FGM electrical service

Solutions & Supplies

FOR ELECTRICAL INSTALLATIONS AND ELECTRICAL PANELS BT / MT

THE ENERGY
THAT LIGHTING YOUR FUTURE

Solutions & Supplies

FOR ELECTRICAL INSTALLATIONS AND ELECTRICAL PANELS BT / MT

FGM
electrical service

More than 10 years of Business History!

2000 Creation of the strictly family-run company

2010 Opening of an independent technical department with qualified technicians in electrical and mechanical design

2012 Acquisition of the prestigious quality mark CSQ UNI EN ISO 9001-2008

2013 Acquisition and transfer of administrative and production headquarters at a new site of 1100 sqm

2015 Acquisition of the prestigious quality mark CSQ OHSAS-18001 and expansion of the production site with a new structure of 600sqm

MISSION

FGM ELECTRICAL SERVICE DESIGNS, SELLS AND INSTALLS THE FOLLOWING PRODUCT LINES:

Indoor/Outdoor Metallic Cabinets for telephony systems and electro-mechanical equipment.

Finished electrical panels for control and distribution of energy of low and medium voltage (LV-MV) for industrial applications, naval, petrochemical, oil & gas, of the following types:

- *Electrical panels MCC (Motor Control Center)*
- *Electrical panels PC (Power Center)*
- *Electrical panels for automation* with internally designed software according to the customer needs

Cabinets and INTEGRATED protections with rear panels, air conditioning, power station, wiring, functional testing and final installation, typical of the civil and **military** sector.

FGM electrical service

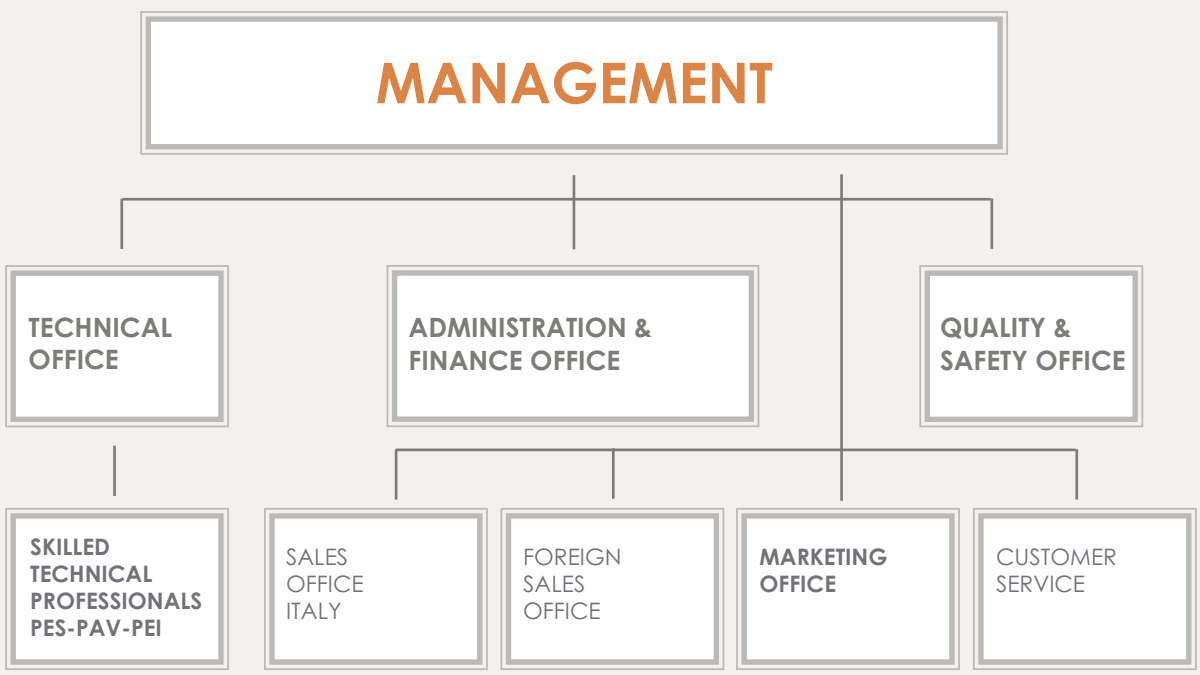
FGM, thanks to long experience in the field of switchboards and electrical plant engineering in general, has developed specific expertise in the design and manufacturing of complex technological equipment offering to our customers the support of a real **Technological Center of Excellence**.

FGM, thanks to its Know-how about **products-process**, collaborates with their clients for:

- definition of the technical specifications of the supply of products
- electromechanical planning / co-design with our customers
- prototyping
- product qualification
- production / final functional testing
- standard installation
- after-sales service / on site maintenance

tested according to internal procedures comply with the requirements of UNI EN ISO 9001-2008.

Organization Chart



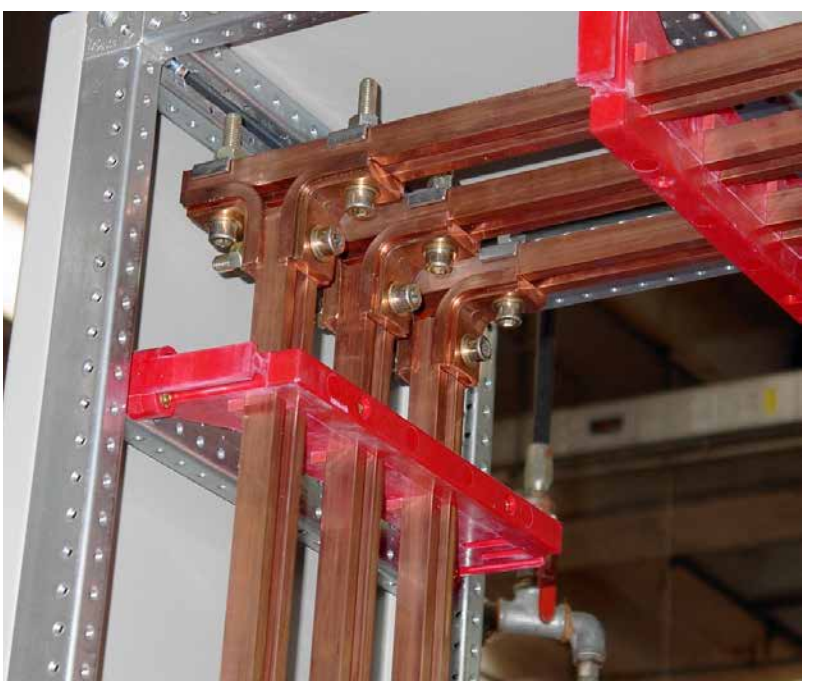
PRODUCTS RANGE

PRODUCTS RANGE

CABINETS FOR ELECTRICAL PANELS

Modularity of the front panel

Omnibus bars coupling - vertical drop without drilling



Modularity of the front panel

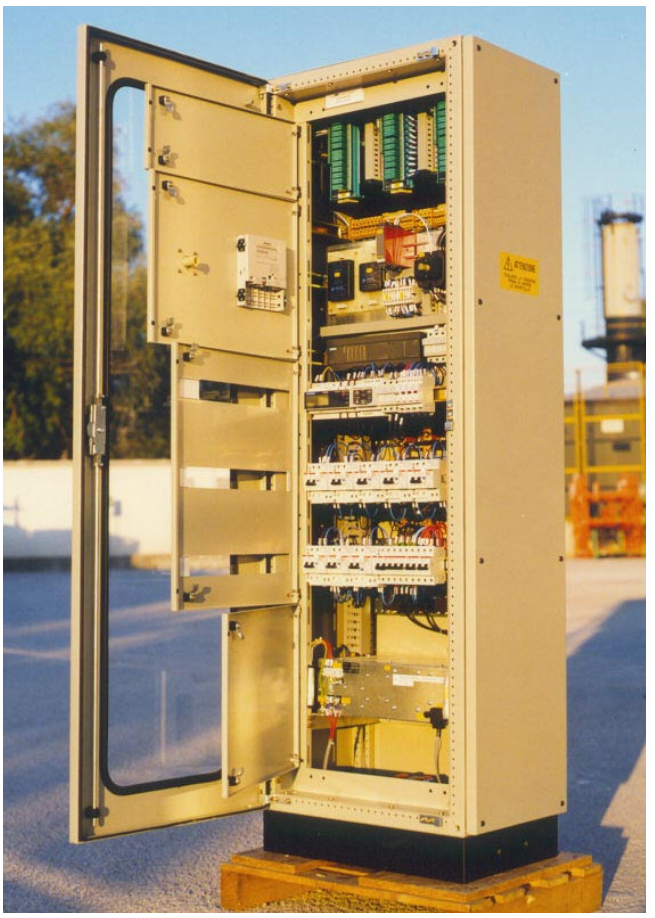
Copper bars edge folded

PRODUCTS RANGE

WIRED ELECTRIC PANELS

for Telephony

Electric panel for indoor general distribution systems



Power Station for Telephony

E.P. for incoming and distribution network for raw-land compact site with lightning protection and isolation transformer

E.P. for incoming and distribution network for rooftop sites indoor and outdoor

PRODUCTS RANGE

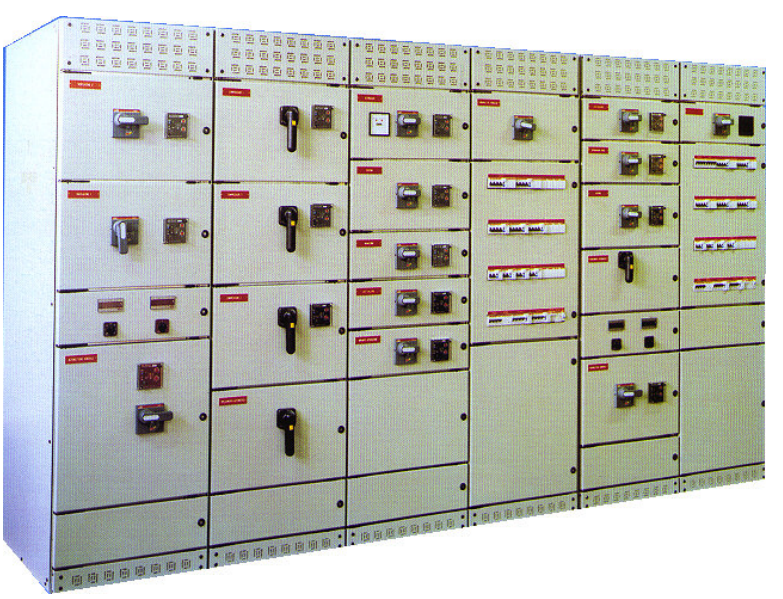
WIRED ELECTRICAL PANELS

for Industrial Use

Distribution Panel
Low Voltage - Power Center type

Panel Switching Network/Group
and E.P. Command for
Electrical Generator

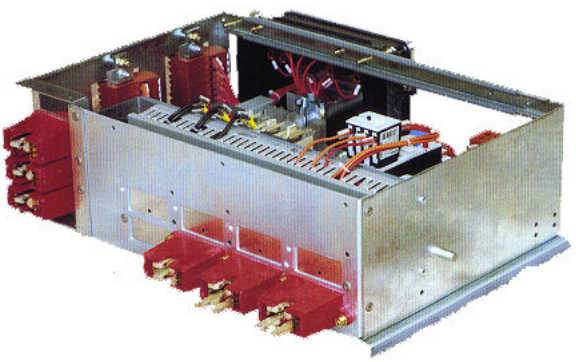
General Distribution Panel
for light and power

