PRODUCT CATALOGUE

ATS DUAL POWER AUTOMATIC TRANSFER SWITCH

Model

W2R-100/2P & W2R-100/4P



- *Dual power continuity*
- *IEC international standard*
- *Auto / Manual Modes*
- *Millisecond-level switching*
- *Easy installation, PZ30 rail mounting*
- *Compact & durable design, Easy replacement*

IEC 60947-6-1

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General

- ATS dual power switch (hereinafter referred to as “Switch”) is a switch that can continue to supply power in case of emergency. The switch consists of a load switch and a controller, which is mainly used to detect whether the main power supply or standby power supply is normal. When the main power supply is abnormal, the standby power supply will start to work immediately, so as to ensure the continuity, reliability and safety of power supply. This product is specially designed for household guide rail installation and is specially used for PZ30 distribution box.

- This switch is suitable for emergency power supply systems with 50Hz/60Hz, rated voltage of 400V and rated current of less than 100A. It is widely used in various occasions where power outages cannot be sustained. (The main and standby power supply can be the power grid, or start the generator set, storage battery, etc. The main and standby power supply is customized by the user).

- The product complies with the IEC 60947-6-1 and IEC 60947-3 standards for low-voltage switchgear and controlgear: functional equipment and transfer switch equipment.

Ordering Code Structure

W2R – □ / □ P

- Poles: 2 - Two poles; 3 - Three poles; 4 - Four poles
- Rated current
- Product code



Structural features and functions

- The switch has the advantages of small volume, beautiful appearance, reliable conversion, convenient installation and maintenance, and long service life. The switch can realize automatic or manual conversion between common (I) power supply and standby (II) power supply.

- Automatic Switching (Automatic Transfer and Automatic Recovery):
  When the main (I) power supply fails, the switch automatically transfers to the standby (II) power supply. When the main (I) power supply returns to normal, the switch automatically transfers back to the main (I) power supply. In automatic mode, the switch has a short transfer time (millisecond level), enabling uninterrupted power supply to the load.

- Manual conversion: When the switch is in the manual state, it can realize the conversion between the manual common power supply and the standby (II) power supply.

