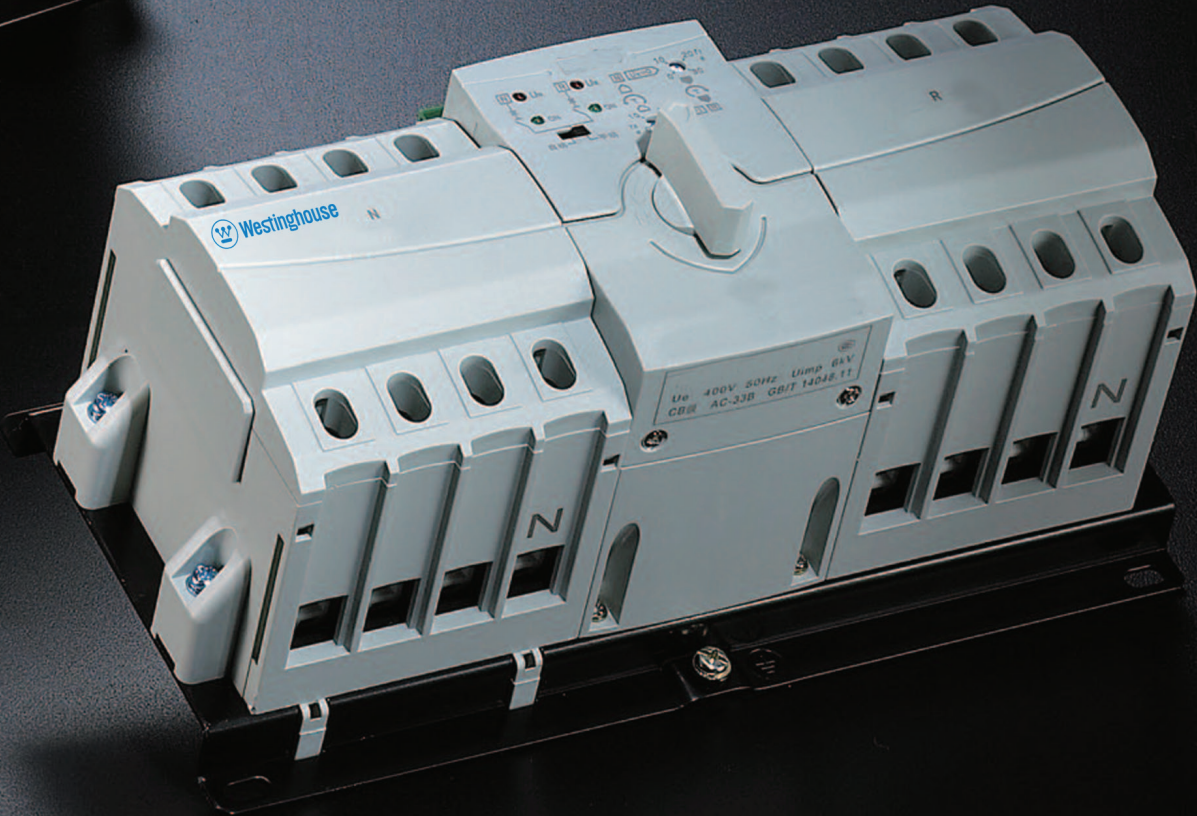




# DUAL POWER AUTOMATIC TRANSFER SWITCH



## WRDQ3 Series

### Application

WRDQ3 Series dual power automatic transfer switch is design and manufactured by our company, is a special product developed as per to customers' requirements. This product has three functions of Auto Transfer with Auto Recovery, Auto Transfer without Auto Recovery and Grid-Generator Mode, monitoring the three phase voltage of two power sources at the same time, when any phase happened with over voltage, under voltage, phase missing, it can automatically transfer from the fault power source to normal power source. For the product with Grid-Generator model, it can also send Generator start signal. It is a widely used dual power transfer switch with perfect performance, reliable and highly automation. WRDQ3 Series Product including 4 series products of WRDQ3, WRDQ3NX, WRDQ3CM, WRDQ3NM.

This series auto transfer switch confirms to IEC60947-6-1 Standard.

### Model Meanings

WRD Q 3 □ □ □ □ - □ / □ □  
 ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓  
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

①	Company code
②	Auto transfer switch
③	Design code
④	Structure type: C: can with DZ47, CM1. N: Can with DZ47, C65, CM1
⑤	Circuit breaker spec. X: Below 63A MCB M: Above 100A MCCB (have A, B, C, D four type controllers for option )
⑥	Controller Model: A: Basic type (only with auto change auto recovery integrated ATS) B: Intelligent type (Numerical indicate the voltage, Generator start, Fire linkage) C: Intelligent type (Same function as B type, but with LCD display ) D: Intelligent type (Same functions as B type, but with frequency indication and remote communication)
⑦	Frame class
⑧	Rated current of circuit breaker
⑨	Poles: 2, 3, 4
⑩	R: Auto change auto recovery S : Auto change no recovery F: Power grid – Generator

### Model Meanings

- Ambient Temperature: -5°C ~+50°C, and 24h average not more than +50°C;
- Atmospheric conditions: humidity not more than 50% at max. +50°C, higher humidity is allowed at lower temperature, at most wet month, the average max humidity is 90% at the average min temperature +35°C , and have considered the condensation on the product surface due to temperature variation.
- Altitude: Not more than 2000m;
- Pollution class: ambient pollution class 3.

# WRDQ3-63

## Application

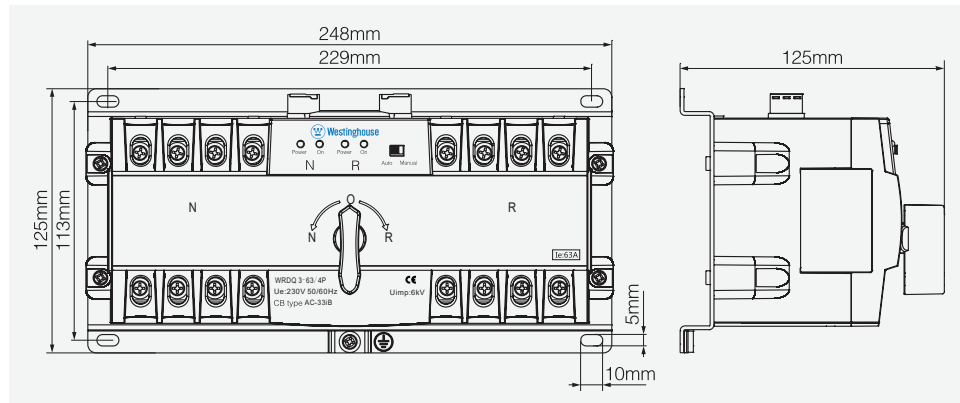


WRDQ3-63 is CB type dual power transfer switch, mainly apply to the two power systems with neutral line earthed and rated current below 63A, rated voltage 230V, 50/60Hz, transfer between two power sources when one power source fault, to ensure the power supply reliable and safety.

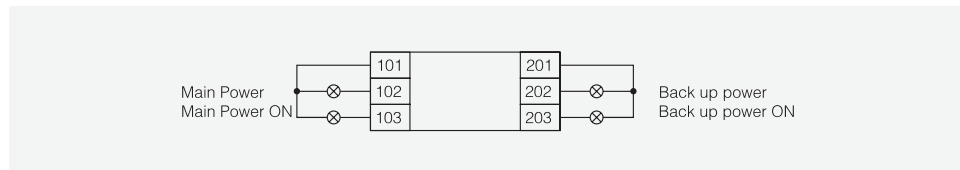
## Technical And Structure Features

WRDQ3-63 Series ATS usage category AC-33iB, electrical appliance grade CB class, its structure comprised with two MCB and accessories, mechanical interlock transmission mechanism, automatic controller, motor operation mechanism etc. Meanwhile the MCB inside the ATS have its original overl o a d and short circuit protection function, can also used as ON/OFF and protection of the main circuit.

## Outline and InstallationDimensions



## Terminal And Wiring Instruction



- 101~103 main power external indicator light
- Signal output (AC220V 0.5A)
- 101- indicator light common null line
- 102- main power signal output
- 103- main power ON signal output

- 201~203 backup power external indicator light
- Signal output (AC220V 0.5A)
- 201- indicator light common null line
- 202- backup power signal output
- 203- backup power ON signal output

## WRDQ3NX-A/B/C/D Series

### Application



The fully new designed WRDQ3NX-A/B/C/D series Auto transfer switch is based on deep development on power transfer switch, make new design to product structure, controller, executive unit, electromagnetic compatibility etc., completely overturned the traditional dual power auto transfer switch design concept. It is a one of the smallest ATS, compact construction, easy for installation; Modularized design, enhance the power supply continuity, energy saving effect is better than other similar product.

### Working Conditions

- Ambient Temperature:  $-5^{\circ}\text{C} \sim +50^{\circ}\text{C}$ , and 24h average not more than  $+50^{\circ}\text{C}$ ;
- Atmospheric conditions: humidity not more than 50% at max.  $+50^{\circ}\text{C}$ , higher humidity is allowed at lower temperature, at most wet month, the average max humidity is 90% at the average min temperature  $+35^{\circ}\text{C}$ , and have considered the condensation on the product surface due to temperature variation.
- Altitude: Not more than 2000m;
- Pollution class : ambient pollution class 3.

### Technical Features

The ATS according to the voltage status of the working power and the working model set by user, decide whether transfer from one power source to another power source. The function depends on the selected controller. The controller have A,B,C,D four types, the main functions and features as followings:

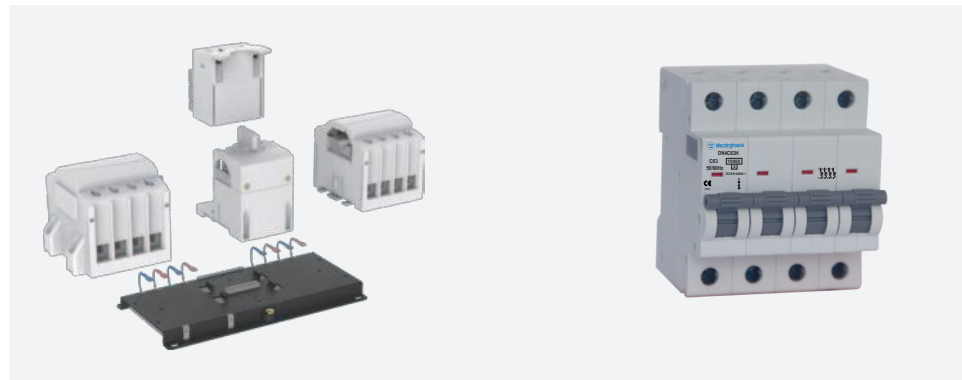
Features	Type	WRDQ3NX-A	WRDQ3NX-B	WRDQ3NX-C	WRDQ3NX-D
Operating power		AC150-265V 50/60Hz			
Installation mode		Integrated			
Working position		Two Position	Three Position	Two Position	Three Position
Operation mode		Auto and Manual	Auto and Manual	Auto and Manual	Auto and Manual
Generator control		No	5A relay contact point	No	5A relay contact point
Fire linkage		No	Passive contact input, With one no passive contact feedback contact	No	Passive contact input, With one no passive contact feedback contact
Transfer mode		Auto change auto recovery	Auto change auto recovery Auto change no auto recovery and Power Grid-Generator	Auto change auto recovery	Auto change auto recovery Auto change no auto recovery and Power Grid-Generator

## WRDQ3NX-A/B/C/D Series

Features	Type	WRDQ3NX-A	WRDQ3NX-B	WRDQ3NX-C	WRDQ3NX-D
Transfer delay		Fixed 0.2s	0~30s adjustable	Fixed 0.2s	0~30s adjustable
Recovery delay		Fixed 0.2s	0~30s adjustable	Fixed 0.2s	0~30s adjustable
Monitored phase		A, N phase monitoring		A, B, C, N Phase monitoring	
Under volt monitor		Yes			
Phase missing monitor		A, N		A, B, C, N	
Use category		AC-33iB (CB Class)			

### Basic Structure

WRDQ3NX-A/B/C/D series ATS is comprised with two MCB and accessories, mechanical interlock transmission mechanism, intelligent controller. It have A、B、C、D four type controller, A type is basic type, B is intelligent type, C/D is improved type, based on A/B type increased with three phase monitoring function, meanwhile the MCB inside the ATS have its original over load and short circuit protection function.



### Product Features

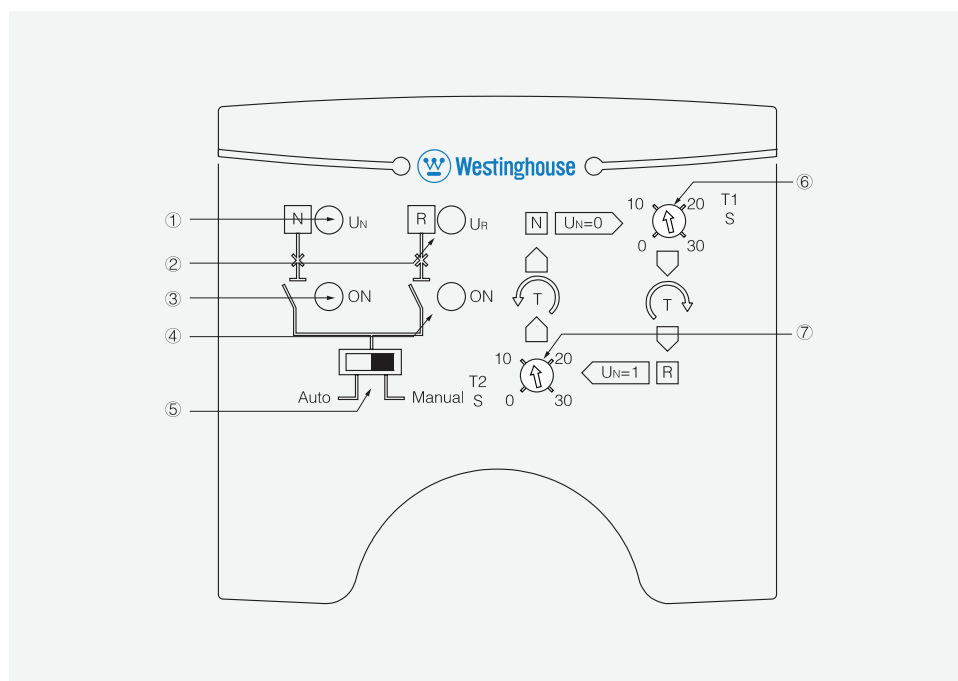
Product with modularized design, executive unit, transmission mechanism, control circuit completely independent, easy for replacement.

- ① : Mechanical transmission device adopt gear transmission, completely eliminate the possibility of closing at same time;
- ② : Compact appearance, it is one of the smallest product on the market;
- ③ : The control circuit layout adopt working power and sampling power separate with single chip control, to overcome the electromagnetic interference from the hardware construction;
- ④ : Working power voltage range: AC200-400V;
- ⑤ : Less power consumption, max. peak power loss 4.8W, only 20% of other similar products;
- ⑥ : Product have complete functions, with generator start, fire linkage, ON delay functions etc.;
- ⑦ : Modularized design, good components interchange performance, easy installation;
- ⑧ : Can use various executive circuit breaker;

## WRDQ3NX-A/B/C/D Series

### Control Panel Functions

- ① : Main power indicator light  
When main power voltage normal, this indicator lighten
- ② : Backup power indicator light  
When backup power normal, this indicator lighten
- ③ : Main power ON indicator light  
When switch on the main power position, this indicator lighten; when during the switch recovery delay status, this indicator flickering
- ④ : Backup power ON indicator light  
When switch on the backup power position, this indicator lighten; when during the transfer delay status, this indicator flickering.
- ⑤ : Auto/Manual transfer mode control switch  
When switch on left side is Auto transfer mode, on the right side is manual transfer mode
- ⑥ : Transfer delay time setting potentiometer ( Main power to backup power transfer delay time )(A/C type without, B/D type have)  
When ATS is on main power ON position, if main power fault and backup power normal, controller start the timing ( the time setting by transfer delay potentiometer), after the timing is over then controller start transfer to the backup power supply; When setting longer time delay can avoid switch transfer due to power grid instant voltage drop ( for example, there is a big size motor start in the same power grid, will cause the voltage drop in a short time period)
- ⑦ : Recovery time delay setting potentiometer ( Backup power to main power transfer delay time) (A/C type without, B/D type have)  
When ATS is on backup power ON position, if main power recovery and normal, controller start the timing ( the time setting by the recovery delay potentiometer), after the timing is over then controller start transfer to the main power supply



## WRDQ3NX-A/C Type Controller

### Basic Structure

This controller is a simple controller developed as per to market demand, have the features of simple operation, suitable functions and display intuitive etc.



### Characteristic

Modularized installation mode with main body.

A, C type controller all have under voltage and voltage missing monitor function.

A, C type controller all can arbitrary interchange with single phase and three phase circuit.

A, C type controller all have Auto/Manual two working mode.

### Technical Data

- Working voltage range: AC150~265V
- Ambient Temperature: -20°C ~+60°C
- Power consumption: ≤5W
- Transfer delay: 0.2s
- Recovery delay: 0.2s

## WRDQ3NX-B/D Type Controller

### Basic Structure

This controller is a multi-function electric monitor device, it is a collection of monitor, analysis, control, protection etc. many functions as a integration, widely used in highly automation genset control system and electric power automatic control system.



### Characteristic

Setting the controller working mode and transfer delay time through the pull switch.

Fire linkage control function: B type controller with a set of passive fire-fighting signal input terminal. The input signal using opto-coupler isolation, have strong anti-interference ability; And also have a set of passive feedback signal output terminals, can send the switching position back to fire-fighting control equipment.

Generator start/stop control function : Controller with a relay contact point to control the generator start and stop.

D type based on B type single phase voltage monitoring change as three phase monitoring.

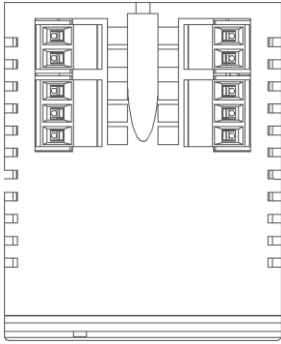
### Technical Data

- Working voltage range: AC150~265V
- Ambient Temperature: -20°C ~+60°C
- Power consumption: ≤5W
- Transfer delay: 0s~30s adjustable
- Recovery delay: 0s~30s adjustable



## WRDQ3NX-A/B/C/D Series

### Terminal Wiring Instruction



- ① : 101、102 three pole switch main power common null line ( can connect to any one )
- ② : 201、202 three pole switch backup power common null line ( can connect to any one )
- ③ : 301~303 main power external indicator light signal output (AC220V 0.5A);

301-Indicator light common null line

302-Main power signal output

303-Main power ON signal output

- ④ : 401~403 backup power external indicator light signal output (AC220V 0.5A);

401-Indicator light common null line

402-backup power signal output

403-backup power ON signal output

- ⑤ : 501~503 Generator start control output terminals

When the backup power is Auto start generator, users can connecting the 501~503 terminals to the generator controller to achieve the generator auto start function, inside 501~503 terminal, there is a set of 3A passive relay contact point, 503 is the relay common terminal, 501 is relay NC point, 502 is relay NO point; When main power normal, 503 and 501 is closed, 503 and 502 open, if main power failure and backup power no electricity, 503 and 502 close, and meanwhile

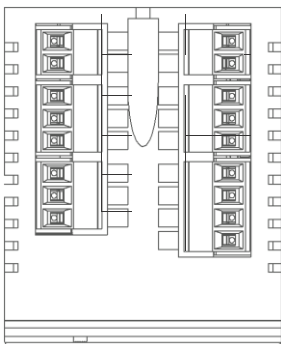
503 and 501 open to send the generator start signal, after generator start successfully, it auto transfer to the backup power supply, during the backup power supply normal and if main power recovery, then after the recovery delay control, it transfers to main power supply, main power circuit breaker ON, then after 3s delay 503 and 501 closed, 503 and 502 open to send generator stop signal.

- ⑥ : 601~604 fire linkage control terminals; These terminals are used for remote control of the switch off the power supply after the fire alarm.

601~602—Fire linkage control signal input terminal, this terminal external only connect to a set of NO passive contact point (if the signal from fire-fighting equipment is an active signal, must first pass through a small relay, then connect the relay NO point to controller, otherwise will burn the controller), when the external contact point closed, the controller immediately control the switch transfer to OFF position to switch off the load power supply, at same time through 603 and 604 terminal to send the signal back to fire-fighting control center;

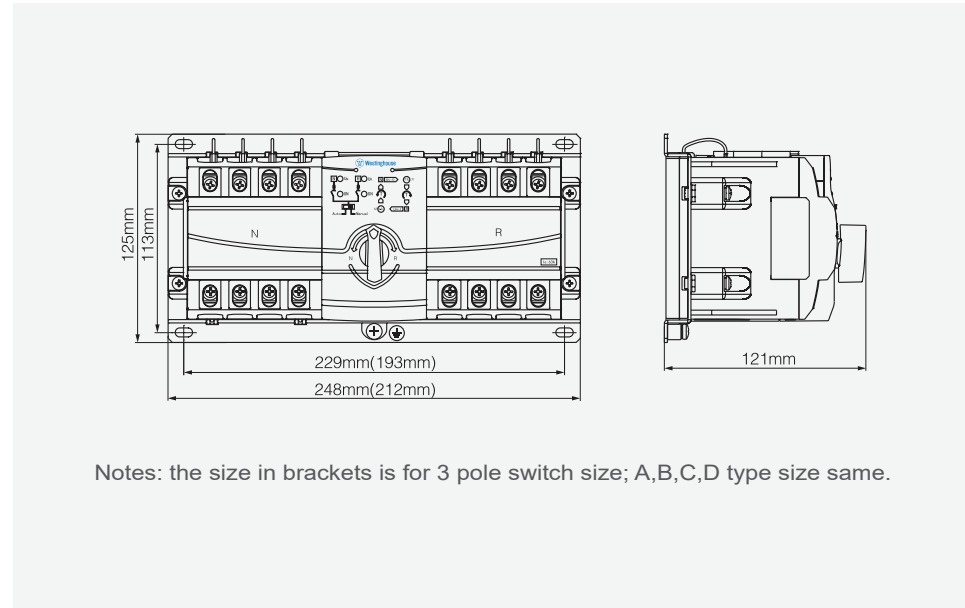
603~604—inside is a set of NO relay contact point, used for sending the fire-fighting movement signal back; When it is normal, the contact is NO status, when there is fire-fighting signal input to the controller, and the switch transfer to OFF position, the 603 and 604 closed.

