

# Product Portfolio



A company of the uesa Group

**30**  
JAHRE  
1990-2020

**We charge it!**  
E-mobility expertise from uesa



Switchgear



made in  
Uebigau

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## Products and services in the product portfolio

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### E-Mobility

- AC charging column, DC charging column,
- wall boxes and charging column for vehicles, with and without measurement,
- charging column with variable designs for vehicles with up to 4 charging points, including without fast charging, for e.g. E-bikes
- Charging stations for the needs of local transport companies or trucks/buses,
- Components for measuring power consumption in the medium and low-voltage range
- Creation of e-mobility solutions for large-scale consumers.

All of the product solutions listed can be commissioned inclusive of all planning services for the grid connection and can be custom-configured to your requirements.



### House connection boxes

uesasa GmbH offers a broad spectrum of house connection options:

House connection boxes 1 x 3 x NH00 up to 100 A,  
House connection boxes 1 x 3 x NH1 up to 250 A,  
House connection boxes 1 x 3 x NH2 up to 400 A,  
house connection boxes 2 x 3 x NH00 for  
50 A/63 A/100 A/160 A,

House connection boxes 2 x 3 x NH2 up to 400 A.  
Special designs of HCBs, such as:

- 5-pin (PE and N separate),
- 1 x 3 x NH00 + 1 x 3 x NH2; 3 x 3 x NH00,
- with double entrance or exit,
- cable exits on the side,
- with strain relief at the exit,
- PEN rail with 1/2/3 outlets.

All kinds of terminal type are also possible, depending on the design.



Cabinet for general use with shared internal space and police flap.

Thanks to two separately lockable functional areas and the police flaps, the cabinet provides the ideal basis for many different potential uses.

The design can comply with protection category IP44 and IP54.

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# Switchgear from uesa ...that you can rely on!



uesa GmbH offers products and services that meet the needs of its customers in the electrical system and switchgear construction industry. Its portfolio of products includes power distribution systems, cable distributors, transformer stations, low-voltage switchgear, medium-voltage switchgear up to 36 kV and automation and control systems, as well as services in the solar sector.

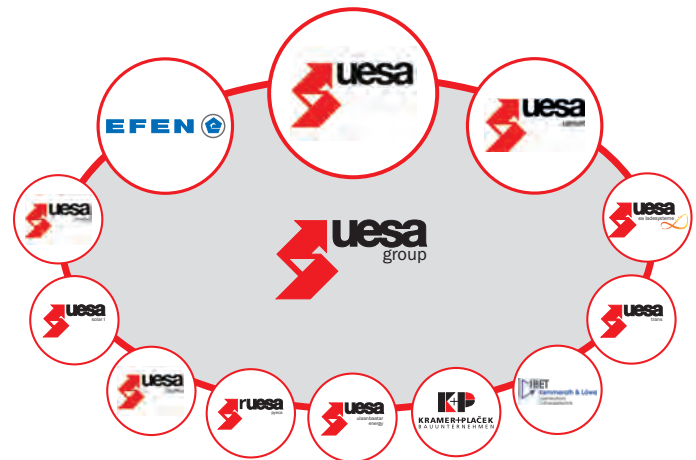
Our customers benefit from the expertise of all of the companies in the uesa network at the „Uebigau-Wahrenbrück power site“, situated in the south of the state of Brandenburg. Collaboration within the uesa network creates the ideal conditions for perfectly aligning processes and workflows on both a national and international level with customers' needs. Our strengths as a single-contract production specialist include combining components from well-known manufacturers to create a system that meets your requirements.

Several hundred professional employees, the use of modern machinery and flexible, customer-orientated production, as well as over 50 years of product experience, create the ideal foundations for establishing uesa GmbH as a turnkey supplier to around 70% of all energy supply companies in Germany and to a range of industrial and wholesale companies.

Our product catalogue shows you an extract from our product portfolio. Get in touch with us and tell us what you need! We'd be delighted to create a customised product for you.

Uebigauer Elektro- und Schaltanlagenbau  
uesa GmbH  
Uebigau  
Gewerbepark-Nord 7  
04938 Uebigau-Wahrenbrück

Tel.: +49 35365 49-0  
Fax: +49 35365 8217  
E-mail: mail@uesa.de  
WEB: www.uesa.de





## Our domestic sales service - your contacts

Production section:	Contact /Telephone/E-mail:		
<b>Sales</b>	Ekkehard Kohl	49-170	e.kohl@uesasa.de
		0172-3795364	
<b>Marketing</b>	Thomas Jage	49-406	t.jage@uesasa.de
<b>Transformer stations</b>	Michael Hoffmann	49-208	m.hoffmann@uesasa.de
- In accessible design	Sebastian Raddatz	49-228	s.raddatz@uesasa.de
- In compact design	René Raak	49-250	r.raak@uesasa.de
	Uwe Lehnert	49-202	u.lehnert@uesasa.de
	Albert Dehne	49-207	a.dehne@uesasa.de
	Michael Beyer	49-243	m.beyer@uesasa.de
	Fax	49-161	
<b>Low-voltage distributions in self-contained structure (IP20) up to 4000 A Type UE-20</b>	Daniel Nowak	49-222	d.nowak@uesasa.de
	Fax	49-161	
<b>Low-voltage distributions in panel design up to 2500 A</b>	Daniel Nowak	49-222	d.nowak@uesasa.de
- for transformer stations with accessible design	Gerry Romanus	49-244	g.romanus@uesasa.de
- for transformer stations with compact design	Andreas Gödicke	49-430	a.goedicke@uesasa.de
- for electrical plant rooms	Fax	49-161	
<b>Low-voltage distributions in cabinet structures up to 7300 A</b>	Uwe Hackel	49-205	u.hackel@uesasa.de
- You can choose between various cabinet systems from well-known manufacturers, tailored to your needs	Olaf Biering	49-213	o.biering@uesasa.de
	Ronny Schnee	49-203	r.schnee@uesasa.de
	Mario Siegmann	49-216	m.siegmann@uesasa.de
	Fax	8217	
<b>Automation systems</b>	Grzegorz Tadra	0351-21385-11	g.tadra@uesasa.de
uesasa-engineering	Siegmut Kaiser	0351-21385-13	s.kaiser@uesasa.de
Dresden office	Fax	0351-21385-20	
<b>Outdoor distribution cabinets without SNO measurement House connection boxes</b>	Frank Drees	49-487	f.drees@uesasa.de
- Cabinets for general use	Enrico Berndt	49-480	e.berndt@uesasa.de
- Distribution columns	René Wieser	49-447	r.wieser@uesasa.de
- Cable distribution columns	Fax	49-495	
<b>Outdoor distribution cabinets with SNO measurement</b>	Chris Gollasch	49-155	c.gollasch@uesasa.de
- Meter connection columns	Danilo Höneke	49-154	d.hoeneke@uesasa.de
- Measurements of PV systems and other regenerative energies	Marko Atlas	49-152	m.atlas@uesasa.de
- Transformer measurements	Jörg Boinski	49-156	j.boinski@uesasa.de
- Street lighting cabinets	Fax	8217	
- Market and camp-site distributors			
- Project-related special cabinets			
<b>Medium-voltage switchgear and equipment</b>	Ricardo Auge	49-218	r.auge@uesasa.de
Medium-voltage switchgear up to 24 kV, 630 A	Bodo Fischer	49-502	b.fischer@uesasa.de
	Michael Richter	49-474	m.richter@uesasa.de
Medium-voltage switchgear up to 24 kV, 630 A	Jens Hoffmann	49-407	j.hoffmann@uesasa.de
	Fax	49-511	
<b>Solar system service</b>	René Thinius	0172-3782580	r.thinius@uesasa.de
	Fax	4499-552	

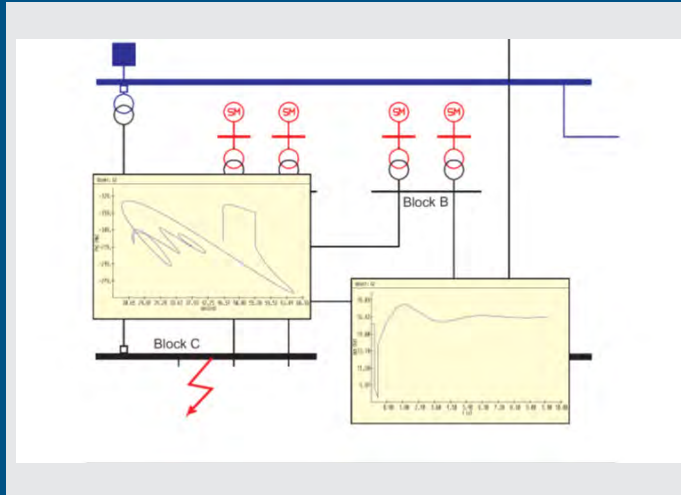


## Our field sales service - your contacts

Contact/Address:	Communication details:	Responsibility for state:
uesasa GmbH Frank Wiese Sportplatzweg 4 18182 Gelbensande	Telephone 03 82 01-7 51 22 Fax 03 82 01-7 51 23 Mobil 0172-3 79 53 63 E-mail f.wiese@uesasa.de	Mecklenburg/ Western Pomerania
uesasa GmbH Steffen Homolka Gewerbepark-Nord 7 04938 Uebigau-Wahrenbrück Germany	Telephone 03 53 65 49-0 Fax 03 53 65 49-161 Mobil 0173-2 46 04 24 E-mail s.homolka@uesasa.de Web www.uesasa.de	Saxony-Anhalt Brandenburg Potsdam region
uesasa GmbH Dirk Blocks Gewerbepark-Nord 7 04938 Uebigau-Wahrenbrück Germany	Telephone 03 53 65 49-0 Fax 03 53 65 49-161 Mobil 0172-3 78 85 67 E-mail d.blocks@uesasa.de Web www.uesasa.de	Brandenburg - Frankfurt/Oder region Cottbus region
Industry representative IVB Jens Hennig Waldstr. 13e 04924 Bad Liebenwerda	Telephone 03 53 41-3 12 50 Fax 03 53 41-3 12 51 Mobil 0172-3 79 53 62 E-mail j.hennig@uesasa.de Web www.aussenverteiler.de	Saxony
Industry representative Frank Gerber Lahnsteiner Straße 9d 07629 Hermsdorf	Telephone 03 66 01-93 99 63 Fax 03 66 01-20 95 24 Mobil 0173-8 00 67 53 E-mail gerber@schaltanlagen-uesasa.de	Thuringia
Industry representative seidl-elektrotechnik GmbH Nico Seidl Gottlieb-Daimler-Straße 3 35463 Fernwald-Annerod	Telephone 06 41-94 88 88-0 Fax 06 41-94 88 88-29 Mobil 0160-8 85 75 37 E-mail info@seidl-elektrotechnik.de Web www.seidl-elektrotechnik.de	Hesse
uesasa GmbH Axel Brieskorn Office Bielefeld	Mobil 0151-16 36 94 82 Fax 0 36 53 65-49-161 E-mail a.brieskorn@uesasa.de Web www.uesasa.de	Lower Saxony North West North Rhine-Westphalia Hamburg Bremen
uesasa GmbH Gewerbepark-Nord 7 04938 Uebigau-Wahrenbrück Germany	Telephone 03 53 65-49-0 Fax 03 53 65-49-161 E-mail mail@uesasa.de Web www.uesasa.de	North Rhine-Westphalia Rheinland-Palatinate Saarland Baden-Württemberg Bavaria
Industry representative for specialist electrical wholesalers Klaus Marschall Industriestraße 18 91161 Hilpoltstein	Telephone 09 174-9 99 99-04 Fax 09 174-9 99 99-06 Mobil 0171-7 70 05 69 E-mail info@marschall-iv.de Web www.marschall-iv.de	Bavaria Baden-Württemberg

## From planning to the charging - Everything from a single source

Grid calculation/-planning



### Grid analysis/grid calculation

- Short-circuit current calculation,
- Power flow calculation,
- Calculation of grid dynamics,
- Grid protection concepts/protection settings,
- Grid design,
- Grid expansion planning.



### Transformer stations

- E-mobility solutions for fuel stations and rest stops
- Delivery of stations for all supply network operators and utility companies in Germany,
- Interface from the MV network of the supply network operator to the LV network for charging technology,
- Custom configuration of transformer stations,
- Option to have medium voltage-side measurement in the transformer station.



### Cable distribution cabinets, measuring cabinets

- Cable distribution cabinets,
- Direct measurements up to 63 A (for all supply network operators and utility companies),
- Transformer measurements up to 630 A (for all supply network operators and utility companies).

### From planning to the charging - Everything from a single source



#### DC-Charging stations

##### Characteristics:

- Outdoor distributor made from powder-coated stainless steel, IP44,
- Vandalism protection, customer-specific design of the housing (labeling),
- Touch panel for starting and stopping the charging process and for information,
- Identification via RFID chip or direct payment system.



#### AC-Charging stations

Charging station for simultaneous AC charging of up to four electric vehicles with up to 22 kW.

##### Characteristics:

- Outdoor distributor made from powder-coated stainless steel, IP44,
- Vandalism protection, customer-specific design of the housing (labeling),
- Touch panel for starting and stopping the charging process and for information,
- Identification via RFID chip.



#### AC-Wall boxes

##### Characteristics:

- Housing made from fibreglass reinforced polyester, IP 54,
- Each charge controller 3.7 kW, 7.4 kW, 11 kW or 22 kW possible,
- Charging cable type 2 with LED status indicator
- Use for private and semi-public charging.

## DC-Charging station



### Charging station for the simultaneous charging of up to two electric vehicles up to 450 kW

#### Housing:

- Made from powder-coated stainless steel, IP 44,
- Two piece back panel,
- 1864 x 582 x 372 mm (H x W x D),
- Stainless steel socket,
- Precast concrete footing optional,
- Column colour RAL 9016 structured, colour of door and roof RAL 7001 smooth, or colour by customer preference,
- Double locking,
- Prevents vandalism.

#### Electrical connection:

- Rated voltage: 200/920 V,
- Electronic meter for each charge point
- Temperature range: -25 to +55 °C,
- Compliance with calibration law: Q2/2021

#### Charge points:

- Charging cable: 2 x CCS Combo 2,
- Charging standard: ISO 15118, DIN 70121,
- Charging power: max. 2 x 450 kW,
- Rated voltage: bis zu 500 A.

#### Charge management:

- Charging controller for each charge point,
- Status panel,
- Operating status panel,
- Error panel,
- External/internal load management,
- Ad hoc charging.

#### Kommunikation:

- User interface 10" touchscreen,
- RFID MIFARE,
- Direct payment system,
- Hotspot-compatible,
- Service web portal,
- Remote control and maintenance

#### Configuration:

- Modular, extendable charging column system,
- Number of charging points: 1 to 4,
- Number of charging points per charging column: 1 to 2,
- Charging Assistant,
- Mandantenverwaltung,
- Tenant management,
- Customer portal,
- Billing systems,
- Plugsurfing.

#### Interfaces:

- OCPP 1.6 interface,
- Internet connection via LTE or LAN/Wifi.





DC-power-module



DC-power-module:

- Housing made from sheet steel,
- Input voltage: AC 400 V low voltage,
- Mains frequency: 50 Hz,
- Connected load 16 to 630 kW,
- Electrical isolation according to: EN 60950,
- Energy efficiency: 96 %,
- DC-DC converter,
- Rated voltage: 200/920 V,
- Output power: 15 to 600 kW.

### Mobile DC-Charger



#### Mobile charging station for DC charging of one electric vehicle with up to 40 kW

##### Housing:

- Made from powder-coated stainless steel, IP 54,
- 1350 x 1000 x 800 mm (H x W x D),
- Weight: approx. 165 kg,
- Two piece back panel,
- Mobile with parking brake,
- Column colour RAL 9016 structured, colour of door and roof RAL 7001 smooth, or colour as per customer preference,
- Single lock,
- Impact resistance: IK09.

##### DC output:

- Charging cable: 1 x CCS Combo 2 (5 m),
- Charging standard: ISO 15118, DIN 70121, IEC 61851-1, IEC 61851-23, IEC 61851-24,
- Rated voltage: 750 V,
- Charging power: max. 40 kW,
- Charging current: 53 A,
- DC meter MID calibrated,
- Temperature range: -25 to +55 °C.

##### AC input:

- Connection cable CEE 5x63 A (5 m),
- Input voltage: 400 V AC,
- Rated current: 63 A,
- Mains frequency: 50 Hz,
- Connected load 42 kW,
- Potential separation according to: EN 60950,
- Energy efficiency: 96 %,
- Radio interference suppression: EN 55011,
- EMV IEC 61000-6-2

##### Charge management:

- Charging controller,
- Status panel,
- Operating status panel,
- Error panel,
- Emergency stop button

##### Communication/authentication:

- User-Interface 7"-Touchscreen,
- Online module optional

##### Interfaces:

- OCPP 1.6 interface,
- Internet connection via LTE or LAN/Wifi.

## AC-Charging station



### Charging station for the simultaneous charging of up to four electric vehicles up to 22 kW or e-bikes

#### Housing:

- Made from powder-coated stainless steel, IP 44,
- Two piece back panel,
- 1864 x 582 x 372 mm (H x W x D),
- Stainless steel socket,
- Precast concrete footing optional
- Column colour RAL 9016 structured, colour of door and roof RAL 7001 smooth, or colour as per customer preference,
- Double locking,
- Prevents vandalism

#### Electrical connection:

- Supply line 5-pin,
- ISO 4101/4102,
- Cross-section up to 95 mm<sup>2</sup>,
- Rated voltage: 230/400 V,
- Rated current: max. 125 A,
- Frequency: 50 Hz,
- Power consumption/column: max. 88 kW,
- RCCB/charge point: 40/0.03 A type A,
- Direct current fault detection,
- MCB/charge point: C-characteristics,
- Electronic meter,
- MID-calibrated for each charge point,
- Temperature range: -25 to +55 °C

#### Charge points:

- 4 charging points per column, each max. 22 kW,
- Charging cable type 2 mode 3, charging socket or attached charging cable

#### Charge management:

- Charge controller for each charge point,
- IEC 61851,
- Status panel,
- Operating status panel,
- Error panel,
- External/internal load management,
- Ad hoc charging

#### Communication/authentication:

- User-Interface 10"-Touchscreen,
- External/internal load management,
- RFID MIFARE,
- Hotspot-compatible,
- Service web portal,
- Remote control and maintenance

#### Configuration:

- Charging Assistant,
- Client management,
- Customer portal,
- Billing systems,
- Charging web app

#### Interfaces:

- OCPP 1.6 interface,
- Internet connection via LTE or LAN/Wifi



# Compliant with calibration law AC-Charging station



### Calibration-compliant charging station for simultaneous AC charging of up to two electric vehicles with up to 22 kW

#### Housing:

- Made from powder-coated stainless steel, IP 44,
- Two piece back panel,
- 1864 x 582 x 372 mm (H x W x D),
- Precast concrete footing optional,
- Stainless steel socket,
- Column colour RAL 9016 structured, colour of door and roof RAL 7001 smooth, or colour by customer preference,
- Double locking,
- Prevents vandalism

#### Electrical connection:

- Supply line 5-pin,
- ISO 4101/4102,
- Cross-section up to 70 mm<sup>2</sup>,
- Rated voltage: 230/400 V,
- Rated current: max. 63 A,
- Frequency: 50 Hz,
- Power consumption/column: max. 44 kW,
- RCCB/charging point: 40/0.03 A type A,
- Direct current fault detection,
- MCB/charging point: C-characteristics,
- Electronic meter,
- MID-calibrated signing for each charge point,
- Temperature range: -25 to +55 °C,
- LV grid connection as per TAB,
- ESC measurement,
- Compliance with calibration law: BMP No. DE-19-M-PTB 0077

#### Charging points:

- 2 charging points per column, each max. 22 kW,
- Charging cable type 2 mode 3 charging socket up to 32 A

#### Charge management:

- Charging controller for each charge point,
- IEC 61851,
- Status panel,
- Operating status panel,
- Error panel,
- External/internal load management,
- Ad hoc charging

#### Communication/authentication:

- LED status indicator,
- RFID MIFARE,
- Hotspot-compatible,
- Service web portal,
- Remote-enabled,
- Remote control and maintenance

#### Configuration:

- Charging Assistant,
- Client management,
- Customer portal,
- Billing systems,
- Charging web app,
- Plug surfing

#### Interfaces:

- OCPP 1.6 interface,
- Internet connection via LTE or LAN/Wifi



AC-Wallbox Type 1-5



Wallbox Type 1

**Wallbox for AC charging of one vehicle with up to 22 kW.**

**Housing:**

- Housing made of glass fiber reinforced polyester, IP44
- Approx 397 x 245 x 165 mm (H x W x D)
- Design plate
- Colour RAL 9016
- Square lock
- Prevents vandalism

**Electrical connection:**

- Supply line 5-pin
- Cross section up to 16 mm<sup>2</sup>
- Rated voltage: 230/400 V
- Rated current: max. 32 A
- Frequency: 50 Hz
- Power consumption/wallbox: from 3.7 to 22 kW
- Charging contactor
- DC fault detection
- Temperature range: -25 to +55 °C

**Charging points:**

- 1 x charging point: from 3.7 to 22 kW
- Charging cable type 2 mode 3, 32 A (6 m), (up to 22 kW)
- Charging cable type 2 mode 3, 16 A (6 m), (up to 11 kW)