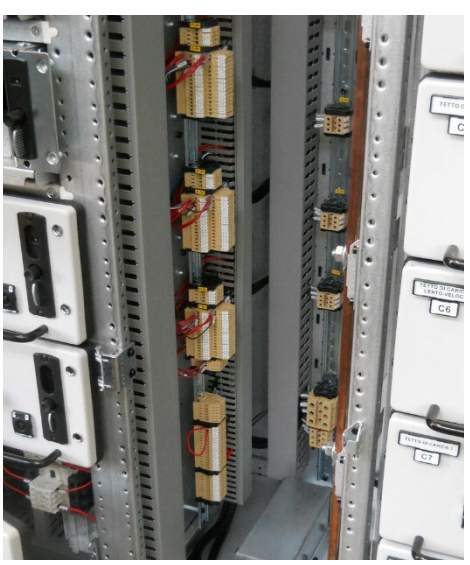


PRODUCTS RANGE

ELECTRICAL PANELS

P.C. & M.C.C



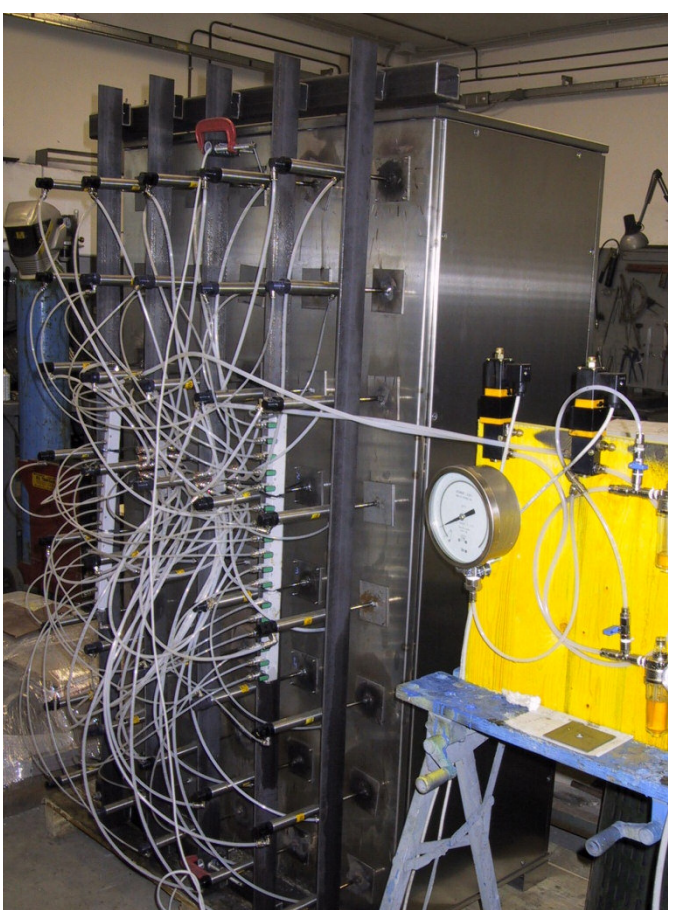


PRODUCTS RANGE

ELECTRICAL PANELS

for Railway Use

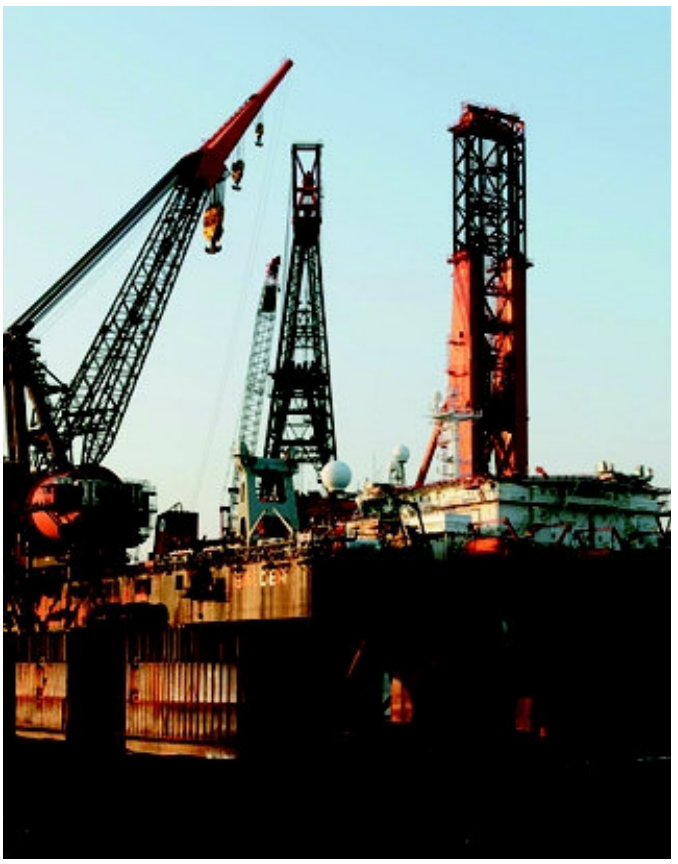
Test performed by an approved certifying authority

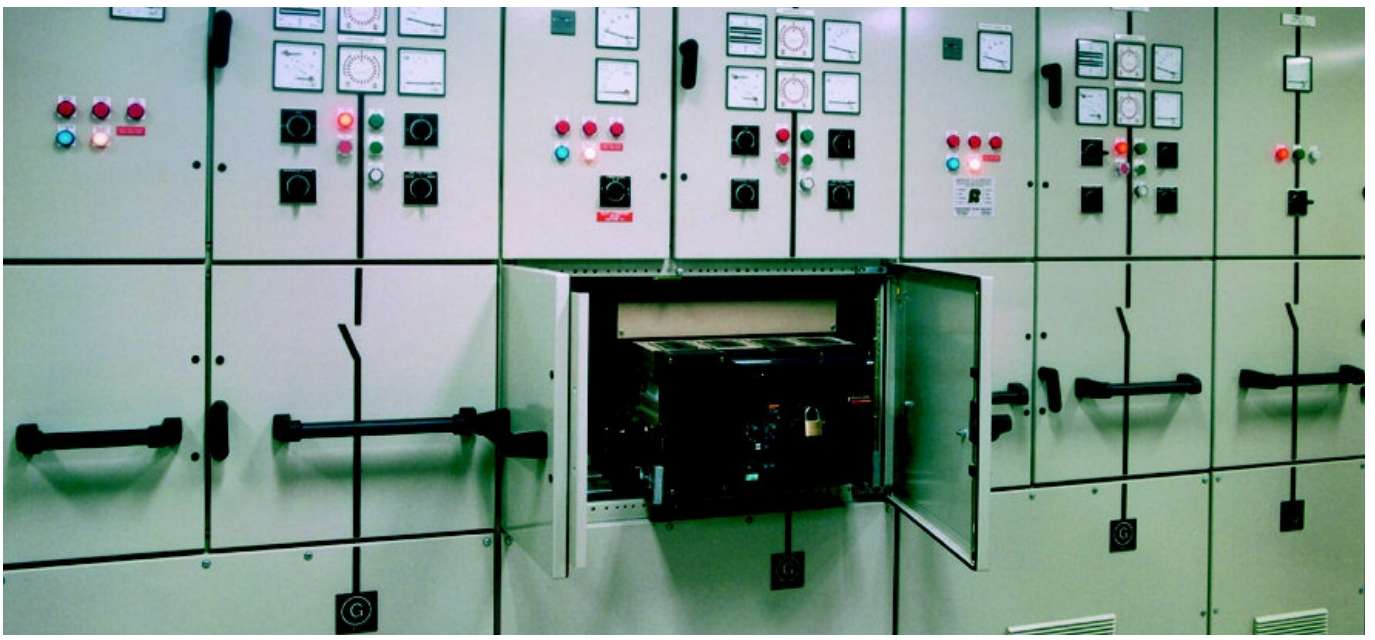


PRODUCTS RANGE

ELECTRICAL PANELS

for Naval Use





Our Products

- OMEGA SYSTEM
  Power Center & Motor Control Center with fixed or extractable drawer
- OMEGA UNITS
  configuration of fixed or extractable drawer
- Electrical Panels for Naval Use
- ALPHA ENCLOSURE SYSTEM
  Electrical Panels for secondary distribution

STANDING OUT

IS DOING ORDINARY THINGS
THAT NO ONE ELSE
ACHIEVES

TECHNICAL DATA ELECTRICAL PANELS AND CARPENTRIES

TECHNICAL DATA

Internal Separation

IEC 61439-2 / 60439-1 Shape from 1 to 4, A and B
BS EN 61439-2 / BS EN 60439-1 Type from 1 to 7
National Annex

Protection Grade

IEC 60529 IP 2X up to IP 44 (IP 54 Optional)

Materials

Doors and Plates	Painted Steel 1.5 mm or 2.0 mm
Structure	Painted Steel or Aluzinc 2.0 mm
Upright	Resistant painted steel 2.5 mm with magnetic coating
Mounting plates	Aluzinc 2.0 mm
Internal plates	Aluzinc1.0 mm - 2.0 mm
Stainless steel (optional)	ANSI 304 160/80
Rear plates	Aluzinc 1.5 mm Painted Steel 1.5 mm or 2.0 mm
Top plates	Aluzinc 1.5mm

Colors

Doors and plates	RAL 7035
Uprights	RAL 9005

TECHNICAL DATA ELECTRICAL PANELS AND CARPENTRIES

REFERENCE STANDARDS

Tests of Connections and Control Equipment

IEC-61439-2 & 1 / 60439-1,
BS EN 61439-2 & 1 / 60439-1,
EN 61439-2 & 1 / 60439-1, IEC 60529,
IEC 62208, IEC/TR 61641,
CSA-C22.2 No. 31 & 14,
DIN VDE 0660 part 500, DIN 43671/12.75,
Classification Naval Company

Dimensions (mm)
Flat plates (AGP)

Height: 1995, 2185, 2375
Width: 440, 630, 820, 1010, 1200
Depth: 600, 790

TECHNICAL DATA ELECTRICAL PANELS AND CARPENTRIES

ELECTRICAL DATA

Rated Voltages

Rated impulse withstand voltage (Uimp)	8 kV up to 12kV
Rated insulation voltage (Ui)	1000 V
Rated operating voltage (Ue)	690 V

RATED VOLTAGE

Horizontals and Verticals Main Bars

Rated Voltage (In)	up to 8500 A
Rated peak current (Ipk)	up to 363 kA
Rated short-time current (Icw)	up to 165 kA 1 sec

Distribution Bars, Fixed System

Rated Voltage (In)	up to 2000 A
Rated peak current (Ipk)	up to 220 kA
Rated short-time current (Icw)	up to 100 kA 1 sec

Distributions Bars, Removable and Extractable System

Rated Voltage (In)	up to 1800 A
Rated peak current (Ipk)	up to 154 kA
Rated short-time current (Icw)	up to 70 kA 1 sec
Rated conditioned short-time current (Icc)	up to 100 kA 1 sec

TECHNICAL DATA ELECTRICAL PANELS AND CARPENTRIES

SERVICE CONDITIONS

Installation	Indoor
Temperatures	0 °C up to +40 °C
Relative humidity	Max. 50% up to 40 °C
Altitude	≤ 2000 m

OMEGA SYSTEM

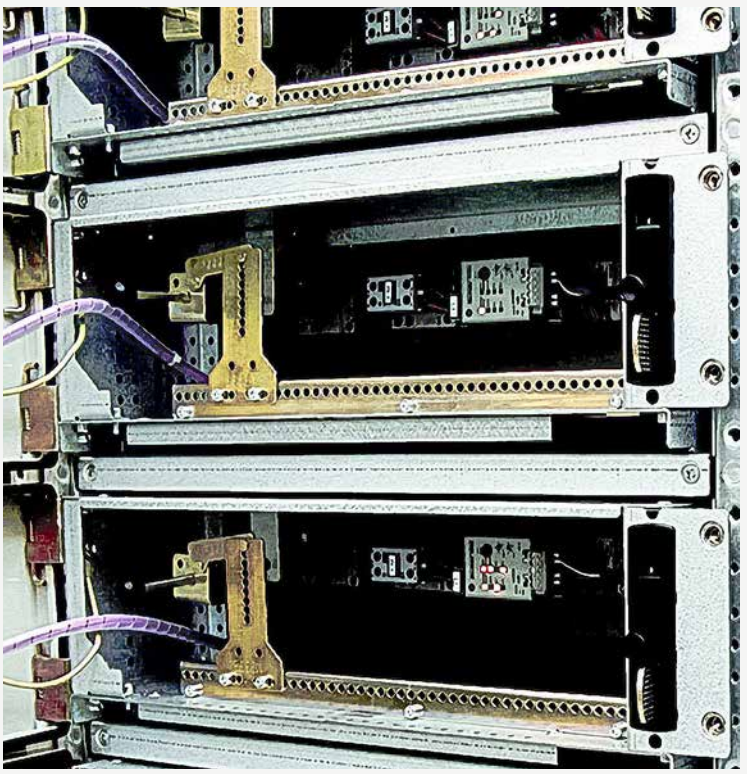
Power Center and Motor Control Center both fixed and extractable drawers

