MENNEKES®

Plugs for the world

AMAXX® your Industry!

Solutions for Industry 4.0

Solutions for Industry 4.0

Energy and data – distributing, networking, measuring.

The New Industrial Revolution: Industry 4.0

Networking is increasingly important in a globalized and industrialized world. Processes increasingly operate digitally. The result: automation and better control. This creates an increased demand for network components in the industry. More often machines need to be connected, for example via Intranet and Internet; logistics and webshops have to be linked with the manufacturing process, and CAD systems with machines and customers. MENNEKES provides proven energy distribution and data distribution solutions for this purpose, and through energy measurement also contributes to energy saving and hence to the reduction of costs.

Energy and data

Distribution of data and energy

MENNEKES has decades of experience in the area of energy distribution for industrial applications – both in terms of development and production. Today many machines and systems require network connections. The combination of energy and data distribution in robust industrial quality is one of our strengths.

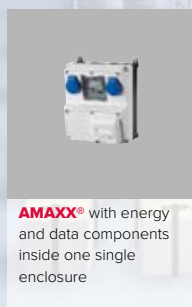### MENNEKES solutions

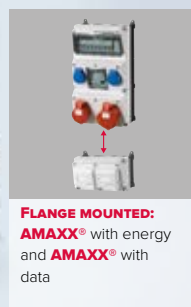**Cepex data port sockets**
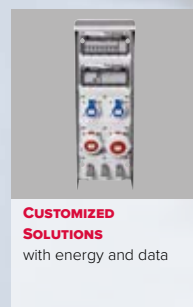

Compact network distributor

AIRKRAFT® AND 3KRAFT®

AMAXX® with energy and data components inside one single enclosure

Flange mounted: AMAXX® with energy and **AMAXX®** with data

Customized Solutions with energy and data

Contents

INDUSTRIAL NETWORK DISTRIBUTOR

NETWORKING FUNCTIONAL COMPONENTS

Our AMAXX® combinations meet the requirements of industrial applications. These proven network component enclosures provide robust and compact solutions for expanding existing networks or for setting up small networks for industry and trade.

MENNEKES SOLUTIONS

AMAXX®
INDUSTRIAL
NETWORK
DISTRIBUTOR

MONITORING WITH ENERGY MEASUREMENT SYSTEMS

ENERGY CONSUMPTION OPTIMISATION

The control of industrial systems provides the basis for economic efficiency. With regard to the monitoring of energy consumption, we can offer an energy measurement system which allows both energy and cost savings and is a result of our long-standing experience in the development and production of energy distribution equipment.

MENNEKES SOLUTIONS

AMAXX®
with Energy
Measurement System

WALL MOUNTED
RECEPTACLES
with Energy
Measurement System

EverGUM
mobile distributor
with Energy
Measurement System

CUSTOMIZED
SOLUTIONS
with energy
and data

ENERGY AND DATA

Cepex data port sockets and compact network distributors

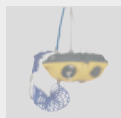

CEPEX DATA PORT SOCKETS

COMPACT NETWORK DISTRIBUTOR

ENERGY AND DATA

CEPEX DATA PORT SOCKETS

COMPACT NETWORK DISTRIBUTORS

AIRKRAFT® AND 3KRAFT®

AMAXX® with energy and data components inside a single enclosure

FLANGE MOUNTED: AMAXX® with energy and **AMAXX®** with data

CUSTOMIZED SOLUTIONS with energy and data

Cepex data port sockets, whether surface or flush mounted versions, can be equipped with **RJ45 data modules from different manufacturers (including Keystones)**. They are made from high quality, durable, self-extinguishing plastic and comply with protection type IP 44. Cepex data port sockets are lockable, even with inserted cables. Four enclosure colors are available: grey, alpine white, black or silver.

The **robust compact network distributors** can be delivered with either two or four SCHUKO® receptacles and a Cepex data port sockets. They are pre-wired for installation with an internal separator between the data and energy areas.
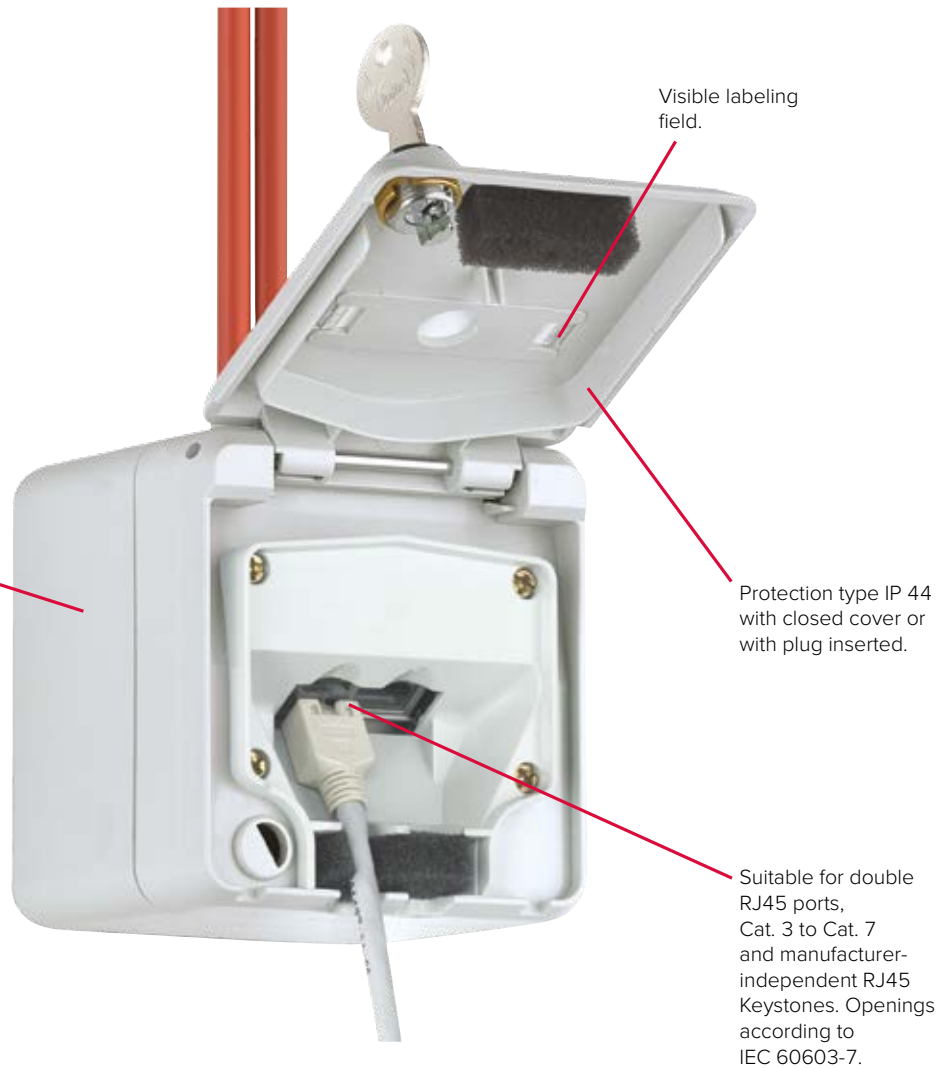
ENERGY AND DATA
Cepex data port sockets

Cepex data port sockets

The right choice for control stations, storage areas, laboratories, airports, production lines, etc. Cepex data port sockets are operated with standard patch cables and can be combined with Cepex receptacles CEE and/or SCHUKO®.
For wall-/panel mounting or installation in cable ducts.

Visible labeling field.

The bottom part of the enclosure can be turned by 180 degrees, which allows cable insertion from above or below without additional work.

Protection type IP 44 with closed cover or with plug inserted.

Suitable for double RJ45 ports, Cat. 3 to Cat. 7 and manufacturer-independent RJ45 Keystones. Openings according to IEC 60603-7.

