

Please, read this manual carefully
before use!

Manual



TRADITIONELLE DEUTSCHE QUALITÄT

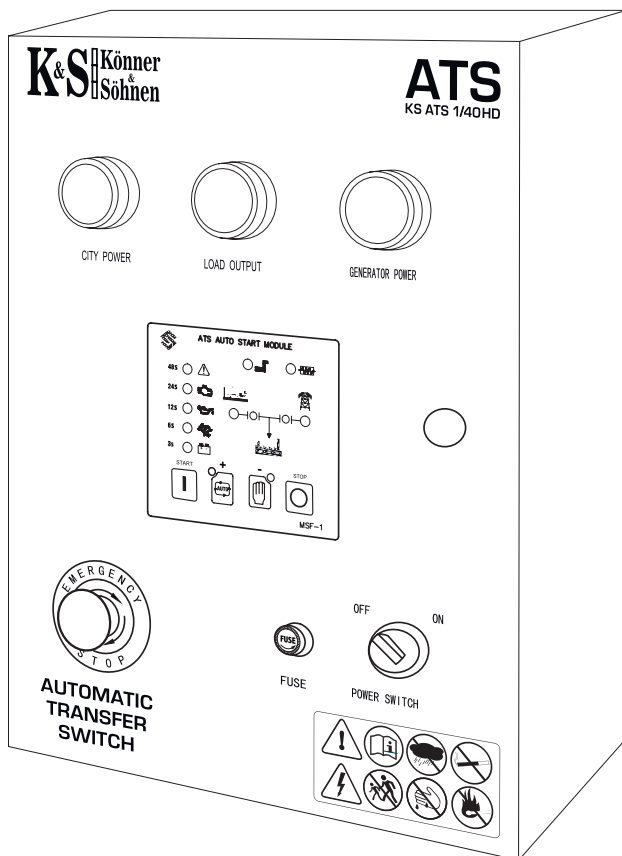
K&S
Können
&
Söhne

AUTOMATIC TRANSFER SWITCH (ATS)

KS ATS 3/18 HD

KS ATS 1/40 HD

KS ATS 4/63 HD





Thank you for your purchase of ATS from **TM Könner & Söhnen**. This manual contains safety instructions, a description of the use and commissioning of the ATS and procedures for its maintenance.

The manufacturer reserves the right to make changes in the product design, configuration and construction. The images and drawings in this manual are for reference only and may differ from the actual components and inscriptions on the products.

Contact information that you are free to use in case of any problems can be found at the end of this manual. All information in this manual is correct to the best of our knowledge and belief at the date of its publication. The current list of service centers can be found on the official importer's website: www.ks-power.de/en



PLEASE NOTE!



In order to ensure equipment integrity and avoid possible injuries, we recommend that you read this manual before operating the product.

ATS UNIT USE AND SAFETY PRECAUTIONS

1

WORK AREA

Do not use the product near flammable gases, liquids or dust. Keep the work area clean and well lit to avoid injuries. Keep unauthorized persons, children and animals away from the running product.

ELECTRICAL SAFETY

The product is energized. Observe safety precautions to avoid electric shock. Avoid operating the product in high-humidity environments. Do not allow moisture to enter the product, as this increases the risk of electric shock. Avoid direct contact with grounded surfaces (pipes, radiators, etc.). Be careful when working with the power cord. Replace it immediately in case of damage, as damaged power cord increases the risk of electric shock. All product connections must be carried out by a certified electrician in accordance with all electrical codes and regulations. Do not operate the product with your feet in the water, on wet or damp soil. Do not touch live parts of the product. Keep all electrical equipment dry and clean. Replace damaged or worn wiring. Worn, damaged, or rusted terminals must be replaced as well.

PERSONAL SAFETY

Do not operate the product when you are tired or under the influence of potent drugs, alcohol or medication. During operation, inattention can cause serious injury. Make sure there are no foreign objects on the product when it is turned on. Do not overload the product; use it for its intended purpose only.



PLEASE NOTE!



The total power of power consumers connected to the ATS system must not exceed the maximum permissible power for this ATS unit model.

