

# General Safety and Installation Instructions

## SURFACE MOUNTING / FLUSH MOUNTING

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### GENERAL INFORMATION



This product may be connected and put into operation exclusively by electricians.  
All installation, the maintenance and safety instructions must be observed.



Avoid hard blows and vibrations.  
Observe instructions regarding the location and stacking.



The product may only be lifted from the bottom or on marked crane lugs.  
Do not lift by the roof!  
The weight of the product is given on the rating plate and/or delivery slip.



This product complies with the directive on the restriction of the use of certain hazardous substances (RoHS), but falls under the Directive on Waste Electrical and Electronic Equipment (WEEE).  
Only dispose of it in authorised collection centres or by disposal companies.

### LOCATIONS



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# General Safety and Installation Instructions

## GENERAL SAFETY INSTRUCTIONS

### Installation and start-up

The installation, connection and start-up of the product may only be carried out by qualified electricians (BA5, electrician). Before installation or connection, the product must be checked for any apparent damage.

During installation and connection, the respective, applicable regulations and recognised engineering standards as well as the installation guides of the manufacturer must be observed.

The correct order of the outer conductors must be observed during connection. The outer conductors are marked in colour in the product or identified with the designations L1, L2, L3. The colour coding may differ from the applicable standards depending on the customer's request.

The specifications on the rating plate must be observed unconditionally. The given protection class and protection rating must be established with suitable means after the installation. This concerns in particular the pre-drilled or customer-created openings for the cable entry.

Covers and barriers that are removed for the installation must be properly replaced before start-up. For products that can be operated by laypersons, a minimum degree of protection of IP2XC must be created behind doors that are opened for operation.

It must be checked whether all doors are actually locked and all covers are properly secured. If nothing to the contrary has been agreed on in writing, the builder of the system is responsible for the configuration of the protective equipment in the distributor, which must be matched to the specific situation onsite, for example for circuit breakers, thermostats, motor protection and so on.



**PV**

Devices for protection of the power mains and system must be checked for the correct pre-setting before start-up. The system builder is responsible for compliance with the parameters.

Any requirements for the fuse protection or settings of protective devices from the planning documents must be complied with unconditionally for the protection of the product. Desired deviations must be discussed with the responsible technician.

Screw connections, especially electrical connections, must be checked for proper seating before start-up. Screw connections that are tightened with a defined torque at the factory are marked with a dot or line.

All functions must also be checked during start-up for prefabricated products as well. The effectiveness of protective measures that are realised by the protective devices contained in the product must be tested during start-up.

### Service and maintenance

Users of the switchgear assembly must be instructed in its operation, service and maintenance.

Residual current-operated protective devices (GFCI safety switches) must be tested regularly. Information on the device or alternatively in the documentation and national regulations (e.g. ESV) must be observed. It is recommended that a test is performed by pressing the test buttons in short intervals.

The effectiveness of the surge protector must be tested regularly by checking the optical indicator. If the surge protection is monitored, e.g. with signal contacts, then regular testing can be skipped.

If dedicated short-circuit protection is available for the surge protector, then it must also be tested optically for triggering and then reset or replaced if applicable.

All wearing parts must be checked regularly and replaced if necessary.

**NH fuse links may only be replaced by suitable specialists (BA5, electrician) or instructed personnel: (BA4, electrically instructed person), and they must be replaced by fuses with the same rated current, rated voltage and characteristics.**

# General Safety and Installation Instructions

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If there is passive or active ventilation with air grilles and/or filter fans, they must be cleaned at regular intervals and the filter replaced if necessary. The cleaning intervals are orientated around the soiling in the surroundings.

Active ventilation (e.g. fans) must be tested regularly to make sure it works. This can be done by adjusting the thermostat for a short time. The fans must turn freely and without any noticeable noise.

The protective measures realised by the switchgear assembly must be checked together with the electrical system at regular intervals in accordance with any legal requirements at the installation site.

