GRITEC

COMPACT STATIONS OF STAINLESS STEEL

WE KEEP THE WORLD RUNNING

CONTENTS

COMPANY

INDIVIDUALLY EQUIPPED.
FULL OF INNOVATIONS. IDEALLY PACKED.

YOUR POWER SUPPLY IS ENSURED WITH OUR PRODUCTS AND SOLUTIONS

EXPERIENCE
GRITEC is an expert in the development, production and distribution of technical buildings consisting of modules made of reinforced concrete that are used in many sectors of public and industrial infrastructure. The product range is from small, non-walk-in compact stations up to large walk-in buildings, consisting of several modules, available in different structural and technical expansion levels.

CUSTOMIZED PRODUCTS
By establishing the brand e⁴you, GRITEC has prepared itself for the future of mobility, setting the course for the implementation of an intelligent overall concept for a charging infrastructure for electrical buses and other municipal vehicles.

INDIVIDUAL SOLUTIONS
GRITEC Compact Stainless Steel Stations were developed especially for use on an international stage and meet not only market specific, but also customized requirements.

COMPETENCE AND NETWORKING
The core competencies in energy and utilities solutions from GRITEC are combined with new, innovative technologies and product solutions, guaranteeing additional milestones for future growth.

COMPANY STRUCTURE

GRITEC GROUP

- GRITEC — Stations, Services, Elements
- E4YOU — Delivery of pre-assembled solutions for charging infrastructure of electric buses

OVER 60 YEARS OF EXPERIENCE IN CONCRETE

FROM A SIMPLE STRUCTURE TO A CUSTOM BUILDING

GRITEC products meet the high requirements in terms of the safety and quality of technical buildings for utilities. They are based on more than 60 years of practical experience and provide many advantages to our customers.

Monolithic design, i.e. made without joints and therefore extremely robust and highly durable.

BENEFITS AT A GLANCE

CUSTOMIZED PRODUCTS

In our factories, we produce and assemble technical buildings with more than 50 standard floor plan dimensions as well as numerous solutions tailored to our customers' needs. The units are fitted out in the factory with the technology according to customer's specifications.

ECONOMIC VIABILITY

- High quality and meticulous craftsmanship ensure long service life.
- Configuration options as a result of the modular design of the products
- Time saving thanks to competent consultation and sound industry competence

COMPLIANCE WITH REGULATIONS AND STANDARDS

All the technical buildings and components from GRITEC meet the requirements of relevant technical rules and regulations.

RANGE OF PRODUCTS

WE DELIVER TECHNICAL BUILDINGS TAILORED EXACTLY TO YOUR SPECIFICATIONS IN ANY REQUESTED CONFIGURATION LEVEL.

PRODUCT PROGRAM

Here is an overview of the applications and products with their most important characteristics.

ELECTRICITY SUPPLY

- Walk-in-type substations
- Compact stations (non-walk-in–type)
- Stations for slopes
- Substations, partially or completely below ground level
- Substation buildings
- Buildings for emergency power generators
- Complies with standard IEC 62271-202

GAS SUPPLY

- Pressure regulation stations
- Large measuring stations
- Gas compressing plants
- Gas tank depot combination buildings
- Sound insulation value for concrete modules min. 47 dB
- Fire protection class F90 DIN EN13501

WATER SUPPLY

- Pump stations
- Water meter shafts
- Wellhead buildings
- Operational buildings
- Water treatment stations
- Pressure booster stations
- Pump stations below ground level

SPECIAL & LARGE BUILDINGS

- Multi-storey building
- Modular units – can be arranged in rows on any side
- Building block principle
- Turnkey concepts
- Variable building designs
- Planning and consultation with specialists
- Pre-construction drawings
- Static calculations

TELECOMMUNICATION

- Security against break-ins
- Fire protection class F90 DIN EN13501
- Ventilation and air conditioning tested
- Electrical fittings on request
- Pre-construction drawings
- Sound insulation value for concrete modules min. 47 dB
- Facade designs on request

RAILWAY TECHNOLOGY BUILDINGS

- Wireless and signal technology
- Security against break-ins
- Fire protection class F90 DIN EN13501
- Ventilation and air conditioning on request
- Electrical fittings on request
- Pre-construction drawings
- Facade designs on request

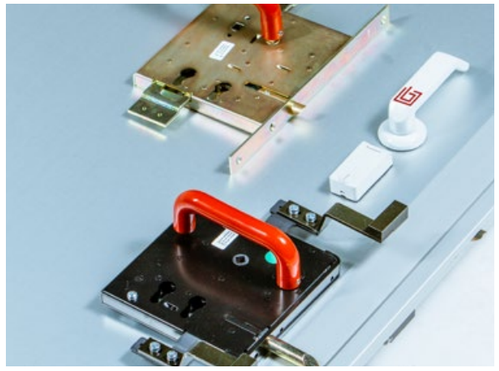
METAL MEETS CONCRETE

DOORS AND VENTILATION ELEMENTS MADE BY GRITEC

Sure, your building needs an entrance. Or several. Whether single- or double-winged, according to standard size or custom-made – the door to success is an eye for detail. That's why we manufacture all metal components such as doors and ventilation elements ourselves.