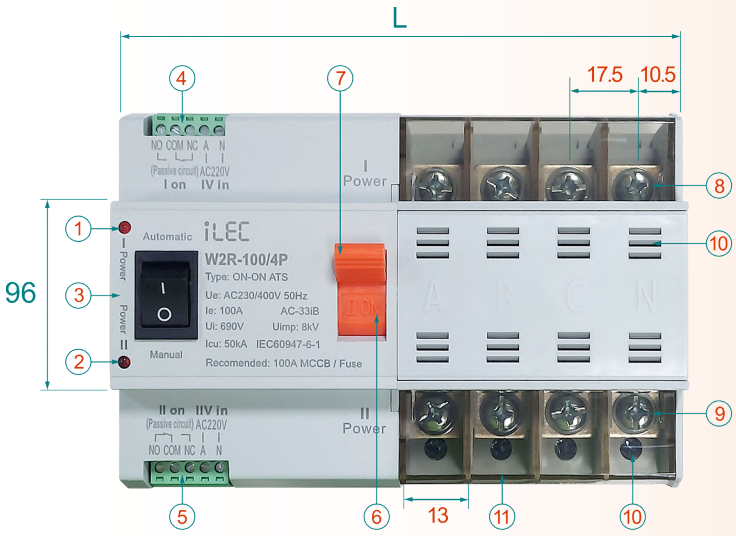
Normal working conditions

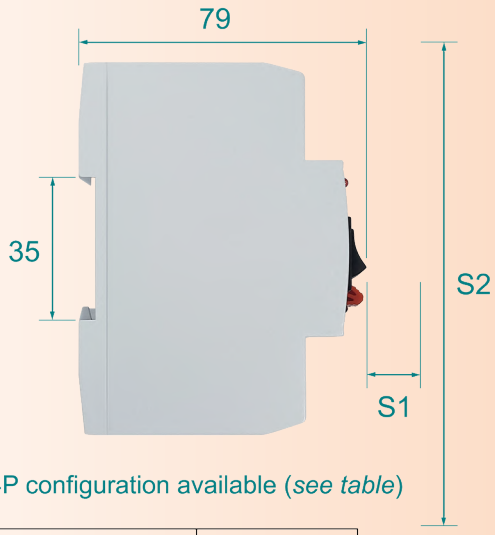
- The air temperature is from -5°C to 40°C, the average value within 24 hours should not be over 35°C.
- The relative humidity should not exceed 50% at max temperature +40°C, the higher relative humidity is permissible at lower temperature, for instance, 90% at +20°C, but the condensation will be produced due to temperature change, which should be considered.
- The altitude of mounting place should not exceed 2000m. Classification: IV.
- Inclination is not more than ±23°C.
- Pollution grade: 3.



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Description and dimensions



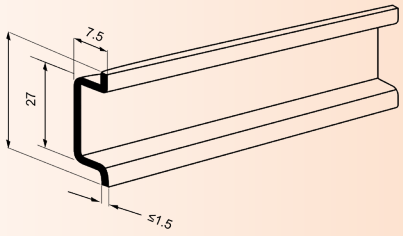


4P configuration available (*see table*)

1. Common (I) power indicator
2. Manual / automatic selector switch
3. Standby (II) power indocator
4. Common terminal block (AC230V)
5. Spare terminal block (AC230V)
6. Manual operation handle
7. Common closing (I ON) / standby closing (II ON) indication
8. Common (I) power side terminal
9. Spare (II) power side terminal
10. Load side terminal

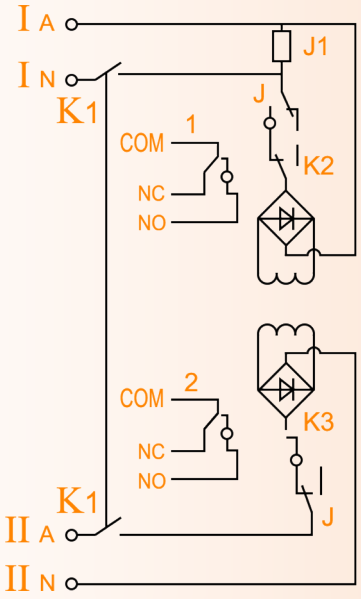
Number of poles \ S1	L
2P	108
4P	143

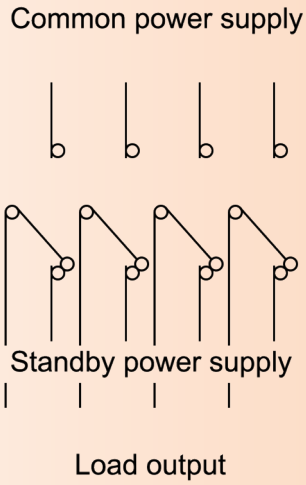
Safe distance: S1≥ 30mm S2 ≥ 200mm



Internal schematic diagram of switch

- K1: Manual/Automatic selector switch
- K2 & K3: Internal valve switch
- J1: AC260V relay
- 1: Passive signal output of common power supply
- 2: Passive signal output of standby power supply





Technical specification

Model name	**W2R-100/2P** & **W2R-100/4P**
Rated current (Ie)	16A, 20A, 25A, 32A, 40A, 50A, 63A, 80A, 100A
Use category	AC-33B
Rated working voltage (Ue)	AC 400/50Hz
Rated insulation voltage (Ui)	AC 690V/50Hz
Rated impulse withstand voltage (Uimp)	8kV
Rated short-circuit limiting current (Iq)	50kA
Service life	Mechanical 5000 times Electrical 2000 times
Pole No.	2P, 4P
Classification	PC grade: can be manufactured and withstood without short circuit current
Short circuit protection device (fuse)	RT16-00-100A
Control circuit	Rated control voltage US: AC 230V, 50Hz Normal working conditions: 85%Us - 110%Us
Auxiliary circuit	Contact capacity of contact converter: AC230V 50Hz Ie=5A
Conversion time of contactor	< 30ms
Operation conversion time	< 30ms
Return conversion time	< 30ms
Power off time	< 30ms
Operating temperature	from -5º to 40ºC
Weight (kg)	2P: 0.62kg – 4P: 0.81kg

