



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
RECEPTACLES**



**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

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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



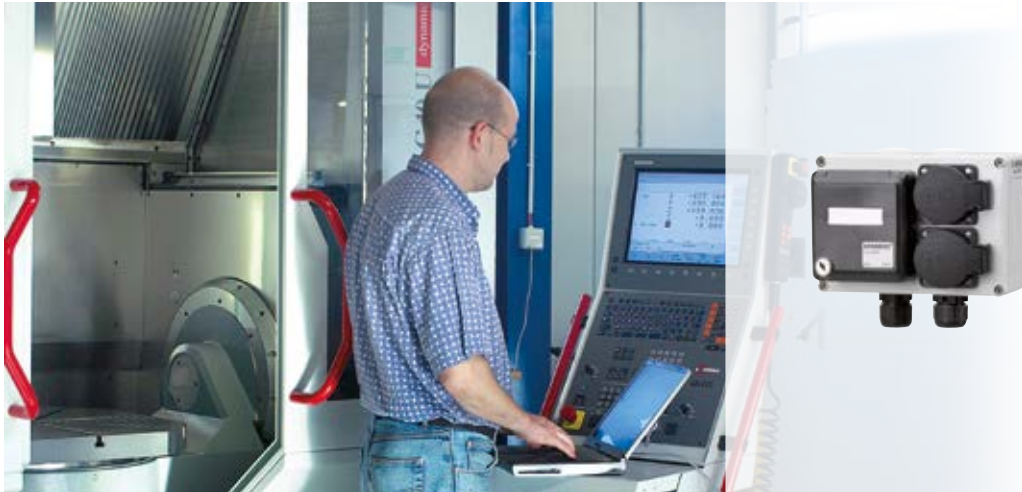
EVERGUM®
mobile distributor
with Energy
Measurement System



**CUSTOMIZED
SOLUTIONS**
with energy
and data

ENERGY AND DATA

Cepex data port receptacles and compact network distributors



CEPEX DATA PORT RECEPTACLE



COMPACT NETWORK DISTRIBUTOR

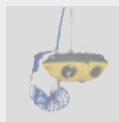
ENERGY AND DATA



CEPEX DATA PORT RECEPTACLES



COMPACT NETWORK DISTRIBUTORS



AIRCRAFT® AND SKRAFT®



AMAXX® with energy and data components inside a single enclosure.



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



CUSTOMIZED SOLUTIONS with energy and data

Cepex data port receptacles, 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 receptacles 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 three SCHUKO® receptacle and a Cepex data port receptacle. They are pre-wired for installation with an internal separator between the data and energy areas.

