

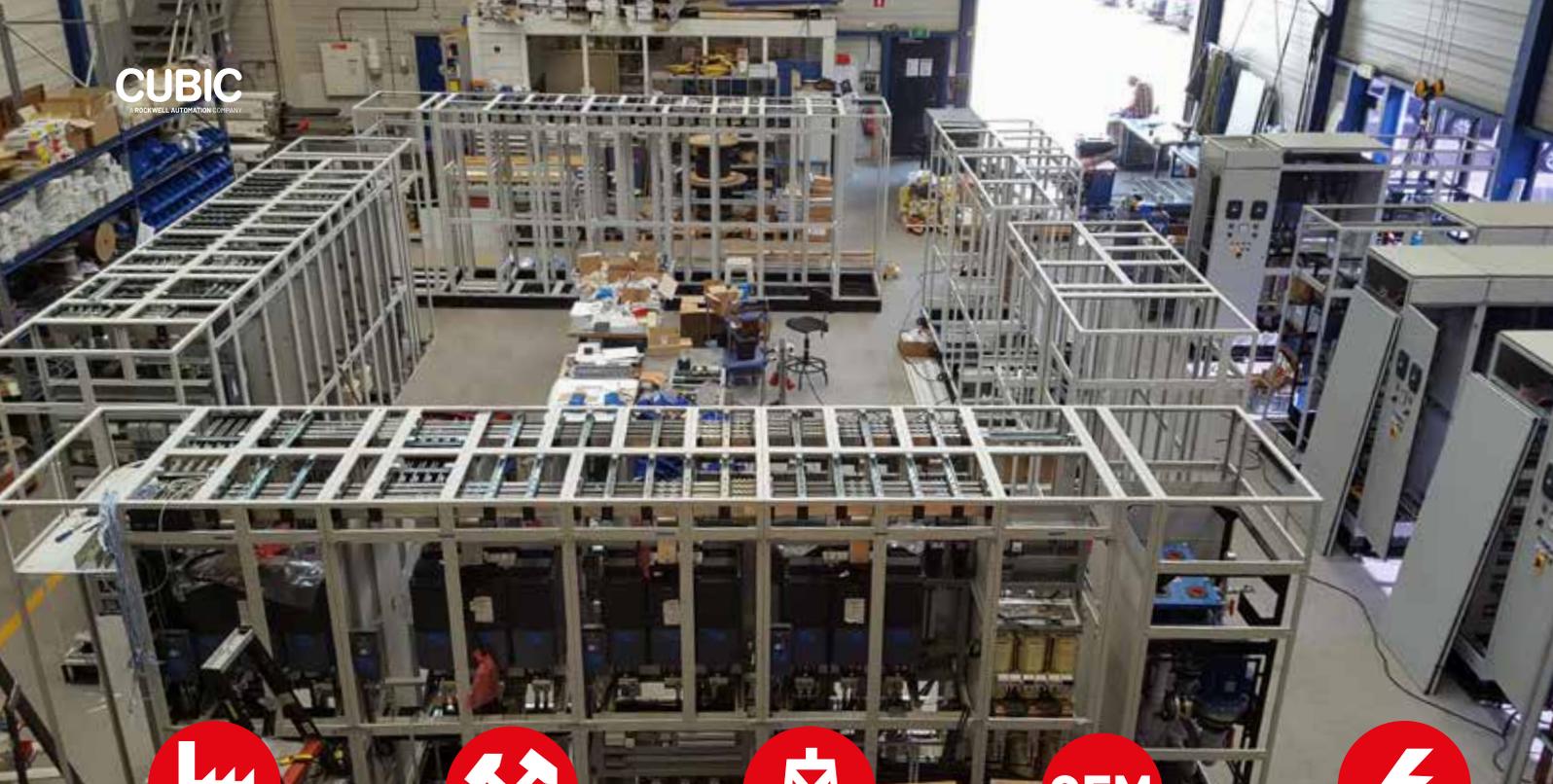
CUBIC
A ROCKWELL AUTOMATION COMPANY

THE MODULAR SYSTEM



MODULAR SYSTEM

The CUBIC modular system is based on a concept of standard modules for the construction of electrical panels. Using a relatively few standard parts it is possible to construct a bespoke enclosure from a range of standard components. The versatility of the modular system makes it easy and quick to assemble and install electrical panels as well as to extend and/or modify existing panels - including older enclosures.



