

POWER YOUR INDUSTRY

SOLUTIONS FOR INDUSTRIAL APPLICATIONS



POWER YOUR INDUSTRY

The distribution of energy and data

Industry is a broad term which in practice covers a wide variety of different forms of business. Despite all the differences in technical systems, controls or machines, they have one thing in common: the distribution of energy and data is of utmost importance to every industrial operation.

There is also an increasing need for intelligent networking of all operating parts through data connections. Today power and data are increasingly the two essential aspects of modern industrial plants.

Whether in the construction of new industrial facilities, in the ongoing building maintenance or in production engineering, our quality is a reference point for every specification. Special solutions for individual requirements are also an integral part of our day to day business. MENNEKES' technical sales team is available at any time with help and advice.



X-CONTACT®
INSIDE



PowerTOP® Xtra
plugs/connectors

AMAXX®
receptacle
combinations

Stainless
steel
distributors

Mobile and
suspendable
distributors



Contents

1. From planning to realization	Pages 4–5
2. The basis of energy distribution	Pages 6–7
3. Flexible planning	Pages 8–9
4. Energy and data	Pages 10–13
5. Products for industry	Pages 14–19
6. Used around the world	Pages 20–21
7. My Power Connection	Pages 22–23



1. MENNEKES – The specialist for energy and data distribution from planning to realization

Globally MENNEKES is recognized as a manufacturer of the highest quality products, all 'Made in Germany'. We live this claim not only with each of our products, but also in the relationship with our customers.

From consultation via planning to realization, it is very important to us to be within reach of our clients at all times, to support both new industrial projects and ongoing operations.

From the enquiry stage – and, if necessary, up to the installation of our products – The MENNEKES' sales team accompanies the whole project.

We take care of compliance and certification, freight and packaging, deadlines and project tracking right through to supplying spare parts to any place in the world. If needed, we also provide standardized documentation, as called for by planners and engineering offices.

Moreover, our regional network of field staff and partners can also provide local support.

At MENNEKES we specialize in individual solutions, having over 80 years of experience in energy distribution to rely on.



2. The basis of energy distribution is all in the planning

Quality products are required for a quality solution. Here MENNEKES sets standards worldwide. The planning phase is crucial to the final outcome, since this is the phase when the prerequisites are established.

Product quality and suitability also starts at the planning phase, especially in the case of complex industrial projects, so MENNEKES is always available to advise and assist.

Mistakes or inaccuracies in this phase can result in additional costs, which precise planning is able to avoid. With this in mind it is often best to clarify the aims of the client beforehand. MENNEKES is always on hand to discuss any technical or design aspects to ensure the specification is correct.



... from the inventory via analysis to planning

Inventory

Only the concrete planning of a project makes it really sustainable and successful. Firstly the aim of the project should be clarified precisely. This begins with a meticulous stocktaking by setting up a systematic, structured and prioritized specification. These specifications, determined through dialogue with a client, describe the scope of the project to be provided. The location must be analyzed together with the requirements for subsequent use of the products in continuous operation.

This determination of the initial and targeted states is taken as a basis for a spatial planning, which takes into account further requirements such as standards and guidelines. Not only cost-effectiveness but also the question of environmental compatibility is important in today's considerations, which should be addressed at an early stage.

Analysis and planning

Once the priorities have been specified, the preliminary planning can begin, by ensuring that the specifications are in line with the client's wishes. Once the client has come to a decision, this serves as a basis for a planning concept, in which all desired functions of the individual plants are taken into account in accordance with the specifications and planning.

If the planning concept is robust, attention can be paid to technical and legal aspects (approval planning). After resolving these points, you can proceed to preliminary negotiations with the authorities, owners and clients about the approval procedures and the estimation of costs.

MENNEKES has many years of practical experience with which to support professionally at all planning stages from the beginning.



3. Flexible project planning: for every application the right product ...

Ideally the planning of the basic infrastructure should take into account not only the specific needs of an industrial plant but also leave scope from the start for future redistribution or facility changes.