- Ventilation elements and doors made of aluminum, high-strength and weather-resistant material; surface silver anodized E6 EV1
- Ventilation elements and doors with sound insulation according to technical instructions for protection against noise on request
- Doors with internal hinges; possible resistance classes RC2 or RC3 according to DIN EN 1627:2011
- Mechanical or electronic multi-point lock with emergency exit function according to DIN EN 179
- Innovative access systems (card reading unit, finger sensor, electronic combination lock)
- Of course, we supply and install all conventional standard doors and ventilation systems (steel, stainless steel, plastic).

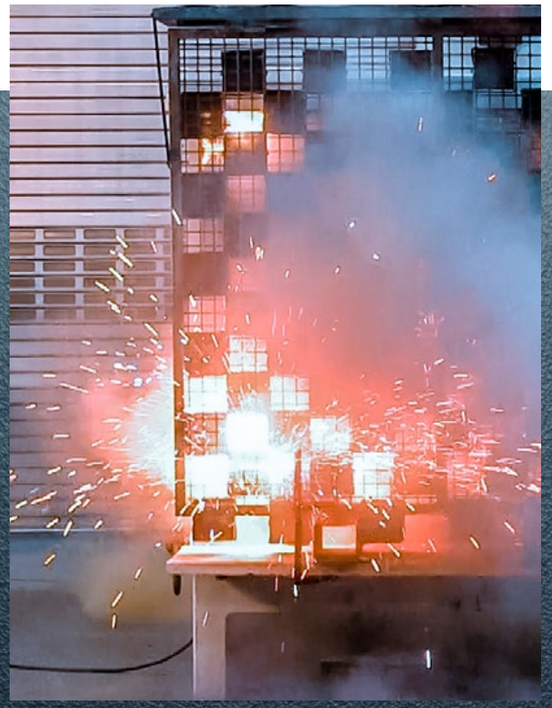
OPTIONALLY WITH POWDER COATING OR LACQUER FINISH IN A RAL COLOR OF YOUR CHOICE



All doors and ventilation openings are manufactured in-house and made to measure

PERSONAL PROTECTION CONCEPT

MAXIMUM SAFETY FOR THE PUBLIC AND FOR THE OPERATING STAFF



Internal arc test arrangement IAC-A 20 kA/1s, according to IEC 62271-202.

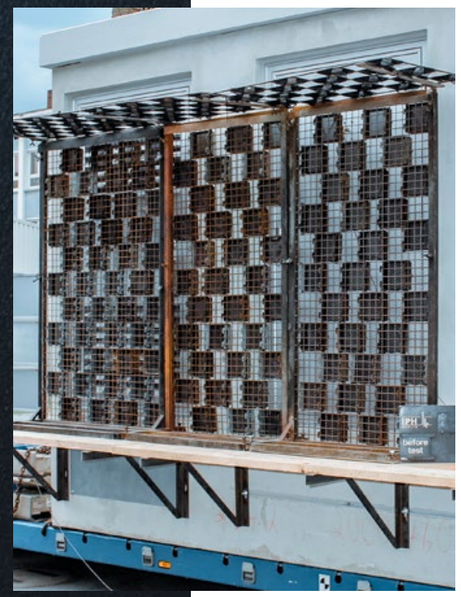
Especially if your substation is located in public areas, it is mandatory to follow a reliable personal protection concept. This concept must ensure the safety of public and the operating staff alike.

GRITEC's specially developed personal protection concept provides protection against all eventualities and compliance with all safety-related standards. This means that your substation can be operated easily and safely in any location.