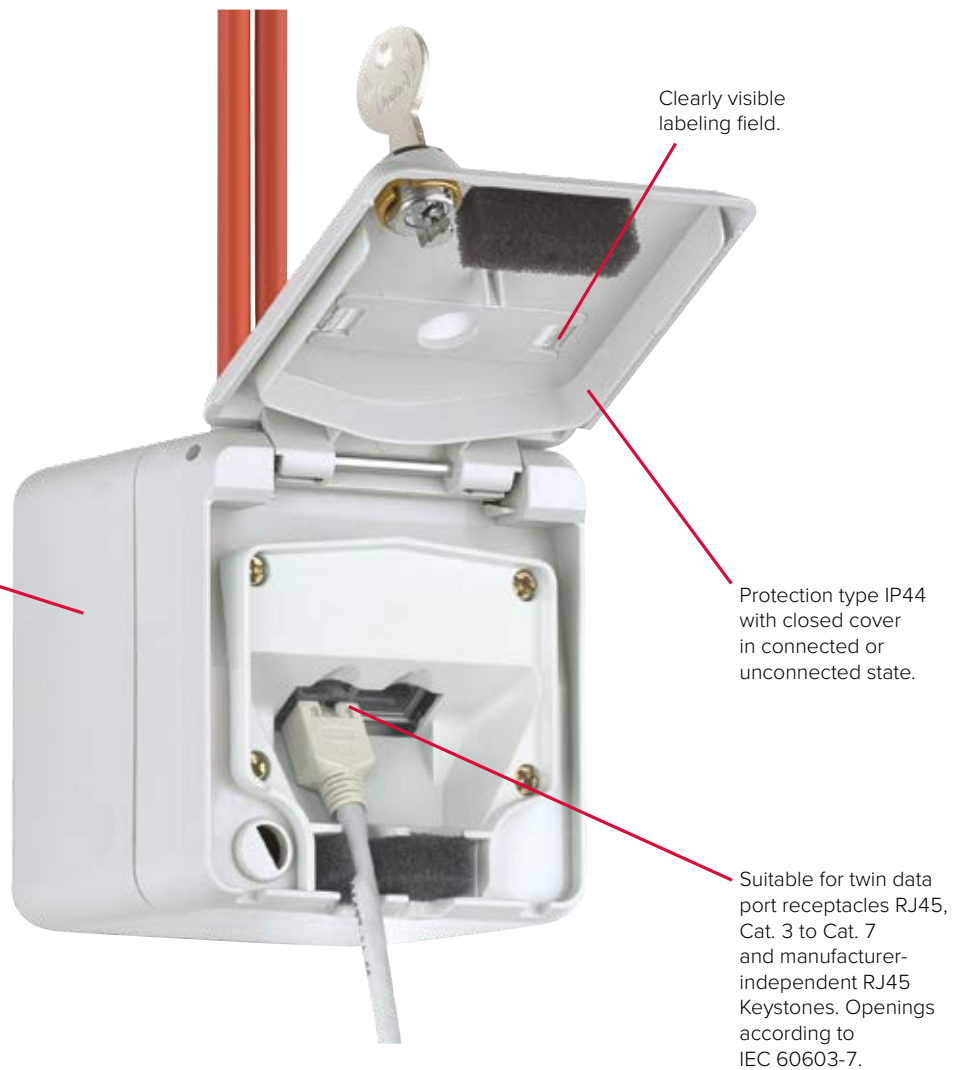
ENERGY AND DATA

Cepex data port receptacles

Cepex data port receptacles

Versatile in use and reliable: Our Cepex data port receptacles are for example perfect for control rooms, storage areas and laboratories as well as airports and production lines. Operation is via standard patch cables. Can be combined with Cepex receptacles, CEE and SCHUKO®. These receptacles are suitable for surface mounting, flush mounting, or duct installation.

Back part of enclosure can be rotated by 180 degrees, allowing cable entry from above or below without additional work.



Simple:

All models are equipped as standard with a membrane screw connection M 25 for two cables 3-9 mm. Simply force the cables into place - done.



Extra:

A metric cable gland M25 / 2 x 8 is optionally available.



Safe:

Lockable, even with inserted cables. The safety lock prevents unauthorized access.

ENERGY AND DATA

Cepex data port receptacles

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

RJ45 modules and Keystone			Cepex flanged receptacle															Cepex surface-mounted receptacle												
Brand	Type	Part no. data module	Part no. Empty enclosure Grey (RAL 7035)							Part no. Empty enclosure Alpine white (RAL 9010)					Part no. Empty enclosure Black (RAL 9005)			Part no. Empty enclosure Silver (RAL 9006)		Part no. Empty enclosure Grey (RAL 7035)										
			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 UPOS	41492	■								■							■				■		■						
Rutenbeck	UM real								■											■										■
TKM	KDFM	41452	■							■													■							
Reichle & De-Massari	Module Real 10	25056							■											■										■
Setec	XKJ								■											■										■
Corning	FutureCom								■											■										■
Dätwyler	KS-T6A								■											■										■
LEONI	MegaLine			■					■		■					■				■				■						■

* Keystones

ENERGY AND DATA

Cepex data port receptacles



Cepex enclosure, empty, Grey

IP 44
Std. Pack. Qty: 5
Product group: 1024
Image: 4300

- as surface-mounted receptacle
- for installation RJ45 data port receptacles
- 2 keys
- Common key lock: Part no. + Index "G"

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 UpOS	1 x 41492	4320
TKM	KDMF	1 x 41452	4300 ¹⁾
Reichle & De-Massari	Real 10 module	2 x 25056	4375 ²⁾



Cepex enclosure, empty, grey

IP 44
Std. Pack. Qty: 5
Product group: 1020
Image: 4302

- as flanged receptacle
- for installation RJ45 data port receptacles
- 2 keys
- Common key lock: Part no. + Index "G"

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 UpOS	1 x 41492	4322
TKM	KDMF	1 x 41452	4302 ¹⁾
Reichle & De-Massari	Real 10 module	2 x 25056	4377 ²⁾