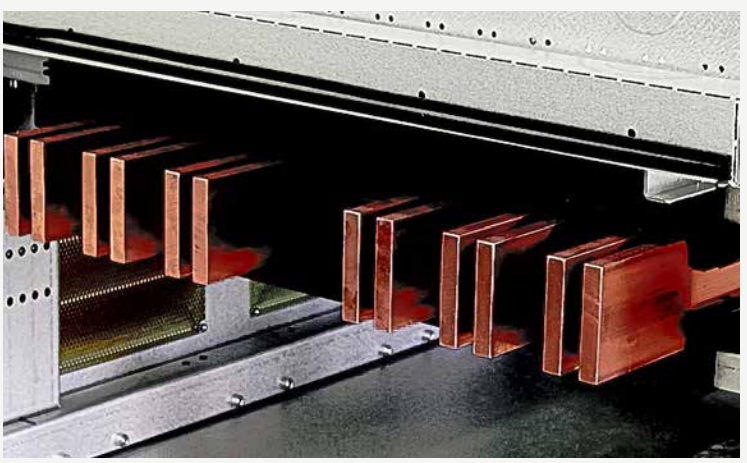
The main advantages are:

Minimum downtime
Easy reconfiguration of the unit under voltage
Interchangeability of the different types of units
Easy to update and repair
Ability to mount components of various suppliers
Compatibility with Profibus and DeviceNet
Up to 40 units per section

The Omega System can be supplied in separate parts or as a mounted systems, and it is suitable for a wide range of sectors, including:

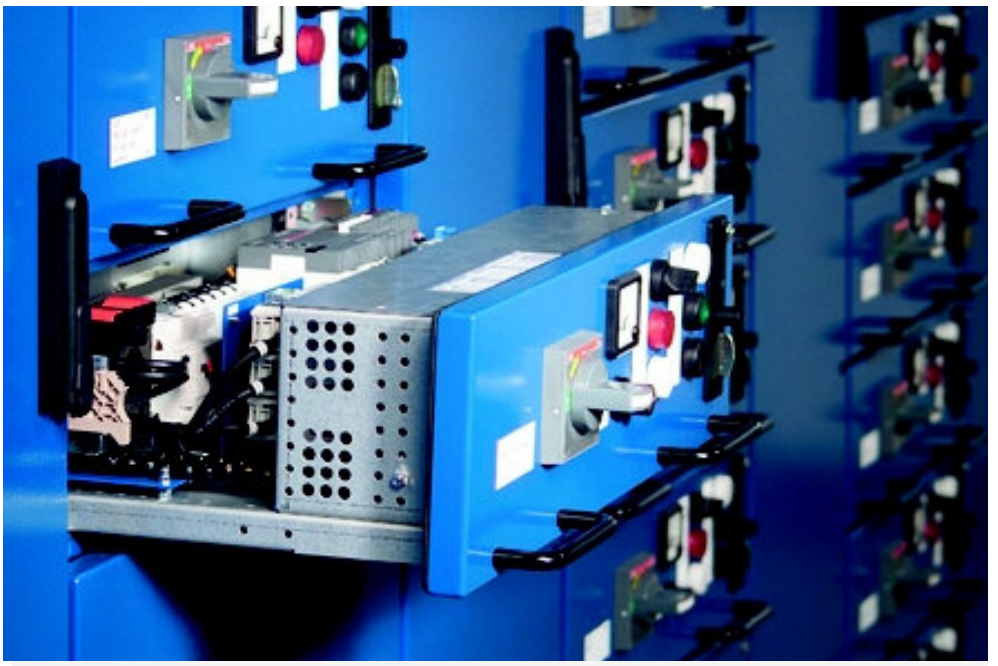
Chemistry
Pharmaceutical
Naval / Offshore
Petrochemistry
Building Services
Power plants
Paper mill
Water treatment plants
Auto industry
Mining





The Omega System is available in a wide variety of configurations to cover all applications

Fixed
Removable
Extractable
In line
Front Access
Rear Access



The primary need of modern society is the personal safety.

The Omega System achieves the highest security standards:

Tests carried out according to IEC 60439-1 / 61439-1,2
Internal Arc Test carried out according to IEC 61641
Internal Arc protective Barriers
Internal Arc protection Unit
Thermographic inspection areas
Mechanical safety lock
Internal protection IP 20

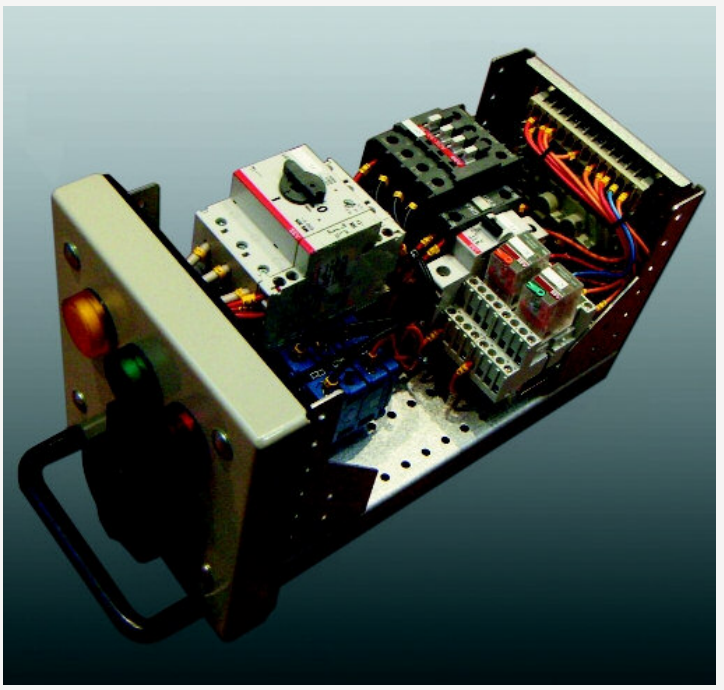
The bar system forms the main distribution of energy within a circuit, and it is one of the critical elements that determines the operational reliability and the safety of the assembly.

Features of the Omega bars system:

Distribution from the top or bottom of the framework
2, 3 or 4 horizontals bars per phase up to 8.500 A
Protection IP 20
Vertical distribution bars up to 2000 A
Internal arc barriers (optional)

The Omega System and coating provide the most robust and flexible system available:

Five curves profile with high resistance
Material Aluzinc with 2 mm thickness
Modular on 3 axes
Ports with 1,5 or 2,0 mm
IP 44 Standard (IP 54 optional)
Special colors available
Tailored door opening



Omega System offers a large variety of units types:

Fixed

Steel compartmentalization up to shape 4, type 7
Mounting plates adjustable in depth
Box for metal or plastic wires
Sizes: 4 widths, 16 heights, 6 depths
Front or rear access

Removable Unit

High protection against contact
Suitable up to 630 A, 500 kW, 690 V
Fixed or hinged front panel
Coding system
Unique mechanism of safety interlocking
Fully configurable when uncovered
It can contain components from several suppliers
Sizes: X = 3, 4 Y = ½, 1, 1 ½, 2, 2½, 3, 3½, 4
Up to 20 units per section

Mini-Extractable

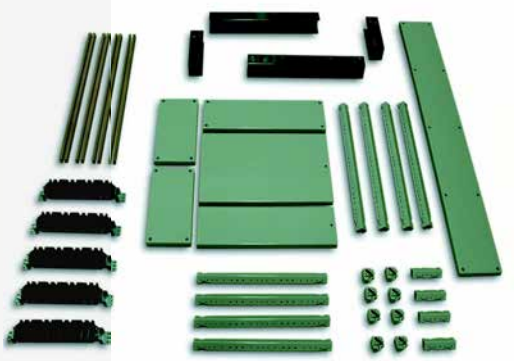
High protection
Suitable up to 80 A, 55 kW, 690 V
Auxiliary controls up to 46 control pins
Front or rear access
Removable interface drawer
The interface drawer can be pre-wired
Fully configurable when uncovered
Coding system
Compatible with DeviceNet and Profibus
Dimensions: X = 1, 1½, 2, 3. Y = 1
Up to 40 units per section

Removable Unit

High security standards
Suitable up to 630 A, 500 kW, 690 V
Auxiliary controls up to 46 control pins
Fully configurable when uncovered
Coding system
IP 20 protection for all positions
Fixed or hinged front panel
Compatible with DeviceNet and Profibus
Sizes: X = 3, 4 Y = ½, 1, 1 ½, 2, 2½, 3, 3½, 4
Up to 20 units per section

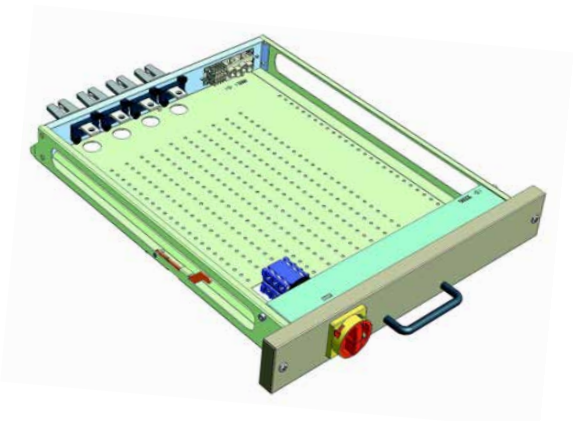
Unit in Row

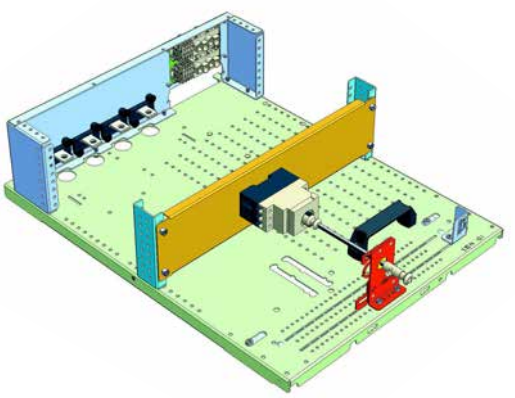
Accept products of ABB Slimline
Accepts Jean Muller Sasil products
Suitable from 160 A up to 630 A
Completely reconfigurable when uncovered
Modular design
Easy installation
High operational reliability
High protection against contact
High tensile strength
High resistance against short circuit
Up to 20 units per section

