NJR2-T
Soft-Starter

1. General

NJR2-T series soft-starter is suitable for three-phase 220V voltage level soft starter, and is cored on advanced dual-CPU control technology. It controls SCR module, realizes soft starting & stopping of three-phase AC induction motor (squirrel cage type), and has wide range of protection functions e.g. overload, input phase failure, output phase failure, load short-circuit, starting limiting overtime, over-voltage, and under-voltage.

The products form into complete set mainly with control cabinet; and are mainly used supporting the bypass AC contactor with corresponding specifications. The product specifications cover 7.5KW ~160KW squirrel cage type three-phase AC induction motor; and widely used in electrical drive equipment in the fields of metallurgy, fire mining, water supply, municipal administration, food, cement and petrochemical. It is an ideal updated product of traditional star - delta starter, and self-coupling voltage starting.

Standard: GB 14048.6 IEC 60947-4-2.

2. Type designation

N J R 2-□ T

- Indicate soft starter control unit, three-phase 220V rating
- Control motor power (kW)
- Design sequence No.
- Soft-starter
- AC motors
- Company code

3. Technical data

3.1 Power supply voltage: Three-phase AC220V (± 15%) 50Hz/60Hz (± 2%)

3.2 Starting current: 0.5 to 5 times the starting current limit

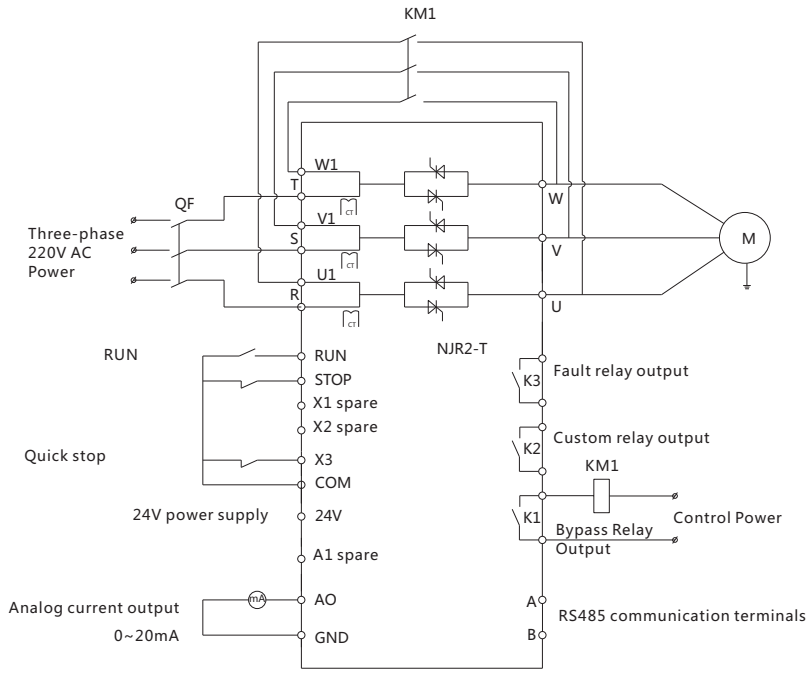
3.3 Ramp-down time: 0s ~ 60s

3.4 Base value voltage for soft starting: 30%Ue ~ 70% Ue

3.5 Kickstart Time: 0.1s

3.6 Environment requirements
Where the altitude is over 1000m, the capacity utilization should be reduced, current reduced by 0.5% for each additional 100m to 1000m;
Ambient temperature of -10℃~40℃(current is reduced by 3% for each 1℃ above 40℃);
Relative humidity less than 95%
Indoor environments featuring non-condensing, free of flammable and explosive gas, free of conductive dust, well-ventilated.