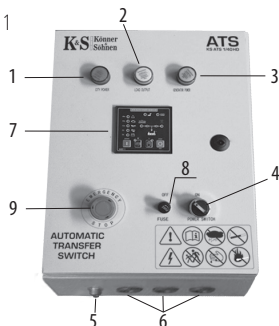
Model	KS ATS 3/18 HD	KS ATS 1/40 HD
Battery voltage	DC8.0 -18 V	
Power consumption	10 W	
Operating voltage / Maximum current	400V/18A	230V/40A
Working environment	-20-50 °C humidity: 20-90%	
Storage environment	-30-70 °C humidity: 20-90%	
IP protection class	IP41	
Insulation class	AC1.5KV / 1min 1mA	
Maximum battery charging current from the built-in power supply	2A	
Control cable length, m	4,4	
Dimensions, mm	300 x 400 x 200	
Net / gross weight, kg	5,7 / 6,1	6,1 / 6,5

Model	KS ATS 4/63 HD
Battery voltage	DC8.0 -18 V
Power consumption	10 W
Voltage	230V/400V
Power 230 V, kW	14,4 (28,8)
Current (max) 230 V	63A (120A)
Power 400 V, kW	34,8
Current (max) 400 V	63A
Working environment	-20-50 0 C humidity: 20-90%
Storage environment	-30-70 0 C humidity: 20-90%
IP protection class	IP41
Insulation class	AC1.5KV / 1min 1mA
Maximum battery charging current from the built-in power supply	2A
Control cable length, m	4,4
Dimensions, mm	320x400x200
Net weight, kg	6,5

GENERAL VIEW OF THE ATS UNITS KS ATS 3/18 HD, KS ATS 1/40 HD, KS ATS 4/63 HD

3

Img. 1



1. Main power indicator
2. Load connection indicator
3. Generator power indicator
4. ATS unit main switch
5. Control cable connector
6. Cable entry openings
7. Programmable controller
8. Fuse
9. Generator emergency stop button

OPERATING THE ATS UNIT

4

ATS UNIT FUNCTION

The ATS unit automatically starts the generator and switches over power consumers to it when the main power supply is deenergized.



PLEASE NOTE!



Use the control cable to connect the ATS unit to the power generator; the generator must have a special connector for connecting the ATS.

OPERATING PROCEDURE

5

Connect the ATS unit as shown in Figs. 3-6 and according to the diagrams in the Appendix.

AUTOMATIC MODE

Set the "POWER SWITCH" to the "ON" position, and then press the "AUTO" button. The "AUTO" light indicator indicates that the ATS system is in automatic mode.

When the main power supply is disconnected, the ATS system automatically starts the generator in 12 seconds (time can be programmed). After 6 seconds (the time can be programmed) following the generator startup, the system will switch over power consumers to the backup power source (generator).

In case of unsuccessful startup, the ATS system attempts to start the generator three times with an interval of 6 seconds between the attempts. If all three attempts are unsuccessful, the ATS unit will stop trying to start the engine and signal an error.

When the main power supply is turned on, the ATS system switches over power consumers to the main power supply and turns off the power generator in 12 seconds (time can be programmed).

GENERATOR STOP IN THE "AUTO" POSITION

If the generator was started in the "AUTO" position, set the "POWER SWITCH" to the "OFF" position to stop it. The generator will stop immediately, or press the emergency stop button.

MANUAL MODE

If it becomes necessary to start the generator without using the ATS automatic mode, press the manual mode button first and then press the "START" button to start the generator. To stop the generator, press the "STOP" button.

BATTERY

The ATS unit battery is charged automatically. The maximum charging current is 2A.



Starter indicator – signals the operation of the starter and flashes once per second in preparation for the startup.



Engine preheat indicator – glows steadily when the engine is preheated. The generator must be equipped with an engine preheating system.



Engine indicator – glows steadily when the engine is running. It flashes once per second in preparation of the engine for the startup.



(LH) Generator power indicator – lights up when power is supplied from the generator. It flashes once per second in preparation for the power supply.



(RH) Main power indicator – lights up when power is supplied from the mains.



Load connection indicator – glows steadily when power consumers are connected.



Connection error indicator – flashes 4 times per second and emits a beep when cables or connections are damaged.



Power indicator – lights up when there is voltage from the main power network. It flashes once per second when testing the mains.



Engine fault indicator – flashes 2 times per second and emits a beep after the engine has failed to start after 3 attempts.