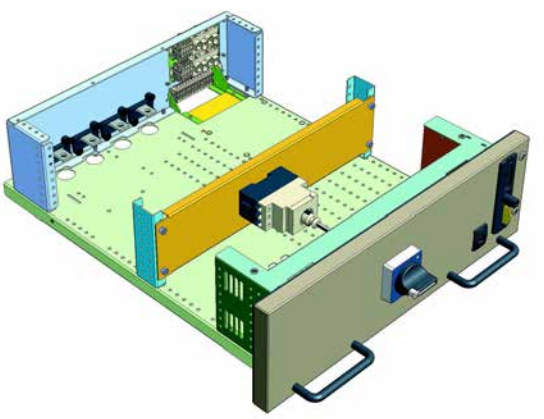


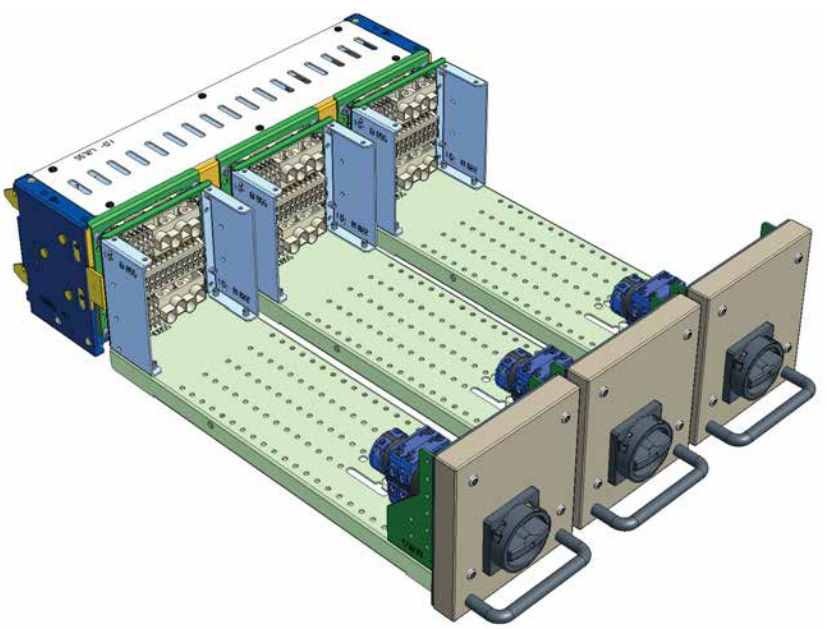
OMEGA UNITS

configurations of fixed and extractable drawers









REMOVABLE UNIT OMEGA – A

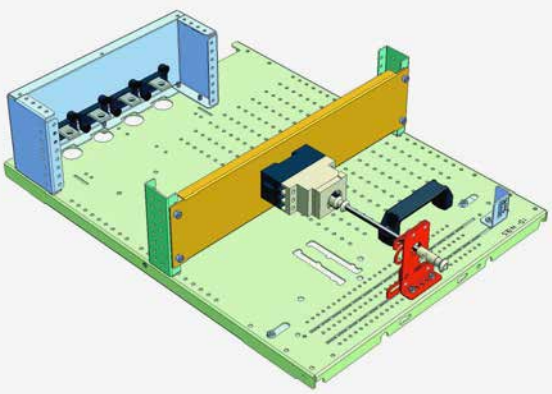
Removable unit type A (RMU type A) is a removable unit with the door mounted on the framework

Features:

The port is mounted on the framework and not on the unit.
Two positions can be reached with the unit movement:

- Position removed
- Position connected

An insulated position can be achieved by the correct type of switch in the OFF position, according to DIN standards.
The test position can be selected by a disconnecting switch that has a test position or by using an external function test (switch or button) when the disconnector is in the OFF position.
The output power wires are connected to the components.
The mechanical interlock of the disconnecting switch shaft can be done with the key or by means of internal screws.
The coding system is optional.
The connected micro switch is optional.
The door can be closed with the unit removed.
Type of electrical connections (in accordance with IEC 61439-2.): W F F / D (depending on configuration).



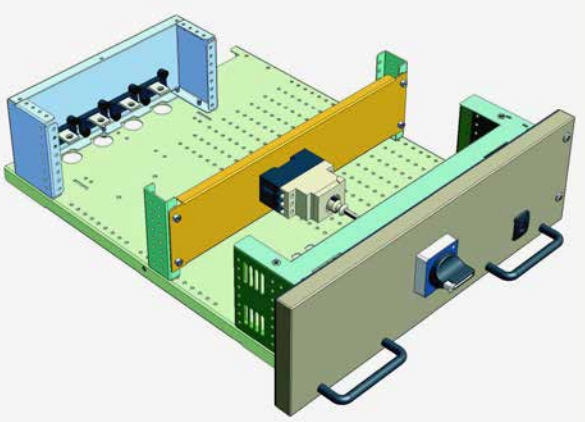
REMOVABLE UNIT OMEGA – B

Removable unit type B (RMU type B) is a removable unit with the door mounted on the unit

Features:

The port is mounted on the unit and not on the frame.
Two positions can be reached with the unit movement:
- Position removed
- Position connected

An insulated position can be achieved by the correct type of switch in the OFF position, according to DIN standards.
The test position can be selected by a disconnecting switch that has a test position or by using an external function test (switch or button) when the disconnector is in the OFF position.
The output power wires are connected to the components.
The mechanical interlock of the disconnecting switch shaft can be done with the key or by means of internal screws.
The coding system is optional.
The connected micro switch is optional.
The door can be closed with the unit removed.
Type of electrical connections (in accordance with IEC 61439-2.): W F F / D (depending on configuration).



REMOVABLE UNIT OMEGA – A

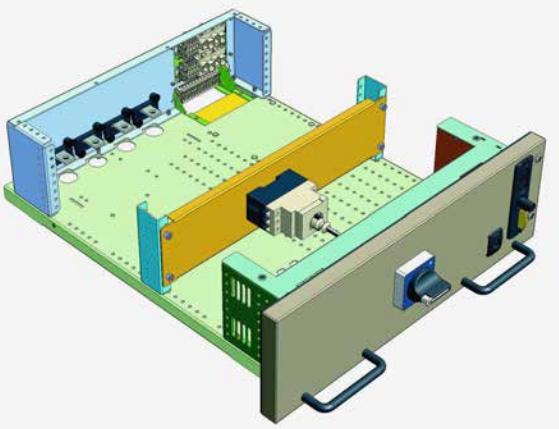
The removable Omega unit type A (WDU type A) is a removable unit with a position and movement indicator

Features:

The port is mounted on the unit and not on the frame.
Four positions can be reached with the unit movement:

- Position removed
- Position insulated (possibility of lock)
- Test position (possibility of lock)
- Position connected

An insulated position can be achieved by the correct type of switch in the OFF position, according to DIN standards.
The test position can be selected by a disconnecting switch that has a test position or by using an external function test (switch or button) when the disconnector is in the OFF position.
The output power wires are connected to the connectors in the power section.
The auxiliary cables are connected to the connectors in the auxiliary section.
The mechanical interlock is constituted by the disconnecting switch with door and the key block.
The encoding system Harting is optional depending on the connector configuration.
Optional microswitches with insulated, test and connected position.
Type of electrical connections (in accordance with IEC 61439-2.): W W W.



REMOVABLE UNIT OMEGA – B

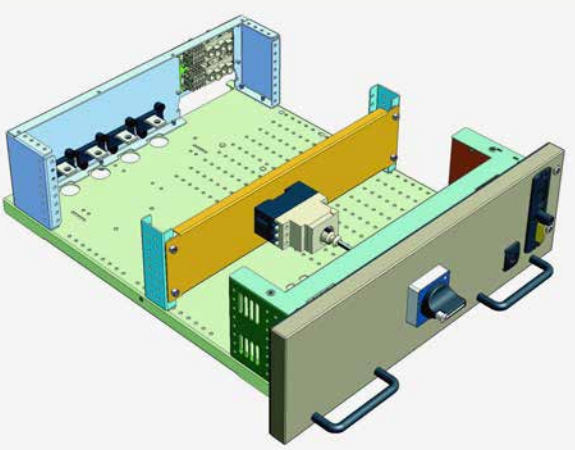
The removable Omega unit type B (WDU type B) is a removable unit with an indicator of position and movement

Features:

The port is mounted on the unit and not on the frame.
Three positions can be reached with the unit movement:

- Position removed
- Position insulated (possibility of lock)
- Position connected

An insulated position can be achieved by the correct type of switch in the OFF position, according to DIN standards.
The test position can be selected by a disconnecting switch that has a test position or by using an external function test (switch or button) when the disconnector is in the OFF position.
The output power wires are connected to the connectors in the power section.
The auxiliary cables are connected to the connectors in the auxiliary section.
The mechanical interlock is constituted by the disconnecting switch with door and the key block.
The encoding system Harting is optional depending on the connector configuration.
Optional microswitches with insulated, test and connected position.
Type of electrical connections (in accordance with IEC 61439-2.): W W W.



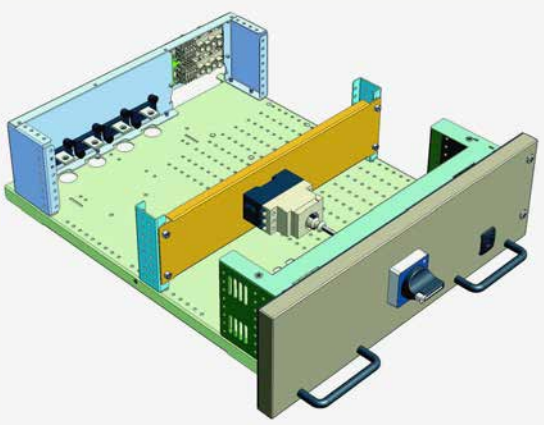
REMOVABLE UNIT OMEGA – C

The removable Omega unit type C (WDU type C) is a removable unit with a position and movement indicator

Features:

The port is mounted on the unit and not on the frame.
Two positions can be reached with the unit movement:
- Position removed
- Position connected

An insulated position can be achieved by the correct type of switch in the OFF position, according to DIN standards.
The test position can be selected by a disconnecting switch that has a test position or by using an external function test (switch or button) when the disconnector is in the OFF position.
The output power wires are connected to the connectors in the power section.
The auxiliary cables are connected to the connectors in the auxiliary section.
The mechanical interlock is constituted by the disconnecting switch with door and the key block.
The encoding system Harting is optional depending on the connector configuration.
Optional microswitches with insulated, test and connected position.
Type of electrical connections (in accordance with IEC 61439-2.): W W W.



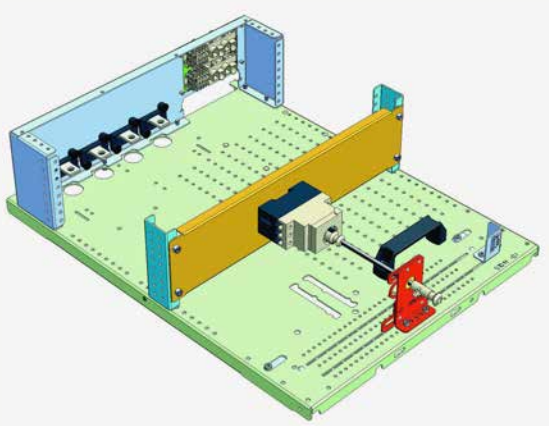
REMOVABLE UNIT OMEGA – D

The removable Omega unit type D (WDU type D) is a removable unit with a position and movement indicator

Features:

The door is mounted on the frame and not on the unit
Two positions can be reached with the unit movement:
- Position removed
- Position connected

An insulated position can be achieved by the correct type of switch in the OFF position, according to DIN standards.
The test position can be selected by a disconnecting switch that has a test position or by using an external function test (switch or button) when the disconnector is in the OFF position.
The output power wires are connected to the connectors in the power section.
The auxiliary cables are connected to the connectors in the auxiliary section.
The mechanical interlock is constituted by the disconnecting switch with door and the key block.
The encoding system Harting is optional depending on the connector configuration.
Optional microswitches with insulated, test and connected position.
Type of electrical connections (in accordance with IEC 61439-2.): W W W.