The safety-related requirements that our products meet include i. a.:

- Internal arc fault resistance
- Ingress of water and solid objects according to IEC 60529
- Electromagnetic compatibility (EMC)
- For more details on compliance with standards, please refer to page 14

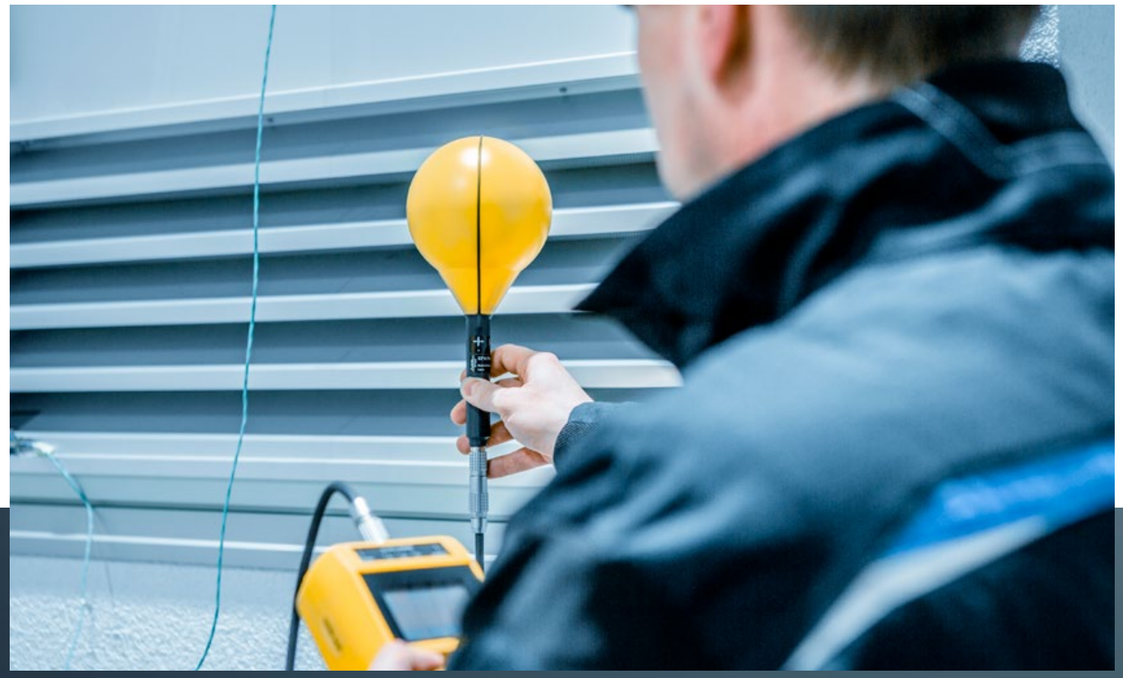
Compact Substation in public area for supplying electricity to a charging point



Internal arc test arrangement IAC-B 20 kA/1s, according to IEC 62271-202.

PRODUCTS TESTED AND MANUFACTURED IN COMPLIANCE WITH RELEVANT STANDARDS IS OUR BENCHMARK

COMPLIANCE WITH STANDARDS



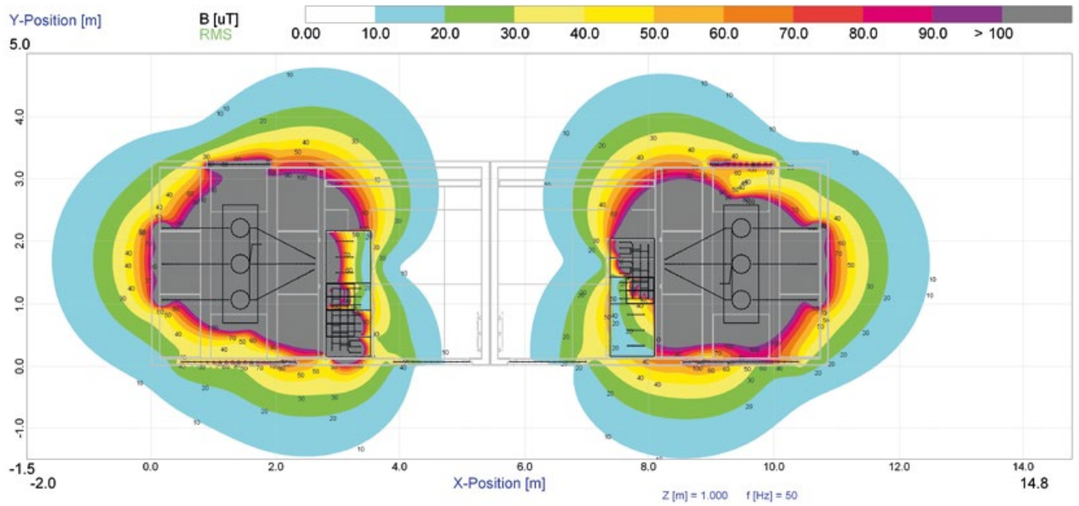
Conducting an EMC measurement

In addition to avoiding personal injury, a basic factor in preserving the value of your installed technology is the generally standard-compliant design and testing of your transformer substation.

