

# Motor Reverser. Catalog



# **JK Motor Reverser**

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# Motor Reverser.

JK solid state relays - the motor is reversed by the CE international certification. Replace the inverter and the electromagnetic switch and do the control of the forward and reversed.

Built-in mutual protection function lock, NO / OFF times of up to 1min/60times.

Voltage 220 ~ 440VAC, the maximum capacity of 7.5KW.

## *Easy*

One of the most important features of any electrical device is that it is easy to set up and easy to use.

The JK motor reversed is easy installation: three-phase line input and three-phase line output.

## *Reliable*

The JK motor reverser is not only designed to ensure an exceptional reliability. It has also been equipped with features to ensure that the whole operation is kept reliable.

Built-in interlock protection device.

If at this stage forward state, the input reversal signal, this product will maintain forward state. This is the interlock protection device.

## *Efficient*

Knowing what the customer want, it has been possible to design a motor reverser that really fulfils the needs of the customers, without adding unwanted complexity.

This gives excellent value for money makes the motor reverser a very efficient choice.

## *Protect*

Built-in interlock protection device.



## JK Motor Reverser

### Overview

Modular design with a standard leading wire.

The JK motor reverser is compact and easy to install. It was designed to meet EN60947-4-2, EN61000-4-2, EN61000-4-4 and EN61000-4-6 the internationally accepted standard defining soft starts, and carries the following agency approvals: CE.  
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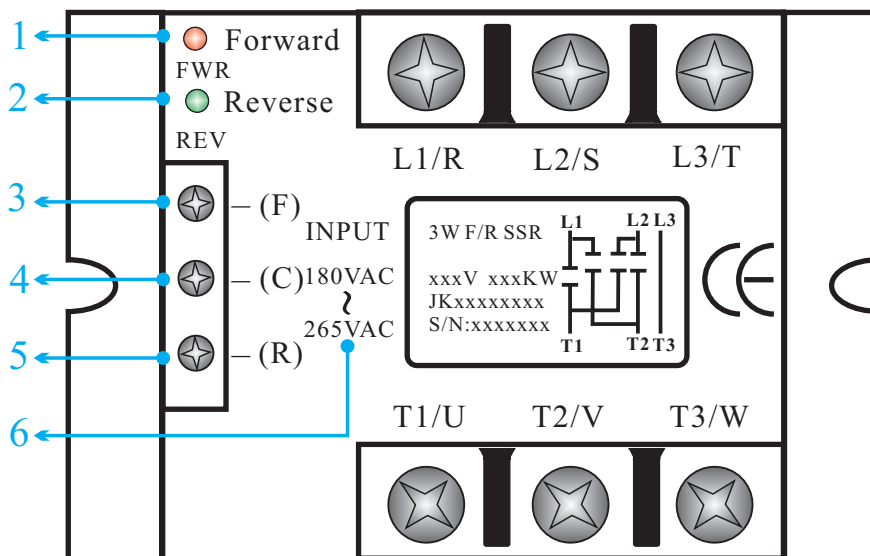


### Description

- Control three phases of the AC voltage supplying the motor to forward and reversed.
- Have motor power ratings of 0.75 to 7.5 KW, three-phase have a motor voltage range of 208 to 220V, 380 to 440V.

They are equipped with:

- Forward LED light (1)
- Reversal LED light (2)
- Forward contact (3)
- Connection contact (4)
- Reversal contact (5)
- AC: 180~265VAC
- DC: 10~32VDC (6)



# Motor Reverser.

## Technical specification

Main power:	208~220 VAC/ 380~440 VAC± 10%
Starting model:	AC control, DC control
Working frequency:	50 ~ 60 Hz ± 5 %
Peak pressure:	600V or 1200V ~ 1600 VAC
Isolation resistance:	Over 20MΩ (power & external cover). Over 20MΩ (input signal & external cover).
Strength of press-resisted:	2500VAC/1min between power & external cover. 1000VAC/1min between power & input signal.
Temperature of working:	-40C ~+100°C
Max. relative humidity :	93% without water drop concealed.