Notes: when the fire linkage function is active, the ATS will stop working, if want the ATS to working again, must first clear up the fire-fighting signal and then switching the Auto/Manual control switch one time, the ATS will recovery normal working.



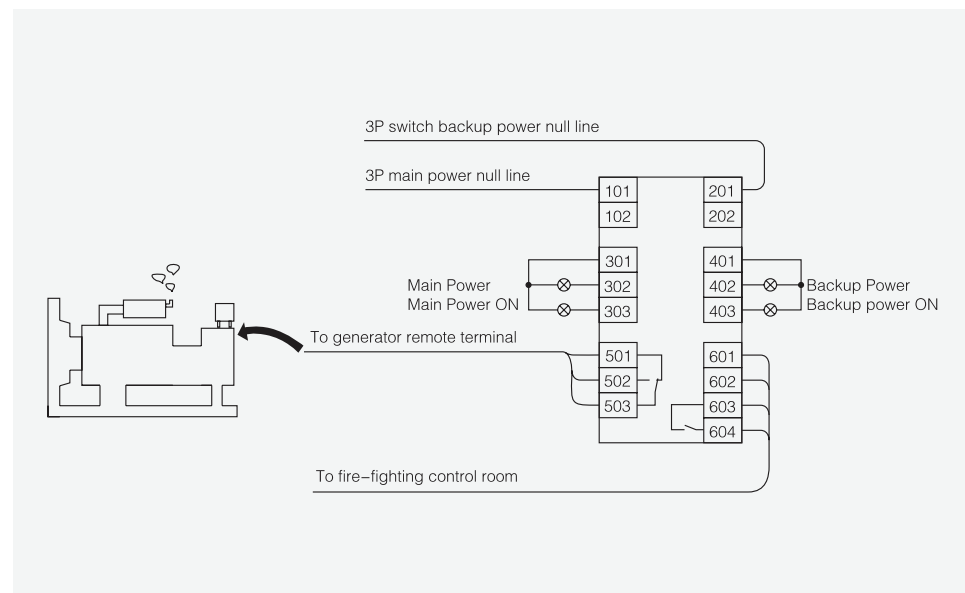
# WRDQ3NX-A/B/C/D Series

## Outline and Installation Dimensions(mm)



2  
DUAL POWER (ATS)

## Terminal Wiring



## WRDQ3CMA Series

### Application

WRDQ3CMA series intelligent dual power auto transfer switch (brief as ATS) suitable for emergency power supply system with rated AC voltage 400V, 50/60Hz. When one power source fault, can auto interchange from main power to backup power, no need manual operation, to protect the power supply stability. Mainly apply to the important place which not allow power cutoff such as Hospital, shopping mall, bank, chemical industry, metallurgy, high building, military facilities and firefighting etc.

### Structure Introduction

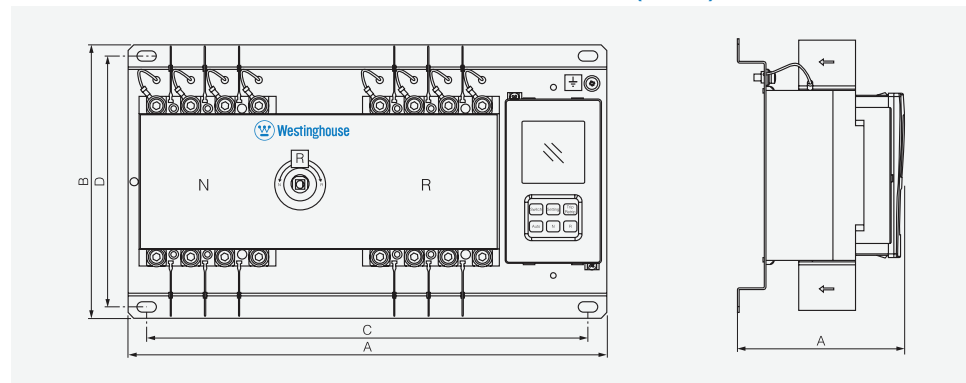
WRDQ3CMA Dual power auto transfer switch use category is AC-33iB, electrical appliance grade is CB class.

WRDQ3CMA ATS comprised with two 3P or 4P MCCB and its accessories (Aux. contact, Alarm contact), Mechanical interlocking transmission mechanism, intelligent controller etc. With integral structure which the controller and executive unit installed at a same base;

The features:

- There is a reliable mechanical interlock device and electric interlock protection between two MCCB, completely avoid the possibility of two MCCB power ON at same time;
- Have short circuit, overload protection functions;

### Outline and Installation Dimensions(mm)



Type - Size	Ref. No	A		B		B		D		H
		3P	4P	3P	4P	3P	4P	3P	4P	
WRDQ3CMA-63	W605150	355	380	24	322	347	220	150		
WRDQ3CMA-100	W605151	390	420	24	357	387	220	150		
WRDQ3CMA-225	W605152	435	470	24	402	437	220	150		
WRDQ3CMA-400	W605153	565	615	33	505	555	300	200		
WRDQ3CMA-630	W605154	682	740	33	622	680	300	200		
WRDQ3CMA-800	W605155	720	790	35	665	735	320	200		

DUAL POWER



# WRDCM-A Economic Type Controller

## Summary

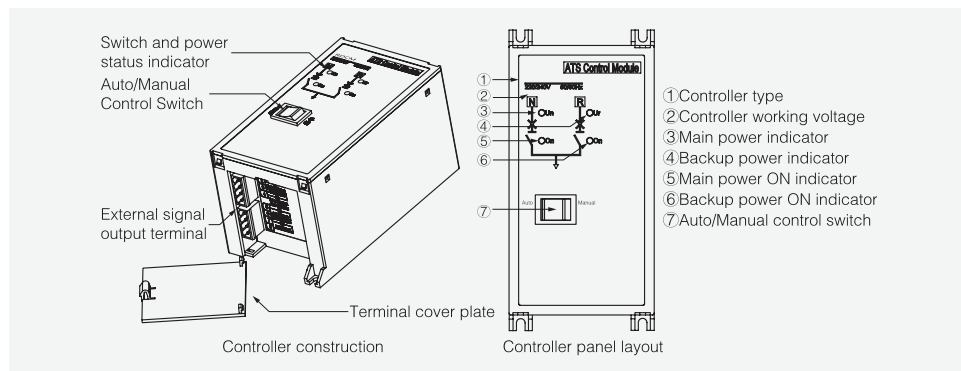
This controller is a simple controller we developed as per to market demand, have the features of simple operation, suitable functions and display intuitive etc., this controller have advantages of stable quality, reliable performance, high anti electromagnetic interference ability etc., widely used in various kind of severe environment with strong electromagnetic radiation and interference.



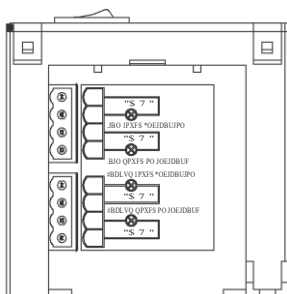
## Technical Data

Working Power	AC150-260V 50/60Hz	Installation Mode	Integral
Power Loss	≤20W	Working Position	Two positions
Ambient temp	-20°C ~+60°C	Operation mode	Auto and Manual
Transfer delay	Fixed 0.5s	Transfer mode	Auto change and Auto recovery
Recovery delay	Fixed 0.5s	Display mode	LED indicator

## Structure Features



## Terminals And Wiring Instruction



- ① : 1~4 Main power external indicator signal ( active AC220V/0.3A)
  - 1-Main power indicator live line
  - 2-Main power indicator null line
  - 3-Main power ON indicator live line
  - 4-Main power ON indicator null line
- ② : 5~8 Backup power external indicator signal (active AC 220V/0.3A)
  - 5-Backup power indicator live line
  - 6-Backup power indicator null line
  - 7-Backup power ON indicator live line
  - 8-Backup power ON indicator null line



## WRDQ3NM Series

### Application

WRDQ3NM Dual Power ATS is a fully new product of our company, by organizes top engineers in two years research and development, grand launch at the end of 2014, completely subvert the traditional dual power ATS design style, leading in the international industrial design concept in the design process, from the product structure, appearance, ergonomic, and control circuit etc., comprehensive improvement of the traditional ATS, so as to make it has the quality of international first-class products and with high competitive price.

WRDQ3NM series intelligent dual power auto transfer switch (brief as ATS) suitable for emergency power supply system with rated AC voltage 400V, 50/60Hz. When one power source fault, can auto interchange from main power to backup power, no need manual operation, to protect the power supply stability. Mainly apply to the important place which not allow power cutoff such as Hospital, shopping mall, bank, chemical industry, metallurgy, high building, military facilities and firefighting etc. Product accord with standard of IEC60947-6-1: «Auto transfer switch», «Civil high building fire-fighting standard», «High building fire-fighting standard», «Civil building electric design standard» etc.

### Working Conditions

- Ambient temperature:  $-20^{\circ}\text{C} \sim +50^{\circ}\text{C}$  ; 24hours average not more than  $+50^{\circ}\text{C}$  ;
- Atmospheric conditions: humidity not more than 50% at max.  $+50^{\circ}\text{C}$  , higher humidity is allowed at lower temperature, at most wet month, the average max humidity is 90% at the average min temperature  $+35^{\circ}\text{C}$  , and have considered the condensation on the product surface due to temperature variation.
- Altitude: Not more than 2000m;
- Pollution Class: The installation site environment pollution Class 3.

### Basic Structure

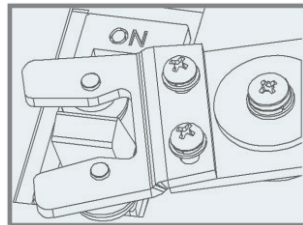
WRDQ3NM series intelligent ATS comprised with two 3P or 4P MCCB and its accessories (Aux. contact, Alarm contact), Mechanical interlocking transmission mechanism, intelligent controller etc. Have integral and split type two structures. Integral type is controller and executive unit installed at a same base; Split type is controller installed on the panel and the executive unit installed on the base inside the panel box, a 2m length signal cable connecting the controller with the executive unit.

The features:

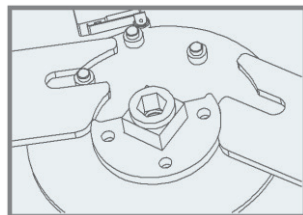
- There is a reliable mechanical interlock device and electric interlock protection between two MCCB, completely avoid the possibility of two MCCB closed at same time;
- Intelligentized controller adopt the single chip microcomputer (SCM) as the control core, simple hardware, strong functions, easy extension, high reliability;
- Intelligent controller circuit layout design adopts power sampling separate with SCM control, from the hardware to overcome the electromagnetic interference;

## WRDQ3NM Series

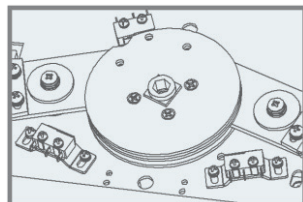
- With short circuit, overload protection functions, over-volt & under-volt phase missing auto transfer function and intelligent alarm function;
- Auto transfer data by external setting freely, with operation motor protect function;
- Signal connecting cable have passed FLUKE instrument channel test, anti near crosstalk, attenuation crosstalk and back wave loss, can meet the test criteria for permanent link;
- The ATS controller installation method provide customer with highly autonomy, split installation only needs simply connect the attached RJ45 signal cable to the corresponding terminal port;
- The controller part based on the previous similar product, have made enhancement process of the electronic components makes it more matching with the product operation.
- Product appearance lead in international design concept, more elegant and practical.
- Mechanism innovation made following improvements:



The push handle adopt adjustable slider structure design, have more wide circuit breakers ON/OFF travelling distance, make the production process more simple.



Optimized cam transmission mechanism design ensures the reliability of mechanical interlock and at same time makes the mechanical life more than 10000 times.



Adopt mechanical positioning detect structure, make the ATS switching more accuracy and reliable during fire linkage.

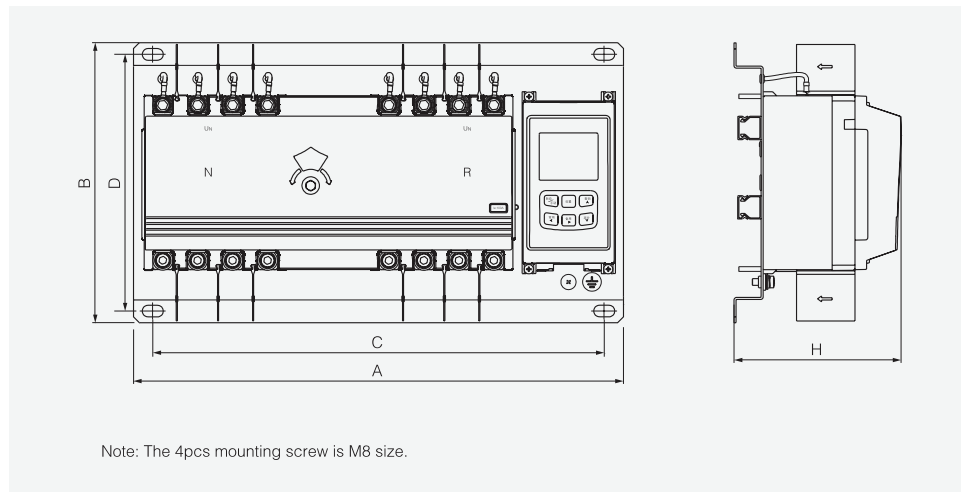
# WRDQ3NM Series

## Working Mode



- WRDQ3NM series intelligent dual power ATS have two working mode: Auto mode and Manual mode.
- Auto Mode: WRDQ3NM series ATS according to the controller functions have three modes: Auto change Auto recovery (R) Auto change no auto recovery (S) and Power Grid-Generator (F), the first two mode used in power grid-power grid system, the latter mode is used in power grid-generator system.
- Manual mode: manual mode has three working mode, main power, backup power and breaker trip modes. Under manual working mode, there will be no auto transfer function.
  - Main power mode: Forced disconnecting backup power, and turn ON the main power;
  - Backup power mode: Forced disconnecting the main power and turn ON the backup power;
  - Breaker trip mode: To disconnecting two power sources, also can switch on the fault tripped circuit breaker.

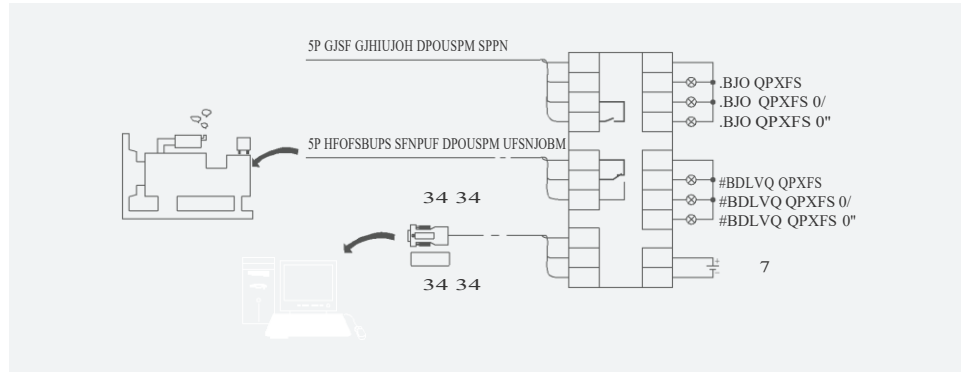
## Outline and Installation Dimensions(mm)



Type	Size	Ref. No	A		B	C		D	H
			3P	4P		3P	4P		
WRDQ3NMB-63		W605156	355	380	240	322	348	220	145
WRDQ3NMB-100		W605157	390	420	240	358	388	220	145
WRDQ3NMB-225		W605158	435	470	240	402	438	220	145
WRDQ3NMB-400		W605159	565	615	330	505	555	300	200
WRDQ3NMB-630		W605160	682	740	330	622	680	300	200
WRDQ3NMB-800		W605161	720	790	350	665	735	320	200
WRDQ3NMB-1250		W605162	730	800	390	685	755	367	252

# WRDQ3NM Series

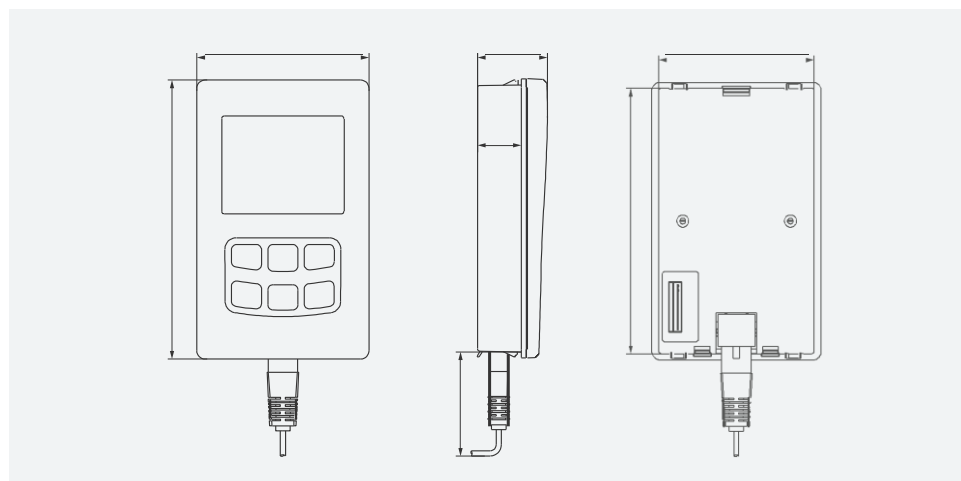
## Terminal Wiring



## Controller Features and Functions

- This product adopts B type controller;
- Can set the controller working mode and transfer data by the control button;
- Through the display can directly read the measuring and control data, including the voltage and delay time etc.
- Fire linkage control function: controller with a set of passive fire-fighting signal input terminal. The input signal using opto-coupler isolation, have strong anti-interference ability; And also have a set of passive feedback signal output terminals, can send the switching position back to fire-fighting control equipment.
- Generator start/stop control function: Controller with a relay contact point to control the generator start and stop, and also can manually setting the generator start/stop delay time (need connect a aux. power with DC15-30V);
- Can remove the display panel and install on the switchgear panel, users can observe the ATS status without open the switchgear doors.

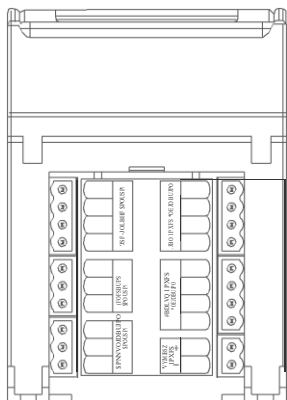
## Split Controller Outline and Mounting Size(mm)





## WRDQ3NM Series

### Terminal Wiring Instruction



- 101~104 Main power external indicator signal (Active AC220V/0.5A)
  - 101-Indicator common null line 102-Main power indicator signal output
  - 103-Main power ON signal output 104-Main power trip signal output
- 201~204 Backup power external indicator signal (Active AC220V/0.5A)
  - 201-Indicator common null line 202-Backup power indicator signal output
  - 203-Backup power ON signal output 204-Backup power trip signal output
- 301~302 Controller DC aux. power input (DC15V~30V/0.5A)

The main purpose to put an aux. power is to control the generator start delay time under the Power Grid-Generator mode, if without aux. power, the generator start delay time is 0s, if the generator starts delay function not needed, then no need to connect the aux. power.

- 401~404 Fire linkage control terminal; Used to remote control cutoff the ATS power supply after the fire alarm.