The switchgear assembly must be checked for dirtying on the inside of the cabinet and cleaned if there is any harmful dirt (e.g. conductive dust or condensate). The causes of the dirtying must be remedied.

The switchgear assembly must be disconnected from the power supply for cleaning. Cleaning may only be performed by specialists (BA5, electrician) or instructed personnel (BA4, electrically instructed person).

Cleaning and repair work or modifications may only be carried out during operation in switchgear assemblies that are intended for this and by suitably trained specialists (e.g. trained for work under voltage).

If no other definitions have been made or no specifications exist, a basic inspection and cleaning interval of at least one year is recommended, depending on the dirtying in the surroundings. Visible changes or dirtying on the outside of the cabinet normally do not constitute a risk, unless they impair the ventilation of the cabinet.

Plants around the cabinet are normally not critical, or rather may even have a positive effect on its function by providing shade. However, unrestricted access must be ensured at all times for operating and maintenance purposes.

The inside of the switchgear assembly must be kept free of plants.

When individual elements of the product are replaced by replacement parts, all stickers with safety-relevant content must be reapplied. Replacement stickers can be obtained for free from the manufacturer when the replacement part is ordered. Please order them as well!

With GRP polyester cabinets in outdoor areas, the reinforcing glass fibres will start to stick out over the course of time. This visible change does not constitute an impairment of the product safety during the usual lifetime of the product.

There is no health hazard from the protruding glass fibres. Weathered surfaces can be restored with the appropriate repair set (for example see the catalogue, art. no. 3006 for RAL 7035 and 3006.7032 for RAL 7032).

**All markings, information and warning labels on the product must be observed.**

## Modifications to the product, equipping, converting and retrofitting components

**Modifications, equipping and enhancements may only be carried out by electrical specialists (BA5, electrician) and by companies licensed for this.**

The manufacturer of the original product assumes no liability at all for subsequent modifications to the product, both for mechanical changes to the cabinet as well as for the subsequent installation of components. Modifications to the cabinet, for example additional openings for a cable entry, which are carried out onsite, must be provided in such a way that in operation, they correspond to the specified protection rating and protection class on the rating plate.

**Equipping or retrofitting components is only possible in the designated distribution panels or on designated mounting plate areas. In pre-equipped products, these areas are marked in the drawing.**

The equipment to be installed must be suitable for the ambient conditions and use in the product. The requirements for the temperature limits in operation (outdoor installation) and the permissible degree of dirtying must be observed in particular.

Before starting up (restarting), all covers and panels must be secured back in their original position. The doors must be locked properly. Any additionally created openings must comply with the specified protection rating.

**The minimum protection rating in distributors that can be operated by laypersons is IP2XC, and this must also be the case after modifications or enhancements to the product.**



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After being opened, connections made at the factory, especially electrical connections, must be tightened again with a suitable tool and the required or specified torque. Please observe the markings and information on the product. We recommend wearing a dust mask when making mechanical changes (cutting, drilling, etc.) to the GRP cabinet. **All modifications made to the product must be documented without exception.**

## Burden of proof

Each finished switchgear assembly according to EN 61439 is checked for its safety and hence conformity to the EU Low-Voltage Directive via a design certificate (Chapter 10) and item certificate.

For all modifications to the product that are not contained in the design certificate (original) of the manufacturer, the executing party must add the respective parts of the design certificate for the change. In particular, refer to verification of heating.

Generally, the respective tests of the item certificate must be carried out by the executing party independently of whether or not they are contained in the design certificate.

The certificates remain with the manufacturer or alternatively with the party that executed the change and are used for submission to the authorities.

## Conduct after malfunctions (faults)

Before switching it back on, the switchgear assembly must be checked for damage and its components checked for their operability (at least an insulation test). The test must be performed by a qualified specialist who has training in electronics (BA5, electrician).

