



IS09001

Enterprise Certified by Quality Management System

Instruction Manual for CAG6 Series DIN Rail Solid State Relays

■ Overview:

The English name of Solid State Relay is Solid State Relay, abbreviated as SSR. It is a switching device that uses semiconductor devices (thyristors) to replace traditional contact electrical connections. There is optoelectronic isolation between the input terminal and the output terminal. When a control signal is applied to the input terminal, the output terminal can change from the non-conducting state to the conducting state, or from the conducting state to the non-conducting state (normally closed type). However, turning off is not equivalent to the contact opening and closing of a relay or contactor. In general, measuring the output terminal with a multimeter cannot determine whether a solid-state relay is good or bad; it must be connected to a load (such as a light bulb) or tested with an oscilloscope. A normal solid-state relay has an internal RC circuit, and the leakage current at the output terminal is ≤ 10 mA. A small number of devices are marked with the rated voltage and rated current of the output. When selecting a model, derated use is required. Different loads have different derating factors; please refer to Table 2. Especially for inductive loads, a varistor should also be connected in parallel at the output terminal for protection. The CAG6 series adopts an innovative structural design, in which the solid-state relay and the heat sink are integrated into one body to maximize heat dissipation efficiency, and it can be expanded with a fan. The installation method can be either DIN rail mounting or screw mounting, which is convenient and hassle-free. The appearance is beautiful and elegant, and the arc design is seamlessly integrated with the protective cover.

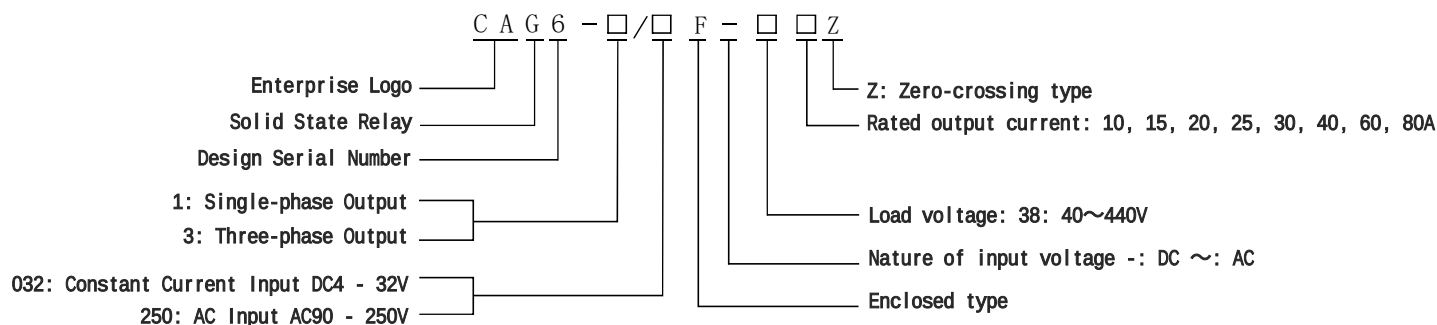
■ Applications of Solid State Relays

The CAG6 series solid state relays are manufactured with internationally popular circuits and technologies, and comply with the relevant requirements of GB14048.5 and UL508. They have the characteristics of high structural strength, impact resistance, and strong vibration resistance. They are especially suitable for harsh environments such as corrosion, humidity, dust prevention, and explosion-proof requirements, as well as occasions with frequent switching. The drive current at the input terminal is small, so they can be conveniently connected with computer terminals and various digital program-controlled circuits. They are widely used in automation control fields such as petrochemical instrument equipment, food machinery, packaging machinery, textile machinery, plastic machinery, CNC machine tools, and entertainment facilities.

■ Product Features

- Integrated heat sink type, maximizing heat dissipation efficiency. The solid-state relay and heat sink can also be used separately. For models with current above 10A, a fan is equipped for heat dissipation.
- Smaller input control current (<15 mA), no interference or trembling at the input, and passes the anti-group pulse interference test.
- DIN rail mounting or screw positioning mounting is more convenient. The product and heat sink can be disassembled for maintenance. The main control has an upper-lower structure, enabling convenient wiring and wire saving.
- The output terminal adopts a copper sheet inverted clamping structure, which is both stable and increases the contact surface.
- Built-in RC absorption and transient protection, making operation more reliable.
- Ordinary or enhanced thyristor output, with zero-voltage turn-on and zero-current turn-off.
- Optoelectronic isolation between the input circuit and the output circuit. The isolation voltage between input, output, and heat dissipation is 2500VAC.

