult Factory
6-1P	24x24x12	24x20x12	Consult Factory
6-2P	30x30x12	30x30x10	Consult Factory
12-1P	30x30x12	30x30x10	Consult Factory
12-2P	42x36x12	42x36x12	Consult Factory
18-1P	42x36x12	42x36x12	Consult Factory
18-2P	60x36x12	60x36x12	Consult Factory
24-1P	42x36x12	42x36x12	Consult Factory
24-2P	60x36x16	42x36x16	Consult Factory
30-1P	60x36x12	60x36x12	Consult Factory
30-2P	60x36x16	60x36x16	Consult Factory
36-1P	60x36x12	60x36x12	Consult Factory
36-2P	60x36x16	60x36x16	Consult Factory
42-1P	60x36x16	60x36x16	Consult Factory
42-2P	Consult factory	Consult factory	Consult Factory
48-1P	60x36x16	60x36x16	Consult Factory
48-2P	Consult factory	Consult factory	Consult Factory

Note: Table 1 is a general guideline for Enclosure Size Selection. Adding certain options could cause enclosure size to differ. If RTD and Power terminals are selected as an option increase panel size by one size over what is published on this table. If Panel dimensions are critical Consult Factory for exact selection.

Spare/Replacement Parts for CIP & CIP-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 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
0108-70509	CIP 10" Display
0108-70507	CIP 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 or 480V)
0017-43762	50A 2P Circuit Breaker (208/240V or 480V)
0023-15097-0001	6" (15 cm) Ribbon Cable with Connectors
0023-15097-0002	72" (180 cm) Ribbon Cable with Connectors

Accessories for CIP & CIP-EXT

Part Number	Description
PCN 514263	RTD Ext Wire, 3-wire, 16 ga, Cu, shielded, 50 FT
PCN 514255	RTD Ext Wire, 3-wire, 16 ga, Cu, shielded, 200 FT