**Charge management:**

- Charging controller for each charging point
- IEC 61851

**Communication**

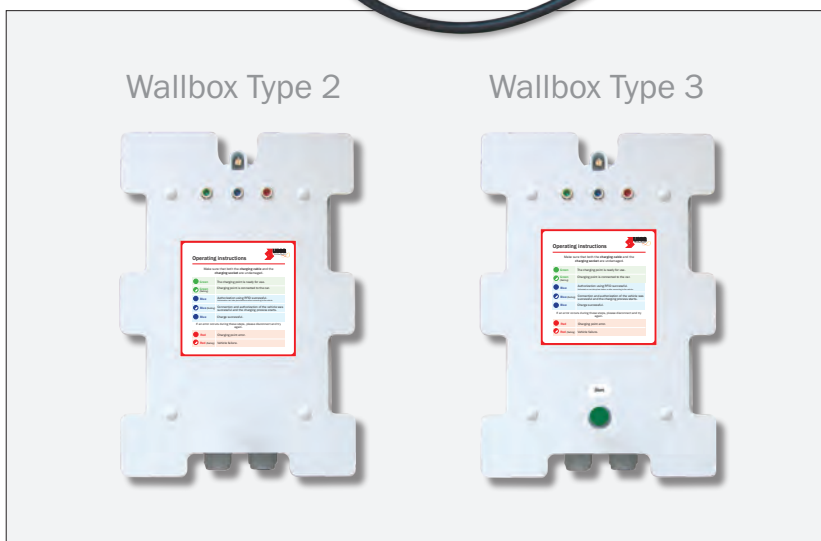
- LED display (status display, operating status display, error display) optional
- Optional regenerative charging switch
- Star button optional
- RFID MIFARE optional
- Star button
- Remote control and maintenance
- Optional regenerative charging switch
- Service web portal optional

**Interfaces:**

- OCPP 1.6
- Ethernet
- Modbus
- W-LAN optional

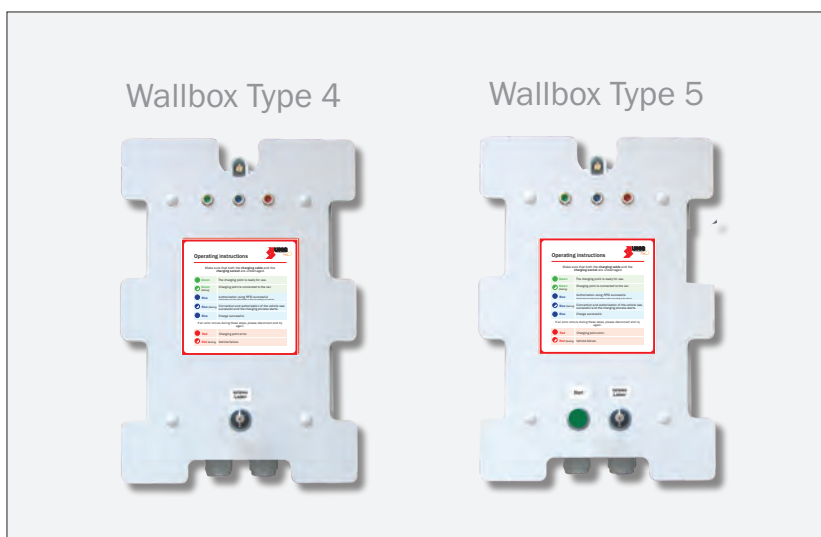
**Optional:**

- Circuit breaker C-characteristic
- Ground fault circuit interrupter type A
- Key switch
- Online module
- Charging cable holder



Wallbox Type 2

Wallbox Type 3



Wallbox Type 4

Wallbox Type 5

## AC-Wallbox Type 6-8

Wallbox Type 6



### Wallbox for simultaneous AC charging of two vehicles with up to 22 kW

#### Casing:

- Housing made of glass fiber reinforced polyester, IP44
- Approx. 705 x 420 x 200 mm (H x W x D)
- Design plate
- Color RAL 9016
- Square lock
- Prevents vandalism

#### Electrical connection:

- Supply line 5-pin
- Cross-section up to 16 mm<sup>2</sup>
- Nominal voltage: 230/400 V
- Nominal current: max. 2 x 32 A
- Frequency: 50 Hz
- Power consumption/wallbox: 7.4 to 44 kW
- Charging contactor
- DC fault detection
- Temperature range: -25 to + 55 ° C

#### Charging points:

- 2 charging points from 3.7 to 22 kW
- Charging cable type 2 mode 3, 32 A (6 m), (up to 22 kW)
- Charging cable type 2 mode 3, 16 A (6 m), (up to 11 kW)

#### Charge management:

- Charge controller per charge point
- IEC 61851-1

#### Communication:

- LED display (status display, operating status display, error display) optional
- User interface 7 "touch display optional
- Selector switch for regenerative charging optional
- Star button optional
- RFID MIFARE optional
- Remote control and maintenance optional
- Service web portal optional

#### Interfaces:

- OCPP 1.6
- Ethernet
- Modbus
- W-LAN optional

#### Optional accessories:

- Electronic counter
- Online module
- Charging cable holder

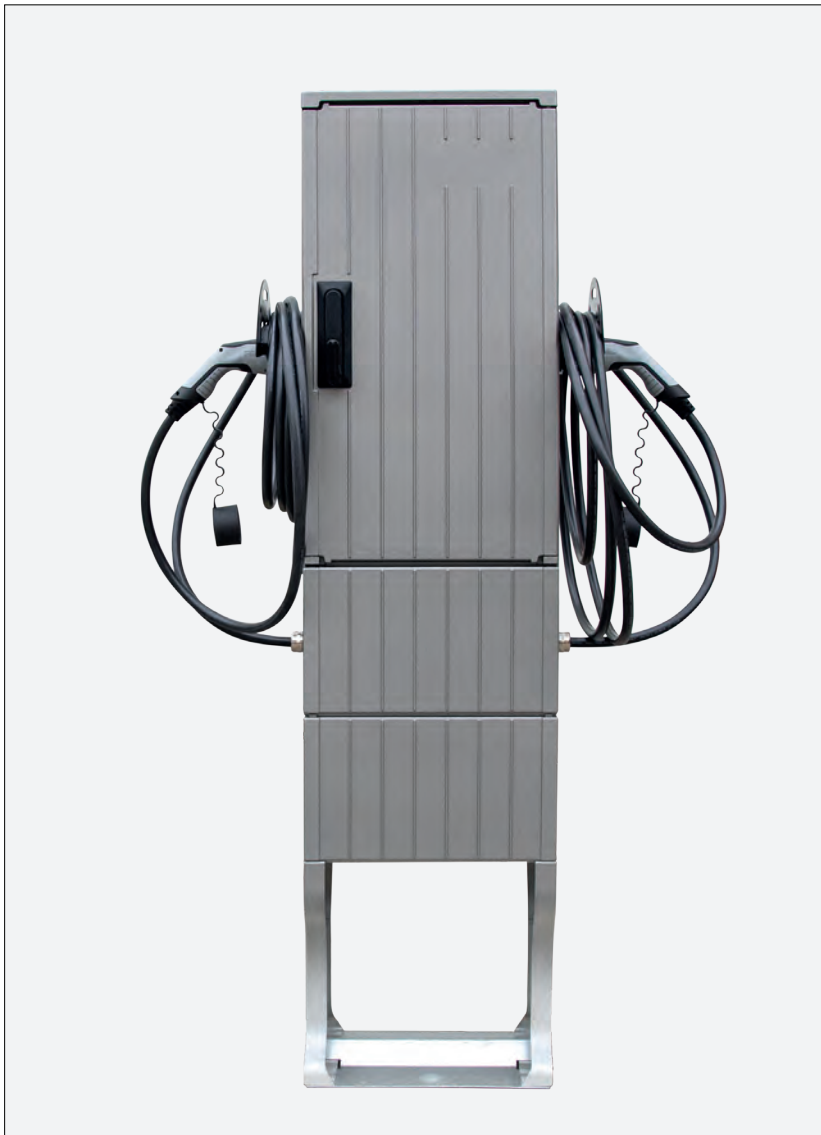
Wallbox Type 7



Wallbox Type 8



### AC-Loading bollard



#### Charging station for simultaneous AC charging of up to two electric vehicles with up to 22 kW

##### Housing:

- Made from fiberglass reinforced polyester, IP44
- Approx. 1420 x 320 x 234 mm (H x W x D), simple version
- Approx. 1420 x 415 x 234 mm (H x W x D), double version
- Color RAL 7035 light grey, paint in desired RAL optional
- Single lock
- Prevents vandalism

##### Electrical connection:

- Supply line 5-pin
- Cross section up to 16 mm<sup>2</sup>
- Rated voltage: 230/400 V
- Rated current: max. 32 A
- Frequency: 50 Hz
- Power consumption:
  - from 3.7 to 22 kW (single version)
  - from 7,2 to 44 kW (double version)
- Charging contactor
- DC fault detection
- Circuit breaker C-characteristic
- Ground fault circuit interrupter type A
- Temperature range: -25 to +55 °C

##### Charge points:

- Up to 2 charging points from 3.7 to 22 kW
- Charging cable type 2 mode 3, 32 A (6 m), (up to 22 kW)
- Charging cable type 2 mode 3, 16 A (6 m), (up to 11 kW)

##### Charge management:

- Charging controller for each charge point
- Plug`n charge

##### Communication:

- Remote control and maintenance
- Service web portal optional

##### Interfaces:

- OCPP 1.6
- Ethernet
- Modbus
- Wifi optional

##### Optional accessories:

- Electronic meter
- Online module
- Charging cable holder

#### Charging station for simultaneous AC charging of a electric vehicle with up to 22 kW.

##### Housing:

- Made from PC-GF 5, IP 20
- Approx. 720 x 100 x 85 mm (H x W x D)

##### Electrical connection:

- Supply line 5-pin
- Cross section up to 16 mm<sup>2</sup>
- Rated voltage: 230/400 V
- Rated current: max. 32 A
- Frequency: 50 Hz
- Power consumption: from 3.7 to 22 kW
- Installation contactors CTX 40
- RCD all-current sensitive 40/0,03-4 type B
- Control fuse LS switch B6
- Charging circuit LS switch 3C32
- DC fault detection
- Temperature range: -25 to +55° C

##### Charge points:

- Charging point from 3.7 to 22 kW
- Charging socket type 2 mode 3 up to 32 A
- Charging cable type 2 mode 3 optional

##### Charge management:

- Charge controller EVCP2

##### Optional accessories:

- Charging cable holder
- Enable switch with/without key



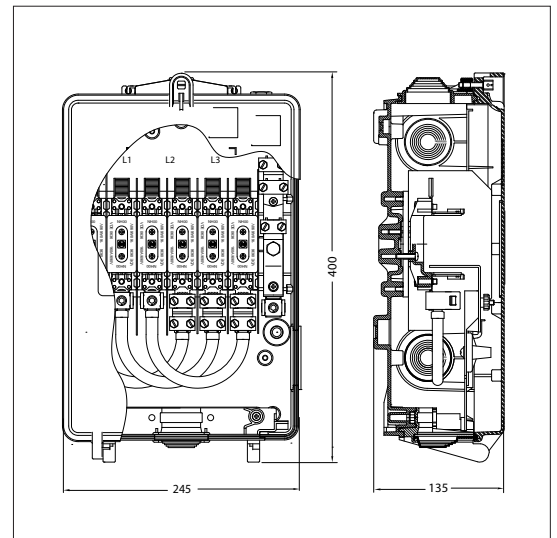
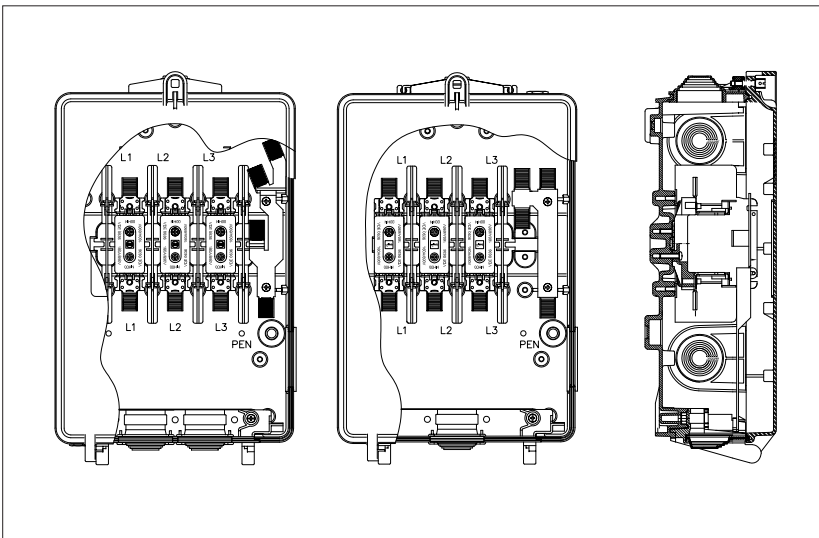


## House connection boxes NH00



### Details:

- 1 x 3 x NH00 bis 100 A (indoor boxes)
- 1 x 3 x NH00 bis 100 A (rain collar boxes)
- Design with grey or transparent cover
  
- Height: 350 mm
- Width: 240 mm
- Depth: 105 mm



### Features:

- Cable housing connection box according to DIN 43627,
- Type-tested according to DIN VDE 0660 Part 505,
- Made from fibreglass reinforced polyester, type 803 according to DIN 16911,
- Degree of protection: IP 54 according to DIN EN 60529,
- Optionally with cover made from transparent polycarbonate,
- Optionally with 2 or 3 outdoor fastening lugs,
- Retrofit kit can be supplied for double cable access,
- Variable side cable inlets or outlets via pluggable inserts with stepped nipples,
- Customised designs are possible,
- Various types of connecting terminal can be supplied, including steel frame terminals with U-bed, clamp-on terminals or double terminals.
- Contacts and terminal lugs on creepage-resistant, insulating fuse bases made of glass fibre reinforced polyester,
- Various touch protection covers can be supplied.

### Technical data:

Type:	KH00
Rated current:	100 A
Rated voltage:	500 V
Connection cross-sections:	10-95 mm <sup>2</sup>
Dimensions (H/W/D):	320/240/105 mm
Short circuit resistance	120 kA
resistance	
(Puls: 1,2/50µs):	6 kV
Alternating voltage resistance:	2,5 kV
Long-term load capacity:	100 A

We would be happy to show you other equipment options upon request.

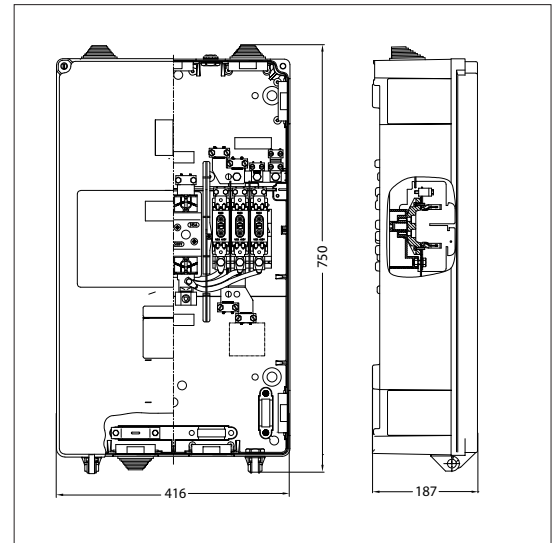
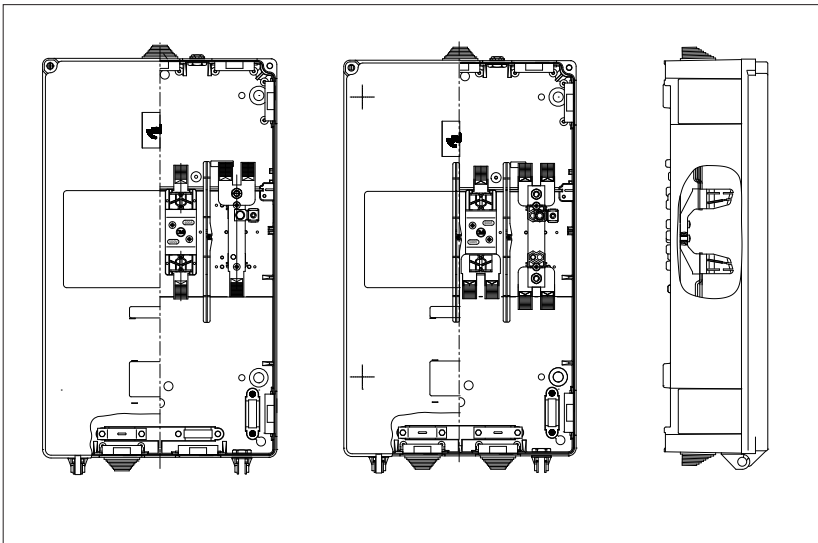
The product catalogue can be found on our website at [www.uesa.de](http://www.uesa.de).

## House connection boxes NH2



### Details:

- 1 x 3 x NH1 bis 250 A
- 1 x 3 x NH2 bis 400 A
- 2 x 3 x NH00 50-160 A
- 2 x 3 x NH2 bis 400 A
- Design with grey cover or grey cover with viewing window
- Height: 750 mm
- Width: 416 mm
- Depth: 187 mm



### Features:

- Cable housing connection box according to DIN 43627,
- Type-tested according to DIN VDE 0660 Part 505,
- Made from fibreglass reinforced polyester, type 803 according to DIN 16911,
- Degree of protection: IP 54 according to DIN EN 60529,
- Optionally with cover featuring transparent viewing window,
- Optionally with 4-point external fastening,
- Retrofit kit can be supplied for double cable access,
- Variable side cable inlets or outlets via pluggable inserts with stepped nipples,
- Customised designs are possible,
- Various types of connecting terminal can be supplied, including steel frame terminals with U-bed or V-frame terminals or double terminals.
- Contacts and terminal lugs on creepage-resistant, insulating fuse bases made of fibreglass reinforced polyester,
- Various touch protection covers can be supplied,
- Cover with 2 sealable screw plugs,
- prepared for cable screw connection PG 48.

### Technical data:

Type:	KH1/2
Rated current:	250/400 A
Rated voltage:	500 V
Connection cross-sections:	25-300 mm <sup>2</sup>
Dimensions (H/W/D):	750/416/187 mm
Short circuit resistance	120 kA
resistance	
(Puls: 1,2/50µs):	6 kV
Alternating voltage resistance:	2,5 kV
Long-term load capacity:	355 A

We would be happy to show you other equipment options upon request.

The product catalogue can be found on our website at [www.uesa.de](http://www.uesa.de).

### House fuse box with integrated surge protection



**NEW!**

#### All-in-one solution

#### „HFB with integrated surge protection“

- In the 12.5 kA version, corresponds to the specification of the current VDE 0100-443 and VDE 0100-534 standard, as well as lightning protection class 3 (LPC III) according to VDE 0185-305-4

#### Ordering information:

HFB with DS133VGS-230 (TNC systems 3+0)  
Article No.: 158051

HFB with DS133VGS-230/G  
(TT/TNS systems 3+1)  
Article No.: 158050

- In the 25 kA version, corresponds to the specification of the current VDE 0100-443 and VDE 0100-534 standard, as well as lightning protection class 1+2 (LPC I + II) according to VDE 0185-305-4

#### Ordering information:

HFB with DUT250VG-300/TT or TNS or TNC  
Article No.: on request

Until now, there have only been surge protection systems that had to be integrated into the building's main distribution board or meter cabinet at great expense and only provide effective protection against surge voltage from the outgoing feeder panels of the meter boards onwards. Other solutions were not permissible in the pre-meter sector, since type 2 surge arresters cause undesirable leakage currents, for example.

This is why we are presenting our all-in-one solution for this problem today: the **„HFB with integrated surge protection“**

In its 12.5 kA version, our solution complies with the specifications of the current VDE 0100-443 and VDE 0100-534 standard, as well as lightning protection class 3 (LPC III) according to VDE 0185-305-4. It also complies with the VDN Directive „Type 1 surge voltage protection devices“ thanks to the spark gap-based leakage current-free VG technology.

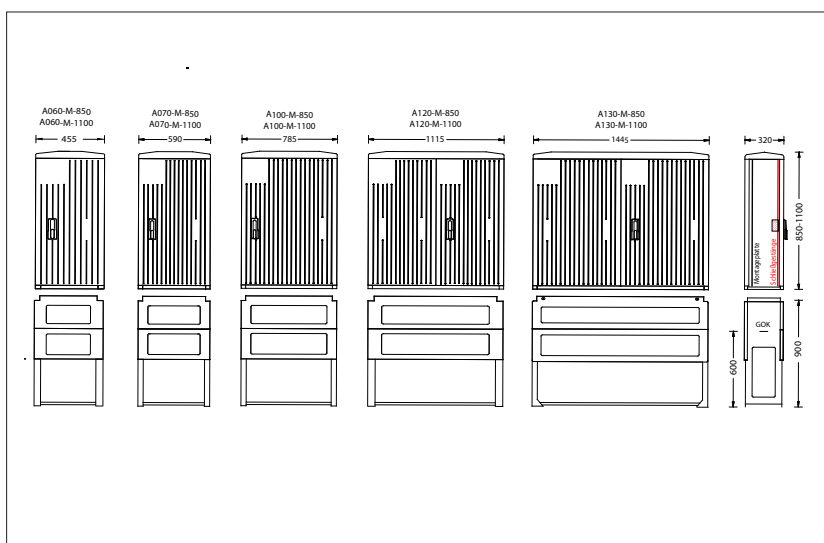
According to the standard specification, this corresponds to the „closest point“ to the feed and thus offers the greatest possible protection of the downstream systems (including the ESC's meter).