■ Model and Meaning of CAG6 Series Solid-State Relays



■ Main Technical Parameters

Model	Input Parameters						Output Parameters									Switching Time (ms)	Fast Fuse Circuit Breaker Selection												
	Control Voltage VDC	Control Current mA	Starting Voltage VDC	Starting Current mA	Turn - off Voltage VDC	Working Indication	Load Voltage VAC	Output Current A	Dielectric Withstand Voltage VAC	On - state Voltage Drop VAC	Frequency Range HZ	Voltage Rise Rate V/ms	Operating Temperature °C	Protection															
														Overvoltage	Overcurrent														
Single - phase CAG6 - 1	4-32	≤20	4	≤9	≤2	LED red	40~440	10、15 20、30 40、60 80A	≥2500	<1.5	47-63	500	-30 +80	Varistor RV	aR fast fuse	≤10	Type aR, rated current 1.2 times												
	90-250 VAC	≤20	90VAC	≤5	20VAC																								
Three - phase CAG6 - 3	4-32	≤30	4	≤17	≤2																								
	90-250 VAC	≤30	90VAC	≤9	20VAC																								

Attached Table 1 for Heat Sink Selection

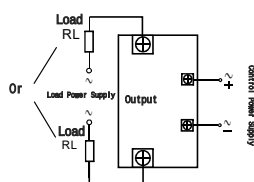
Solid-state Relay Current Rating	Single - phase below 15A	Single - phase below 30A	Single - phase below 40A	Single - phase below 80A	Three - phase below 15A	Three - phase below 30A	Three - phase below 40A
Heat Sink Model	NN-051	NN-052	NN-055	NN-057	NN-055	NN-057	NN-057F

Attached Table 2 for Load Derating Reference

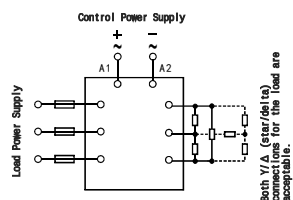
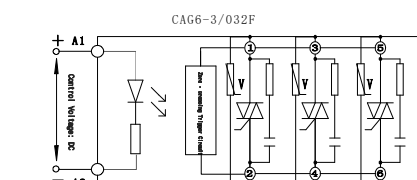
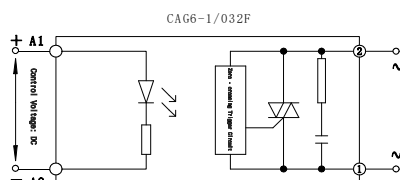
Load Type	Pure Resistance	Electrical Heating Wire	Incandescent Lamp	Transformer	Electromagnet	Single - phase motor	Three - phase motor	Capacitor Switching
Power Factor	1.0	0.7	0.5	0.4	0.5	0.2	0.3	Inrush
Application Factor	1.5 times	2 times	2.5 times	4 times	4 times	7 times	6 times	10 times

■ Wiring Diagram of Application Circuit

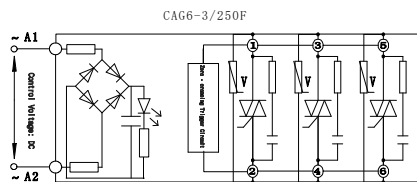
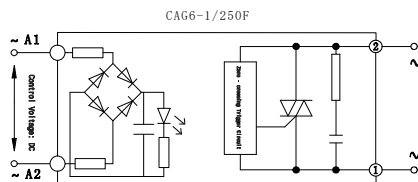
■ Typical Internal Circuit Diagram



Wiring Diagram of CAG6-1



Wiring Diagram of CAG6-3



■ Overall Dimensions and Installation Dimensions

Name	Load Current (A)	Standard - equipped Heat Sink	Overall Dimensions (mm)	Installation Dimensions (mm)
Single - phase CAG6 - 1	10、15	NN-051	100×24×107	90
	20、25、30	NN-052	100×48×107	90
	40	NN-055	100×80×107	90×54
	60、80	NN-057	100×110×127	90×54
Three - phase CAG6 - 3	10、15	NN-055	100×80×110	90×54
	20、25、30	NN-057	100×110×130	90×54
	40	NN-057F	125×110×130	90×54

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