

Please, read this manual carefully
before use!

Manual



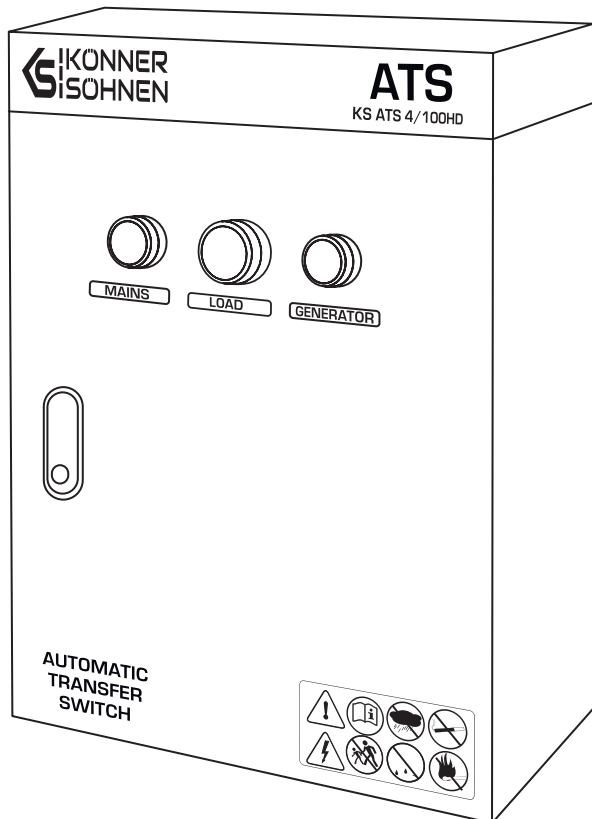
TRADITIONELLE DEUTSCHE QUALITÄT



AUTOMATIC TRANSFER SWITCH (ATS)

KS ATS 4/100HD

KS ATS 4/100HD-0





Thank you for your purchase of ATS from **Könnér & 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.koenner-soehnen.com



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

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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.



WARNING!

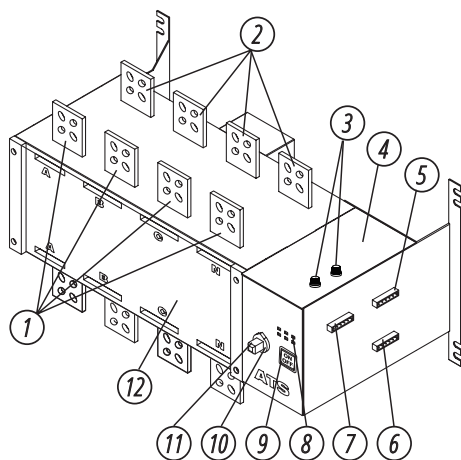


This material is for informational purposes only and is not an instruction how to install or connect equipment to the network. In practice, there are different options for supplying electricity and different rules for its connection. The decision on how to properly connect the equipment in each individual case must be made by a certified electrician who performs the installation and electrical connection of the equipment. The manufacturer is not responsible for improper connection of equipment, and is not responsible for possible material and physical damage that may occur as a result of improper installation, connection or operation of equipment.

Model	KS ATS 4/100HD	KS ATS 4/100HD-O
Consumption	18W	18W
Operating voltage	230 V/400 V	230 V/400 V
Power 230 V, kVA, cosPhi 1.0	23 kW	23 kW
Current (max) 230 V	100 A	100 A
Power 400 V, kVA, cosPhi 0.8	55 kW	55 kW
Current (max) 400 V	100A	100A
Working environment	-20-45 °C humidity: ≤ 50%	
Storage environment	-30-70 °C humidity: ≤ 50%	
IP protection class	IP44	
Insulation class	AC1.0KV/1min 1mA	
Net dimensions (LxWxH), mm	500x300x600	515x415x150
Net weight, kg	22.3	5