THE MODULAR SYSTEM'S HIGH DEGREE OF FREEDOM IS USED WORLDWIDE

The CUBIC modular system provides numerous possibilities for construction of tested panels.

With the modular system, the choice of electrical components is completely up to you. The versatility regarding width, height and depth means that the panel can be designed to suit its place of installation, and ensures simultaneously that the panel can be modified or extended.

The system is fully documented and is supplied as flat-pack worldwide to panel builders, who construct and offer complete panel systems. All panel builders have gone through extensive training/education to ensure a high and uniform quality level all over the world on panel systems enclosed with the CUBIC modular system.

CUBIC has many years of experience in delivering enclosure solutions based on our modular system that is applicable in several industries. CUBIC has provided solutions for infrastructure and building services projects, OEMs, as well as to the Offshore, Mining and Marine Industries. In addition, CUBIC has delivered solutions to the energy sector both in fossil and renewable energy, respectively to power plants and wind, solar and hydropower.

THE MODULAR SYSTEM

The modular system can be used in many situations, where electrical switchboards are a necessity to ensure the operation of electrical equipment.

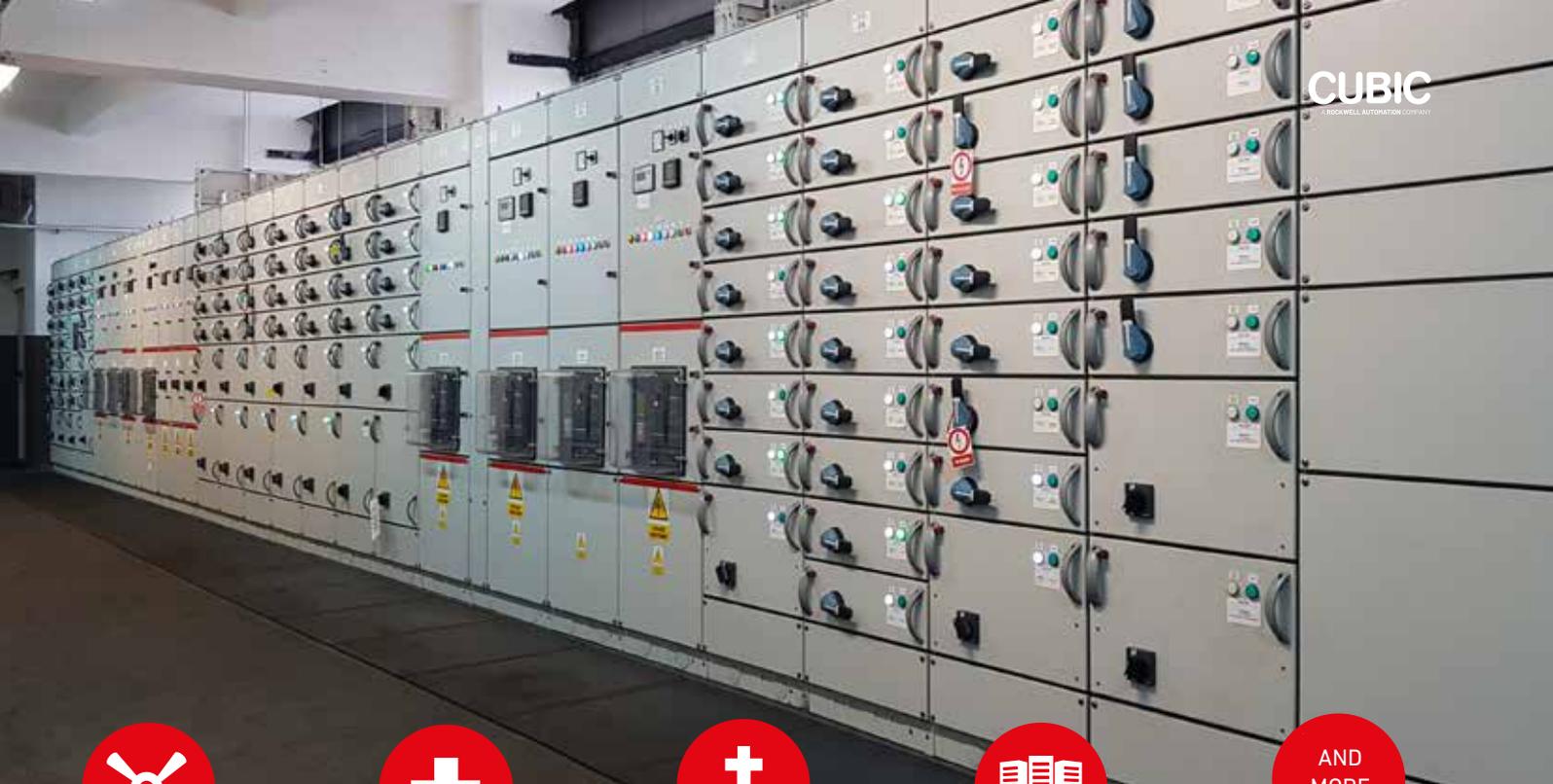
CUBIC can offer solutions based on our modular system for the following types of switchboards:

