

Burner control unit SPC 108/SPC 216



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CHARACTERISTICS

- Burner control unit SPC can receive signals from the temperature controller and convert them into pulse signals for output, realizing the pulse control of combustion system.
- SPC 108, 2 current input channels. Single or double temperature controlling zone, 8 output channels corresponding to 16 switch contacts.
- SPC 216, 4 current input channels. Single or multiple temperature controlling zone, 16 output channels corresponding to 16 switch contacts.
- Modular design, high temperature controlling accuracy, 4 pulse control modes optional.

APPLICATIONS

Pulse burner control unit SPC can convert the signals of temperature controller into pulse signals, and the pulse signals work as the controlling signal of the burner control unit to realize the pulse control of burner. SPC series are often used with the temperature controllers with an output signal of 4-20 mA to replace PLC control.

SPECIFICATION

Working mode

Control signal: 4-20 mA current signal.

Mode 1 Fixed pulse width heating

The pulse width (heating duration) and pulse sequence of each output channel can be set separately. The heating pulse output duration is fixed and the shutting interval is calculated by SPC according to the input proportion, the shutting interval would not shorter than the minimum interval set Individually.

When the input proportion exceeds the continuous proportion setting, the system outputs continuous pulses.

Mode 2 Fixed pulse width heating and cooling

This mode is designed on the basis of mode 1, and a heating/cooling limit and conversion zone is added. When the input proportion exceeds the range of conversion zone, the heating pulse instruction is output. When the input proportion is below the range of the conversion zone, the cooling pulse instruction is output. And when the input proportion is within the conversion zone, the SPC would not output pulse instruction.

The range of conversion zone could be expressed as: (cooling/heating limit – 0.5*dead band, cooling/heating limit + 0.5*dead band), the cooling/heating limit and dead band could be set separately.

When the input proportion exceeds the continuous proportion setting, the system outputs continuous pulses.

Mode 3 Variable pulse width heating

A control parameter can be set: when the input proportion is exceeds the control parameter, the shutting interval is fixed as the minimum interval set individually, and the heating pulse output duration is calculated by SPC according to the input proportion, the heating pulse output duration

would not shorter than the minimum duration set Individually. When the input proportion below the control parameter, the heating pulse output duration is fixed as the minimum duration set individually, and the shutting interval is calculated by SPC according to the input proportion, the shutting interval would not shorter than the minimum interval set individually. And when the input proportion is equal to the control parameter, the heating pulse duration would be output as a standard value.

When the input proportion exceeds the continuous proportion setting, the system outputs continuous pulses.

Mode 4 Variable pulse width heating and cooling

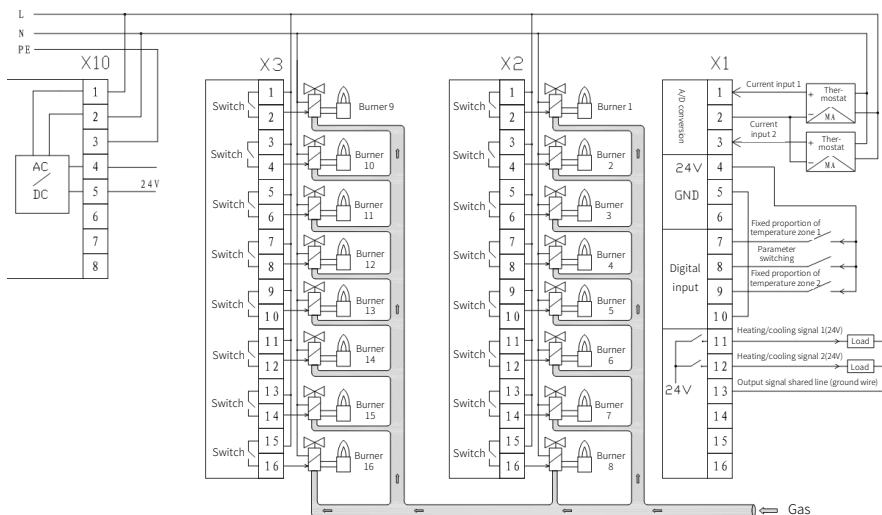
This mode is designed on the basis of mode 3, and a heating/cooling limit and conversion zone is added. When the input proportion exceeds the range of conversion zone, the heating pulse instruction is output. When the input proportion is below the range of the conversion zone, the cooling pulse instruction is output. And when the input proportion is within the conversion zone, the SPC would not output pulse instruction.

The range of conversion zone could be expressed as: (cooling/heating limit – 0.5*dead band, cooling/heating limit + 0.5*dead band), the cooling/heating limit and dead band could be set separately.

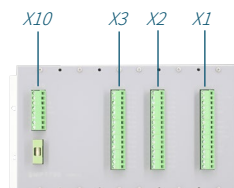
When the input proportion exceeds the continuous proportion setting, the system outputs continuous pulses.