GRITEC manufactures according to the relevant German, European and international standards, directives and legal regulations.
Our certified quality management system guarantees full compliance with all mentioned regulations.

COMPLIANCE ACCORDING TO IEC62271-202

- Minimum degree of protection according to IEC 60529:
  IP 23 D (concrete substations)
  IP 34 D (stainless steel substations)
  optionally: IP 44 D
- Internal Arc Classification according to IEC 62271-202: IAC-AB 20 kA/1s
- Temperature rise tests and temperature classes according to IEC 62271-202
- Electromagnetic capability (EMC) according to DIN CLC/TR 62271-208
- Further tests according to national requirements are available upon request



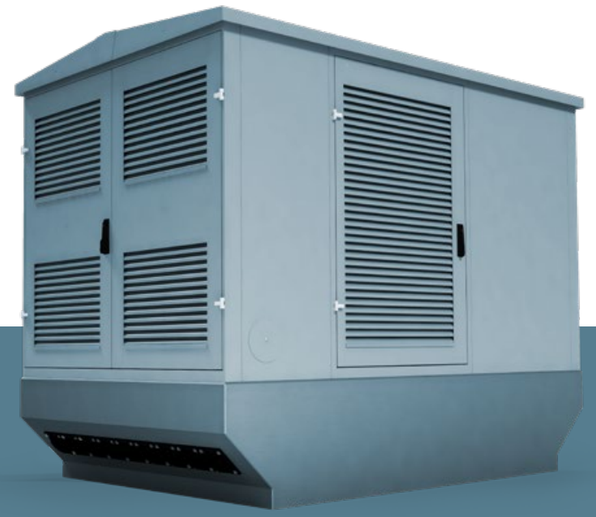
Magnetic field lines of an EMC calculation

PRODUCTS TESTED AND MANUFACTURED IN COMPLIANCE WITH RELEVANT STANDARDS IS OUR BENCHMARK

Test arrangement for temperature rise Test

TRANSFORMER STATIONS

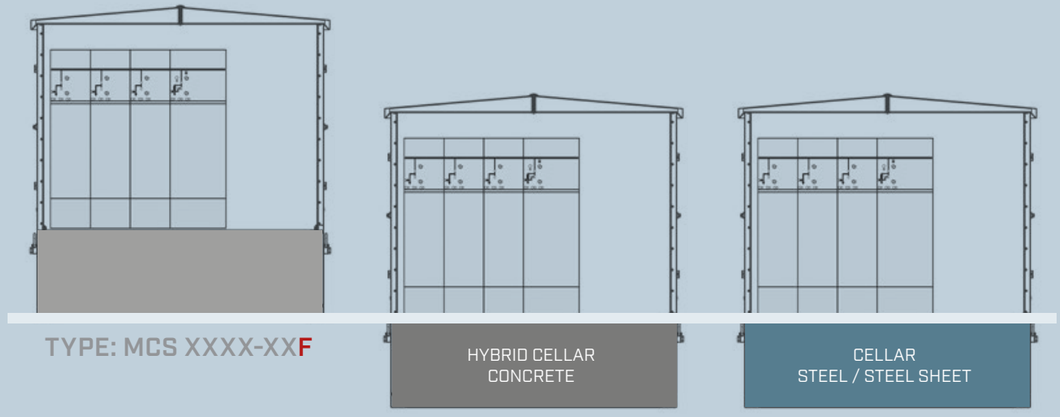
IN STAINLESS STEEL AND HYBRID DESIGN



DUE TO THE DESIGN OF THE GRITEC SUBSTATIONS WE ARE ABLE TO RESPOND TO YOUR NEEDS – EXACTLY TO YOUR SPECIFICATIONS AND ACCOUNTING FOR THE CONDITIONS ON SITE.

