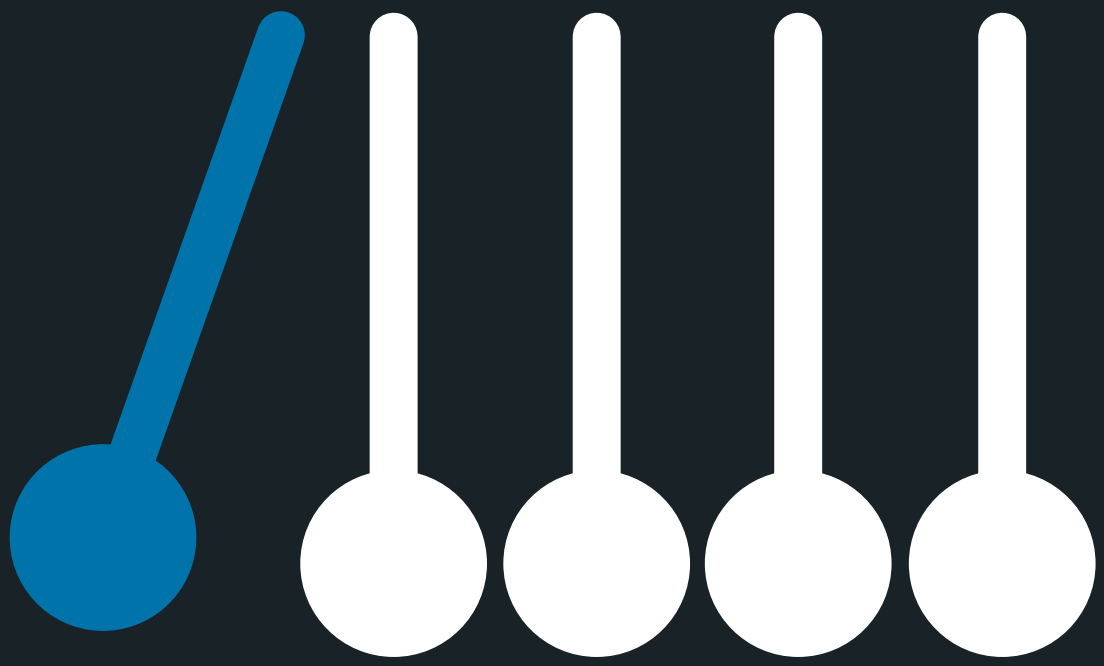


We start you up

with smooth and spindleless liquid resistance starters

Cement Industry

www.mks-anlasser.de

Our philosophy is to deliver a quality full service solution in liquid resistance starter and drive system engineering. MKS is internationally renowned for everything from assembly to commissioning, preventive maintenance, repairs, reconditioning, engineering, consulting and training.

Our highest priority: To respect and fulfil our customers' interests and to achieve their full satisfaction.

Our products always meet the high level of quality our customers have come to expect. Our expertise, the consistency of our processes and our up-to-date quality management techniques ensure that this remains the case.

Quality products require quality components. This is why we accept only the highest quality from our suppliers.

We ensure that we comply with all legal and official requirements by subjecting ourselves to regular audits carried out by certifying organisations.

Dipl.-Ing. Bektas Kusdogan
Dipl.-Soz. Deniz Beese, MBA
Managing Directors

Quality Management ISO 9001:2008
▶ Voluntary participation in regular monitoring
DEKRA Certification
DEKRA certified
ISO 9001:2008

EAC
TR TS Declaration

MKS is one of the leading manufacturers of liquid resistance starters and can look back on more than 100 years of expertise and experience in the field of drive technology.

1917

Tradition

MKS has its origins in BEA, an accomplished liquid resistance starters-manufacturing company founded in 1917.

2001

Expertise

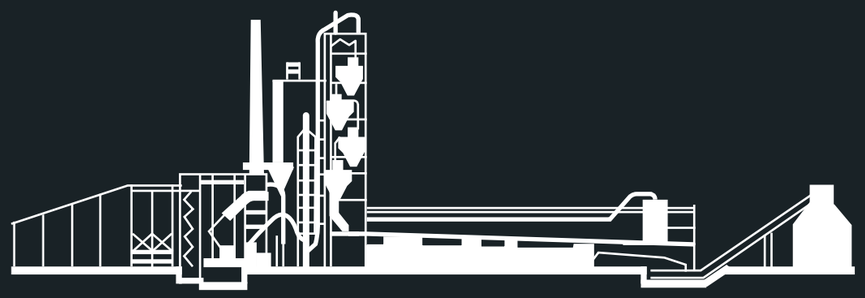
Bektas Kusdogan, a long-serving BEA employee and head of BEA Liquid Resistance Starter Manufacturing, took over his department and founded MKS in 2001 as part of a management buyout.