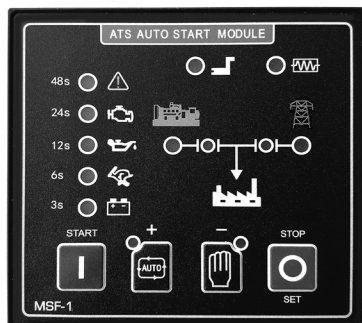
Engine speed



Oil pressure indicator – flashes 2 times per second and emits a beep when the engine oil pressure is low. The generator must be equipped with an oil pressure sensor. (The ATS models do not have this function).



Manual mode button / indicator – switches the ATS unit in manual mode, lights up in manual mode.



Img. 2



Battery voltage indicator – flashes 2 times per second in the event of improper battery voltage.



Engine start button – starts the engine in manual mode.



Engine stop button – stops the engine in manual mode.



Automatic mode button / indicator – switches the ATS unit in AUTO mode, lights up in AUTO mode.



“Power switch” – ATS unit main switch.

ERROR OPTIONS:



Flash together when the generator is deenergized.



(LH) Failed to connect power consumers to the generator.



(RH) Failed to connect power consumers to the mains.

With the engine off, press and hold down the button  for 3 seconds to switch the controller to the setup mode. To select the setting, briefly press the  button. The parameters are changed cyclically.

PARAMETERS:



Engine start delay time following deenergization of the main power supply (factory set to 12 seconds).



(LH) Generator warm-up time before connecting the load (factory set to 6 seconds).






Delay time during which the ATS unit will switch over power consumers to the main power supply upon restoration of the power supply (factory set to 6 seconds).



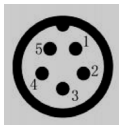
Engine preheat time (factory set to 6 seconds). (The generator must be equipped with an engine preheating system). (The ATS models do not have this function).



Starter operation time (can be adjusted from 3 to 21 seconds).

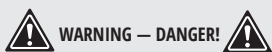
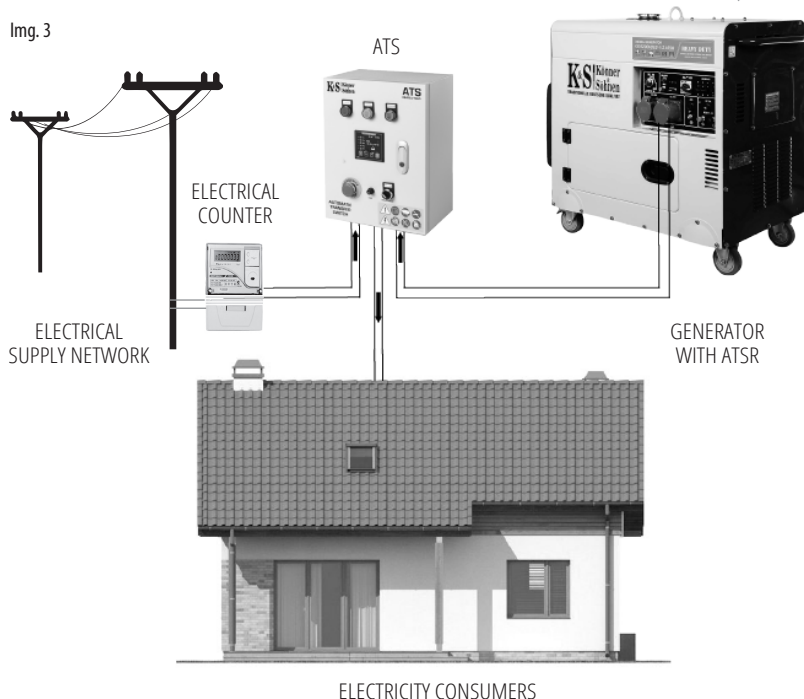
The timing of these parameters can be set to 3, 6, 12, 24 or 48 seconds. Select the required parameter, press  to increase or  to decrease the value. To complete the setup process, press and hold the button  for 3 seconds.

ATS CONNECTOR AND ITS CONNECTION



Number	Color	Connection function
1	Red	+12V
2	Yellow	Starter
3	Green	~24V
4	Blue	Fuel valve
5	Black	-12V
6	White	Electric heating

Img. 3



WARNING – DANGER!

Opening of ATS unit and its connection to the mains must be carried out only by qualified specialist. The product is under tension.