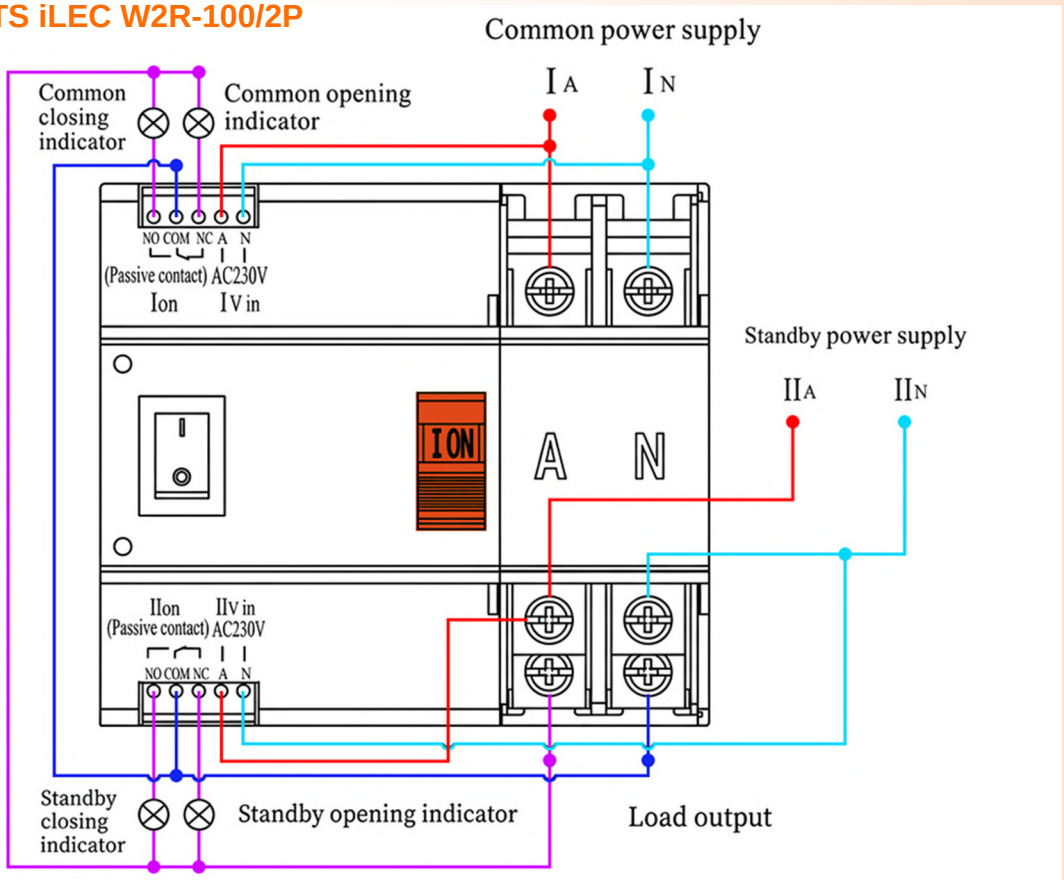
Matters needing attention

- It is strictly prohibited to manually switch the switch in the automatic state. The switch must be manually operated under the manual state
- It must ensure that the product is not electrified when maintaining or overhauling; After the maintenance or overhaul is completed, the dual power supply controller shall be restored to the automatic state.
- The switch can work reliably at 85%-110% of the rated working voltage. When the voltage is too low, the temperature rise of the coil will increase, which may cause the coil to burn out.
- Please check the integrity of the switch before installation. Check the flexibility of the transmission and detect the load generation and disconnection conditions at each stage of the normal and standby power supplies.
- If the installation cannot be carried out according to the correct steps due to wiring and other reasons, please contact us. The safe distances S1 and S2 should not be lower than the labels in the following figure.