Today

Innovation

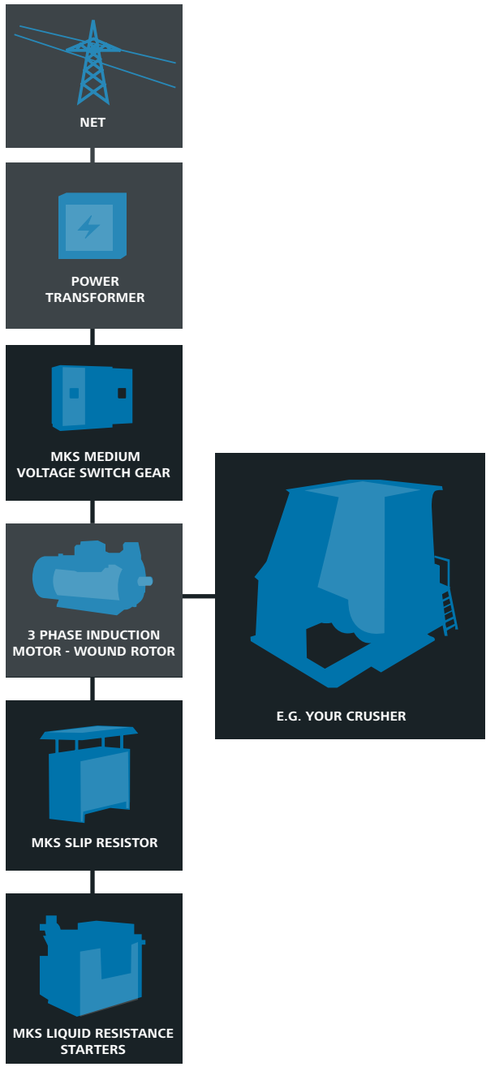
MKS has established itself as a successful company, renowned for innovative solutions, delivering quality liquid resistance starters and components with an outstanding level of service worldwide.

MKS
We start you up.



MKS Liquid Resistance Starters

Our customised full service solution for your drive system.



We deliver the components for your drive system – liquid resistance starters, switch gears and slip resistors customised according to your needs.

We combine all of the system components necessary to build a perfect drive system that enables highly-effective operation.

From receiving a quotation and project planning through to delivery – our customers are supported by a single contact person who handles and coordinates the project from start to finish.

Our expertise and experience allow us to meet the most individual challenges and find the ideal solutions for your business. We can even develop drive system concepts from scratch.

Our liquid resistance starters and Medium Voltage Switch Gears are designed, engineered and tested by MKS experts in Germany.

All materials and equipment conform to IEC and VDE standards. The specification of NEMA is considered far-reaching.

Made to resist.

By definition, a liquid resistance starter is a device in which the resistance of each conducting path is formed by the electrolyte column. Changing the length and the cross sectional area of the electrolyte column alters the resistance.

Our liquid resistance starters can resist almost anything. Our customers appreciate their sturdy construction and outstanding reliability. They have a service life of up to 40 years.

Smooth and spindleless liquid resistance starters – unique in their application.

MKS MFA 1-4

Smooth and spindleless blade electrode system

MFA1-4 series liquid resistance starters impress with their straightforward and sturdy design and high level of cost-effectiveness. Their specially-developed and patented blade electrode alignment allows for a very compact design that also simplifies servicing and maintenance. Liquid resistance starters of the MFA1-4 series are excellently-suited to smaller and medium power range applications from 100 to 4,000 kW.

Their highly-efficient and modern design provides an attractive alternative to oil-cooled starters. Growing environmental awareness and the high level of flexibility of the MFA1-4 liquid resistance starters are the reason why this series is increasingly the replacement of choice for older, oil-cooled models that can cause environmental damage in the event of a malfunction.

MKS AFA 25-105

Smooth and spindleless ring electrode system

AFA 25-105 series liquid resistance starters are based on the original 1917 design produced by BEA. Their production and further development was taken up by MKS in 2001. These liquid resistance starters incorporate the classic BEA ring electrode system.
MKS liquid resistance starters stand out for their high current rating and power range. They have a high resistance ratio and a very low final resistance at their minimal electrolyte concentration.

These liquid resistance starters are rated from 2,000 to 20,000 kW. The excellent characteristics of these liquid resistance starters for the starting of slip ring motors can be employed in nearly all drive systems where high levels of starting torque are required and/or where poor network conditions are present. They are often used for the starting of mills, ventilators, pumps and crushers but also in more unusual applications, such as in sugar mills.

MKS SFAK 31-101

High speed servo drive system

The SFAK series of liquid resistance starters covers a power range from 1,500 to 20,000 kW of engine output. They are usually used as liquid resistance starters for metal shredding drive systems due to their highly dynamic control and positioning characteristics. The smooth, spindleless and wear-resistant electrode adjustment enables a high level of positioning accuracy. Due to their wide dynamic range and control precision they are also employed in turbine and compressor test rigs, steel works, in Ilgner converters, or to start and synchronise the water pumps in hydroelectric energy storage.