#### Advantages at a glance:

- Combined protection from lightning and surge voltages (combi surge arrester type 1+2+3) in the pre-meter sector and even before the main distribution.
- Protection of the customer's own cable to the main distribution.
- No changes are required in the pre-meter sector of the main distributor, providing significant cost advantages during installation or retrofitting
- Can be viewed directly from the outside thanks to transparent cover, i.e. the system's functional capabilities can be checked easily and at any time,
- Spark gap arrester (GSG) in VG technology. The construction of the DS130VGS series guarantees a simple and tool-free change of the protection module. This means that the system does not need to be disconnected.

## Outdoor power

### Cabinets for general use



#### Housing:

- Cabinets for outdoor setup with base in heights of 850 + 1100 mm,
- Available in standard sizes 00, 0, 1, 2, 3
- Material: fibreglass reinforced polyester,
- Weather-resistant, impact-resistant, flame retardant,
- Modular system with exchangeable individual components,
- Door and back wall with profiled surface,
- Cable support rail,
- Swivel lever handle for profile half cylinder, single or double closure,
- Colour: RAL 7035 Pale grey,
- Degree of protection: IP44.

#### Equipment:

- 1 mounting plate made from sheet steel/polyester

#### Focal areas of use:

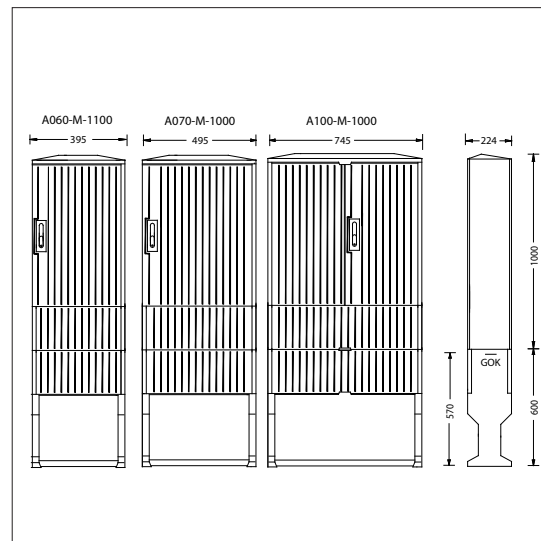
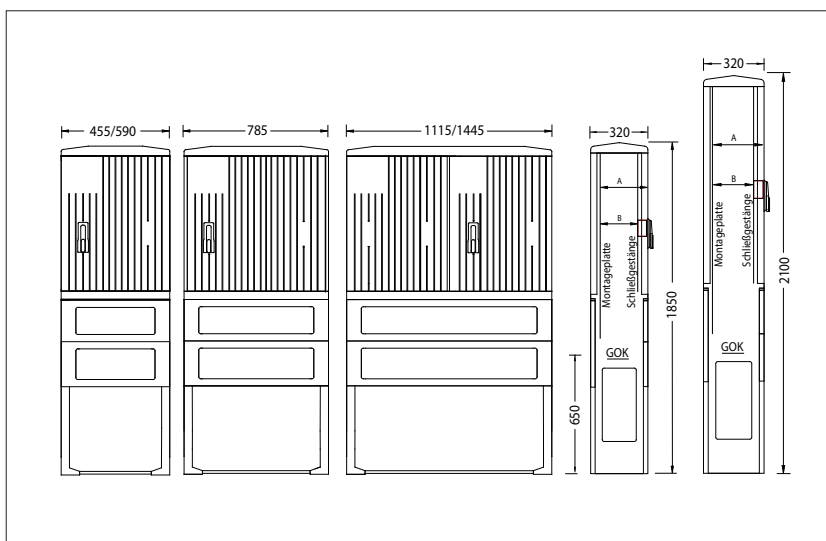
We would be happy to equip this housing in accordance with our standard variants or in line with your requirements, including as a cable distributor, meter column, transformer cabinet, street lighting cabinet, marketplace distributor or camp-site distributor.

We would be happy to show you other equipment options upon request.

The product catalogue can be found on our website at [www.uesa.de](http://www.uesa.de).

## Outdoor power

### Columns for general use



#### Housing:

- Column for outdoor setup with end-to-end side section in heights of 1850 and 2100 mm,
- Available in standard sizes 00, 0, 1, 2,3
- Material: fibreglass reinforced polyester,
- Weather-resistant, impact-resistant, flame retardant,
- Modular system with exchangeable individual components,
- Door and back wall with profiled surface,
- Cable support rail,
- Swivel lever handle for profile half cylinder, single or double closure,
- Colour: RAL 7035 Pale grey,
- Degree of protection: IP44.

#### Equipment:

- 1 mounting plate made from sheet steel/polyester

#### Focal areas of use:

We would be happy to equip this housing in accordance with our standard variants or in line with your requirements, including as a cable distributor, meter column, transformer cabinet, street lighting cabinet, marketplace distributor or camp-site distributor.

We would be happy to show you other equipment options upon request.

The product catalogue can be found on our website at [www.uesa.de](http://www.uesa.de).

## Outdoor power

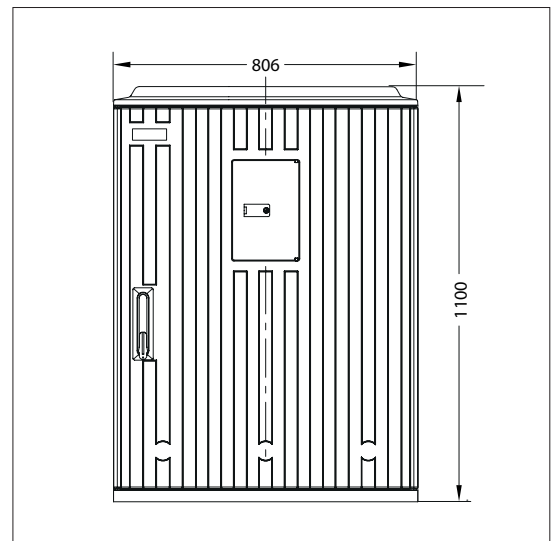
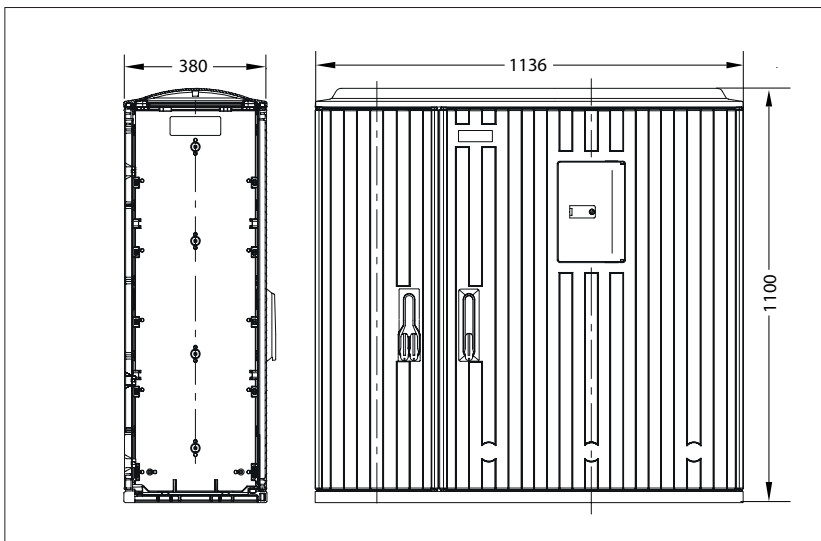


### Cabinets for general use with shared internal space



#### Details:

- Cabinet with shared internal space
- Height: 1100 mm
- Width: 806/1136 mm
- Depth: 380 mm



#### Housing:

- Cabinets for outdoor setup with base in heights of 1100 mm,
- Material: fibreglass reinforced polyester,
- Weather-resistant, impact-resistant, flame retardant,
- Modular system with exchangeable individual components,
- Door and back wall with profiled surface,
- Swivel lever handle for profile half cylinder, single or double closure,
- Colour: RAL 7035 Pale grey,
- Degree of protection: IP 44, optionally IP 54 possible.

#### Equipment:

- 2 mounting plates made from polyester or 1 end-to-end mounting plate made from polyester,
- Dividing wall between the two functional spaces,
- Meter module in accordance with the requirements of the local SNO and 1 mounting plate made from polyester.

#### Focal areas of use:

We would be happy to equip this housing in accordance with our standard variants or in line with your requirements, including as a street lighting cabinet.

We would be happy to show you other equipment options upon request.

The product catalogue can be found on our website at [www.uesa.de](http://www.uesa.de).

## Outdoor power



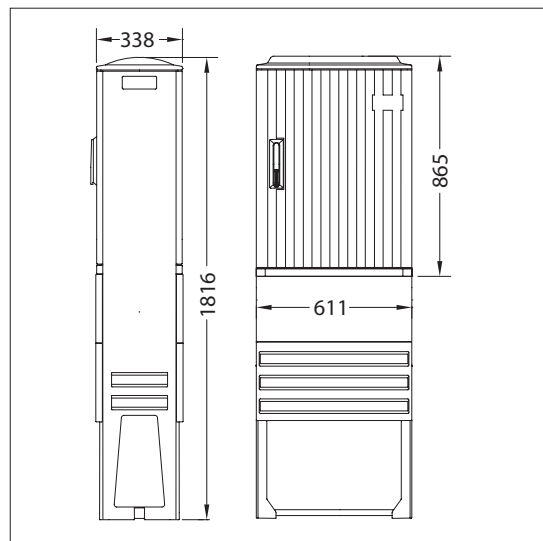
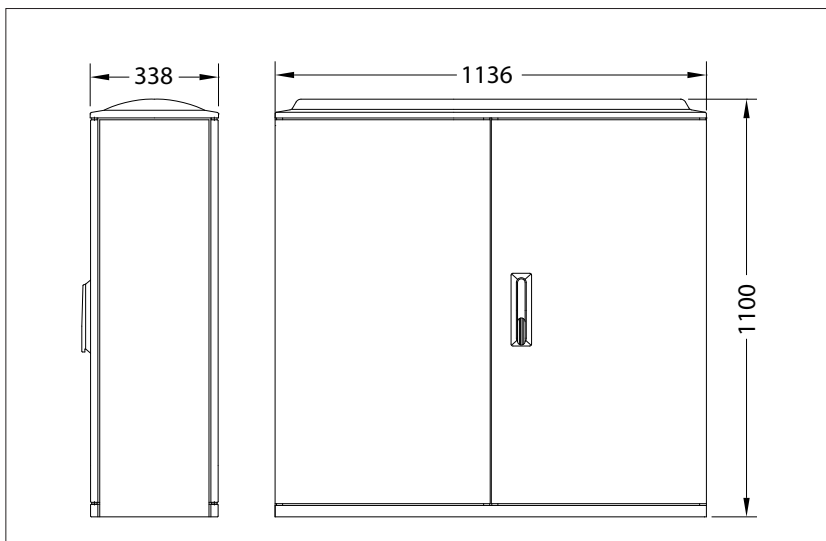
### Cabinets for general use

#### Type N



#### Details:

- Smooth/profiled version
- Single, double closure
- Height: 865/1100/1250/1720/1816 mm
- Width: Size 00, 0, 1, 2, 3



#### Housing:

- Cabinets for outdoor setup with base,
- Material: fibreglass reinforced polyester,
- Weather-resistant, impact-resistant, flame retardant,
- Modular system with exchangeable individual components,
- Door and back wall with smooth or profiled surface,
- Cable support rail,
- Swivel lever handle for profile half cylinder, single or double closure,
- Colour: RAL 7035 Pale grey,
- Degree of protection: IP 44, optionally IP 54 possible.

#### Equipment:

- Mounting plate made from polyester

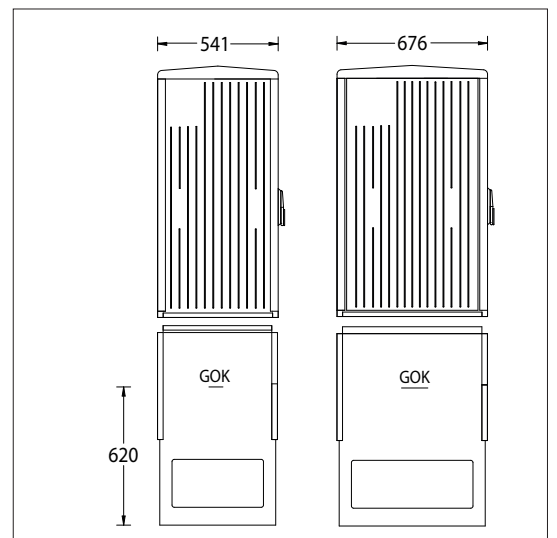
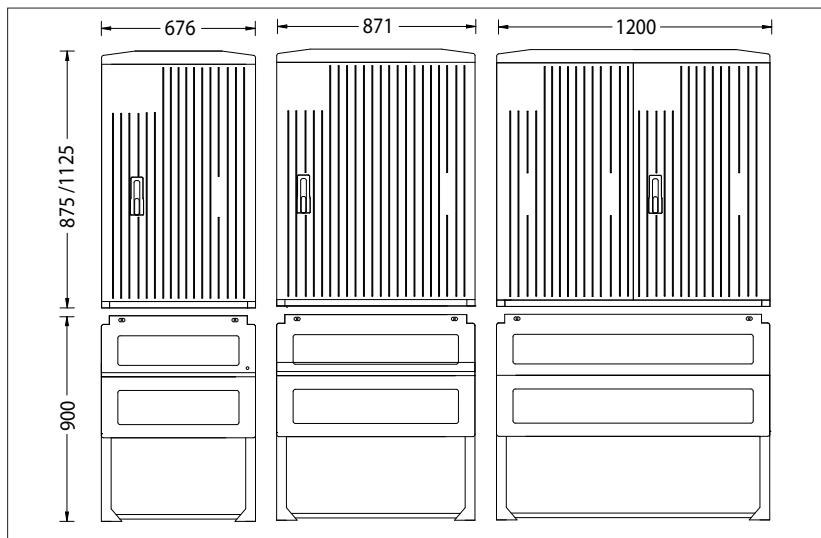
#### Focal areas of use:

We would be happy to equip this housing in accordance with our standard variants or in line with your requirements.

The product catalogue can be found on our website at [www.uesa.de](http://www.uesa.de).

## Outdoor power

### Cabinets for general use with large installation depth



#### Housing:

- Cabinets for outdoor setup with base,
- Material: fibreglass reinforced polyester,
- Weather-resistant, impact-resistant, flame retardant,
- Modular system with exchangeable individual components,
- Door and back wall with profiled surface,
- Cable support rail,
- Swivel lever handle for profile half cylinder, single or double closure,
- Colour: RAL 7035 Pale grey,
- Degree of protection: IP43.

#### Dimensions:

- Height: 875/1125 mm
- Width: 676/871/1200 mm
- Depth: 541/676 mm

#### Focal areas of use:

We would be happy to equip this housing in accordance with your requirements, including for

- Energy distribution,
- Gas meter,
- Feed and control cabinets,
- Rectifier systems,
- Pump stations,
- 19" installation systems.

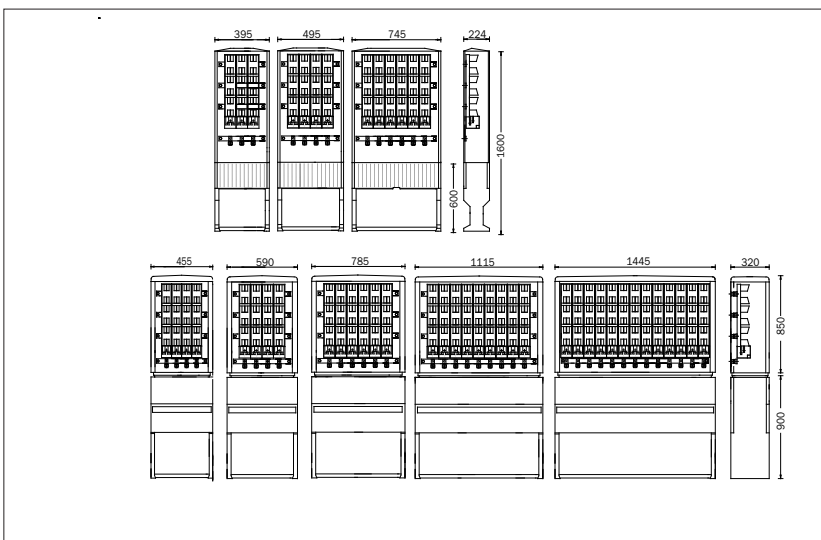
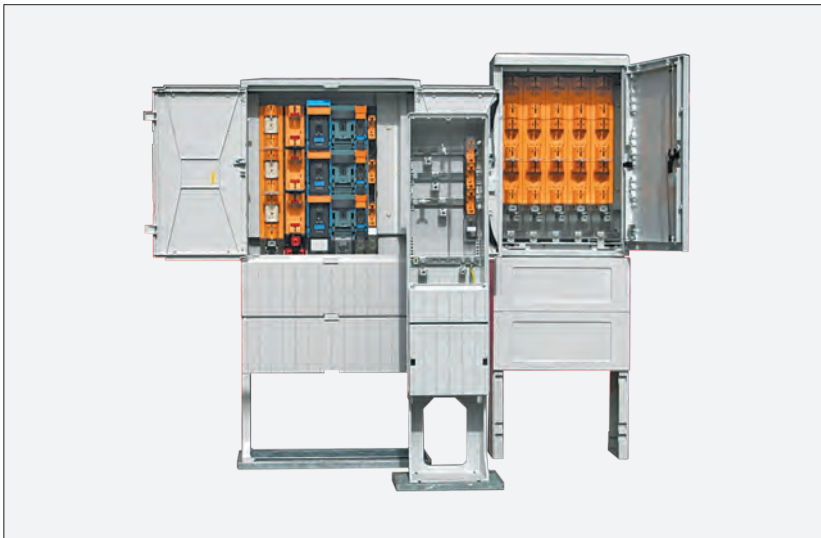
The product catalogue can be found on our website at [www.uesa.de](http://www.uesa.de).



## Outdoor power



### Cable distribution cabinets House connection columns



#### Housing:

- Cabinets/columns for outdoor setup with base or end-to-end side sections in heights of 1850 and 2100 mm,
- Material: fibreglass reinforced polyester,
- Weather-resistant, impact-resistant, flame retardant,
- Modular system with exchangeable individual components,
- Door and back wall with profiled surface,
- Cable support rail,
- Swivel lever handle for profile half cylinder, single or double closure,
- Colour: RAL 7035 Pale grey,
- Degree of protection: IP44.

We would be happy to show you other equipment options upon request.

#### Equipment:

- 1 4-pin busbar system,
- Fuse strips/power switch strips NH 00 to NH 3,
- V-direct connection terminal/flat connection,
- reserve slots individually covered,
- 1 feed-through for construction power.

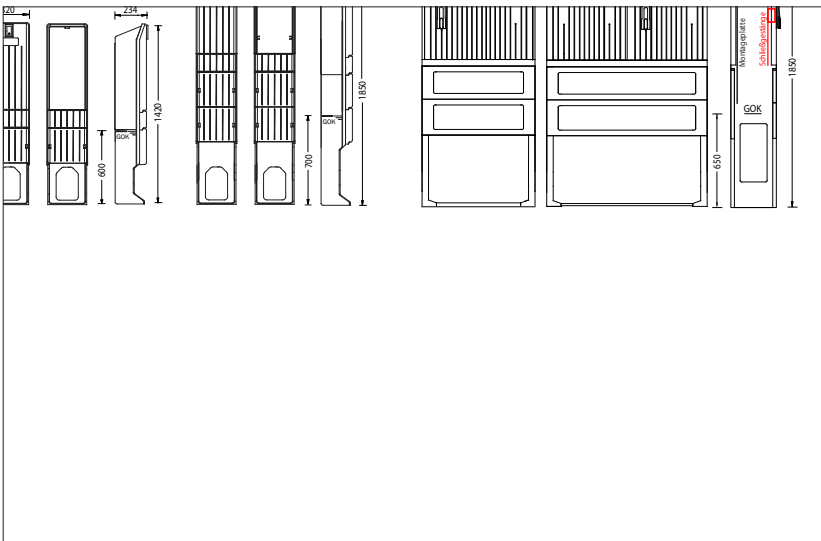
#### Focal areas of use:

- Distributor column with base as house connection column,
- Cable distributor in LV distribution network.

The product catalogue can be found on our website at [www.uesa.de](http://www.uesa.de).

## Outdoor power

### Distributor columns



#### Housing:

- Column for outdoor setup with base and end-to-end side sections in heights of 1420 and 1850 mm,
- Material: fibreglass reinforced polyester,
- Weather-resistant, impact-resistant, flame retardant,
- Push-in door with profiled surface,
- Bolt lock and sealable key plate for profile half cylinder/sash lock,
- Cable support rail,
- Colour: RAL 7035 Pale grey,
- Degree of protection: IP44.

We would be happy to show you other equipment options upon request.