Cepex enclosure, empty, Alpine white

IP 44
Std. Pack. Qty: 5
Product group: 1020
Image: 4304

- as flanged receptacle
- for installation RJ45 data port receptacles
- 2 keys
- Common key lock: Part no. + Index "G"

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 UpOS	1 x 41492	4324
TKM	KDMF	1 x 41452	4304 ¹⁾

ENERGY AND DATA

Cepex data port receptacles



Cepex enclosure, empty, 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 flanged receptacle
- for installation RJ45 data port receptacles
- 2 keys
- Common key lock: Part no. + Index "G"



Cepex enclosure, empty, 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	Real 10 module	2 x 25056	4378 ²⁾

- as flanged receptacle
- for installation RJ45 data port receptacles
- 2 keys
- Common key lock: Part no. + Index "G"

¹⁾ Cepex enclosure, empty, also suitable for data modules type Telegärtner (AMJ 45 Up/O, Cat.6a) and Nexans (LANmark-6 snap-in connector with support ring modular outlet 50).

²⁾ Cepex enclosure, empty, also suitable for data modules type Telegärtner (AMJ/UMJ Cat.6+, Setec (XKJ), Corning (FutureCOM S10TENE Keystone), Dätwyler (KS-T6A, MS-K, PS-GG45), Rutenbeck (UM real Cat.6a, A), and LEONI MegaLine (Keystone).

³⁾ Cepex enclosure, empty, also suitable for LEONI MegaLine.

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

Colors:

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

ENERGY AND DATA

Cepex data port receptacles - data modules



Data module

Std. Pack. Qty: 20
Product group: 9247
Image: 41455

Part no.

41455

- BTR, type: RJ45 C6A module, 270° angled (E-DAT module 8(8) receptacle), Cat.6
- for engaging in Cepex data port receptacles, Part no. 4340, 4342, 4344, 4355
- Installation-friendly connection of the 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 receptacle, Part no. 4360 and variants



Data module

Std. Pack. Qty: 10
Product group: 8140
Image: 25056

Part no.

25056

- Reichle & De-Massari, type: Data insert Real 10, Cat.6, shielded, including frame for engagement
- suitable for Cepex data port receptacle, Part no. 4375 and variants

ENERGY AND DATA

Cepex data port receptacles - data modules



Data module

Std. Pack. Qty: 10
Product group: 8247
Image: 41492

- Rutenbeck, type: Data insert 2 x RJ45, Cat.6a, (type UPOS)
- suitable for Cepex data port receptacle, Part no. 4320 and variants

Part no.

41492



Data module

Std. Pack. Qty: 5
Product group: 8247
Image: 41452

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

Part no.

41452



Data module

Std. Pack. Qty: 10
Product group: 8440
Image: 25042

- for Cepex data port receptacles
- RJ45 connection module, type E-DAT module, angled connector 8(8) 90°, Cat.6 (insert recommended for improved cable management)

Part no.

25042

ENERGY AND DATA

Cepex data port receptacles - accessories



Flush mounting 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 flanged receptacles



Spacer frames

Std. Pack. Qty: 25
 Product group: 8237
 Image: 4191

Description

Part no.

Grey	4191
Black	4191S

- as height adjustment
- suitable for all Cepex SCHUKO® surface-mounted receptacles and all Cepex CEE surface-mounted receptacles 16 A and 32 A



Cable gland

Std. Pack. Qty: 200
 Product group: 8247
 Image: 41453

Part no.