4. Wiring diagram



External terminal wiring instructions

B	RS485 communication terminals	When RS485 communication is required, please contact the manufacturer.
A	RS485 communication terminals	
GND	Analog ground	As the reference ground for A0 output
AO	(0 ~ 20) mA current output	GND as reference ground
A1	Spare terminals	
24V	+24 V output	Reference ground of COM, maximum output of 100mA
COM	Common terminal	Reference ground of +24 V
X3	quick stop terminal	Connecting with COM when factory default , once disconnect , output will be stopped with an “open circuit” fault
X2	Spare terminals	
X1	Spare terminals	
STOP	Stopping terminal	Can realize “two wire” and “three wire” control with COM
RUN	Running terminal	Can realize “two wire” and “three wire” control with COM
K3	Fault relay output, normally open Contact capacity (5A/250VAC)	When there is a fault, the relay picks up (0.2s pick-up time during power-up instant).
K2	Programmable relay outputs, normally open Contact capacity (5A/250VAC)	The relay function can be defined programmatically, when effective, the relay picks up.
K1	Bypass relay output, normally open; Contact capacity (5A/250VAC)	Control bypass contactor.

5. Features

5.1 Perfect Human Design:

5.1.1 The wide-body large LCD, the Chinese and English display, parameter setting, and equipment operation and control are made easier and simpler;

5.1.2 Advanced diverse soft starting mode can adapt to various types of starting demands of load devices;

Voltage starting mode

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Step voltage + current limiting starting mode
Step voltage + voltage starting mode
Current ramp starting mode
Double-loop starting mode

5.1.3 Enable online display of the current operating voltage and current signals, and have fault name and memory function to facilitate commissioning and maintenance of equipment;
5.1.4 full aluminum radiator patented design, better cooling effect, and natural ventilation, saving installation space;
5.1.5 Unique soft start master-slave linkage function, conducive to the production process control of equipment;
5.1.6 RS485 communication function, easy to control and automation networking engineered (to be customized).
5.2 Reliable Quality Assurance
5.2.1 Intelligent dual-CPU optimized design, so that the system operation is more stable and reliable;
5.2.2 SMT chip production process, reducing the failure rate of the circuit board;
5.2.3 Excellent Electromagnetic Compatibility;
5.2.4 High temperature aging test and load test of the machine ensure high reliability of manufactured products.
5.3 Perfect and Reliable Protection
5.3.1 Soft starter under-voltage, overvoltage protection;
5.3.2 Soft starter overheating, starting timeout protection;
5.3.3 Starting over-current, operating overload, load short circuit protection;
5.3.4 Input phase failure, output phase failure, and phase imbalance protection.

①

5.4 Removable keyboard,easy to operate outside remote operation control.(see ①)

②

5.5 all-aluminum design patent (75kW and below) gives better heat dissipation, natural air cooling, and saves space (see ②)

③

5.6 RS485 communication function (requiring extended RS485 communication module), facilitating networked control and automation engineered; providing three relay outputs: operation, ramp-top and failure for external linkage control. (See ③)
5.8 Unique master-slave linkage soft starting function, beneficial to production process control.

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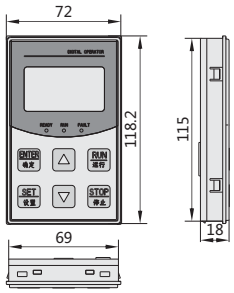
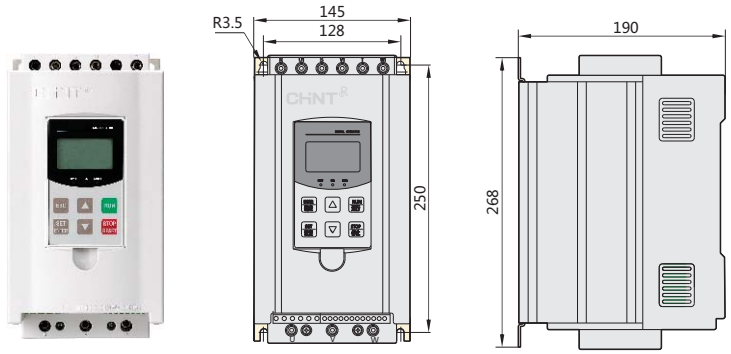
5.7 Display of operating voltage and current; fault description code display and memory function (see ④)