Simple:

All types are equipped with a membrane gland fitting M 25 for two cables 3-9 mm. Simply push in the cable – done!

Extra:

A metric cable gland M 25 / 2 x 8 is optionally available.

Safe:

Lockable even with connected cables. The safety lock prevents unauthorized access. Identical locks are available on request.

ENERGY AND DATA
Cepex data port sockets

Overview of mounting options for RJ45 modules in empty Cepex enclosures.

Brand	Type	Part no. data module	4302	4322	4342	4352	4362	4372	4377*	4304	4324	4344	4354	4364	4374	4345	4365	4366	4367	4378*	4379	4326	4300	4320	4340	4350	4360	4370	4375*
AMP	**Jack**	**41457**					■							■		■												■	
AMP	CO Plus							■							■						■								■
Telegärtner	AMJ 45 Up/O		■		■					■		■					■						■		■				
Telegärtner	AMJ/UMJ module								■											■									■
Nexans	LANmark connector		■		■					■		■					■						■		■				
BTR	**E-DAT module**	**41455**		■							■					■												■	
Rutenbeck	**iso-8/8 UP0S**	**41492**		■									■					■				■					■		
Rutenbeck	UM real								■											■									■
TKM	**KDFM**	**41452**	■							■													■						
Reichle & De-Massari	**Module Real 10**	**25056**							■											■									■
Setec	XKJ								■											■									■
Corning	FutureCom								■											■									■
Dätwyler	KS-T6A								■											■									■
LEONI	MegaLine				■				■			■				■				■							■		■

Header groups: columns 4302–4377* = Cepex panel mounted receptacle, enclosure Grey (RAL 7035); 4304–4374 = Alpine white (RAL 9010); 4345–4379 = Black (RAL 9005); 4326 = Silver (RAL 9006); 4300–4375* = Cepex surface-mounted receptacle, enclosure Grey (RAL 7035).

* Keystones

ENERGY AND DATA
Cepex data port sockets

Cepex enclosure, Grey

IP 44

Std. Pack. Qty: 5

Product group: 1024

Image: 4300

Brand	Type	suitable insert	Part no.
AMP	Twist	—	4350 [1)]
AMP	Jack	2 x 41457	4360
AMP	CO Plus	—	4370 *
BTR	E-DAT module	2 x 41455	4340 [3)]
Rutenbeck	iso-8/8 Up0S	1 x 41492	4320
TKM	KDMF	1 x 41452	4300 [1)]
Reichle & De-Massari	Module Real 10	2 x 25056	4375 [2)]

- as wall mounted receptacle
- for installation of RJ45 data port sockets
- 2 keys
- with identical locks: part no + index G

Cepex enclosure, Grey

IP 44

Std. Pack. Qty: 5

Product group: 1020

Image: 4302

Brand	Type	suitable insert	Part no.
AMP	Twist	—	4352 [1)]
AMP	Jack	2 x 41457	4362
AMP	CO Plus	—	4372 *
BTR	E-DAT module	2 x 41455	4342 [3)]
Rutenbeck	iso-8/8 Up0S	1 x 41492	4322
TKM	KDMF	1 x 41452	4302 [1)]
Reichle & De-Massari	Module Real 10	2 x 25056	4377 [2)]

- as panel mounted receptacle
- for installation of RJ45 data port sockets
- 2 keys
- with identical locks: part no + index G

Cepex enclosure, Alpine white

IP 44

Std. Pack. Qty: 5

Product group: 1020

Image: 4304

Brand	Type	suitable insert	Part no.
AMP	Twist	—	4354 [1)]
AMP	Jack	2 x 41457	4364
AMP	CO Plus	—	4374 *
BTR	E-DAT module	2 x 41455	4344 [3)]
Rutenbeck	iso-8/8 Up0S	1 x 41492	4324
TKM	KDMF	1 x 41452	4304 [1)]

- as panel mounted receptacle
- for installation of RJ45 data port sockets
- 2 keys
- with identical locks: part no + index G

ENERGY AND DATA
Cepex data port sockets

Cepex enclosure, Silver

IP 44

Std. Pack. Qty: 5

Product group: 1020

Image: 4326

Brand	Type	suitable insert	Part no.
Rutenbeck	iso-8/8 Up0S	1 x 41492	4326

- as panel mounted receptacle
- for installation of RJ45 data port sockets
- 2 keys
- with identical locks: part no + index G

Cepex enclosure, Black

IP 44

Std. Pack. Qty: 5

Product group: 1020

Image: 4345

Brand	Type	suitable insert	Part no.
AMP	Twist	—	4366 [1]
AMP	Jack	2 x 41457	4365
AMP	CO Plus	—	4379 *
BTR	E-DAT module	2 x 41455	4345 [3]
Rutenbeck	iso-8/8 Up0S	1 x 41492	4367
Reichle & De-Massari	Module Real 10	2 x 25056	4378 [2]

- as panel mounted receptacle
- for installation of RJ45 data port sockets
- 2 keys
- with identical locks: part no + index G

[1] Cepex enclosures also suited for data modules of Telegärtner (AMJ 45 Up/O, cat.6a) and Nexans (LANmark-6 Snap-in Connector with jumper ring Modular Outlet 50).

[2] Cepex enclosures also suited for data modules of Telegärtner (AMJ/UMJ cat.6+, Setec (XKJ), Corning (FutureCOM S10TENe Keystone), Dätwyler (KS-T6A, MS-K, PS-GG45), Rutenbeck (UM real cat.6a, A), LEONI MegaLine, (Keystone).

[3] Cepex enclosures also suited for LEONI MegaLine.

* The data inserts/modules AMP CO Plus are not part of the MENNEKES delivery program!

Colors:

Grey (RAL 7035), Alpine White (RAL 9010), Silver (RAL 9006), Black (RAL 9005)

ENERGY AND DATA

Cepex data port sockets - data modules

Data module

Std. Pack. Qty: 20

Product group: 9247

Image: 41455

Part no.
41455

- BTR, type: RJ45 connection module 270° (type E-DAT module 8(8) jack cat.6)
- suitable for Cepex data port sockets, part no. 4340, 4342, 4344, 4355
- easy to install connection of data cables
- Installation without a special tool
- Strain relief per locking clip directly on the stuffer cap

Data module

Std. Pack. Qty: 12

Product group: 8247

Image: 41457

Part no.
41457

- AMP, type: RJ45 connection module (type Cat.6 SL Jack)
- suitable for Cepex data port sockets, part no. 4360 and versions

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Data module

Std. Pack. Qty: 10

Product group: 8140

Image: 25056

Part no.
25056

- Reichle & De-Massari, type: data port sockets insert Real 10, Cat.6, screened, including frame for snap-in
- suitable for Cepex data port sockets, Part no. 4375 and versions

ENERGY AND DATA
Cepex data port sockets - data modules

Data module

Std. Pack. Qty: 10

Product group: 8247

Image: 41492

Part no.
41492

- Rutenbeck, type: data port insert 2 x RJ45, Cat.6a, (type UP0S)
- suitable for Cepex data port sockets, Part no. 4320 and versions

Data module

Std. Pack. Qty: 5

Product group: 8247

Image: 41452

Part no.
41452

- TKM, type: data port insert 2 x RJ45, Cat.6, (type KDMF)
- suitable for Cepex data port sockets, Part no. 4300 and versions

Data module

Std. Pack. Qty: 10

Product group: 8440

Image: 25042

Part no.
25042

- for Cepex data port sockets
- RJ45 connection module, type E-DAT module, connector 8(8) 90º, Cat.6 (recommended for improved cable routing)

ENERGY AND DATA

Cepex data port sockets - accessories

Flush mounted installation box

Std. Pack. Qty: 5

Product group: 8236

Image: 41404

Part no.
41404

- for Cepex CEE receptacles 16 A and 32 A and Cepex SCHUKO® receptacles
- can be combined with all Cepex panel mounted receptacles

