

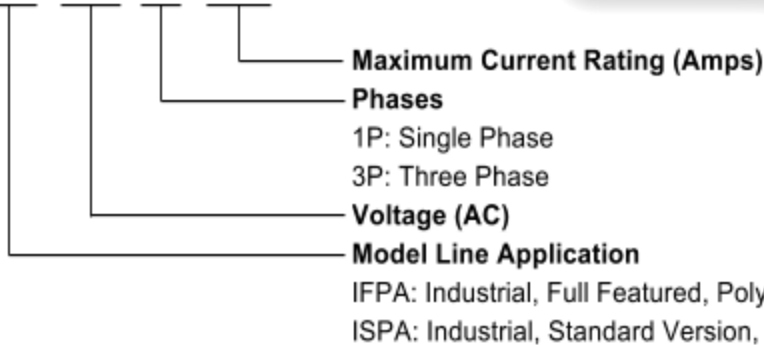
# ISPA & IFPA Enclosed Temperature Control Panels

Shift Controls temperature control panels are designed for temperature control of industrial and laboratory electric heaters, heat trace, furnaces and other resistive heater loads. The controller measures the process temperature using a thermocouple input. The operator inputs a setpoint with the keypad and the heater output is controlled by a proportional (0-100% output) power controller. Power output is calculated using a PID process control algorithm. The power controller and PID controller allow processes to be controlled within a tighter temperature band than if using a traditional contactor or switched output controller, while also extending the contactor and heater life.

Model IFPA-480-3P-64A shown to the right



**IFPA - 480 - 3 P - 64 A**



## **Standard Features**

- IFPA models include a fused disconnect handle and silicon controlled rectifier (SCR) power controllers
- ISPA models include disconnect style fuse holders and solid state relay (SSR) power controllers
- Line side power controller / load protection fuses included
- Zero-cross power controllers - lasts longer and controls better than mechanical contactors
- Latching overtemperature alarm with electrical disconnect contactor
- Advanced PID temperature controller with autotuning, ramp and profile functions
- Safe/Run Control Switch - places controller in stop mode and opens disconnect contactor

## **Included**

- Line side power controller / load protection fuses included
- Hard copy operations manual
- Hard copy electrical schematics - with corresponding wire labels, terminal block numbers, and component labels for easy troubleshooting

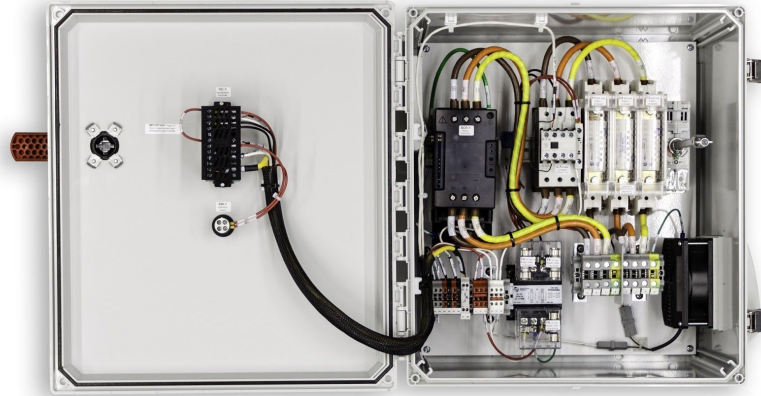


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# ISPA & IFPA Enclosed Temperature Control Panels

## **Safety Features**

- Finger-safe components
- Non-conductive polycarbonate enclosure
- Fused disconnect handle with door interlock on IFPA models
- Electrical disconnect contactor isolates heater from power upon:
  - Setting Safe/Run switch in Safe mode (also places controller output in an off state)
  - Over-temperature condition (latching with user programmable limit)



## **External Interfacing**

- Addressable 2-wire Modbus or ASCII RS-485 communications
- Temperature 4-20mA retransmit and user programmable alarm relay contact
- Optional external interlock relay