6. Overall and mounting dimensions (mm)

Display box

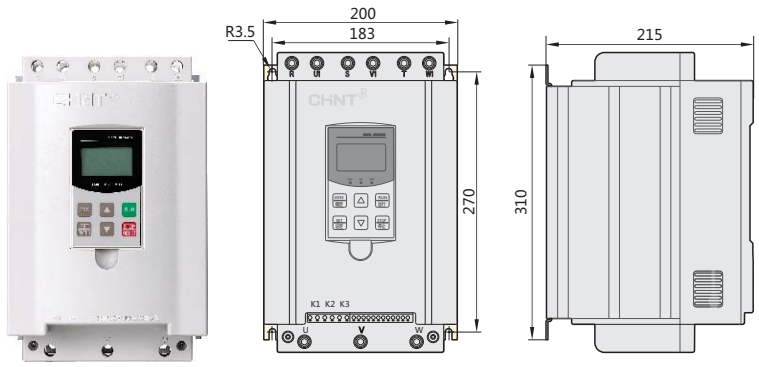


NJR2-7.5T~22T



Model	Rated Current (A)	Power of controlled motor(kW)	Weight (kg)
NJR2-7.5T	30	7.5	5
NJR2-11T	44	11	
NJR2-15T	60	15	
NJR2-18.5T	74	18.5	
NJR2-22T	88	22	

NJR2-30T~37T



Model	Rated Current (A)	Power of controlled motor(kW)	Weight (kg)
NJR2-30T	120	30	8
NJR2-37T	148	37	

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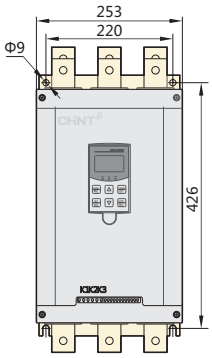
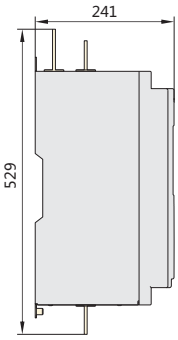
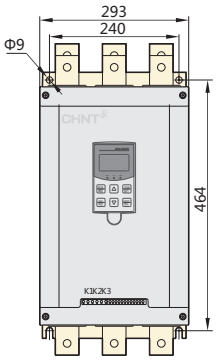
NJR2-45T~90T

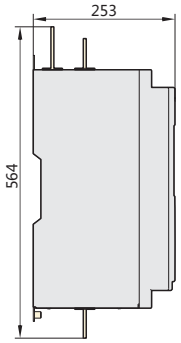




Model	Rated Current (A)	Power of controlled motor(kW)	Weight (kg)
NJR2-45T	180	45	20
NJR2-55T	220	55	
NJR2-75T	300	75	
NJR2-90T	360	90	

NJR2-110T~160T





Model	Rated Current (A)	Power of controlled motor(kW)	Weight (kg)
NJR2-110T	440	110	25
NJR2-132T	528	132	
NJR2-160T	640	160	

7. Ordering information

7.1 Please select the required model and specification according to the instructions on model and meaning when ordering.
Example: The controlled motor power of 45kW is installed and used with soft starting cabinet or matching distribution cabinet.
Ordering model: NJR2-45T

7.2 When motor with more than 4 poles is used with soft starter, recommend to select one size larger.
Example: the controlled motor power 55kW is installed and used with soft starting cabinet or matching distribution cabinet.
Ordering model: NJR2-110T

7.3 When bipolar motor is used with soft starter, as the starting current is large, please set the parameters correct as per the instruction manual before use.