Connect the ATS to the generator using the generator automatic start control cable (supplied as a set with ATS)

To start the generator in automatic mode, the start key on the generator's control panel must be in the OFF position.



The ATS contact socket is located on the control panel of the generator.

WIRING DIAGRAMS

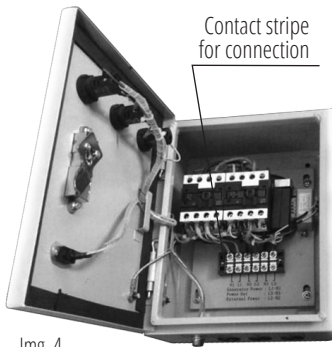


WARNING – DANGER!

The ATS unit may only be tampered with and connected by a qualified technician. The product is live.

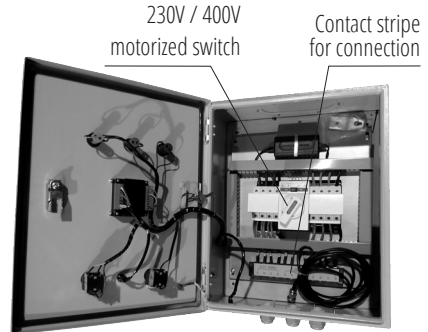
Open the ATS unit door. Inside you will see the connection terminals. Connect the ATS unit as shown in Figs. 3-6 and according to the diagrams in the Appendix.

MODELS KS ATS 3/18 HD AND KS ATS 1/40 HD



Img. 4

MODEL KS ATS 4/63 HD

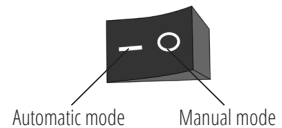
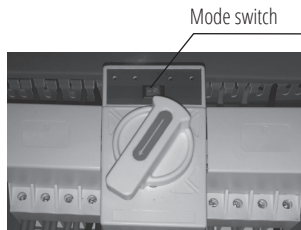


Img. 5

The automatic generator control unit KS ATS 4/63 HD has two operating modes: manual and automatic. The ATS unit has a built-in mode switch: AUTOMATIC / MANUAL. To ensure normal functioning of the ATS unit, the manufacturer recommends that the mode switch be set to "I", which means the device operates in automatic mode, in which the automatic control unit continuously monitors voltage from the main power source (mains).

If the mode switch is set to "O", the ATS unit operates in manual mode and mains voltage control is not provided.

Img. 6



CONTACT STRIPES WITH WIRING DIAGRAM FOR MODEL KS ATS 3/18 HD FOR THREE-PHASE MAINS

See picture 1 in the Appendix:

CITY – terminals for the main power supply.

A – Phase 1, **B** – Phase 2, **C** – Phase 3,
N – NEUTRAL.

OUTPUT – terminals for home or other power consumers.

L1 – Phase 1, **L2** – Phase 2, **L3** – Phase 3,
N – NEUTRAL.

GENERATOR – terminals for the generator.
U – Phase 1, **V** – Phase 2, **W** – Phase 3,
N – NEUTRAL.

CONTACT STRIPES WITH WIRING DIAGRAM FOR MODEL KS ATS 1/40 HD FOR SINGLE-PHASE MAINS

See picture 3 in the Appendix:

CITY – terminals for the main power supply.

N – neutral, **L** – phase.

OUTPUT – terminals for home or other power consumers.

N – neutral, **L** – phase.

GENERATOR – terminals for the generator.
N – neutral, **L** – phase.

CONTACT STRIPES WITH WIRING DIAGRAM FOR MODEL KS ATS 4/63 HD

See picture 5 in the Appendix:

CITY POWER – terminals for the main power supply.

A – Phase 1, **B** – Phase 2, **C** – Phase 3, **N** – NEUTRAL.

LOAD – terminals for home or other power consumers.

A – Phase 1, **B** – Phase 2, **C** – Phase 3,
N – NEUTRAL.

GENERATOR – terminals for the generator.
A – Phase 1, **B** – Phase 2, **C** – Phase 3,
N – NEUTRAL.

KS ATS 3/18 HD – see picture 2 in the Appendix.

KS ATS 1/40 HD – see picture 4 in the Appendix.

KS ATS 4/63 HD – see picture 6 in the Appendix.