This applies both to the production technology built on it and to ongoing maintenance. MENNEKES' wall mounted combinations can very easily be adapted to new needs. If the combinations are supplied through cables, a re-positioning is possible without much trouble. If there is a desire for stand solutions, which are also to be connected through ground lines, the planning has to be very precise. MENNEKES' technicians are happy to advise you.

We have many years of experience behind us, especially with such solutions, and can gladly incorporate our expertise into concrete planning.

On the other hand, complete flexibility may be attained with suspendable combinations and mobile distributors, which leave full scope in application, even where there are no walls or columns for the installation.

Whether the machine layout changes in production, or test laboratories have to be converted to new processes, or routes for forklifts and pallet trucks have to be kept flexible, suspendable combinations together with a cleverly planned hall distribution can help avoid future problems before they can arise.



**PowerTOP® Xtra
plugs/connectors**

**AMAXX®
receptacle
combinations**

**Stainless
steel
distributors**

**Mobile and
suspendable
distributors**

... and the right enclosure

When it comes to materials, we at MENNEKES have the right solution for every application. To meet challenges in working areas where chemicals and other aggressive materials are used, enclosures made of AMELAN offer a higher resistance to all types of fuels, oils, greases, diluted acids and bases as well as cleaners and most aqueous salt solutions. In addition, highly heat-resistant contact carriers and nickel-plated contacts provide safety in highly corrosive environments.

Solid rubber compounds are used mainly where products are exposed to high mechanical and/or chemical stress.

The solid rubber material has excellent dimensional stability, can resist most acids and alkalis and is extremely durable.

Whether at the factory premises or in production, wherever reliable protection is needed against unauthorized access, or where appearances are important, MENNEKES can offer lockable stainless steel combinations.



4. Energy and data – distribution and networking Solutions for the industry 4.0 ...

Networking is increasingly important in a globalized and industrialized world. Processes increasingly operate digitally. Consequence: Automation and better control. This results in an increased demand for network components in the industry.

Machines increasingly need to link to the Intranet and Internet, to logistics and online shops, to the manufacturing process and CAD systems to machinery and customers. MENNEKES offers solutions to the distribution of energy or data.



... also easy to retrofit

A modular system combining energy and data technology is ideal for setting up decentralized networks or sub-networks in harsh industrial environments. Wherever data and energy are needed MENNEKES has a solution.

Advantages:

- Physically separate enclosures with a hinged upper enclosure part
- Spatial separation of data and energy enclosure
- Standard pre-stamped cable glands
- Cable connection set with multiple sealing inserts for variable cable glands
- Data access from outside through lockable Cepex data outlets possible



AMAXX®, flange mounted

4. Energy and data – distributing and networking at each point

Today many machines and systems require network connections. In whatever application energy and data are needed, the combination of energy and data distribution in robust industrial quality is one of our strengths.

MENNEKES also offers solutions to the distribution of energy and data in mobile, suspendable or lockable combinations.