41453

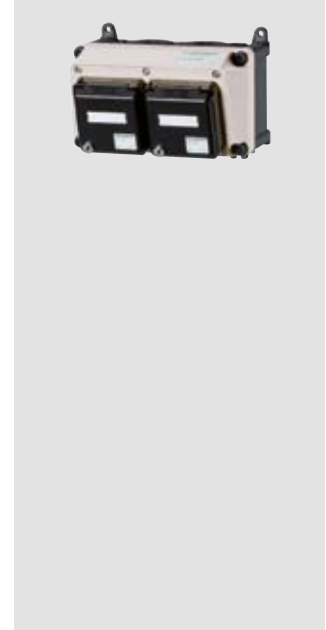
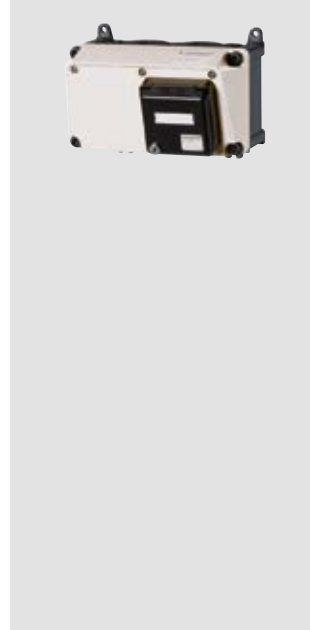
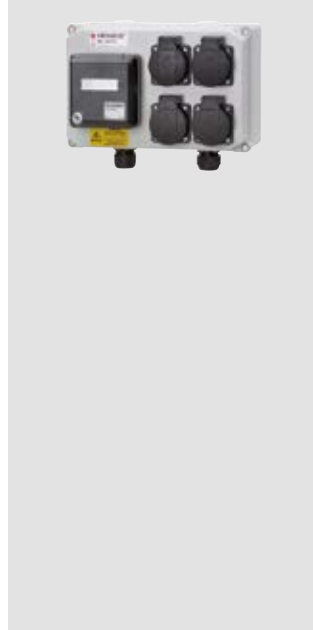
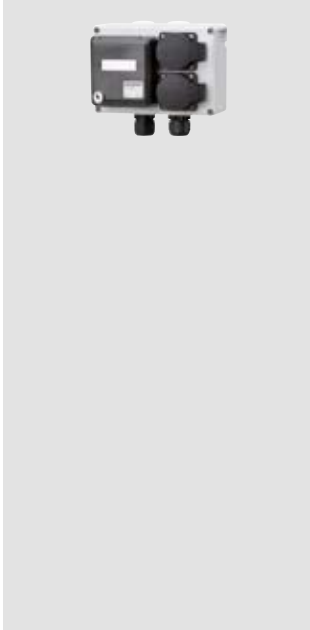
- Grey
- M 25
- 2 x 8, for 2 cables 6-8 mm
- suitable for all Cepex surface-mounted receptacles

ENERGY AND DATA

Compact distributor and network enclosure

Protection type IP 44

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



Protection type IP 44

Enclosure front cover electric grey RAL 7035, yellow (GE) RAL 1021 also available on request. Cepex enclosure, empty, available in either electric grey (RAL 7035) or black (RAL 9005).

Data receptacles
1 Cepex data port receptacle with 2 RJ45 connection modules, type E-DAT module, receptacle, Cat.6, make: BTR
Receptacles SCHUKO®
2 SCHUKO® 16 A, 230 V
Cable entry
2 x M 25 top (sealed) 1 cable gland M 25 bottom 1 cable gland M 25 (2 x 8) at bottom (sealing insert for 2 single cables up to 8 mm diameter)
Connection
for 1 cable up to 3 x 4 mm ²
Enclosure size
118 x 170 mm (H x W)
Part no.
25705

Data receptacles
1 Cepex data port receptacle with 2 RJ45 connection modules, type E-DAT module, receptacle, Cat.6, make: BTR
Receptacles SCHUKO®
4 SCHUKO® 16 A, 230 V
Cable entry
2 x M 25 top (sealed) 1 cable gland M 25 bottom 1 cable gland M 25 (3 x 5-7) at bottom (sealing insert for 2 single cables up to 8 mm diameter)
Connection
for 1 cable up to 5 x 4 mm ²
Enclosure size
160 x 245 mm (H x W)
Part no.
25715

Data receptacles
1 Cepex enclosure, empty, prepared for 2 RJ45 connection modules, type E-DAT module, receptacle, Cat.6a, make: BTR (Part no. 41455) or OpDAT module LC or ST (make BTR - not in scope of supply)
Cable entry
2 each x M 25 top and bottom (sealed) 2 each 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 cap-shape seal blank for punched hole)
Enclosure size
130 x 225 mm (H x W)
Part no.
25104

Data receptacles
2 Cepex enclosure, empty, common locking, prepared for 4 RJ45 connection modules, type E-DAT module, receptacle, Cat. 6a, make: BTR (Part no. 41455) or OpDAT module LC or ST (make BTR - not in scope of supply)
Cable entry
2 each x M 25 top and bottom (sealed) 2 each 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 cap-shape seal blank for punched hole)
Enclosure size
130 x 225 mm (H x W)
Part no.
25102

ENERGY AND DATA

AirKRAFT® and 3KRAFT®



AIRKRAFT®



3KRAFT®

ENERGY AND DATA



CEPEX DATA PORT RECEPTACLES

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

AIRCRAFT® and 3KRAFT® distributors can be optionally equipped with **SCHUKO®** receptacles or **CEE receptacles** up to 32 A, **2-way RJ45 data port receptacles** 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 switches or MCBs (modular devices up to 4HP).