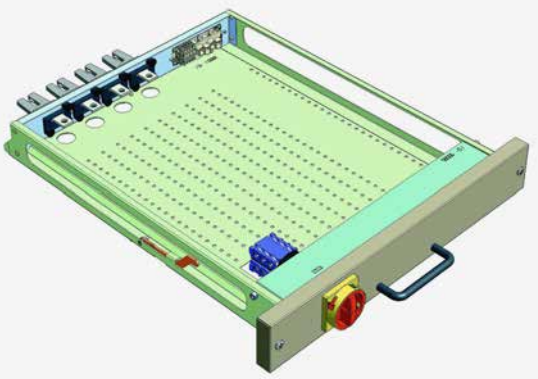
REMOVABLE UNIT OMEGA – E

The removable Omega unit type E (WDU type E) is a removable unit with half of the module size

Features:

The door is mounted on the unit and not on the frame.
Two positions can be reached with the unit movement:
- Position removed
- Position connected

The test position can be selected by a disconnecting switch that has a test position or by using an external function test (switch or button) when the disconnector is in the OFF position.
The insulated position can be achieved by the correct type of switch in the OFF position, according to DIN standards.
The output power wires are connected to the connectors in the power section.
The auxiliary cables are connected to the connectors in the auxiliary section.
The mechanical interlock is constituted by the disconnecting switch with door and the key block.
The encoding system Harting is optional depending on the connector configuration.
Type of electrical connections (in accordance with IEC 61439-2.): W W W.



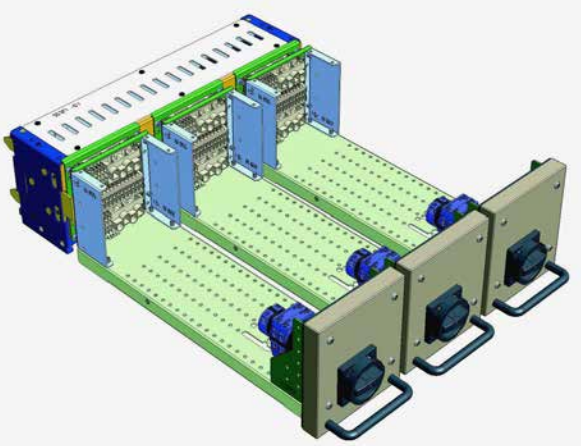
REMOVABLE MINI-UNIT OMEGA - A

The removable mini-unit Omega type A (MDU type A) is a width-compact unit

Features:

The door is mounted on the unit and not on the frame.
Two positions can be reached with the unit movement:
- Position removed
- Position connected

The test position can be selected by a disconnecting switch that has a test position or by using an external function test (switch or button) when the disconnector is in the OFF position.
The insulated position can be achieved by the correct type of switch in the OFF position, according to DIN standards.
The output power wires are connected to the connectors in the power section.
The auxiliary cables are connected to the connectors in the auxiliary section.
The mechanical interlock is constituted by the disconnecting switch with door and the key block.
The encoding system Harting is optional depending on the connector configuration.
Type of electrical connections (in accordance with IEC 61439-2.): W W W.

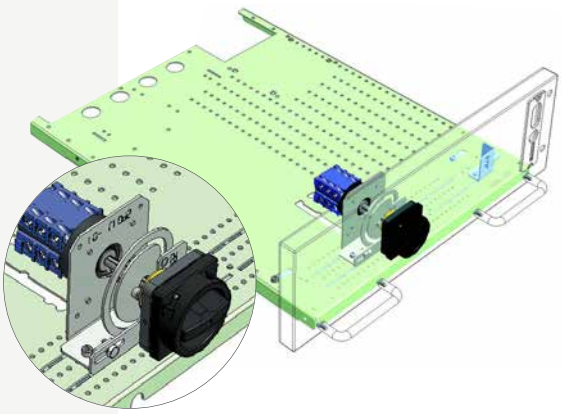


MECHANICAL INTERLOCKS

Rotary selector

Features:

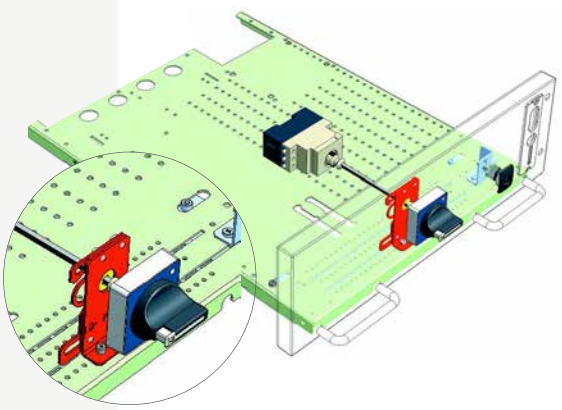
Mechanical Interlocks RMU/WDU, type of switch Kraus & Naimer.
Specific position on the shaft.
No extra key.



Fixed height

Features:

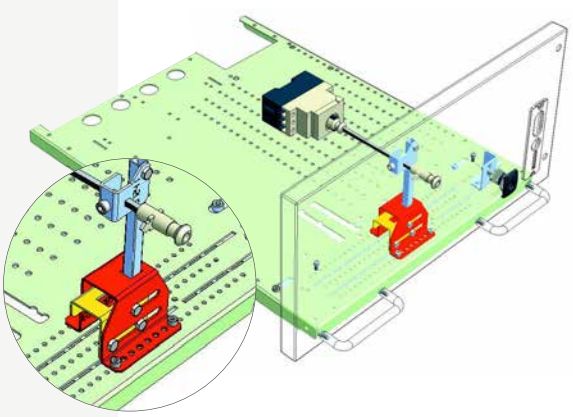
Mechanical Interlocks RMU / WDU.
Specific position on the shaft.
Further extension parts can be inserted at different shaft heights.
Extra key needed.

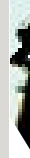


Adjustable heights

Features:

Mechanical Interlocks RMU / WDU.
The position on the shaft is not specific.
Extra key needed.





ELECTRICAL PANELS
FOR NAVAL APPLICATIONS

ELECTRICAL PANELS
FOR NAVAL APPLICATIONS

THE COMPANY IS A MAJOR SUPPLIER OF THE MARINE AND OFFSHORE INDUSTRIES FOR THE FOLLOWING PRODUCTS:

General electrical panels
Motor Control Center (fixed/extractable)
Control panels
Consoles for cockpits
Panels for start-up with water cooling

The product are supplied both "turnkey" or just with the carpentry assembled with the main bars

THE COMPANY IS ONE OF THE LEADING SUPPLIERS FOR ALL KINDS OF SHIPS:

Container ships
Private yachts
Port tanks
Cruise ships
Harbor tugs
Ferry
Offshore platforms
Auxiliary port ships
Deepwater Construction Vessels - DCV

NAVAL AND OFFSHORE PANELS REACH THE HIGHEST SECURITY STANDARDS:

Tests carried out according to IEC 60439-1 / 61439-1,2
Internal arc test according to IEC 61641
Certified by major marine classification companies
Internal arc barriers
Thermographic inspection areas
Mechanical safety lock
Internal protection IP 20

THE SYSTEM STRUCTURE AND COATINGS PROVIDE THE MOST ROBUST FLEXIBLE PANEL AVAILABLE:

Five curves profile with high resistance
Aluzinc material with 2 mm thickness
Modular on 3 axes
Ports with 1,5 or 2,0 mm
IP 3X and Standard IP 44 (IP 54 optional)
Special colors available
Tailored door opening

ELECTRICAL PANELS
FOR NAVAL APPLICATIONS

THE BAR SYSTEM FORMS THE MAIN POWER DISTRIBUTION SYSTEM WITHIN THE CIRCUIT AND IS ONE OF THE CRITICAL ELEMENTS THAT DETERMINES THE OPERATIONAL RELIABILITY AND SAFETY OF THE INSTALLATION.

Features of the bar system:

2, 3 or 4 bars up to 8,500 A
High error level up to 135 kA
Rated Voltage 690 V AC
Protection IP 20
Internal electric arc barriers optional
Mounted at the top, middle or bottom of the panel

THE PANELS FOR MARINE & OFFSHORE USE INCORPORATE ADVANCED FEATURES TO ENSURE THE OPTIMAL USE OF SPACE ON BOARD OF THE SHIP WHILE MAINTAINING THE PROPER TEMPERATURE INSIDE THE ELECTRICAL PANEL.

Front and rear ventilation
Front and rear access
Top Roofs IP 31
Stainless steel covering the bar system reducing magnetic effect

IT IS POSSIBLE TO PROVIDE CUSTOMIZED SOLUTIONS FOR CONSOLES AND COCK-PITS USING THE LATEST 3D TECHNOLOGIES.

Services include:

3D Concept Model
3D Visualization
Detailed design
CAD/CAM production
Precision welds
Products made of steel or stainless steel
Wide choice of colors and fabric

MARINE & OFFSHORE SWITCHBOARDS AND MOTOR CONTROL CENTERS ARE AVAILABLE IN VARIOUS TYPES:

Fixed Type
Removable Type
Extractable Type
In line Type

ELECTRICAL PANELS
FOR NAVAL APPLICATIONS

TECHNICAL INFORMATIONS

Reference standards

Standard Tests:

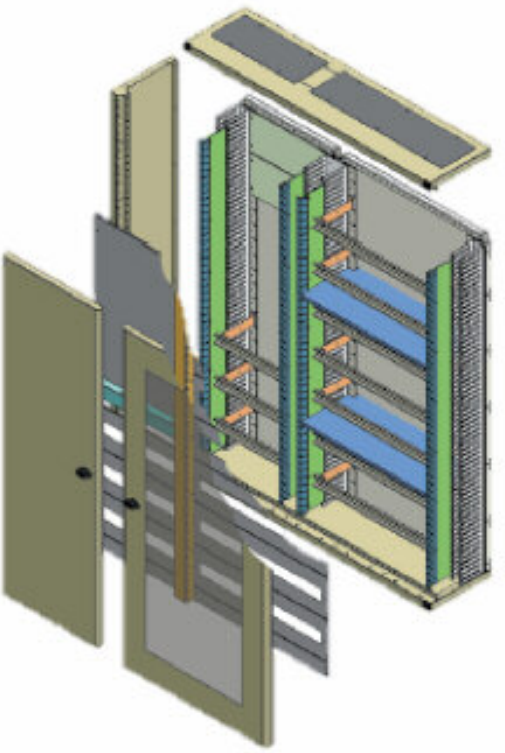
IEC-60439-1 / 61439-1,2
DIN EN 60439-1 (VDE 0660 Teil 500)
BS EN 60439-1
IEC 60529
CSA - C22.2 No. 31 & 14
DIN 43671 / 12.75
IEC 61641
IEC 62208

Electrical Data

Rated voltage *(Ue) 690 V*
Rated insulation voltage *(Ui) 1000 V*
Rated impulse voltage *(Uimp) 8 up to 12kV*
Rated frequency *(f) 40 - 60 Hz*
Rated current *(A) 250 A - 8500 A*
Rated short-time current *(Icw) up to 165 kA 1 sec*
Rated peak current *(Ipk) up to 363 kA*

Test & Permits

- IPH, Berlin, Germany. (member LOVAG)
- ACAE, Genova, Italy. (member LOVAG)
- ASTA, Rugby, England. (member LOVAG)
- KEMA, Arnhem, Holland. (member LOVAG)
- Underwriters Laboratory, Melville, USA (*permits*)
- CSA, Rexdale, Canada. (*permits*)
- DEMKO, Herlev, Denmark
  Elektronikcentralen, Hørsholm, Denmark.
  Bureau Veritas. (*permits*)
- Det Norske Veritas. (*permits*)
- Germanischer Lloyd. (*permits*)
- Lloyds Register. (*permits*)
- The Russian Maritime Register of Navigation (*permits*)



ALPHA **ENCLOSURE SYSTEM**

ELECTRICAL PANELS FOR SECONDARY DISTRIBUTION

THE FRAME OF THE ALPHA SYSTEM HAS BEEN DEVELOPED FOR SECONDARY DISTRIBUTIONS IN LOW TENSION AND FOR CONTROL PANELS.

The system is completely modular and offers unlimited design configurations. It is possible the construction of a single unit from 400x600 mm up to 2000x2000 mm, so there is no need to join the structures together.

The Alpha System delivers a solid, durable design with a modern style. The port configurations are provided in the Alpha System standards in multiple solutions.

