INTELLIGENT SWITCHBOARD

PRODUCT OVERVIEW

Intelligent Switchboard is developed on the basis of the traditional Switchboard, which can replace some common components controlling the three-phase asynchronous motor in the original panel, including the circuit breaker, AC contactor, thermal protection relay, arc extinguisher with impedance and capacitor, relay module and others; it features simple wiring, strong anti-interference ability, small size, easy to install, cost savings, low failure rate, versatility, high reliability, high coefficient of safety and other advantages.

FEATURES IN BRIEF

1.Highly integrated, modularity in design, with high reliability;

2.Protection function for motor phase failure, short circuit, overload;

3.Circuit breakers with oil damping replace metal bellows circuit breakers;

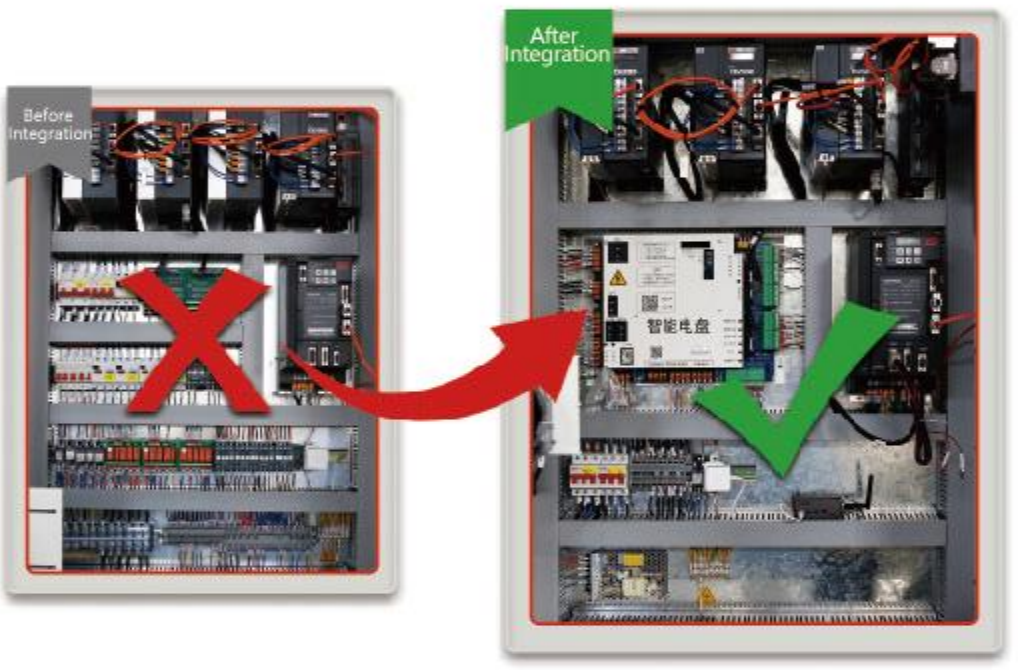
4.Wide adjustable range of overload current;

5.Fast response time for short-circuit protection;

6.Control signals of high and low levels are commonly applicable;

7.Diversified selection of motor drive modules;

8.Modules can be replaced, maintenance is simple and fast.



