SmartGen

MAKING CONTROL SMARTER

HTR6

RELAY EXPANSION MODULE

USER MANUAL

郑州众智科技股份有限公司

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Table 1 Software Version

Date	Version	Note
2025-7-16	V1.0	Original release.

1 OVERVIEW

HTR6 Relay Expansion Module is used to expand the external relays. When the capacity of the output port inside the controller is insufficient, this module can be used for expansion.

The module integrates 6 independent relays, each of which has a normally open contact capacity of 10A/300VDC. The original control logic is not changed when used on site, and the contact capacity can be expanded through simple wiring.

2 PERFORMANCE FEATURES

The main features of the HTR6 relay expansion module are as follows:

——The power supply of module is compatible with 110VDC, 220VDC, and (90~305) VAC;

——The wiring is simple, just connect the original controller output port directly to the expansion module input port;

——It features strong load capacity, supporting up to 10A DC switching capability at 300VDC;

——The circuit board adopts a potting process, providing excellent protection against moisture, dust, and corrosion;

——With modular structure design, pluggable terminals, screw-mounted installation, and compact structure, it is easy to install.

3 SPECIFICATIONS

Table 2 Technical Parameters

Item	Note
Working Voltage	(90~305) VAC or 110VDC/220VDC
Power Consumption	<3W
Digital Input 1-6	Active when low level
Digital Output 1-6	10A at 300VDC or 12A at 277VAC, independent output
Vibration Test	5 ~ 8 Hz: ±7.5 mm 8 ~ 500 Hz: 4 g Refer to the IEC 60068-2-6
Shock Test	50g, 11ms, half-sine, apply three shocks successively in each direction of three mutually perpendicular axes of the specimen, which means 18 shocks in total Refer to the IEC 60068-2-27
Bump Test	20g/16ms, half sine Refer to the IEC 60255-21-2
Case Dimensions	144mm x 109mm x 41mm
Working Temperature	(-25~+70)°C
Working Humidity	(20~95)%RH
Storage Temperature	(-30~+85)°C
Weight	0.40kg
Installation Method	Screw-mounted (M5x35 Hex socket head cap screw)
IP Rating	IP20