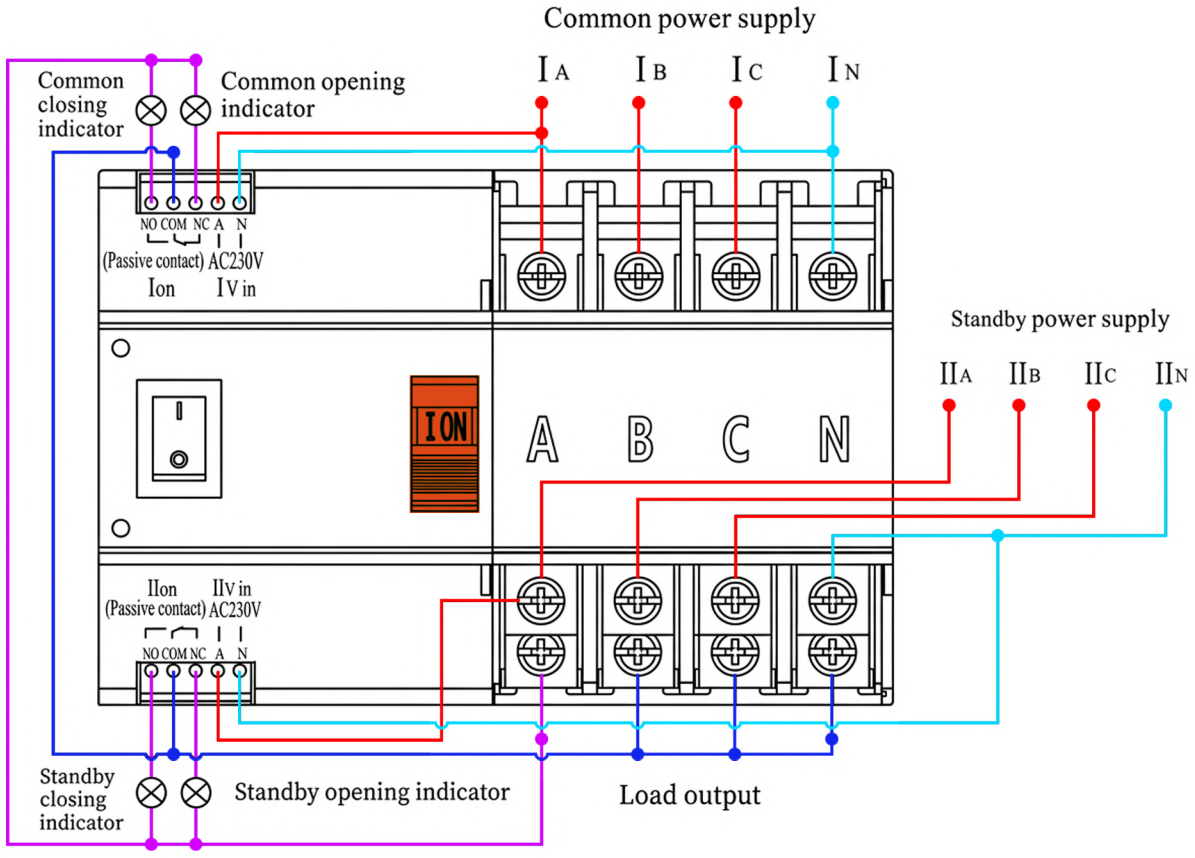
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Connection diagram

ATS iLEC W2R-100/2P



ATS iLEC W2R-100/4P



INSTALLATION & MAINTENANCE

1. Installation and Disassembly

- **Installation Method:** This switch is installed on a 35mm standard guide rail (din-rail). The thickness of the guide rail sheet metal must be less than 1.5mm.
- **Mounting steps:** Buckle the lower end of the guide rail groove at the rear of the product into the guide rail first, then push the product upward and press it inward to lock it into place.
- **Disassembly method:** Push the product upward and pull it outward to remove it from the rail.