MODEL DESCRIPTION

ZNDP – □ – □ – □

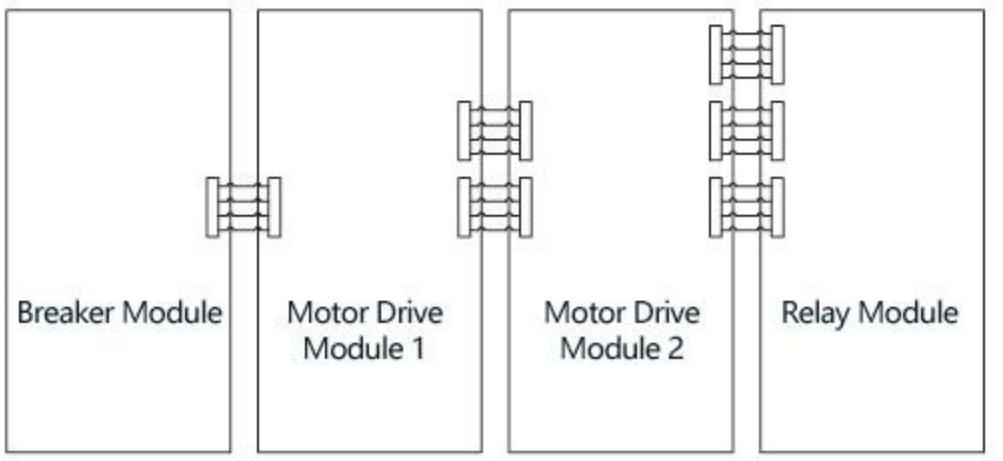
Series Code

Circuit Breaker Module Code

Motor Drive Module Code

Relay Module Code

Connection Method



CIRCUIT BREAKER MODULE DESCRIPTION

SD 1 — □

- SD: For circuit breaker module
- 1: Version No.
- □: For circuit breaker module model

MODULE TYPE

Code	1	2	3	4
Model	SD1-A	SD1-B-V1	SD1-C	SD1-D

Config & Electrical Specs

Model	Configuration	Code	Layout
SD1-A	1 × 3-P breaker 6 × 1-P breakers 3 × fuses（270×89mm）	1	

代号	QF0(3P)	QF1(1P)	QF2(1P)	QF3(1P)	QF4(1P)	QF5(1P)	QF6(1P)
1	2A	2A	3A	3A	3A	6A	10A
1A	10A	3A	3A	3A	6A	6A	10A
1B	4A	2A	3A	3A	3A	10A	10A
1C	4A	6A	3A	3A	3A	10A	10A
1D	4A	4A	4A	4A	2A	2A	2A
1E	4A	2A	2A	10A	10A	10A	10A
1F	8A	4A	4A	4A	4A	10A	10A
1G	2A	4A	6A	6A	6A	10A	10A
1H	8A	2A	4A	6A	6A	6A	6A
1I	--	3A	3A	3A	3A	6A	10A
1J	10A	3A	3A	3A	3A	3A	3A
1K	5A	3A	10A	10A	10A	6A	1A

Model	Configuration	Code	Layout
SD1-B-V1	3 × fuses（270×25mm）	2	
SD1-C	4 × 1-P breakers 3 × fuses（270×80mm）	3	

Code	QF1(1P)	QF2(1P)	QF3(1P)	QF4(1P)
3	3A	6A	6A	6A
3A	6A	6A	6A	6A
3B	6A	6A	10A	10A
3C	2A	2A	3A	4A
3D	1A	2A	3A	5A

Model	Configuration	Code	Layout
SD1-D	1 × 2-P breaker 2 × 1-P breakers 3 × fuses（270×80mm）	4	

代号	QF1(2P)	QF2(1P)	QF3(1P)
4	6A	10A	6A
4A	6A	6A	3A
4B	6A	6A	6A
4C	10A	6A	6A
4D	10A	10A	6A
4E	3A	6A	3A

INDICATOR LIGHT DESCRIPTION

The Power indicator lights up when three-phase AC power is present.

AL1 / AL2 / AL3 indicators remain OFF during normal operation and will illuminate if the corresponding fuse fails.

PROCAUTIONS

- 1. Disconnect power before servicing; eliminate the root cause before replacing fuses; use only the specified fuse rating; do not power on until the fault is resolved; damage caused by incorrect fuse replacement is not covered under warranty.
- 2. Hydraulic circuit breakers are highly sensitive. Proper sizing must account for inrush current and operating conditions to prevent nuisance tripping;

MOTOR DRIVE MODULE DESCRIPTION

MD□ — F□ + FR□

- MD: For motor drive module
- □: Version No.
- F: For a single-direction rotary motor
- □: Number: 1 for 1 motor, 2 for 2 motors
- FR: For forward and reverse motors
- □: Number: 1 for 1 motor, 2 for 2 motors