ENERGY AND DATA

AirKRAFT® and 3KRAFT®

Protection type IP 20

Pre-wired for installation, base frame black, hinged device casing optionally red (RO), yellow (GE) or silver (SI).
Other combinations on request



Fitted with

3 SCHUKO® 16 A, 230 V
1 RJ45 2-way data port
receptacle 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 2-way data port
receptacle Cat.6, 8/8

Fusing

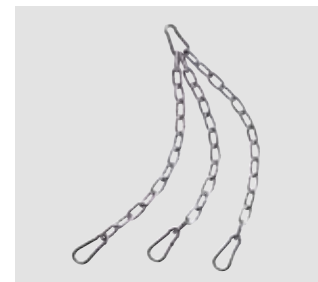
Connection / feeder cable

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 2-way data port
receptacle 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 2-way data port
receptacle Cat.6, 8/8

Fusing

Connection / feeder cable

for 1 cable up to 5 x 10 mm²

Connection and load values

Part no.

94355GE



Compressed air connection

for 3KRAFT® and AirKRAFT®

NW 9 mm

Part no. 208620

NW 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 receptacles** 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 RECEPTACLES	COMPACT NETWORK DISTRIBUTORS	AIRKRAFT® AND SKRAFT®
		
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, enclosure front cover electric grey RAL 7035, yellow (GE) RAL 1021 or silver (SI) RAL 9006 also available on request. Enclosure, with exception of 130 x 225 mm and 650 x 112.5 mm, hinged to the side. 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 receptacles	Data port receptacles	Data port receptacles	Data port receptacles
1 Cepex RJ45, 2-way Cat.6	1 Cepex RJ45, 2-way Cat.6	1 Cepex RJ45, 2-way Cat.6	2 Cepex RJ45, 2-way 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 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 16 A, 1 p, C
Connection	Connection	Connection	Connection
for 1 cable up to 3 x 10 mm ²	for 1 cable up to 5 x 10 mm ²	for 1 cable up to 5 x 10 mm ²	for 2 cables up to 5 x 25 mm ²
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, enclosure front cover electric grey RAL 7035, yellow (GE) RAL 1021 or silver (SI) RAL 9006 also available on request. Enclosure 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 receptacles

1 Cephex RJ45, 2-way 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 16 A, 1 p, C

Connection

for 1 cable up to
5 x 10 mm²

Connection and load values

Pre-fuse fuse max. 32 A
InA 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® 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



Pneumatic connection

for suspendable AMAXX®

for tube NW 9 mm,
Part no. 997001

for hose NW 13 mm,
Part no. 997000



AMAXX® Screw connector set

Black RAL 9005,
1 screw connection,
1 multiple seal with
openings for cable
diameters of 5 - 7 mm
and blanking plugs,
1 cap-shaped seal
(customer-side hole)

M 25 - 3 openings

Part no. 25023

M 32 - 4 openings

Part no. 25024

M 40 - 7 openings

Part no. 25025

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



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

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 receptacles.

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



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!

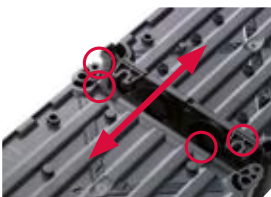
ENERGY AND DATA

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 receptacles** as well as **RCD's** and **MCBs**.

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.