- Main and distribution switchboards
- MCC panels
- Control panels
- 19" rack

Depending on the end user's requirements CUBIC offer several options based on the modular system. For example, Multi Drawer, Plug-in, MPI inserts Cu-mini. These you can read more about on the following pages.

In addition, CUBIC also offers customized solutions. Read more about these at www.cubic.eu.





BASIC COMPONENTS AND INSTALLATION PARTS

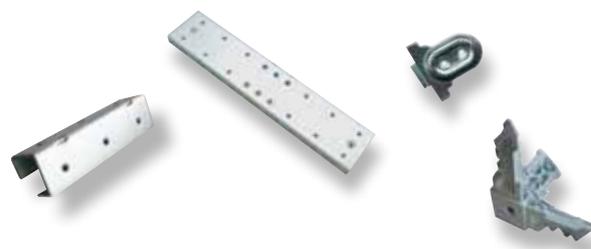
The main module of the CUBIC modular system is 192 mm, which is remarkable for being divisible by 12 figures without decimals.

During the construction of a panel, logical main and sub modules are used so that the fitter need not take millimetres into consideration.

All fitting is done by means of only very few tools. The panels are easy to assemble, can be constructed in many sizes and models and can furthermore be divided into suitable sections.

THE ADVANTAGES BY USING CUBIC'S MODULAR SYSTEM

- Maximum versatility
- Freedom to choose electrical components and switchgear from the component manufacturer you prefer.
- Easy and timesaving assembly with very few tools
- Easy expansion of your solution
- Tested according to IEC/EN 61439 series through DEKRA
- Good documentation - Design software, technical assembly instruction, projecting manual, software for temperature rise calculation etc.
- Delivered as single parts



The modular system is supplied in parts. Using a relatively few standard parts, it is possible to build enclosures in bespoke sizes and models.

TESTED BUSBAR SYSTEMS

CUBIC's tested busbar systems consist of standard components and cover a range up to 6300 Amps.

The systems are tested by DEKRA according to IEC/EN 61439 to a short-circuit level of 120 kA for 1 sec. and a peak withstand current of max. 264 kA. The busbar sections are easily assembled in templates and fitted into the panel. With CUBIC's specially developed assembly bolt, it is not necessary to drill holes or cut threads. The assembly bolt allows for an adjustable connection, exactly where it is needed on the busbar holders. All busbar joints are designated as maintenance-free according to DIN 43673.

The busbar systems are incorporated in the modular system and are described in detail in CUBIC's Instruction Manual, which make them easy to install in the panel.



FORM 2 protection of the busbars vertically, in top and in front of the joints of the busbar systems.

SEPARATION

With the CUBIC modular system you can choose a separation from FORM 1 to FORM 4, and you are thus ensured optimum personal safety and operational dependability according to IEC/EN 61439 and the customer's wishes. After installation and commissioning, you can make a visual inspection of and thermograph the busbar joints. All the necessary coverings and protection plates are available as standard parts of the modular system and require no adjustment.



MPI-INSERTS

CUBIC's standard inserts are available for all kinds of switches on the market.

Tested connections are ensured through the use of Cu-flex, CUBIC's patented flexible copper conductors, which easily adapt to the various component makes.

All inserts are constructed with much built-in functionality so that you achieve rational workshop installation and thus increased competitiveness.



PLUG-IN

Panels with the plug-in solution maintain the function of a draw-out solution and have the economy of a fixed pattern solution.



PLUG-IN+

PLUG-IN+ is a competitive solution based on Plug-in with features and functionalities known and inspired from Multi Drawer. PLUG-IN+ is highly applicable in situations, when not all the advanced MD functionalities are needed.



The individual sections are here made in FORM 4A, which is particularly suited for high safety.

