Pulse controller SPC 108/216

GUANGZHOU SINON COMBUSTION

EQUIPMENT CO., LTD.

📞 020- 84581309

🖨 020- 84507159

🌐 www.gzsinon.net

✉ sinon@gzsinon.net

CHARACTERISTICS

- Pulse controller SPC can receive and process the signal of temperature controller and output as pulse signal to realize 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 controller SPC can receive and process the signal of temperature controller and output as pulse signal, and the pulse signal works as the controlling signal of the burner controller 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 exceed 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; and when the input proportion is below the range of the conversion zone, the cooling pulse instruction is output; 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 exceeds the control parameter, the heating pulse output duration is fixed as a settable value, and the shutting interval is calculated by SPC according to the input proportion, the shutting interval would not exceed the minimum

interval set Individually; when the input proportion is below 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; 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; and when the input proportion is below the range of the conversion zone, the cooling pulse instruction is output; 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.
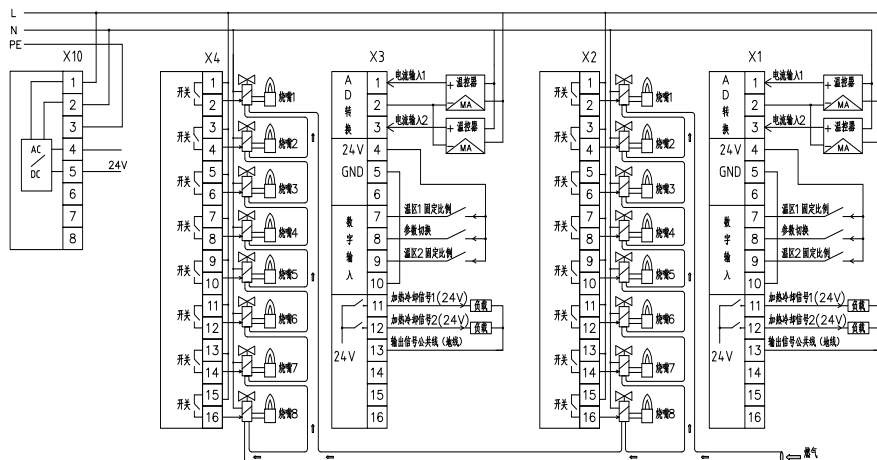
WIRING

SPC 108
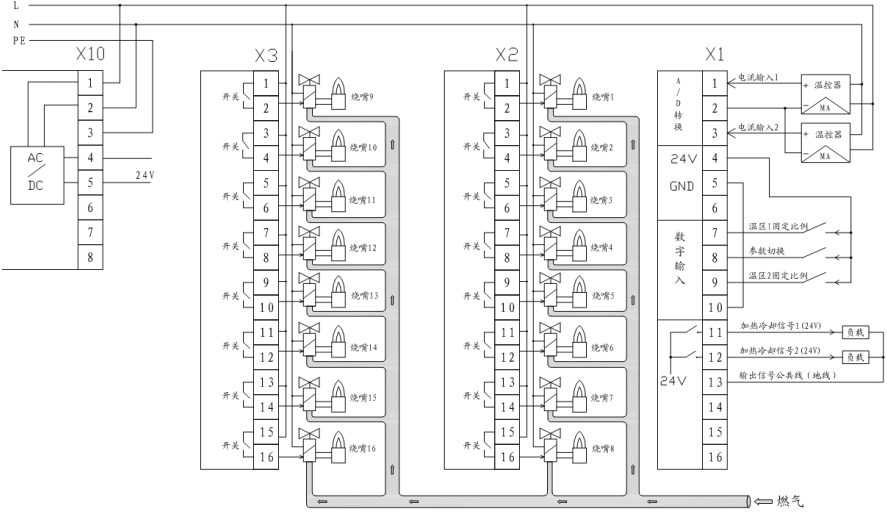
There are four rows of terminals: X1, X2, X3 and X10 on the back of SPC 108. X1 are the terminals for input signal and output signal; X2 are the terminals for output channel 1～4; X3 are the terminals for output channel 5～8; and X10 are the terminals for the input and output of power supply.
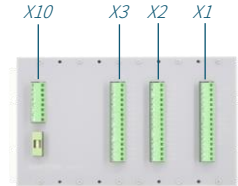
SPC 216