#### Equipment:

- 1 mounting plate made from sheet steel or polyester

#### Focal areas of use:

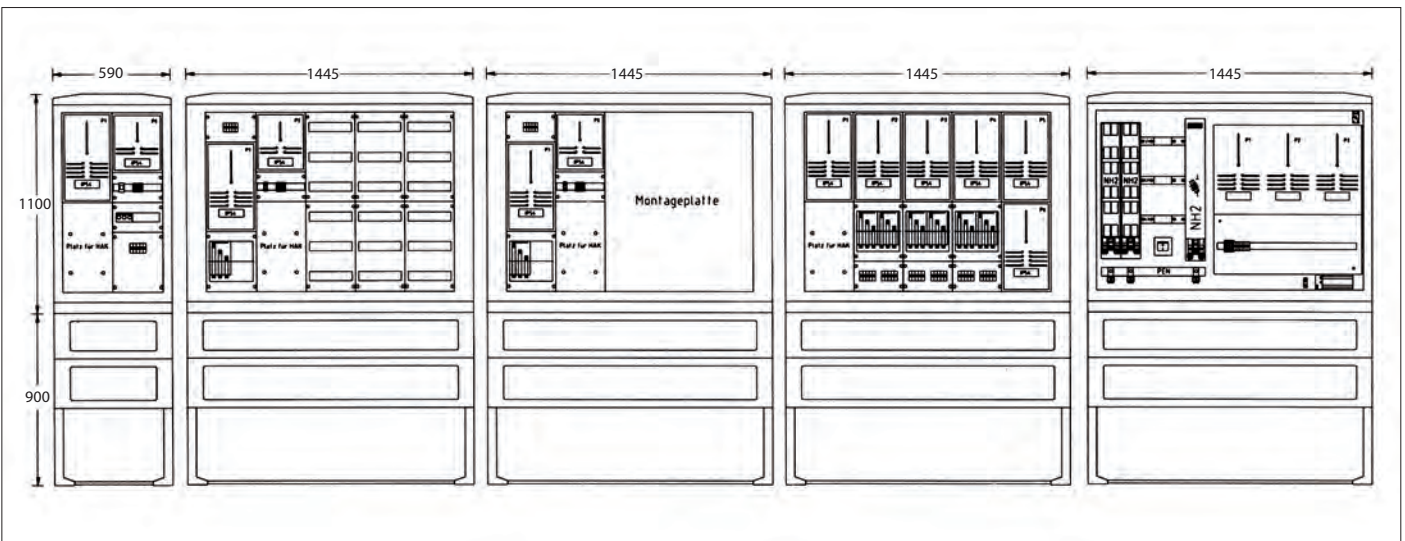
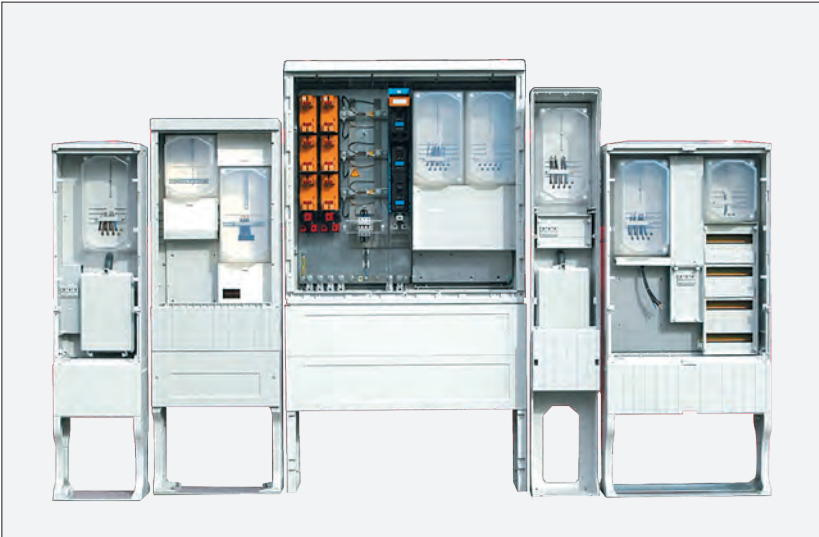
Thanks to the smallest possible dimensions, excellent adaptation in inner-city areas, including as:

- Small street lighting distributor,
- Small marketplace distributor,
- Camp-site distributor.

The product catalogue can be found on our website at [www.uesa.de](http://www.uesa.de).

## Outdoor power

### Meter connection columns



#### Housing:

- Material: fibreglass reinforced polyester,
- Weather-resistant, impact-resistant, flame retardant,
- Effective ventilation,
- Modular system with exchangeable individual components,
- Door and back wall with profiled surface,
- Cable support rail,
- Swivel lever handle for profile half cylinder, single or double closure with locking cap,
- Colour: RAL 7035 Pale grey,
- Degree of protection: IP44.

We would be happy to show you other equipment options upon request.

#### Technical data - Direct measurements:

- Compliant with the technical connection conditions of the respective SNO,
- Options: Number of meter slots as required, equipped/unequipped distribution panels, mounting plate made from sheet steel/polyester, special versions, base fillers.

#### Technical data - Transformer measurements:

- Compliant with the technical connection conditions of the respective SNO,
- Options: Number of customer outlets as required, special versions, base fillers.

Product catalogues for SNO can be found on our website at [www.uesa.de](http://www.uesa.de).

## Outdoor power



## Meter connection columns/cabinets PV systems and other regenerative energies



We supply direct and transformer measurements up to an output of 700 kW. We also offer cabinets for grouping individual inverters (optionally with monitoring technology) and transformer handover stations.

### Housing:

- Material: fibreglass reinforced polyester; sheet steel,
- Weather-resistant, impact-resistant, flame retardant,
- Effective ventilation,
- Modular system with exchangeable individual components (outdoor distributor),
- Door and back wall with profilled surface (outdoor distributor),
- Cable support rail (outdoor distributor),
- Swivel lever handle for profile half cylinder, single or double closure with locking cap; double bit,
- Colour: RAL 7035 Pale grey,
- Degree of protection: IP43/IP44/IP54.

### Technical data:

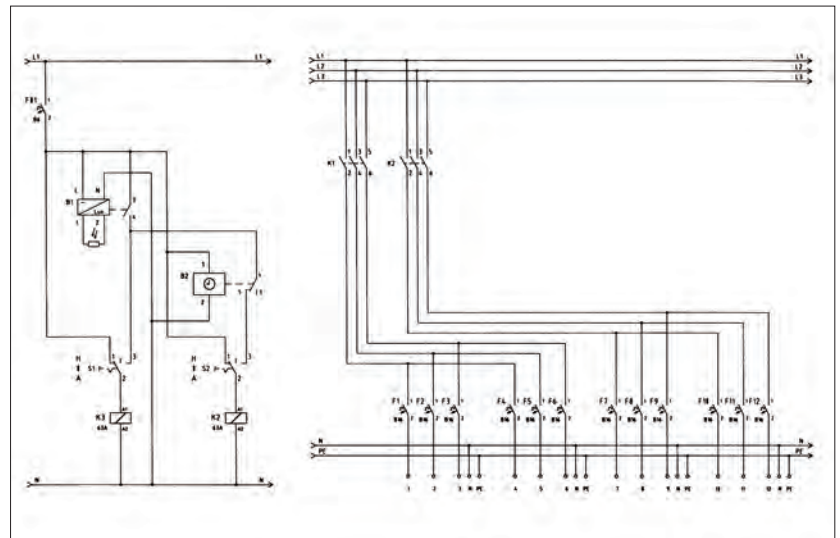
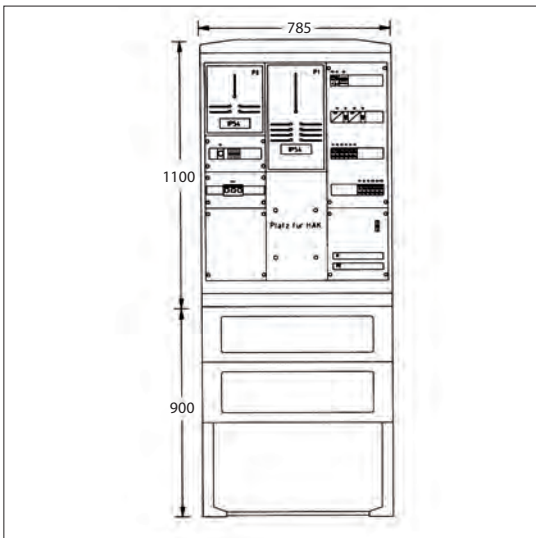
- Compliant with the technical connection conditions of the respective SNO

### Options:

- Monitoring technology (voltage, frequency, asymmetry),
- Grid safety management.

We would be happy to show you other equipment options upon request.

Product catalogues for SNO can be found on our website at [www.uesa.de](http://www.uesa.de).



### Housing:

- Material: fibreglass reinforced polyester,
- Weather-resistant, impact-resistant, flame retardant,
- Effective ventilation,
- Modular system with exchangeable individual components,
- Door and back wall with profiled surface,
- Cable support rail,
- Swivel lever handle for profile half cylinder, single or double closure with locking cap,
- Colour: RAL 7035 Pale grey,
- Degree of protection: IP44.

We would be happy to show you other equipment options upon request.

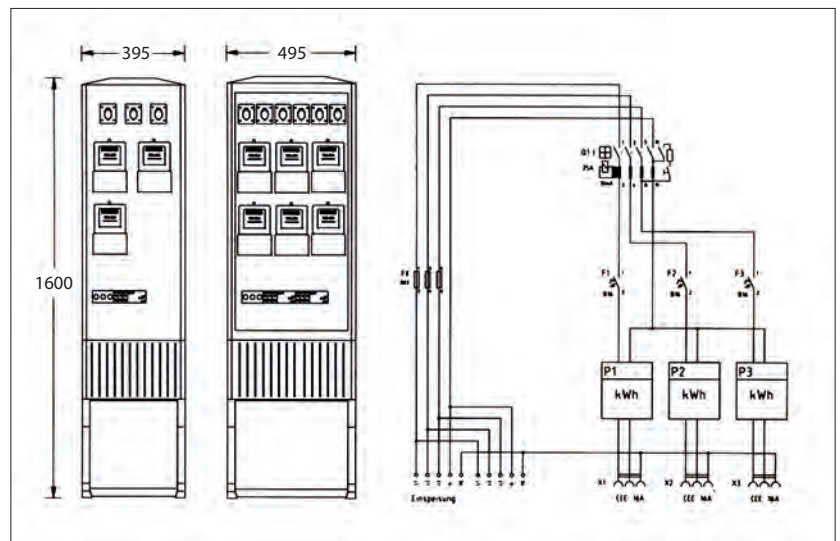
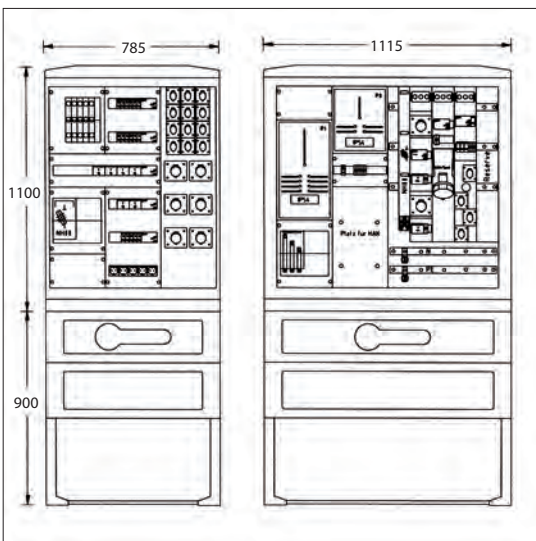
### Technical data · Direct measurements:

- Compliant with the technical connection conditions of the respective SNO,
- Street lighting component fully equipped and wired,
- Control via dimmer switch and timer.

### Options:

- Without measurement or with sub-measurement,
- Customer-specific controls,
- Number of outputs as required,
- Cabinet lighting,
- Service socket,
- Cabinet heating with regulator,
- Standard cabinets for street lighting,
- Special versions.

Product catalogues for SNO can be found on our website at [www.uesa.de](http://www.uesa.de).



### Housing:

- Material: fibreglass reinforced polyester,
- Weather-resistant, impact-resistant, flame retardant,
- Effective ventilation,
- Modular system with exchangeable individual components,
- Door and back wall with profiled surface,
- Cable support rail,
- Swivel lever handle for profile half cylinder, single or double closure with locking cap,
- Colour: RAL 7035 Pale grey,
- Degree of protection: IP44,
- Camp-site distributor in flat cabinets with lateral cable inlet.

### Technical data · Marketplace distributors:

- Compliant with DIN/VDE,
- in fixed-installation technology/modular technology,
- Equipment as per the customer's requirements,
- Options: Direct measurement, transformer measurement or sub-measurement.

### Technical data · Camp-site distributors:

- Compliant with DIN/VDE,
- in fixed-installation technology/modular technology,
- Feed terminals for 2 terminals,
- Main fuse, fault current and circuit breaker, certified single-phase alternating current meter,
- 16 A, 3-pin CEE sockets,
- Maximum 3 sockets for each ground fault circuit interrupter,
- Equipment as per the customer's requirements.

The product catalogue can be found on our website at [www.uesa.de](http://www.uesa.de).

## Outdoor power

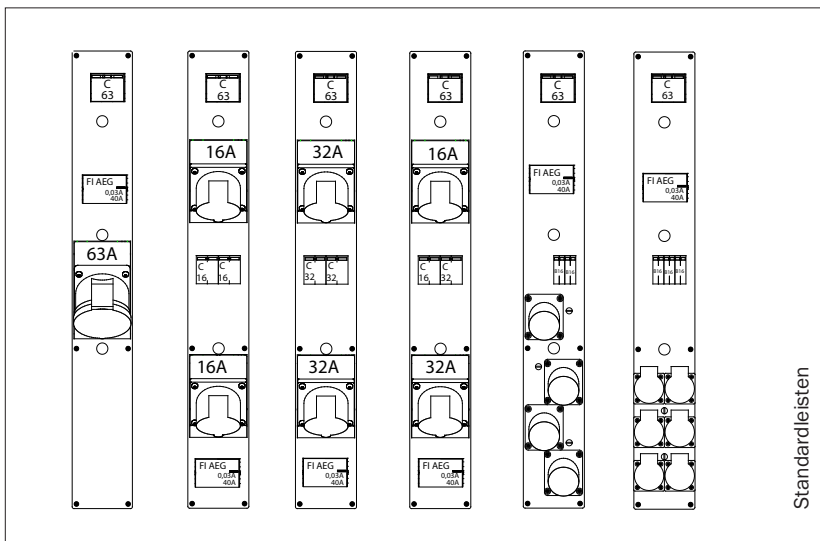


## Socket strips for 185 mm busbar system

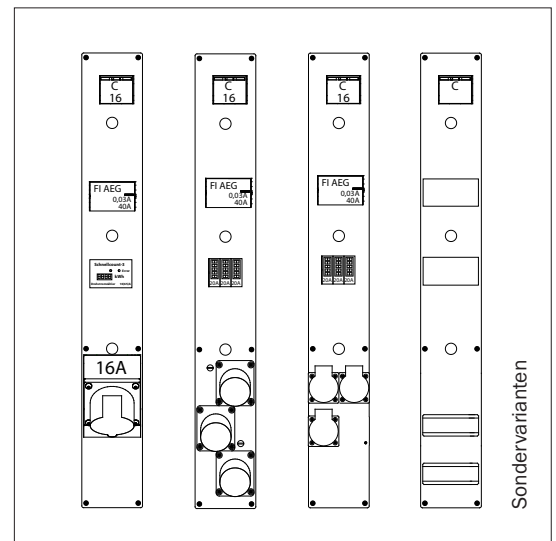


### Modules:

- Socket strip
- Transformer measuring module
- Street lighting module
- Socket strip with measurement
- Distribution strip



Standardleisten



Sondervarianten

### Housing:

- Base body and covers made from polyamide 6 with GF proportion PA6 GF20,
- Contacting with the busbar uses M12 screws, similar to fuse or power switch strips NH 1 - NH 3 according to DIN 43 623.
- Dimensions: H/W/D: 745 x 100 x 100-184 mm,
- Degree of protection: IP40,
- 5-pin connection incl. connecting cables

### Focal areas of use:

- Marketplace and fixed-installation distributors, cable distributors,
- Special applications.

### Type tests:

- According to DIN EN 61439-1/60309-1
  - Limit excess temperature, insulating properties
  - Air and creepage paths, short-circuit resistance 3 kA

### Safety information:

- If the socket strips are operated by non-professionals, contact protection compliant with DIN VDE 0100, Part 729 and DIN EN 61439-3 must be ensured.
- If operating equipment (frequency inverter, medical equipment, PV and UPS systems, lift controls, cranes, speed-restricted machinery, etc.) is used in which, in the event of a fault smooth or virtually smooth direct residual currents can occur, the correct choice of residual current protective device must be ensured.

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## Low-voltage distributions



### Distribution systems in accordance with the customer's requirements

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#### Presentation:

Okken is a low-voltage switchgear with a modular design for energy distribution and for the switching of engines. It meets the international standards for type-tested switchgear combinations:

- VDE 0660 Part 600
- IEC 61439-1/-2

The standards listed form the subject of the type certificate under real conditions.

Okken guarantees high availability, flexibility and operational reliability of its system.

#### Standards:

The switching system meets the requirements of the following standards:

- Type-tested switchgear combination pursuant to IEC 61439-1/-2,
- Definition of housing protection types IEC 60529,
- Arc fault protection (100 kA eff. 0.3 s) IEC 61641,
- Climatic durability IEC 60068-2.

#### General properties:

Standard production: IEC 61439-1/-2; IEC 60529

System: Modular

Cabinet type: Indoor setup

- Degree of protection: IP31/IP41/IP54
- Compact dimensions,
- High personal safety,
- High system availability,
- Can be reconfigured during live operation,
- Maintenance-friendly,
- High safety in the event of an earthquake,
- Can be used in ship-building and offshore installations.

#### Electrical properties:

Rated insulation voltage  $U_i$ : 1000 V AC

Rated operational voltage  $U_e$ : 400 V AC

Rated frequency  $f$ : 50 Hz

Rated short-time current  $I_{cw}$ : up to 100 (150) kA eff./1 s

Rated surge current  $I_{pk}$ : up to 220 (330) kA

Rated current

horizontal busbar: up to 7300 A

vertical busbar: up to 4000 A PCC; up to 2100 A MCC



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## Low-voltage distributions



### Automation systems in line with customer requirements

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We supply tailored automation solutions that meet your individual needs for small and medium-sized systems. Our portfolio also includes reconstruction solutions.

#### Housing systems:

Setup of your automation technology in:

- Special housings are produced for your specific applications, with machine-specific adaptations,
- Standard housings from Rittal, ABB, Schneider Electric.

#### Engineering:

Basic engineering for small and medium-sized mechanical engineering companies as well as rationalisation solutions, including the creation of catalogues of specifications, functional diagrams, indexes of measuring points, operating and monitoring concepts, professional advice to customers.

#### Project management:

- Electrical project management of low-voltage distributions and automation systems.
  - Electrical project management for mechanical engineering companies in the field of series products, special machinery, line control systems for transport and
  - documentation drafting with EPLAN, WSCAD, ELCAD according to IEC, EN and US regulations,
  - Project management of process control systems and control room design,
  - Project management of NEA control units with/without synchronisation.
-

## Low-voltage distribution UE20



### Description:

The metal-encapsulated UE20 low-voltage switchgear can be used anywhere on energy supply networks and for industrial applications.

The UE20 switchgear is tested according to the current DIN EN 61439-1 standard and therefore meets the requirements for safe and reliable use.

Thanks to its modular construction, it can be delivered in individual panels or as a complete switchgear, with the equipment, panel sequence and so on being configurable on a specific basis.