## **Model Lineup Power, Disconnect, and Enclosure Specifications**

Model Number	Model Line Application	Phases	Rated Voltage at 60 Hz	Maximum Full Load Current	Maximum Heating Load	Power Controller	Disconnect Method	Enclosure Environmental Rating
ISPA-120-1P-15A	Standard Features, Industrial	Single	120 VAC	15 Amps	1.80 kW	SSR, Zero Crossing	Disconnect Fuse Holder	NEMA 4X
IFPA-120-1P-35A	Full Featured, Industrial	Single	120 VAC	35 Amps	4.20 kW	SCR Zero Crossing	External Front Door Mount Handle, Fused Disconnect	NEMA 4X
IFPA-208-1P-35A			208 VAC		7.28 kW			
IFPA-240-1P-35A			240 VAC		8.40 kW			
IFPA-480-1P-35A			480 VAC		16.8 kW			
IFPA-208-3P-24A	Full Featured, Industrial	Three	208 VAC	24 Amps	8.65 kW	SCR, Zero Crossing	External Front Door Mount Handle, Fused Disconnect	NEMA 4X
IFPA-208-3P-64A				64 Amps	23.1 kW			NEMA 4X Enclosure, NEMA 12 Fan & Vent
IFPA-480-3P-24A			480 VAC	24 Amps	20.0 kW			NEMA 4X
IFPA-480-3P-64A				64 Amps	53.2 kW			NEMA 4X Enclosure, NEMA 12 Fan & Vent



# ISPA & IFPA Enclosed Temperature Control Panels

## Temperature Control Panel Specifications:

<i>Environmental</i>	
Enclosure Construction	Rugged Construction Suitable for Industrial and Laboratory Locations
Environmental Rating	Indoor Use Only, NEMA 4X Models Rated for Washdown
Ambient Temperature Rating	32°F to 95°F (0°C to 35°C)
<i>Process Controller</i>	
Process Input Sensor	Factory Standard Configurations Thermocouple: K (Standard), J (Optional - No Charge) Factory Custom Configurations (Consult Factory) Analog Input: 0 to 5 V, 0 to 10 V, 0 to 20 mA, 4 to 20 mA, 0 to 50 mV Thermocouple: T, E, N, R, S, B, L, U, TXK / RTD: Pt100, JPt100, Cu50, Ni120
Control Mode	PID, PID Program (Ramp/Soak) , Fuzzy, Manual, Slope Limited Control
Tuning Method	Auto-Tuning, Self-Tuning
Display	LED, 4 Digit PV and SV, 10 Bar Segment Output PV Backlight and Digits Change from Yellow to Red on Alarm
Input Process Filtering	User Adjustable Time-Base and Range
<i>Interfacing Features</i>	
Thermocouple Process Input	Standard Size Female Panel Jack or Bi-Metal Terminal Block
External Enable/Interlock Control (Optional)	120 VAC or 24 VDC Interface Relay (Customer Specified) High Signal Allows Controller RUN and Contactor to be Energized Low Signal Places the Controller in STOP and De-Energizes Contactor Field Wiring Available Through Interface Relay Terminals
User Programmable Alarm/Status Dry Contacts	Normally Open, Electromechanical Dry Contacts, 250VAC 5A, for Resistive Loads 20 Configurable Alarm/Status Modes, Terminal Block Field Wiring
Temperature Retransmit	4-20mA Analog Output, Sourcing, 10 bit, Terminal Block Field Wiring
Digital Monitoring and Control	RS-485 2-Wire, Addressable Modbus RTU or ASCII, Terminal Block Field Wiring
<i>Safety</i>	
Electrical Construction	All Terminals and Components are Finger-Safe (IP-20) Electrical Design, Construction, and Wiring are NEC 70 and UL-508A Compliant
Main Branch Power Fusing	Current Limiting Class CC or J, Finger Safe Fuse Holder, Disconnecting Type
Control Power Fusing	1 Amp, Fast Acting, Finger Safe Fuse Holder
Safety Power Contactor	Power is Positively Disconnected from the Load Under the Following Conditions: Front Panel Switch is in the SAFE Position Latching High Temperature Alarm Thermocouple Fault External Interlock (Optional)
Front Panel SAFE/RUN Switch	RUN Places Controller in RUN Mode and Energizes Contactor SAFE Places Controller in STOP Mode and De-Energizes Contactor
Latching High Temperature Alarm	User Configurable Temperature and On Delay Timing High Temperature Alarm Places Controller in STOP Mode and De-Energizes Safety Contactor Thermocouple Fault Places Controller in STOP Mode and De-Energizes Contactor



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