WARRANTY PROVISIONS

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The international manufacturer warranty is 1 year. The warranty period starts from the date of purchase. In cases when warranty period is longer than 1 year according to local legislation please contact your local dealer. The Seller which sells the product is responsible for granting the warranty. Please contact the Seller for warranty. Within the warranty period, if the product fails because of defects in the production process, it will be exchanged on the same product or repaired.

The warranty card should be kept throughout the warranty period. In case of warranty card loss, a second one will not be provided. The customer must provide the warranty card and buyer`s check during request for repair or exchange. Otherwise, the warranty service will not be provided. The warranty card, attached to the product during sale, should be correctly and fully completed by the retailer and customer, signed and stamped. In other cases, warranty is not considered as valid.

Provide clean product to the service center. Parts, that must be replaced, are the property of the service center.

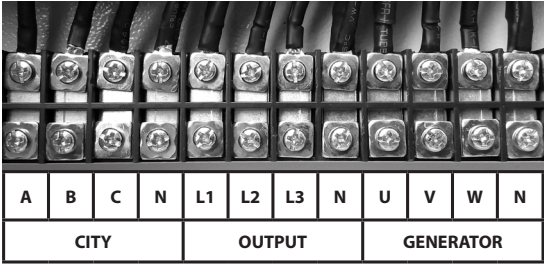
WARRANTY DOES NOT COVER:

- Mechanical damage (cracks, paint peeling, etc.) and damage caused by the action of aggressive media, ingress of foreign objects into the product or air inlet screen, as well as damage resulting from improper storage (corrosion of metal parts).
- Malfunctions resulting from improper operation, unintended use of the product, overloading of the product, as well as instability of the mains parameters. The product overload is indicated by melting or discoloration of parts due to the effect of high temperature, score marks on the cylinder or piston surfaces, destruction of connecting rod inserts or piston rings. In addition, the warranty obligations do not apply to the failure of the automatic voltage regulator of power generators due to improper operation.
- Malfunctions caused by contamination of the fuel or cooling system.
- Quick-wearing parts (V-belts, rubber seals, spark plugs, nozzles, clutch springs, pulleys, guide rollers, cables, manual starters, clamping chucks, collets, removable batteries, filter and safety elements, oil, removable devices, fittings, blades, drills, etc.).
- Electric cables with mechanical and thermal damage.
- The product tampered with or repaired not by the authorized service center. The product tampered with or repaired not by the authorized service center is indicated by, among other things, kinked splined parts of fasteners.
- Preventive maintenance (cleaning, washing, greasing, etc.), installation and setup of the product.
- Normal wear and tear of the product (remaining life).
- Malfunctions arising from the use of the product for business related purposes.
- The warranty card that is not filled out or does not bear the seller's seal.
- The warranty card that does not bear the bearer's signature.
- The warranty will become null and void in case of violation of the rules for the operation, transportation and storage of the generator.
- Improper or careless installation, improper connection to the mains.