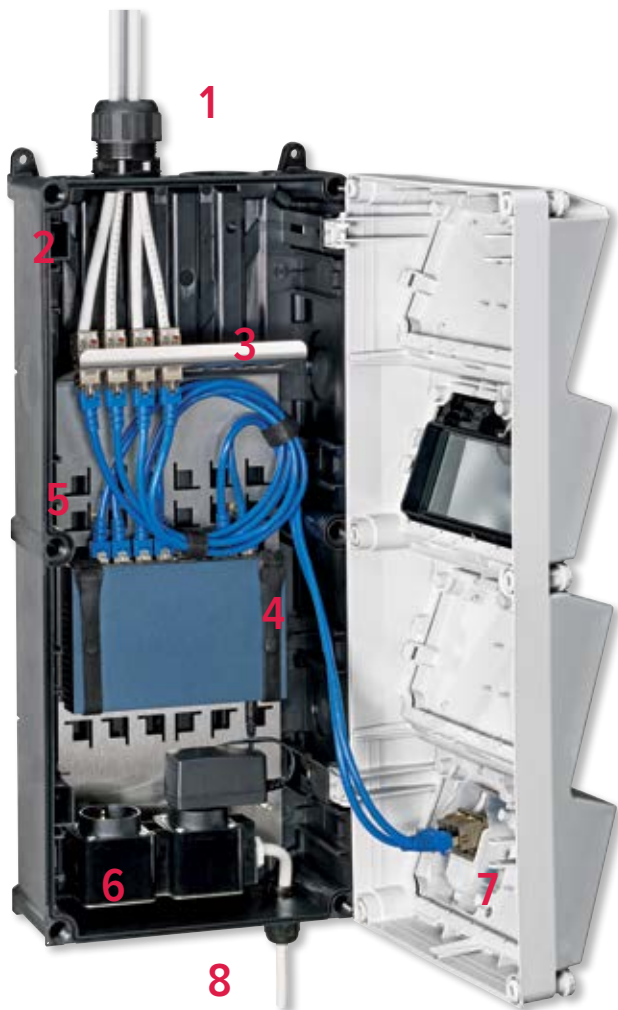


4. Energy and data – distributing and networking with the media distributor

Our AMAXX® enclosures meet the requirements of industrial applications. The use of these proven enclosures for network components offers robust and compact solutions for expanding existing networks or for setting up small networks.

If a network expansion is planned, the media distributor by MENNEKES is the perfect solution. The media distributor can be individually fitted with standard active network components and Keystones.

The plastic enclosure is ideally suited for installing wireless components and protects the installed components against dust, moisture and other environmental influences.



1

Metric screw fitting M 40

with multiple sealing insert, 6 openings for cable diameters of 6-9 mm and blanking plugs

2

Generous connection area

3

Combined patch panel

- for fitting 8 manufacturer-independent RJ45 keystones and individual assembly options for active network components
- Recesses compliant with IEC 60603-7: 19.45 mm and 14.91 mm; with threaded grounding screws M 6 for the optional connection of an external ground conductor

4

Velcro connectors

for attaching the network components

5

Installation space for network components

such as switch, router, WLAN access point etc.

6

2 SCHUKO® receptacles

for the power supply of active network components

7

Cepex data socket with RJ45

right angle connector module for direct connection of patch cables

8

Metric screw fitting M20

5. Products for the industry

Standard material

In addition to the conventional wall mounted receptacles, the MENNEKES range up to 400 A also includes variants with increased corrosion protection and fusing, as well as residual current protection.

This is excellent for industrial applications where the demands imposed on material and products are extremely high.

Our range includes variants of 110-500 V and protection classes IP 44 (splash-proof) up to IP 67 (water-proof).

PowerTOP® Xtra is a complete product family with solutions for every application area. In this regard plugs, connectors and phase inverters have been completely reworked and optimized in every detail.

With X-CONTACT® MENNEKES has developed a completely innovative contact sleeve solution for industrial plugs and sockets setting new standards in safety, reliability and durability.

1

Wall mounted receptacles DUO

- Can be switched off/locked
- If the receptacle is switched on it is not possible to remove the plug

2

PowerTOP® Xtra family

- Ergonomically optimized design
- Simplified assembly
- Simple and secure connection
- All PowerTOP® Xtra with X-CONTACT® inside
- Available in IP 69
- Intelligent detection
- More information can be found at www.mennekes.com/CEEvolution

3

X-CONTACT®

- Secure contact closure and simple handling
- As much as 50% less expenditure of force
- More information can be found at www.x-contact.com



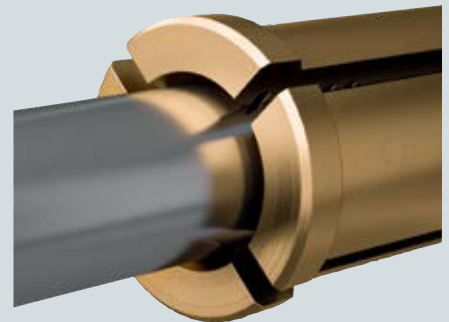
1

Wall mounted receptacles DUO



2

PowerTOP® Xtra family



3

The new contact sleeves X-CONTACT® technology

5. Products for the industry

Wall mounting

Good planning and project planning involves the selection of suitable products. With AMAXX® receptacle combinations by MENNEKES you are optimally equipped, regardless of the environment. The proven product family has been in reliable operation for years and is therefore field-tested.