There are four rows of terminals: X1, X2, X3, X4 and X10 on the back of SPC 216. X1 are the first set of terminals for input signal and output signal; X2 are the terminals for output channel 1～8 corresponding to the first set of input signal; X3 are the second set of terminals for input signal and output signal; X4 are the terminals for output channel 1～8 corresponding to the second set of input signal; and X10 are the terminals for the input and output of power supply.
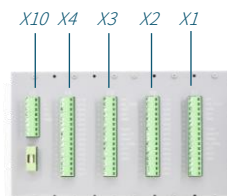
INSTALLATION

Reserved installation port on control cabinet (mm)
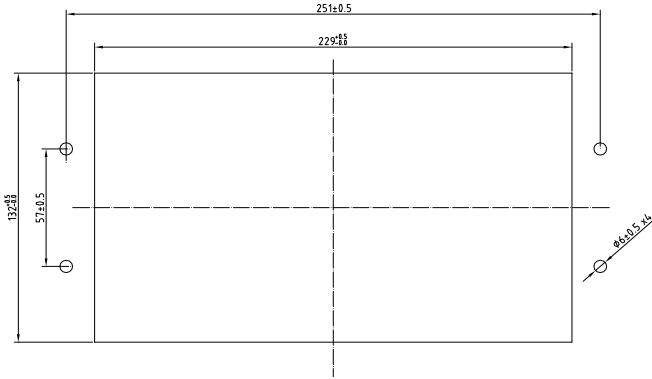

Installing attention

- 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 ~ 60 ℃ (14 ~ 140 °F).

Cable installation

- Signal and control line: max. 2.5 mm² (AWG 14).

- Cable for controller ground/PE wire: max. 4 mm² (AWG 12).

- Terminal X10-1# for live wire, 2# for neutral wire separately, use BVR line of 1.0 ~ 2.5 mm² with withstand voltage above 500 V.

OPERATION

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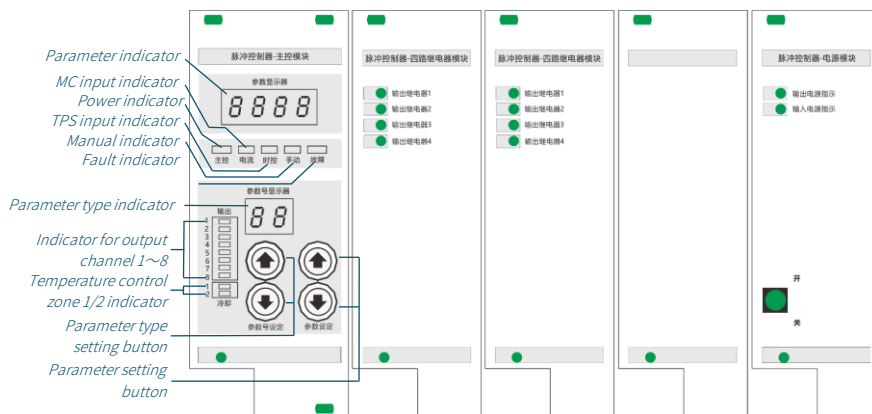
SPC 108 includes a main control module, two 4-channel relay module and a power module. SPC 216 includes two main control module, two 8-channel relay module and a power module.

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: the parameter is less than the setting range. Please adjust to parameter 8 to check the fault parameter type.
02	Wrong parameter: the parameter is greater than the setting range. Please adjust to parameter 8 to check the fault parameter type.
03	Wrong burner number: 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.