INTELLIGENT SWITCHBOARD

MODULE TYPE

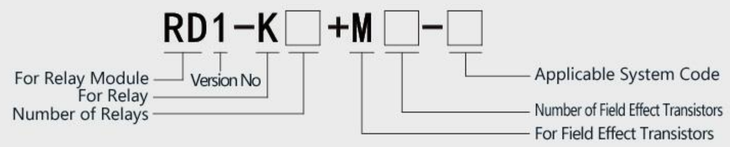
Code	A	B	C	D	E	F	G	S*
Model	MD□-F1	MD□-FR1	MD□-F2	MD□-F1+FR1	MD□-FR2	MD□-F2+FR1	MD□-F1+FR2	MD□-F4+FR2

If a motor drive module can not meet the requirements, the above modules can be used in combination, motor drive module Codes can be added for selection, such as A + F.
S is a double-layer plate to reduce the mounting area and can drive 4 single-direction rotary motors and 2 forward and reverse motors.

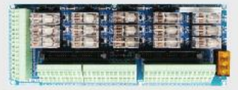
General Motor Drive Module

Model	Configuration	Code	Layout
MD20-F1	For one unidirectional three-phase induction motor 270 × 60 mm	A	
MD20-FR1	For one reversible three-phase induction motor 270 × 80 mm	B	
MD20-F2	For two unidirectional three-phase induction motors 270 × 105 mm	C	
MD20-F1+FR1	For one unidirectional and one reversible three-phase induction motor, 270 × 120 mm	D	
MD20-FR2	For two reversible three-phase induction motors, 270 × 140 mm	E	
MD20-F2+FR1	For two unidirectional and one reversible three-phase induction motor, 270 × 155 mm	F	
MD20-F1+FR2	For one unidirectional and two reversible three-phase induction motors, 270 × 180 mm	G	

RELAY MODULE DESCRIPTION



Relay Module

Model	Configuration	Code	Layout
RD1-K5+M8	Compatible with FANUC, Huazhong, Siemens, etc. 1 system-defined 50-pin interface; 24 inputs, 16 outputs; 5 main relays; 8 MOSFET; 1 power-on relay; Pluggable Terminal Block; 270 × 90 mm	1	
RD1-K5+M8-XD	Compatible with Syntec; 2 system-defined 20-pin interfaces; 16 inputs, 16 outputs; 5 main relays; 8 MOSFET; 1 power-on relay; 2 spare relays; Screw Terminal Block; 270 × 90 mm	1-XD	
RD1-K16+M15+BY2	Compatible with FANUC, Huazhong, Siemens, etc. 2 system-defined 50-pin interfaces; 48 inputs, 32 outputs; 16 main relays; 15 MOSFET; 1 power-on relay; 2 spare relays; Screw Terminal Block; 270 × 170 mm	2	
RD1-K16+M15+BY2-M80	Compatible with Mitsubishi M80; 1 system-defined 50-pin interface; 1 system-defined 40-pin interface; 48 inputs, 32 outputs; 16 main relays; 15 MOSFET; 1 power-on relay; 2 spare relays; Screw Terminal Block; 270 × 170 mm	2-M80	
RD1-K14-TY	Compatible with FANUC, Huazhong, Siemens, etc. 2 system-defined 50-pin interfaces; 48 inputs, 32 outputs; 14 main relays; 1 power-on relay; Screw Terminal Block; 270 × 100 mm	3	
RD1-K14-M80	Compatible with Mitsubishi M80; 1 system-defined 50-pin interface; 1 system-defined 40-pin interface; 48 inputs, 32 outputs; 14 main relays; 1 power-on relay; Screw Terminal Block; 270 × 100 mm	3-M80	