### Technical data:

Rated insulation voltage	$U_i$	1000 V
operational voltage	$U_e$	400 V
Rated impulse voltage	$U_{imp}$	8 kV
Rated frequency	$f_r$	50 Hz
Rated short-time current	$I_{cw}$	bis 65 kA (1 s)
Rated surge current	$I_{pk}$	bis 143 kA
Busbar		bis 4000 A
Height (without roof)	mm	1900
Width	mm	600–1100
Depth	mm	500
Degree of protection		IP20

### Panel types:

Incoming/outgoing feeder panels	Panel width in circuit breaker up to 1600 A	500 mm
	one circuit breaker up to 3200 A	600 mm
	one circuit breaker up to 4000 A	910 mm
	two circuit breakers up to 1600 A	910 mm
coupling panel		
	one circuit breaker up to 1600 A	500 mm
	one circuit breaker up to 3200 A	710 mm
	one load-break switch up to 3200 A	600 mm
outgoing feeder panels		
	6 NH fuse strips size Gr. 1-3	710 mm
	8 NH fuse strips size Gr. 1-3	910 mm
	10 NH fuse strips size Gr. 1-3	1110 mm
	3 circuit breakers up to 630 A	1110 mm
combi panels		
	Feed: circuit breaker up to 2500 A	1100 mm
	outputs: 10 NH fuse strips size 1-3	

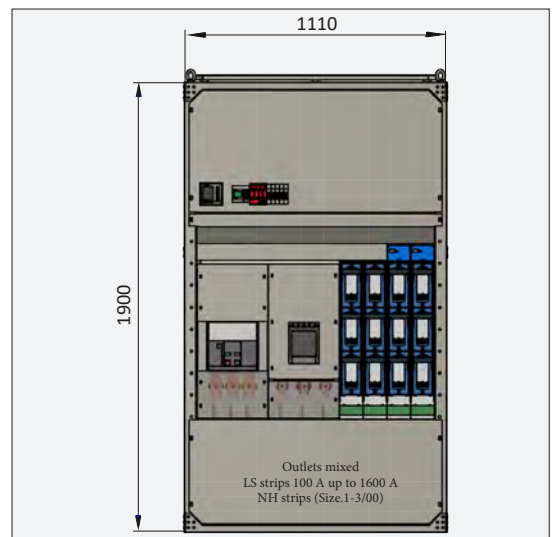
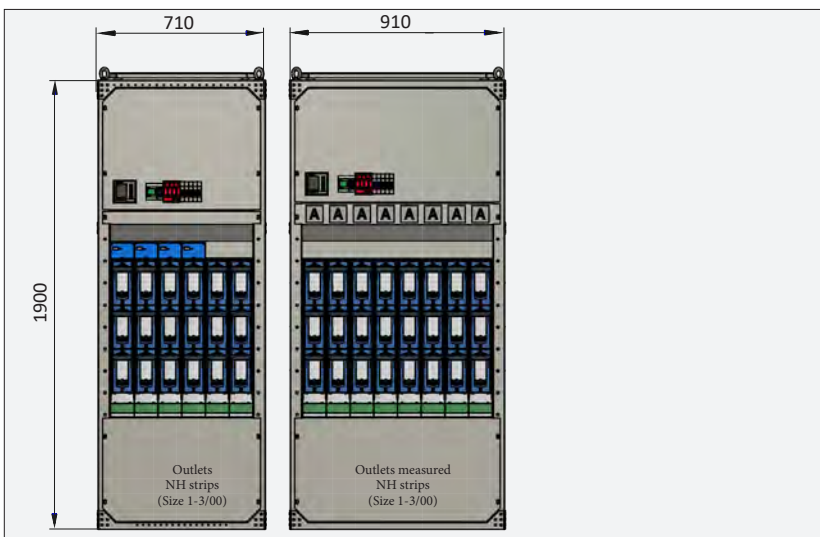
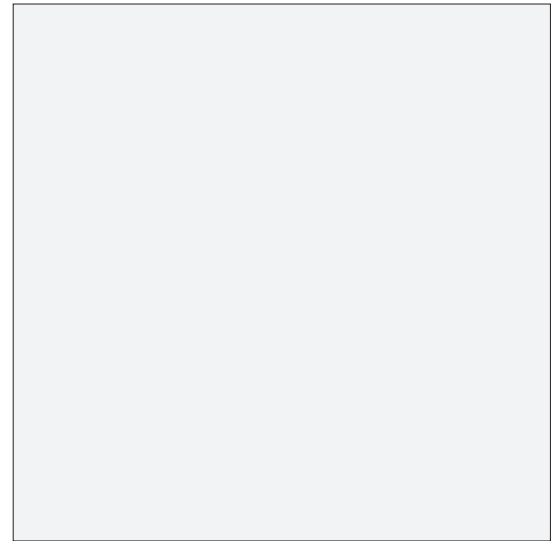
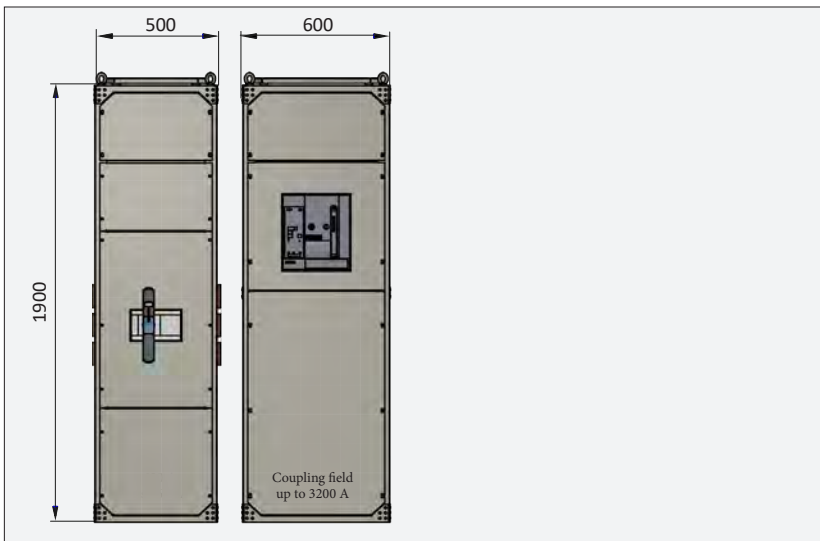
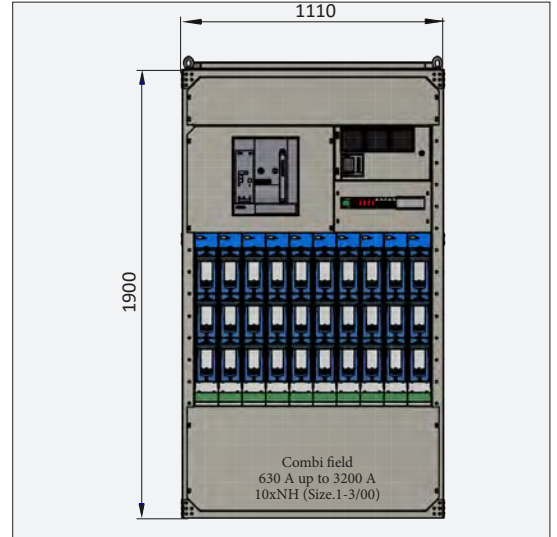
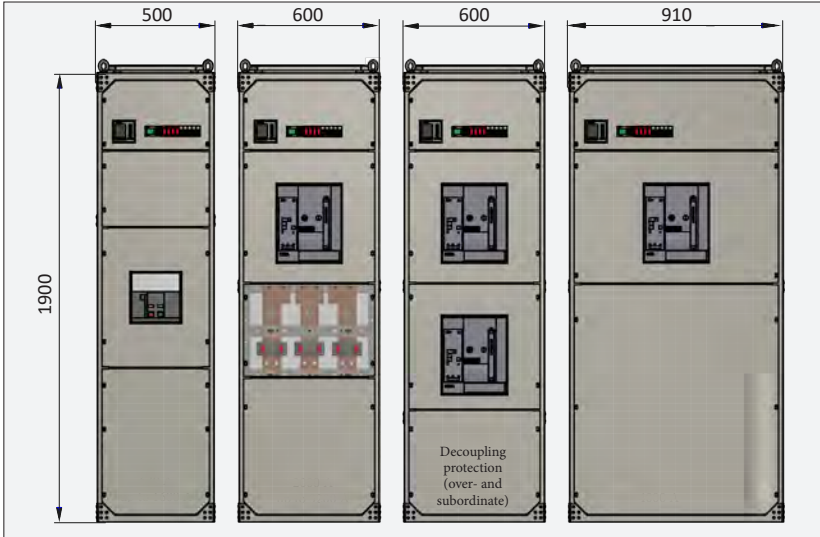
### Options:

- Voltage and current measurement,
- Fuse monitoring,
- Transformer lugs,
- Ball anchorages,
- Feed from above/behind (depth 710 mm),
- Control functions with circuit breakers (automatic switching, locking and similar).

# Low-voltage distributions



## Low-voltage distribution UE20



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## Low-voltage distributions



### Low-voltage switchgear Panel design



630 A - 1600 A,  
H x W = 1350 x 1000 mm  
(outlets can be extended as required)

Standard switchgear:

- Circuit breaker ABB
- Switch disconnector NH3 EFEN
- switch disconnector NH3/NH4a EFEN  
other brands possible on request

outgoing circuits:

- NH fuse rails size 00-3
- NH fuse-switch disconnectors size 00-3
- covered reserve
- standard 10 pieces, can be extended as required



2000 A - 2500 A,  
H x W = 1430 x 1000 mm  
(outlets can be extended as required)

Standard feeder switchgear:

- circuit breaker Siemens 3WL size 2  
other brands possible on request

outgoing feeders:

- NH-fuse strips size 00-3
- NH-fuse switch disconnectors size 00-3
- covered reserve
- standard 10 pieces, can be extended as required



- Version for accessible stations
-

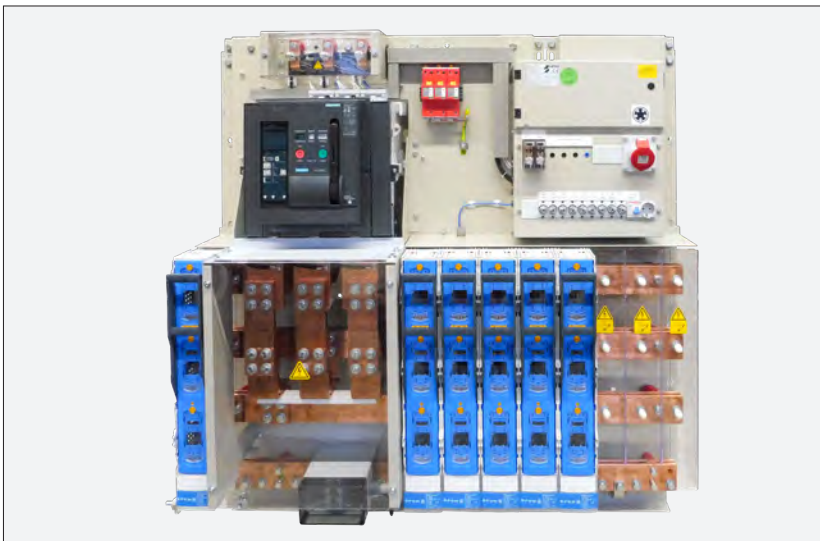
## Low-voltage distributions



### Low-voltage switchgear Panel design



- Version for accessible stations



- A large number of other variants are possible, eg .:
- Preparation of NS billing measurement



- Feed/draw separated
- Electrically coupled in the direction of the transformer
- Triggering higher-level protection + protection producer unit

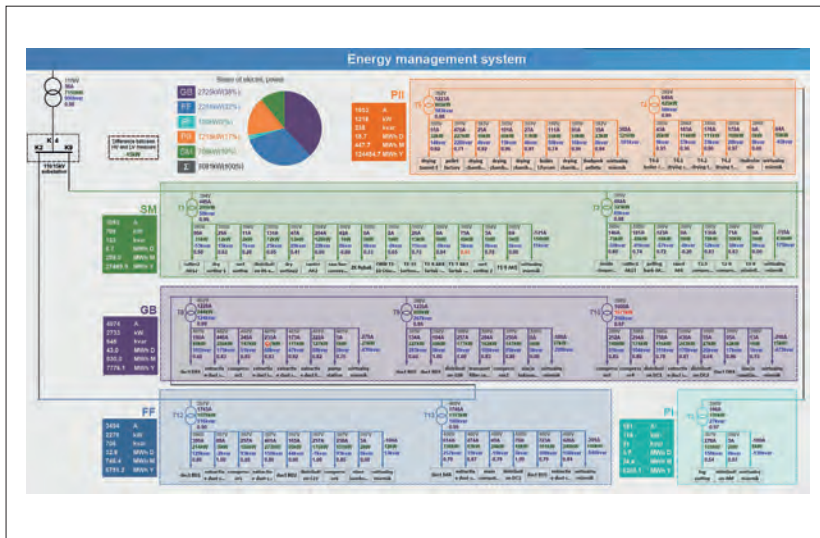
# Low-voltage switchgear

uesa Engineering



### Project management of automation solutions:

- Food industry:  
Experience in cocoa processing, chocolate production, weighing, mixing and dispensing processes, milling processes, bakery technology, complex line controls,
- Transport processes:  
Gravel plants, opencast mines, foundries,
- Series production in line with customer specifications, including delivery of mechanical components, such as the machine frame,
- Industrial robot solutions:
  - Project management of pick and place tasks,
  - Integration of complex solutions.



### Production and resources consumption (energy, gas and others) monitoring systems

Planning, programming, installation and commissioning of:

- Resources consumption monitoring with distribution over individual products/processes/consumers,
- Production process monitoring (efficiency and other customer-specific KPIs, micro-stops and bottleneck detection),
- Other influencing production factors (outdoor temperature, humidity, etc.),
- Visualisation,
- Data capture, archiving, processing,
- Limit value checks,
- Reporting and analysis systems.

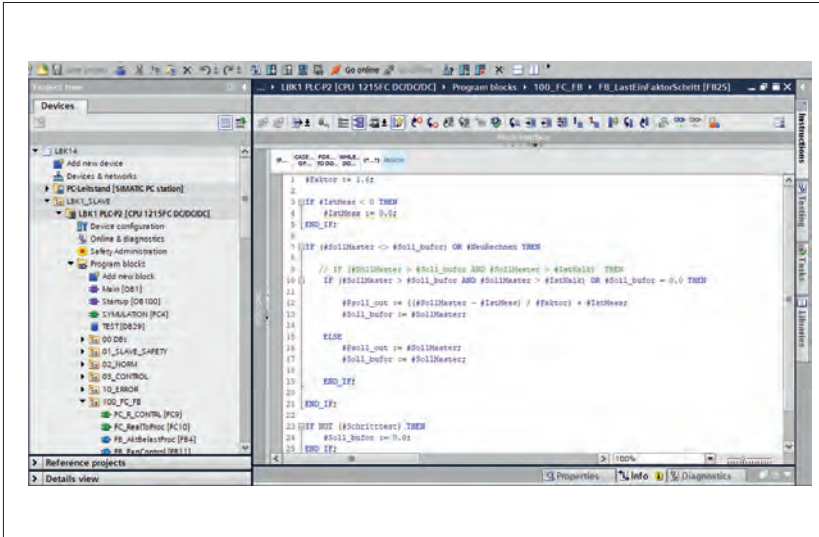


### Project management of low-voltage switchgear:

- Distributions for steel plants and other industrial properties,
- Pump cabinets for water plants, opencast mining equipment,
- NEA control units/grid synchronisations,
- Storage compressor stations.

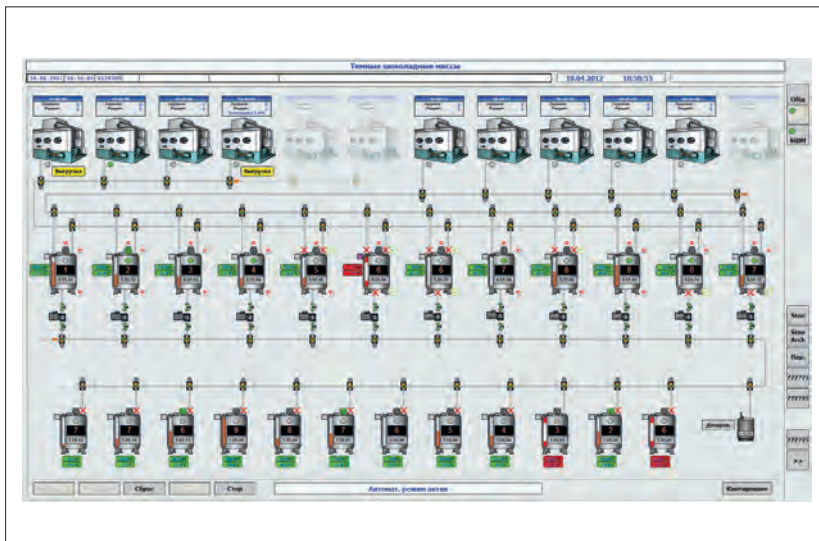
# Low-voltage switchgear

uesa Engineering



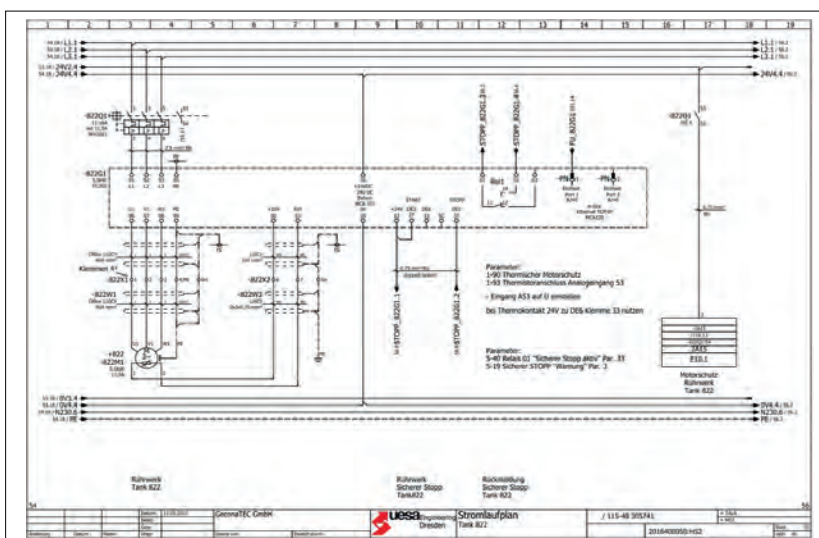
Programming and automation of PLC control systems according to IEC 1131-3:

- Siemens SIMATIC S7,
- Rockwell-Automation/Allen-Bradley,
- Mitsubishi, Wago,
- Use of bus systems such as Profibus, Profinet, Interbus, Ethernet.



Visualisations:

- Siemens: WinCC,
- Wonderware: System Platform,
- Rockwell: RS-View.



Project management with:

- EPLAN,
- ELCAD.

# Transformer stations



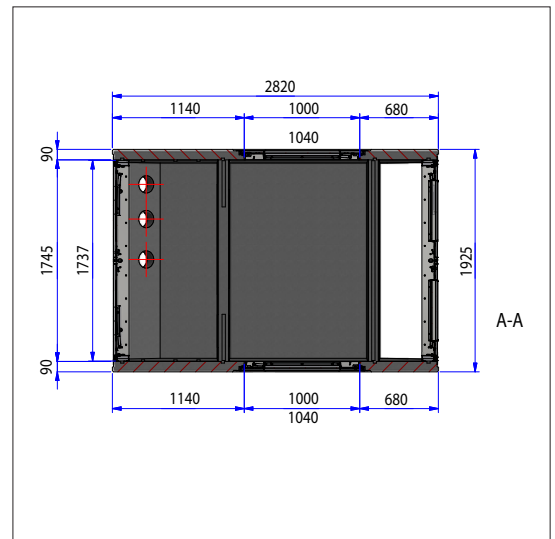
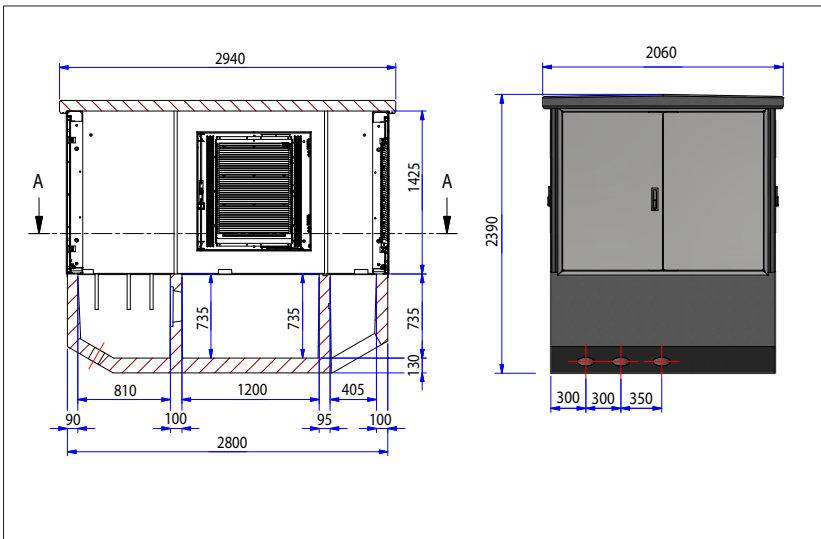
## Type KS 19-28 Concrete compact station



### Details:

- Concrete station
- Compact, non-accessible
- 1 transformer
- Tare weight 6300 kg
- Designed in various RAL colours

- Length: 2820 mm
- Width: 1925 mm
- Height: 2290 mm



### Component:

- The structure of the KS 19-28 is a reinforced concrete assembly construction with the basic components of a cellar element, wall element and roof element,
- Upper section can also be made from sheet metal,
- Concrete with strength class C 30/37, waterproof,
- Transformer space as a self-contained tub,
- Medium-voltage segment with waterproof cable feed-throughs,
- Low-voltage segment in the area of the base plate open/optionally closed with cable feed-throughs,
- Doors and ventilation grilles made from sheet steel produced in-house, UV-resistant powder coating,
- Construction power feeds with cable attachment option,
- External coating underneath with bitumen protective layer, facade as per customer's requirements (rubbing plaster, roll plaster, etc.).

### Technical equipment:

- Compliant with the technical connection conditions of the respective SNO,
- Type tests compliant with IEC 62271-202: with medium-voltage switchgear from Ormazabal type GA and Siemens type 8DJH.

### Medium voltage:

- Use of 2 to 4-panel, type-tested SF6-insulated switchgear from well-known manufacturers in the range from 6 to 36 kV.