- Efficient room climatic characteristics
- Climate proof under worldwide conditions
- Enclosure maintenance-friendly
- Low transport weight and low transport volume reduce the freight costs
- Degree of protection IP 34D acc. to IEC 60529, optionally IP44D

BASIC TYPES AND THEIR APPLICATIONS



TYPE: MCS XXXX-XX**F**

TYPE: MCS XXXX-XX**H**

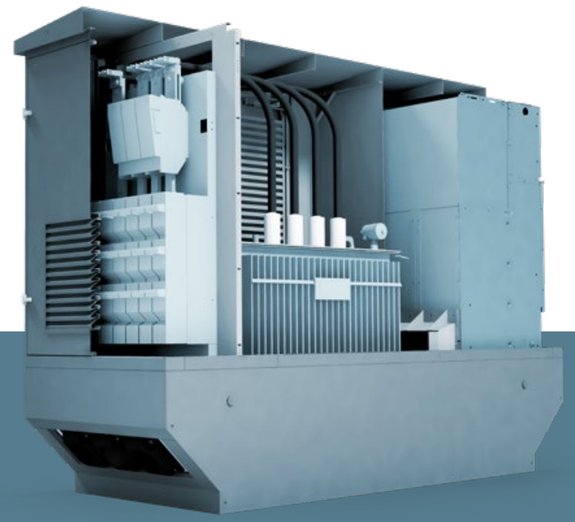
TYPE: MCS XXXX-XX**S**

Enclosure made of stainless steel Installation above-ground	Enclosure made of stainless steel Precast concrete cellar (Hybrid Station)	Enclosure and cellar made of stainless steel
Installation above ground	Cable cellar semi-underground	Cable cellar semi-underground
Transformer substation for use in industrial areas and for temporary use	Transformer substation for use in local networks and industrial areas	Transformer substation for use in local networks and industrial areas
For use on rocky ground and at high groundwater level	For use on normal and solid ground / non-contaminated soil	For use on normal and solid ground / non-contaminated soil
Foundation: Concrete foundation or slab, sand or gravel bed, depending on local conditions	Foundation: Concrete foundation or slab, sand or gravel bed, depending on local conditions	Foundation: Concrete foundation or slab, sand or gravel bed, depending on local conditions

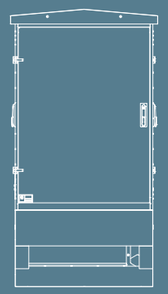
Note: If the stations are used in the area of standing or pressing water, appropriate drainage measures must be provided on site.

TRANSFORMER COMPACT STATIONS

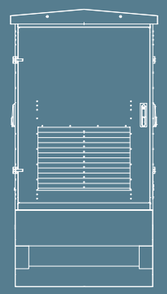
MCS 1229-24
630 KVA



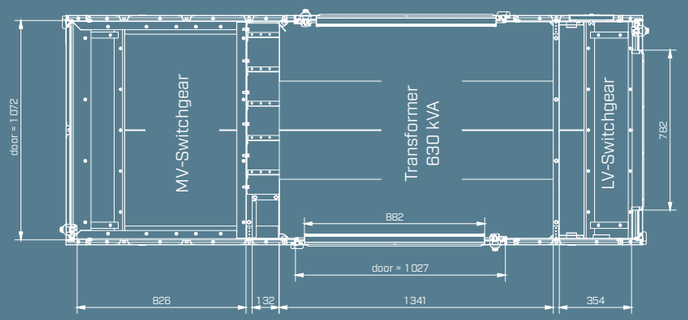
VIEW MV SIDE



VIEW LV SIDE

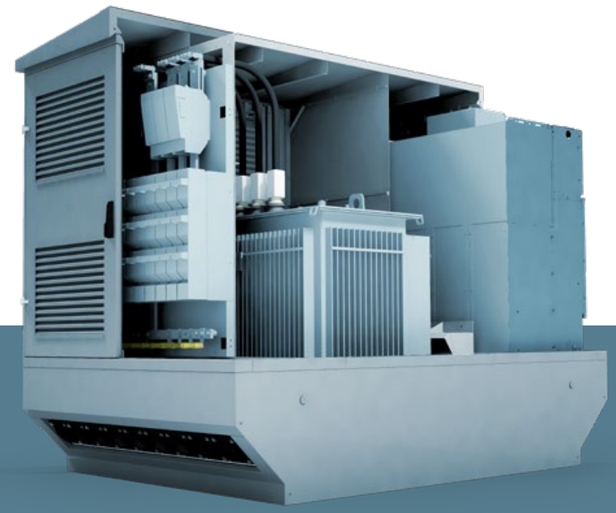


TOP VIEW

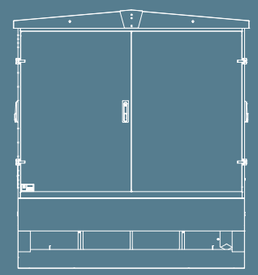


OVERALL DIMENSIONS	MAXIMUM MV-SWITCHGEAR DIMENSIONS	RATED POWER TRANSFORMER	MAXIMUM LV-SWITCHGEAR DIMENSIONS	TEMPERATURE CLASS	IAC CLASSIFICATION WITH F-GAS FREE MV-SWITCHGEAR *mv-swithgear types on request
L = 2900 mm D = 1200 mm H = 2263 mm	L = 1050 mm D = 775 mm H = 1400 mm	630 kVA	L = 993 mm D = 354 mm H = 1521 mm	20	IAC-AB 20kA-1s