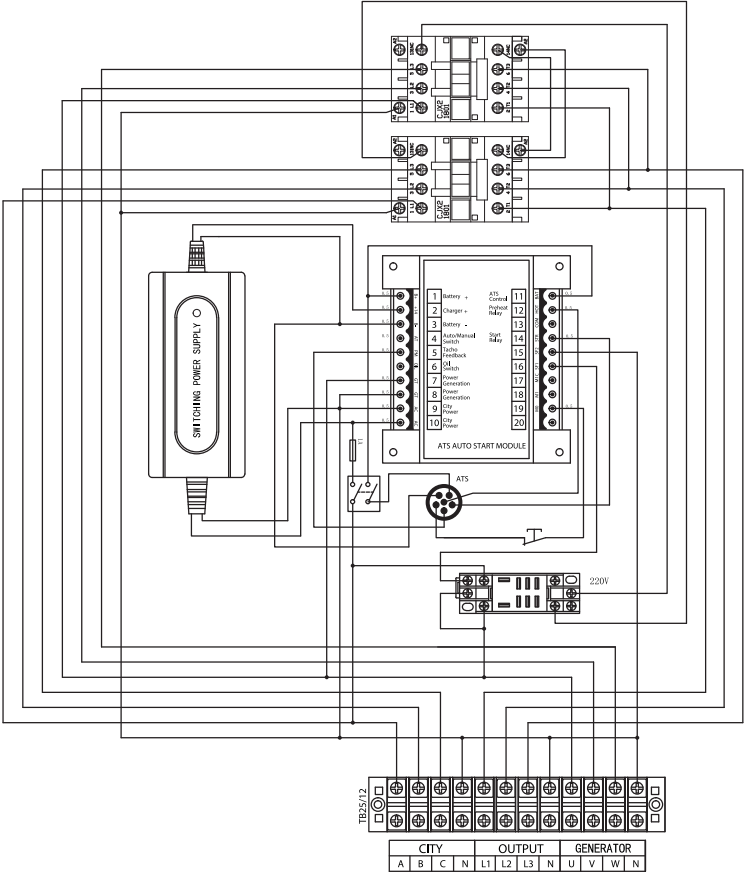


KS ATS 3/18 HD

1.

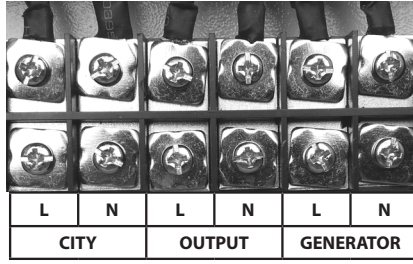


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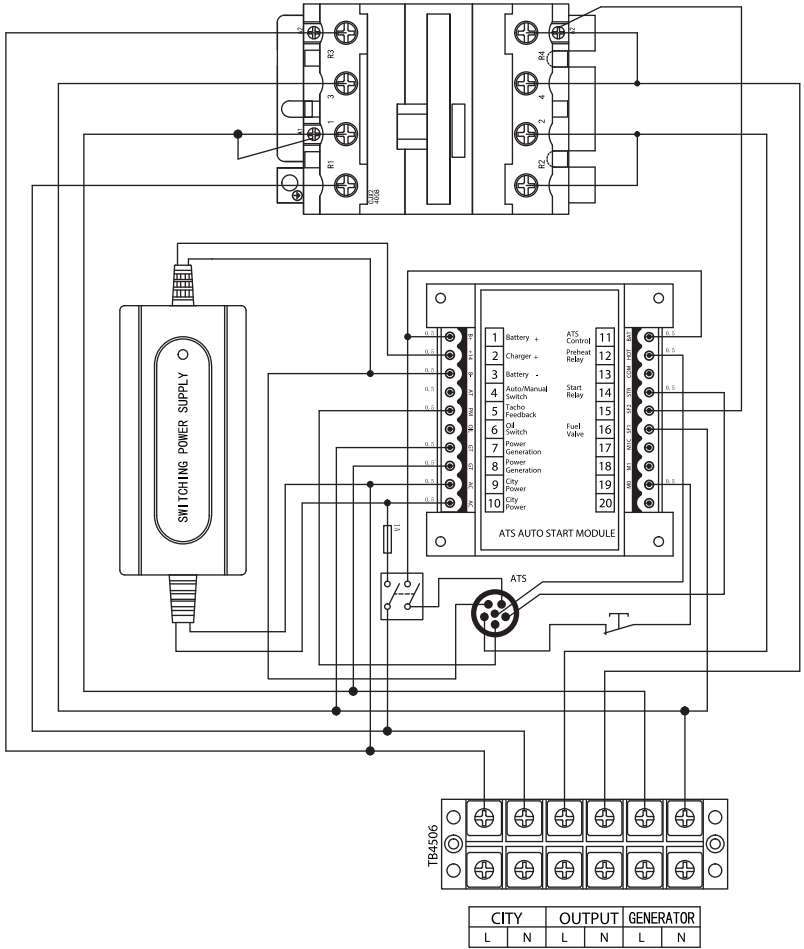


KS ATS 1/40 HD

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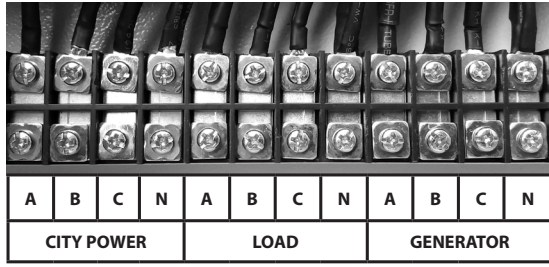