401, 402 Fire linkage control signal input terminal, this terminal external only connect to a set of NO passive contact point (if the signal from fire-fighting equipment is an active signal, must first pass through a small relay, then connect the relay NO point to controller, otherwise will burn the controller), when the external contact point closed, the controller immediately control the switch transfer to OFF position to switch off the load power supply, at same time through 403 and 404 terminal to send the signal back to fire-fighting control center;

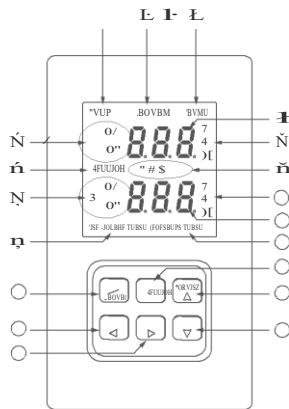
403, 404 Inside is a set of NO relay contact point, used for sending the fire-fighting movement signal back; when it is normal, the contact is NO status, when there is fire-fighting signal input to the controller, and the switch transfer to OFF position, the 403 and 404 closed. (Notes: when the fire linkage function is active, the ATS will stop working, if want the ATS to working again, must first clear up the fire-fighting signal and then switching the Auto/Manual control switch one time, the ATS will recovery normal working)

- 501~503 Generator start control output terminals

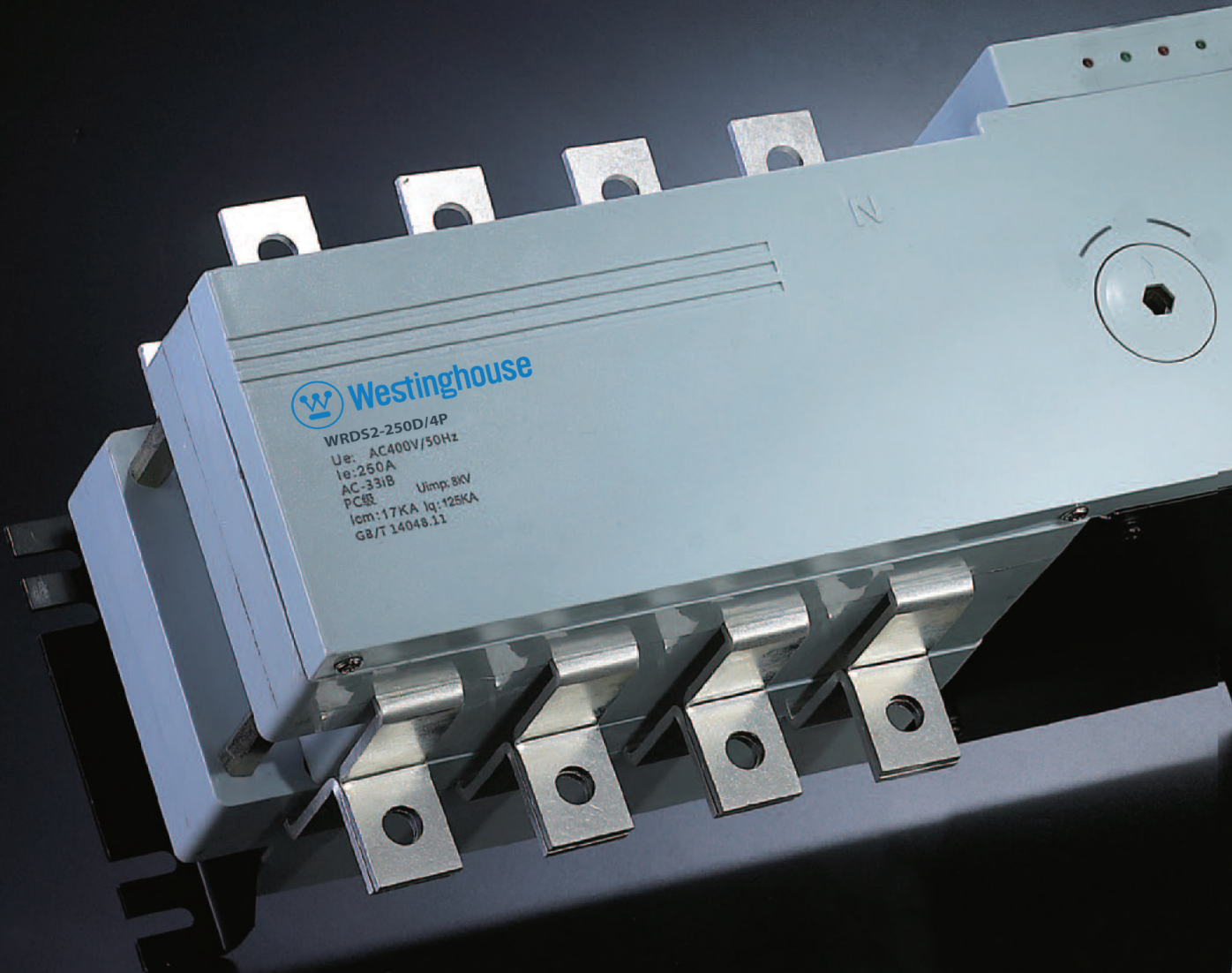
When the backup power is Auto start generator, users can connecting the 501~503 terminals to the generator controller to achieve the generator auto start function, inside 501~503 terminal, there is a 3A passive relay contact point, 502 is the relay common terminal, 503 is relay NC point, 501 is relay NO point; Under Power grid-Generator mode and controller is auto mode, when main power normal, 502 and 501 is closed, 502 and 503 open, if main power failure and backup power no electricity, 502 and 503 closed after generator start delay time, and meanwhile 502 and 501 open to send the generator start signal, after generator start successfully, it auto transfer to the backup power supply, during the backup power supply normally and if main power recovery, then after the recovery delay time control, it transfer to main power supply, main power circuit breaker ON, then after generator stop delay time 502 and 501 closed, 502 and 503 open to send generator stop signal.

# WRDQ3NM Series

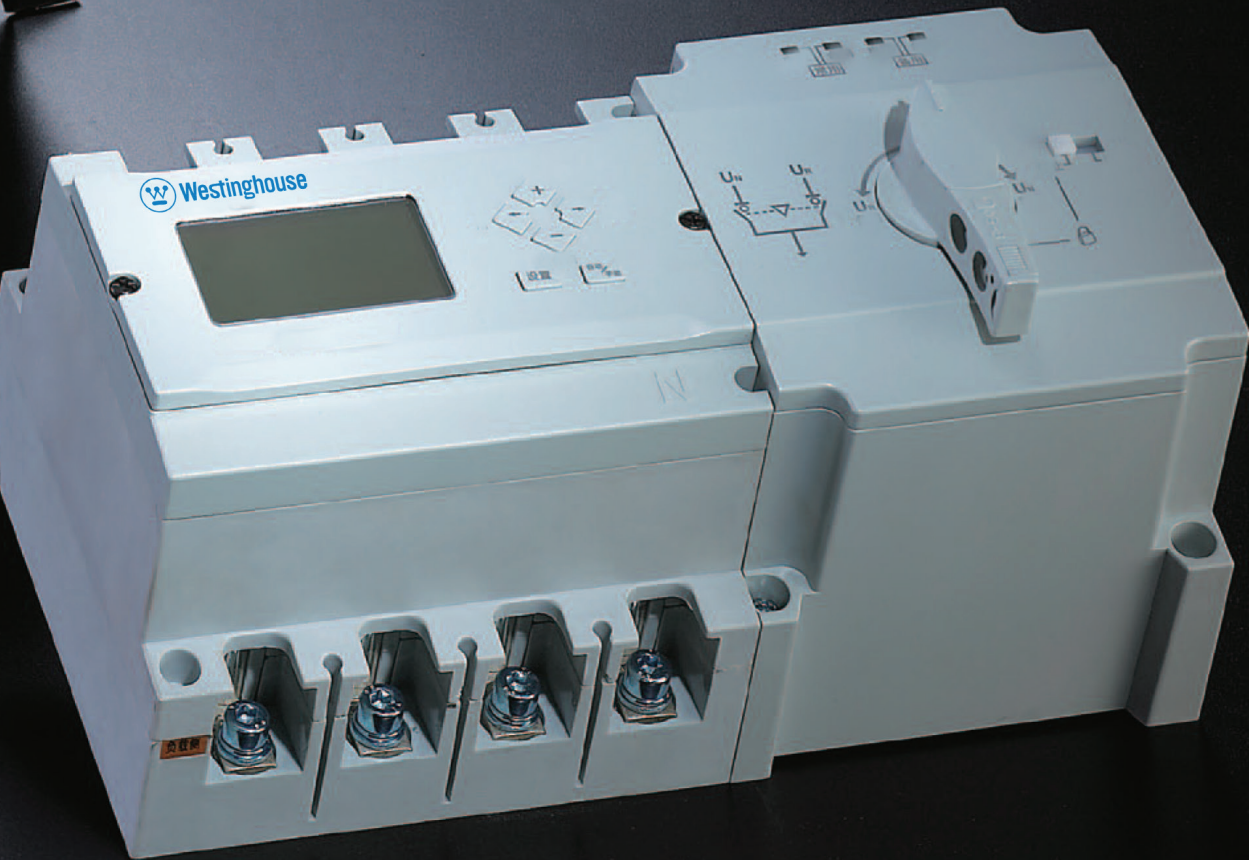
## Controller Panel Functions



- 1.Auto mode indication;
- 2.Manual mode indication;
3. Fault indication: When ATS is fault or load short circuit causes the circuit breaker trip, this indicator will lighten;
- 4.Main power voltage data indication zone: under working status, it displays the main power voltage and time delay, under setting status, it displays the item code;
- 5.Main power circuit breaker ON/OFF indicate;
- 7.Backup Power circuit breaker ON/OFF indicate;
- 8.Fire linkage function start indicate;
- 9.Main power voltage, time and frequency unit;
- 10.A, B, C phase indicate;
- 11.Backup power voltage, time and frequency unit;
- 12.Backup power voltage data indication zone:  
under working status, it displays the backup power voltage and time delay, under setting status, it displays the item code;
- 13.Generator start signal indicate;
- 14.Auto/Manual mode select button:  
under working status, it used to select the Auto and Manual mode, under the setting status it used as save and escape function;
- 15.Main power transfer button:  
under manual control mode and main power good, push this button will forced to transfer to main power; Under setting status, it used for up page button;
- 16.Backup power transfer button:  
under manual control mode and backup power good, push this button will forced to transfer to backup power; Under setting status, it used for down page button;
- 17.Trip button:  
under manual control mode if any one of the two power is good, push this button will change to OFF position; under setting status it is used for data reduce button;
- 18.Fault inquiry button:  
if the fault indicator is lighten on the display, through this button can check the fault code; under setting status, it is used for data increase button;
- 19.Setting button:  
push this button will enter the controller setting menu.



# DUAL POWER AUTOMATIC TRANSFER SWITCH



## WRDS2 Series

### Application



WRDS2 Series Auto transfer switch mainly used for electric distribution network or motor network with rated voltage 380V, 50Hz, DC rated voltage 220V, rated current 16A to 3200A, change over between main power and backup power system, power grid and genset. Meanwhile can be used as isolation of unfrequency making and breaking circuit.

It is widely used in the transmission and distribution system and automation system of the important place which not allow power cutoff such as firefighting, Hospital, Bank, high building etc.

WRDS2 Series ATS accord to the following standard:

International:

IEC60947-1(2001) 《Low voltage switchgear and controlgear, part one: General Rules》

IEC60947-3(2005) 《Low voltage switchgear and controlgear, switch, isolator and combined fuse switch etc.》

IEC60947-6-1 (2005) 《Low voltage switchgear and controlgear multi-function switch: auto transfer switch etc. 》

### Model Meanings

WR DS 2 - □ / □  
 ↓ ↓ ↓ ↓ ↓  
 ① ② ③ ④ ⑤

①	Company code
②	Dual power ATS
③	Design code
④	Rated Current
⑤	Poles (3, 4)

### Working Conditions

Ambient temperature: -20°C ~+50°C; 24hours average not more than +50°C ;

Atmospheric conditions: humidity not more than 50% at max.+50°C, higher humidity is allowed at lower temperature, at most wet month, the average max humidity is 90% at the average min temperature +35°C , and have considered the condensation on the product surface due to temperature variation;

Altitude: Not more than 2000m;

Pollution Class: The installation site environment pollution Class 3.

# WRDS2 Series

## Main Technical Parameters

WRDS2-100-3200A series Auto transfer switch electric properties and mechanical properties

Rated Thermal Current I <sub>th</sub>	100A						250A				630A		1000A		1600A		2000A	2500A	3200A	
	3Pole Ref.No	W605272	W605273	W605274	W605275	W605276	W605277	W605278	W605279	W605280	W605281	W605282	W605283	W605284	W605285	W605286	W605287	W605288	W605289	W605290
4Pole Ref.No	W605291	W605292	W605293	W605294	W605295	W605296	W605297	W605298	W605299	W605300	W605301	W605302	W605303	W605304	W605305	W605306	W605307	W605308	W605309	
Rated Current I <sub>n</sub> (A)	16	20	40	63	80	100	125	160	200	250	400	630	800	1000	1250	1600	2000	2500	3200	
Rated insulation voltage U <sub>i</sub> (V)	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	1000	1000	1000	
Dielectric strength (V)	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	10000	10000	10000	10000	10000	10000	10000	
Rated impulse withstand voltage U <sub>imp</sub> KV (installation category)	8	8	8	8	8	8	8	8	8	8	12	12	12	12	12	12	12	12	12	
Rated Working current I <sub>e</sub> (A) AC-33iB	16	20	40	63	80	100	125	160	200	250	400	630	800	1000	1250	1600	2000	2500	3200	
Rated short time withstand current I <sub>sw</sub> (kA Rms)0.1S/1S	9/5	9/5	9/5	9/5	9/5	9/5	12/25	12/25	12/25	12/25	40/20	50/25	90/50	90/50	90/50	90/50	50	50	55	
Rated Breaking capacity (A Rms) AC-33iB 380V	128	160	320	500	640	800	1000	1280	1600	2000	3200	5000	6400	8000	10000	12800	16000	20000	25600	
Rated Making capacity (A Rms) AC-33iB 380V	160	200	400	630	800	1000	1250	1600	2000	2500	4000	6300	8000	10000	12500	16000	20000	25000	32000	
Transfer Time	I-0-II	0.5	0.5	0.5	0.5	0.5	1	1	1.1	1.1	1.2	1.2	1.2	1.2	1.2	1.2	2.4	2.4	2.4	
	I-0-II (S)																			
	I-0 II-0(S)	0.3	0.3	0.3	0.3	0.3	0.6	0.6	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.8	1.6	1.6	1.6	
Weight (kg)	3Poles	4.15	4.15	4.25	4.35	4.45	4.45	8.2	8.2	10.4	10.4	17.8	19	28	31	31	34	-	-	-
	4Poles	4.2	4.2	4.3	4.4	4.5	4.5	8.7	8.7	11.3	11.3	20.2	22	32	36	36	40	95	98	135
Use category	AC-33iB(PC)																			

## WRDS2 Series

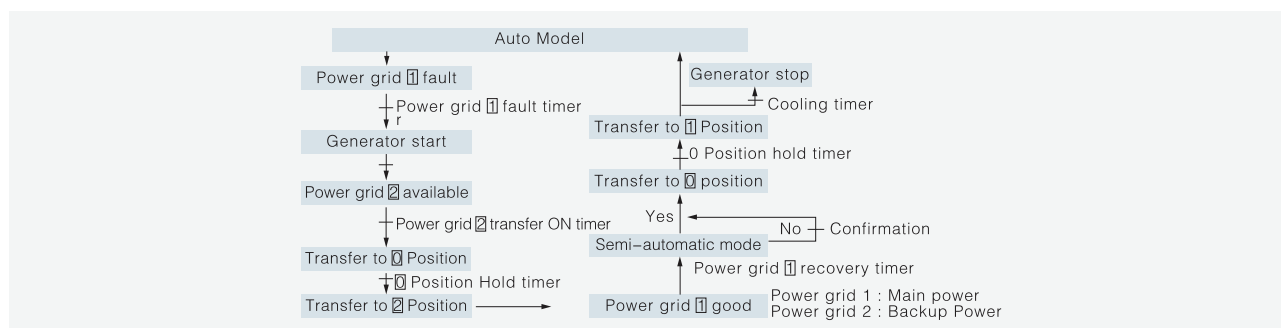
### Performance And Characteristic

- It adopted double complex contact/ horizontal pulling mechanism/micro motor energy pre storage and micro-computer control technology, basically come to Zero arc (no arcing chamber);
- Adopted reliable mechanical interlock and electric interlock, executive unit adopt independent load disconnect switch, it makes more reliable and safety;
- Adopt "Zero Position" technology, it can force to set to Zero Position under emergency situation (cut off two way power supply, meet the fire linkage requirements);
- Load disconnect switch change over adopt singleness motor drive, switch over smooth and reliable, no noise, little impact;
- The driving motor have instant current across only under the load disconnect switch change over, stable working status no need to provide the working current, outstanding energy saving;
- Executive load disconnect switch have mechanical interlock, make sure the Normal power and Reserve Power working reliable and no interference;
- Distinct ON and OFF position indicator, padlock function etc., make reliable and safe isolation between power supply and loading.
- High security, high automatization, high reliability, working life more than 8000 times;
- Electromechanical integration design, accuracy change over, flexible, smoothly, adopt international advanced logical control technology, high anti-interference ability, no interference outward.
- Have main power ON, backup power OFF; main power OFF, backup power ON; main and backup power OFF; three working mode (I-o-II);
- Easy installation, control circuit adopt plug type terminal connection;
- Four operating functions: Emergency manual, motor remote control, emergency OFF under auto control status, auto control operation.

### Basic Type Switch Control Characteristic

- Suitable for two way main and backup power system, auto change auto recovery;
- Can expand functions by outer connection;
- Auto, Remote, Manual control functions;
- Delay 0.5s signal detect, avoid miss actuation;
- Under Auto control status have "O" position remote control;
- Key switch select the operating mode;
- Can with RS-485 communication port ( optional), according to customer required.

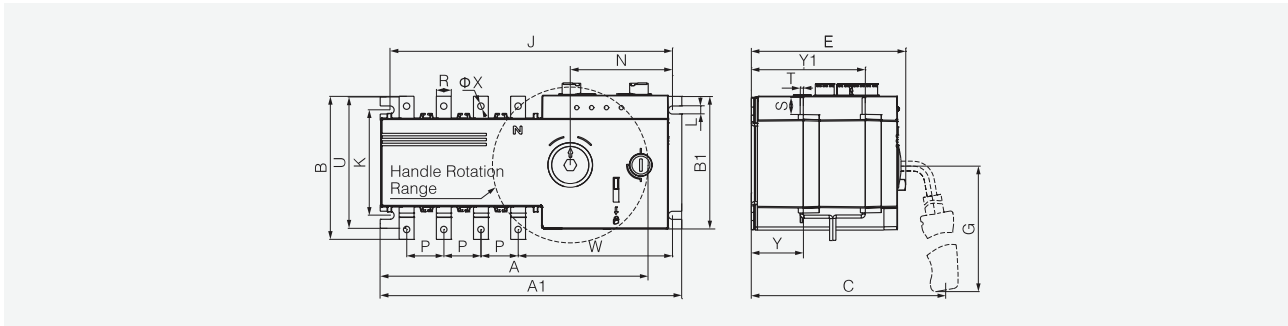
### ATS Working Flow



# WRDS2 Series

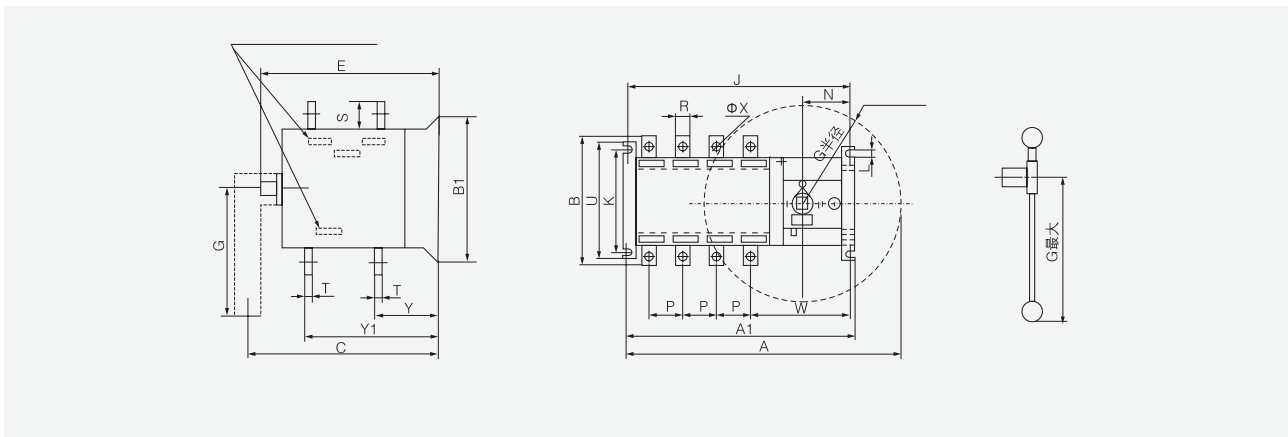
## WRDS2-100 - 1600A Auto Transfer Switch

- WRDS2-16A~630A outline and mounting size



Specification	Outline and mounting size (mm)																			
In	A	A1	B	B1	C	E	G	J	K	L	N	P	R	S	T	U	W	ΦX	Y	Y1
100A	330	244	115	107	182	125	174	228	85	6.5	83	30	12	18	(2.5)5	99	125	5.2	42	92
250A	436	436	178	134	240	198	174	344	108	7	99	50	24	30	(3.5)7	148	173	11	72	157
630A	502	433	260	222	282	244	174	416	176	9	101	65	40	50	(5)10	222	185	12	83	193

- WDS2 -800A-1600A outline and mounting size



Specification	Outline and mounting size (mm)																			
In	A	A1	B	B1	C	E	G	J	K	L	N	P	R	S	T	U	W	ΦX	Y	Y1
800A/3	871.5	524	340	250	387	319.5	448	499	212	11	88	120	60	69	8	250	198.5	12.5	84	252
800A/4	975.5	637.5	340	250	387	319.5	448	612.5	212	13	88	120	60	69	8	250	207	12.5	107	252
1000A/3	871.5	524	340	250	387	319.5	448	499	212	13	88	120	60	69	8	250	198.5	12.5	107	252
1000A/4	975.5	637.5	340	250	387	319.5	448	612.5	212	13	88	120	60	69	8	250	207	12.5	107	252
1250A/3	871.5	524	369	250	387	319.5	448	499	212	13	88	120	60	69	8	250	198.5	13	107	252
1250A/4	975.5	637.5	369	250	387	319.5	448	612.5	212	13	88	120	60	69	8	250	207	13	107	252
1600A/3	871.5	524	376	250	387	319.5	448	499	212	13	88	120	60	69	10	250	198.5	13	109	253.5
1600A/4	975.5	637.5	376	250	387	319.5	448	612.5	212	13	88	120	60	69	10	250	207	13	109	253.5