### Transformers:

- Use of standard three-phase current oil or cast resin transformers possible; Max. technical dimensions, determined by the structure,
- Ventilation dimensioned for transformer outputs of up to 630 kVA, opt. up to 800 kVA.

### Low voltage:

- Use of standard and customer-specific low-voltage distributions in mounting plate construction,
- Option: LV-side measurement.



# Transformer stations

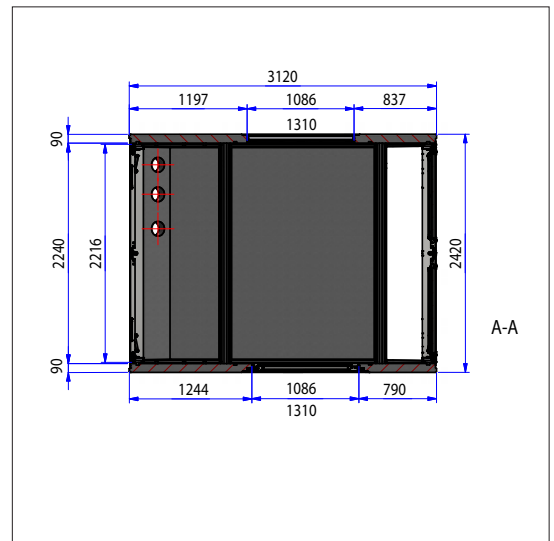
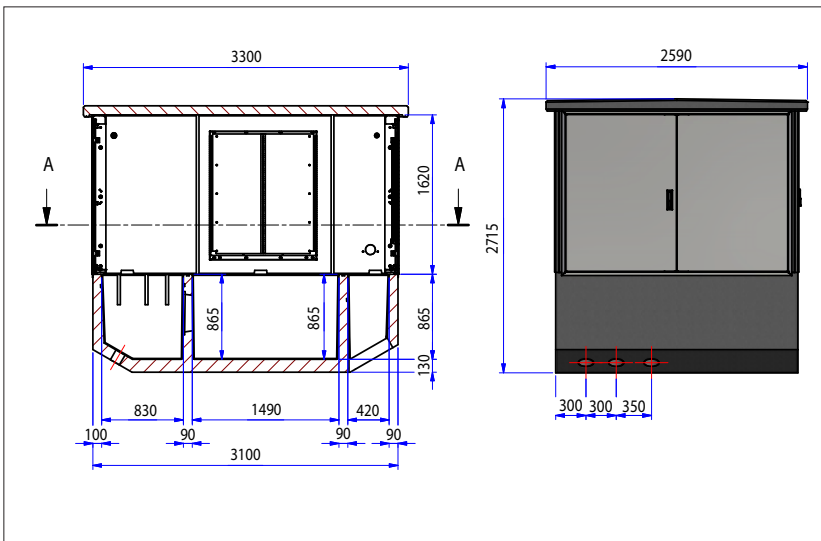


## Type KS 24-31 Concrete compact station



### Details:

- Concrete station
- Compact, non-accessible
- 1 transformer
- Tare weight 8650 kg
- Designed in various RAL colours
  
- Length: 3120 mm
- Width: 2420 mm
- Height: 2615 mm



### Component:

- The structure of the KS 24-31 is a reinforced concrete assembly construction with the basic components of a cellar element, wall element and roof element,
- Upper section can also be made from sheet metal,
- Concrete with strength class C 30/37, waterproof,
- Transformer space as a self-contained tub,
- Medium-voltage segment with waterproof cable feed-throughs,
- Low-voltage segment in the area of the base plate open/optionally closed with cable feed-throughs,
- Doors and ventilation grilles made from sheet steel produced in-house, UV-resistant powder coating,
- Construction power feeds with cable attachment option,
- External coating underneath with bitumen protective layer, facade as per customer's requirements (rubbing plaster, roll plaster, etc.).

### Technical equipment:

- Compliant with the technical connection conditions of the respective SNO,
- Type tests compliant with IEC 62271-202: with medium-voltage switchgear make: Siemens Typ 8DJH and Schneider Electric type FBX and measuring field of type MSA produced in-house.

### Medium voltage:

- Use of 2 to 4-panel, type-tested SF6-insulated switchgear from well-known manufacturers in the range from 6 to 36 kV,
- Use of air-insulated measuring fields of type MSA produced in-house.

### Transformers:

- Use of standard three-phase current oil or cast resin transformers possible,
- Ventilation dimensioned for transformer outputs of up to 1000 kVA, opt. up to 1250 kVA.

### Low voltage:

- Use of standard and customer-specific low-voltage distributions in mounting plate construction,
- Option: LV-side measurement.

# Transformer stations

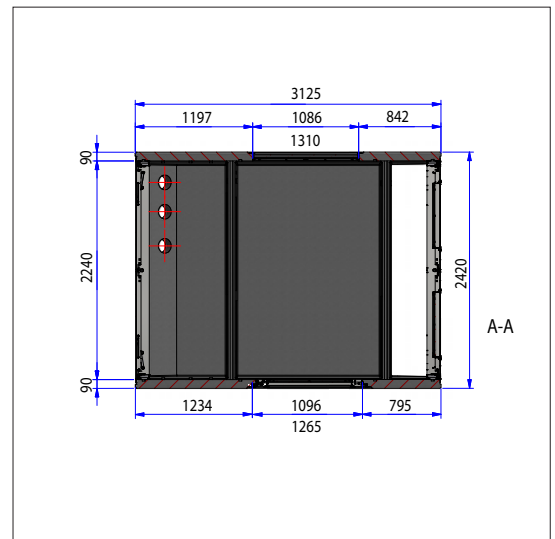
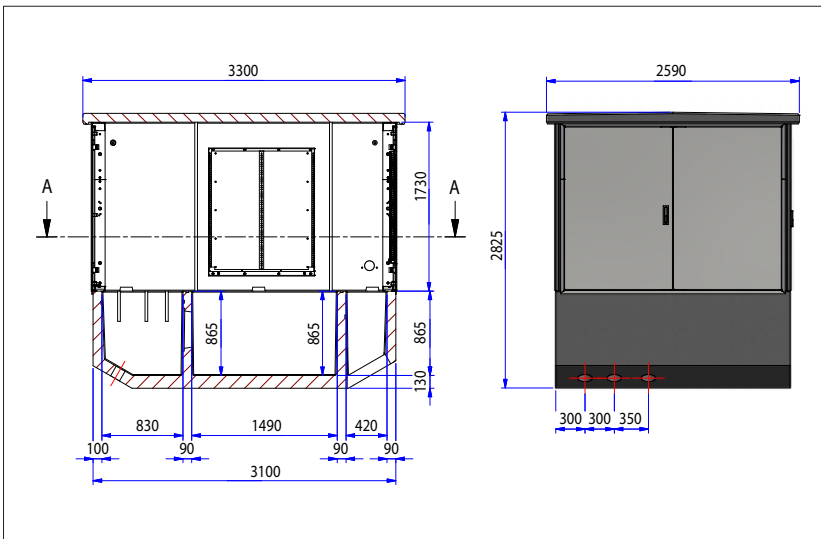


## Type KS 24-31 H Concrete compact station



### Details:

- Concrete station
- Compact, non-accessible
- 1 transformer
- Tare weight 8800 kg
- Designed in various RAL colours
  
- Length: 3125 mm
- Width: 2420 mm
- Height: 2725 mm



### Component:

- The structure of the KS 24-31 H is a reinforced concrete assembly construction with the basic components of a cellar element, wall element and roof element,
- Upper section can also be made from sheet metal,
- Concrete with strength class C 30/37, waterproof,
- Transformer space as a self-contained tub,
- Medium-voltage segment with waterproof cable feed-throughs,
- Low-voltage segment in the area of the base plate open/optionally closed with cable feed-throughs,
- Doors and ventilation grilles made from sheet steel produced in-house, UV-resistant powder coating,
- Construction power feeds with cable attachment option,
- External coating underneath with bitumen protective layer, facade as per customer's requirements (rubbing plaster, roll plaster, etc.).

### Technical equipment:

- Compliant with the technical connection conditions of the respective SNO,
- Type tests compliant with IEC 62271-202: with medium-voltage switchgear make: Siemens type 8DJH and Schneider Electric type FBX and measuring field of type MSA produced in-house.

### Medium voltage:

- Use of 2 to 4-panel, type-tested SF6-insulated switchgear from well-known manufacturers in the range from 6 to 36 kV,
- Use of air-insulated measuring fields of type MSA produced in-house.

### Transformers:

- Use of standard three-phase current oil or cast resin transformers possible,
- Ventilation dimensioned for transformer outputs of up to 1250 kVA, opt. up to 1600 kVA.

### Low voltage:

- Standard and customer-specific low-voltage distributions in mounting plate construction,
- Option: LV-side measurement.

# Transformer stations

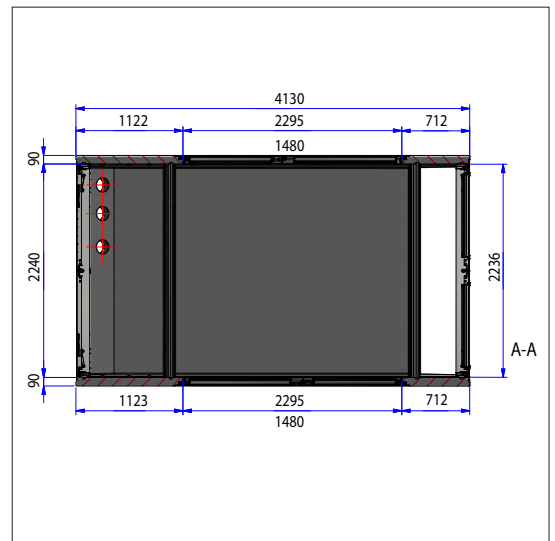
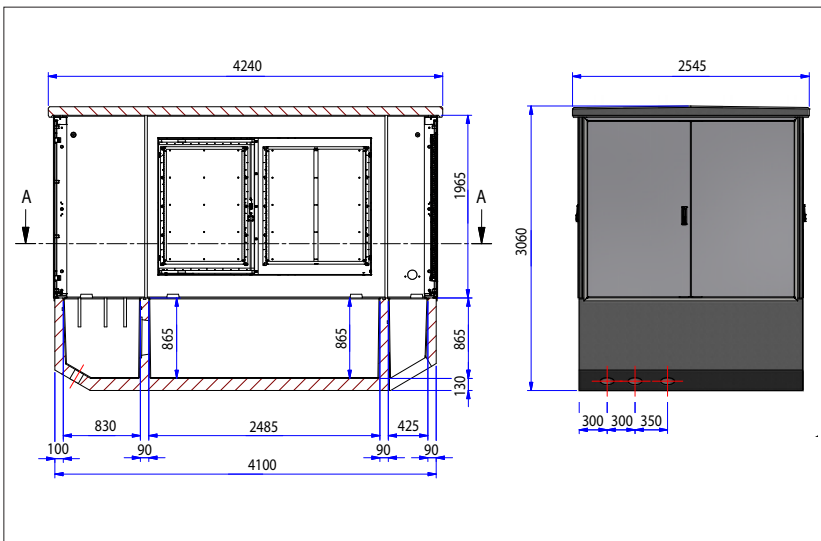


## Type KS 24-41 H Concrete compact station



### Details:

- Concrete station
- Compact, non-accessible
- 1 transformer
- Tare weight 11050 kg
- Designed in various RAL colours
  
- Length: 4130 mm
- Width: 2420 mm
- Height: 2960 mm



### Component:

- The structure of the KS 24-41 H is a reinforced concrete assembly construction with the basic components of a cellar element, wall element and roof element,
- Upper section can also be made from sheet metal,
- Concrete with strength class C 30/37, waterproof,
- Transformer space as a self-contained tub,
- Medium-voltage segment with waterproof cable feed-throughs,
- Low-voltage segment in the area of the base plate open/optionally closed with cable feed-throughs,
- Doors and ventilation grilles made from sheet steel produced in-house, UV-resistant powder coating,
- Construction power feeds with cable attachment option,
- External coating underneath with bitumen protective layer, facade as per customer's requirements (rubbing plaster, roll plaster, etc.).

### Technical equipment:

- Compliant with the technical connection conditions of the respective SNO.

### Medium voltage:

- Use of 2 to 4-panel, type-tested SF6-insulated switchgear from well-known manufacturers in the range from 6 to 36 kV,
- Use of air-insulated measuring fields of type MSA produced in-house.

### Transformers:

- Use of standard three-phase current oil or cast resin transformers possible,
- Ventilation dimensioned for transformer outputs of up to 2000 kVA, opt. up to 2500 kVA.

### Low voltage:

- Standard and customer-specific low-voltage distributions in mounting plate construction,
- Option: LV-side measurement.

# Transformer stations



## Type US 19-28

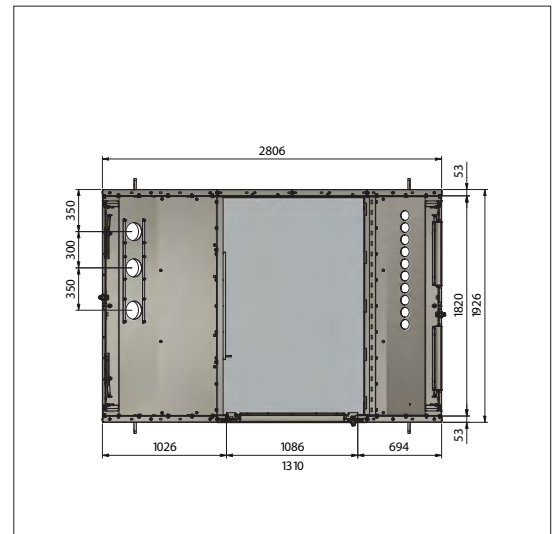
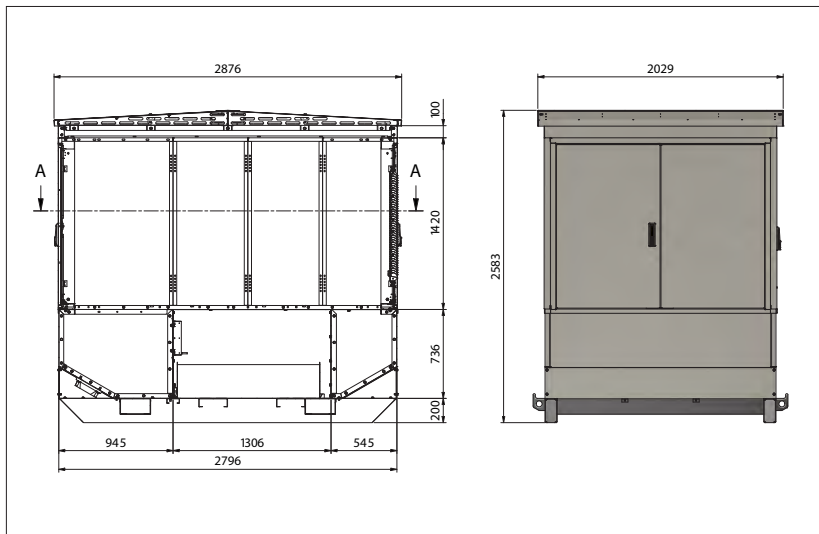
Compact, non-accessible, sheet metal



### Details:

- Sheet metal station
- Compact, non-accessible
- 1 transformer 630 kVA
- Tare weight approx. 1,5 t
- Designed in various RAL colours

- Length: 2806 mm
- Width: 1926 mm
- Height: 2456 mm



### Use:

- The modular construction means there are numerous possible uses: use as a construction power station (with runners), as a grid and customer station for permanent use (buried) and as a grid centre station for use in the immediate vicinity of electrical consumers, as an alternative to setting up electrical plant rooms.

### Component:

- Housing: robust full-steel design, hot dip galvanised, powder-coated, unit tested,
- Doors and ventilation grilles made from sheet steel with UV-resistant powder coating, colour freely selectable from RAL table,
- Medium-voltage segment with waterproof cable feed-throughs,
- Low voltage segment with bushings or open with small animal protection.

### Technical equipment:

- Compliant with the technical connection conditions of the respective SNO,
- Type tests compliant with IEC 62271-202: with medium-voltage switchgear make : Siemens type 8DJH.

### Medium voltage:

- Use of 2 to 4-panel, type-tested SF6-insulated switchgear from well-known manufacturers in the range from 6 to 36 kV.

### Transformers:

- Use of standard three-phase current oil or cast resin transformers up to 630 kVA,

### Low voltage:

- Use of standard and customer-specific low voltage distributions in mounting plate construction.
- Option: LV-side measurement.

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## Transformer stations



### Rental stations Concrete/sheet metal



#### Details:

- Concrete station (type KS 19-28)
- Compact, non-accessible
- 1 transformer
- Tare weight 6300 kg
- Designed in various RAL colours

- Length: 2820 mm
- Width: 1925 mm
- Height: 2456 mm



#### Details:

- Sheet metal station (type US 19-28)
- Compact, non-accessible
- 1 transformer 630 kVA
- Tare weight approx. 1,5 t
- Designed in various RAL colours

- Length: 2806 mm
- Width: 1926 mm
- Height: 2580 mm

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Our rental stations offer a variety of solutions for our customers. Whether for the safeguarding of construction power connections, the bridging of faults or for use as a grid centre station, the possible uses are many and varied.

We can provide customers looking for the direct use of stations on a rental basis with solutions-orientated offers. We also offer solutions for investors who are looking for rental stations as a rental property for onward rental over a longer period.

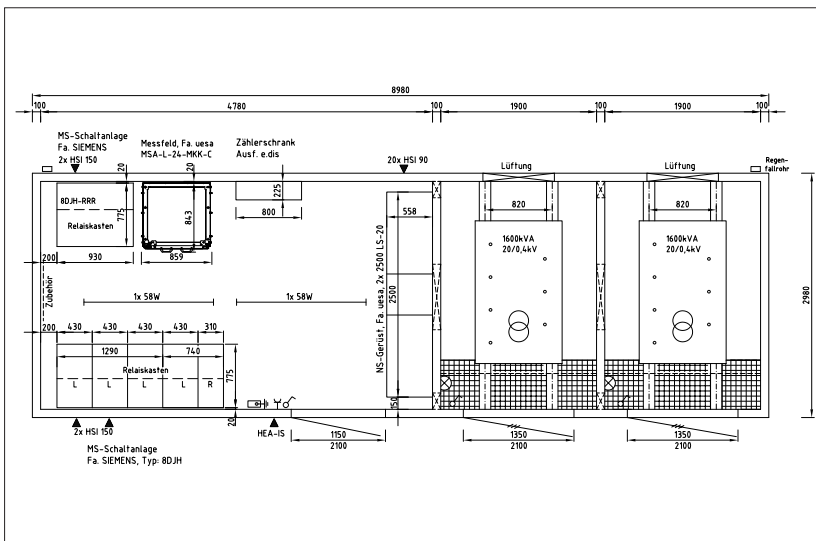
The compact transformer station can be supplied with concrete housing and also as a sheet metal station. Oil and cast resin transformers up to 630 kVA can be used for voltages up to 36 kV.

The medium-voltage switchgear is adapted to the prevailing grid conditions. The stations are tested according to IEC 62271-202.

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# Transformer stations

compact, accessible



## Component:

- Production of the structure in an element-based construction from reinforced concrete,
- Concrete with strength class C30/37, waterproof,
- Production of the cellar in a cell construction without work gaps to ensure resistance to water and oil,
- Introduction of external cables via water-resistant cable feed-throughs,
- Doors and ventilation grilles made from sheet steel or aluminium, colour options and selection according to manufacturers' colour palettes,
- Construction power feed with cable attachment option,
- External coating underneath with bitumen protective layer, facade as per customer's requirements (rubbing plaster, roll plaster, etc.).

## Technical equipment:

- Compliant with the technical connection conditions of the respective SNO.

## Medium voltage:

- Use of type-tested air and SF6-insulated switchgear from well-known manufacturers in the range from 6 to 36 kV.

## Transformers:

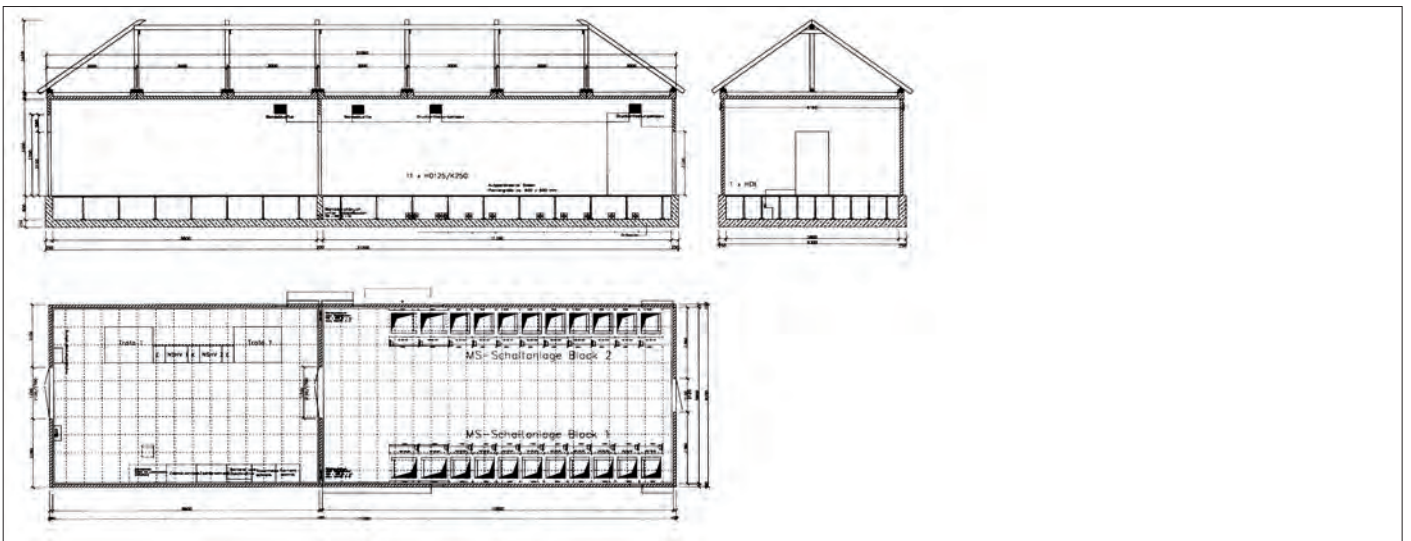
- Use of standard three-phase current oil or cast resin transformers possible, maximum technical dimensions determined by the structure.

