

# **Motor Protection Controller**

## **User Manual**

**The manual is applied to the products of the following model:**

**WDH-31-200**

**JIANGSU SFERE ELECTRIC CO., LTD.**

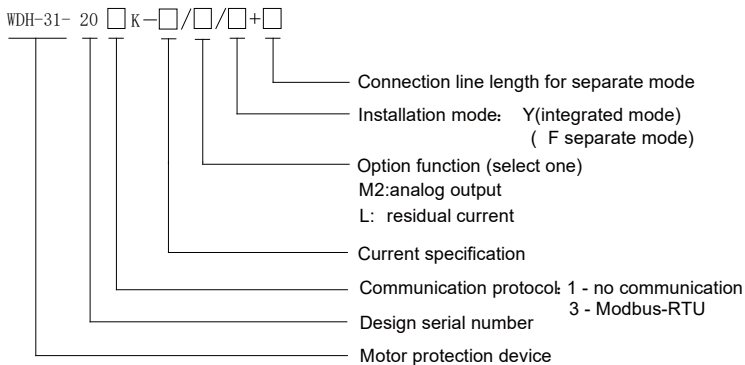
## 1.Product Introduction

WDH-31-200 is applied for three phase motors with the parameters such as 380V, 50Hz and less than 800A. It can protect the motors from overload, junction and open phase. This controller all has monitoring, controlling, protection and protection. It has small volume. The transformer and the main controller can be equipped together or separately. It has good price-cost feature and can replace thermal relay, current meter, voltage meter and transducers.

Features:

- ◇ Measure three phase current and single phase voltage
- ◇ Overload, under load, high speed start, start time-out, rotation clogging, blocking, junction, current unbalance, open phase, current leakage, over voltage and under voltage protection functions;
- ◇ Two relay outputs for trip protection and fault alarm
- ◇ One 4-20mA analog output
- ◇ RS485 communication interface adopting Modbus-RTU protocol
- ◇ Record the latest three faults of the motor and show the fault types.

## 2.Product Model Selection



**Table 1: Rated working current range of main circuit**

Rated current of controller	Applied to motor current specification (Ie)	Rated power of motor	SHI-I three phase current transformer specification
1A	0.2A~1A	0.13~0.37kW	SHI01-I, aperture Φ20mm
2A	1A~2A	0.37~1kW	SHI30-I, aperture Φ20mm
6.3A	2A~6.3A	1~3kW	
30A	6.3A~30A	3~15kW	

50A	30A~50A	15~22kW	SHI200-I, aperture $\Phi$ 20mm
100A	50A~100A	22~45kW	
200A	100A~200A	45~110kW	SHI300-I, aperture $\Phi$ 30mm (only for separate mode)
5A	/	Configured for external transformer	SHI30-I, aperture $\Phi$ 20mm

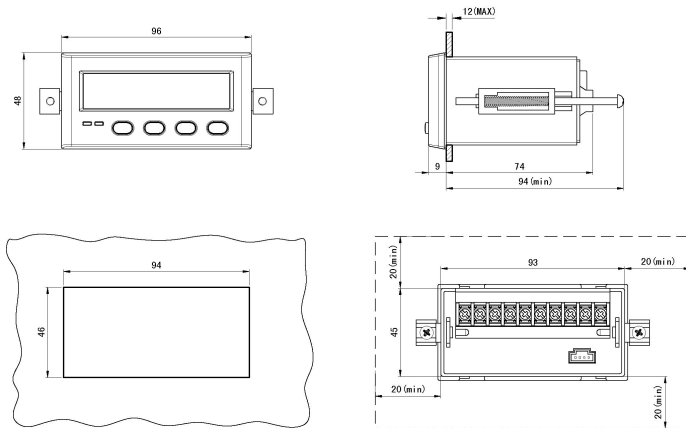
**Note:**

**When the external current transformer is used, the rated current of the controller should be 1A or 5A.**

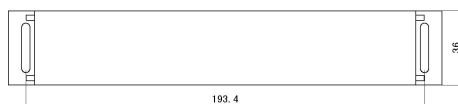
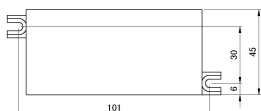
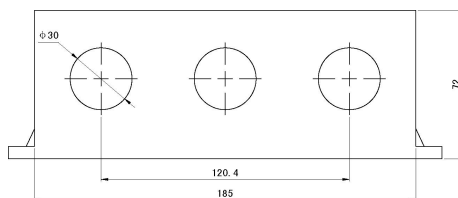
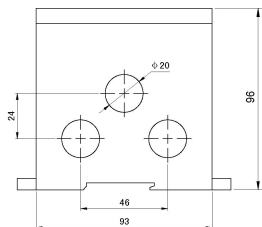
### 3.Installation and Wiring

#### Outline Dimension

Controller



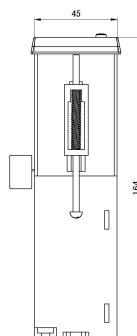
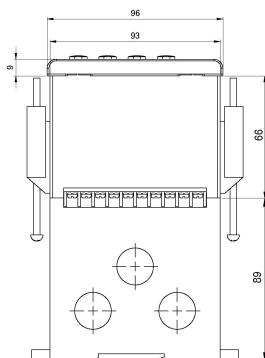
## Current Transformer



SHIxx-I(Rated Current 1A~100A)

SHI300-I(Rated Current 100A~200A)

Integrated type



## 4. Technical Parameters

Electric Characteristics		
Main Loop Rated Voltage		220/380V AC
Rated Power		50Hz
Controller Rated Current		0.1A ~ 800A
Auxiliary Power Supply	Working Voltage	AC 100 ~ 415V
	Power Consumption	3VA

Relay Output	Ever Open Point K1 (resistive): 3A 250VAC , 3A 24VDC Ever Closed Point K2 (resistive): 8A 277VAC , 8A 24VDC ;
<b>Environment Features</b>	
Working Temperature	-10°C ~ 55°C
Storage Temperature	-25°C ~ 70°C
Relative Humidity	≤95%
Installation Type	III
Protection Degree	IP 66
Insulation	Between signal, power supply and output > AC 1.5kV
<b>EMC</b>	
Electrostatic discharge immunity	IEC 61000-4-2-III
Radiated, radio-frequency, electromagnetic field immunity	IEC 61000-4-3-III
Electrical fast transient/burst immunity	IEC 61000-4-4-IV
Surge immunity	IEC 61000-4-5-IV
Immunity to conducted disturbances, induced by radio-frequency fields	IEC 61000-4-6-III
Power frequency magnetic field immunity	IEC 61000-4-8-III
Voltage dips, short interruptions and voltage variations immunity	IEC 61000-4-11-III