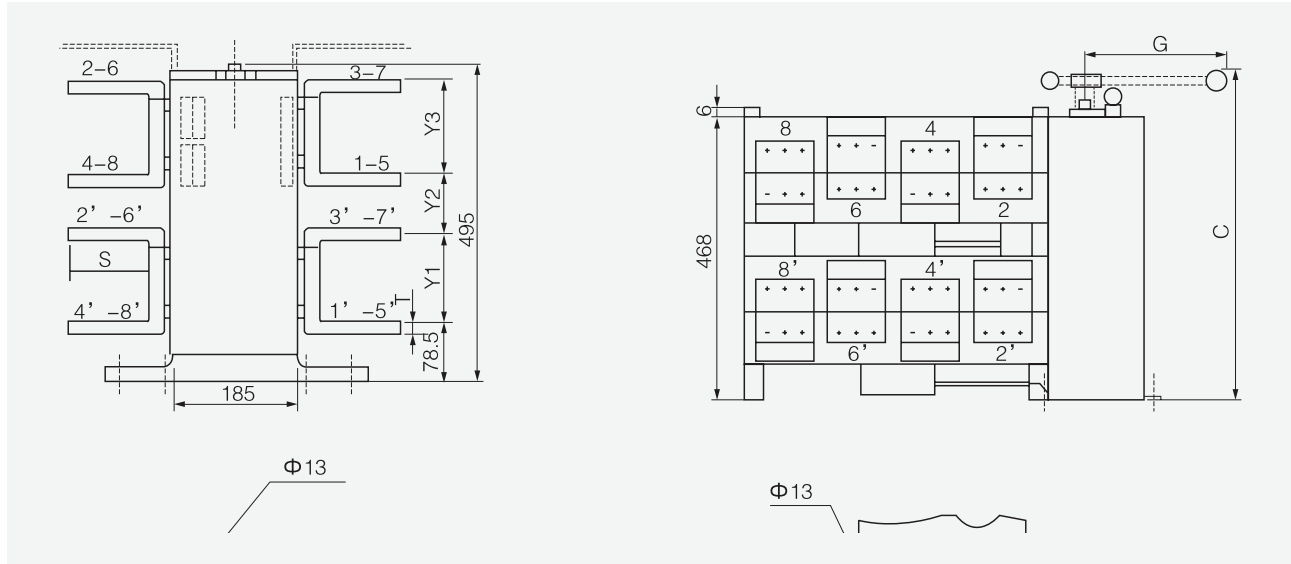


# WRDS2 Series

## WRDS2-2000-3200A Outline and Installation Size

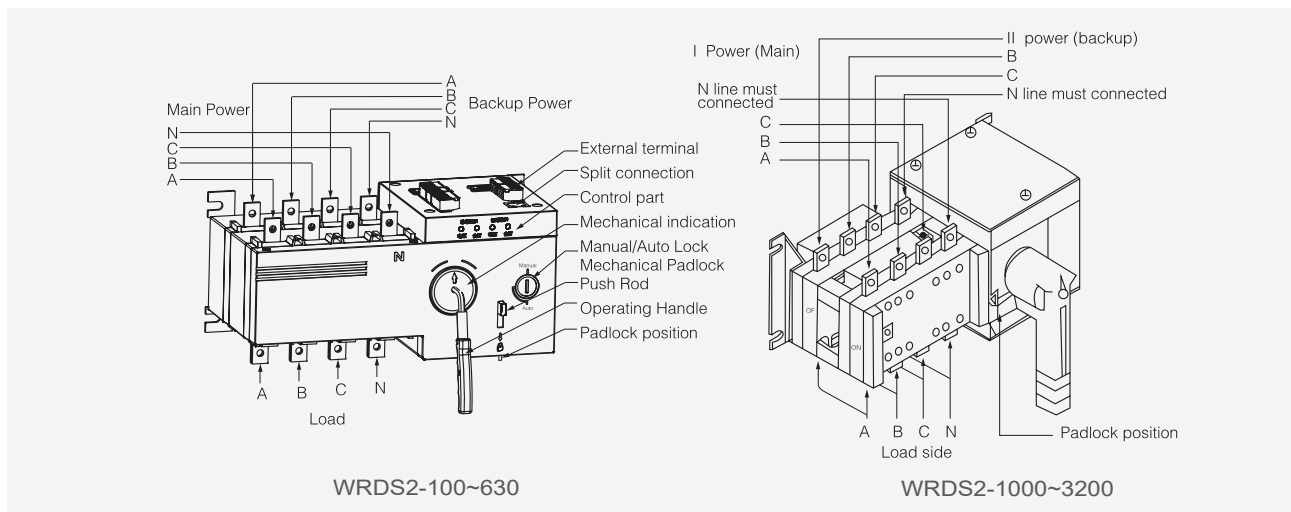
- WRDS2-2000-3200A outline and installation size

2  
DUAL POWER (ATS)



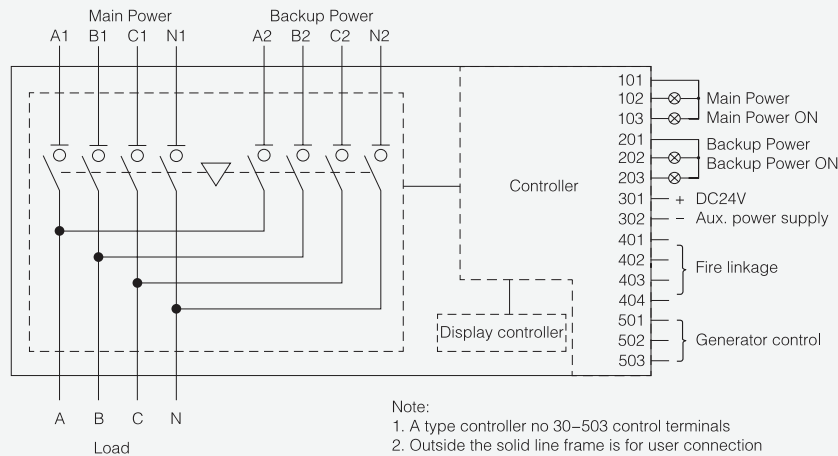
Spec	Size						Switch Installation						Terminal								
	A	A1	B	C	E	G	H	J	K	L	N	O	P	R	S	T	U	V	Y	Y1	Y3
2000A	1007	633	455	562	495	470	53	467	220	11	84.5	524	120	80	80	10	250	33	147	84	147
2500A	1007	633	455	562	495	470	28	467	220	11	84.5	524	120	80	100	10	250	13	152	79	152
3200A	1007	633	505	562	495	470	28	467	220	11	84.5	524	120	100	100	14	250	13	152	79	152

## Wiring Instruction

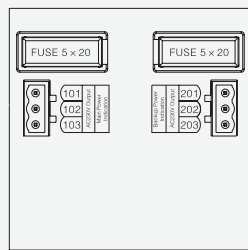


# WRDS2 Series

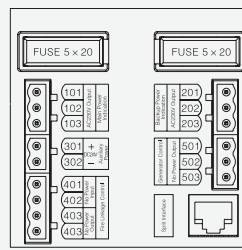
## WRDS2-100-630A Auto Transfer Switch Control And Operation (Suitable For Rated Current 16A~630A)



Note:  
1. A type controller no 30-503 control terminals  
2. Outside the solid line frame is for user connection



A type Controller



B Type Controller

101~103 : main power external indicator signal ( Active AC230V/0.5A)

101- Indicator common null line 102- Main power indicator signal output 103- Main power ON signal output

201~203 : Backup power external indicator signal (Active AC230V/0.5A)

201- Indicator common null line 202- Backup power indicator signal output 203- Backup power ON signal output

301~302 : DC 24V aux. power input for generator start

301- DC24V positive input 302-DC24V negative input

401,404 : Fire linkage control 5 signal input and feedback signal output

401,402 : Fire linkage control signal passive input, if the signal from fire-fighting equipment is an active signal, must first connect to a small relay, then connect the relay NO point to 401,402, after NO contact closed ATS transfer to OFF position.

403,404 : Feedback signal for ATS transfer to OFF position cutoff the load power supply

Notes: when the fire linkage function is active, the ATS will stop working, if want the ATS to working again, must first clear up the fire-fighting signal and then switching the Auto/Manual control switch one time, the ATS will recovery normal working

501~503 : Generator start control signal output

When the backup power is Auto start generator, users can connecting the 501~503 terminals to the generator controller to achieve the generator auto start function, inside 501~503 terminal, is a set of passive relay contact point, 502 is the relay common terminal, 503 is relay NC point, 501 is relay NO point; when main power normal, 501 and 502 is closed, 503 and 501 open, if main power failure 501 and 502 open, meanwhile 503 and 502 closed, to send generator start signal.

# WRDS2 Series

## WRDS2-1000-1600A Auto Transfer Switch Control And Operation (Suitable For Rated Current 800A ~1600A)

2 DUAL POWER (ATS)

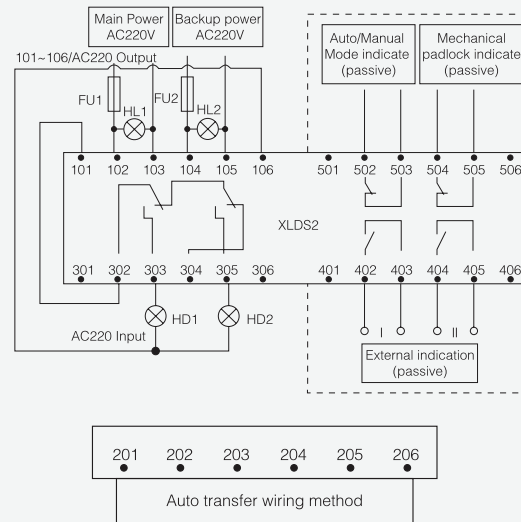
- Basic type terminals

Output connection	Interior	Connector terminal color
AC200V — 101 I AC200V — 102 — 103 — 104 II Ac200 — 105 — 106 0 —	Interior output Second power	
Common Point — 201 — 202 Position I — 203 Position 0 — 204 Position II — 205 — 206	Control	
Common point — 301 — 302 Position I — 303 Position 0 — 304 Position II — 305 — 306	Position indicate	
— 401 — 402 — 403 Position I — 404 — 405 Position II — 406	The 1 break Aux. contact	
"Manual" contact open — 501 "Auto" contact closed — 502 "Padlock" contact open — 503 "No padlock" contact closed — 504 Mode — 505 Padlock — 506	Indicate Auto/Manual Mode and padlock	
Main power ON Contact open — 601 Main power fault contact closed — 602 Genset start — 603 — 604 — 605 — 606	(Special use for genset) Control	

# WRDS2 Series

## Automatic Wiring Method (Suitable For Rated Current 800~3200A)

- HL1 Main power good indication;
- HL2 Backup power good indication;
- HD1 Main Power ON indication;
- HD2 Backup power ON indication;
- FU1/U2 is 2A fuse.
- 101-106, 201-206, 301-306 is WRDS2 switch terminal.
- 401-406, 501-506 optional switch terminal for up 630A rating.

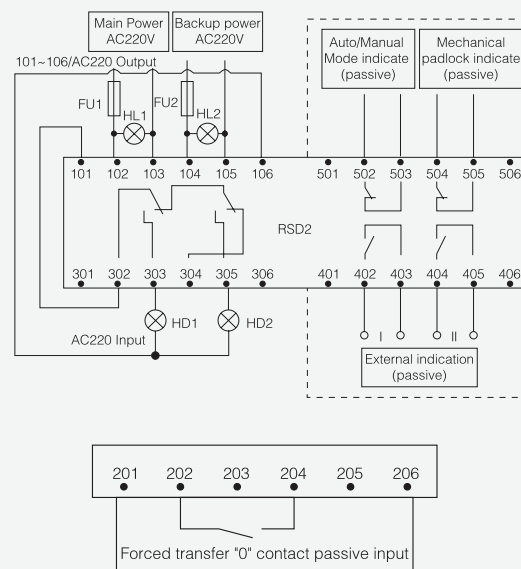


2

DUAL POWER (ATS)

## Auto+Forced Change "0" Position ( For Rated Current 800~3200A ) ( Fire-Fighting Dual Power Source Off) Wiring Drawing

- HL1 Main power good indication;
- HL2 Backup power good indication;
- HD1 Main Power ON indication;
- HD2 Backup power ON indication;
- FU1/U2 is 2A fuse.
- 101-106, 201-206, 301-306 is WRDS2 switch terminal.
- 401-406, 501-506 optional switch terminal for up 630A rating.





## WRDS3 Series

### Application

WRDS3 Series PC class dual power Auto transfer switch, mainly used in two way power supply system with rated voltage below 400V, AC 50/60Hz, rated current up to 630A, when one power supply abnormal, then it transfer between two power supply system, to ensure the power supply reliability and safety.

The ATS have " Main Power", "Backup Power" and "Two way OFF" positions, with higher breaking and making capacity, it not only can meet normal load transfer, but also can meet high inductive impedance or big motor load transfer, meanwhile due to have high short time withstand current capacity, no need special SPCD, doesn't affect the selective of inside circuit, meanwhile it also can meet the application at big capacity power supply side.

《Low voltage switch equipment and control equipment Part 6-1: multi-funtional transfer switch equipment》 Standard.

### Model Meanings

WR DS 3 - 125 C 4P  
 ↓ ↓ ↓ ↓ ↓ ↓  
 ① ② ③ ④ ⑤ ⑥

①	Company code
②	PC class auto transfer switch equipment
③	Design code
④	Rated working current
⑤	Controller type A: Basic type Single phase monitor B: Standard type three phase monitor+fire-fighting ,generator control C: Intelligent type three phase monitor+fire-fighting,generator control+LCD display D: Intelligent type three phase monitor+fire-fighting, generator control+split LCD display
⑥	Poles (3P,4P)

### Working Conditions

- Ambient temperature: -20°C ~+50°C ; 24hours average not more than +50°C ;
- Atmospheric conditions: humidity not more than 50% at max. +50 °C , higher humidity is allowed at lower temperature, at most wet month, the average max humidity is 90% at the average min temperature +35°C , and have considered the condensation on the product surface due to temperature variation;
- Altitude: Not more than 2000m;
- Pollution Class: The installation site environment pollution Class 3.

# WRDS3 Series

## Technical Data

Type	WRDS3-125	WRDS3-250	WRDS3-630
3 Pole Ref.No	W605310	W605311	W605312
4 Pole Ref.No	W605313	W605314	W605315
Poles	3/4	3/4	3/4
Rated Working current (A) Ie	16-125	140-250	315-630
Rated working voltage (V) Ue	400	400	400
Rated insulation voltage (V)Ui	800	800	800
Rated impulse withstand voltage (KV) Uimp	8	8	8
Use category	AC-33B	AC-33B	AC-33B
Rated short time withstand current(KA, rms)Icw	10kA(200mS)	10kA(200mS)	25kA(200mS)
Rated short circuit Making capacity (KA peak)Icm	20kA	30kA	50kA
Rated limit short circuit current (KA)Iq	120kA	120kA	120kA
Rated control power supply voltage (V) Us	230V/50Hz	230V/50Hz	230V/50Hz
Contact transfer time (s)	1.5	1.8	2
Operation cycles	no electricify	8500	7000
	with electricify	1500	1000
	Total	10000	8000
Outline size (mm) WxDxH	245×130×122	295×175×175	430×272×228
Weight (kg)	5	10	20

## ATS Functions List

Type	A type controller	B type controller	C type controller	D type controller
Control power voltage	AC 230V/50Hz			
Auto transfer	Auto transfer and auto recovery	Auto transfer auto recovery, auto transfer no auto recovery, power grid-generator		
Manual transfer	Manual main power, manual backup power, manual OFF			
Isolation lock	Off position have isolation function, also can padlock locked			
Generator control	-	Generator start and stop		
Fire linkage	-	with passive fire linkage signal to switch OFF the device, with one set passive NO feedback contact		
Display mode	Mechanical indication: device ON/OFF status, operating mode LED: device ON/OFF status, power status		Mechanical indication: device ON/OFF status, operating mode LED: device ON/OFF status, power status LCD: device ON/OFF status, power status, data setting	
Setting mode	-		Key-press operation, Chinese/English display interface, can set the working mode, low-voltage value, over-voltage value, delay time, auto transfer mode etc.	
Power monitoring	A phase voltage missing monitor	ABC three phase over-voltage 265V ABC three phase low-voltage 187V ABC three phase voltage missing monitor	ABC three phase over-voltage (240-290V adjustable) ABC three phase low-voltage (150-200V adjustable) ABC three phase voltage missing monitor	
Delay time	-		Transfer delay (0-300s adjustable) Recovery delay (0-300s adjustable) Generator start, stop delay (0-300s adjustable)	
Mounting mode	Integrated mounting		Split mounting	

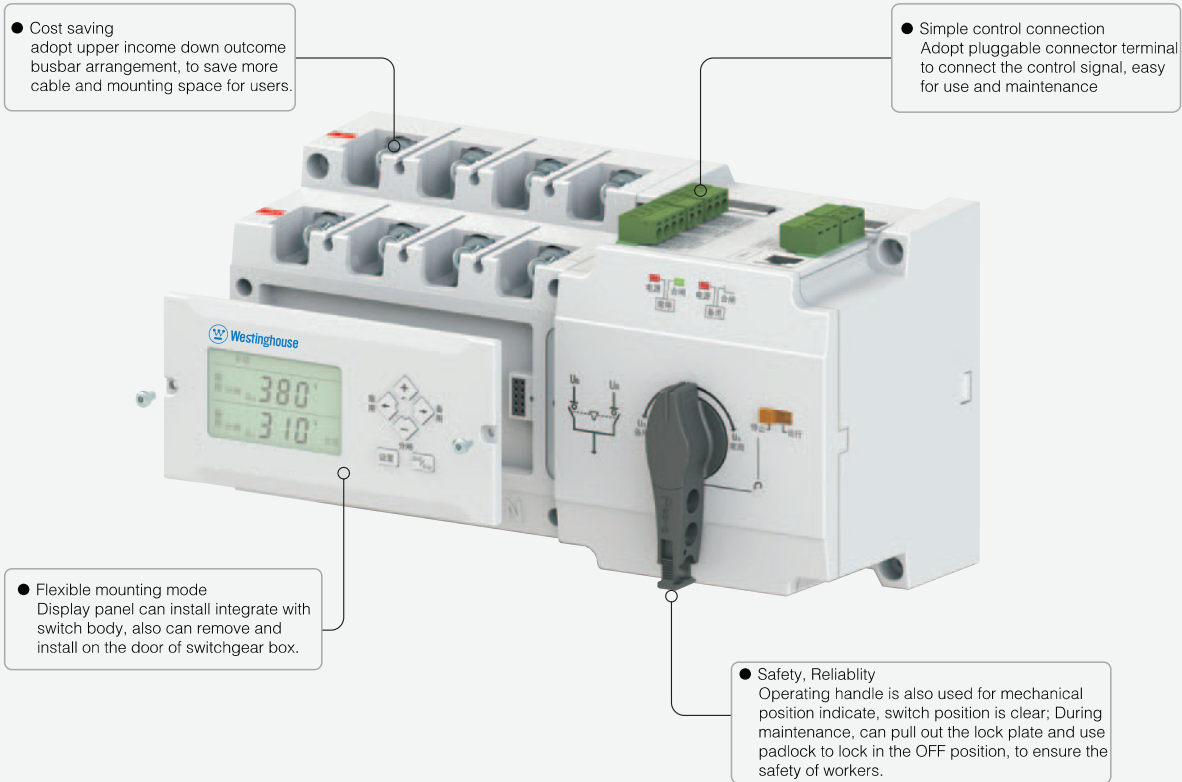
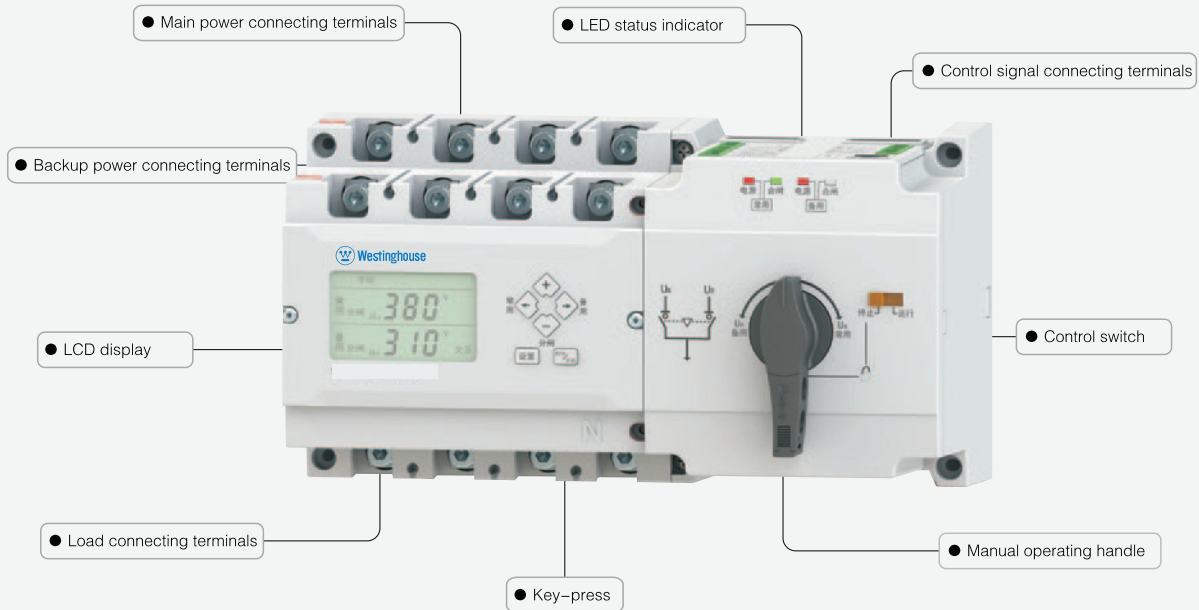
Note: B type controller if need auto transfer no recovery mode, please specify when ordering.

# WRDS3 Series

## Product Structure

2

DUAL POWER (ATS)



# WRDS3 Series

## Product Features

- High short time withstand capacity, high short circuit making capacity  
Adopt high density silver alloy contact, can withstand thousands operating cycles and no burning loss, no pit or no melting. No need daily contact maintenance, 100% rated current continues load. Contact system adopt bridge type double break rotating insert structure, reach high short time withstand capacity and high short circuit making capacity, no need special SCPO, no affect the selective of circuit, meanwhile also can meet the application in the big capacity power supply system.
- 10Ie making and breaking capacity, match the AC-33B use category  
Optimized magnetic blow-out arc extinguish system, easily reach 10Ie making and breaking capacity, match AC-33B use category and also match the load property of AC typical application , have wide application range.
- Stacking structure, small volume  
Main, backup power switch part adopt modularize design, stacking arrangement, make the product volume more smaller than other similar products.
- Three position with isolation lock  
With “Main power position”, “OFF position”, “Backup power position” three working position, can used for fire linkage and high inductive impedance load; OFF position with isolation lock function, can meet the isolation requirement during th load side maintenance.
- Display controller can integrated installation, also can split installation  
Display controller and transfer controller split set up, display controller can install on the switch body panel ( Integrated type), also can install separately on the door panel of switchgear box (split type), convenient for user to check and control of the ATS status.
- Multi-functions, different modes  
Controller have under-voltage, over-voltage, phase missing automatic transfer function and motor-driven forced transfer function, Auto mode have auto transfer with auto recovery and auto transfer without recovery two modes, to fit with different location; Have fire linkage function, to cutoff the load power under emergency situation.

## Controller Functions

- Under-voltage detection  
Controller makes under-voltage detection for main power and backup power, when the under-voltage is detected with the power supply, it will start the auto transfer function to transfer to another power supply. When the power supply voltage is detected recovered to acceptable range (Recovery value), controller will decide whether make transfer according to the settled transfer mode and can set transfer delay time.
- Over-voltage detection  
Controller makes over-voltage detection for main power and backup power, when the over-voltage is detected with the power supply, it will start the auto transfer function to transfer to another power supply. When the power supply voltage is detected recovered to acceptable range (Recovery value), controller will decide whether make transfer according to the settled transfer mode and also can set transfer delay time.
- Transfer delay  
When the main power is confirmed abnormal and backup normal, transfer delay start delay counting, after time delay is over then transfer from the main power to backup power. This time delay can wait to confirm whether the main power is short time abnormal, also can avoid switch frequently transfer.
- Recovery delay  
Recovery delay is after backup power supply, and main power is confirmed available, then start delay counting, when delay time is over then transfer from the backup power to main power. This delay time can wait the main power supply output stable before it supply to the load.
- Generator start delay  
Generator start delay can avoid starting genset due to short time power off. When main power fault then start delay counting, and after the delay time is over then send generator start signal.  
(Note: when the main power suddenly cutoff and genset didn't start, under this situation it can't delay due to no power supply to the controller, if need to use this function have to connect a DC24V aux. power supply to the controller to achieve the time delay function)
- Generator stop delay  
Generator stop delay can remain the generator in hot backup status after it stop power supply to the load, avoid the genset restarting due to main power in short time recovery. When transfer from the backup power to main power supply then start the delay counting, after delay time counting is over then controller send genset stop signal.