Thanks to receptacles pointing downwards at an angle, little space is required for inserted cables. The standard front cover colour is electric grey. On request we can offer the colour variants silver and yellow.

Wherever there is a need for a robust material in an attractive design, stainless steel surface-mounted receptacle combinations are the right choice.

The EverGUM series is made from solid rubber. In applications with harsh mechanical conditions or aggressive cleaning agents EverGUM enclosures are always the right choice.

1

AMAXX® receptacle combination

- Inclined downwards receptacles
- Modular design
- Individually configurable

2

Stainless steel distributors

- Modern design
- Lockable in plugged-in status

3

EverGUM receptacle combination

- Impact-resistant
- High dielectric strength and creep resistance



1 AMAXX® receptacle combination



2 Stainless steel distributors



3 EverGUM receptacle combination

5. Products for the industry

Suspendable solutions

Every industrial plant has workplaces which cannot be supplied with energy by conventional wall combinations.

MENNEKES offers a practical solution in the form of suspendable combinations to supply the workplaces with electricity from ceiling trays.

MENNEKES offers several groups of products for this: the suspendable AMAXX® combinations, the AirKRAFT and 3KRAFT products as well as delta BOXES.

1

AMAXX® suspendable

- Modular design
- Handle
- can be equipped with receptacles on two sides

2

AirKRAFT

- Fusing possible

3

3KRAFT

- Compressed air connection possible

4

Delta-BOX

- mounted suspension system



1 **AMAXX®**
suspendable



2 **AirKRAFT**



3 **3KRAFT**



4 **Delta-BOX**

5. Products for the industry

Mobile distributors

Most industrial plants also need mobile power distributors. Whether in production halls with mobile equipment or in maintenance and service, mobile combinations from MENNEKES are an optimum solution for all applications.

For mobile applications MENNEKES offers various solutions: AMAXX® combinations are also available as portable variants. The EverGUM series also includes portable distributors and receptacle strips for harsh mechanical conditions. Thanks to the solid rubber enclosure, they can resist acids and alkalis.

The mobile PE distributors provide numerous combination options in stackable insulated enclosures for indoor and outdoor use. The unique, newly developed addition to the family of mobile products is the EverBOX® Grip: Developed for the very demanding and mostly confined working environments at shipyards, this 'power pack' offers a new approach to mobile distribution.

1

AMAXX® combination

- Safe distribution on-site
- Robust enclosure
- On/Off switch can be integrated
- Fusing on-site (for example with fire protection switch in accordance with DIN VDE 0100-420)
- Available with or without supply cable

2

EverBOX® Grip – mobile distributors

- Compact enclosure and stackable
- Minimal weight and convenient to carry
- Protected receptacles
- Awards



DESIGN PLUS
powered by: **light+building**

3

Mobile EverGUM distributor

- Ground clearance prevents water ingress
- Robust
- Colour – signal yellow
- Available with or without supply cable



1

AMAXX® combination



2

EverBOX® Grip – mobile distributors



3

Mobile EverGUM distributors

5. Products for the industry

Stand-alone combinations

Industrial facilities and outdoor areas have many applications where a fixed position stand alone distributor is required.

In such applications, stand-alone combinations from MENNEKES meet the highest standards.

Our diverse portfolio already covers a broad variety of applications but we can also offer bespoke solutions.

Whether the need is for highly stable power posts or robust stainless steel enclosures with locking systems MENNEKES has the solution.