Spacer frames

Std. Pack. Qty: 25

Product group: 8237

Image: 4191

Description	Part no.
Grey	4191
Black	4191S

- to compensate for unequal heights
- matching all Cepex surface mounted receptacles SCHUKO® as well as all Cepex CEE surface mounted 16 A and 32 A receptacles

Cable gland

Std. Pack. Qty: 200

Product group: 8247
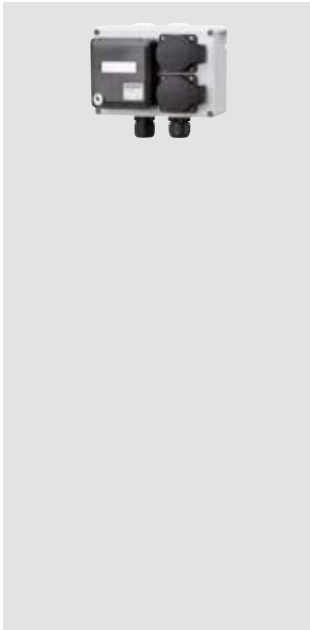
Image: 41453

Part no.
41453

- Grey
- M 25
- 2 x 8, for 2 cables 6-8 mm
- matching all Cepex wall mounted receptacles

ENERGY AND DATA
Compact distributor and network enclosure

Protection type IP 44
Pre-wired for installation, with internal separator between data and energy area, front cover electric grey RAL 7035

Protection type IP 44
Front cover electric grey RAL 7035, yellow (GE) RAL 1021 also available on request. Cepex enclosure, available in either electric grey (RAL 7035) or black (RAL 9005).

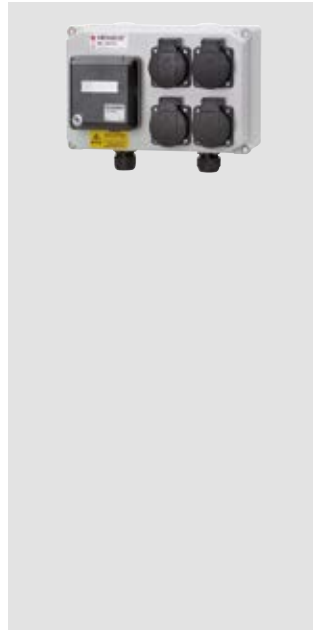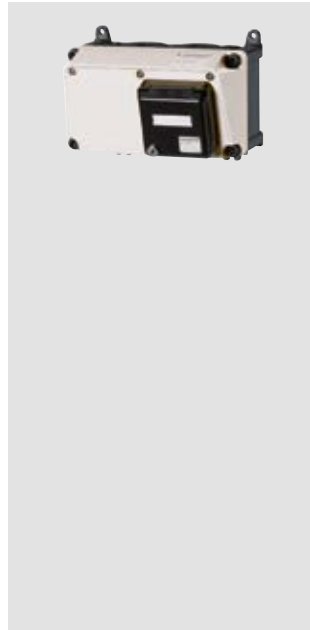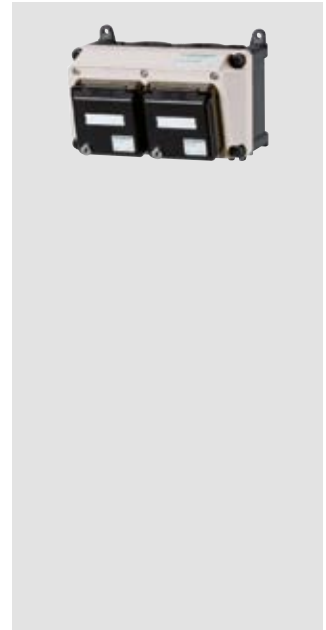| Data port sockets	Data port sockets	Data port sockets	Data port sockets
1 Cepex data port socket with 2 RJ45 connection module couplings, type E-DAT module, port, Cat.6, brand: BTR	1 Cepex data port socket with 2 RJ45 connection module couplings, type E-DAT module, port, Cat.6, brand: BTR	1 Cepex enclosure, prepared for 2 RJ45 connection modules, type E-DAT module, port, Cat.6a, brand: BTR (Part no. 41455) or OpDAT module LC or ST (brand BTR - not in scope of supply)	2 Cepex enclosure, identical locks, prepared for 4 RJ45 connection modules, type E-DAT module, port, Cat. 6a, brand: BTR (Part no. 41455) or OpDAT module LC or ST (brand BTR - not in scope of supply)
Receptacles SCHUKO®	**Receptacles SCHUKO®**		
2 SCHUKO® 16 A, 230 V	4 SCHUKO® 16 A, 230 V		
Cable entry	**Cable entry**	**Cable entry**	**Cable entry**
2 x M 25 at the top (closed) 1 M 25 at the bottom (with cable gland) 1 M 25 (2 x 8) at the bottom (with cable gland seal insert for 2 individual cables up to 8 mm Ø)	2 x M 25 at the top (closed) 1 M 25 at the bottom (with cable gland) 1 M 25 (3 x 5-7) at the bottom (with cable gland seal insert for 2 individual cables up to 8 mm Ø)	Each 2 x M 25 top and bottom (sealed) Each 2 x M 20 top and bottom (sealed) 1 cable gland M 25 bottom (multiple seal with 3 openings for a cable diameter of 5-7 mm including suitable blanking plugs, 1 seal blank for perforation)	Each 2 x M 25 top and bottom (sealed) Each 2 x M 20 top and bottom (sealed) 1 cable gland M 25 bottom (multiple seal with 3 openings for a cable diameter of 5-7 mm including suitable blanking plugs, 1 seal blank for perforation)
Connection	**Connection**		
for 1 cable up to 3 x 4 mm²	for 1 cable up to 5 x 4 mm²		
Enclosure size	**Enclosure size**	**Enclosure size**	**Enclosure size**
118 x 170 mm (H x W)	160 x 245 mm (H x W)	130 x 225 mm (H x W)	130 x 225 mm (H x W)
Part no.	**Part no.**	**Part no.**	**Part no.**
25705	**25715**	**25104**	**25102**

ENERGY AND DATA
AirKRAFT® and 3KRAFT®

AirKRAFT®

3KRAFT®

ENERGY AND DATA

Cepex data port sockets

Compact network distributors

AirKRAFT® and 3KRAFT®

AMAXX® with energy and data components inside a single enclosure

Flange mounted: AMAXX® with energy and **AMAXX®** with data

Customized solutions with energy and data

AirKRAFT® and 3KRAFT® distributors can be optionally equipped with **SCHUKO®** receptacles **or CEE receptacles** up to 32 A, **double RJ45 data port socket** and **compressed air**. There is a choice of three enclosure colors: silver, red and yellow.

For 3KRAFT® a maximum of three receptacles is possible.

For AirKRAFT® up to four receptacles are possible. In addition, the enclosure provides space for RCD´s or MCB´s (modular devices up to 4 Modules).

ENERGY AND DATA
AirKRAFT® and 3KRAFT®

Protection type IP 20
Pre-wired for installation, back box in black, hinged cover available in red (RO), yellow (GE) or silver (SI).
Other combinations on request.