# WRDS3 Series

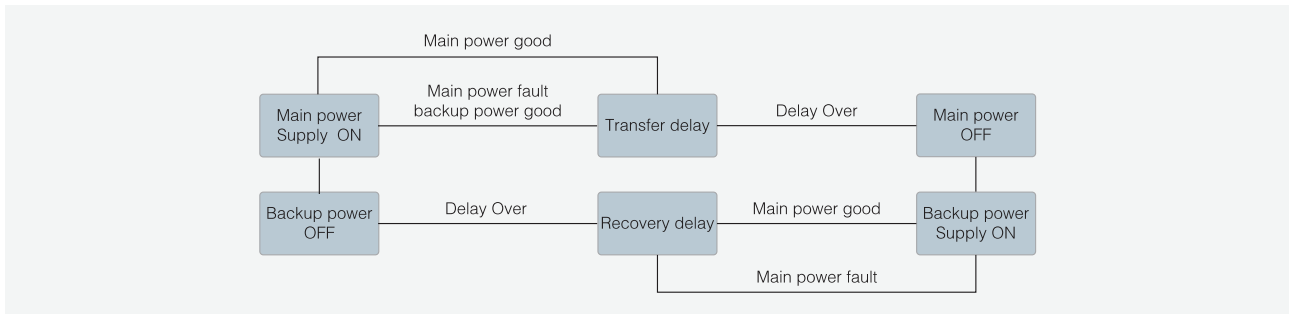
- Transfer mode

Controller provides different transfer mode function according to the power supply property

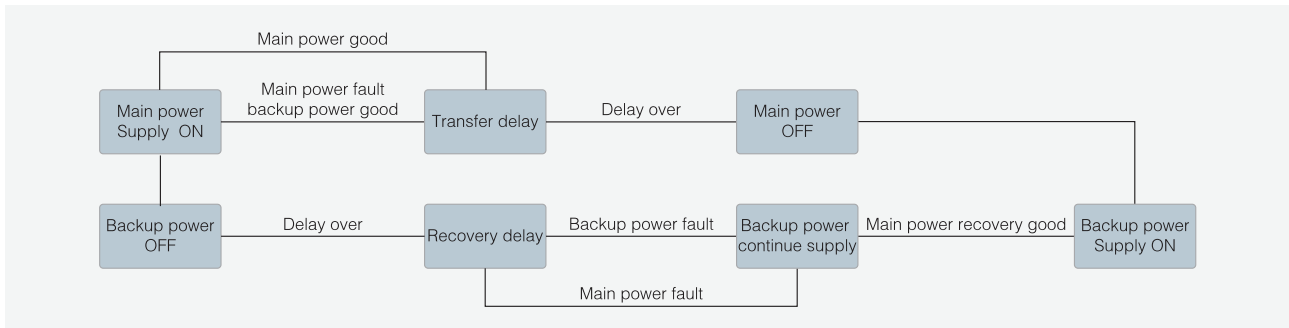
1 : Power grid - Power grid:

At the application of power grid - power grid, ATS can provide auto transfer with auto recovery and auto transfer no auto recovery two transfer mode.

Power grid - power grid auto transfer with auto recovery mode

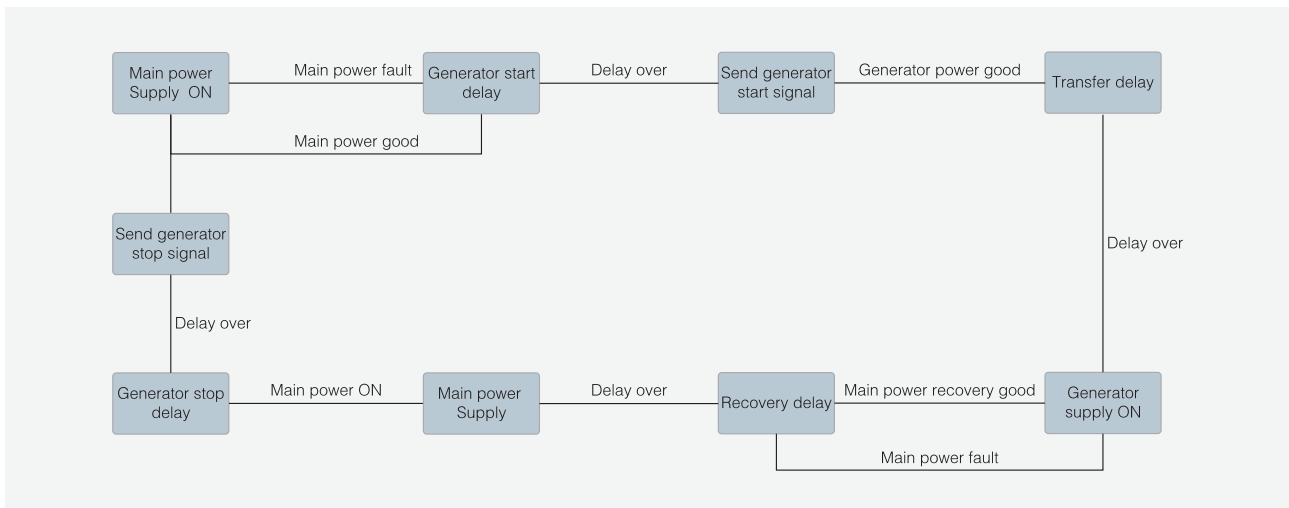


Power grid - power grid auto transfer no auto recovery mode



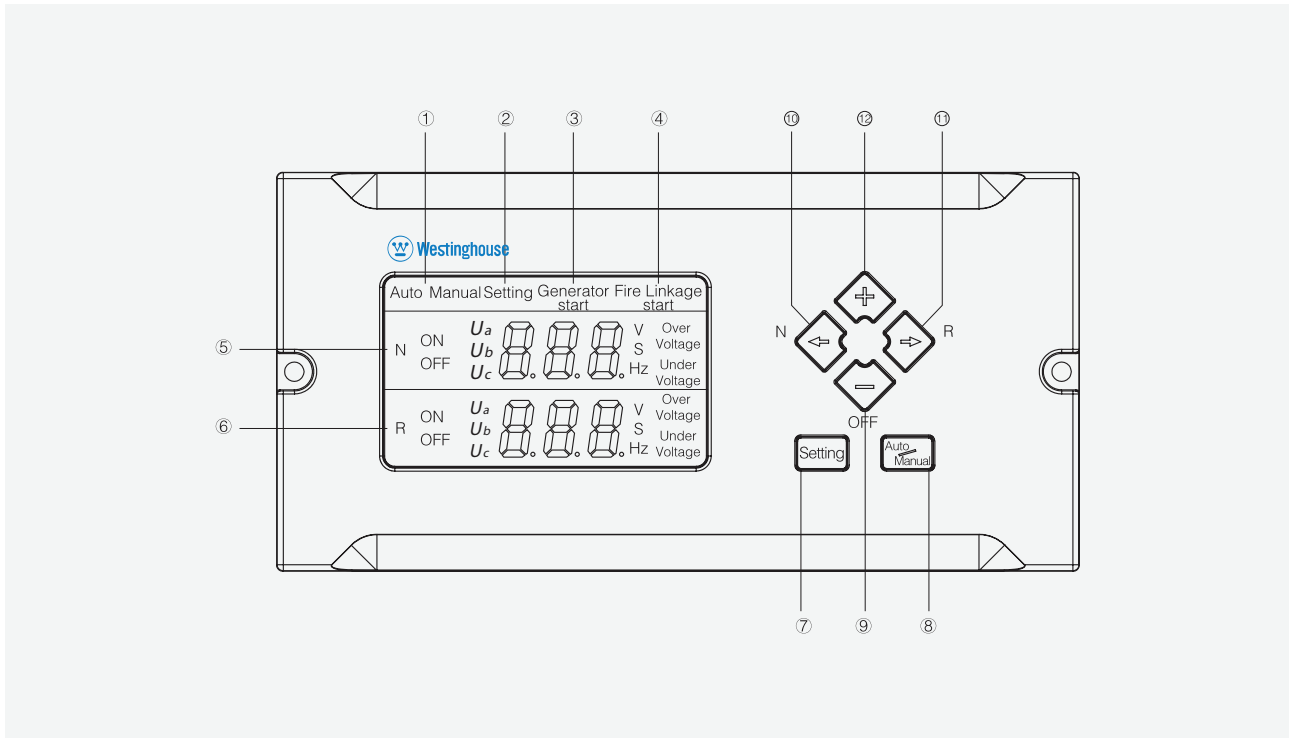
2 : Power grid - generator mode

Transfer between power grid - generator



# WRDS3 Series

## Display Panel

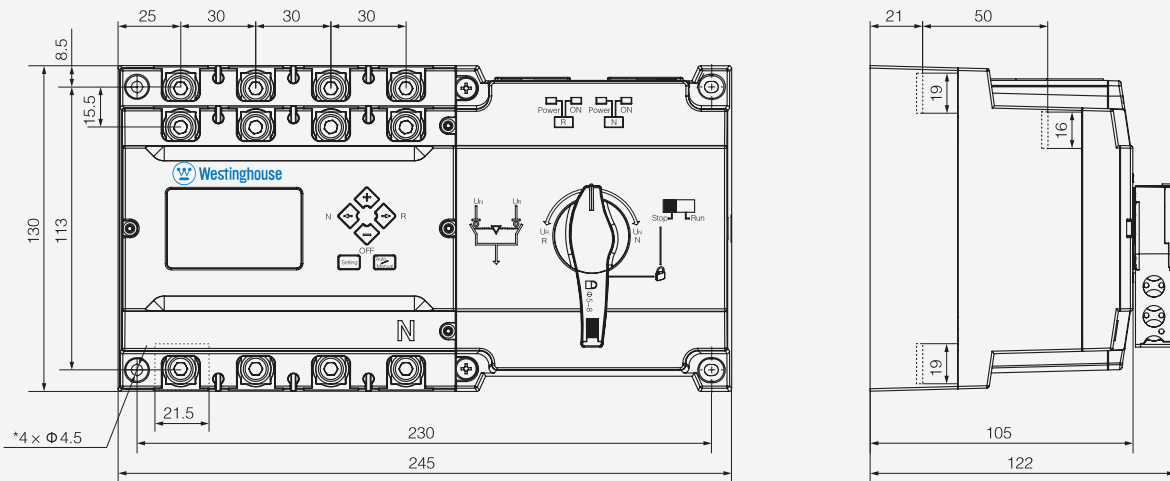


- 1: Auto、Manual working mode indicate;
- 2: Setting status indication;
- 3: Generator start signal indicate;
- 4: Fire linkage function status indicate;
- 5: Main power status data indication zone: during working status display main power voltage data and transfer delay time, during setting status display setting item code;
- 6: Backup power status data indication zone: during working status display backup power voltage data and recovery delay time, during setting status display setting item code;
- 7: Setting button: press this button will enter into controller setting menu;
- 8: Auto/Manual transfer mode selection button: under working status it used to select the Auto and Manual transfer mode, under the setting status it used as save and escape function;
- 9: Trip button: under manual control mode if any one of the two power is good, push this button will change to OFF position; under setting status it is used for data decrease button;
- 10: Main power transfer button: under manual control mode and main power good, push this button will forced to transfer to main power; Under setting status , it used for up page button;
- 11: Backup power transfer button: under manual control mode and backup power good, push this button will forced to transfer to backup power; Under setting status , it used for down page button;
- 12: + Button: under setting status this button is used as data increase button;

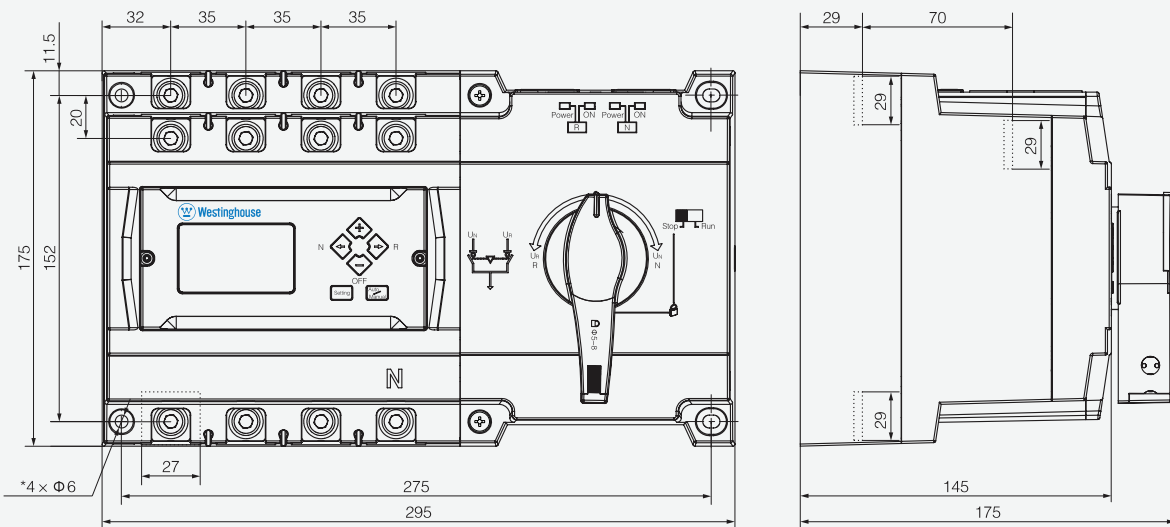
## WRDS3 Series

### Outline And Mounting Size (mm)

- WRDS3-125 (3P,4P outline and mounting size same)



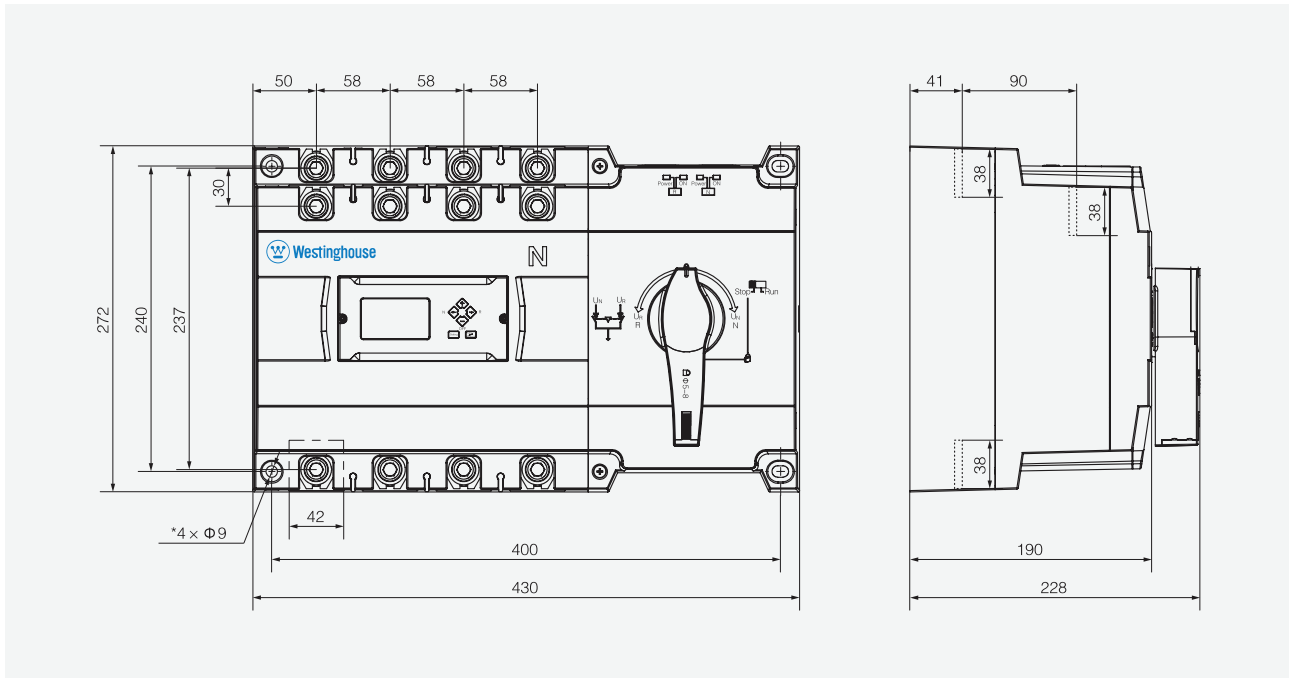
- WRDS3-250 (3P,4P outline and mounting size same)



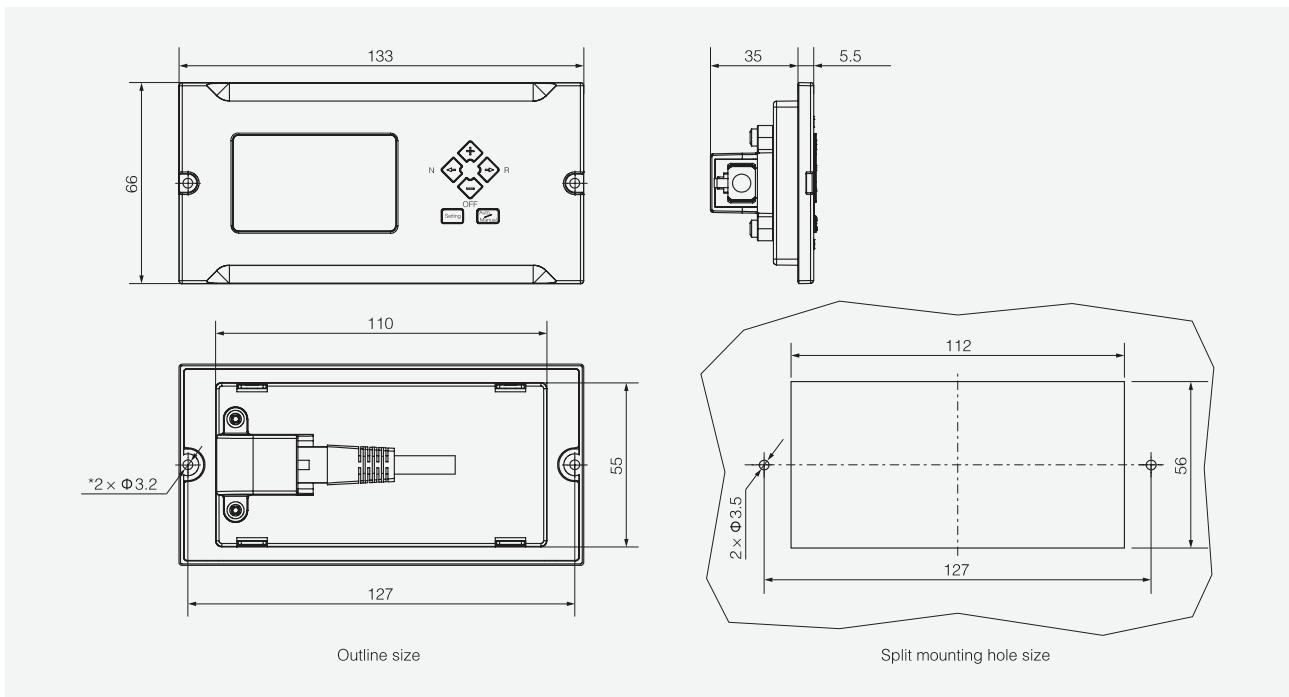
# WRDS3 Series

## Outline and Mounting Size (mm)

- WRDS3-630 (3P,4P outline and mounting size same)

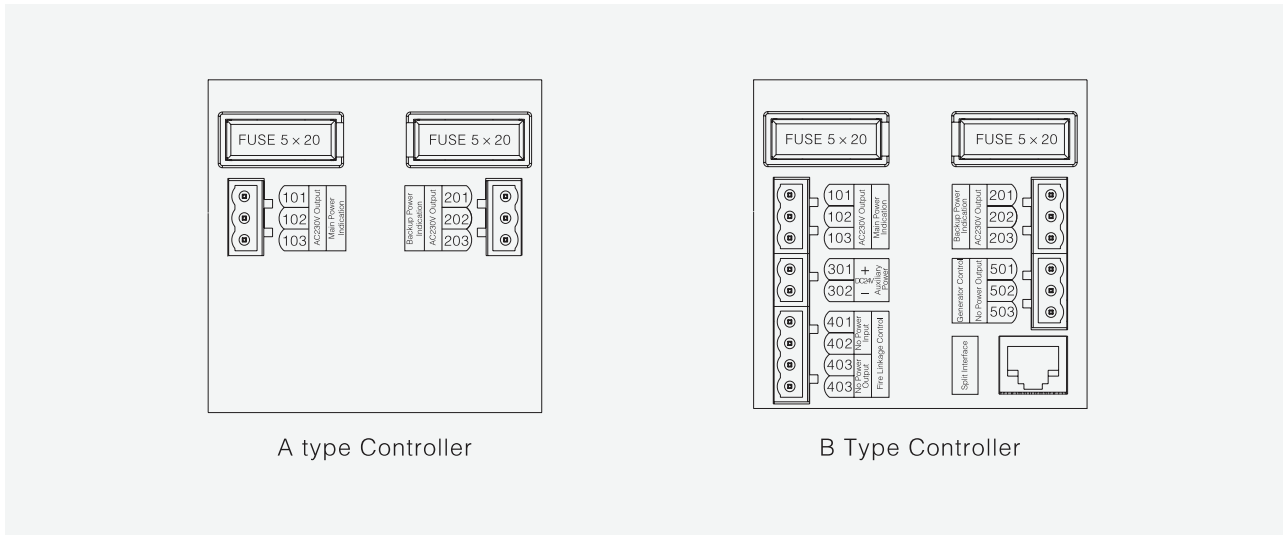


- Display controller outline and split mounting hole size



# WRDS3 Series

## Controller Terminal and Wiring Instruction



A type Controller

B Type Controller

- 101~103 main power external indicator signal (Active AC230V/0.5A)  
101- Indicator common null line 102- Main power indicator signal output 103- Main power ON signal output
- 201~203 Backup power external indicator signal (Active AC230V/0.5A)  
201- Indicator common null line 202- Backup power indicator signal output 203- Backup power ON signal output
- 301~302 aux. power input (DC15V- 24V/0.5A)

The purpose to put an aux. power is to control the generator start delay time under the Power grid-Generator mode, if without aux. power, the generator start delay time is 0s, if the generator start delay function not needed, then no need to connect the aux. power .