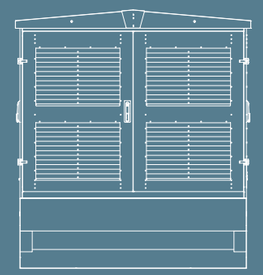
MCS 2129-24
1000 KVA



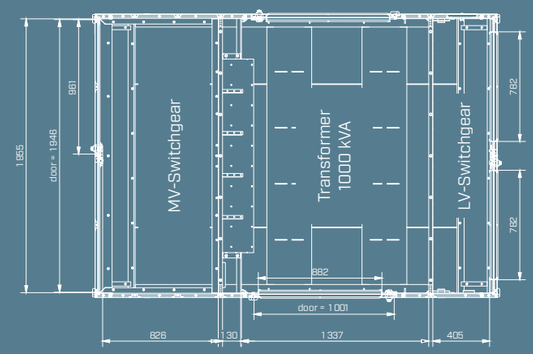
VIEW MV SIDE



VIEW LV SIDE



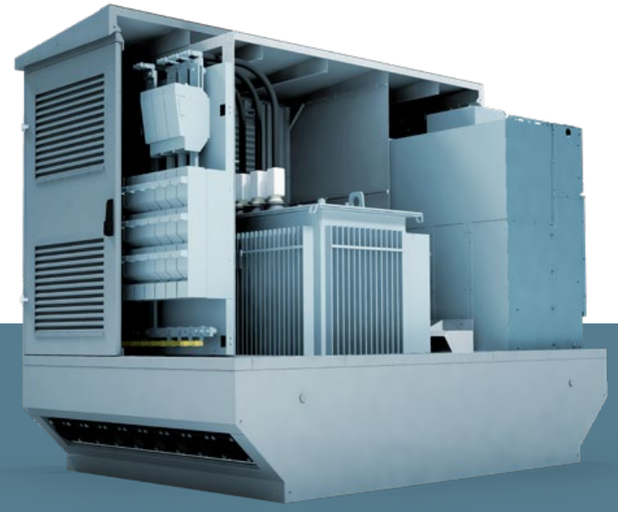
TOP VIEW



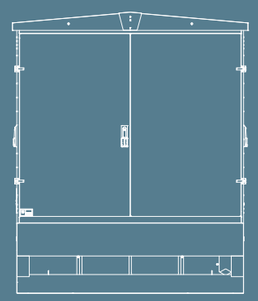
OVERALL DIMENSIONS	MAXIMUM MV-SWITCHGEAR DIMENSIONS	RATED POWER TRANSFORMER	MAXIMUM LV-SWITCHGEAR DIMENSIONS	TEMPERATURE CLASS	IAC CLASSIFICATION WITH F-GAS FREE MV-SWITCHGEAR *mv-swithgear types on request
L = 2953 mm D = 2101 mm H = 2306 mm	L = 1400 mm D = 775 mm H = 1519 mm	1000 kVA	L = 1894 mm D = 403 mm H = 1523 mm	20	IAC-AB 20kA-1s