After a high electrical load that is below the limit of resistance to short-circuiting (e.g. due to an external short circuit), the switchgear assembly or the affected part of it usually remains operational.

After the occurrence of an internal short circuit accompanied by fault arcs or loads above the resistance to short-circuiting, the switchgear assembly or the affected part of it is usually no longer operational and must be replaced.

After a fire or a fault arc in a part of the switchgear assembly, the entire switchgear assembly must be checked for its operability. It may be necessary to clean or replace the entire product.

## Conduct in the event of a fire

**In the event of a fire in the energy distributor, contact the fire department in all cases.**

Follow the telephone instructions of the control centre. Workers who are necessary, for example to switch off the power supply, will be contacted by the fire department if necessary.

Try to extinguish the fire if possible, but exclusively with suitable extinguishing agents such as carbon dioxide (CO<sub>2</sub>) or powder, for example, while maintaining a sufficiently safe distance of at least one metre.



Do not use other extinguishing agents, for example water-based agents. Danger to life! Observe the wind direction if you are outdoors. Do not breathe in any smoke or vapours.

## Disassembly and Disposal

Observe the five safety rules: when dismantling the product.

The product meets the requirements of the RoHS Directive (Restriction of Hazardous Substances Directive).

However, electrical energy distributors fall under the EU Directive on Waste Electrical and Electronic Equipment (WEEE) and may only be disposed of in authorised collection centres or by disposal companies.

The return of used equipment unconditionally calls for prior consultation with the manufacturer. It is possible that returned products that are not agreed on will not be accepted.



# General Safety and Installation Instructions

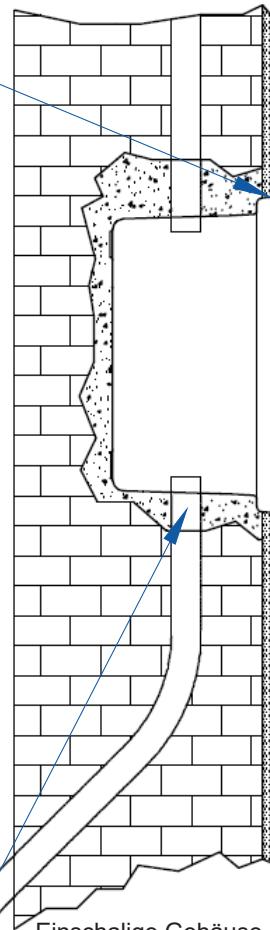
## FLUSH-MOUNTED CABINETS

The applicable construction regulations must be observed for installation in outside walls. If the cabinet is installed in a thermal insulation system, then it must have a correct seal and sealing to the insulation that is secure against driving rain.

Cabinets must generally be positioned so that the front edge is flush to the facade. This is to prevent water getting into the facade at the edges.

When putting it into the wall, the cabinet must not be deformed. When installing in concrete walls, the recess for the cabinet must first of all be lined (Exception: cabinet type EA0). Cabinets with a depth of less than 20 cm (e.g. single-shell polyester cabinets) must be put completely into the masonry for stability reasons.

Installation tubes and hoses must be inserted into the cabinet in such a way that no water can penetrate into the cabinet. The hoses might have to be sealed to prevent the formation of condensation or heat bridges.



Einschalige Gehäuse in Wänden ohne WDVS



Not all cabinets are suitable for installation in outside walls that are completely exposed to the weather.

The following must be observed for outside facades that are exposed to the weather:

- Cabinets made of double-wall profiles with a plaster frame must be suitably sealed to the facade.
- Products with openings on top, regardless of whether they are made by the customer or at the factory, may only be installed in dry walls (e.g. not in uncovered, freestanding walls).
- Rain protection strips must be used for cabinets with frames. This is included with the delivery or available as an accessory.



Flush-mounted cabinets made of plastic are not suitable for installation in hollow walls. The cabinets are not made for carrying loads. Recesses in which the cabinets are installed must be given additional support (e.g. with a lintel).