The SFAK series is also offered with a slip ring motor, medium voltage switch gear and re-cooling system as part of a complete solution. It goes without saying that the latest motor management system and PLC control via a Profibus or Ethernet interface are included.

Fitted as standard

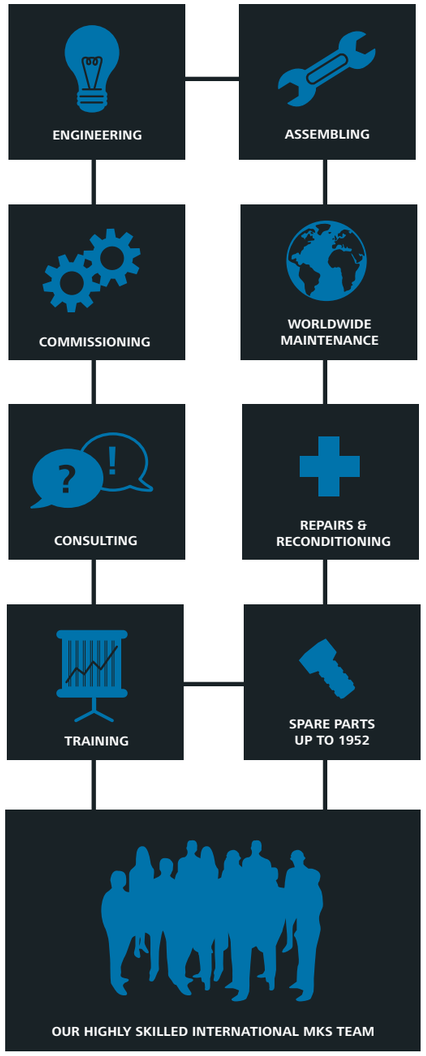
- ✓ Automatic / manual operation
- ✓ Level monitoring
- ✓ Rmax und Rmin monitoring
- ✓ Frequency converter
- ✓ Hand crank
- ✓ Gear box limit switch
- ✓ Short-circuit contactor
- ✓ Heater
- ✓ Thermostat for cut-off and control
- ✓ Liquid resistance starters compliant with IP54
- ✓ Control panel at least compliant with IP54

Options

- ✓ Automation through Profibus or Ethernet interface
- ✓ High speed servo controller
- ✓ Brush lifting device
- ✓ Brush arc monitoring
- ✓ Rotor blocking monitoring
- ✓ Torque control
- ✓ Speed control
- ✓ Agitator
- ✓ Circulation pump
- ✓ Integrated cooling system rated up to 1,200 kW
- ✓ Analogue electrode position sensor 4-20 mA

MKS Service

Your long-term partner in all service areas:



It is our mission to provide optimal service to our customers.

With our extensive experience, we are able to offer you dedicated and comprehensive support in all service fields – in a prompt, straightforward and effective manner – anywhere in the world. Our all-inclusive service encompasses assembly, commissioning, preventive maintenance, repairs and reconditioning as well as engineering, consulting and training. To ensure your plant is optimally maintained we always keep all spare parts in stock – no matter the date of your purchase. Our documentation dates as far back as 1952.
This means we are able to provide you with all the knowledge, experience and spare parts you need.

- ✓ Worldwide service
- ✓ On-site training
- ✓ Engineering
- ✓ Spare parts
- ✓ Retrofitting

up to **40 years** of service life

Our products set standard in many sectors such as the cement, minerals, energy and sugar cane industries, shredder plants, pump stations and power plants – all over the world.

This exceptional position results from our high standards of reliability and quality, our dedication to our customers and confidence in our products. All the more reason for being proud of our extensive reference list. MKS liquid resistance starter and drive systems can be found in more than 100 countries worldwide.

References

ABB
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AKCANSA CIMENTO
AL SAFWA CEMENT
ALBA ELECTRONICS RECYCLING
ALBERT HOFFMANN
ALFA ACCIAI
ARABIAN CEMENT
ARCELOR MITTAL
ASIA CEMENT
ATB SCHORCH
AZCON METALS
BASF
BENTELER STEEL/TUBE
CEMTEC
CEMENTO CHIMBORAZO
CEMENTOS PACASMAYO
CEMENTOS TRANSEX
CEMENTOS YURA
CEMEX
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CHRISTIAN PFEIFFER
CIMENTS DE L'AFRIQUE
CIMPOR
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ELIN MOTOREN
EMR
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POWER TECH DE MEXICO
QUAD PLUS
RABIGH CEMENT
RIVERSIDE ENGINEERING
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RWE
SA RECYCLING
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SAVEH CEMENT
SCANCEM
SCHNITZER STEEL
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VEM SACHSENWERK
VOITH TURBO
WEG
WISE ALLOYS
YAFFE METALS
YAMAMA SAUDI CEMENT
YGUAZU CEMENTOS
YTL CEMENT MALAYSIA

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