4 OPERATION

4.1 DESCRIPTION

4.1.1 INDICATORS AND WIRING CONNECTION

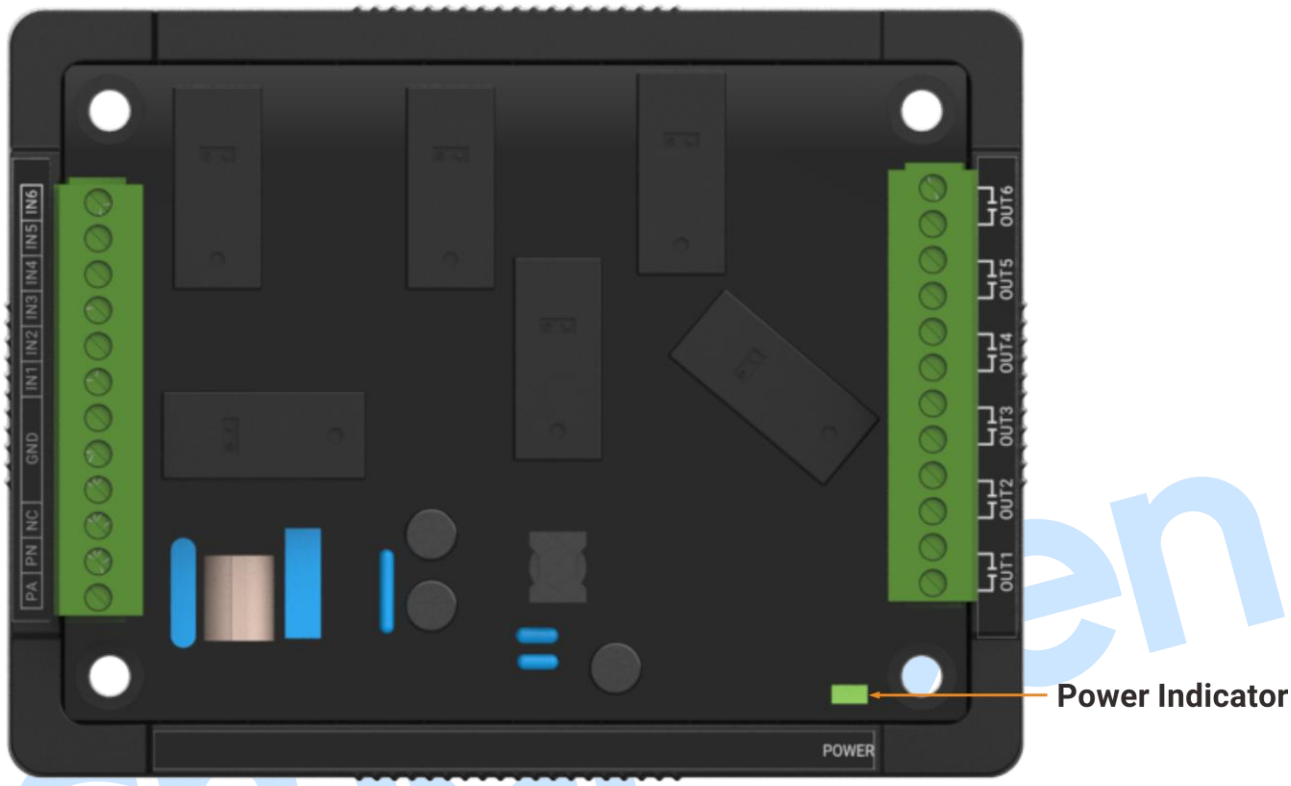

Fig.1 Front Panel Indication

Table 3 Wiring Connection of Terminals

No.	Function	Cable Size	Remarks
POWER	Power Indicator	/	The green indicator is always on when the power supply of module is normal.
PA	Module Power Supply Input	0.5mm²	The power supply is compatible with (90-305)VAC, and 110VDC or 220VDC.
PN		0.5mm²	
NC	Null Terminal	/	/
GND	Input Reference Low Level	0.5mm²	The input reference is low level, and the internal reference is grounding.
IN1	Input 1	0.5mm²	Control the OUT1, active when it is connected to GND.
IN2	Input 2	0.5mm²	Control the OUT2, active when it is connected to GND.
IN3	Input 3	0.5mm²	Control the OUT3, active when it is connected to GND.

No.	Function	Cable Size	Remarks
IN4	Input 4	0.5mm^2	Control the OUT4, active when it is connected to GND.
IN5	Input 5	0.5mm^2	Control the OUT5, active when it is connected to GND.
IN6	Input 6	0.5mm^2	Control the OUT6, active when it is connected to GND.
OUT6	Output 6	2.5mm^2	Passive relay output 6, controlled by input 6.
OUT5	Output 5	2.5mm^2	Passive relay output 5, controlled by input 5.
OUT4	Output 4	2.5mm^2	Passive relay output 4, controlled by input 4.
OUT3	Output 3	2.5mm^2	Passive relay output 3, controlled by input 3.
OUT2	Output 2	2.5mm^2	Passive relay output 2, controlled by input 2.
OUT1	Output 1	2.5mm^2	Passive relay output 1, controlled by input 1.