Fitted with
3 SCHUKO® 16 A, 230 V 1 RJ45 double data port Cat.6, 8/8
Fusing
Connection / feeder cable
for 1 cable up to 5 x 10 mm²
Connected loads
Part no.
94554GE

Fitted with
1 CEE 16 A, 5 p, 400 V 2 SCHUKO® 16 A, 230 V 1 RJ45 double data port Cat.6, 8/8
Fusing
Connection / feeder cable
for 1 cable up to 5 x 10 mm²
Connected loads
Part no.
94555GE

Set of chains
for fixing AirKRAFT® to the ceiling
Part no. 106060
for fixing 3KRAFT® to the ceiling
Part no. 106123

Fitted with
2 SCHUKO® 16 A, 230 V 1 RJ45 double data port Cat.6, 8/8
Fusing
Connection / feeder cable
for 1 cable up to 3 x 6 mm²
Connection and load values
Part no.
94354SI

Fitted with
1 CEE 16 A, 5 p, 400 V 1 SCHUKO® 16 A, 230 V 1 RJ45 double data port Cat.6, 8/8
Fusing
Connection / feeder cable
for 1 cable up to 5 x 10 mm²
Connection and load values
Part no.
94355GE

Pneumatic connection
for 3KRAFT® and AirKRAFT®
for tube dia. 9 mm **Part no. 208620** for tube dia. 13 mm **Part no. 208621** duplex When used in 3KRAFT® and AirKRAFT® an additional one-way pneumatic quick connect part no. (208620 or 208621) is still needed! **Part no. 41442**

ENERGY AND DATA
AMAXX® with energy and data components inside a single enclosure

AMAXX® with energy and data components inside a single enclosure

The combinations can be optionally equipped with **SCHUKO® receptacles** and **CEE receptacles** up to 32 A, **Cepex data port sockets** and **RCD´s and MCB´s**.

All combinations are **pre-wired for installation** with an internal **separator between the data and energy areas.**

There is a choice of three colors: electric grey, silver, and signal yellow.

ENERGY AND DATA

Cepex data port sockets

Compact network distributors

AirKRAFT® and 3KRAFT®

AMAXX® with energy and data components inside a single enclosure

Flange mounted: AMAXX® with energy and **AMAXX**® with data

Customized solutions with energy and data

ENERGY AND DATA

AMAXX® with energy and data components inside a single enclosure

Protection type IP 44
Pre-wired for installation, front cover electric grey RAL 7035, yellow (GE) RAL 1021 or silver (SI) RAL 9006 also available on request. Hinged to the side (except enclosure size 130 x 225 mm and 650 x 112.5 mm). Fusing behind a transparent cover.

CEE receptacles	**CEE receptacles**	**CEE receptacles**	**CEE receptacles**
	1 CEE 16 A, 5 p, 400 V	1 CEE 16 A, 5 p, 400 V	1 CEE 32 A, 5 p, 400 V 1 CEE 16 A, 5 p, 400 V
Data port sockets	**Data port sockets**	**Data port sockets**	**Data port sockets**
1 Cepex RJ45, 2 fold Cat.6	1 Cepex RJ45, 2 fold Cat.6	1 Cepex RJ45, 2 fold Cat.6	2 Cepex RJ45, 2 fold Cat.6
Receptacles SCHUKO®	**Receptacles SCHUKO®**	**Receptacles SCHUKO®**	**Receptacles SCHUKO®**
2 SCHUKO® 16 A, 230 V	3 SCHUKO® 16 A, 230 V	2 SCHUKO® 16 A, 230 V	2 SCHUKO® 16 A, 230 V
Fusing	**Fusing**	**Fusing**	**Fusing**
1 RCD 25 A, 2 p, 0.03 A 2 MCB´s 16 A, 1 p, C		1 RCD 40 A, 4 p, 0.03 A	1 RCD 40 A, 4 p, 0.03 A 1 MCB 32 A, 3 p, C 1 MCB 16 A, 3 p, C 2 MCB´s 16 A, 1 p, C
Connection	**Connection**	**Connection**	**Connection**
for 1 cable up to 3 x 10 mm²	for 1 cable up to 5 x 10 mm²	for 1 cable up to 5 x 10 mm²	for 2 cables up to 5 x 25 mm²
Connection and load values	**Connection and load values**	**Connection and load values**	**Connection and load values**
			Pre- fuse max. 40 A I$_{nA}$ 40 A RDF 1
Enclosure size	**Enclosure size**	**Enclosure size**	**Enclosure size**
260 x 225 mm (H x W)	650 x 112.5 mm (H x W)	650 x 112.5 mm (H x W)	520 x 225 mm (H x W)
Part no.	**Part no.**	**Part no.**	**Part no.**
921312	**960005**	**960340**	**940018**

ENERGY AND DATA

AMAXX® with energy and data components inside a single enclosure

Protection type IP 44
Pre-wired for installation, front cover electric grey RAL 7035, yellow (GE) RAL 1021 or silver (SI) RAL 9006 also available on request.
Hinged to the side, fusing behind a transparent cover. With suspension eyes on top, grip hooks on the bottom and chain set provided.

CEE receptacles
1 CEE 32 A, 5 p, 400 V
1 CEE 16 A, 5 p, 400 V

Data port sockets
1 Cepex RJ45, 2 fold Cat.6

Receptacles SCHUKO®
3 SCHUKO® 16 A, 230 V

Fusing
1 RCD 40 A, 4 p, 0.03 A
1 MCB 16 A, 3 p, C
3 MCB´s 16 A, 1 p, C

Connection
for 1 cable up to
5 x 10 mm²

Connection and load values
Pre- fuse max. 32 A
I_{nA} 32 A
RDF 1

Enclosure size
260 x 225 mm (H x W)

Part no.
970005

**AMAXX® standard
cable glands**

Black RAL 9005

M 20 - for cable from
6-13 mm
IP 44: **Part no. 990607**
IP 67: **Part no. 990611**
M 25 - for cable from
9-17 mm
IP 44: **Part no. 990610**
M 32 - for cable from
13-21 mm
IP 44: **Part no. 990608**
IP 67: **Part no. 990612**
M 40 - for cable from
14-28 mm
IP 67: **Part no. 990609**

**AMAXX®
cable gland set**

Black RAL 9005,
1 screw connection,
1 multiple seal with
   openings for cable
   diameters of 5 - 7 mm
   and blind plugs,
1 seal
   (perforation by the customer)

M 25 - 3 openings
Part no. 25023
M 32 - 4 openings
Part no. 25024
M 40 - 7 openings
Part no. 25025

**AMAXX® standard
screw set**

Consisting of:
4 screws, 6 x 70 mm
   Pozidrive size 3, steel
   galvanized and
4 dowels, 8 x 50 mm,
   for concrete, porous concrete,
   solid brick, perforated brick

Part no. 990606

Pneumatic connection

for AMAXX® hanging

for tube NW 9 mm,
Part no. 997001

for tube NW 13 mm,
Part no. 997000

Set of chains
are provided with each
suspendable AMAXX®
receptacle combination.

ENERGY AND DATA

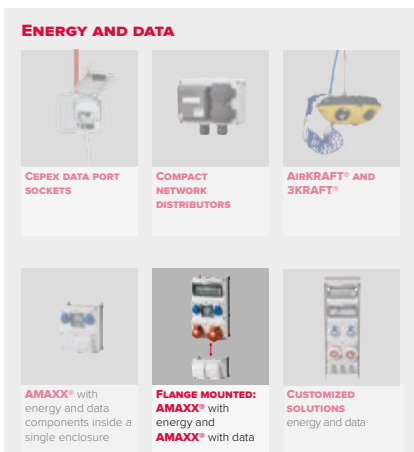AMAXX® with energy and AMAXX® with data components, suitable for flange-mounting

A **modular system** that combines energy and data technology is ideal for providing the required compact, reliable interfaces in harsh industrial environments.

The **physically separate enclosures** and hence the spatial separation of data and energy enclosures are an important aspect.

External data access is possible via the lockable Cepex data port sockets.

Thus **individual installations or special solutions are a thing of the past.**

FLANGE MOUNTED:
AMAXX® WITH ENERGY AND
AMAXX® WITH DATA COMPONENTS

ENERGY AND DATA

CEPEX DATA PORT SOCKETS	**COMPACT NETWORK DISTRIBUTORS**	**AIRKRAFT® AND 3KRAFT®**
AMAXX® with energy and data components inside a single enclosure	**FLANGE MOUNTED: AMAXX**® with energy and **AMAXX**® with data	**CUSTOMIZED SOLUTIONS** energy and data

Choose an energy enclosure from our AMAXX® range and combine it with a network enclosure. In this way you can individually assemble your desired combination of energy and data!