Power post



Stand-alone combinations



” As early as 2012, in cooperation with MENNEKES, such freestanding distributors were developed for our new plant in China. The devices have shown their worth so more have been ordered, this time in a variant suitable for the parent company in Obertshausen. The cooperation between the technical departments of Karl Mayer and MENNEKES has gone very smoothly.

Ralf Lienau, head of the department of electrical maintenance at Karl Mayer, Obertshausen



6. In use all round the world

Esteemed internationally

Many international projects with satisfied customers are proof of this. Furthermore, we have a range of products with a variety of combinations that allows diverse possibilities

and a passion for developing custom made solutions. For use all round the world.



ABS, Italy, steel industry



Reliance Industries Limited, India



Airbus, USA



Siemens, Russia

References:

- Metal industry | Julius Kleemann, Germany
- Recycling | Milton Keynes Waste Recovery Park, Great Britain
- Steel industry | ABS, Italien
- Energy generation & distribution | Electrabel, Belgium
- Food and beverage industry | Dr. Oetker, Canada
- Aerospace industry | AIRBUS, USA
- Food and beverage industry | Nigerian Bottling Company, Nigeria
- Oil and gas industry | Reliance Industries Limited, India
- Energy generation and distribution | EGAT, Thailand
- Machine engineering | Karl Mayer, China
- Food and beverage industry | Heineken, Cambodia
- Tire industry | Pirelli, Indonesia
- Energy generation and distribution | Siemens, Russia
- Steel and aluminium industry | EMAL (Emirates Aluminium), Abu Dhabi, United Arab Emirates
- Metal industry | Tenaris, Colombia

Learn more about the worldwide references at

www.amaxx.info/en/amaxx/references/



My Power Connection Made in Germany.

Founded in 1935 in Kirchhundem (Sauerland), MENNEKES has actively accompanied the fast-paced entry of electricity into all industry sectors right up until the present day, and has influenced the industry with products and solutions for industrial plugs and sockets. And not only in Germany. With a workforce of 1,000, today the family-owned company has an international presence and is one of the leading providers in the electrical industry. MENNEKES products for industrial plugs and sockets, and electric mobility, are used in over 90 countries. Where high currents have to be transferred safely and economically, our customers and partners can always rely on MENNEKES.

And the EU too has gone for the highest quality: in 2014, type 2 charging couplers by MENNEKES were declared the standard by the European Parliament in the EU. A pioneering milestone. But we have been making more than plugs for the world for a very long time. We think holistically and create powerful connections that enable people to handle energy more innovatively and to distribute and manage it more intelligently. And because we like to think about things from the user's point of view when we are developing our products and solutions, we also communicate our performance promise from the customer's perspective:

MENNEKES – MY POWER CONNECTION.



Innovative power combined.

At MENNEKES we set ourselves the goal a long time ago of creating innovative connections between industry and infrastructure, between energy and electric mobility. Our range comprises more than 15,000 different industrial plugs and sockets, and electric mobility solutions in a variety of versions and designs. It doesn't matter whether it's a series or an individual special development, the MENNEKES brand stands for something extra right from the start – for an intelligent, sustainable solution combined with the highest quality, reliability and safety.

Intelligent e-mobility charging solutions for:

- companies
- private households
- fleet operators
- cities
- hotels
- shops and restaurants
- multi-story car parks
- landlords

Reliable plugs and sockets for:

- industrial plants
- mining
- chemical and petrochemical industries
- railway and transport companies
- shipyards
- food industry
- trade fairs and exhibitions
- data centres
- trade
- production industry



Management System
ISO 9001:2015
ISO 14001:2015
ISO 50001:2011

www.tuv.com
ID 9105064067

DGQ

Deutsche Gesellschaft
für Qualität



MENNEKES

Elektrotechnik GmbH & Co. KG

Aloys-Mennekes-Straße 1
57399 KIRCHHUNDEM
GERMANY

Phone: +49 2723 41-1

Fax: +49 2723 41-214

info@MENNEKES.de

www.MENNEKES.com

1019800DS 3TA 02.19 V Subject to change without notice. No liability accepted for printing errors