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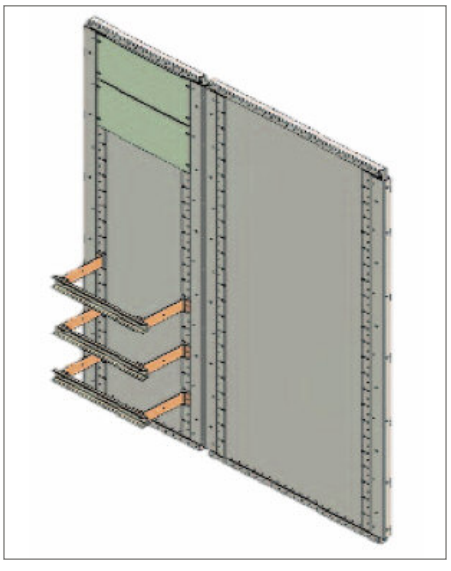


The mounting plates and rails DIN are fixed on the structure.

The backplates can be joined together in various combinations:

Widths:

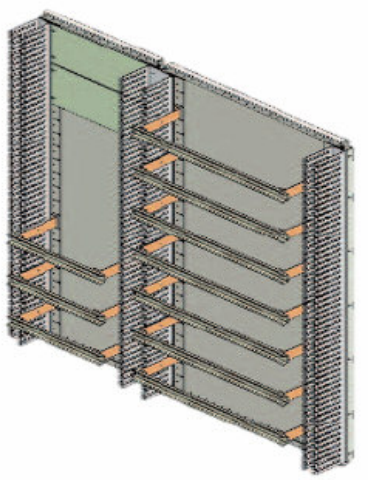
400 millimeters
600 millimeters

Height:

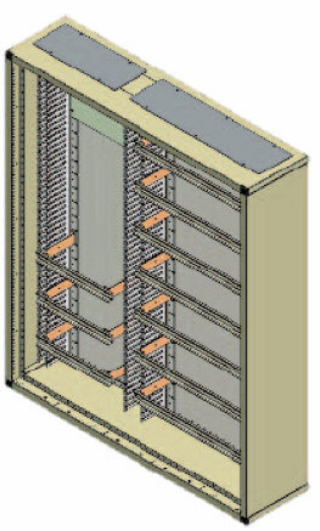
600 millimeters
800 millimeters
1000 millimeters
1200 millimeters
1400 millimeters
1600 millimeters
1800 millimeters
2000 millimeters

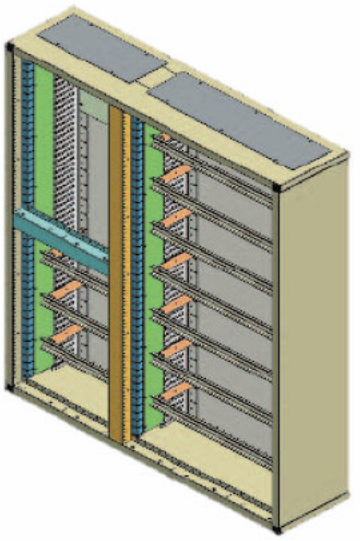
CHANNELING CAN BE RIVETED OR SECURED BETWEEN THE SECTIONS TO FACILITATE WIRING.

The electrical equipment is then inserted and the panel can be fully wired, allowing an easy access to all components and terminals.



The upper and lower panels are mounted in conjunction with the various bottom plates. The side panels are then fixed to form a rigid structure.





THE COATINGS CAN BE DIVIDED VERTICALLY AND HORIZONTALLY WITH GUIDES TO ALLOW THE VARIOUS PORT CONFIGURATIONS.

If necessary, the cable sections with individual ports can be added to the side or at the top.

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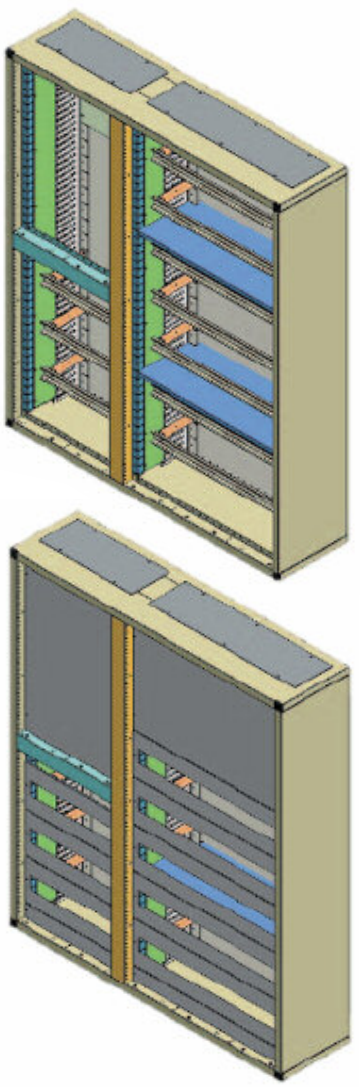


VERTICAL PARTITIONS CAN BE INSTALLED BEHIND EACH GUIDE.

HORIZONTAL SEPARATORS ARE USED TO CREATE COMPARTMENTS BETWEEN GROUPS OF CIRCUITS.

The panels are arranged in front of the equipment.

These can be fixed with screws or hinged to the frame and provided with a key interlock.

The DIN panels are mounted giving 17 or 28 modules in a row and with a width sizes from 400 or 600 mm.

INDIVIDUAL PORTS CAN BE INSTALLED FOR THE ENTIRE HEIGHT OF THE CABIN OR AS MULTIPLE COMBINATIONS OF VARIOUS HEIGHTS.

--

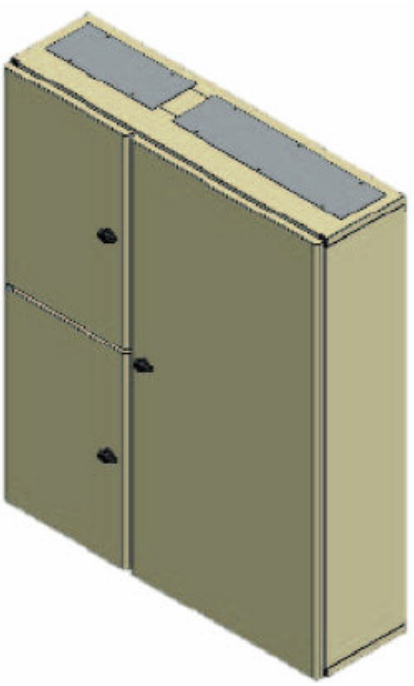
There are a wide range of combinations:

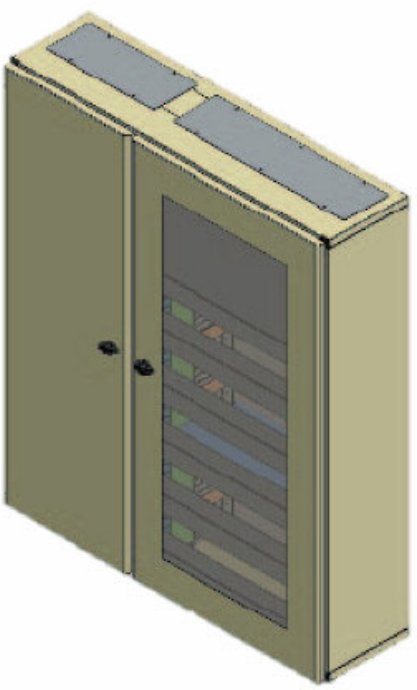
Widths:

200 mm
400 mm
600 mm

Heights:

600 mm
800 mm
1000 mm
1200 mm
1400 mm
1600 mm
1800 mm
2000 mm





The doors are made of steel 1.5 mm to ensure strength and can be equipped with various types of locking devices individual or 3 points. Glass doors are provided as option and a bars system can also be installed behind the equipment or in a separate section.

Technical Data

Heights:

600 mm up to 2000 mm
basement excluded 100 mm

Width:

400 mm up to 2000 mm
single column

Useful width for section:

200 mm - 115 mm
400 mm - 315 mm
600 mm - 515 mm

Depth:

250 mm
280 mm with door

Material:

Backplate 2,0 mm Aluzinc
Door 1,5 mm Painted steel
Lateral & Top 1,0 mm Painted steel

Paint:

From 60 to 80 microns 100%
Polyester

Color:

RAL 7032

IP Value:

IP 30 up to IP 44

IMAGES OF OUR PROJECTS

ELECTRICAL INSTALLATION

Industrial Automation Systems

Electrical Systems Tunnels

CORPORATE
MANAGEMENT SYSTEM

CORPORATE NETWORK

DESIGN:
Electrical: N°4 work stations Cad Elet.

Archive drawings via server + nr. 15 licenses and about 70,000 documents stored in electronic format.

ADMINISTRATION:
COMPUTER SOFTWARE MANAGEMENT

PRODUCTION:
COMPUTER SOFTWARE MANAGEMENT

WAREHOUSE:
INTEGRATED MANAGEMENT SYSTEM (PGI)