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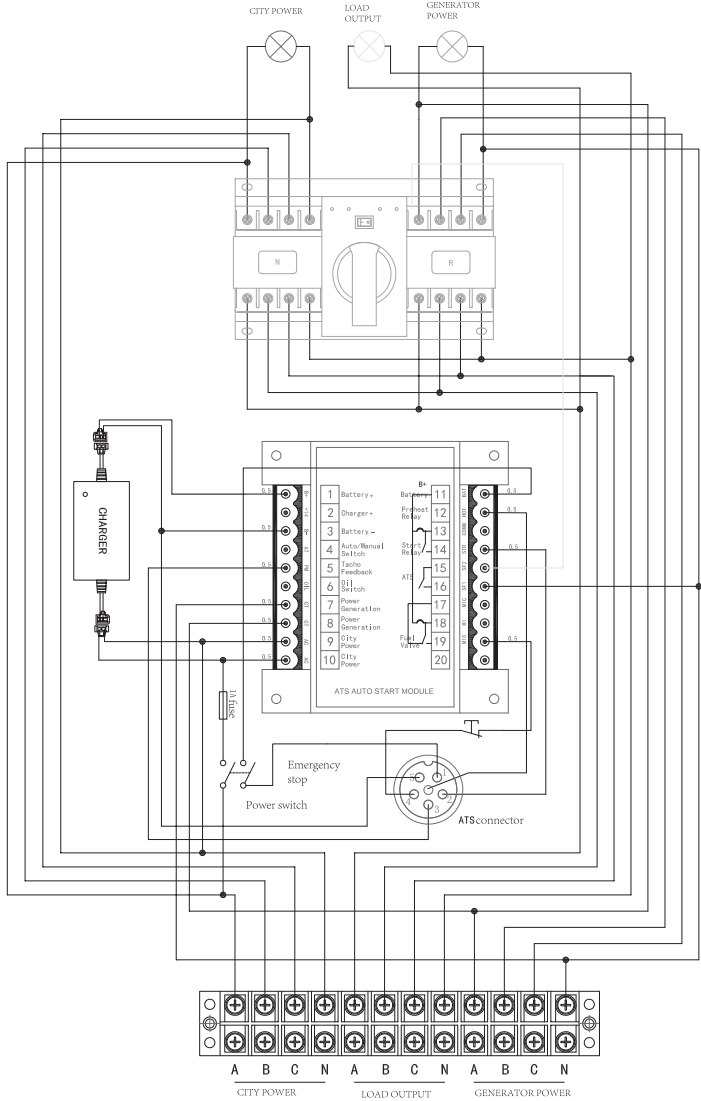


KS ATS 4/63 HD

5.



6.



TRADITIONELLE DEUTSCHE QUALITÄT

K&S Köhner Söhne



EC Declaration of Conformity

Nr. 081

The following products have been tested by us with the listed standards and found in compliance with the European Community Low Voltage Directive 2014/35/EC, Electromagnetic compatibility Directive (EMC) 2014/30/EC.

Manufacturer: DIMAX INTERNATIONAL GmbH
Address: Hauptstr. 134, 51143 Cologne, Germany
Product: Automatic Transfer Switch "Könner & Söhnen"
Type / Model: KS ATS 4/63HD ,KS ATS 1/40HD, KS ATS 3/18HD

The statement is based on a single evaluation of above mentioned products. It does not imply an assessment of the whole production and does not permit the use of the test lab. logo. The manufacturer should ensure that all product in series production are in conformity with the product sample detailed in this report. The applicant should hold the whole technical report at disposal of the competent all the right.

Applied EC Directives: 2014/35/EC Low Voltage Directive
2014/30/EC Electromagnetic compatibility Directive (EMC)

Applied Standards: EN 55014-1:2017
EN 55014-2:2015
EN 61000-3-2:2019
EN 61000-3-3:2013+A1:2019
IEC 60335-1:2020



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DIMAX
International
GmbH

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USt-Id-Nr.: DE296177274

We DIMAX INTERNATIONAL GmbH hereby declare that specified above conforms covering European Parliament and Council Directives, Low Voltage Directive of 26 February 2014, Electromagnetic compatibility Directive (EMC) 2014/30/EC of 26 February 2014. The CE mark above can be used under the responsibility of manufacturer. After completion of an EC declaration of Conformity and compliance with all relevant EC directives.

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