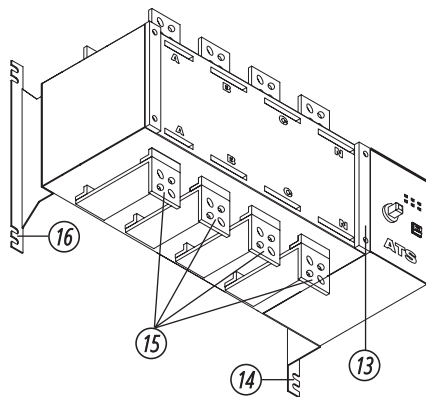
GENERAL VIEW OF THE ATS UNITS

3



1. Main power input bars: used for fixed the main power cable or busbar
2. Standby power input bars: used for fixed the main power cable or busbar
3. Working power fuses
4. Electronic control unit of transfer switch: including main control circuit board and driven motor.
5. Terminal #2: Transferring control signal input (passive output)
6. Terminal #3: Position feedback control signal output 1 (active output for M type and passive output for)
7. Terminal #1: Electronic control unit power supply input
8. LED indicators

9. Electric/emergency manual mode selection button
10. Switch position status indicator
11. Manual emergency handle interface: used to tum the switch manually to switchover the power supply at an emergency situation.
12. Transferring switch body: the standard type is equipped with upper incoming lines and lower busbar outgoing lines.



- 13. Safety guard plate installation holes, used for fixing the safety guard plate
- 14. Right installation bracket: matched with the left installation bracket and used for fixing switches
- 15. Load power output bars: used for fixing installation the load cables or busbars.
- 16. Left installation bracket: matched with the right installation bracket and used for fixing switches



IMPORTANT!



Manufacturer reserves the right to make changes and/or improvements in design, components set and technical attributes without notice and without incurring obligation. The pictures in this manual are schematical and may not match the parameters of original product.

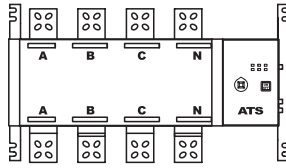
CONTROLLER MAIN TECHNICAL PARAMETERS

4

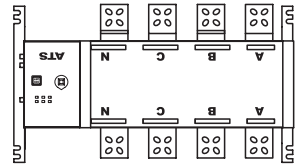
Conventional thermal current I_{th}	100A
Rated insulation voltage of copper bar, U_i	750V
Rated impulse withstand voltage, U_{imp}	8 kV
Rated operating voltage of copper bar, U_e	AC440V
Use category	AC-3A
Rated operating current of copper bar, I_e	100
Rated making capacity	10Ie (10 times the rated current)
Rated breaking capacity	8Ie (8 times the rated current)
Rated limit short-circuit current	100 kA
Rated short time withstand current	9 kA
Transferring time I - II or II - I	0.45 s
Rated operating voltage of the control power supply, U_s	Standard product: AC220V, Optional: DC24V, AC110V, AC280V, Correct working range: 85% U_s ~ 115% U_s
Start	300W
Normal	55W
Net weight (4-pole), kg	3.5

SCHEMATIC DIAGRAM OF CORRECT INSTALLATION METHOD

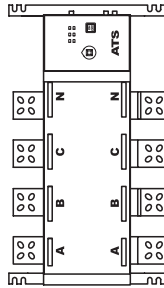
5



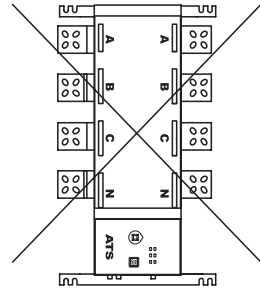
BEST
(front installation)



RIGHT
(back installation)



RIGHT
(vertical installation)

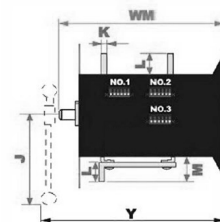
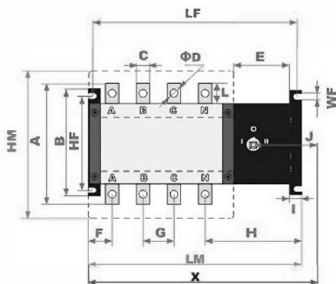
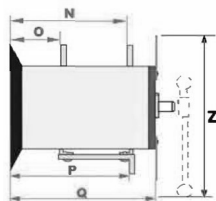
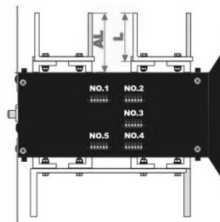
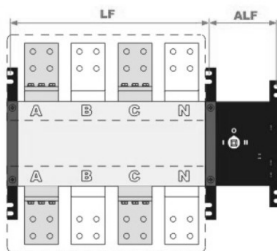
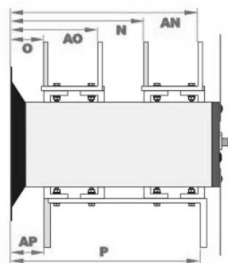