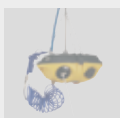
ENERGY AND DATA



CEPEX DATA PORT RECEPTACLES



COMPACT NETWORK DISTRIBUTORS



AIRKRAFT® AND SKRAFT®



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

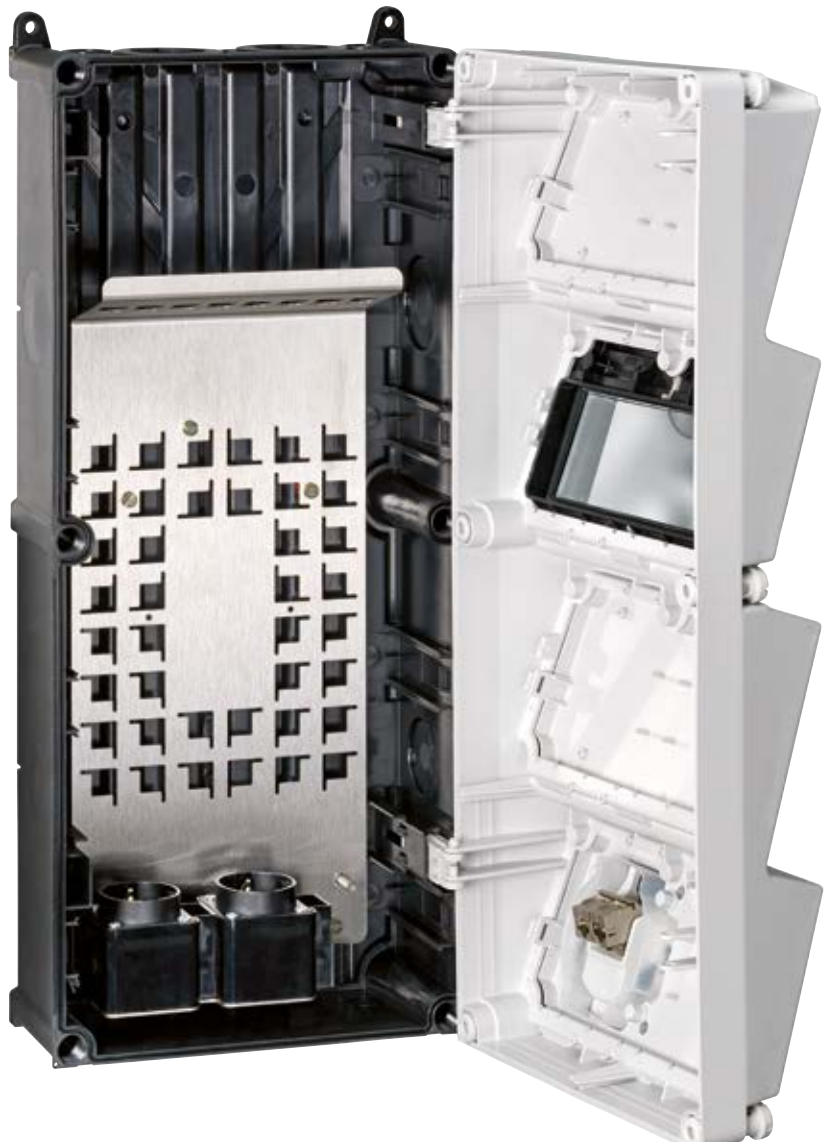
With the new industrial network distributor from the AMAXX® family, MENNEKES offers a product for the expansion of network solutions.

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 Keystone®. 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 Keystone® can be equipped with RJ45 receptacles or other inserts.

Two SCHUKO® receptacles integrated into the enclosure are used for the power supply of the active network components.