TECHNOLOGICAL PROCESSES

IT System Technical/Management

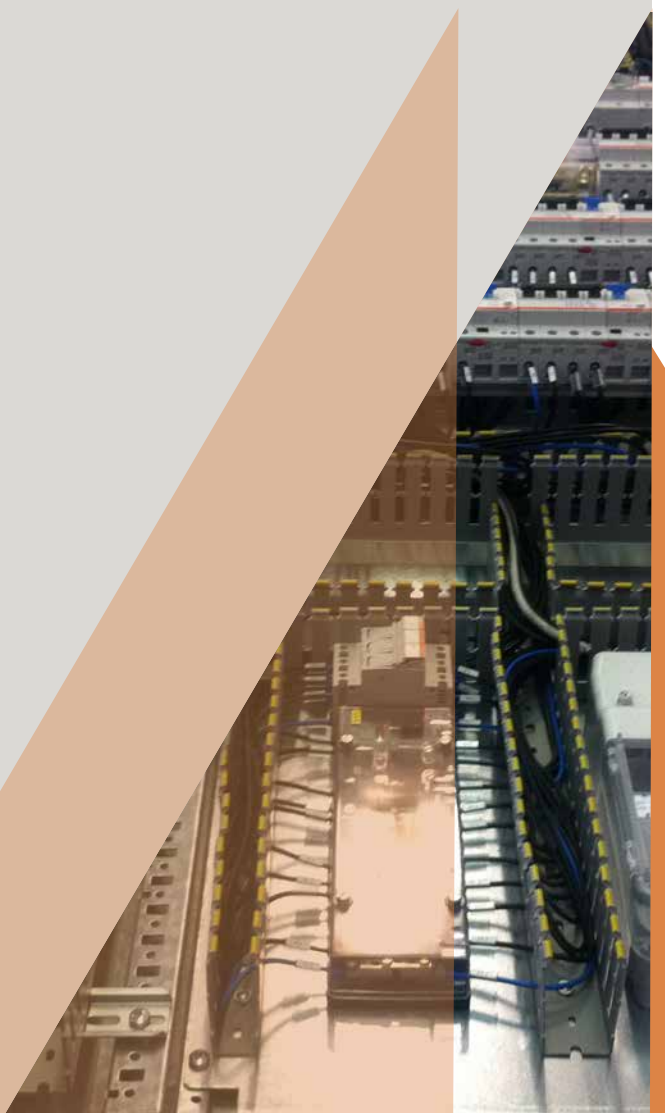
AUTOMATIC PROCESSES

DESIGN

TESTING

ELECTROMECHANICAL ASSEMBLY

ELECTRICAL INSTALLATION



TECHNOLOGICAL PROCESSES

MECHANICAL ASSEMBLY

- FLEXIBLE ASSEMBLY LINES FOR FRAMES AND CABINETS
- STATIONS FOR FINAL MECHANICAL/ELECTRICAL TEST

WIRING OF E.P. LOW VOLTAGE

- ASSEMBLY AREA EQUIPPED WITH FLEXIBLE EQUIPMENT

TEST

- STATION FOR FINAL TEST BOTH ELECTRIC AND MECHANICAL

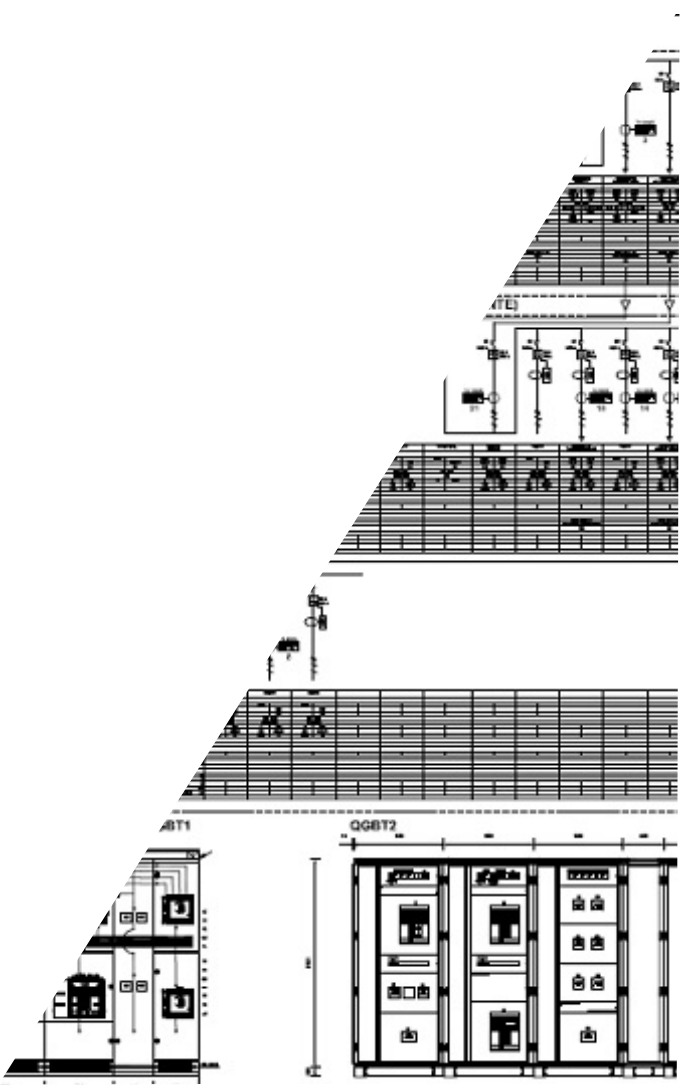
EXAMPLES OF ELECTRICAL DESIGN

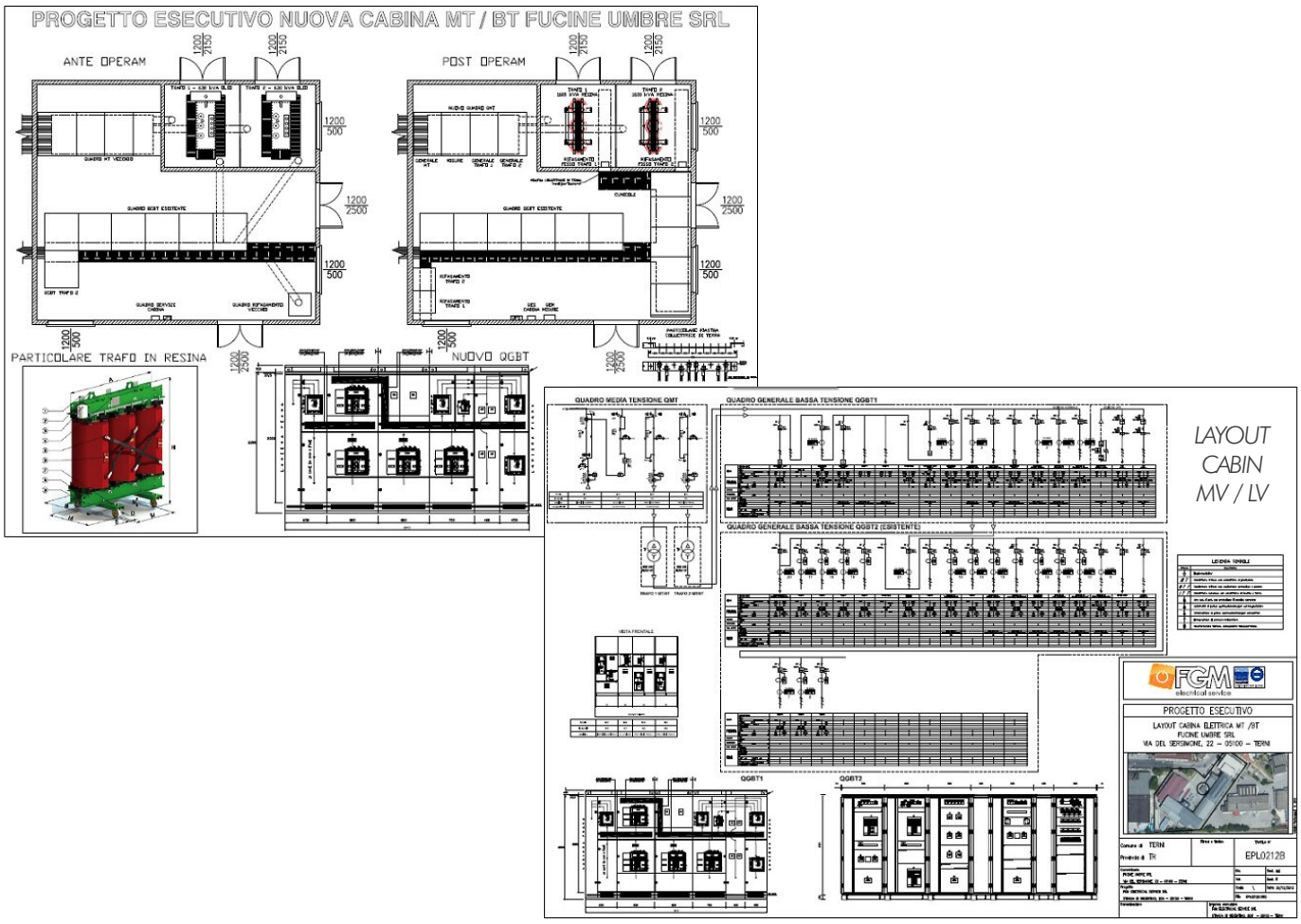
ELECTRICAL ENGINEERING AND AUTOMATION

AUTOCAD 2014 - AUTODESK
CADELET 2013 FULL PROFESSIONAL – ELECTROGRAPHICS
SOLERGO software for photovoltaic design ELECTROGRAPHICS

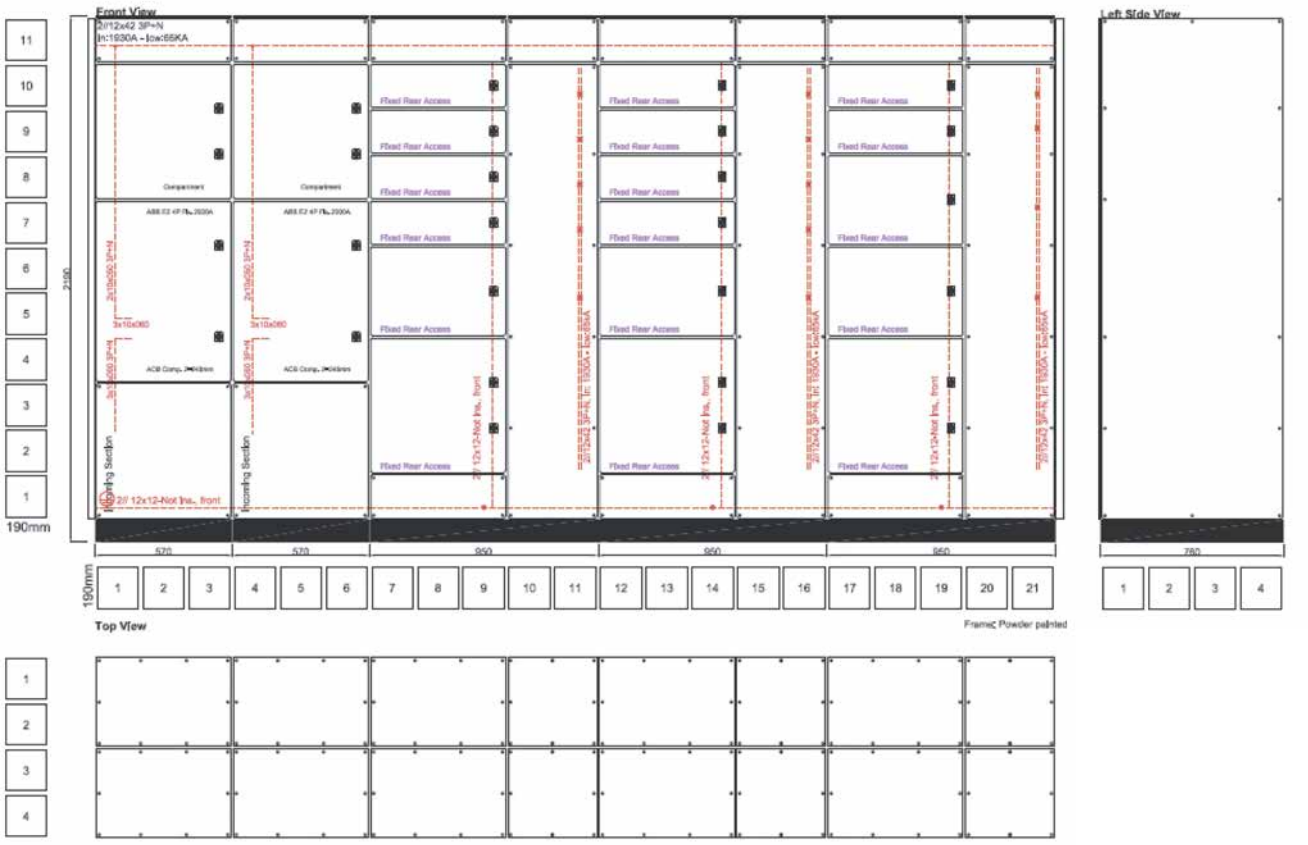
SPAC START 2013 – SDPROGET
PRIMUS 100 – ACCA SOFTWARE
CERTUS 100 – ACCA SOFTWARE
OFFICE 2013 - MICROSOFT
PROJECT 2013 - MICROSOFT
VISIO 2013 – MICROSOFT
SOMACHINE – SCHNEIDER ELECTRIC

VIJEO DESIGN – SCHNEIDER ELECTRIC
PROFICY MACHINE EDITION – GE
DESIGNER 6 – GE
QUICK DESIGNER PANEL – GE
TIA PORTAL V12 – SIEMENS
WINCC FLEXIBLE ADVANTED – SIEMENS
LOGO SOFT CONFORT 7 - SIEMENS





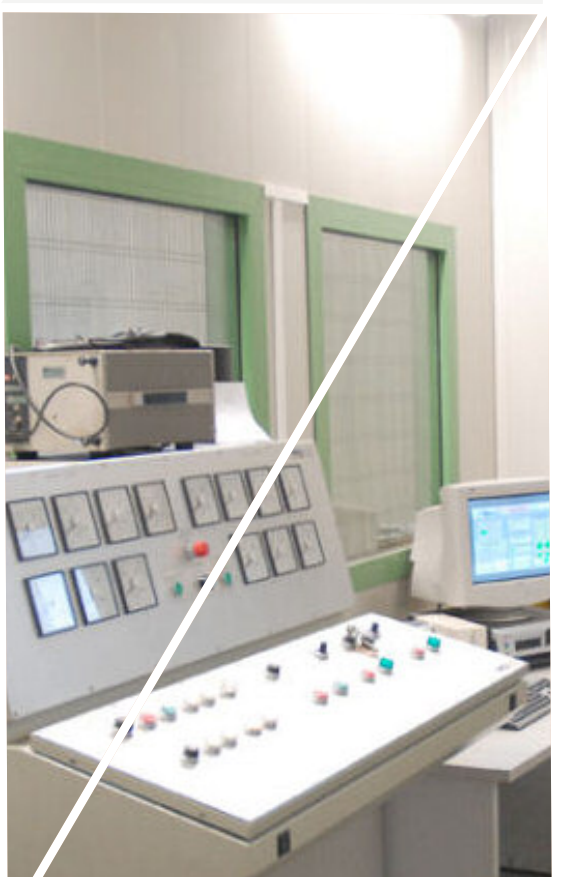
LAYOUT EXAMPLES OF ELECTRICAL DESIGN



TECHNOLOGICAL PROCESSES

FUNCTIONAL FINAL TEST:

- N°1 MULTI-VOLTAGE TEST BENCHES FOR DC/AC TESTING UP TO 700 V.
- N°2 VOLTAMPEROMETRIC TOOLS FOR TESTING PROTECTIVE RELAYS.
- TOOLS FOR ELECTRIC STRENGTH TEST IN LV/MV.
- EQUIPMENT FOR TEMPERATURE TESTING WITH ELECTRIC CURRENT UP TO 6 KA.-6V.
- HT ZG47 MULTIFUNCTION TOOL FOR TESTING CEI 64-8 AND ANALYSIS NETWORK OF IN SINGLE AND THREE-PHASE SYSTEMS.
- METREL EUROTEST 61557 ADVANCED, DIGITAL MULTIFUNCTION INSTRUMENT FOR LOW VOLTAGE MEASUREMENTS - SAFETY TESTS ACCORDING TO IEC/EN 6155.
- FLUKE DTX 1200 LAN CABLES AND FIBER OPTIC ANALYSER.