## Control

Control voltage range:	Uc	AC180~265V, DC:10-32V
Control current range:	Ic	15~25mA DC
Release voltage:	Ur	6VDC
Display LED:		Yes
Protection against simultaneous controls:		Yes
Maximum reverse voltage:	Urv	30V
Output signal:		no output
Reversing time:		fixed 70ms

## Input-output characteristics(at20°C)

Input-output isolation @500m:	Ui	3300 VRMS
Output-case isolation @500m:	Ui	3000 VRMS
Rated impulse voltage:	Uimp	4000 V

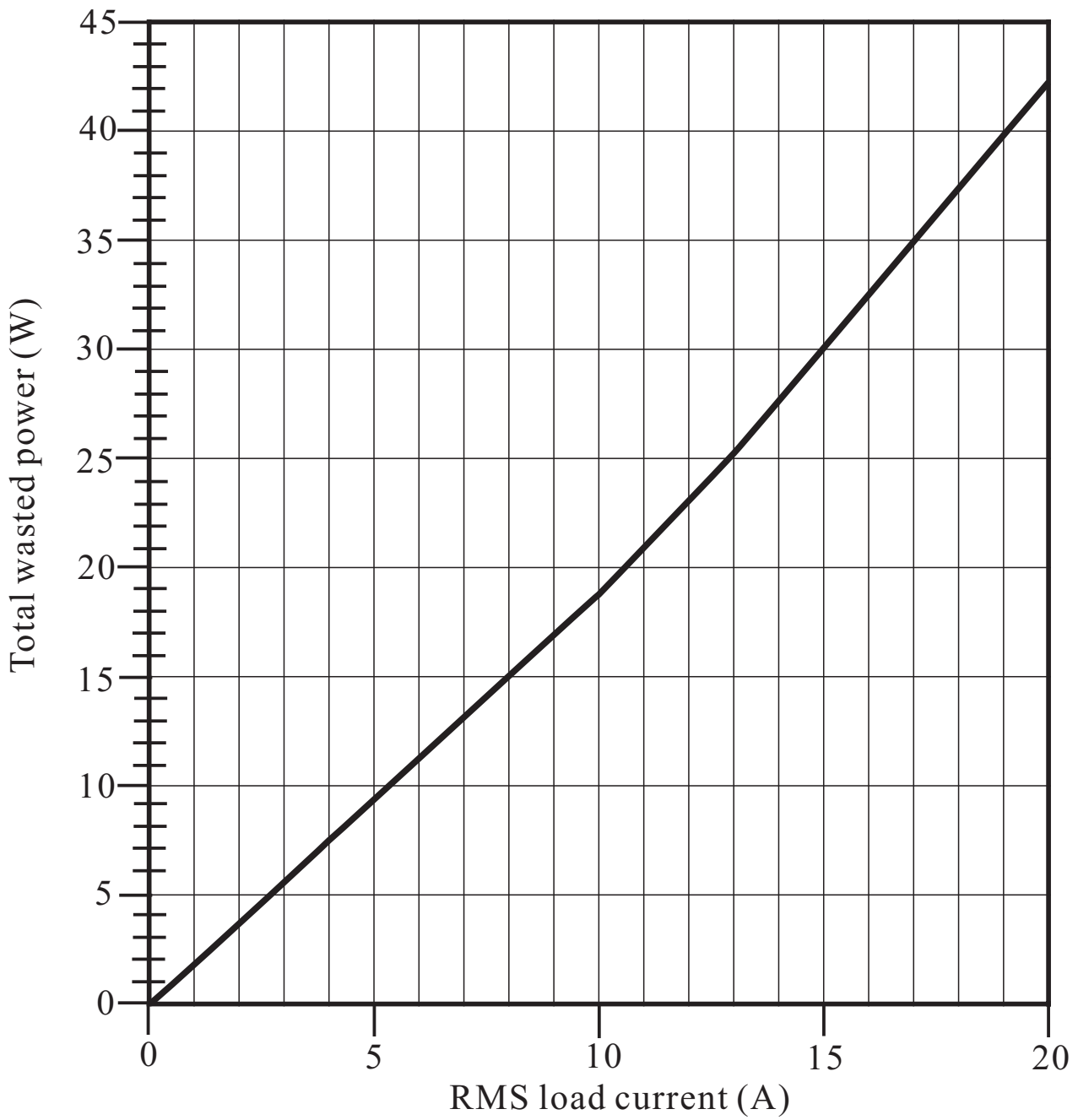
## General characteristics

Weight:	130g
Storage temperature range:	-40~+100°C
Operating temperature range:	-40~+100°C

## Sortie/ Output

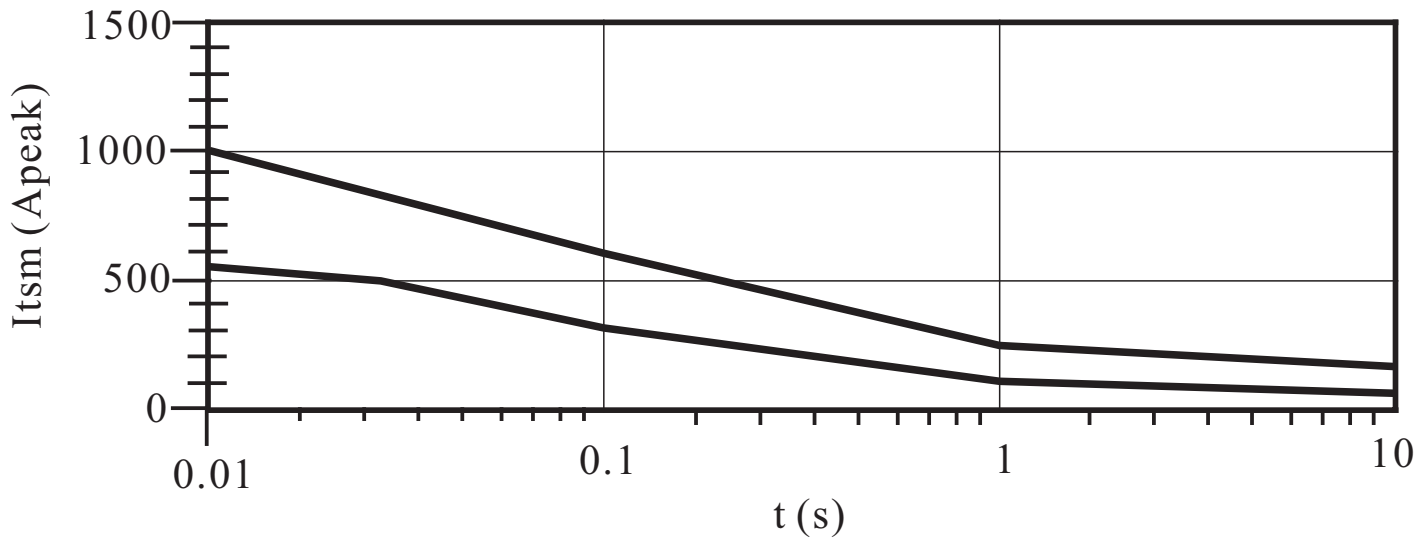
Standard mains voltage:	Ue	400VAC
Mains voltage range:	Un	24-550VAC
Non-repetitive maximum peak voltage:	Up	1600V
Max. nom. current(AC53a-AC3)@40°C:	Ie	16A
3 pole power motor (3x400VAC):	Pn	7.5KW
Max Direct voltage drop (@Ie):	Ud	1.4VRMS
Non repetitive overload current: (@1cycle of 10ms)	ITSM	1000A
Melting limit (choice of fuse)@10ms:	I <sup>2</sup> t	5000A <sup>2</sup> s
Minimum load current:	Imin	100mA
Power factor (@Ie):	Pf	0 up to 1
Turn on time-reversing time(@50Hz):	ton/trv	20ms / 100ms
Turn off time (@50Hz):	toff	10ms
Maximum leakage current (@Ue/50Hz):	I <sub>lk</sub>	5mARMS
dv/dt/Max off state voltage rise:	dv/dt	500 / μs
Operating frequency range:	f	25 up to 440Hz