WRONG
(inverted installation)

ENVIRONMENTAL REQUIREMENTS FOR USE

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Name	Requirements
Operating temperature	-20 To +45°C, the average value for 24 hours shall not exceed +35°C;
Operating humidity	The average humidity under the +40°C conditions shall not exceed 50% without condensation;
Altitude	Lower than 2000 meters and, if higher than 2000 meters, reduce its rated value for use;
Vibration and gas	There shall be no strong vibration or shock and no harmful gases to corrode the metals and to damage the insulation within the environment of its use;
Surrounding material	There shall be no serious dust, conductive particles or explosive hazardous substances
Class of pollution	Class III
IP rating	IP20
Storage requirements	To be stored under -30 To 70°C and in a dry, non-corrosive and saline environment and the longest period of storage shall be 1 year



Current range	Installation data			Maximum size of the body			Other detailed dimensions of switch					
	LF	WF	HF	LM	WM	HM	A	B	C	D	E	F
100A	225	7	84	244	135	136	113	103	14	6	102.5	21

Other detailed dimensions of switch											Reference dimensions		
G	H	J	K	L	M	N	O	P	Q	X	Y	Z	
30	133	13	141	2.5	18	8	86	37	86	113	303.5	168.5	208



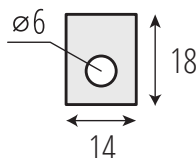
NOTE!



X, Y and Z are the maximum width, depth and height of the switch assembled with a manual emergency handle.

Depending on the angle of the handle when installing or the difference of positions of the slider moving, the corresponding dimensions will be smaller than the data listed in the table above, which are listed for reference only.

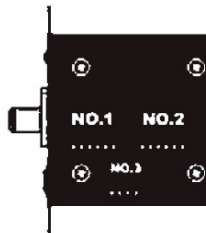
INPUT AND OUTPUT COPPER BAR
DIMENSIONS CHART



Terminal Serial №	Access point serial №	Function	Notes
Terminal №1	101, 106	Power supply neutral wire for feedback and live wire output	Active output, 1 A AC230V
	102, 103	№1 operating power supply live wire and neutral wire input	>5A AC 230V
	104, 105	№2 operating power supply live wire and neutral wire input	>5A AC 230V
Terminal №2	201, 206	Passive control when disconnected and active control when closed	See SKT Type Principle Diagram for details
	202	External passive control signal input common terminal	Passive control signals
	203	Line I is switched on, when closed with 202	
	204	Line 0 is switched on, when closed with 202	
	205	Line II is switched on, when closed with 202	
Terminal №3	301, 306	Not used, directly connected internally	20A-250A Unassembled
	302	Passive position feedback signal output common terminal	M type is active output, the other types are passive output, see the principle diagram for details 1A AC 220V 400A and above assembly
	303	Closed with 302, when Line I is switched on	
	304	Closed with 302, when Line 0 is switched on	
	305	Closed with 302, when Line II is switched on	

TERMINAL LOCATION DRAWING

X type 100A



● 1 ● 2 ● 3

LED INDICATOR

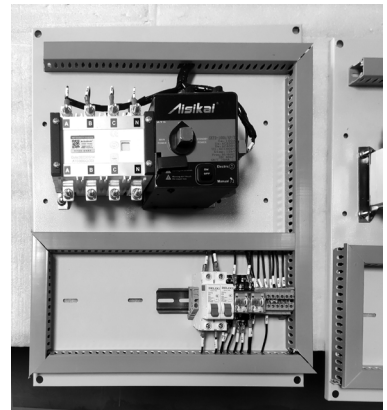
● 4 ● 5 ● 6

No1	No2
Line I control power supply is powered-on. (There is AC 220V between the access points 102 and 103 of No.1 tenninal)	Line I control power supply fuse is normal.