Hoses or inlets that lead from inside rooms to an externally-installed, wall-mounted cabinet must be sealed with particular care. Otherwise it may result in the formation of heavy condensation.



By installing flush-mounted cabinets, the basic requirements of buildings with regard to insulation must not be disturbed (thermal bridges).  
The cabinet may need to be insulated.

For additional protection against dirtying and penetration by foreign objects, openings and gaps can be sealed with suitable foam.

The foam must be water repellent and electrically insulating.

A suitable product can be purchased from ELSTA (art. no 42560).

Openings drilled at the factory specify the direction of the incoming and outgoing lines. These and any other openings made by the customer must be sealed in such a way that the specified protection rating of the cabinet is maintained.

# General Safety and Installation Instructions

## Wall mounting in outside walls with a thermal insulation system (ETICS)

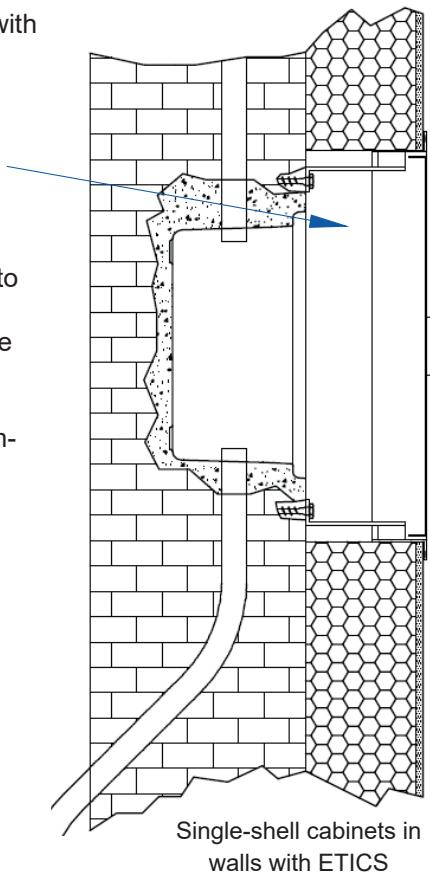


Additional measures must be taken for wall mounting in outside walls with a thermal insulation system (ETICS).

Depending on the cabinet or insulation thickness, accessories are required (e.g. ETICS frames) for installation in facades. See our catalogue regarding this or ask our customer service.

The connection to the ETICS is to be carried in the same way as a connection to doors or windows (see OENORM B 6400-1, for example). Suitable system accessories and installation instructions are available from the manufacturer of the insulation system.

We recommend using a self-adhesive connection profile with an integrated compression tape and a textile glass net attachment piece.



# General Safety and Installation Instructions

## WALL-MOUNTING (SURFACE-MOUNTED INSTALLATION) INDOORS AND OUTDOORS

Cabinets for wall-mounting are equipped with suitable anchoring fins. They must be used without exception. Pole mounting is only possible with a suitable pole mounting bracket (accessory).

Cable entries with suitable sealing threaded cable glands must be realised for wall mounting, and external strain relief must be provided if the product doesn't already have measures for strain relief.

When determining the installation height, minimum and maximum heights must be strictly complied with, with regard to operation of the built-in devices based on the laws, regulations or technical rules that apply to this.

Through-holes made by the customer through the roof outdoors are not recommended, even with the use of threaded cable glands with the respective IP protection rating.



Screwing through the protection class II plastic cabinet is not permissible without suitable accessories. Breaking through the cabinet must be avoided.



The cabinet must be secured with suitable fixing material. The weight of the distributor must be observed. We recommend screws that are at least 6x50 mm or 8x60 mm with the right dowel depending on the wall construction.



Threaded cable glands must be used to maintain the specified protection rating. The strain relief of the conductors that lead out must be implemented externally if no provisions have been made for this in the cabinet.