TRANSFORMER COMPACT STATIONS

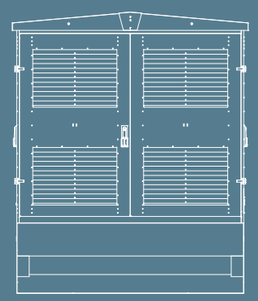
MCS 2129-26
1250 KVA



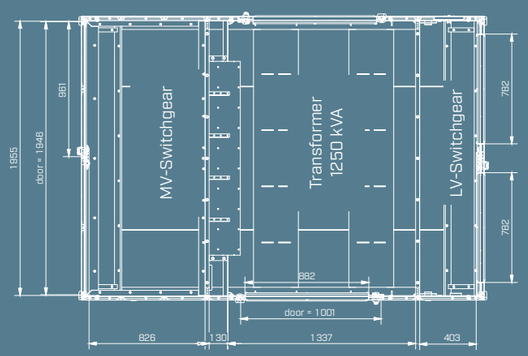
VIEW MV SIDE



VIEW LV SIDE

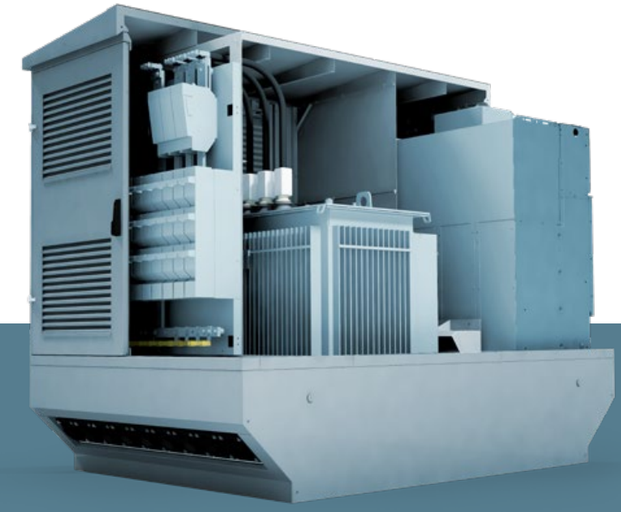


TOP VIEW

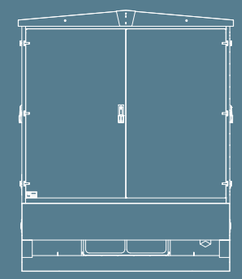


OVERALL DIMENSIONS	MAXIMUM MV-SWITCHGEAR DIMENSIONS	RATED POWER TRANSFORMER	MAXIMUM LV-SWITCHGEAR DIMENSIONS	TEMPERATURE CLASS	IAC CLASSIFICATION WITH F-GAS FREE MV-SWITCHGEAR *mv-swithgear types on request
L = 2953 mm D = 2101 mm H = 2506 mm	L = 1890 mm D = 775 mm H = 1719 mm	1250 kVA	L = 1894 mm D = 403 mm H = 1723 mm	20	IAC-AB 20kA-1s

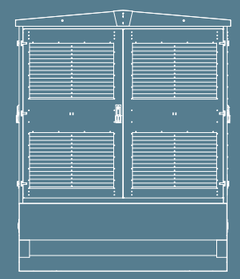
MCS 2331-28
1600 KVA



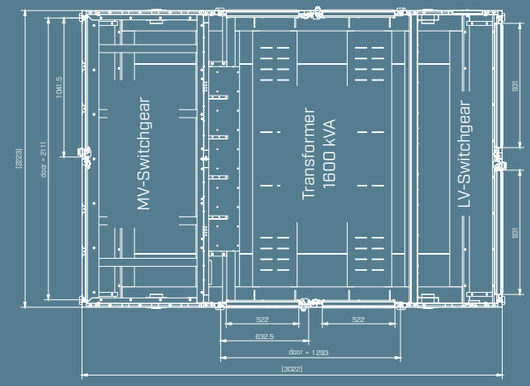
VIEW MV SIDE



VIEW LV SIDE



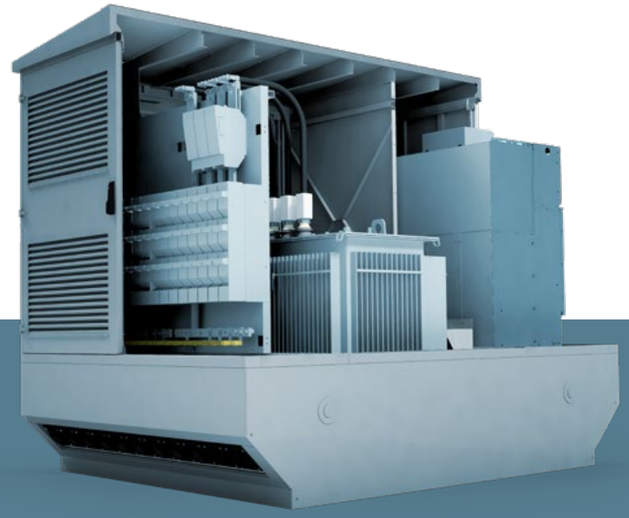
TOP VIEW



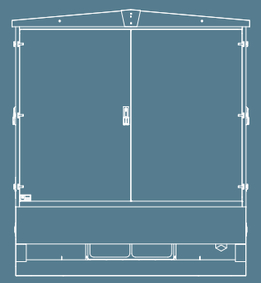
OVERALL DIMENSIONS	MAXIMUM MV-SWITCHGEAR DIMENSIONS	RATED POWER TRANSFORMER	MAXIMUM LV-SWITCHGEAR DIMENSIONS	TEMPERATURE CLASS	IAC CLASSIFICATION WITH F-GAS FREE MV-SWITCHGEAR *mv-swithgear types on request
L = 3103mm D = 2301mm H = 2790mm	L = 1890mm D = 775mm H = 1896mm	1600 kVA	L = 2089 mm D = 513 mm H = 1900 mm	20	IAC-AB 20kA-1s