No3	No4	No5	No6
Line I control relay is normal (the relay is mounted on the internal circuit board and No.3 light is used for this function, only when No.4 light is not lit up).	Line II control power supply is powered-on (There is AC 230V between the access points 104 and 105).	Line II control power supply fuse is normal.	125A-250A switch, key lock or button is in the AUTO position (the key lock or the button is mounted on the front side of the switch). 400A-3200A switch and Line II control relay are normal (the relay is mounted on the internal circuit board).

INSTRUCTIONS FOR RAPID APPLICATION OF LED INDICATORS:

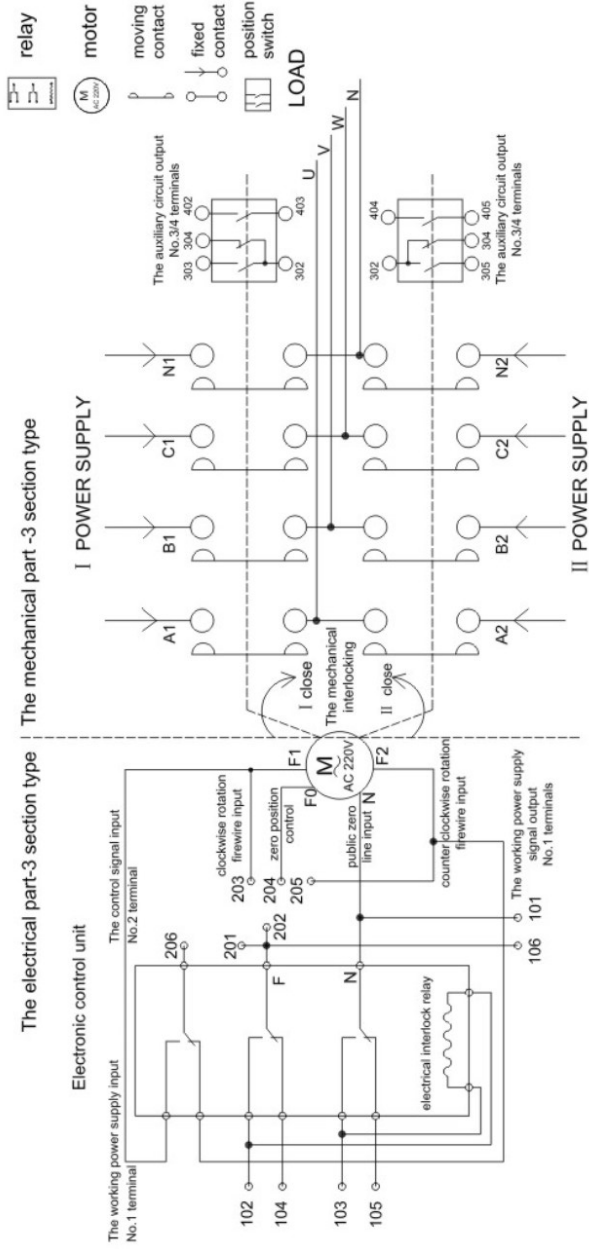
- A.** No. 1 and No. 4 indicator lights are lit up, which stands for that the control power supply of the lines I and II are powered on.
- B.** No. 2 and No. 5 indicator lights are lit up, which stands for that the fuses of the control power supply of the lines I and II are normal.
- C.** No. 3 indicator light is lit up, which stands for that the control relay of the line I is working normally.
- D.** No. 6 indicator light for the 400A to 3200A switches is lit up, which stands for that the control relay of the line II is working normally.
- E.** No. 6 indicator light for the 125A to 250A switches is lit up, which stands for that the key switch or the button is in the ON position.



NOTE!



M type switch 100A has no LED indicator equipped.



NOTE!



The above drawing is only a schematic diagram of its working principle, which does not represent the number of its internal components.