## Low voltage:

- Use of low-voltage distributions in panel construction or cabinet construction produced in-house in accordance with your requirements,
- Options: Compensation systems, battery or UPS systems, use of control and instrumentation components.

# Transformer stations

## Switching stations



### Component:

- The structures are produced in an element-based construction from reinforced concrete,
- Concrete with strength class C 30/37, waterproof,
- Production of the cellar in individual components or as a waterproof in-situ concrete tank,
- Design with double or concrete intermediate floor,
- Introduction of external cables via water-resistant cable feed-throughs,
- Doors and ventilation grilles made from sheet steel or aluminium, colour options and selection according to manufacturers' colour palettes,
- Construction power feed with cable attachment option,
- Outer coating underneath with bitumen protective layer, façade according to customer's requirements (plaster, brick facing up to timber framing),

### Technical equipment:

- Compliant with the technical connection conditions of the respective SNO.

### Medium voltage:

- Use of type-tested air and SF6-insulated switchgear from well-known manufacturers in the range from 6 to 36 kV.

### Transformers:

- Use of standard three-phase current oil or cast resin transformers possible, maximum technical dimensions determined by the structure.

### Low voltage:

- Use of low-voltage distributions in mounting plate construction or cabinet construction produced in-house in accordance with your requirements,
- Options: Compensation systems, battery or UPS systems, use of control and instrumentation components.

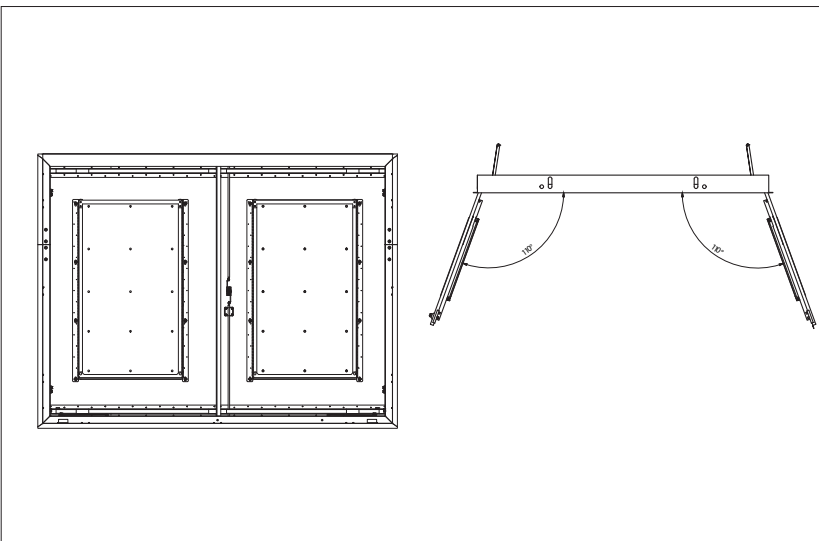
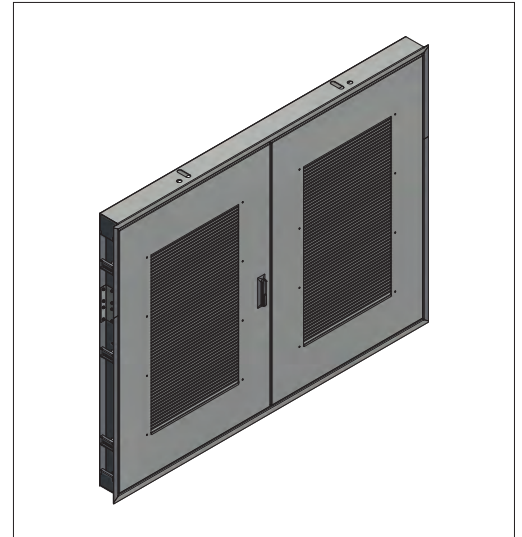
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## Transformer stations



Doors made from sheet steel/aluminium/  
stainless steel for compact stations

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### Standard designs Doors:

- Sheet metal parts made from galvanised sheet steel with powder-coated surface, sheet metal parts made from aluminium with anodised surface or stainless steel,
- Option of integration into the equipotential bonding,
- Lock with three-point locking,
- Locking bars made from stainless steel,
- Piercing protection in accordance with DIN VDE 0101,
- Insect protection,
- Type tested,
- Protection category: IP23D.

The dual-cylinder swivel lever lock is made from black zinc die cast metal.

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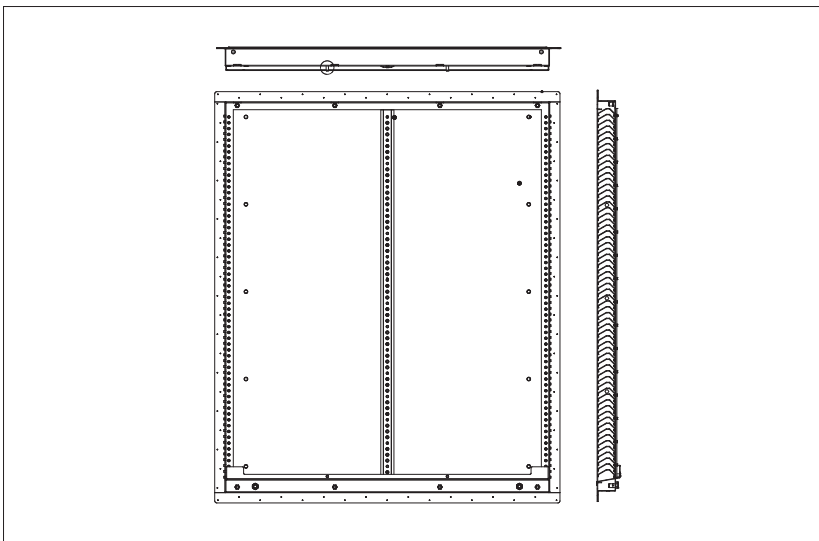
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## Transformer stations



### Sheet steel/aluminium/ stainless steel ventilation grille

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#### Standard designs Ventilation grilles:

- Sheet metal parts made from galvanised sheet steel with powder-coated surface, sheet metal parts made from aluminium with anodised surface,
  - Dimensions are possible from H/W: 210 x 500 mm up to 2000 x 750 mm,
  - Favourable flow coefficient,
  - High free ventilation cross-section,
  - Option of integration into the equipotential bonding,
  - Piercing protection in accordance with DIN VDE 0101,
  - Insect protection,
  - Type tested,
  - Colour: Standard is RAL 7035 (other RAL colours are possible),
  - Protection category: IP23D.
-

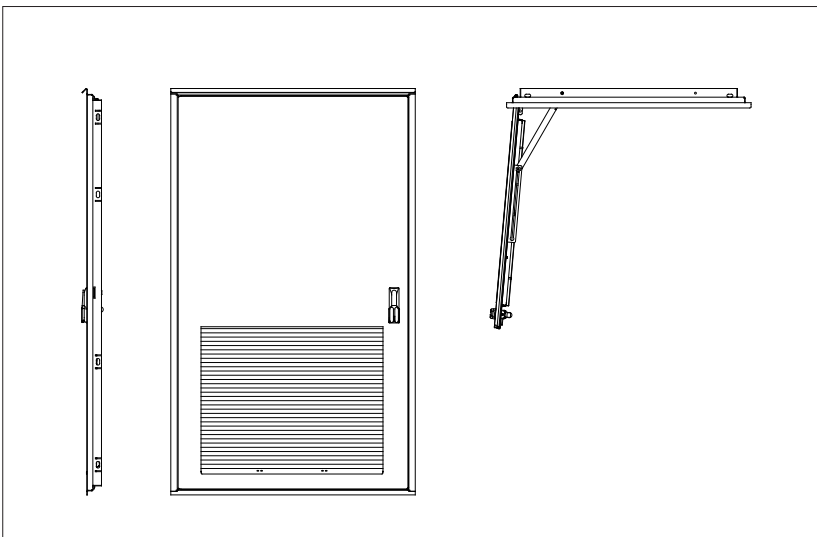
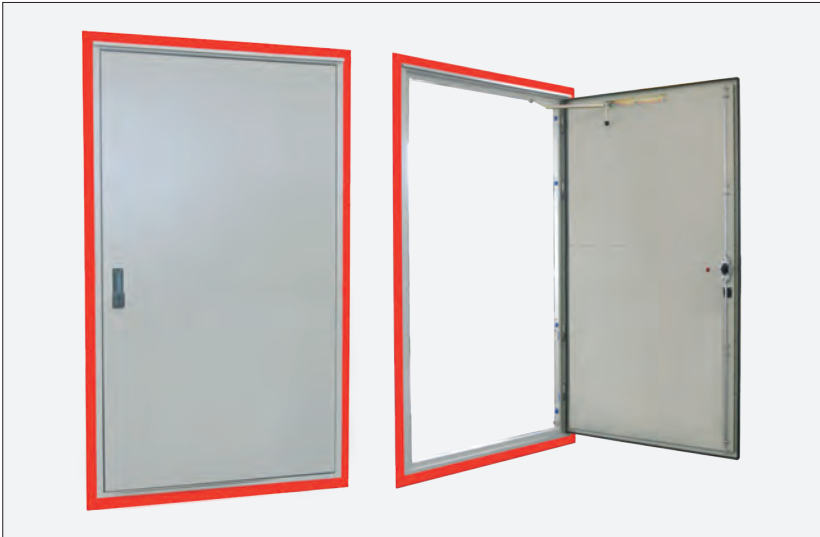
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## Transformer stations



### Doors for technology stations (accessible transformer stations)

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#### Standard designs and special designs:

- Sheet metal parts made from galvanised sheet steel with powder-coated surface
- Option of integration into the equipotential bonding
- Lock with panic function and three-point locking
- Dual-cylinder swivel lever lock made from black die cast metal
- Locking bars made from stainless steel
- Insect protection
- Type tested
- Protection category: IP43

The doors for the accessible technology stations are made in the version shown with ventilation unit or with lockable underneath ventilation.

Special frames have been developed for use in reconstruction measures which cover different construction dimensions.

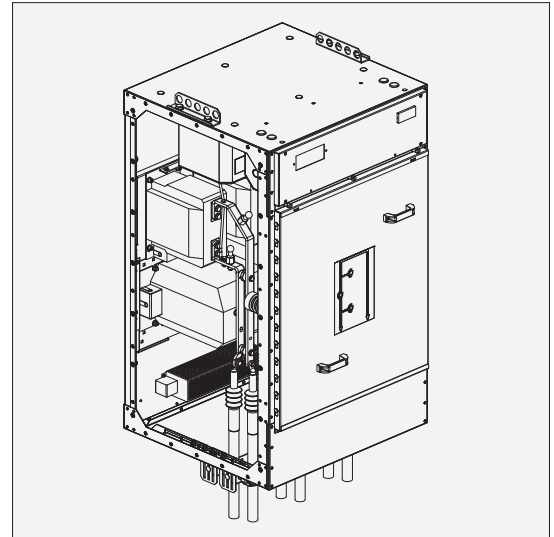
Please do not hesitate to contact us if you have any queries regarding possible dimensions and designs.

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# Medium-voltage switchgear



## Compact measuring panel MSA-L up to 24 kV



### Description:

The compact measuring panel of type MSA-L is type-tested according to the current DIN EN 62271-200 standard and therefore meets the requirements for safe and reliable use in the energy distribution network.

The measuring panel's arc fault resistance has been successfully demonstrated according to IAC-AFL 20 kA/1s in a certified testing field. The measuring panel has been developed and built for use under normal operating conditions according to DIN EN 60694 and can be used in compact stations thanks to its structure.

### Setup:

The measuring panel is made from a sheet steel construction in a modular design. The individual elements are connected using steel rivets.

The front closing panel forms a pressure-resistant sheet steel plug-in panel. Both side walls and the back wall are also made from sheet steel.

The busbars are made from 40 x 6 mm flat copper.

Cables of up to 240 mm<sup>2</sup> to be connected are guided from underneath into the measuring panel and can be secured there using variable cable holding irons.

Special end closures allow cables up to 300 mm<sup>2</sup> to be connected.

### Technical equipment:

The measuring panel supports the installation of standardised current and voltage transformers.

### Optional additional equipment:

The installation of a second voltage transformer set or self-powered transformers (e.g.: 2 x GSZ20 or 1 x TGZ20 - from Ritz) is possible.

The separate appliance compartment can be equipped with various types of measuring equipment, safety elements, etc.

We would be happy to present other equipment options to you on request.

### Technical data:

Rated voltage	$U_r$	24 kV
Rated short-duration power-frequency withstand voltage	$U_d$	50 kV
Rated lightning impulse withstand voltage		125 kV
Rated frequency	$f_r$	50/60 Hz
Rated operating current	$I_r$	630 A
Rated short-duration withstand current (3s)	$I_k$	20 kA
Rated short-duration withstand current (1s)	$I_k$	25 kA
Rated impulse current	$I_{ma}$	65 kA
Ambient temperature Umgebungstemperatur	$T_{UMWELT}$	-25 °C bis +40 °C
Arc fault qualification	IAC AFL	20 kA/1s
Protection category		IP 3XD/IK07
Dimensions (mm)	H/B/T	1400x860x843

## Medium-voltage switchgear



### Air-insulated medium-voltage switchgear type MSA-L up to 24 kV



#### Description:

The metal-encapsulated, air-insulated switchgear of type MSA-L can be used universally on energy supply networks as well as for industrial applications. The abbreviation „MSA“ stands for medium-voltage system and the suffix „L“ means air-insulated. The switchgear is installed on the base frame at the front of the panel, ensuring easy and secure installation. All switchgear can be operated with the panel door closed.

The MSA-L switchgear is type-tested according to the current DIN EN 62271-200 standard and therefore meets the requirements for safe and reliable use.

The panels' arc fault resistance has been demonstrated successfully according to IAC-AFL 16 kA; 1 s in a certified testing field. The switchgear has been developed and designed for use under normal indoor operating conditions in accordance with DIN EN 60694. The switchgear used has been designed and type-tested according to the relevant switchgear standards.

Thanks to its modular construction, it can be delivered in individual panels or as a complete switchgear, with the equipment, panel sequence and so on being configurable on a specific basis.

#### Equipment and structure:

The panels are made from a sheet steel construction with a modular design and switchgear permanently installed at the front. The individual housing elements are connected using steel rivets.

The front closing panel forms a pressure-resistant sheet steel door with door fitting either on the right or left.

The panel door is equipped with viewing panes and therefore allows the switchgear and switch settings to be checked and monitored.

A polyester wall with feed-throughs separated two neighbouring panels, while the back walls are made from sheet steel.

The busbars are made from rounded copper and are partially insulated.

Cables to be connected are guided from underneath into the switching panels and can be secured there using variable cable holding irons.

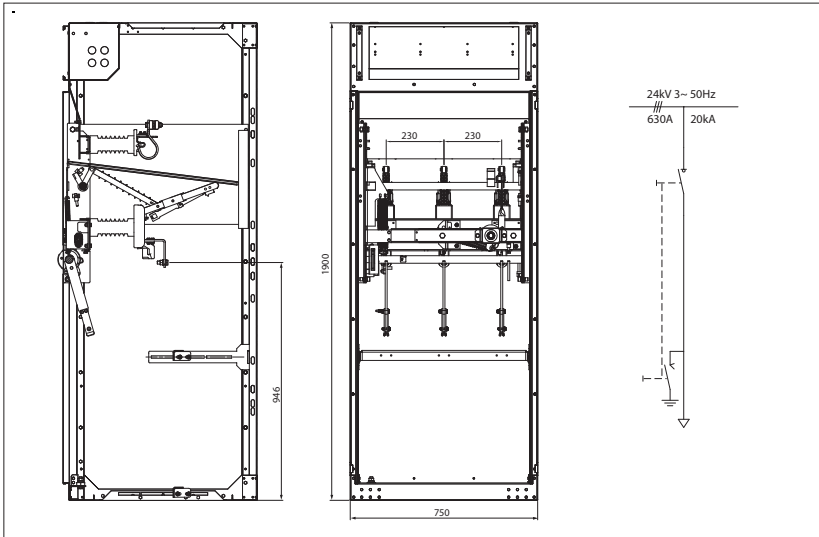
#### Technische Daten:

Rated voltage	$U_r$	12 kV	24 kV
Rated short-duration power-frequency withstand voltage	$U_d$	42 kV	50 kV
Rated lightning impulse withstand voltage	$U_p$	75 kV	125 kV
Rated frequency	$f_r$	50 Hz	50 Hz
Rated current	$I_r$	630 A	630 A
Rated short-duration withstand current (1s)	$I_k$	20 kA	20 kA
Rated impulse current	$I_{ma}$	50 kA	50 kA
Ambient temperature	$T_{UMWELT}$	-5 °C bis +40 °C*	-5 °C bis +40 °C*
Arc fault qualification IAC AFL; 1s	$I_{AC AFL}$	20 kA	16 kA
Protection category		IP 2XC	IP 2XC

\* optionally with additional equipment up to -25 °C

# Medium-voltage switchgear

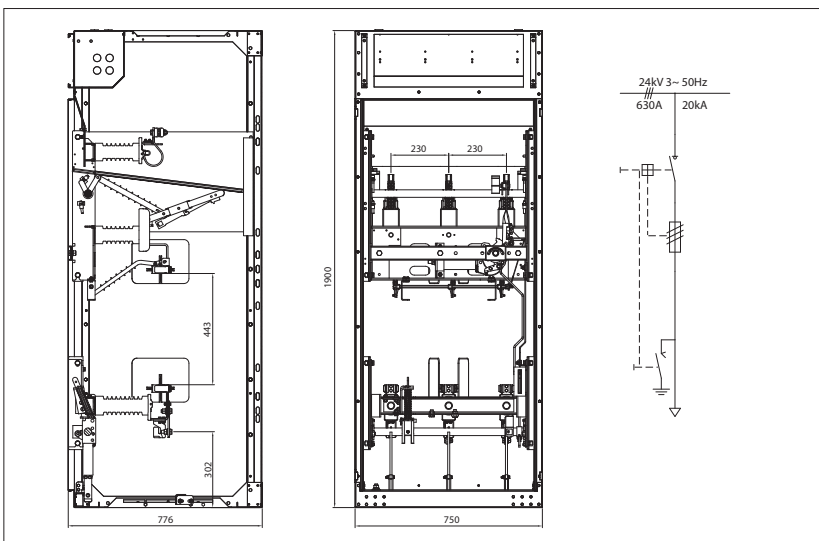
## Switch panels



### Switch panels type MSA-L-12/24-630-K Ring cable panels – Load-break switch

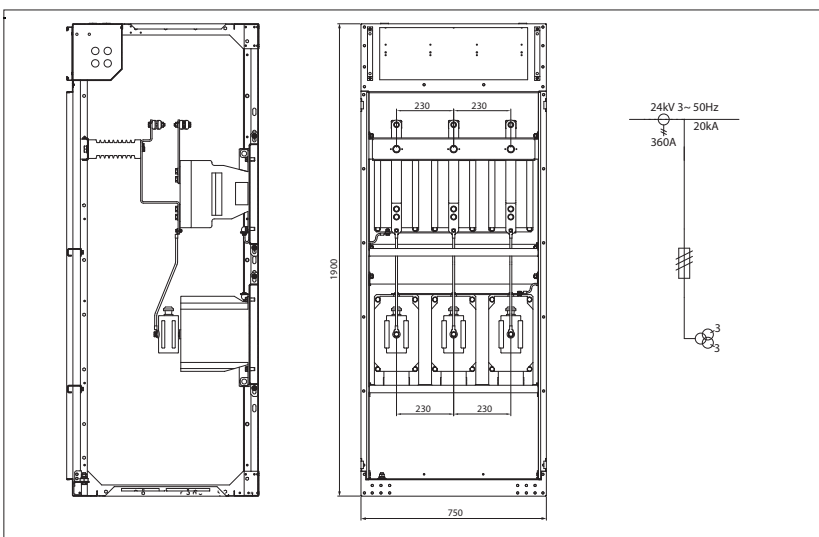
The load-break switch panels are equipped with load-break switches of type KLS and optionally equipped with integrated and locked earthing switches of type -EUKS-E1. The design means that the additional installation of surge arresters is also possible without any problems.

We would be happy to present other equipment options to you on request.