ENERGY AND DATA
AMAXX® with energy and AMAXX® with data components, suitable for flange-mounting

AMAXX® combinations – suitable for flange-mounting

The well-thought-out design guarantees maximum flexibility. All enclosures are 225 mm wide. Unassembled enclosures can easily be arranged vertically, one on top of the other. All combinations are pre-wired for installation and tested for electrical safety and quality, so as to ensure quick installation on site.

Vertically combine two AMAXX® enclosures:
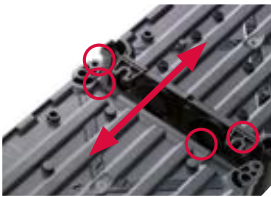
You have the option if required to install unmounted AMAXX® enclosures one above the other without spacing.

Apply the combination pliers to the thin break-out edges and break out the pre-punched break-out edges with the combination pliers.

The enclosure parts can be combined.

ENERGY AND DATA
Customized solutions

AMAXX® customized solutions

For almost every field of application we design for you the right combination of energy and data technology for the provision of the necessary interfaces.

The combinations can be optionally equipped with **SCHUKO**® **receptacles and CEE receptacles** up to 63 A, **Cepex data port sockets** as well as **RCD´s and MCB´s**.

The **physically separate enclosures** for data and energy can also be delivered in **protection type IP 67** (waterproof).

The **stainless steel protective cover** provides additional protection against dirt and moisture and prevents deposits.
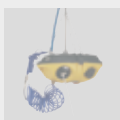
ENERGY AND DATA

CEPEX DATA PORT SOCKETS

COMPACT NETWORK DISTRIBUTORS

AIRKRAFT® **AND 3KRAFT**®

AMAXX® with energy and data components inside a single enclosure

FLANGE MOUNTED: AMAXX® with energy and **AMAXX**® with data

CUSTOMIZED SOLUTIONS energy and data

ENERGY AND DATA
Customized solutions

Application examples for AMAXX® network enclosures

Perfect for the industrial environment.

For safe installation in dust-laden areas.

Industrial Network Distributor
Extension of network solutions

Industrial Network Distributor

If you are planning a **network extension**, the network distributor by MENNEKES is the perfect solution.

The network distributor can be **individually fitted** with standard active network components and Keystones.

The **plastic enclosure** is ideally suitable for the **installation of components with wireless functionality** and **protects the installed components** against dust, moisture and other environmental influences.

Industrial Network Distributor

AMAXX® industrial Network Distributor

INDUSTRIAL NETWORK DISTRIBUTOR
Extension of network solutions
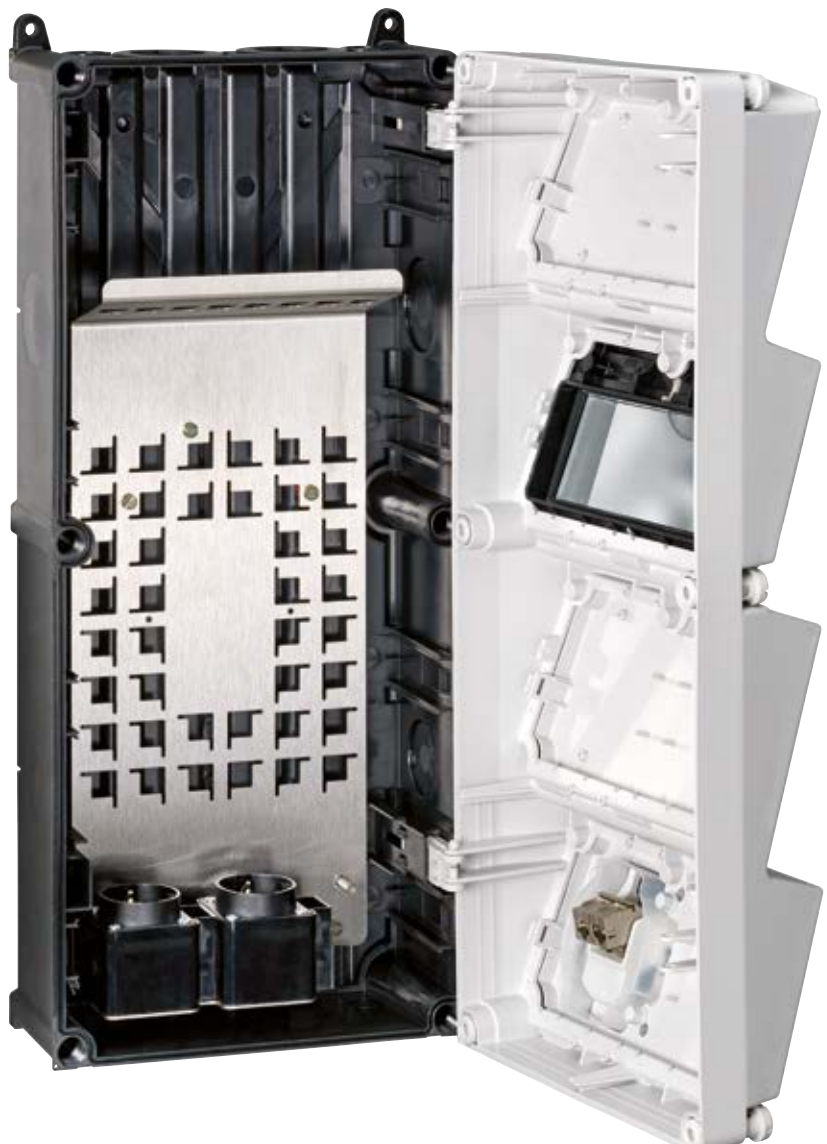
MENNEKES network distributor

With the new industrial network distributor from the AMAXX® family, MENNEKES offers a product for the expansion of network solutions.

By using a robust plastic enclosure, the installation of standard network components is possible in more demanding environments, such as those that prevail in trade and industry, with regard to protection class, mechanical influences or similar factors.

Existing networks can thus be quickly expanded, while smaller networks can easily be rebuilt. The user can act freely in the selection of active network components and Keystones. Hence the preferred switches or routers can be easily and safely attached to the integrated mounting plate. The patch panel for mounting up to eight Keystones can be equipped with RJ45 sockets or other inserts.

Two SCHUKO® receptacles integrated into the enclosure are used for the power supply of the active network components.
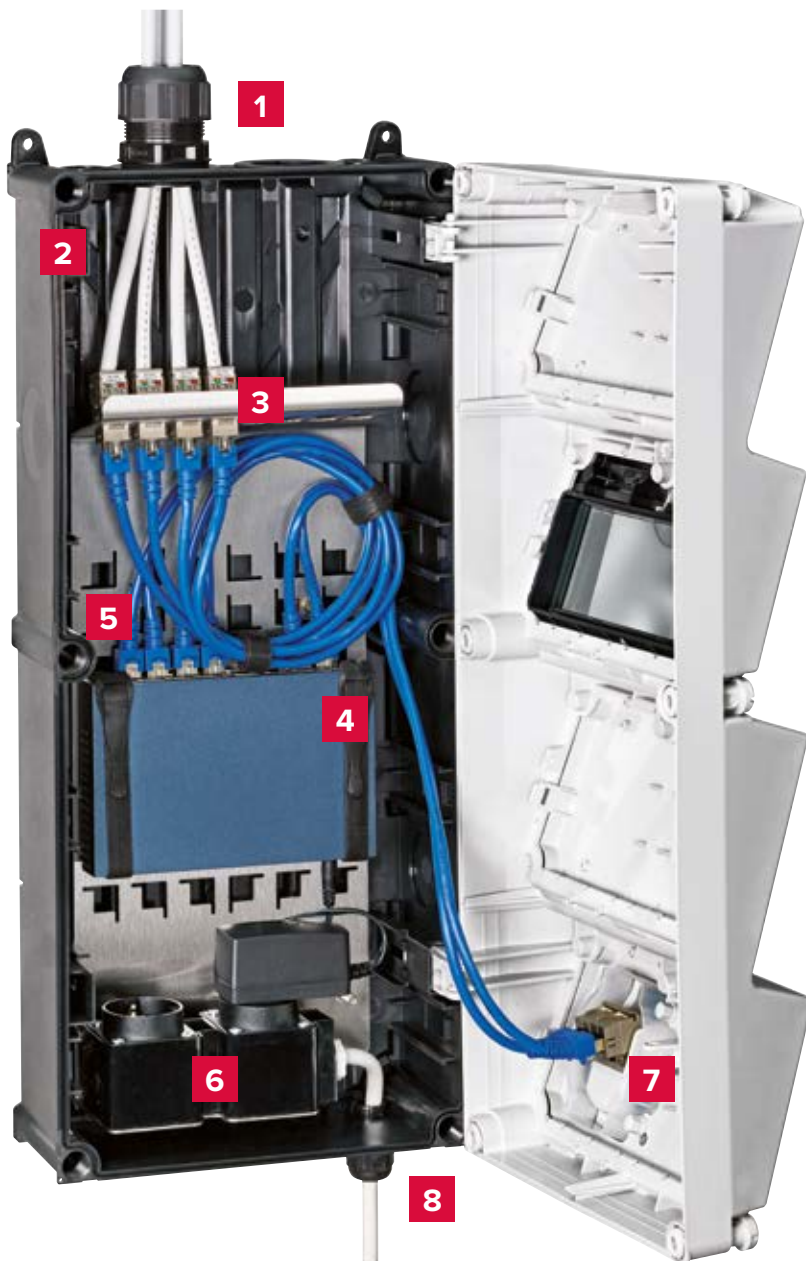
Another advantage for the user: After the power supply has been connected by the qualified electrician, the further equipping and manipulation of the enclosure can be performed by laymen in the field of electrical technology.