*Thermal curves:*



# Motor Reverser.

surge current:  $I_{tsm} (A_{peak}) = f(t)$  for 75A models with  $I_{tsm} = 1000A$



1. No repetitive  $I_{tsm}$  is given without voltage reapplied for the determination of the protection.
2. Repetitive  $I_{tsm}$  is given for inrush current with initial  $T_j = 70^\circ C$ . The repetition of the surge current decrease the lifetime SSR's.

## Cautions:

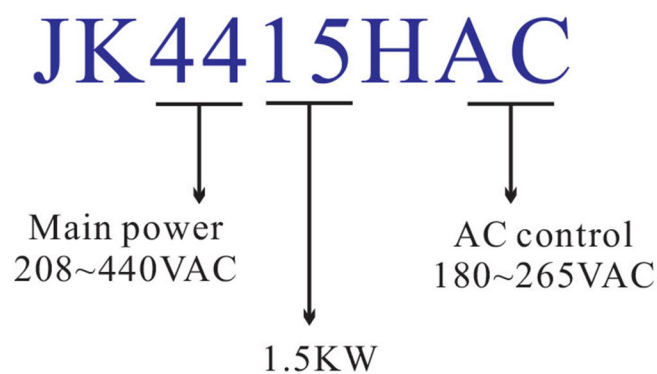
Semiconductor relays don't provide and galvanic insulation between the load and the mains.

Selection:

## JK Motor Reverser Selection

Motor power	In motor (400V)	AC control SSR Models	DC control SSR models	KW	AC contro	DC control	Main power
0.75KW	2A	JK4415HAC	JK4415HDC	1.5	180~265 VAC	10-32 VDC	208~440 VAC
1.1KW	2.6A	JK4415HAC	JK4415HDC	1.5			
1.5KW	3.5A	JK4415HAC	JK4415HDC	1.5			
2.2KW	5A	JK4430HAC	JK4430HDC	3			
3KW	6.6A	JK4430HAC	JK4430HDC	3			
5.5KW	12A	JK4455HAC	JK4455HDC	5.5			
7 KW	16A	JK4470HAC	JK4470HDC	7			

Explain:



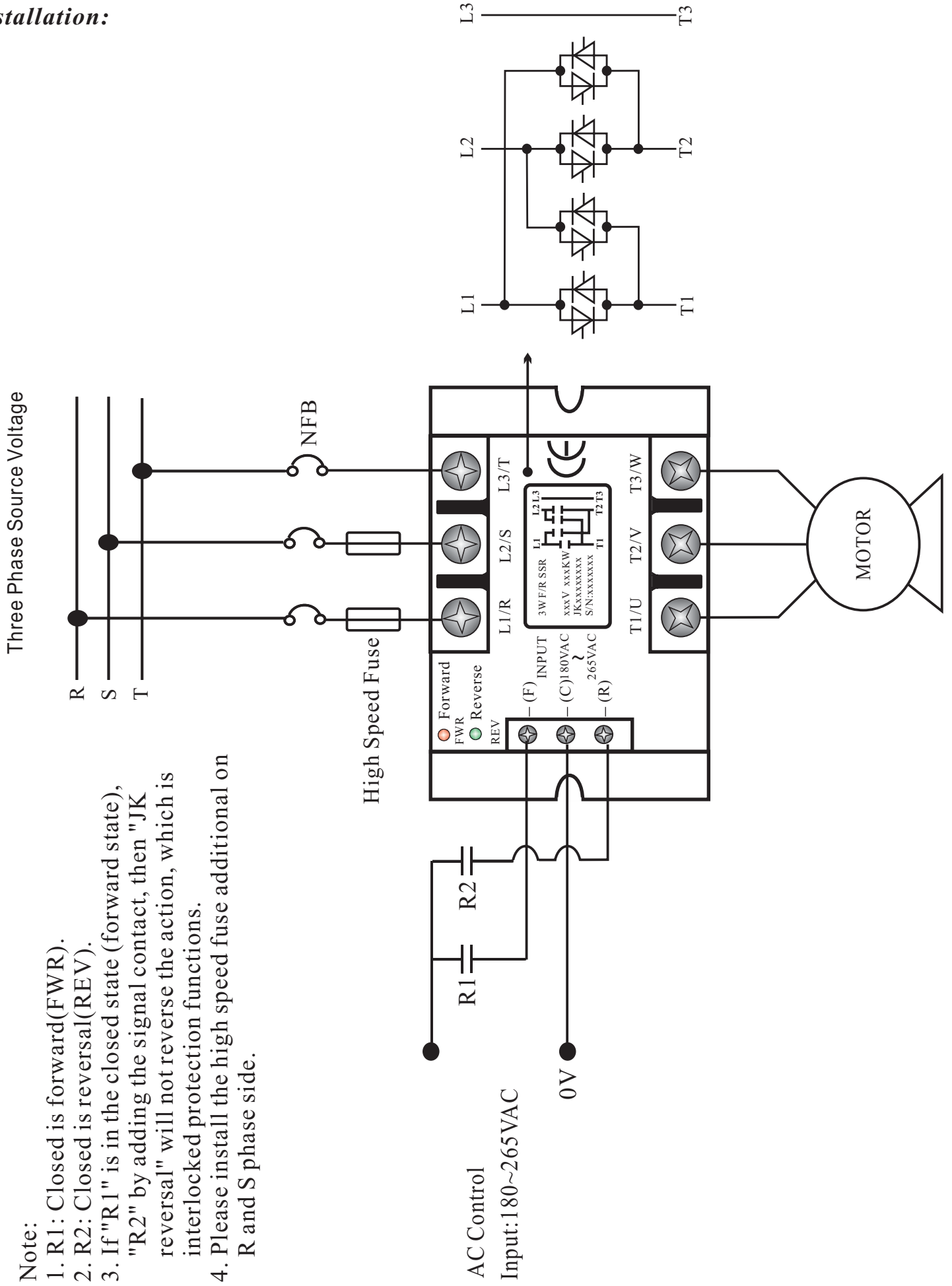


# Motor Reverser.

## Installation:

Note:

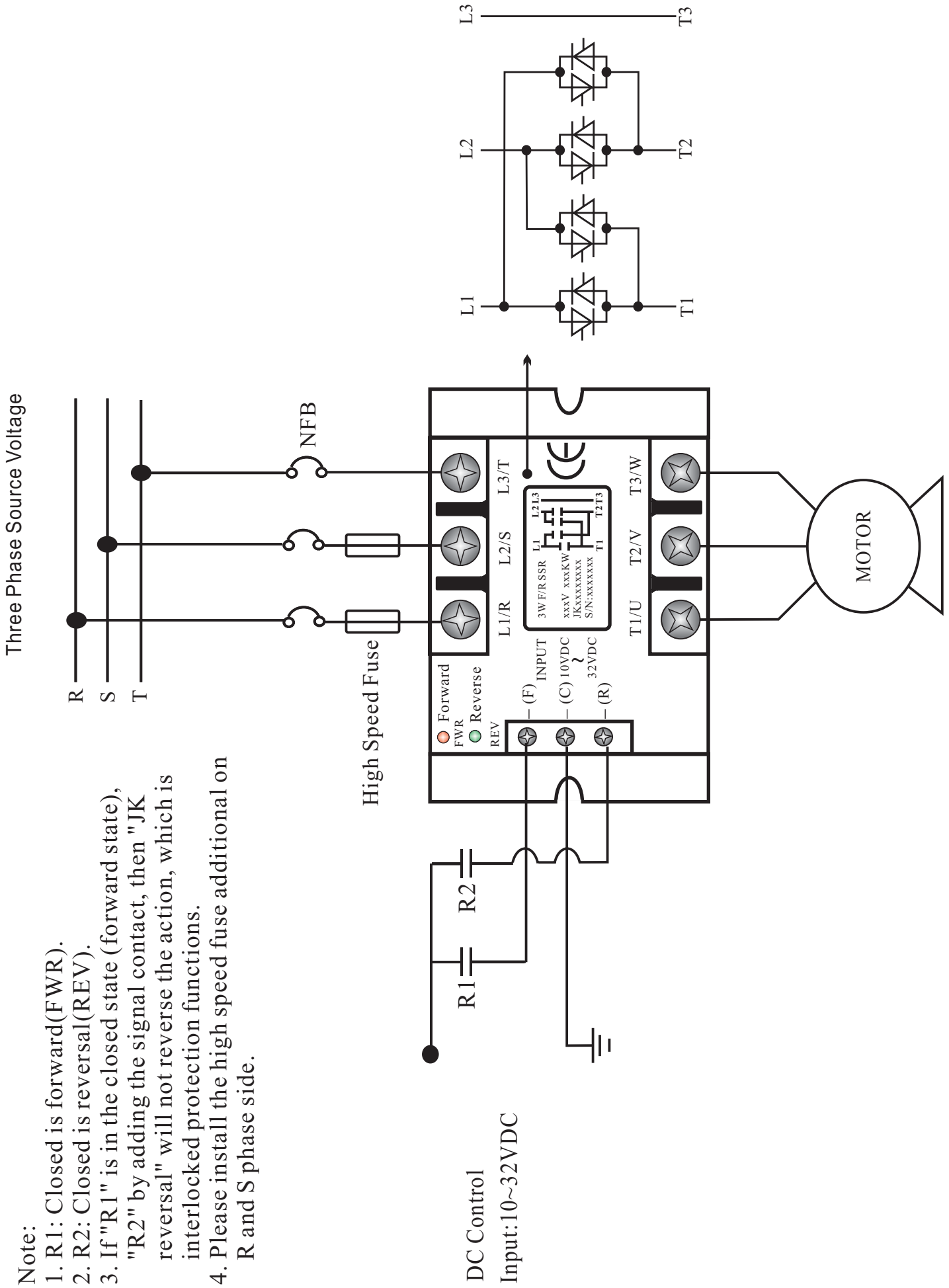
1. R1: Closed is forward(FWR).
2. R2: Closed is reversal(REV).
3. If "R1" is in the closed state (forward state), "R2" by adding the signal contact, then "JK reversal" will not reverse the action, which is interlocked protection functions.
4. Please install the high speed fuse additional on R and S phase side.



# Motor Reverser.

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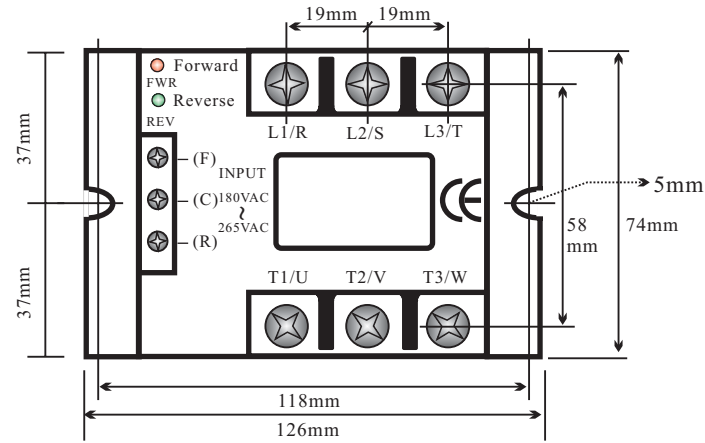