UNAE UMBRIA www.unae.it

CSQ N - 9165

IQNet IT - 84156

FGM SERVICE

FGM provides an activity of installation and assistance that allows customers to see us as a "turnkey" provider that can cover the entire logistics supply chain.

We offer both immediate post-sales service and ***periodic maintenance***, both on site or in our headquarter.

CSQ

CERTIFICATO N. 9165.FGME
CERTIFICATE N.

FGM ELECTRICAL SERVICE SRL
STRADA DI RECENTINO B24 - 05100 TERNI (TR)

ISO 9001:2008

2012-07-02 2012-07-02 2015-07-01

Quality System

Total quality, for **FGM**, is the result of the adopted process methods.

The company has received from CSQ the certification of its Quality System according to **UNI EN ISO 9001**.

This certification is the most important recognition of the quality that **FGM** introduced in the processes, products and services, making the company able to compete with the major and qualified operators in and outside Italy.
In **July 2012**, the Management System for Quality of FGM has been certified in compliance with the new **UNI EN ISO 9001-2008**.

IQNet

THE INTERNATIONAL CERTIFICATION NETWORK

CERTIFICATE

IQNet and its partner
CISQ/IMQ-CSQ
hereby certify that the organization

FGM ELECTRICAL SERVICE SRL
STRADA DI RECENTINO B24 - 05100 TERNI (TR)

for the following field of activities

Design, installation and maintenance of electrical civil and industrial plants, automation and conditioning, wiring of switchboards

has implemented and maintains a
Quality Management System
which fulfills the requirements of the following standard
ISO 9001:2008

Issued on: 2012 - 07 - 02 Expiry date: 2015 - 07 - 01

Registration Number: IT - 84156

Michael Drechsel
President of IQNET

Ing. Claudio Provetti
President of CISQ

System Security

Total quality, for **FGM**, is the result of the adopted process methods.

The company has received from the CSQ the certification of its Safety System in accordance with **BS OHSAS 18001-2007**.

This certification is the most important recognition of the quality that **FGM** introduced in the processes, products and services, making the company able to compete with the major and qualified operators in and outside Italy also due to the reduction of the number of work injuries.
In **July 2015**, the Management System for Safety of FGM has been certified to the new standard **BS OHSAS 18001-2007**.

CSQ
H&S
CERTIFICATO N. 9192.FGM2
CERTIFICATE N.
FGM ELECTRICAL SERVICE SRL
BS OHSAS 18001:2007
2015-06-18 2015-06-18 2018-06-18
IQNet
CISQ

IQNet
THE INTERNATIONAL CERTIFICATION NETWORK
CERTIFICATE
IQNet and its partner
CISQ/IMQ-CSQ
hereby certify that the organization
FGM ELECTRICAL SERVICE SRL
VIA DEGLI ARTIGIANI 39 - 05100 TERNI (TR)
for the following field of activities
has implemented and maintains a
Management System
which fulfills the requirements of the following standard
BS OHSAS 18001:2007
Issued on: 2015 - 06 - 18 Expiry date: 2018 - 06 - 18
Registration Number: IT - 100873
Michael Drechsel
President of IQNet
Ing. Claudio Provetti
President of CISQ

PROFESSIONALISM
IS IN THE **CARE**
OF EACH **PARTICULAR**

REFERENCES

Tecnis spa	*Electrical installation for road tunnels*
Maeg spa	*Electrical installation for road tunnels*
Cofathec Spa (Gdf Suez)	*Installation of gas turbines for hospitals*
Bertolotti spa	*Electrical equipment for railway systems*
Canalicchio s.p.a.	*Panels M.T; P.C., Distribution, Automation, Naval*
Superconti Supermercati	*Electrical installation for supermarkets*
Sea Steel srl	*Panels P.C., Distribution, Automation for Naval area*
Fucine Umbre srl	*Panels M.T; P.C., Distribution, Automation*
Garofoli s.p.a.	*Panels M.T; P.C., Distribution (military)*
ELI Elettronica Spa	*Electrical panel installation for military environments*
Contraves Spa	*Electrical panel installation for military environments*
Thyssenkrupp	*Electrical panels P.C.; M.C.C.;Automation*
Tarkett s.p.a	*Electrical panels M.T; P.C., Installation, Distribution, Automation*
Schneider Electric spa	*Electrical panels M.T; P.C., Distribution*
Grande meccanica spa	*Electrical panels M.T; P.C., Installation and distribution*
Genera spa	*Electrical panels BT/MT*
AST- TK ACCIAI SPECIALI TERNI	*Supply and installation of Q.E. P.C. and MCC*
E-ON S.p.a.	*Installation and supply electrical systems Q.E. BT/MT*

OUR
CERTIFICATES

UNAE UMBRIA - AQUINEL

ALBO DI QUALIFICAZIONE DELLE IMPRESE
DI INSTALLAZIONE DI IMPIANTI ELETTRICI

L'UNAE rilascia il Certificato di Qualificazione alla ditta

FGM ELECTRICAL SRL

"INSTALLATORE ELETTRICO QUALIFICATO"
ISCRIZIONE ALL'ALBO N° 179

Perugia li, 01 GENNAIO 2012

UNAE UMBRIA
Il Presidente

LineaVita

certifica che

Sig. FORTUNATI GIANLUCA

C.f FRTGLC70L26L117T

ha frequentato ,superando le prove finali,il corso di formazione della durata di ore 6
Di tecnico installatore di dispositivi di ancoraggio a norma EN 795
Ed è autorizzato all'installazione e manutenzione dei prodotti a marchio:

LineaVita SALA capital PROTECTA

Tenutosi a FOLIGNO in data: 16 MARZO 2012

Nr attestato 090584 Questo attestato scade il 16 MARZO 2014

VITALI GIANCARLO
Managing Director and instructor

LINEA VITA srl – Via Bellafini, 22 24126 Bergamo (BG) tel 035315315 fax 035330000 mail: info@lineavita.it sito: www.lineavita.it

FORMAZIONE TECNICA

Si attesta che il Signor

FORTUNATI MICHELE

Della Società

FGM ELETRICAL SERVICE S.R.L.

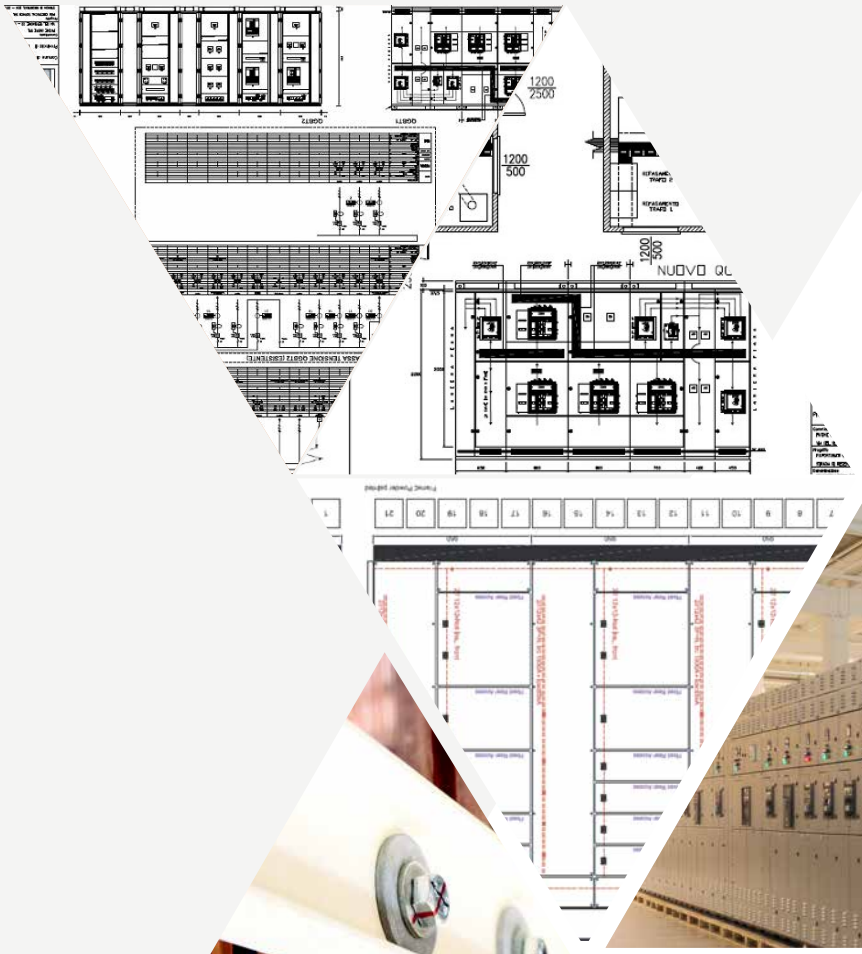
ha partecipato al Corso di Formazione

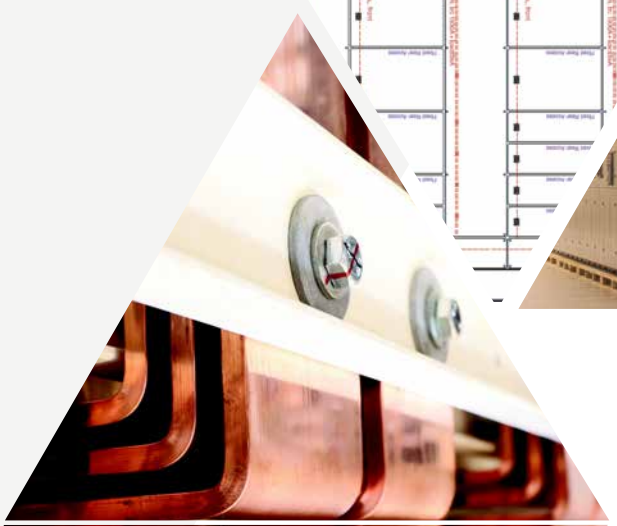
QUADRI ELETTRICI BT "INTELLIGENTI"

Presso la sede di STEZZANO (BG) in data: 07/06/2012 per complessive ore: 12

Il Responsabile

Schneider Electric





FGM
THE INTEGRATED QUALITY OF **MADE** IN **ITALY**

FGM ELECTRICAL SERVICE SRL

Via Degli Artigiani n.39
05100 - Terni (TR) - Italia
Tel +39 0744 800974
Fax +39 0744 807161
E-mail info@fgm-service.it
Internet www.fgm-service.it