2. Initial Installation and Wiring Guidelines

- **Pre-installation Inspection:** Check the integrity of the switch and the flexibility of the transmission mechanism before installation.
- **Safe Clearance Distances:** Ensure that the safe clearance distances S1 and S2 strictly comply with the manufacturer's specified markings.
- **Control Circuit Specifications:** The detection control voltage is AC 230V / 50Hz. Keep the conductors in the control circuit as short as possible. The cross-sectional area of the copper wiring must not exceed 2.0 mm^2.
- **Protective Devices:** Equip appropriate circuit breakers (CB) according to the power

3. Inspection and Maintenance procedures

- **Safety First:** Maintenance must be performed by professionals. Ensure all power supplies are completely disconnected before operating.
- **Maintenance Frequency:** Inspect within the first 6 months, then at least once a year (or every 3 months during normal operation). Increase frequency under harsh environments. For harsh or demanding installation environments, the frequency of inspection must be increased. Proper functionality must be verified by testing power supply switching.
- **Contact Cleaning and Troubleshooting:** Remove dust and clean off any metal particles or scorch marks on contact surfaces. Manually switch the ATS several times if rust or oxidation occurs.

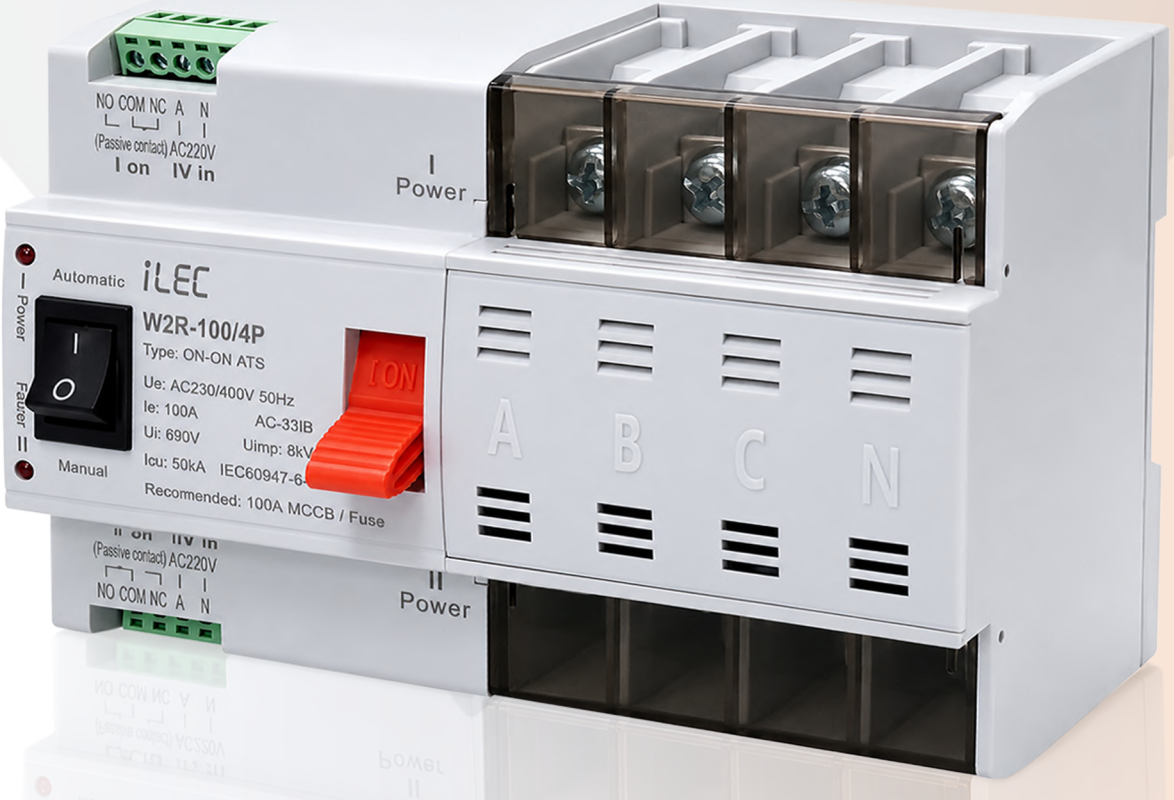
  Insulation Test: If damp or left idle, dry thoroughly before powering on. Use a 500V megger to test insulation resistance; values must be ≥ 10MΩ.

4. Storage and Handling Conditions

- The switch must be stored in an environment equivalent to its standard operating conditions. Adequate dust-proofing, moisture-proofing, and impact-protection measures must be implemented during storage.

ATS
DUAL POWER
AUTOMATIC TRANSFER SWITCH

Model
W2R-100/2P & W2R-100/4P



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