DC Control

Input: 10~32VDC

# Motor Reverser.

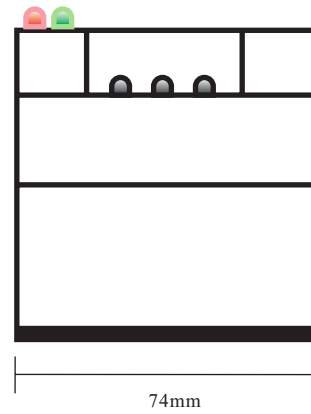
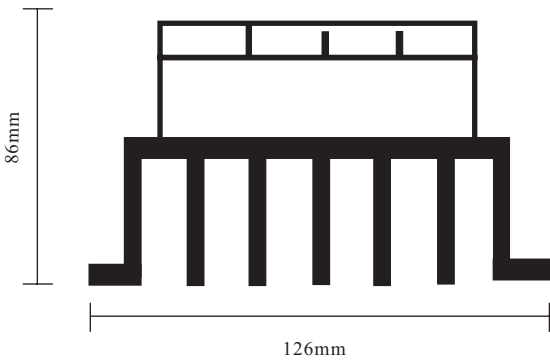
## Dimension:



Three Phase Solid State Relay Motor Reverser.

**JKXXXX-HDC,HAC**

A75散熱片  
A75Heat sink.



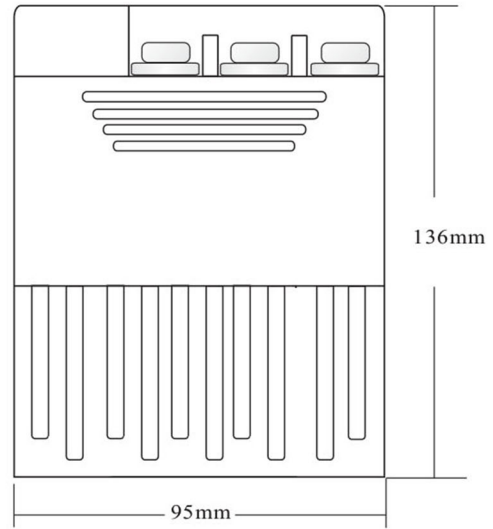
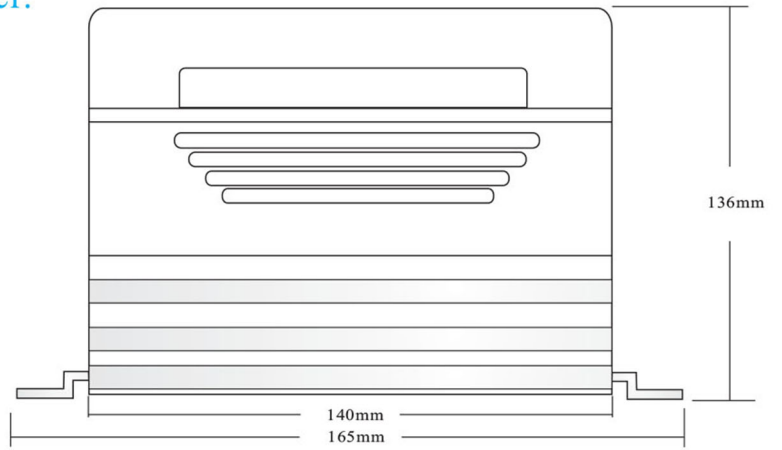
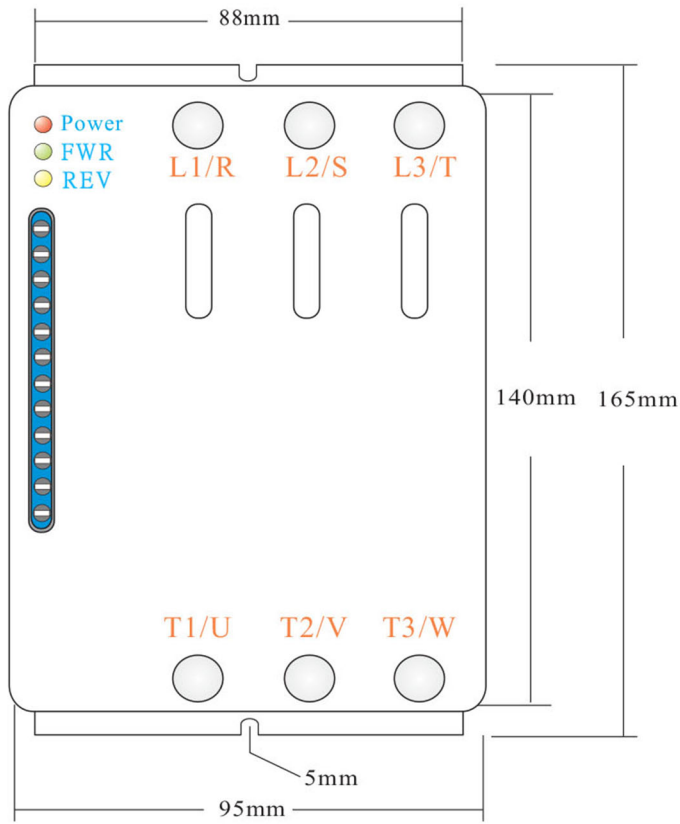
規格 Model	JK4415HDC, JK4430HDC	單位 Unit	mm
	JK4415HAC, JK4430HAC	圖號 Photo No.	圖1 P.1