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:

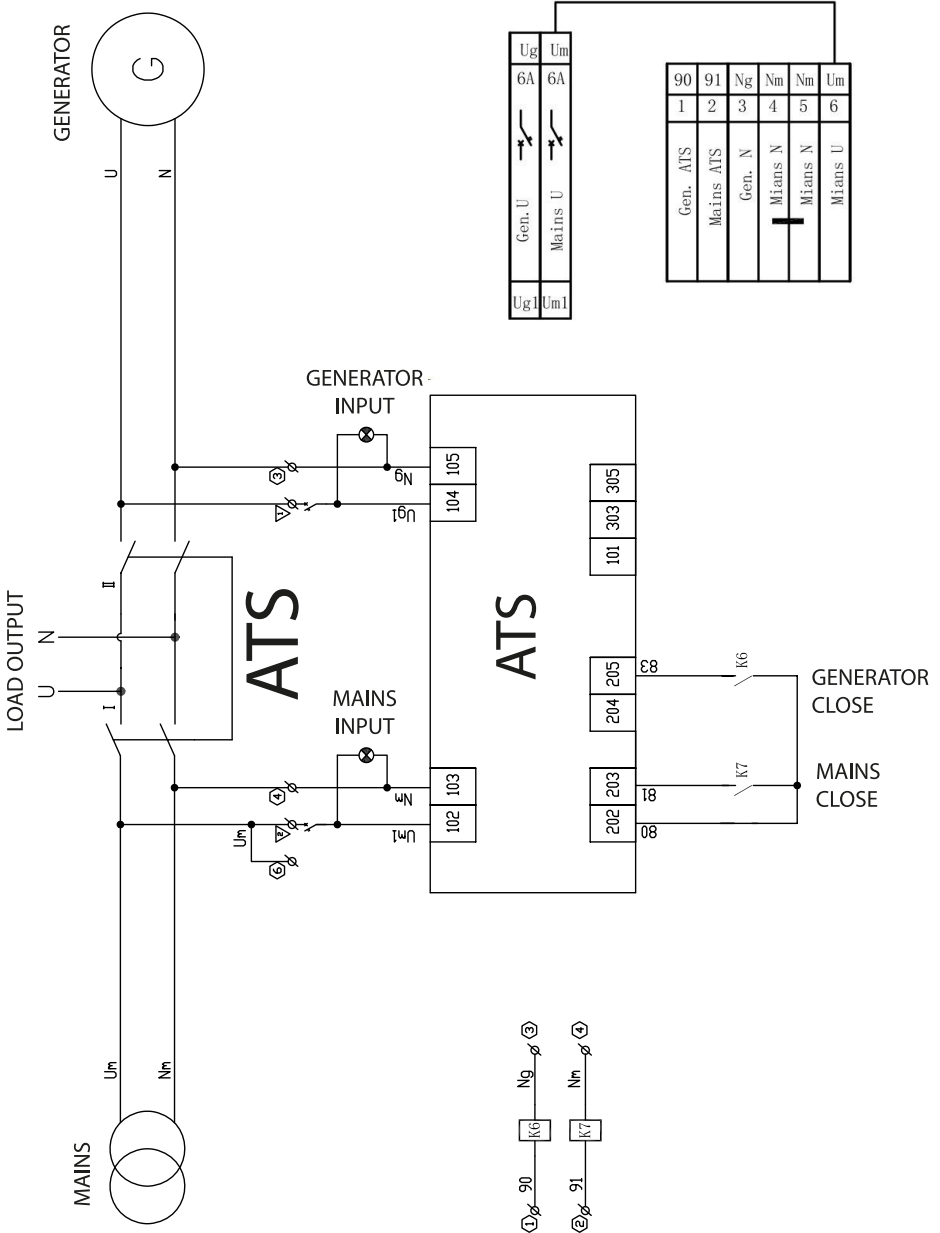
- Mechanical damage (cracks, paint peeling, etc.) and damage caused by the action of aggressive media, ingress of foreign objects into the product or air inlet screen, as well as damage resulting from improper storage (corrosion of metal parts).
- Malfunctions resulting from improper operation, unintended 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.