TRANSFORMER COMPACT STATIONS

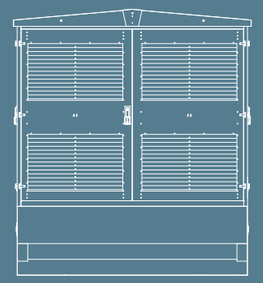
MCS 2532-28
2500 KVA



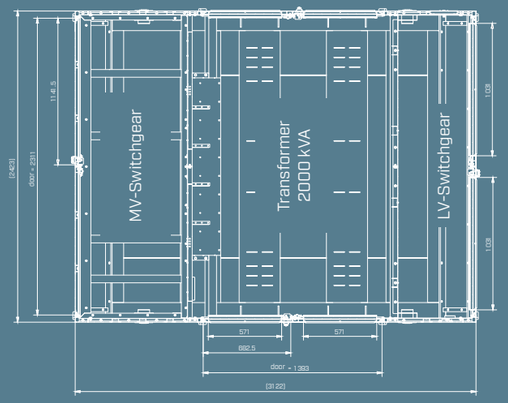
VIEW MV SIDE



VIEW LV SIDE



TOP VIEW



OVERALL DIMENSIONS	MAXIMUM MV-SWITCHGEAR DIMENSIONS	RATED POWER TRANSFORMER	MAXIMUM LV-SWITCHGEAR DIMENSIONS	TEMPERATURE CLASS	IAC CLASSIFICATION WITH F-GAS FREE MV-SWITCHGEAR *mv-swithgear types on request
L = 3203 mm D = 2501 mm H = 2799 mm	L = 1890 mm D = 775 mm H = 1896 mm	2000 kVA	L = 2298 mm D = 544 mm H = 1900 mm	20	IAC-AB 20kA-1s

WE PROVIDE COMPREHENSIVE SUPPORT, FROM PLANNING AND CONSTRUCTION TO ON-SITE INSTALLATION.

CUSTOMIZED VERSIONS
UPON REQUEST

MCS 2129-28K

Compact Station
with skid design
for opencast mining

MCS 1833-31H

Hybrid station
consisting of MV- and
Transformer/LV-part
Anti-Graffity-Coating

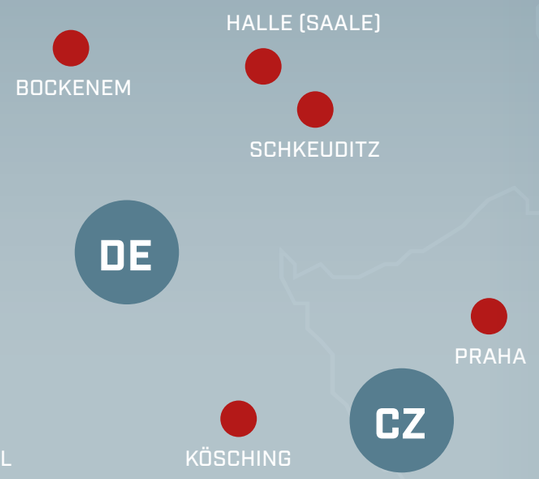
MCS 1019-20F

Compact Switchgear
enclosure with concrete
basement for overground
installation

MCS 2019-24F

Compact Switchgear
enclosure with steel
basement for semi-
underground installation

GRITEC GROUP



60 YEARS OF EXPERIENCE

The company GRITEC was founded in 1963 in Waghaeusel, Germany. Thanks to continuous growth of the business, five additional plants were built in Germany plus one in Praha (Czech Republic).

These facilities form the GRITEC Group, producing more than 10,000 individual concrete modules per year with a staff of more than 1.300 employees and using state-of-the-art production equipment.

WAGHAEUSEL

KOESCHING

HALLE (SAALE)

SCHKEUDITZ

BOCKENEM

PRAHA

WE KEEP THE
WORLD RUNNING

GRITEC

www.gritec.com

GRITEC

COMPACT STATIONS OF STAINLESS STEEL