- 401~404 Fire linkage control terminals

401,402 Fire linkage control signal input, this terminal external only can connect to a set of NO passive contact (if the signal from fire-fighting equipment is an active signal, must first connect through a small relay, then connect the relay NO point to controller) after NO contact closed ATS immediately transfer to OFF position and cutoff the power supply.

403,404 Inside is a set of NO relay contact point, used for sending the fire-fighting movement signal back; when it is normal, the contact is NO status, when there is fire-fighting signal input to the controller, and the switch transfer to OFF position, the 403 and 404 closed. (Notes: when the fire linkage function is active, the ATS will stop working, if want the ATS to working again, must first clear up the fire-fighting signal and then switching the Auto/Manual control switch one time, the ATS will recovery normal working)

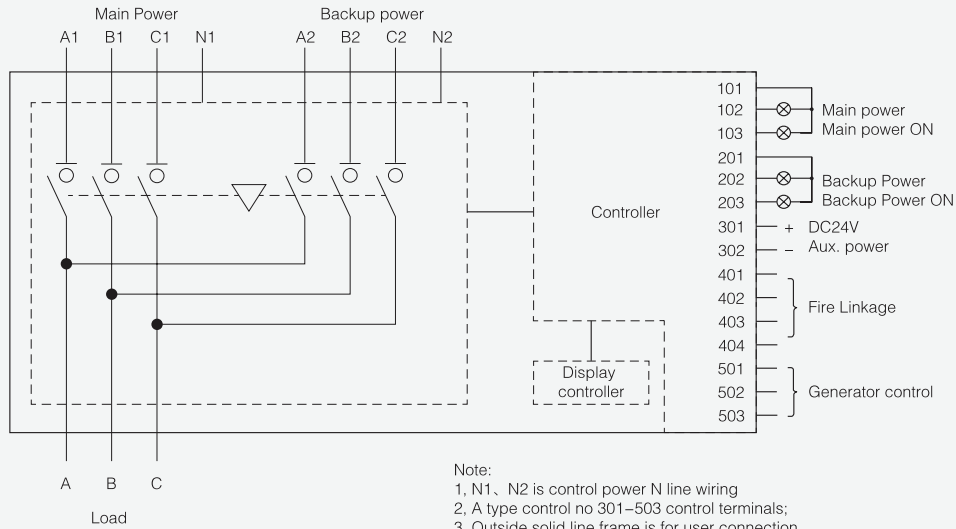
- 501~503: Generator start control signal output

When the backup power is Auto start generator, users can connecting the 501~503 terminals to the generator controller to achieve the generator auto start function, inside 501~503 terminal, is a set of passive relay contact point, 502 is the relay common terminal, 503 is relay NC point, 501 is relay NO point;

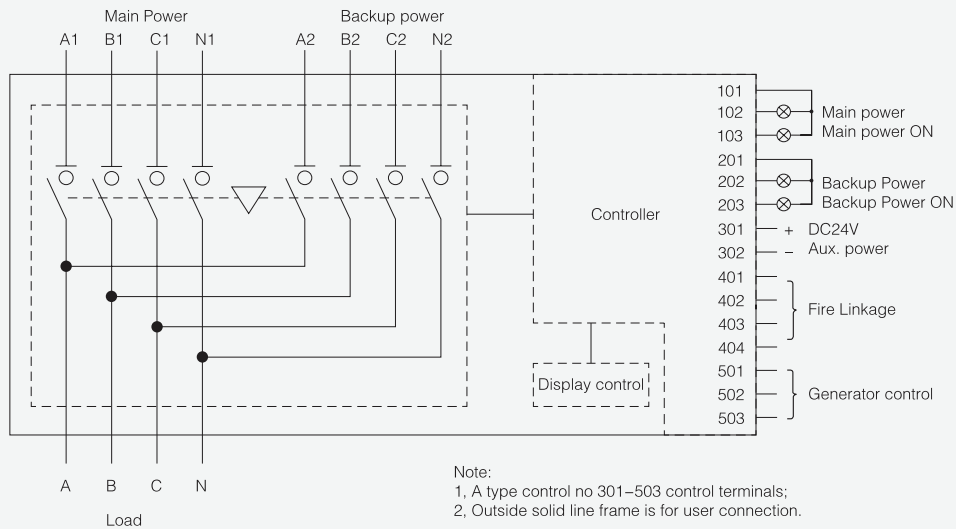
Under power grid- generator mode and auto transfer mode, when main power normal, 502 and 501 is closed, 502 and 503 open, if main power failure and backup power no power, 502 and 503 closed after generator start delay time, meanwhile 502 and 501 open to send generator start signal, after generator start successfully ATS auto transfer to backup power supply, if main power recovery good, then controller after recovery delay time to control the switch transfer to main power supply, after main power ON, 502 and 501 closed after generator stop delay time, 502 and 503 open to send generator stop signal.

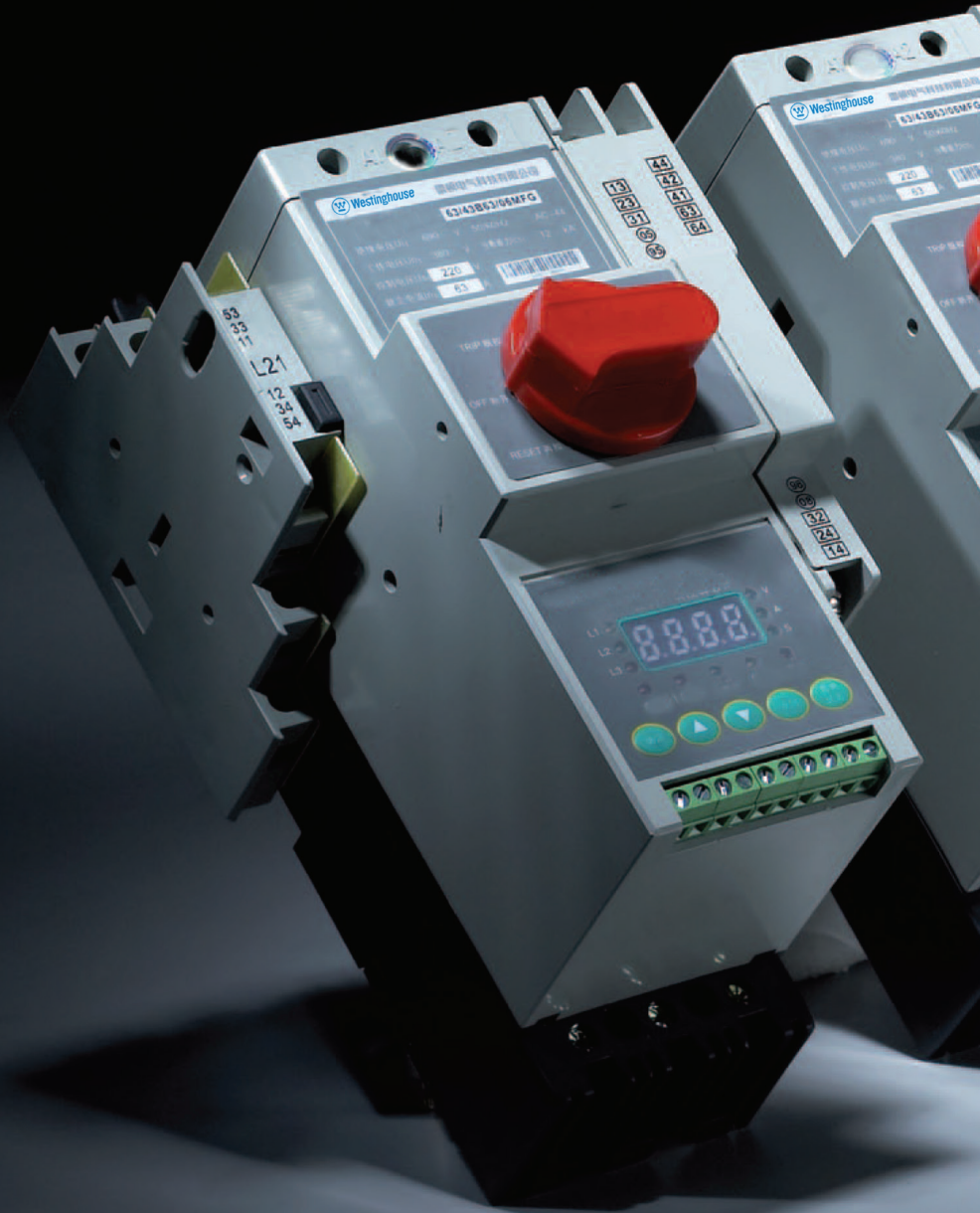
# WRDS3 Series

## 3P Product Wiring



## 4P Product Wiring





**CONTROL AND PROTECTIVE  
SWITCHING DEVICE**





## WRDCPS(KBO) Series

### Summary



CPS “Control and Protective Switching Device” is a new type product of low voltage electrical appearance, internationally accepted as “Control and Protective Switching Device” product category code name, as new major product categories, its product category code “CPS” (Control and Protective Switching Devices). WRDCPS(KBO) series control and protective switching device is based on the single structure to achieve integration, internal coordination of control and protective functions, can replace various kind of traditional separate components such as circuit breaker (fuse), contactor, starter, isolator, thermal relay, overload (or over current, phase missing) protection relay, motor protector, intelligent leakage relay etc. With both remote auto control and on site manual control functions, with coordinated Time-Current protection characteristic, with control and protection self-coordination, continuous operation after short circuit, with high breaking capacity, small flashover distance, long working life, with adjustable protective setting current, easy operation, with various complete auxiliary module advantage, can achieve the control and protection of motor load and distribution load.

WRDCPS (KBO) series control and protective switching device fundamentally solved the various problems of not well coordination of control and protection due to unreasonable selection of separate components (normally is circuit breaker or fuse+contactor+overload relay), especially overcome the poor coordination of control and protection characteristic when different standard electric appliance combined together, it greatly improved the reliability and continuous operation performance of control and protection system.

WRDCPS (KBO) series control and protective switching device is based on the latest micro-electronic technology and other similar product, developed the WRDCPS (KBO) series products with our company own characteristic, overcome the defect of other similar products, collect the advantage of separate low voltage components, complete functions, reliable performance, provide a basic part for the simplification and optimization of low voltage electric distribution and control system.

Product confirm to IEC60947-6-2 standard.

### Functions And Application

WRDCPS(KBO) adopt modularized single product structure type, integrated the main functions of traditional low voltage electric appliance of circuit breaker (or fuse), contactor, overload protection relay (or over current, phase failure relay), starter, isolator, motor protector etc. With both remote auto control and on site manual control functions, with panel indication and electromechanical signal alarm functions, with over/under voltage protection, with phase missing/phase failure protection, with coordinated Time-Current Protection characteristic ( with overload inverse time limit, fixed time-lag, short circuit instant trip, big short circuit instant trip four stage protection characteristic). As per to the requirement to select the functional module or accessories, to make control and protection to various kind of motor load and distribution load.

# WRDCPS(KB0) Series

## Application



The WRDCPS(KB0) Series product have the advantages of integration of control and protection, modularization, structure miniaturization, high class anti-pollution, high breaking capacity, small flashover distance, long electrical life, complete protection functions, highly reliable and continuous running performance, easy installation and maintenance etc. It is widely used at industry facility, basic facility, fire-fighting system, commercial and civil facilities:

- In control and protection system of electric distribution and motor of Metallurgy industry, Coal mine, Steel industry, Petrochemical industry, Port, Shipping, Railway etc;
- Motor Control Center (MCC) and Electric distribution center;
- Power station and sub-station;
- Shipping and Railway system (like airport, railway and highway passenger center etc.);
- Expressway lighting and ventilating system;
- Control and protection system of Army garrison (like the border post, Radar station etc.);
- All kind of fire-fighting pump, Draught fans etc.;
- Modernized building lighting, power transfer, pump, fan, air-conditioner, fire-fighting control and protection;
- Hospital and Commercial building ( like shopping mall, super market etc.);
- Telecomm system;
- Information center (like cynicism, bank, stock exchange center etc.)
- Single motor control and protection system of factory or workshop;
- Remote lighting control system.

## Model Meanings

WRD CPS(KB0) □ - □ □ / □ □ □ / □ □ □ □  
 ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓  
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪

①	Factory code
②	Control and Protection Switching Device ( multi-functional device)
③	Product combination type: basic type no code, S-Dual power type, N-Reversible type, D-Two speed type, J-Star delta voltage reduce type
④	Main body current In: 45A, 125A
⑤	Rated breaking capacity Icw: 12KA
⑥	Poles and protected poles: 33 – 3poles with 3poles protected, 43-4poles with 3poles protected
⑦	Electronic overload trip type: M-motor protector type, L- distribution protection type
⑧	Rated current of trip unit Ie: 0.4~125A
⑨	Auxiliary contact code: 02-2NO 1NC+1 short circuit 1 fault 06-3NO 3NC+1 short circuit 1 fault 09-2NO 1NC
⑩	Control power supply voltage Us: M-220V, Q-380V
⑪	Extension code: Basic no code, F-Fire-fighting, L-leakage, G-Isolation, T-Communication



## WRDCPS(KBO) Series

### Application

- WRDCPS(KBO) Product basic configuration: Main body + Intelligent controller + Auxiliary contact group
- Main body have main circuit basic module comprise of: contact system module, short circuit trip unit, electromagnetic module and operation mechanism module
- Auxiliary contact group compose of short circuit alarm contact, overload alarm contact and a set of 2NO 1NC contact, 02 is 2NO 1NC+1 short circuit 1 overload and 06 is 3NO 3NC +1 short circuit 1 overload
- Intelligent controller rated current Ie: 1A, 2A, 3A, 6A, 10A, 16A, 32A, 45A, 63A, 100A, 125A
- Main body rated current In: 45A, 125A
- Poles: use two digital represent ( front digital means pole number, the after digital means protected poles)  
Such as 33 means 3poles with 3poles protected, 30 means 3poles without protection
- Control power supply voltage: M:220V,Q:380V

### Main Features

- The defects of the traditional system comprised with separate components:
  - The similar products may have quality difference
  - The design person may don't have complete data information
  - The every components and device manufacturing technology level different
  - Traditional product like MCCB the over current and short current setting not adjustable.
  - Poor reliability of system operation
  - Customer can't adjust the setting value, not accurate protection characteristic
  - The control and protection characteristic coordination unreasonable
  - Not economical
- The advantages of WRDCPS compared with traditional system (refer to the technical comparative statement)
- With control and protection self-coordination characteristic

WRDCPS (KBO) series product integrated the control and protection functions, equivalent to circuit breaker (or fuse)+ Contactor + Thermal relay + Auxiliary device. Solved the problem of difficult coordination of control and protection characteristic between different components, improved the control and protection characteristic coordination ( have three stage protection characteristic Inverse time limit, fixed time-lag and instant), only according to the load capacity or current to make correct selection of one single product, replaced the traditional various kind of electric appearance from the input to the load side, no need capacity reduce, greatly reduced the working quantity of design person.

## WRDCPS(KB0) Series

- With excellent system operating reliability and continuous performance

WRDCPS(KB0) product no need maintenance after breaking the short circuit current, with continuous working performance after breaking the short circuit failure; WRDCPS (KBO) after short circuit current breaking test, still have more than 6000 time electrical life with AC-44 category, it is unapproachable for the traditional system comprised with separate component, this characteristic of WRDCPS(KBO) highly improved the system operation reliability and operation continuous performance, its operating short circuit breaking capacity  $I_{cs}$  80KA is the highest class of domestic similar product.

Technical Comparative Statement			
Serial No	Technical performance	The system comprised with separate components	WRDCPS(KB0)
1	Breaking capacity	10~50kA	15~80kA
2	Mechanical Life	5~10 million times	5~10 million times
3	Electrical life	100~150 thousand times	1.2~1.5 million times
4	Setting current adjustment	Curve	Straight line
5	The uniformity of circuit coordination	Poor	Good
6	Current limit capacity	Low	High
7	Self-coordinated protection characteristic	no	Yes
8	Continuous operating characteristic	no	Yes

- Compared with MCCB

- With the characteristic of high breaking capacity, small flashover distance

WRDCPS (KBO) the rated operating short circuit breaking capacity  $I_{cs}$  (0-co-co) under 380V is 80KA for high class type, 50KA for standard class, 35KA for economic class, the breaking time under 50KA expected short circuit current is 2~3ms, current limiting factor is below 0.2, reach the advance level of MCCB, near to the current limiting level of fuse, greatly limited the dynamic and thermal shock of short circuit current, the flashover distance less than 30mm.

- Compared to the MCCB protection system, have the setting current adjustable characteristic

The WRDCPS(KBO) trip unit of intelligent controller current setting (inverse time limit and fixed time-lag) all can be adjustable on the panel, except the normal overload protection current setting as per to the load capacity, the over current setting also can be adjustable on the panel. Overcome the defect of normal MCCB can't adjust the short circuit protection current, make the WRDCPS(KBO) product have good short circuit protection function even it is installed at the end of line and with small short circuit current.

- Compared to the contactor

Have longer working life, easy operation characteristic, the mechanical life of WRDCPS(KBO) is 5~10 million cycles, electrical life AC-43 is 1~1.2 million cycles, can be at site manual operating and also can be remote auto control function.

- Compare to thermal magnetic control and protection switching device

Function more complete, more better performance, adjusting more accuracy. Thermal magnetic control and protection switching device have unavoidable defect on its function, and performance also unstable affect by the environment. WRDCPS(KB0) control and protection switching device is based on advanced micro-electronic technology, adopt intelligent control mode, modularized structure, is a new intelligent product integrate the functions of fuse, circuit breaker, leakage relay, contactor, thermal relay, motor protector etc low voltage components together, have incomparable advantage on its function, performance, environment requirement and product adjusting aspect, it is the best product to replace the thermal magnetic control and protection switching device.

## WRDCPS(KB0) Series

- Other features

- Have complete range of accessories

WRDCPS(KB0) accessories including: Aux. and signal alarm contact, intelligent controller (including basic type and fire-fighting type), isolator type rotating handle etc. Can form a complete control and protection function unit, on one single product to achieve control and protection functions.

- Flexible mounting

Front mounting (horizontal mounting, vertical mounting), flat mounting, side mounting all is OK no affect to its performance. Can widely use in compact switchgear device, including fixed or draw-out type MCC switchgear, especially WRDCPS(KB0)-16,32,45 type application in the 1/4 and 1/2 drawer, it have incomparable advantage to the separately components.

- Safety and high protection degree

Front side, backside, plug-in terminals all have anti finger contact function, can equipped with IP65 high protection degree cover, especially suitable for the wet location of civil buildings, basement, water pump room, coal mine, vessel, petrochemical industry etc. areas, it is the best product to replace the magnetic starter, protection and combined starter and motor protector.

### Main Features

- Main circuit data

Main circuit mainly comprised of main body and intelligent trip unit, these two parts is the least part to form a applicable WRDCPS(KB0).Main body rated current  $I_n$ , rated thermal current  $I_{th}$ , rated insulation voltage  $U_i$ , rated frequency, rated working voltage  $U_e$  and optional intelligent rated working current  $I_e$  range or controller power range as below table.