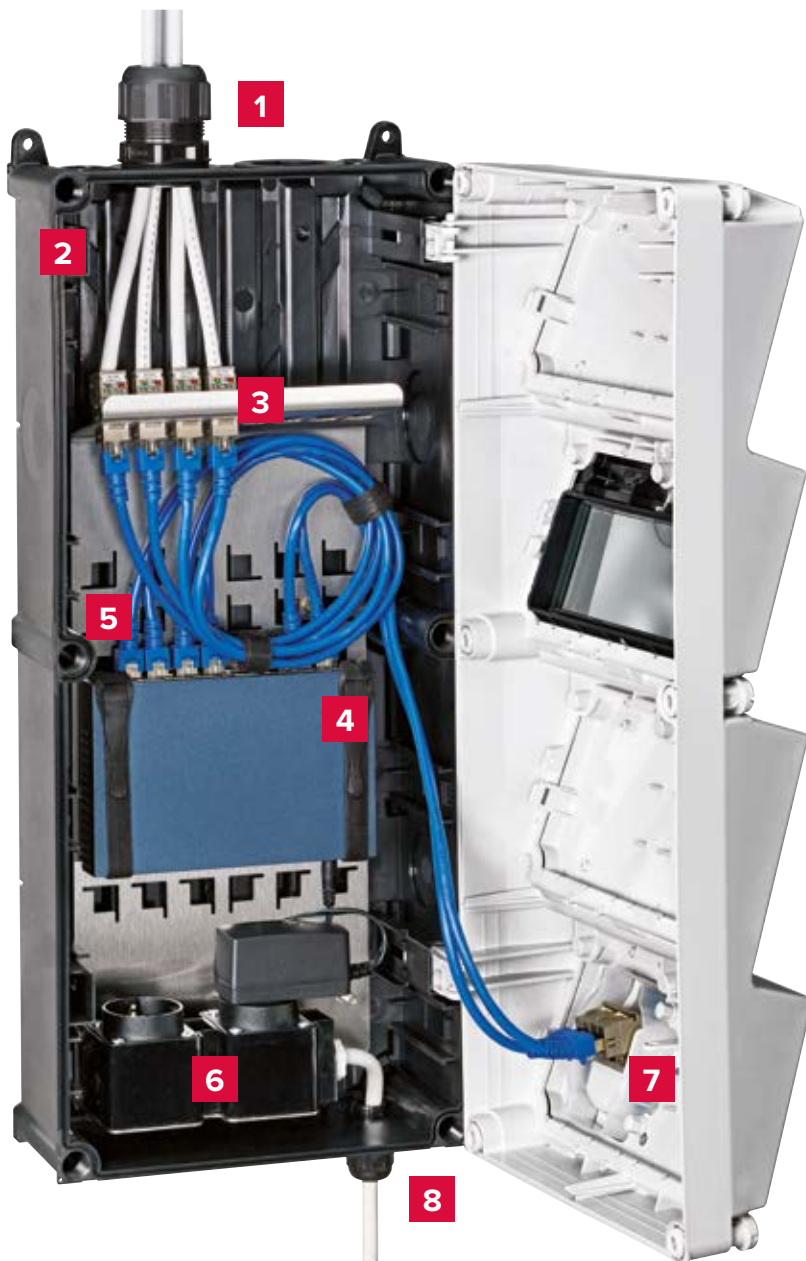
Another advantage for the user: After the power supply has been connected by the qualified electrician, the further equipping and manipulation of the enclosure can be performed by laymen in the field of electrical technology.



INDUSTRIAL NETWORK DISTRIBUTOR

Network extension solutions

Application example: network distributor



- 1** Metric screw M40 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 Keystone 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 receptacle 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 on 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 receptacle (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

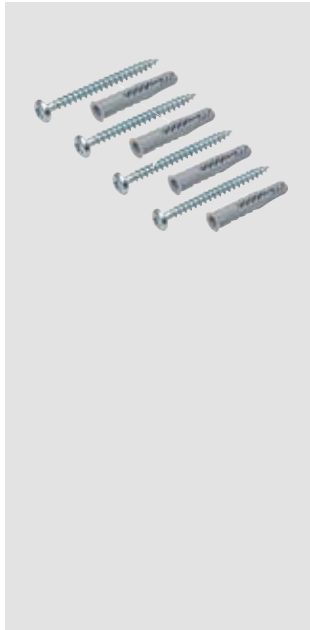
1 screw set

Enclosure size

520 x 225 mm (H x W)

Part no.

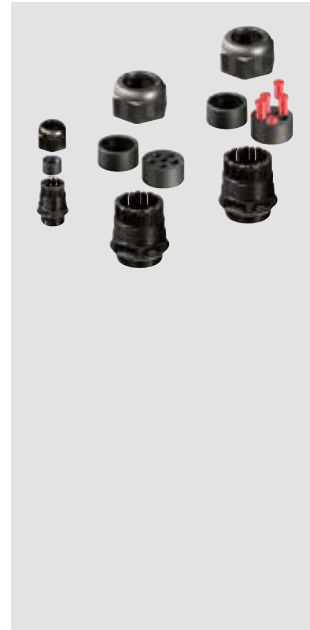
25405



AMAXX® standard screw set

enclosed with each media distributor

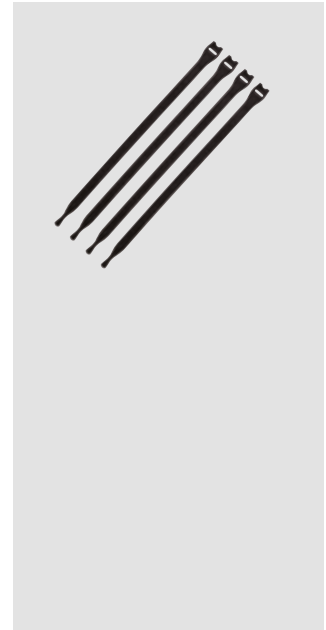
Consisting of:
4 screws, 6 x 70
Pozidrive size 3, steel galvanized and
4 dowels, 8 x 50,
for concrete, porous concrete, solid brick, perforated brick