# Motor Reverser.

Three Phase Solid State Relay Motor Reverser.

**JKXXXX-HDC,HAC**



規格 Model	JK4455HDC, JK4470HDC	單位 Unit	mm
	JK4455HAC, JK4470HAC	圖號 Photo No.	圖2 P.2



## CE Certificate:



### EC Declaration of Conformity



According to the following EC Directives:

- Low Voltage Directive: 2006/95/EC
- Electromagnetic Compatibility Directive: 2004/108/EC

We, Jacky Enterprise Co., Ltd. ;

Add: No. 11, Lane 2, Tsyr Street, Da Lee District, Taichung City, Taiwan, R.O.C.

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declare that the equipments mentioned hereafter:

- ◎Product : Solid State Relay
- ◎Model JK2205HDC, JK2210HDC, JK2215HDC, JK2205HAC,  
No.(s) : JK2210HAC, JK2215HAC, JK4405HDC, JK4415HDC,  
JK4430HDC, JK4405HAC, JK4415HAC, JK4430HAC

All of these equipments are in compliance with the requirements of the Low Voltage Directive and Electromagnetic Compatibility Directive.

They are based on the following harmonized standards:

- EN 60947-4-2:2000+A2:2006, Low-voltage switch-gear and control gear -  
Part 4-2: Contactors and motor-starters - AC semiconductor motor controllers and starters
- EN 55011:2007, Electromagnetic compatibility - Industrial, scientific and medical (ISM) radio-frequency equipment- Radio disturbance characteristics- Limits and methods of measurement
- EN 61000-4-2:2009, Electrostatic discharge (ESD)
- EN 61000-4-4:2004, Electrical fast transient/burst requirements (EFT/Burst)
- EN 61000-4-6:2009, Immunity to conducted disturbances, induced by radio-frequency fields (CS)

Representative :

Lin Chin Yi / General Manager

Place / Date :

Taichung City, Taiwan / April 28, 2011.

# Motor Reverser.



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