Basic data of main circuit					
$I_{nm}$	$I_n(A)$	$I_{th}(A)$	$U_i(V)$	Fixed Frequency(Hz)	$U_e(V)$
45	3, 16, 45	45	690	50/60	380/690
125	63, 100, 125	125			

Main data of main circuit							
Frame $I_{nm}$	Rated current of main body $I_n(A)$	Rated working current of controller $I_e(A)$	Ref.No.	Long time delay current setting range $I_{r1}(A)$	Short time delay current setting range $I_{r2}(A)$	380V control power range (kW)	Use category
45	3	1	W605310	0.4~1	1.2~12	0.12~0.33	AC 42
		3	W605311	1.2~3	3.6~36	0.55~1.2	
		6	W605312	2.4~6	7.2~72	1~2.5	
	16	10	W605313	4~10	12~120	1.6~4	
		16	W605314	6.4~16	19.2~192	2.5~7.5	
	45	32	W605315	12.8~32	38.4~384	5.5~15	
		45	W605316	18~45	54~540	7.5~22	
125	63	63	W605317	25.2~63	75.6~756	11~30	
		80	W605318	32~80	96~960	15~37	
	100	100	W605319	40~100	120~1200	18.5~45	
		125	W605320	50~125	150~1500	22~55	

## WRDCPS(KB0) Series

- Protection mode
  - Instant short circuit instant protection
  - Overload short time delay protection
  - Phase missing protection
  - Under-current protection
  - Over-voltage protection
  - Start delay
  - Fault indication
  - overload long delay protection
  - Short circuit instant protection
  - Phase lost protection
  - Three phase unbalance protection
  - Under voltage protection
  - On line programmable function

For motor control (use category: AC-42, AC-43, AC-44) performance characteristic					
No.	Trip class	1.0 times current setting value no trip time	1.2 times current setting trip time	Hot-status 1.5 times current setting trip time	Cool-status 7.2 times current setting trip time $T_p$
1	10A	≥ 2h	<2h	≤2min	2s< $T_p$ ≤10s
2	10			≤4min	4s< $T_p$ ≤10s
3	20			≤8min	6s< $T_p$ ≤20s
4	30			≤12min	9s< $T_p$ ≤30s

Used for distribution line load (use category: AC-40, AC-41) performance characteristic					
Use category	Setting current ( $I_{r1}$ ) times		Time related to $I_e$		Temperature
	A	B	$I_e < 63A$	$I_e \geq 63A$	
AC-40, AC-41	1.05	1.3	1	2	+30°C

Note: A is no trip current, B is trip current

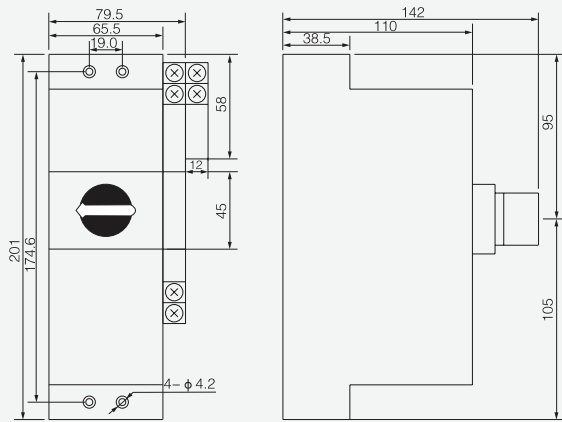
Product use category code and typical application		
Circuit	Use category	Typical application
Main circuit	AC-20A	Making and breaking circuit under no-load condition
	AC-40	Distribution circuit, including mixed resistivity and inductive load
	AC-41	No-inductive or micro inductive load, resistor furnace
	AC-42	Slip ring type motor: start, breaking
	AC-43	Cage type inductive motor: start, breaking during running
	AC-44	Cage type inductive motor: start, reverse connect stop or reverse running, point moving
	AC-45a	Discharge lamp ON/OFF
	AC-45b	Filament lamp ON/OFF
Auxiliary circuit	AC-15	Control AC electric magnet
	AC-20A	Making and breaking circuit under wireless condition
	AC-21A	Making and breaking resistivity load, including a certain overload
	DC-13	Control DC electric magnet load
	DC-20A	Making and breaking circuit under wireless condition
	DC-21A	Making and breaking resistivity load, including a certain overload

# WRDCPS(KB0) Series

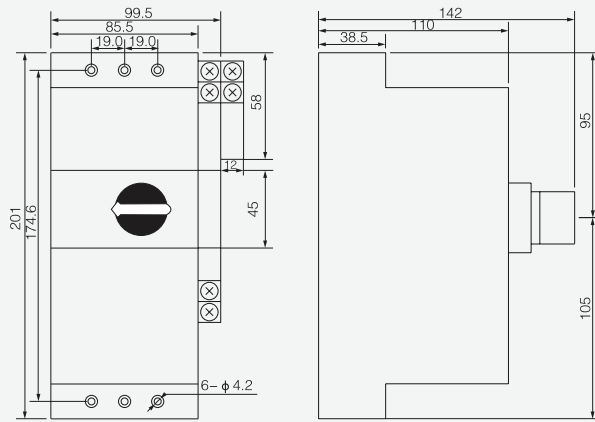
## Outline And Mounting Size(mm)

3

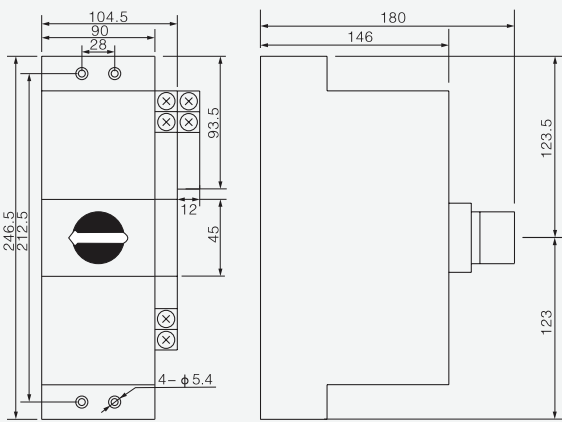
CONTROL AND PROTECTIVE SWITCHING DEVICE



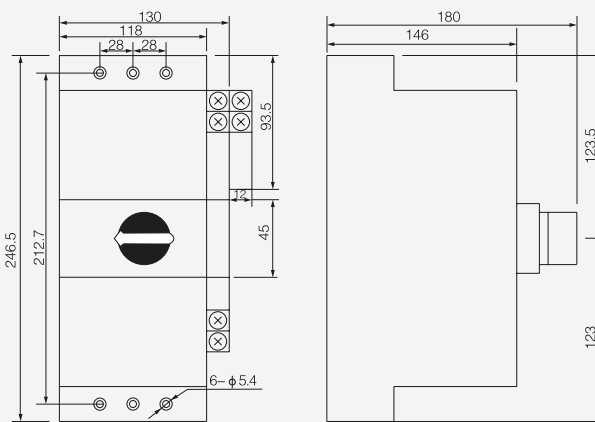
WRDCPS(KB0)-45 3pole basic type



WRDCPS(KB0)-45 4pole basic type



WRDCPS(KB0)-125 3pole basic type



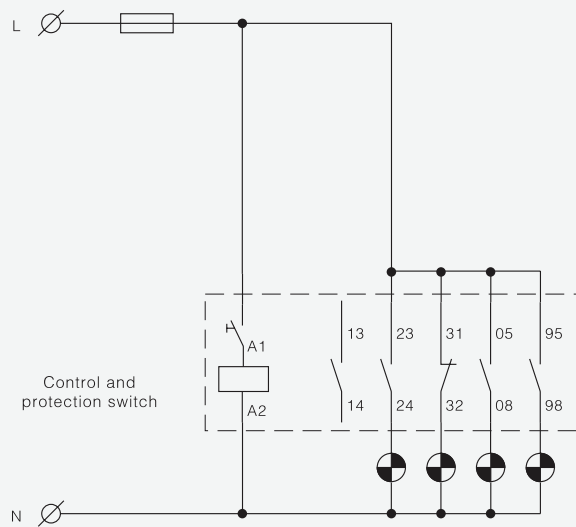
WRDCPS(KB0)-125 4pole basic type

# WRDCPS(KB0) Series

## Basic Electrical Control Diagram

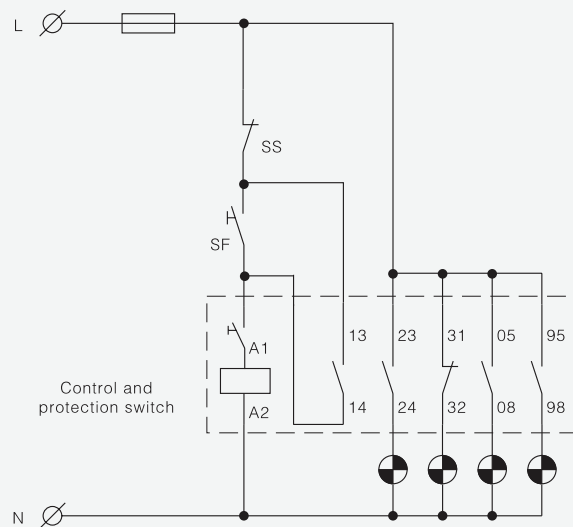
Manual control (Panel control)

Control circuit power supply	Control circuit protection	Control circuit Coil control	Aux. signal		Fault signal	
			Run	Stop	Short circuit	Overload



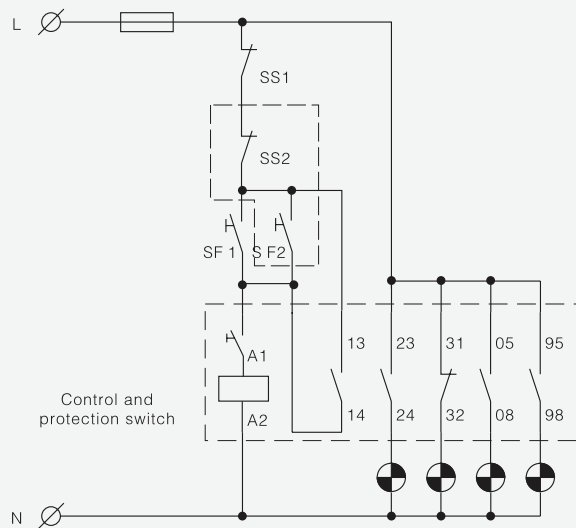
Manual control+local control

Control circuit power supply	Control circuit protection	Control circuit Coil control	Aux. signal		Fault signal	
			Run	Stop	Short circuit	Overload



Manual control+local control+remote control

Control circuit power supply	Control circuit protection	Control circuit Coil control	Aux. signal		Fault signal	
			Run	Stop	Short circuit	Overload





## WRDCPS(KB0) Operating Panel Diagram

Auto control position:

Under this status, the inside WRDCPS-F product coil control contact is at closed position, through coil to control the circuit making and breaking to achieve remote auto control, if overload, over-current, phase missing etc. fault happened, rotation handle still keep at Auto position

Trip position:

At the connected circuit, if happened with short circuit fault trip, the corresponding function unit inside product action, to make main contact and control contact all at break.

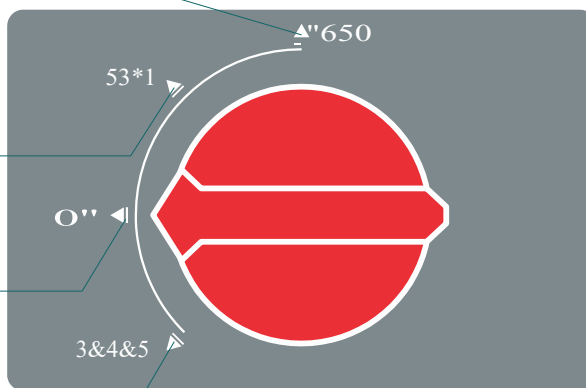
OFF position:

Manual operating position, coil control contact at break status, WRDCPS-F product inside contact keep at break position.

Reset position:

Operating handle rotate to this position, make the free tripped WRDCPS-F product recovery and reset.

WRDCPS-F operating panel



Auto control position:

Under this status, the inside WRDCPS-G product coil control contact is at closed position, through coil to control the circuit making and breaking to achieve remote auto control, if overload, over-current, phase missing etc. fault happened, rotation handle still keep at Auto position

Trip position:

At the connected circuit, if happened with short circuit fault trip, the corresponding function unit inside product action, to make main contact and control contact all at break position.

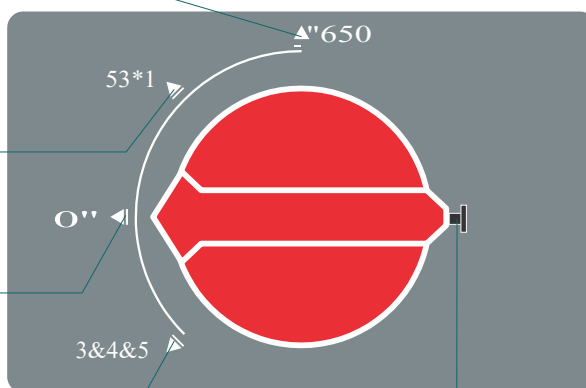
OFF position:

Manual operating position, coil control contact at break status, WRDCPS-G product inside main contact keep at break position.

Reset position:

Operating handle rotate to this position, then can make the free tripped WRDCPS-G product recovery and reset.

WRDCPS-G operating panel



Isolation status:

Under this status the WRDCPS-G product inside control coil control contact at break position, pull out the isolating rod and add the lock, under this status, coil controller contact at break position, main contact keep at break isolation status.

## WRDCPS-F Fire-Fighting Type

### Summary and Application



W605321

Firefighting type control and protection switching device adopt fully new design concept, by specialized firefighting type digital controller to coordinate with other module to achieve "Fault No Trip" unique function.

WRDCPS-F firefighting type CPS integrated the functions of fuse, circuit breaker, contactor, starter, isolator, thermal relay, overload (or over current, phase missing) protection relay, motor protector, intelligent leakage circuit breaker(relay) etc. low voltage appliance together, is a multi-function firefighting electrical appliance, also have characteristics of remote control and local control, auto and manual control, panel indication, fault inquiry, flexible setting etc. Its max. rated current 125A, maximum breaking capacity up to 80KA, to achieve in firefighting system the specified function of "only alarm, no tripping" when overload, overcurrent and "both alarm and trip" function when short circuit.

Main data same as basic type product.

WRDCPS-F firefighting type CPS mainly apply to the firefighting system with AC 50/60Hz, rated voltage to 690V, rated current 0.4 to 125A, can making and withstand normal condition current including specified current under overload, overcurrent condition, to achieve "only alarm no trip" function; And also can making, withstand and breaking current under abnormal condition (such as short circuit current), to achieve "Both alarm and trip" unique function.

### Notes

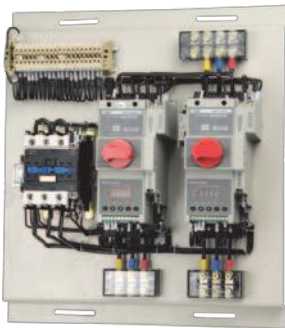
- Under normal condition, the rotation handle on the panel can used directly to control main circuit making and breaking
- When happened with overload, overcurrent, phase missing, and three phase unbalance faulty, 95, 98 passive firefighting alarm contact closed, to connect the external alarm or other device, to remind the operator on duty to examine the faulty circuit, WRDCPS-F product operating mechanism rotation handle keep at ON position and no trip, main circuit no breaking; at this time, can use external connected stop button or rotation handle to break the main circuit. After the faulty is cleared up, then must reset or recovered.
- WRDCPS-F product when short circuit happened, 05,08 send out alarm signal, operating mechanism at Trip position, main circuit break. After the faulty is cleared up, then must reset or recovered.
- Special remind: firefighting type product when circuit faulty happened, firefighting passive alarm contact 95,98 closed to connect the external alarm circuit, to remove the alarm signal have to rotating the handle to Trip position or through external stop button to cutoff the power, continue to use should rotating to ON position again.

### Outline and Mounting Size(mm) (Same as Basic Type)

# WRDCPS(KB0)-D Double Speed Motor Control and Protection Switching Device

## Summary

Adopt digitalized WRDCPS(KB0) as main switch, integrated the functions of fuse, circuit breaker, contactor, starter, isolator, thermal relay, overload (or over current, phase missing) protection relay, motor protector, intelligent leakage circuit breaker(relay) etc. low voltage appliance together, with contactor and other necessary accessories, through mechanical interlock and electrical interlock to form new type WRDCPS-D type double speed motor control and protection switching device, to achieve integrated, internal coordinate double speed motor auto control and protection functions, suitable for double speed motor starter control and protection. Have the same characteristic of delta-star voltage reduce starter WRDCPS-J and self-coupling voltage reduce starter WRDCPS-Z. Product can install with electrical interlock as per request, have the advantages of high reliability, high breaking capacity, long working life, small size, small mounting space, less maintenance job etc.

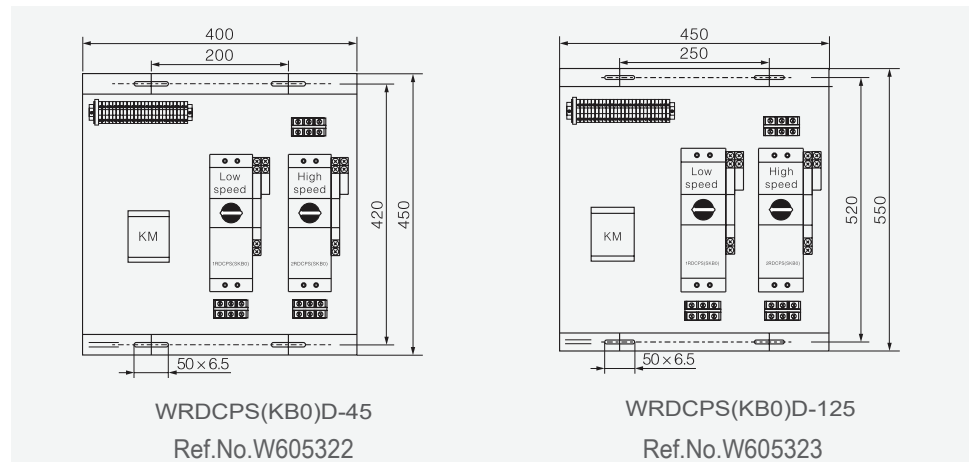


## Model Meaning

WRD CPS(KB0) - D □ □ / □ □ □ / □ □ □  
 ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓  
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪

①	Company code
②	Control and protection switching device(multi-function device)
③	Product combine mode: double speed controller
④	Main body current In: 45A,125A
⑤	Rated operation breaking capacity Icw: 12KA
⑥	High speed electronic overload trip unit type: M - motor protector type, L distribution protection type
⑦	High speed trip unit rated current Ie: 0.4 - 125A
⑧	Low speed electronic trip unit type: M - motor protector type, L distribution protection type
⑨	Low speed trip unit rated current Ie: 0.4 - 125A
⑩	Aux. contact code : 02- 2No 1NC+1 short circuit 1 fault 06- 3No 3NC+1 short circuit 1 fault 09- 2NO 1NC
⑪	Control power voltage Us: M-220V, Q-380V
⑫	Extend code: Basic type no code, F- firefighting, L-leakage, G-Isolation, T- communication

## Outline And Mounting Size (mm)



# WRDCPS(KB0)-J Delta-Star Voltage Reduce Start Control And Protection Switch

## Summary



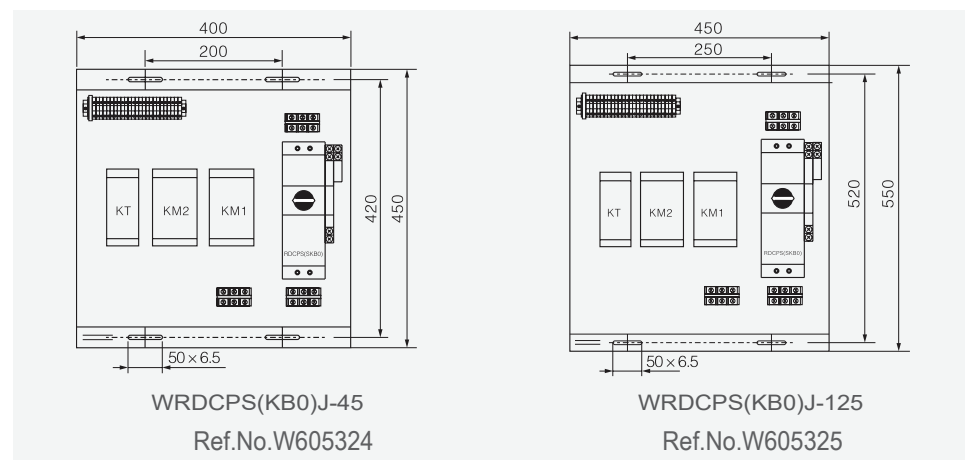
Use digitalized WRDCPS(KB0) as main switch, adopt modularized structure, integrated the functions of fuse, circuit breaker, contactor, starter, isolator, thermal relay, overload (or over current, phase missing) protection relay, motor protector, intelligent leakage circuit breaker(relay) etc. low voltage appliance together, with suitable reversible contactor, timer relay and other necessary accessories, through electrical interlock to form new protection type delta-star voltage reduce starter, WRDCPS-J or WRDCPS-J2, self-coupling voltage reduce starter WRDCPS-Z, resistivity voltage reduce starter WRDCPS-R, to achieve integrated, internal coordinated voltage reduce start auto control and protection functions, suitable for start control and protection of below 50KW motors. Have panel indication and electromechanical signal alarm auxiliary contact module. The selected reversible contactor product inside have mechanical interlock and electrical interlock accessories, greatly improved the operating reliability. Product can install with electrical interlock as per request, have the advantages of high reliability, high breaking capacity, long working life, small size, small mounting space, less maintenance job etc.

## Model Meaning

WRD CPS(KB0) - J □ □ / □ □ □ / □ □ □  
 ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓  
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪

①	Company code
②	Control and protection switching device(multi-function device)
③	Product combine mode: Delta-star voltage reduce starter
④	Main body current In: 45A,125A
⑤	Rated operation breaking capacity Icw: 12KA
⑥	Poles and protected poles : 33 - 3pole with 3pole protected; 43 - 4 poles with 3 poles protected
⑦	Electronic overload trip unit type: M - motor protector type, L distribution protection type
⑧	Trip unit rated current Ie: 0.4 - 125A
⑨	Aux. contact code : 02- 2No 1NC+1 short circuit 1 fault 06- 3No 3NC+1 short circuit 1 fault 09- 2NO 1NC
⑩	Control power voltage Us: M-220V, Q-380V
⑪	Extend code: Basic type no code, F- firefighting, L-leakage, G-Isolation, T- communication

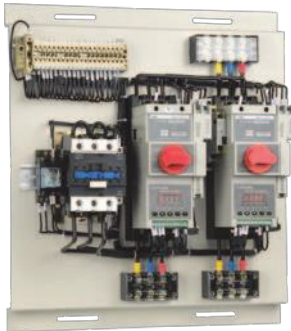
## Outline And Mounting Size (mm)



# WRDCPS(KB0)-N Reversible Control And Protection Switch

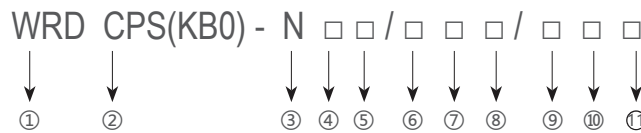
## Summary

Use digitalized WRDCPS(KB0) as main switch, integrated the functions of fuse, circuit breaker, contactor, starter, isolator, thermal relay, overload (or over current, phase missing) protection relay, motor protector, intelligent leakage circuit breaker(relay) etc. low voltage appliance together, through combine the mechanical interlock and electrical interlock accessories to form reversible motor control and protection switching device WRDCPS(KB0)-N, suitable for motor reversible or two way control and protection, product can install with relevant accessories as per to request, have the advantages of high reliability, high breaking capacity, long working life, small size, small mounting space, less maintenance job etc.