### Switching panels of type MSA-L-12/24-630-T Transformer output fields – Load-break switches

The load-break switching panels are equipped with type KLFS load-break switches. The switch contains a memory drive, coupled with a tripping device, which causes automatic opening of the switchgear via a control coil and/or striking pin of the built-in fuses. Expansion is also possible with circuit-proof earthing switches of type EUKFS-E1. If necessary, optional locking between both switchgears prevents incorrect operation.



### Switching panels of type MSA-L-12/24-630-M measuring panels

The MSA-L switchgear series offers an A range of switching options for the installation of standardised current and voltage transformers.

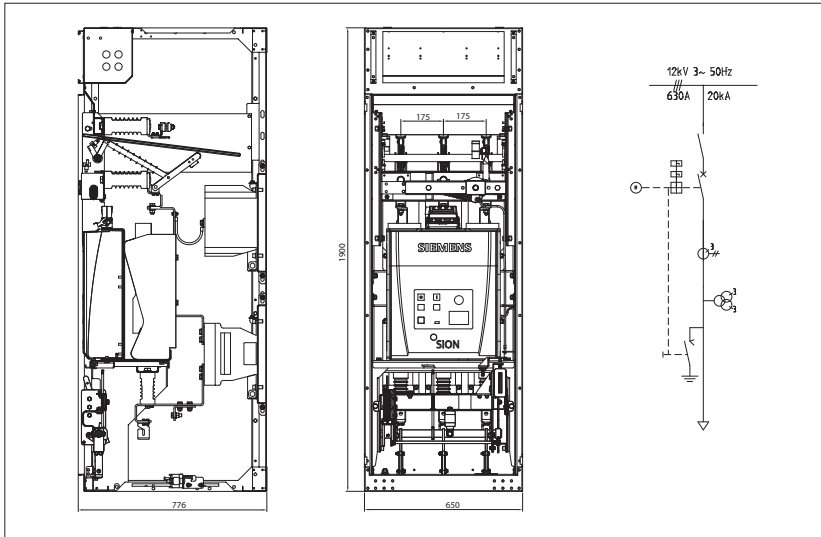
**Optional additional equipment for all panel types** including capacitive voltage displays, specific lockable panel doors, panel lighting, installation of measuring instruments and control elements in separate equipment compartment.

We would be happy to present other switching/equipment options to you on request.

# Medium-voltage switchgear



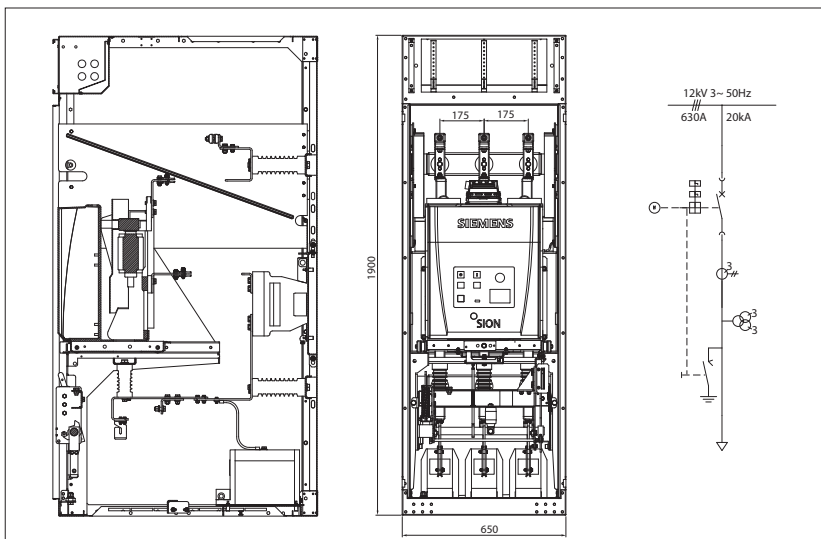
## Switch panels



### Switch panels of type MSA-L-12-630-LS (F) Circuit breaker panels (fixed-installation)

The panels are equipped with circuit breakers of type SION (Siemens) in combination with a series-connected disconnecter and optionally equipped with integrated and interlocked earthing switches of type EULS-E1. Alternatively, for earthing and short-circuiting, there is an option to use ball anchorages. The design supports the installation of current and voltage transformers (narrow structure according to DIN 42600 T8/T9).

A wide variety of protection and control devices can be installed in the low-voltage equipment space, which is partitioned from the medium-voltage compartment, according to customer requirements.



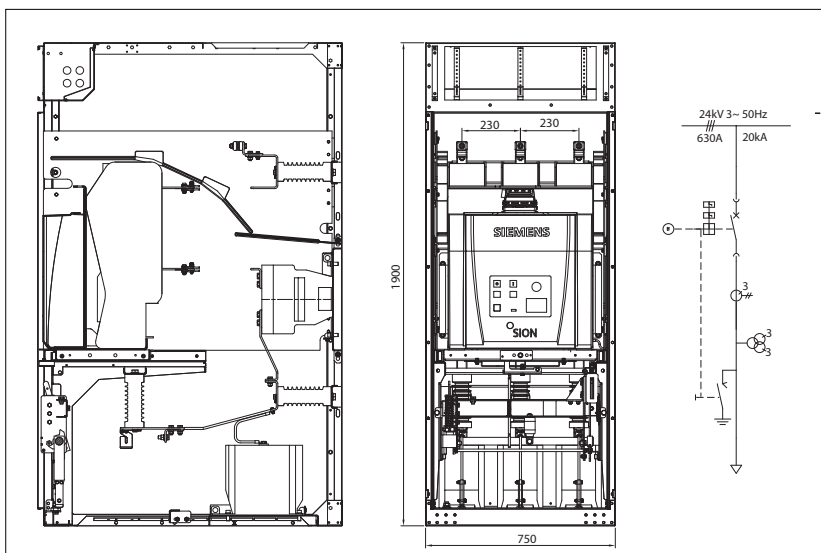
### Switch panels of type MSA-L-12-630-LS (E) Circuit breaker panels (slot-in technology)

The panels are equipped with circuit breakers of type SION (Siemens) on a slot-in cassette and optionally with integrated and interlocked earthing switches type EULS-E1.

Alternatively, for earthing and short-circuiting, there is an option to use ball anchorages.

The design supports the installation of current and voltage transformers (narrow structure according to DIN 42600 T8/T9).

A wide variety of protection and control devices can be installed in the low-voltage equipment space, which is partitioned from the medium-voltage compartment, according to customer requirements.



### Switch panels of type MSA-L-24-630-LS (E) Circuit breaker panels (slot-in technology)

The panels are equipped with circuit breakers of type SION (Siemens) on a slot-in cassette and optionally with integrated and interlocked earthing switches type EULS-E1.

Alternatively, for earthing and short-circuiting, there is an option to use ball anchorages.

The design supports the installation of current and voltage transformers (narrow structure according to DIN 42600 T8/T9).

A wide variety of protection and control devices can be installed in the low-voltage equipment space, which is partitioned from the medium-voltage compartment, according to customer requirements.

# Medium-voltage switchgear

## QU protective cabinet



QU protective cabinet example: Internal structure



QU protective cabinet with Siemens 7S180



QU protective cabinet with Siemens 7SN600 and SEG Woodward MRA4



QU protective cabinet with SEG Woodward MRA4

### Dimensions:

The cabinet dimensions are selected so that it is possible to use all conventional protection relays in the cabinet.

Standard cabinet: H/W/D 840 x 430 x 430 mm, 1200 x 350 x 500 mm

### Installation versions:

The cabinet can be installed horizontally or vertically.

### Battery system:

The battery system is designed so that a voltage supply to the protective relays is guaranteed for at least 8 hours.

It is possible to put the battery into operation via a button. After 8 hours, the battery system is switched off by a timer relay in order to prevent deep discharging of the batteries.

### Potential use:

The dimensions mean that the protective cabinet can also be used in compact stations.

### Protective relay:

All conventional protective relays can be used. The preferred versions for QU protection are:

- MRA4                      SEG Woodward
- 7SJ80                     Siemens
- P130C                    Schneider Electric

### Retrofitting:

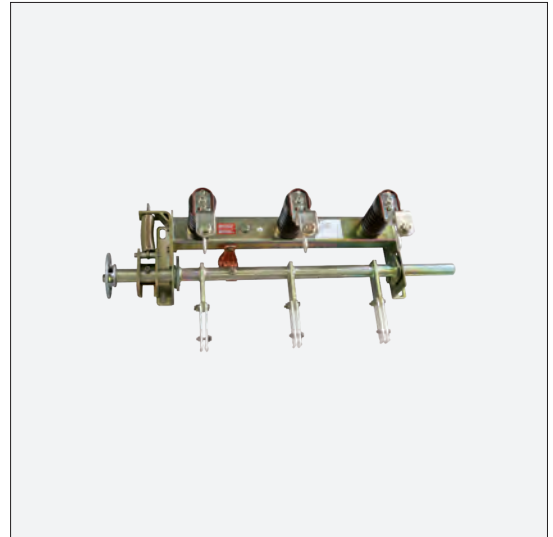
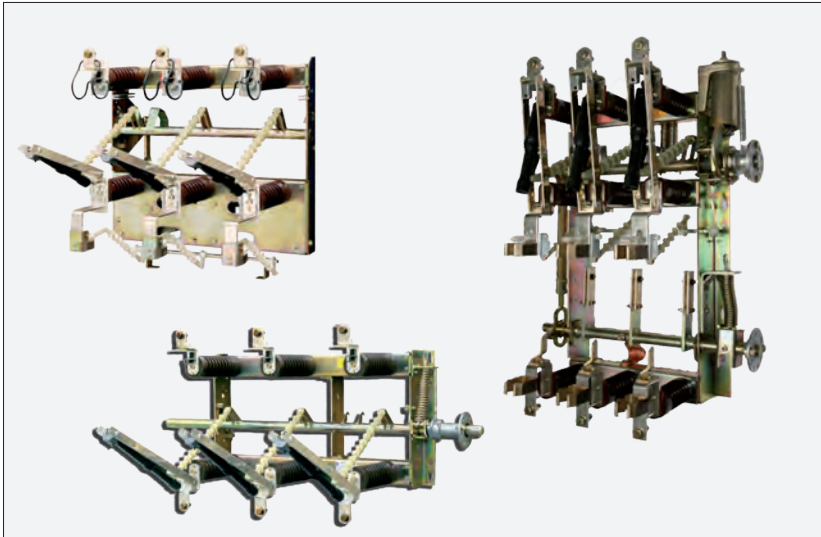
It is possible, with very little effort, to retrofit the QU protection into existing systems.

Deliveries come as standard with a test terminal strip. The use of test sockets is also possible.

## Medium-voltage switchgear



### Load-break switches, disconnectors, earthing switches



uesasa medium-voltage load-break switches, disconnectors and earthing switches offer switchgear manufacturers devices that have proven their technical quality and cost-effectiveness for years.

The medium-voltage load-break switches KL, KLF, disconnector T and earthing switches DES, EUK, EOK with rated voltage up to 24 kV and rated current up to 630 A are used in distribution networks managed by energy supply companies and in industrial networks of small to medium-sized businesses with low switching frequency.

Due to the compact dimensions, these switches can be used as installed devices in existing switchgear concepts from various manufacturers.

#### Key characteristics of this switchgear include:

- High operational reliability thanks to simple and reliable design,
- Easy maintenance and monitoring,
- High dynamic and thermal stability,
- Tested in international testing fields.

The KL and KLF load-break switches have encapsulated tilting tube arc extinguishing devices (current interruption without visible arc) and belong to the group of hard gas switches. These generate the extinguishing agent (gas) required

to extinguish the arc themselves. Spring-loaded actuators act indirectly and quickly on the movable contact blades, whose speed is thus largely independent of the actuation of the drive.

KL load-break switches are used as cable and handover switches. KLF load-break switches with HH fuse holder and fuse free release are used as transformer switches.

Disconnectors T are designed without arc extinguishing devices or mechanical spring drives.

DES, EUK and EOK earthing switches can optionally be supplied with quick switch-on devices (E1). The DES earthing switch is designed for universal use. The EUK and EOK earthing switches are especially suitable for attachment to KL and KLF load-break switches and T disconnectors, and can optionally be installed ex works below or above the load-break switch or disconnector. The EUK and EOK earthing switches are mechanically interlocked with the load-break switch or disconnector.

#### Optional equipment can be supplied:

- HH fuse holder below or above the KLF load-break switch, fitted with lever for fuse free release,
- Auxiliary switch,
- Tripped signalling contact for KLF load-break switches,
- Shunt release for KLF load-break switches,
- Motor drive for KL and KLF load-break switches and T disconnectors,
- Switching lever with ring eyelet (for switch rod actuation),
- Disc drive with linkage (1500 or 2000 mm long),
- Rotary drive for lateral rotary lever actuation.

The switchgear is certified according to the European IEC CN standard and to the Russian GOST standard.

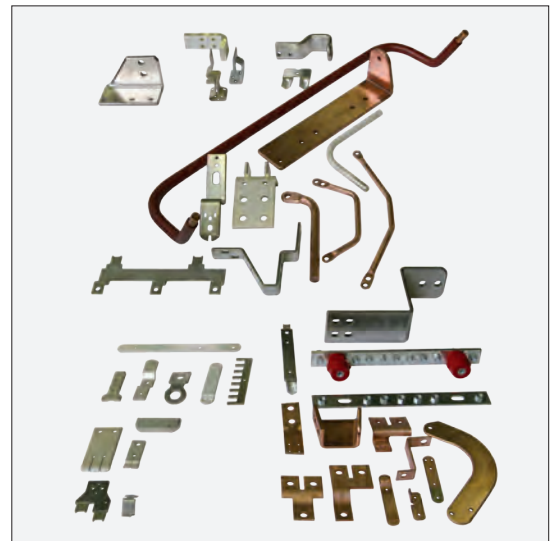


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## Component production



Copper processing  
Assembly production



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uesa's component production facility in Uebigau has been a major player in the production of components for the electrical industry since 2002.

Its portfolio of services ranges from the manufacture of all kinds of stamped, formed and milled parts with/without surface finishing in copper production to module assembly.

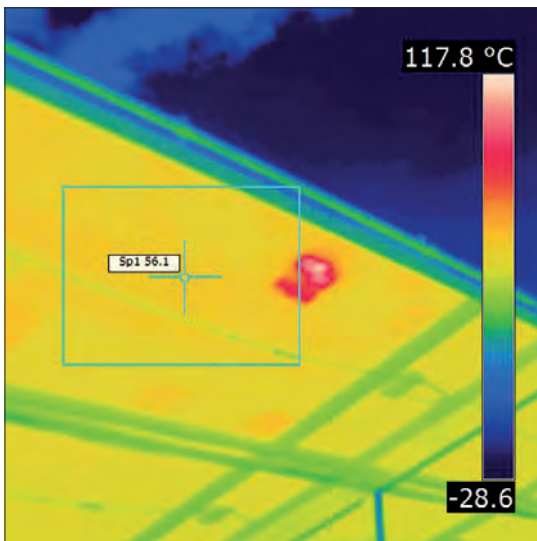
The other services we offer include MAG and WIG welding, helium leak testing, vibratory grinding, placement of Cu rails (set nuts) and the covering of Cu rails (round/flat) with shrink hose.

A team of highly skilled employees and a modern fleet of machinery guarantee the very best quality.

In our design department, we are able to produce 3D drawings of your products. We use the Mechanical Desktop and Inventor software to help us do this.

The tools and installations required for production are produced in the uesa toolshop and by external tool-making companies.

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uesasa GmbH guarantees the technical operation, maintenance and repair of solar parks. In addition to monitoring, our services also include scheduled maintenance work on generator connection boxes, inverters and transfer stations. Our special „Thermography“ service identifies modules with faulty cells.

#### Our references (a selection):

- Lönnewitz solar park - approx. 33 MWp,
- Merseburg solar park - approx. 4 MWp,
- Allstedt solar park - approx. 18 MWp,
- Cottbus Drewitz solar park - approx. 29 MWp,
- Finow solar park - approx. 60 MWp.

#### Our services:

- Operational management and monitoring,
- String measurements (idle voltage, insulation resistance, earthing resistance),
- Maintenance and repair within 24 hours
- Thermography.

#### Our qualifications:

- Meteocontrol: Safer'SUN training course,
- Skytron: System principles, system components, plant monitoring with PVGuard,
- SMA: Large-scale PV plants with Sunny Central,
- TÜV SÜD Academy: photovoltaic systems.

We would be delighted to make you an offer for your solar park!

## Location



uesasa GmbH  
Uebigau  
Gewerbepark-Nord 7  
04938 Uebigau-Wahrenbrück

Tel: 035355 49-0  
Fax: 035365 8217  
Web: [www.uesasa.de](http://www.uesasa.de)  
E-mail: [mail@uesasa.de](mailto:mail@uesasa.de)



uesasa GmbH  
Außenstelle Lönnewitz  
Grassauer Straße 12  
04895 Mühlberg/Elbe

Tel: 035355 49-0  
Fax: 035365 8217  
Web: [www.uesasa.de](http://www.uesasa.de)  
E-mail: [mail@uesasa.de](mailto:mail@uesasa.de)



uesasa Polska Sp. z o. o.  
ul. Traugutta 2  
68-300 Lubsko

Tel: 0048 68 3 725 000  
Fax: 0048 68 3 725 010  
E-mail: [centrala@uesasa.pl](mailto:centrala@uesasa.pl)  
Web: [www.uesasa.pl](http://www.uesasa.pl)

## uesa GmbH - A company of the uesa Group

Products from our extensive production and services portfolio:

- Low-voltage distributions in an open scaffold construction up to 2500 A and in cabinet construction up to 7300 A,
- Automation and control systems,
- Cable, house connection and special distributors,
- House connection boxes for connection to the public power network,
- Meter connection columns, street lighting cabinets, camp-site and marketplace distributors,
- Charging columns and wall boxes for e-mobility,
- Transformer stations also for wind power, biogas and photovoltaic systems,
- Construction power transformer stations with sheet metal housings and runner supports, rental stations,
- Safety checks, maintenance of transformer stations,
- Medium-voltage switchgear up to 24 kV,
- Stamped, formed and milled parts made from copper, steel and polyester,
- Solar system service.



uesa GmbH · Uebigau · Gewerbepark-Nord 7  
04938 Uebigau-Wahrenbrück  
Tel.: +49 (0) 35365 49 0  
Fax: +49 (0) 35365 8217  
Email: mail@uesa.de  
Web: www.uesa.de



EFEN GmbH · Uebigau · Gewerbepark-Nord 6  
04938 Uebigau-Wahrenbrück  
Tel.: +49 (0) 35365 893 0  
Fax: +49 (0) 35365 893 35  
Email: efen@efen.com  
Web: www.efen.com



uemet GmbH · Uebigau · Gewerbepark-Nord 9  
04938 Uebigau-Wahrenbrück  
Tel.: +49 (0) 35365 4499 0  
Fax: +49 (0) 35365 4499 510  
Email: mail@uemet.de  
Web: www.uemet.de



metec GmbH · Uebigau · Doberluger Straße 52/53  
04938 Uebigau-Wahrenbrück  
Tel.: +49 (0) 35365 49 0  
Fax: +49 (0) 35365 8217  
Email: mail@metec-uebigau.de



uesatrans GmbH · Elsterwerdaer Straße 31a  
04932 Merzdorf  
Tel.: +49 (0) 3533 4819 0  
Fax: +49 (0) 3533 4819 25  
Email: info@uesatrans.de  
Web: www.uesatrans.de



uesa Solar I GmbH · Uebigau · Gewerbepark-Nord 7  
04938 Uebigau-Wahrenbrück  
Tel.: +49 (0) 35365 49 0  
Fax: +49 (0) 35365 8217  
Email: mail@uesa.de  
Web: www.uesa.de



uesa EA Ladesysteme GmbH  
Uebigau · Gewerbepark-Nord 7  
04938 Uebigau-Wahrenbrück  
Tel.: +49 (0) 35365 49 0  
Fax: +49 (0) 35365 8217  
Email: mail@uesa-ea-ls.de  
Web: www.uesa.de



uesa Polska Sp. z o.o. · ul. Traugutta 2  
68-300 LUBSKO  
Tel.: +48 (0) 68 372 50 -00  
Fax: +48 (0) 68 372 50 -10  
Email: centrala@uesa.pl  
Web: www.uesa.pl



Ruesa GmbH · ul. Kedrova, d. 4 pom. 5  
117372 Moskau  
Tel.: +7 495 134 34 00  
Fax: +7 495 134 34 00  
Email: mail@ruesa.ru  
Web: www.uesa.ru



"Uesa Ulaanbaatar Energy" LLC  
Ulaanbaatar/Mongolei  
Bayangol duureg, 20.Khoroo  
Erchim khuchnii gudamj-50  
"Hasu Megawatt Center" bair



IBET - Dr. Kammerath & Löwe GmbH  
Bad Driburger Str. 13  
04938 Uebigau  
Tel.: +49 (0) 35365 39 72 0  
Fax: +49 (0) 35365 39 72 11  
Email: mail@ibet-kl.de  
Web: www.ibet-kl.de



K&P Kramer & Plaček Bauunternehmen GmbH  
Grassauer Str. 11a  
04895 Mühlberg/GT Lönnewitz  
Tel.: +49 (0) 35365 444111  
Fax: +49 (0) 35365 386363  
Email: info@effektivhaus.com  
Web: www.effektivhaus.com