Industrial Network Distributor
Network extension solutions

Application example: network distributor

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 mounting 8 manufacturer-independent RJ45 Keystones and custom mounting options for active network components. Openings according to 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 connector for attaching the network components.

5   Installation space for network components, e.g. switch, router, wireless access point, etc.

6   2 SCHUKO® receptacles for 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

Advantages:

- Equipping of the interior with commercially available active network components, by the customer
- Plastic enclosure, highly suitable for the installation of components with wireless functionality
- Ideal for network expansion
- Protects the installed components against dust, moisture and other environmental influences

Industrial Network Distributor

AMAXX® network distributor

Protection type IP 44

Pre-wired for installation, enclosure front cover electric grey RAL 7035, yellow (GE) RAL 1021 also available on request. Enclosure hinged to the side,

Fitted with

Patch and mounting panel with threaded ground bolt M6 for the optional connection of an external ground conductor

2 SCHUKO® receptacles for the power supply of active network components

1 Cepex data port socket (black RAL 9005) with 2 RJ45 right angle connector modules for direct connection of patch cables

4 Velcro connectors for fastening installed components on the base plate

2 screw fittings M40 with multiple seal, 6 openings for a cable diameter of 6-9 mm including 5 each blanking plugs
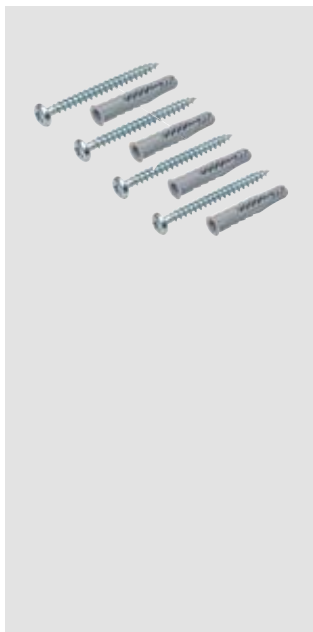
1 screw fitting M20

1 screw set

Enclosure size

520 x 225 mm (H x W)

Part no.

25405

AMAXX® standard screw set
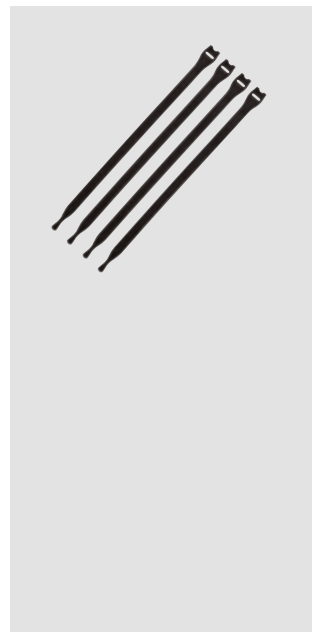
enclosed with each media distributor

Consisting of:
4 screws, 6 x 70 mm
  Pozidrive size 3, steel galvanized and
4 dowels, 8 x 50 mm, for concrete, porous concrete, solid brick, perforated brick

AMAXX® cable gland set

enclosed with each media distributor

Black RAL 9005,
2 screw fittings M 40
2 multiple seals with 6 openings for a cable diameter of 6-9 mm including each 5 blind plugs
1 screw fitting M 20

Velcro connector

enclosed with each media distributor

Set of 4 Velcro connectors for fastening installed components on the base plate

Monitoring with Energy Measurement System

AMAXX® with Energy Measurement System

AMAXX® Energy Measurement System

The MENNEKES energy measurement system enables the measurement of overall energy used by one or several consumers.

Integrating the enclosure in an already **existing fixed installation** is no problem.

The measured values are made available **over LAN or WLAN** and can be visualised in an App (smartphone, tablet) or web interface. The installed 3-phase energy measurement device includes an internal measured value memory that stores data for a long period and provides **statistics of the energy consumption**.

Monitoring with Energy Measurement System

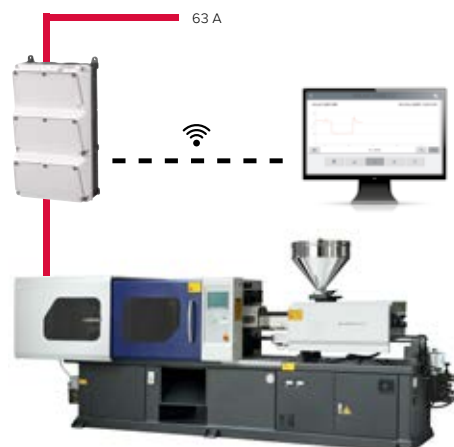**AMAXX**® with Energy Measurement System

Wall mounted receptacle with Energy Measure- ment System

EverGUM mobile distributor with Energy Measure- ment System

Customized solutions with Energy Measure- ment System

63 A

MONITORING WITH ENERGY MEASUREMENT SYSTEM
AMAXX® with Energy Measurement System

AMAXX® combination for energy measurement

1   Metric screw fitting M40

2   3-phase energy measurement device

3   Input terminals 25 mm^2

4   Output terminals 25 mm^2

5   Transformer 100/5 A

6   RJ45 data module for connecting the 3-phase energy measuring device to an incoming network cable

Advantages:

- Total energy measurement of one or more consumers
- Installation of the enclosure in an existing fixed installation
- Integration of the energy measuring system into a network via LAN
- Data access via LAN, WLAN or App (Android/iOS)
- Continuous energy measurement of consumers

MONITORING WITH ENERGY MEASUREMENT SYSTEM
AMAXX® with Energy Measurement System

Application example: Energy management system and energy
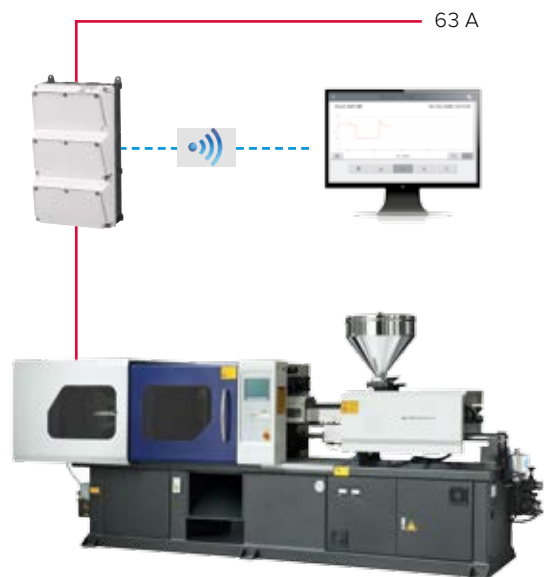
AMAXX® receptacle combination in protection type IP 67

1 3 AMAXX® enclosures for
energy measurement

2 3 AMAXX® receptacles
combination in protection type IP 67

**Alternative
combination options:**

- Direct connection of machines
  or systems

- Connection of existing
  energy distribution systems

63 A

Monitoring with Energy Measurement System

AMAXX® with Energy Measurement System

Protection type IP 44

Pre-wired for installation, enclosure front cover electric grey RAL 7035, yellow (GE) RAL 1021 or silver (SI) RAL 9006 also available on request.