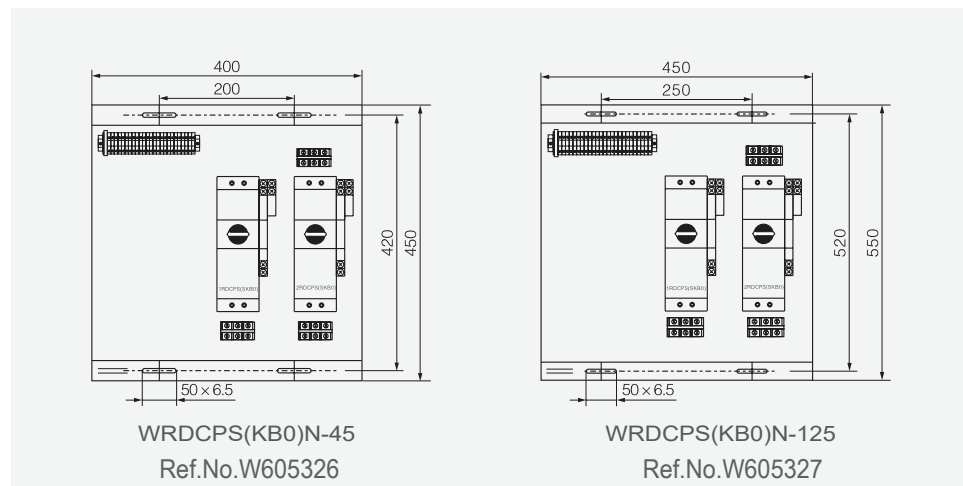
W605324

## Model Meaning



①	Company code
②	Control and protection switching device(multi-function device)
③	Product combine mode: Reversible type control and protection switch
④	Main body current In: 45A,125A
⑤	Rated operation breaking capacity Icw: 12KA
⑥	Poles and protected poles : 33 - 3pole with 3pole protected; 43 - 4 poles with 3 poles protected
⑦	Electronic overload trip unit type: M - motor protector type, L distribution protection type
⑧	Trip unit rated current Ie: 0.4 - 125A
⑨	Aux. contact code : 02- 2No 1NC+1 short circuit 1 fault 06- 3No 3NC+1 short circuit 1 fault      09- 2NO 1NC
⑩	Control power voltage Us: M-220V, Q-380V
⑪	Extend code: Basic type no code, F- firefighting, L-leakage, G-Isolation, T- communication

## Outline And Mounting Size (mm)





Westinghouse



Quality ●

Differences ●

Cost ●

Service ●

Time ●



<b>Relay Series</b>	<b>01- 03</b>
Time Relay .....	01
Counter relay .....	01
Liquid Relay .....	01
Time Controller .....	01
Liquid Level Control Relay .....	02
Electromagnetic Relay .....	02
Relay Socket .....	03
<b>Electrical transmission and control Series</b>	<b>04-04</b>
Protection Relay .....	04
Motor Protector .....	04



<b>Instrument Series</b>	<b>05-05</b>
LED Digital Current Voltage Meter .....	05
LED Programmable 3 Phase Power Meter .....	05
Multifunction Power Meter .....	05
<b>Power Distribution Control Series</b>	<b>06-09</b>
Surge Protective Device .....	06
Control And Protective Switching Device .....	09



# Time, Counter, Time Controller

## WHHS18



Ref.No. W605113

### Time Relay

Power voltage	DC24V; AC24V,AC220V,AC380V
Delay range	0.1s~ 120h
Repeatable Error	≤ 1%
Mode	Power delay, release delay, ect. Total 8 Modes
Output contact	WHHS18: 2 delay C/O WHHS18C: 1 delay C/O+ 1 instant C/O
Contact Capacity	1A A C240V
Dimension	85 x 24.5 x 90mm
Mounting	Embedd or 35mm Din-Rail
Replacement	WH3DS, Re11, WDHC19-M WNJB1-S

## WHHS18R



Ref.No. W605114

### Time Relay

Power voltage	DC24V; AC24V, AC220V,AC380V
Delay range	0.1s~100h
Repeatable Error	≤ 1%
Mode	Cycle delay
Output contact	WHHS18R: 2 delay C/O WHHS18RC: 1 delay C/O+ 1 instant C/O
Contact capacity	3A AC250V
Dimension	85 x 24.5 x 90mm
Mounting	Embedded or 35mm Din-Rail
Replacement	WDHC19S-S

## WHHS18F



Ref.No. W605115

### Time Relay

Power voltage	DC24V: AC24V,AC220V,AC380V
Delay range	1S, 5S, 10S, 30S, 60S 120S, 180S
Repeatable Error	≤ 5%
Mode	Power failure delay
Output contact	2 delay C/O with reset
Contact capacity	1A AC250V
Dimension	85 x 24.5 x 90mm
Mounting	Embedded or 35mm Din-Rail

## WJDM9-4



Ref.No. W605116

### Counter Relay

Power voltage	DC24V:AC24V:AC220V:AC380V:
Mode	Addition count, 4 bit LED display
Count speed	100 times/sec.
Count range	1-9999
Input signal	Contact signal PNP NO type photoelectric/proximity switch
Output mode	N and C
No power memory	10 Years
Output contact	one group NO and NC contact
Contact Capacity	3A A C250V
Dimension	72 x 72 x 81mm
Hole size	68 x 68mm
Mounting	Panel

## WHHQ15 (DHC15)



Ref.No. W605117

### Time Controller

Power voltage	AC220V50Hz
Time control range	1~168
Timing error	≤ ± 0.5
Contact capacity	16A AC250V
Programmable number	16 groups of switches can be programmed per day
Battery	Rechargeable battery
Dimension	86 x 36 x 65mm
Mounting	35mmDin - rail

# Liquid Relay

## WHHY11PG-A



Ref.No. W605118

### Liquid Relay

Power voltage	AC/DC 100~240V
	Supply - Ultra high alarm Drain - Ultra high double drainage Drain- Ultra low alarm Supply - Ultra low self locking
Water control distance	≤ 200m
Output contact	2 NO contacts
Contact capacity	1A AC240V
Dimension	85 x 24.5 x 90mm
Mounting	Embedded or 35mm Din-Rail

## WHHY14



Ref.No. W605124

### Liquid Level Control Relay

Mode	Floating ball contact
Output contact	One group NO and NC contact
Contact capacity	10A AC250V
Lead length	1m, 2m, 3m, 4m, 5m, 10m,
Dimension	80 x 160 x 45mm
Mounting	By hammer

# Electromagnetic Relay

**WHHC68BVL - 2Z**  
**(WHH52P, MY2)**


Ref.No. W605119

Electromagnetic Relay

Output contact	2H, 2D, 2Z
Rated load	6.5A 240VAC/28VDC
Coil power	DC: 0.9W AC: 1.2VA
Coil voltage	DC:3V-220V AC:3V-380V
Dimension	27.3 x 21 x 36.2mm

**WHHC68BVL- 4Z**  
**(WHH54P, MY4)**


Ref.No. W605120

Electromagnetic Relay

Output contact	4H, 4D, 4Z
Rated load	5A/240VAC28VDC
Coil power	DC: 0.9W AC: 1.2VA
Coil voltage	DC: 6V-220V AC: 6V-380V
Dimension	27.3 x 21 x 36.2mm

**WHHC68B - 4Z**  
**(WHH54P, MY4)**


Ref.No. W605121

Electromagnetic Relay

Dimension(mm)	27.3 x 21 x 35
Contact form	4A,4B,4C
Rated load	3A 240VAC/28VDC
Contact Material	Silver alloy
Electric life	$\geq 10^5$ time
Pick-up voltage(23°C)	DC $\leq 75\%$ x Rated voltage AC $\leq 80\%$ x Rated voltage
Release voltage(23°C)	DC $\geq 10\%$ x Rated voltage AC $\geq 30\%$ x Rated voltage
Coil voltage	DC DC3V-220V AC AC3V-380V
Coil power	DC:0.9W AC:1.2VA
Operate/Release time	$\leq 15$ ms / $\leq 10$ ms

**WHHC68BVL -2Z 10A**  
**(WHH52P, MY2)**


Ref.No. W605122

Electromagnetic Relay

Output contact	2H, 2D, 2Z
Rated load	10A/240VAC 28VDC
Coil power	DC: 0.9W AC: 1.2VA
Coil voltage	DC:3V- 220V AC:3V- 380V
Dimension	27.3 x 21 x 36.2mm

**WHHC68BZL-4Z**  
**(WHH54P, MY4)**


Ref.No. W605123

Electromagnetic Relay

Output contact	4H, 4D, 4Z
Rated load	5A240VAC/28VDC
Coil power	DC: 0.9W AC: 1,2VA
Coil voltage	DC: 6V-220V AC: 6V-380V
Dimension	27.3 x 21 x 36.2mm

# Relay Socket

**WPYF14A1**  
**WPYE14A - E**



Ref.No. W605125

Relay Socket

Dimension (mm)	75.5 x 29 x 30
Rated load	7A
Rated voltage	300V
Dielectric strength	2500VAC/S
Application	WHHC68B 4Z WHHC68BZ 4Z WJQX18F-4Z WHH54P WMY4

**WPYF14A-E2**  
**WPYF08A-E2**



Ref.No. W605126

Relay Socket

Dimension (mm)	
Rated load	WPYF14A-E2:10A WPYF08A-E2:12A
Rated voltage	300V
Dielectric strength	2500VAC/S
Application	WHHC68B-2Z/4Z WHHC68BZ-2Z/4Z WJQX-18F-2Z/4Z WHHC68B-2Z/4Z WHH52P/HH54P WMY2/MY4

**WPYE14A**



Ref.No. W605127

Relay Socket

Dimension(mm)	65 x 30x 25.5
Rated load	7A
Rated voltage	300V
Dielectric strength	2500VAC/S
Application	WHHC68B 4Z WHHC68BZ 4Z WJQX 18F 4Z WHH54P WMY4

# Protection Relay/Motor Protector

4

## WHHD10-A



Ref.No. W605128

### Protection Relay

Power voltage	Three phase AC380V 50Hz
Function	Phase sequence protection
Display mode	LED indicator
Output contact	One group NO and NC contact
Contact capacity	3A AC250V
Dimension	78 x 33 x 68.5 mm
Mounting	Embedded or 35mm Din - Rail
Replacement	ABJ1 -10W

## WHHD10-B



Ref.No. W605129

### Protection Relay

Power voltage	Three phase AC380V 50Hz
Function	Phase failure phase sequence voltage unbalance
Display mode	LED indicator
Output contact	One group NO and NC contact
contact capacity	3A AC250V
Dimension	78 x 33 x 68.5mm
Mounting	Embedded or 35mm Din-Rail
Replacement	ABJ1- 11W

## WHHD10-C



Ref.No. W605130

### Protection Relay

Power voltage	Three phase AC380V 50Hz
Function	Over voltage, under voltage: phase failure, phase sequency: voltage unbalance
Display mode	LED indicator
Output contact	One group NO and NC contact
contact capacity	3A AC250V
Dimension	78 x 33 x 68.5mm
Mounting	Embedded or 35mm Din-Rail
Replacement	GMR- 32B

## WHHD10-D



Ref.No. W605131

### Protection Relay

Power voltage	Three phase AC380V 50Hz
Function	Overvoltage (adjustable): undervoltage (adjustable): phase failure, phase sequency: voltage unbalance
Display mode	LED indicator
Output contact	One group NO and NC contact
Contact capacity	3A AC250V
Dimension	78 x 33 x 68.5mm
Mounting	Embedded or 35mm Din-Rail
Replacement	ABJ1- 18, XJ11

## WEOCR-SS 05type, 30type, 60type



Ref.No. W605132

### Motor Protector

Power voltage	180 ~ 480VAC 50Hz
Current range	05type 0.5 ~ 6.5A: 30type 3 ~ 30A: 60type 5 ~ 65A
Startup avoidance time D- TIME	(0.2- 38S) ± 5%
Tripping time O- TIME	(0.2s- 13s) ± 5%
Startup phase failure time	Start delay+O - TIME
Startup overload time	Start delay + D- TIME + O- TIME
Run off phase time	O - TIME
Operation overload time	O - TIME
Contact form	Power off or panel control
Output contact	1 NO and NC transfer
Contact state	N: ON no close R: on close
Dimension	55 x 72.7x 66mm
Mounting	Din- rail

## WSX- 48



Ref.No. W605133

### LED Digital Current Voltage Meter

Input signal	AC current/voltage DC current/voltage
Measurement error	≤ 1.0 class
Display mode	0.39 inch LED
Range	0~9999
Power voltage	AC220V, AC380V
Dimension	48 x 48x 81mm
Hole size	45 x 45mm
Mounting	Panel
Application	Testingstand, switch cabinet distribution box, etc.

# Led / Multifunction Power Meter

## WSX-72



Ref.No. W605134

### LED Digital Current Voltage Meter

Input signal	AC current/voltage DC current/voltage
Measurement error	≤ 1.0 class
Display mode	0.56 inch LED
Range	0~9999
Power voltage	AC220V, AC380V
Dimension	72 x 72x 72mm
Hole size	68 x 68mm
Mounting	Panel
Application	Testingstand, switch cabinet: distribution box, etc.

## WSX-96



Ref.No. W605135

### LED Digital Current Voltage Meter

Input signal	AC current/voltage DC current/voltage
Measurement error	≤ 1.0 class
Range	0~9999
Power voltage	AC220V,AC380V
Dimension	96 x 96 x 66mm
Hole size	91 x 91mm
Mounting	Panel
Application	Testing stand, switch cabinet: distribution box, etc.

## WSX-96B



Ref.No. W605136

### LED Digital Current Voltage Meter

Input signal	AC current/voltage DC current/voltage
Measurement error	≤ 1.0 class
Range	0~9999
Power voltage	AC220V,AC380V
Dimension	96 x 48 x 90mm
Hole size	92 x 45mm
Mounting	Panel
Application	Testingstand, switch cabinet: distribution box,etc.

## WHPZ72



Ref.No. W605137

### LED Programmable 3 Phase Power Meter

Input signal	AC current/voltage(three phase)
Measurement error	≤ 0.5 class
Display mode	0.4 inch LED
Range	0~9999
Current range	AC 0~5A(bypass)
Voltage range	AC0~500V(bypass)
Power voltage	AC220V, AC380V
Dimension	75 x 75 x 96mm
Hole size	68 x 68mm
Mounting	Panel
Application	Testingstand, switch cabinet distribution box,etc.

## WHPZ96



Ref.No. W605138

### LED Programmable 3 Phase Power Meter

Input signal	AC current/voltage (three phase)
Measurement error	≤ 0.5class
Display mode	0.4 inch LED
Range	0~9999
Communication interface	RS485
Current range	AC 0~5A(bypass) >AC5A (match with current transformer)
Voltage range	AC0~500V(bypass): >AC500V (match with current transformer)
Power voltage	AC220V or AC380V
Hole size	91 x 91mm
Mounting	Panel
Application	Testingstand, switch cabinet distribution box,etc.

## WHCD194E-9S4



Ref.No. W605139

### Multifunction Power Meter

Input signal	Three phaseAC current/voltage
Display mode	Three line 0.4 inch LED
Measuring data	Voltage, current,active power : reactive power, power factor: frequency, active electric energy
Measurement error	Voltage: 0.5 class current:0.5 class frequency:0.5 class power : 1.0class electric energy: 1.0 class
Input mode	3P3W,3P4W
Output signal	Communication interface: Pulse output: 2 way power
Ratio range	Current CT (Multiplying power) Voltage PT (Multiplying power)
Power voltage	AC220V
Dimension	96 x 96 x 90mm
Hole size	91 x 91mm
Mounting	Panel

## Surge Protective Device

**WSP1 - B**


Ref.No. W605140

Surge Protective Device

Nominal voltage (Un)	230V/400V			
Nominal discharge current In (8/20 μs)	30kA, 40kA, 60kA			
Max. discharge current I <sub>max</sub> (8/20 μs)	60kA, 80kA, 100kA			
Max. continuous operating voltage (Uc)	320V, 385V, 420V, 440V			
Leakage current (75%Uc1mA)	< 20 μA			
Test classification	Class II			
Protection level	IP20			
Fuse or breaker	40A~63A			
Installation	35mm DIN rail			
Number of poles	1P	2P	3P	4P
Overall and mounting dimensions (mm)	90 x 27x 67	90 x 54x 67	90 x 81x 67	90 x 108x 67

**WSP1 - C**


Ref.No. W605141

Surge Protective Device

Nominal voltage (Un)	230V/400V			
Nominal discharge current In (8/20 μs)	20kA			
Max. discharge current I <sub>max</sub> (8/20 μs)	40kA			
Max. continuous operating voltage (Uc)	275V, 320V, 385V, 420V, 440V			
Leakage current (75%Uc1mA)	< 20 μA			
Test classification	Class II			
Protection level	IP20			
Fuse or breaker	40A~63A			
Installation	35mm DIN rail			
Number of poles	1P	2P	3P	4P
Overall and mounting dimensions (mm)	90 x 27x 67	90 x 54x 67	90 x 81x 67	90 x 108x 67

**WSO1-D**


Ref.No. W605142

Surge Protective Device

Nominal voltage (Un)	230V/400V			
Nominal discharge current In (8/20 μs)	5kA, 10kA			
Max. discharge current I <sub>max</sub> (8/20 μs)	10kA, 20kA			
Max. continuous operating voltage (Uc)	275V, 320V, 385V, 420V			
Leakage current (75%Uc1mA)	< 20 μA			
Test classification	Class II			
Protection level	IP20			
Fuse or breaker	40A~63A			
Installation	35mm DIN rail			
Number of poles	1P	2P	3P	4P
Overall and mounting dimensions (mm)	90 x 18x 67	90x36x 67	90 x 54x 67	90 x 72x 67

# Surge Protective Device

## WSP1-NPE



Ref.No. W605143

### Surge Protective Device

Nominal voltage (Un)	230V/400V		
Nominal discharge current In (8/20 μs)	5kA, 10kA, 20kA, 30kA, 40kA, 60kA		
Max, discharge current I <sub>max</sub> (8/20 μs)	10kA, 20kA, 40kA, 60kA, 80kA, 100kA		
Max, continuous operating voltage (Uc)	255V		
Leakage current (75%Uc1mA)	< 20 μA		
Test classification	Class II		
Protection level	IP20		
Fuse or breaker	10~16A, 40~63A		
Installation	35mm DIN rail		
Number of poles	1P	3P+N	
Overall and mounting dimensions (mm)	90 x 36x 67, 90 x 54x 67	90 x 72x 67	90 x 108x 67

## WSP9-I 25 385V



Ref.No. W605144

### Surge Protective Device

Nominal voltage (Un)				
Nominal discharge current In (8/20 μs)	50kA,			
Surge current I <sub>imp</sub> (10/350 μs)	15kA, 25kA, 50kA			
Voltage protection (Up)	<2.0kV, <2.2kV, <2.5kV (385V)			
Max. continuous operating voltage (Uc)	385V			
Test classification	Class I			
Protection level	IP20			
Installation	35mm DIN rail			
Number of poles	1P	2P	3P	4P
Overall and mounting dimensions (mm)	90 x 36x 68	90 x 72x 68	90 x 108x 68	90 x 114 x 67



# Control And Protective Switching Device

## WXLCP51



Ref.No. W605145

### Control And Protective Switching Device

Rated working voltage (Ue)	400V, 690V
Power voltage (Us)	AC230V, AC400V
Frame current (Inm)	45A, 125A
Rated working current(Ie)	1A, 3A, 6A, 12A, 16A, 25A, 32A, 45A, 63A, 80A, 100A, 125A
Ambient temperature	-5°C — 50°C
Altitude	Not more than 2000m
Poles	3P
Overload protection (delay)	Distribution protection, motor protection
Breaking capacity	C: 15kA, Y: 35kA
Aux. Contact	06-3 NO 2 NC+1 fault release+1 fault alarm
Extend Code	F-Firefigthing, L- Leakage, G- Isolation, T- Communication
Mounting	vertical
Dimension(mm)	45type3P: 202 x 78 x 140 125type3P: 245 x 104 x 180

## WXLCP52



Ref.No. W605146

### Control And Protective Switching Device

Frame class	63
Rated working voltage (Ue)	400V, 690V
Conventional thermal current Ith(A)	12                      32                      63
Rated working current(Ie)	0.6, 1.2, 2.4, 6, 12                      18, 32                      45, 63
Rated frequency	50Hz
Poles	3P
Rated work system	Eight- Hour work system,Uninterrupted work system,intermittent work system Intermittent work system level 600,load factor 40%
Rated operating short-circuit Breaking capacity Ics	50kA(AC400V),4kA(AC690V)
Breaking action time	≤ 2ms
Rated insulation voltage Ui	690V
Rated impluse withstand voltage Uimp	6kV
Electrical life span (AC- 43)(Ten Thousand)	100(AC400V)
Mechanical life span(Ten Thousand)	1000
Mounting	Vertical
Dimension(mm)	180 x 55 x 158

# Control And Protective Switching Device

## WXLCP51D Double Speed Control And Protective Switching Device



Ref.No. W605147

Rated working voltage (Ue)	400V, 690V
Power voltage (Us)	AC230V, AC400V
Frame current (Inm)	45A, 125A
Rated working current(Ie)	1A, 3A, 6A, 12A, 16A, 25A, 32A, 45A, 63A, 80A, 100A, 125A
Ambient temperature	-5°C — 50°C
Altitude	Not more than 2000m
Poles	3P
Overload protection (delay)	Distribution protection, motor protection
Breaking capacity	C: 15kA, Y: 35kA
Aux. Contact	06-3 NO 2 NC+1 fault release+1 fault alarm
Extend Code	F-Firefigthing, L- Leakage, G- Isolation, T- Communication
Mounting	vertical
Dimension(mm)	45type3P: 400 x 450 x 125type3P: 450x 550

## WXLCP51J Delta-Star Control And Protective Switching Device



Ref.No. W605148

## Control And Protective Switching Device

Rated working voltage (Ue)	400V, 690V
Power voltage (Us)	AC230V, AC400V
Frame current (Inm)	45A, 125A
Rated working current(Ie)	1A, 3A, 6A, 12A, 16A, 25A, 32A, 45A, 63A, 80A, 100A, 125A
Ambient temperature	-5°C — 50°C
Altitude	Not more than 2000m
Poles	3P
Overload protection (delay)	Distribution protection, motor protection
Breaking capacity	C: 15kA, Y: 35kA
Aux. Contact	06-3 NO 2 NC+1 fault release+1 fault alarm
Extend Code	F-Firefigthing, L- Leakage, G- Isolation, T- Communication
Mounting	vertical
Dimension(mm)	45type3P: 400 x 450 x 125type3P: 450x 550

## WXLCP51 N Reversible Control And Protective Switching Device



Ref.No. W605149

## Control And Protective Switching Device

Rated working voltage (Ue)	400V, 690V
Power voltage (Us)	AC230V, AC400V
Frame current (Inm)	45A, 125A
Rated working current(Ie)	1A, 3A, 6A, 12A, 16A, 25A, 32A, 45A, 63A, 80A, 100A, 125A
Ambient temperature	-5°C — 50°C
Altitude	Not more than 2000m
Poles	3P
Overload protection (delay)	Distribution protection, motor protection
Breaking capacity	C: 15kA, Y: 35kA
Aux. Contact	06-3 NO 2 NC+1 fault release+1 fault alarm
Extend Code	F-Firefigthing, L- Leakage, G- Isolation, T- Communication
Mounting	vertical
Dimension(mm)	45type3P: 400 x 450 x 125type3P: 450x 550



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