型号	功能简介	选型代号	外观图
RD1-K19	Compatible with FANUC, Huazhong, Siemens, etc. 2 system-defined 50-pin interfaces; 48 inputs, 32 outputs; 19 main relays; 1 power-on relay; Screw Terminal Block; 270 × 130 mm	4	
RD1-K2+M12	Compatible with FANUC, Huazhong, Siemens, etc. 2 system-defined 50-pin interfaces; 48 inputs, 32 outputs; 2 main relays; 12 MOSFET; 1 power-on relay; Screw Terminal Block; 270 × 93 mm	5	
RD2-K5+M8-XD	Based on Syntec RIO bus communication; 16 inputs, 16 outputs; 5 main relays; 8 MOSFET; 1 power-on relay; 2 spare relays; Pluggable Terminal Block; 270 × 90 mm	6	
RD1-K8+M16+BY2-XD	Based on Syntec RIO bus communication; 48 inputs, 32 outputs; 8 main relays; 16 MOSFET; 2 power-on relays; 2 spare relays; Spring-Clamp Terminal Block; 270 × 183 mm	7	
RD3-K5+M8(MT) 优先选用	Compatible with FANUC, Huazhong, Siemens, etc. 1 system-defined 50-pin interface; 24 inputs, 16 outputs; 5 main relays; 8 MOSFET; 1 power-on relay; Pluggable Terminal Block; 270 × 90 mm	8	

PRECAUTIONS

- 1. The effective value of the control signal of the relay module can be selected by using the mini jumper, when the output is effective at high level, the COM terminal and OV are shorted. When the output is effective at low level, COM terminal and 24V are shorted; and the corresponding mini jumper on the motor drive module should be set synchronously;
- 2.FET driver only outputs DC +24V, maximum current 2A, not for controlling AC loads or high voltage loads;
- 3. The start and overload signals of the three-phase asynchronous motor controlled by the smart panel will occupy the input and output points of the system.

INTELLIGENT SWITCHBOARD

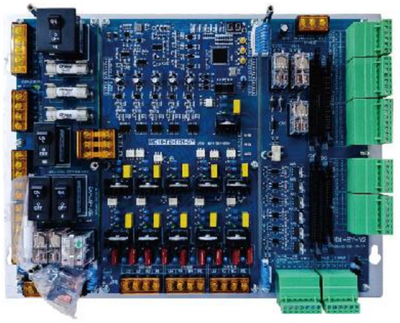
MODELING EXAMPLES

Model：ZNDP-1-G-3

Model：ZNDP-2-F+G-2

CUSTOMIZED DESIGN EXAMPLES

Model： ZNDP-2040-L1
System： Fanuc



Model： ZNDP-BY-V2
System： Huazhong or KND

Model： ZNDP-XAJL-V2
System： Fanuc or Syntec

Model： ZNDP-MF85QSa
System： Fanuc or Huazhong

Motor Drive

Product Overview

The motor drive module is designed for three-phase asynchronous motor control. It integrates protection functions including short circuit, overload, overcurrent, and phase loss, and features alarm output and real-time current monitoring. The module replaces conventional control components such as intermediate relays, circuit breakers, AC contactors, motor protection devices, and arc suppression devices.

Features in brief

1、Simple wiring, compact size, vertical design for easy installation;

2、Long service life, low noise, low failure rate, and high compatibility;

3、Real-time operating current display with fault code indication;

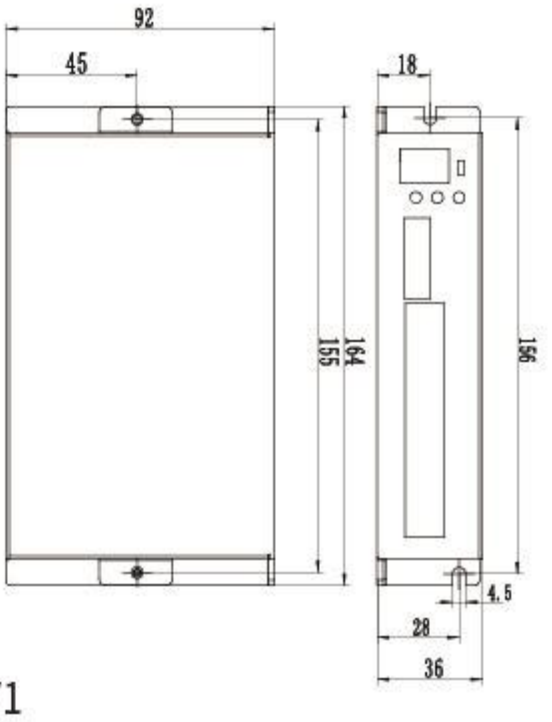
4、 Main power supply: AC 220V / 380V, 50 Hz;

5、Control power supply: DC 24V; selectable active-high or active-low control signals;