Data port sockets

1 RJ45 data module for rail mounting

Max. power load

up to max. 100 A permissible total current

Energy measurement

1 3-phase energy measurement device
3 Transformer 100/5 A

Connection

for 2 cables up to 5 x 25 mm²

Enclosure size

390 x 225 (H x W)

Part no.

936361

AMAXX® standard cable glands

Black RAL 9005

M 20 - for cable from 6-13 mm
IP 44: **Part no. 990607**
IP 67: **Part no. 990611**
M 25 - for cable from 9-17 mm
IP 44: **Part no. 990610**
M 32 - for cable from 13-21 mm
IP 44: **Part no. 990608**
IP 67: **Part no. 990612**
M 40 - for cable from 14-28 mm
IP 67: **Part no. 990609**

AMAXX® cable gland set

Black RAL 9005,
1 screw fitting,
1 multiple seal with openings for cable diameters of 5 - 7 mm and blind plugs,
1 seal (perforation by the customer)

M 25 - 3 openings
Part no. 25023
M 32 - 4 openings
Part no. 25024
M 40 - 7 openings
Part no. 25025

AMAXX® standard screw set

Consisting of:
4 screws, 6 x 70 mm Pozidrive size 3, steel galvanized and
4 dowels, 8 x 50 mm, for concrete, porous concrete, solid brick, perforated brick

Part no. 990606

Monitoring with Energy Measurement System
Wall mounted receptacles with Energy Measurement System

Wall mounted receptacle
32 A with Energy Measurement System

Wall mounted receptacle
63 A with Energy Measurement System

Monitoring with Energy Measurement System

AMAXX® with Energy Measurement System

Wall mounted receptacle with Energy Measurement System

EverGUM mobile distributor with Energy Measurement System

Customized solutions with Energy Measurement System

The receptacle with integrated 3-phase energy measuring device is optionally available in 32 A or 63 A.

In addition to energy measurement, a functional check of the connected load (e.g. chillers, pumps, etc) is possible via monitoring.

Monitoring with Energy Measurement System
Wall mounted receptacles with Energy Measurement System

Protection type IP 44
Pre-wired for installation.
Enclosure electric grey RAL 7035.

CEE receptacles	**CEE receptacles**
1 CEE 32 A, 5 p, 400 V	1 CEE 63 A, 5 p, 400 V
Data port sockets	**Data port sockets**
1 RJ45 data module for rail mounting	1 RJ45 data module for rail mounting
Max. power load	**Max. power load**
Energy measurement	**Energy measurement**
1 3-phase energy measurement device	1 3-phase energy measurement device, 3 Transformer 100/5 A
Receptacles SCHUKO®	**SCHUKO® receptacles**
Fusing	**Fusing**
Connection and load values	**Connection and load values**
Enclosure size	**Enclosure size**
225 x 118 (H x W)	460 x 180 (H x W)
Part no.	**Part no.**
8108621	**8412522**

Do you have special wishes and requirements? Please feel free to contact us. We will be pleased to advise you and design a customized solution for you!

Monitoring with Energy Measurement System
EverGUM Mobile Distributor with Energy Measurement System

Robust, portable, **solid rubber** enclosure, **suitable for mobile use**. High dielectric and tracking resistance as well as acid and alkali resistance.

Available with a loading of **CEE receptacles up to 32 A** and **SCHUKO® receptacles**.

The integrated 3-phase energy measuring device allows the **temporary measurement and documentation** of plug-in consumers. The data can easily be read via WLAN and App (Android and iOS).

EverGUM mobile distributor with Energy Measurement System

Monitoring with Energy Measurement System

AMAXX® with Energy Measurement System

Wall mounted receptacle with Energy Measurement System

EverGUM mobile distributor with Energy Measurement System

Customized solutions with Energy Measurement System

MONITORING WITH ENERGY MEASUREMENT SYSTEM

EverGUM Mobile Distributor with Energy Measurement System

Protection type IP 44
Enclosure made of solid rubber, signal yellow
Pre-wired for installation. Other combinations on request.

CEE receptacles
1 CEE 32 A, 5 p, 400 V
1 CEE 16 A, 5 p, 400 V
1 CEE 16 A, 3 p, 230 V

Data port sockets

Max. power load
32 A

Energy measurement
1 3-phase energy measurement device

Receptacles SCHUKO®
1 SCHUKO® 16 A, 230 V

Fuse protection
1 RCD 40 A, 4 p, 0.03 A
1 MCB 16 A, 3 p, K
1 MCB 16 A, 1 p, K

Connection
2 m H07RN-F5G4 with CEE plug 32 A, 5 p, 400 V

Enclosure size
306 x 230 x 288 (H x W x D)

Part no.
7418231

Do you have special wishes and requirements? Please feel free to contact us.

We will be pleased to advise you and design a customized solution for you!

Monitoring with Energy Measurement System

Customized Solutions

Customized solutions involving energy measurement system based on individual requirements

The **energy measurement system** can also be integrated in a receptacle combination with **customized fitting,** if required.

Temporary and continuous energy measurement and recording of data enable the monitoring of **individual receptacle circuits, as well as of the overall energy required for the connected, ready-to-be-plugged-in consumers.**

Monitoring with Energy Measurement System

AMAXX® with Energy Measurement System

Wall mounted receptacle with Energy Measurement System

EverGUM mobile distributor with Energy Measurement System

Customized solutions with Energy Measurement System

MONITORING WITH ENERGY MEASUREMENT SYSTEM

AMAXX® Customized Solutions

Protection type IP 44

Pre-wired for installation, front cover electric grey RAL 7035, yellow (GE) RAL 1021 or silver (SI) RAL 9006 also available on request. Enclosure hinged on the side. Fusing behind a transparent cover.

CEE receptacles
1 CEE 63 A, 5 p, 400 V
1 CEE 32 A, 5 p, 400 V
1 CEE 16 A, 5 p, 400 V

Data port sockets
1 RJ45 data module for rail mounting

Max. power load

Energy measurement
1 3-phase energy measurement device, 3 Transformer 100/5 A

SCHUKO® receptacles
3 SCHUKO® 16 A, 230 V

Fuse protection
1 RCD 63 A, 4 p, 0.03 A
1 MCB 32 A, 3 p, C
1 MCB 16 A, 3 p, C
3 MCB´s 16 A, 1 p, C

Connection
for 2 cables up to 5 x 25 mm²

Enclosure size
650 x 225 (H x W)

Part no.
954429

AMAXX® standard cable glands

Black RAL 9005

M 20 - for cable from 6-13 mm
IP 44: **Part no. 990607**
IP 67: **Part no. 990611**
M 25 - for cable from 9-17 mm
IP 44: **Part no. 990610**
M 32 - for cable from 13-21 mm
IP 44: **Part no. 990608**
IP 67: **Part no. 990612**
M 40 - for cable from 14-28 mm
IP 67: **Part no. 990609**

AMAXX® cable gland set

Black RAL 9005,
1 screw fitting,
1 multiple seal with openings for cable diameters of 5 - 7 mm and blind plugs,
1 seal (perforation by the customer)

M 25 - 3 openings
Part no. 25023
M 32 - 4 openings
Part no. 25024
M 40 - 7 openings
Part no. 25025

AMAXX® standard screw set

Consisting of:
4 screws, 6 x 70
   Pozidrive size 3, steel galvanized and
4 dowels, 8 x 50,
   for concrete, porous concrete, solid brick, perforated brick

Part no. 990606

Do you have special wishes and requirements? Please feel free to contact us. We will be pleased to advise you and design a customized solution for you!