ONE-PHASE ATS

ATS CONNECTION TERMINAL

Fig. 1

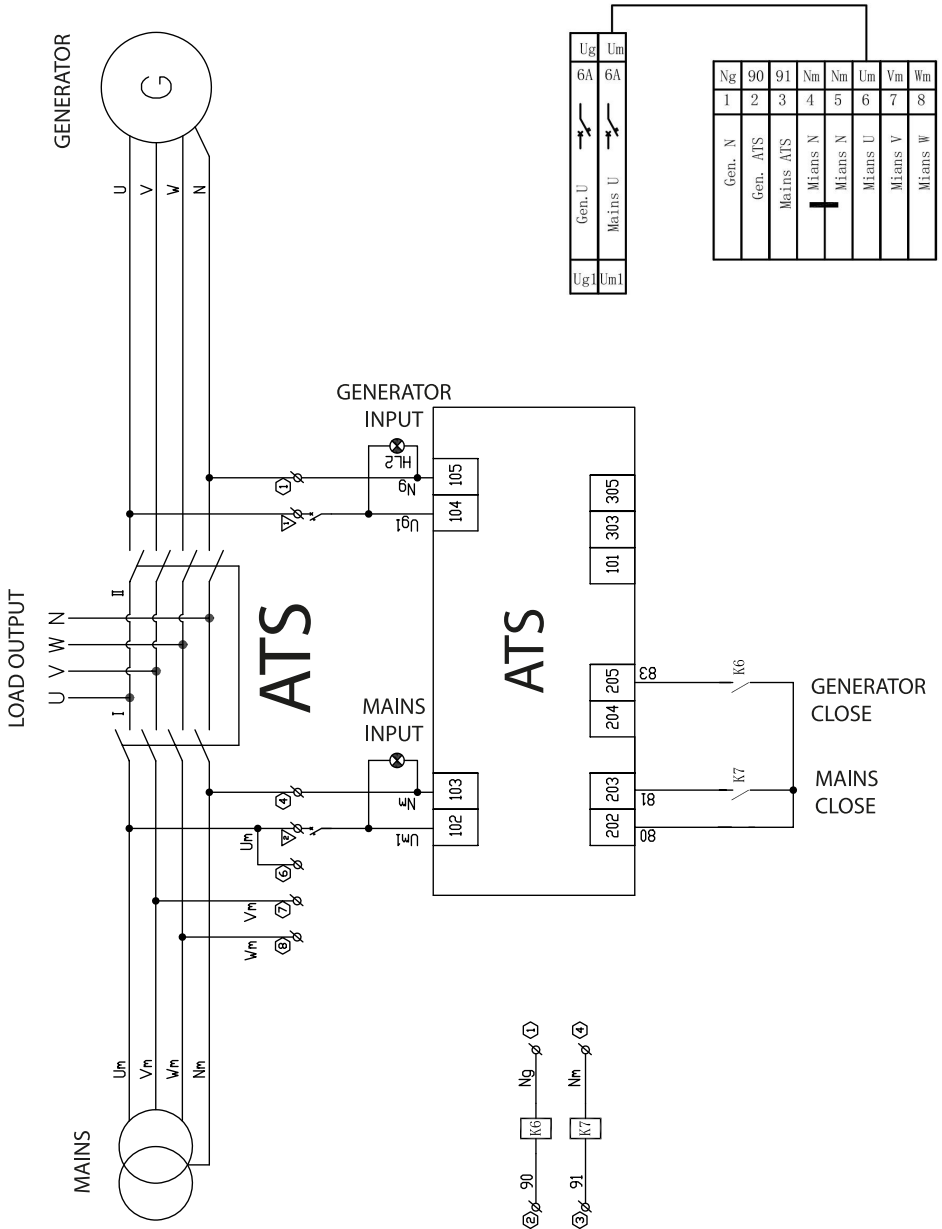




THREE-PHASE ATS

ATS CONNECTION TERMINAL

Fig. 2



CONTACTS

Deutschland:

DIMAX International GmbH
Flinger Broich 203 -FortunaPark-
40235 Düsseldorf, Deutschland
www.koenner-soehnen.com

Ihre Bestellungen

orders@dimaxgroup.de

Kundendienst, technische Fragen und Unterstützung

support@dimaxgroup.de

Garantie, Reparatur und Service

service@dimaxgroup.de

Sonstiges

info@dimaxgroup.de

Polska:

DIMAX International
Poland Sp.z o.o.

Polska, Warczawska,
306B 05-082 Stare Babice,
info.pl@dimaxgroup.de

Україна:

ТОВ «Техно Трейд КС»,
вул. Електротехнічна 47, 02222,
м. Київ, Україна

sales@ks-power.com.ua