6、 Adjustable rated current: 0.5 – 12 A;

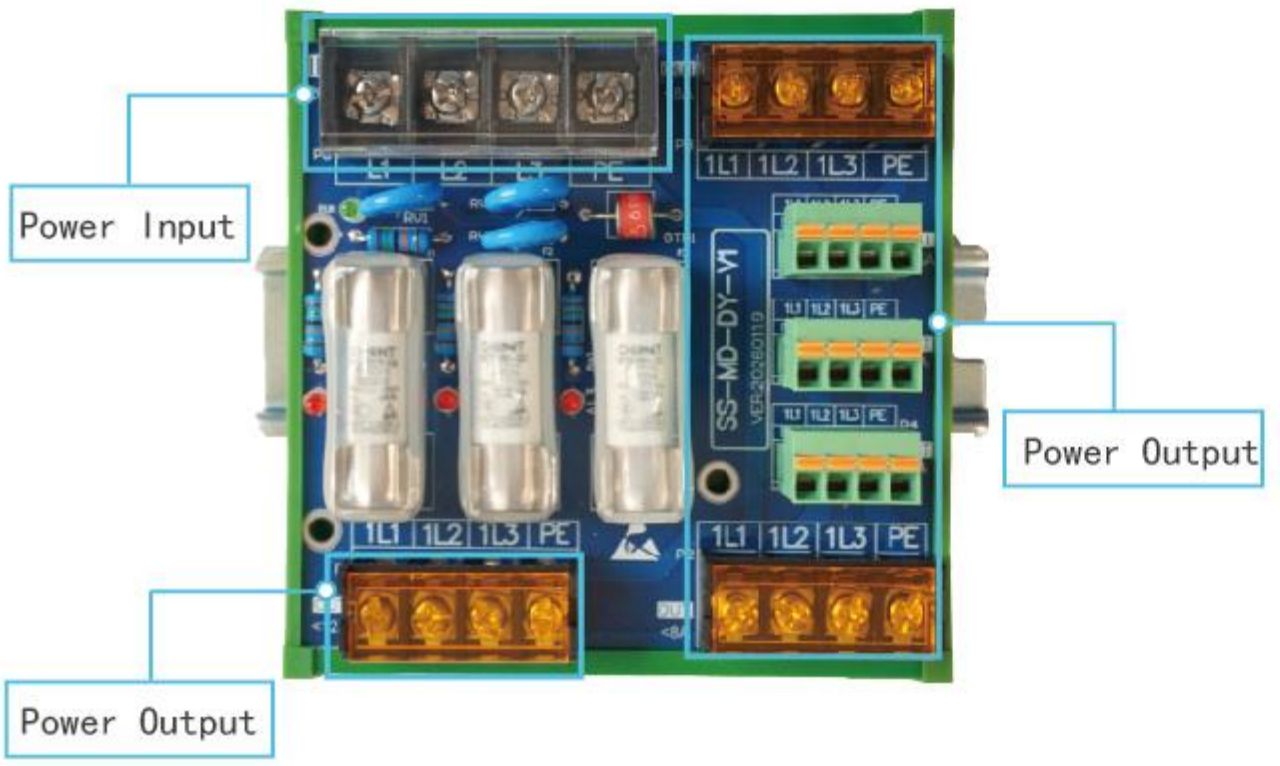
SS-MD-F1-V1

SS-MD-FR1-V1



Power Module

The power module is used in conjunction with the motor drive module, providing power supply and short-circuit protection. One power module can support up to six motor drive modules.



SS-MD-DY-V1

No.	Item	Specification	Remarks
1	Model	SS-MD-DY-V1	
2	Mounting Method	DIN rail mounting	
3	Dimensions	(L × W)	117mm×115mm
4	Load Capacity	Up to 6 motor drive modules	
5	Input Terminal	P0	380V / 220V, 3-phase, 50 Hz, <20 A
6	Output Terminal	P1	<12A
7	Output Terminal	P2,P3	<8A
8	Output Terminal	P4,P5,P6	<5A
9	Indicator	AL1,AL2,AL3	Indicator lights on when fuse is blown