Monitoring with Energy Measurement System
Energy Monitoring

With the energy measuring system, MENNEKES facilitates **solutions for the collection of energy data** from machines, equipment or energy distribution systems in the business enterprise. Measurement can be performed continuously or temporarily using stationary or mobile devices. In addition to the visualization of real time data, the information already stored in the 3-phase energy measuring device can also be accessed.

Electricity is becoming more expensive. One solution is energy saving.

Energy Efficiency Directive (EED)
Energy Services Act (EDL-G)

With the Energy Efficiency Directive (EED), the European Union is shouldering its responsibility for the better management of global energy consumption.

The aim is to achieve an average energy saving of 20% by 2020. This will only be achieved if each EU member state is held accountable.

In March 2015, the Federal Council approved the draft law to implement the Energy Efficiency Directive. The Energy Services Act sets out, among other aspects, which companies are required to carry out regular energy audits. The implementation of an energy audit according to IEC 16247 must be carried out by December 5, 2015. If a company chooses the option of certification to ISO 50001 the initial audit must be carried out by **31 December 2016**.

Two cornerstones of the Energy Efficiency Directive (EED) in summary

Mandatory energy saving by the Member States in the period from 2014 to 2020 by an average of 1.5% annually	Mandatory implementation of regular energy audits in large companies
Motivation by industry through Government funding: Peak equalization scheme (Efficiency System Regulation SpaEfV)	Definition of a "large company" No. of employees: > 250 AND Annual revenue: > € 50 million OR Annual balance sheet total: > € 43 million
Regular energy audit IEC ISO 50001 IEC 16247 Alternative system (small companies only)	Regular energy audit Energy management system IEC ISO 50001 IEC 16247

MONITORING WITH ENERGY MEASUREMENT SYSTEM
3-phase energy measurement device

The MENNEKES 3-phase energy measuring device allows the measurement and monitoring of energy consumption by your plant and equipment. The measured values are made available over LAN or WLAN and can be visualised in an App (smartphone, tablet) or web interface.

The 3-phase energy measurement device includes an internal measured value memory (4 GB) that stores the measurement data for a long period and thus provides power consumption statistics, because energy monitoring in the production process is also increasingly more important. The keyword here again is Industry 4.0 and specifically the Smart Factory.

Performance characteristics:

- **Connection**
  - Operating voltage 230 V ± 10 %
  - Rated voltage 230 V / 400 V ~
  - Maximum current/phase 32 A, use of transformers for rated currents (e.g. 100/5 A, 150/5 A to 600 A)
  - Frequency 50 Hz ± 5 %

- **Measured variables**
  - Active / reactive / apparent power, power factor cos (phi)
  - Current, voltage, network frequency

- **Transmission of measured data**
  - Modbus-TCP

- **Accuracy of measurement**
  - ± 1 % of full scale

- **Temperature range**
  - T_A = -25 °C to +45 °C
  - T_L = -25 °C to +70 °C

- **Visualization**
  - PC (web interface)
  - Smart phone (App)
  - Tablet (App)

- **Communication interfaces**
  - LAN
  - WLAN
  - RS485

- **Other components**
  - Sensor bar (individual consumer measurement/ individual circuit measurement)
  - Transformer

- **Meter**
  - Measuring instrument and data logger combined in a single device
- **Software**
  - Software integrated into 3-phase energy measurement device (free of charge)
  - Open interface for integration of several 3-phase energy measuring devices in various central software solutions (consider additional costs) via Modbus TCP or CSV-Export via FTP

Monitoring with Energy Measurement System
Visualization

Visualization takes place via the integrated software wirelessly via App on a tablet or smartphone (Android / iOS), and wirelessly or wired via web interface.

The 3-phase energy measurement device has an internal web server. If this is called up via LAN or WLAN, the user receives an overview of the current energy consumption and the amount of the resulting costs.
Using the corresponding buttons, the displayed real-time values can also be converted to day, week, month or year values.

The real-time values, both for the total consumption as well as for individual consumers / circuits, can be displayed in the form of a graph. The prerequisite for the visualization of individual variables is the installation of the current sensors and the sensor bar.
Individual current values can be defined in the curve progression, quickly and easily, by positioning the mouse pointer in the appropriate place.

In addition to the current data, the information already stored can be accessed via the statistics button. The total consumption or the individual values of the past days, weeks, months or the last year can be visualized in the form of pie charts, column charts, or bar charts.

From a variety of real-time as well as historical data, patterns or trends can be identified and appropriate adjustments made. Energy monitoring is the basis for decision-making. In **condition monitoring**, i.e. monitoring the condition of machines and equipment, defects, malfunctions and other deviations from normal operation can be quickly identified and rectified. Another field of use of the recorded energy data can be **Predictive Maintenance**. Upward current changes, for example, may be signs of increased wear.

MONITORING WITH ENERGY MEASUREMENT SYSTEM
Data export

Data export can be performed manually or automatically with an adjustable time interval. By selecting the automatic data export, the data can be sent as an export file (CSV format) either to an email address or to an FTP server. Setting a time interval defines when new export files are to be generated in the measuring device and sent back to the destination address. This allows continuous documentation.

The automatic data export offers the advantage that measured energy consumption at other company locations can also be easily processed and stored at a central location in the company.

Central software

The data generated and stored in each 3-phase energy measuring device can only be read out or exported individually, i.e. device by device. If several measuring devices are to be monitored simultaneously, additional, central software is required. The data of each individual measuring device is transmitted to the central software via the installed **Modbus TCP** protocol over a LAN connection.

The central software is necessary for the implementation of an energy management system (EMS) in accordance with IEC ISO 50001 in the company. In the software, the consumption values and costs determined in the individual 3-phase energy measurement devices can be directly allocated to different cost centers and documented. A prerequisite for the transfer of the data is that the central software recognizes the Modbus TCP protocol.

Possible features of a central software solution:
Integration of several installed 3-phase energy measuring devices. Visualization of the measured values (single phase and total values) of several installed EM devices. Allocation of (individual) consumers to individual cost centers. Preparation of monthly and annual forecasts.

The central software is not included in the scope of supply for the MENNEKES products with energy measurement and must be purchased additionally from the providers of these products (see below for a list of eligible energy management software, for use as software in an energy management system according to IEC ISO 50001). Additional investment costs must be considered and calculated. Requirement of the software product to integrate the above-mentioned 3-phase energy measurement devices: Data exchange via Modbus TCP or import of the CSV files that the EM device automatically provides at freely configurable time intervals.

List of eligible energy management software
Published on the website of the BAFA (Federal Ministry of Economics and Export Control)
www.bafa.de/bafa/de/energie/energiemanagementsysteme/publikationen/energiemanagementsoftware.pdf

AMAXX® your Industry!

Solutions for Industry 4.0

ENERGY AND DATA	INDUSTRIAL NETWORK DISTRIBUTOR	MONITORING WITH ENERGY MEASUREMENT SYSTEMS

Networking in industrial production taking place currently under the catchphrase Industry 4.0 requires powerful and intelligent systems in power and data distribution and energy measurement.

For this purpose, MENNEKES offers appropriate products and solutions specifically tailored to the requirements in these fields.

At **www.industry40.MENNEKES.de**, interested parties can find all relevant information about the **many and varied** possibilities, whether as standard equipment or customized solutions, as well as the MENNEKES contact partners.