4.1.2 WIRING CONNECTION DIAGRAM

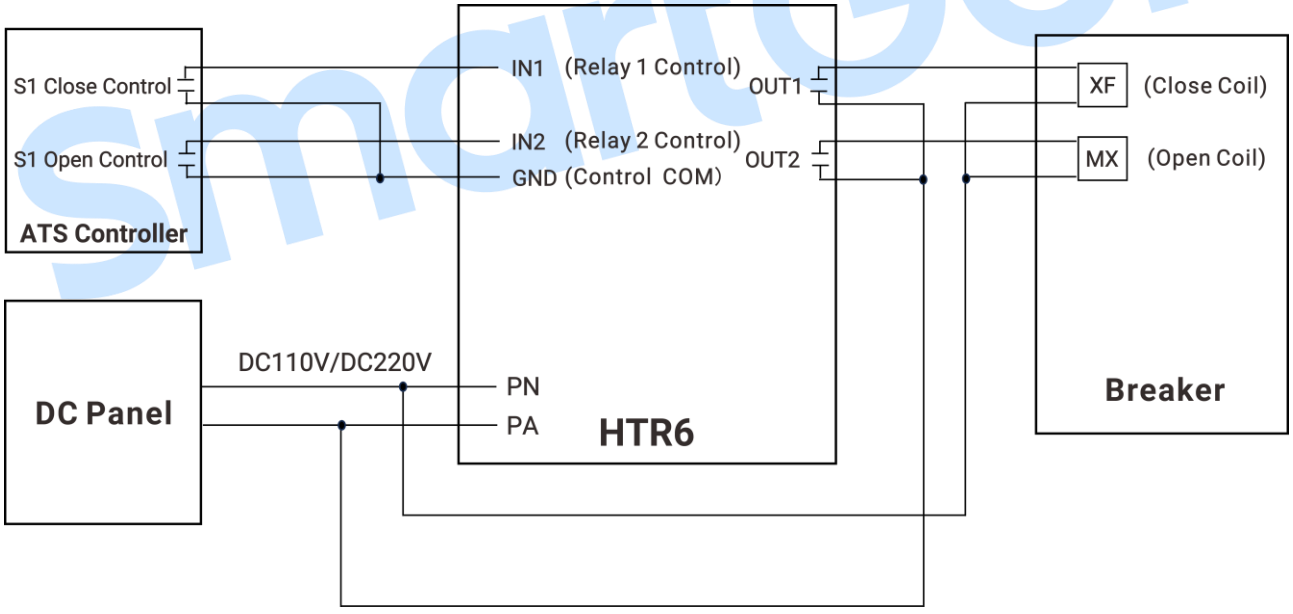

Fig.2 Expansion Relay Output Wiring Connection Diagram

5 INSTALLATION

5.1 OVERALL AND CUTOUT DIMENSIONS

Unit: mm

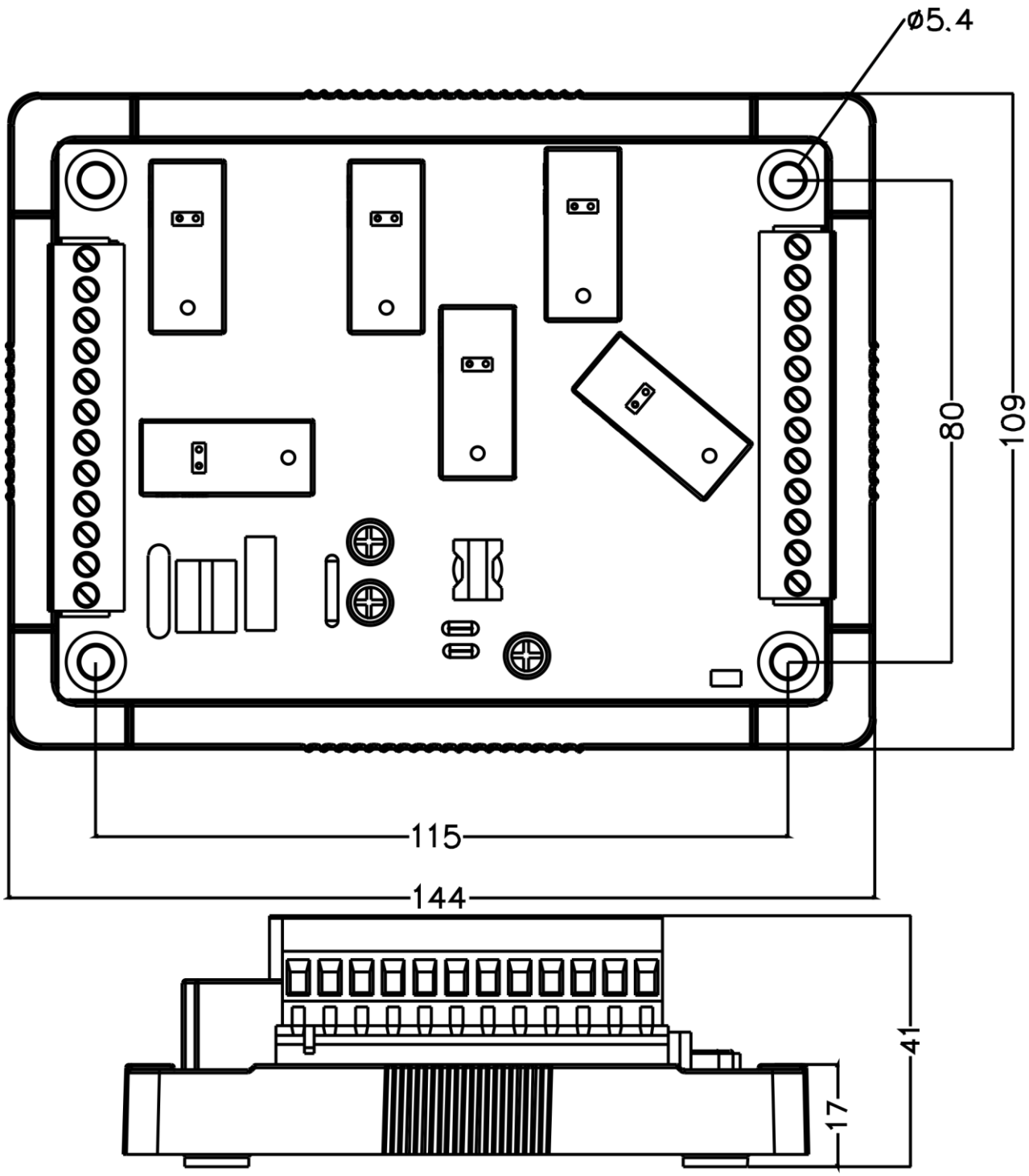

Fig.3 Overall and Cutout Dimensions

5.2 INSTALLATION METHOD

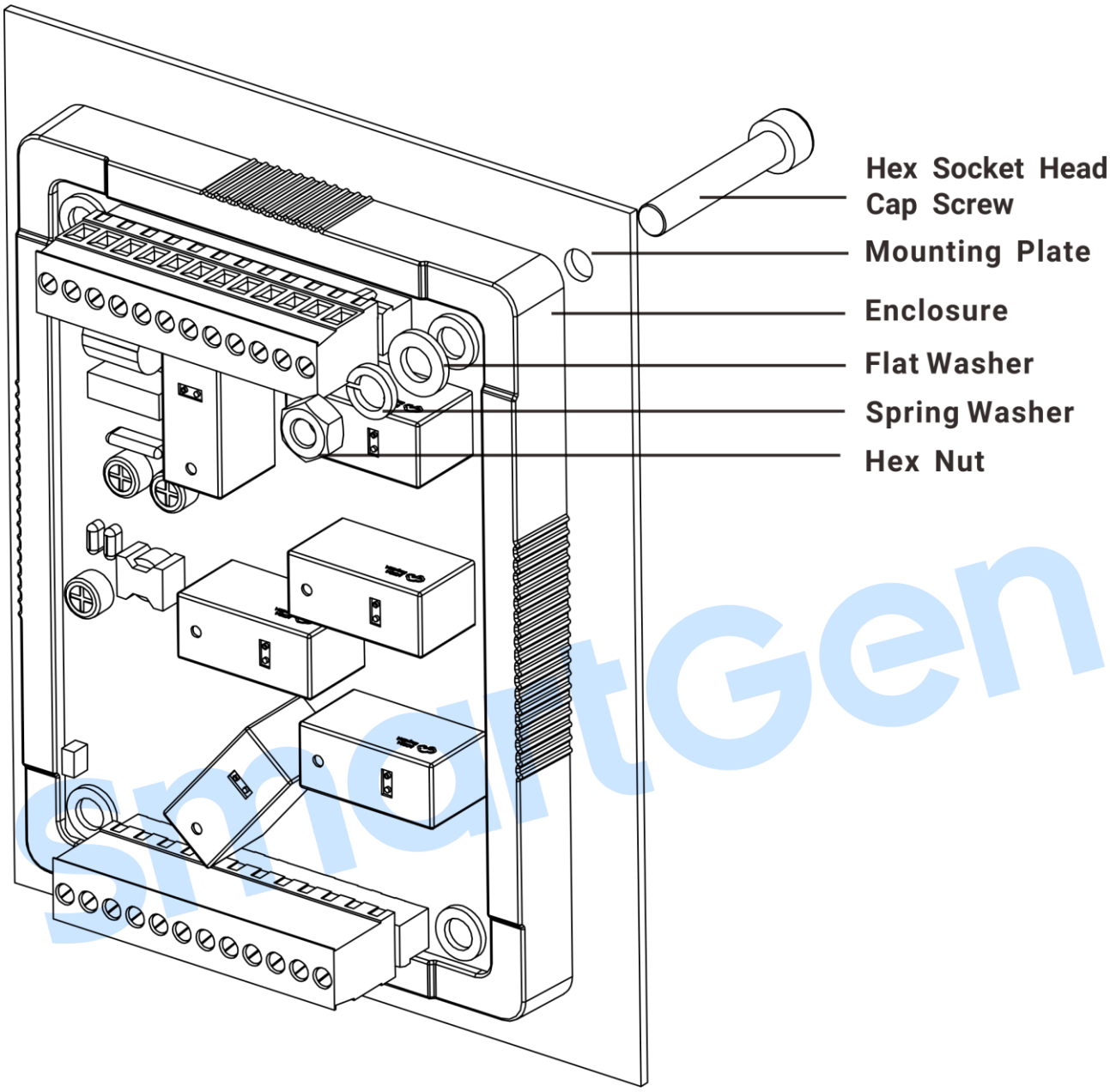

Fig.4 Installation Method

6 TROUBLESHOOTING

Table 4 Troubleshooting

Fault Symptoms	Possible Solutions
The power indicator is off	Check whether the wiring connection of power supply is normal or not.
No output from output port	Check whether the wiring connection of the output port and the corresponding input port is correct or not.