AMAXX® Screw fitting set

enclosed with each media distributor

Black RAL 9005,
2 screw fittings M40
2 multiple seals with
6 openings for a cable diameter of 6-9 mm including 5 each blanking 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



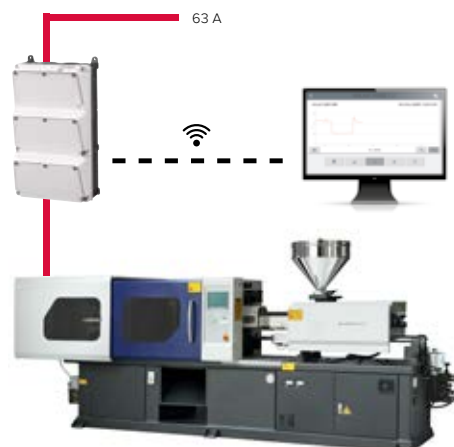
WALL RECEPTACLE with Energy Measurement System



EVERGUM® mobile distributor with Energy Measurement System



CUSTOMIZED SOLUTIONS with Energy Measurement System



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 mm²
- 4 Output terminals 25 mm²
- 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

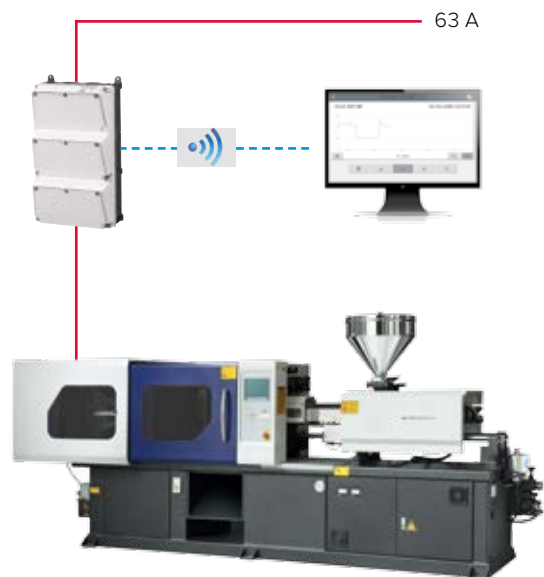


1 3 AMAXX® enclosures for energy measurement

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



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 receptacles

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® 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



AMAXX® Screw connector set

Black RAL 9005,
1 screw fitting,
1 multiple seal with openings for cable diameters of 5 - 7 mm and blanking plugs,
1 cap-shaped seal (customer-side hole)

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

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



AMAJXX[®]
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

Wired for installation.

Enclosure electric grey RAL 7035.



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



CEE receptacles
1 CEE 63 A, 5 p, 400 V
Data receptacles
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
Fusing
Connection and load values
Enclosure size
460 x 180 (H x W)
Part no.
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



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).

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

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 receptacles

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, enclosure 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 receptacles

- 1 RJ45 data module for rail mounting

Max. power load

Energy measurement

- 13-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 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® 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



AMAXX® Screw connector set

- Black RAL 9005,
- 1 screw fitting,
- 1 multiple seal with openings for cable diameters of 5 - 7 mm and blanking plugs,
- 1 cap-shaped seal (customer-side hole)

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

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 DIN EN 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



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 nterface.

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 \pm 10 %
- Rated voltage 230 V / 400 V \sim
- 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 \pm 5 %

■ Measured variables

- Active / reactive / apparent power, power factor cos (ϕ)
- Current, voltage, network frequency

■ Transmission of measured data

- Modbus-TCP

■ Accuracy of measurement

- \pm 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 DIN EN 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 DIN EN 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.

MENNEKES

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Industrial plugs and sockets

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