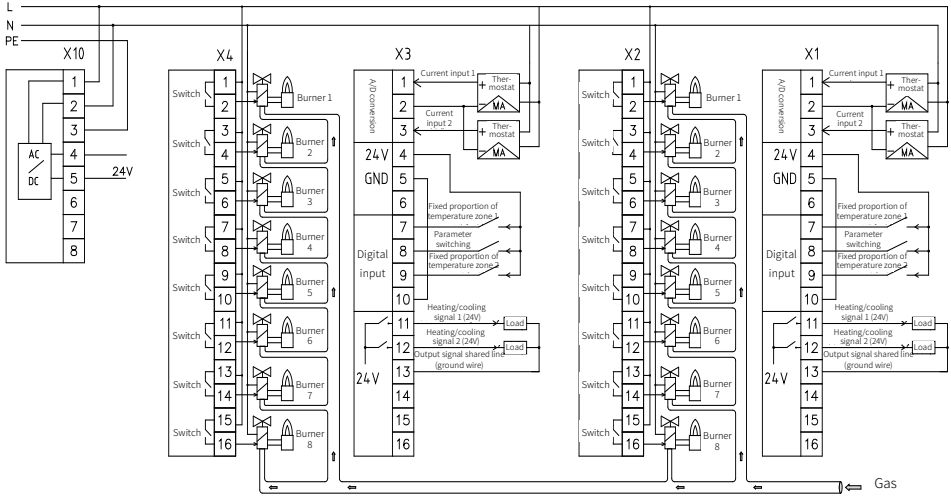
WIRING

SPC 108

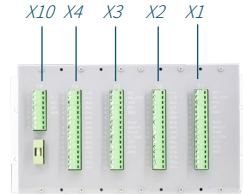


There are four terminal blocks: X1, X2, X3 and X10 on the back of SPC 108. X1 is the terminal block for input signal and output signal, X2 is the terminal block for output channel 1~4, X3 is the terminal block for output channel 5~8, and X10 is the terminal block for the input and output of power supply.



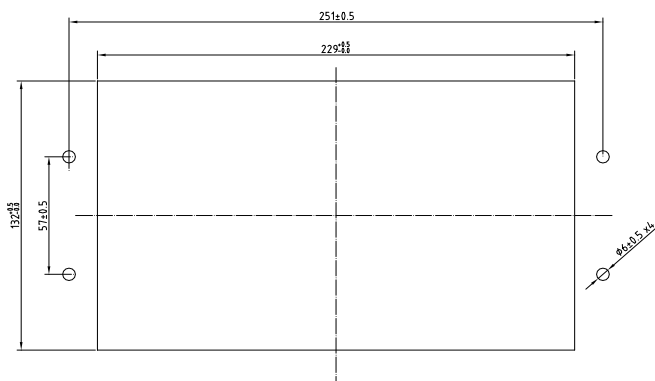


There are five terminal blocks: X1, X2, X3, X4 and X10 on the back of SPC 216. X1 is the terminal block of the first group of input signals and output signals. X2 is the terminal block for output channel 1~8 corresponding to the first group of input signals. X3 is the terminal block of the second group of input signals and output signals. X4 is the terminal block for output channel 1~8 corresponding to the second group of input signals, and X10 is the terminal block for the input and output of power supply.



INSTALLATION

Reserved installation port on control cabinet (mm)



Installing attention

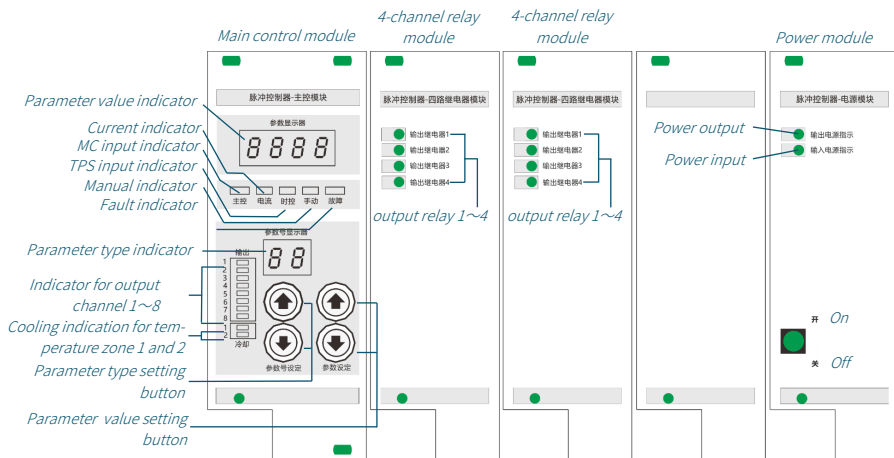
- The SPC shall be installed on the control cabinet with screw bolts in a ventilated position to ensure heat dissipation, the control cabinet should be reserved with installation ports.
- There shall be no obstruction in front to facilitate operation and maintenance.
- Ambient temperature: $-10 \sim 60^{\circ}\text{C}$ ($14 \sim 140^{\circ}\text{F}$).

Cable installation

- Signal and control line: max. 2.5 mm^2 (AWG 14).
- Cable for burner control unit ground/PE wire: max. 4 mm^2 (AWG 12).
- Terminal X10-1# for live wire, X10-2# for neutral wire separately, use BVR line of $1.0 \sim 2.5 \text{ mm}^2$ with withstand voltage above 500 V.

OPERATION

Operation interface



SPC 108 includes a main control module, two 4-channel relay modules and a power module. SPC 216 includes two main control modules, two 8-channel relay modules and a power module.

Fault code

When a fault occurs, the red fault indicator on main control module lights, and the system would stop working. Please adjust to parameter 9 to check the fault code:

Display	Fault message
01	Wrong parameter value: the parameter value is less than the setting range. Please adjust to parameter 8 to check the fault parameter type.
02	Wrong parameter value: the parameter value is greater than the setting range. Please adjust to parameter 8 to check the fault parameter type.
03	Wrong number of burner: The number of the burner set in parameter 15 and 16 is more than 8.
04-07	Wrong current signal: The max input current is greater than 20 mA.
08	Current input module failure: System hardware failure. Please send it back to the distributor.
09	No current input in current input channel 1.
0A	No current input in current input channel 2.