MULTI DRAWER

The draw-out system of CUBIC is a system where electrical components are mounted in exchangeable drawer units, which can be operated without disconnecting the main supply of the panel.

Multi Drawer can be used where electrical energy is to be distributed with the highest possible personal and operational safety. Typically within the process and other industry, mining, navigation, hospitals, infrastructure etc. where even a short interruption of the power supply may be crucial to human lives and cause huge operational disadvantages and economic losses.

By choosing CUBIC's Multi Drawer solution, you open the doors not only to an optimum combination of user-friendliness, operational safety and economy, but to a number of advantages that satisfy meets the end-users demands for a competitive product, minimum maintenance, reduced downtime and the possibility of rebuilding the panel whilst live.

The Multi Drawer has been designed so that the panel builders can configure and equip the drawer themselves according to the project specifications. The design simultaneously makes it possible to offer the most competitive solution without having to accept a compromise regarding the specified functions.





CU-MINI

Cu-mini is a series of small distribution boards for DIN rail materials a.o.

The panel consists of a rear frame and a front frame, which ensure a simple and prompt assembly, both regarding components, wires and cables.

AUXILIARY TOOLS

To ensure that our products are as user-friendly as possible, we have developed a series of auxiliary tools that guide you through engineering, installation, etc.

Goal-directed development has resulted in the CUBIC modular system being one of the best documented and most tested panel systems on the market today.



BSM-BOX SYSTEM

CUBIC's box system for distribution boards and controls mounted on mounting on a base plate.

Plenty of space in the box system makes it easy to mount wires and cables.

The box system is delivered in a depth of 1.5M, fulfilling the space demand for components, which are usually mounted in distribution switchboards. Apart from the depth, the outer dimensions are the same as for the Modular System.

The documentation is currently updated and always accessible on the Internet for CUBIC's partners. The on-line documentation comprises all necessary information in connection with design, engineering and construction of panels.



To facilitate the mounting and transportation of CUBIC's products, we have developed a number of physical auxiliary tools, including everything from transport wheels and templates to both assembling and dismantling tools.

GALAXY 3

As an inestimable service to everybody, who works professionally with panels, CUBIC has developed the electronic auxiliary tool: CUBIC Galaxy 3.

The program comprises a drawing module, a calculation modul, a temperature rise calculation module and a module for purchasing enclosure components.



CUBIC GLOBAL TRAINING

The CUBIC Global Training programme is developed for ASSEMBLY manufacturers who have made an "Agreement on Cooperation" with CUBIC (original manufacturer) to use the modular system as per documentation.

It represents a joint commitment that can be relied upon by consultants and end users worldwide for switchboards based on the CUBIC Modular System.

The CUBIC Global Training Programme is carried out worldwide by educated trainers referring to the same education material.



TESTS AND CERTIFICATES

CUBIC pays much attention to both personal safety and operational dependability and therefore, we currently carry out tests that are demanded by the market, such as earthquake test, shock test and arcing test.

The CUBIC products are all tested and/or type approved by several of the world's most recognised test laboratories.

UL take current spot tests from CUBIC's production of the modular system.



Furthermore, CUBIC has been certified according to the norms in DS/EN/ISO 9001, DS/EN 14001 and DS/OHSAS 18001.

TECNICAL DATA

- MODULAR SYSTEM

Material:

Electro-galvanized / iron-phosphated steel plate

Colour:

Light grey, RAL 7035, powder lacquered 60-80 µm

Busbar systems:

System 225, 800, 2000 and 7000

Supply systems:

TN-C, TN-S, TN-C-S, TT and IT

Internal separation:

FORM 1, 2a, 2b, 3a, 3b, 4a, 4b and FORM 4, type 1-7

Multi Drawer:

Up to 630 Amps

Icc up to 120 kA

Electro-magnetic compatibility:

EMC environment A and B

Rated current:

Up to 6300 Amps

Dielectric properties:

Up to 3.5 kV

Rated short-time withstand current:

Up to 120 kA

Rated peak withstand current:

Up to 264 kA

Rated voltage, insulation:

1000 V AC

Rated operational voltage:

Up to 1000 V, 50 Hz

Degree of protection:

Up to IP54

Vibration test:

2 G in frequency area 2.5-500 Hz in three directions

Shock test:

30 G in 12.5 ms in six directions

Seismic test:

Earthquake test carried out with biaxial horizontal and

vertical multi-frequency movements

Arcing test:

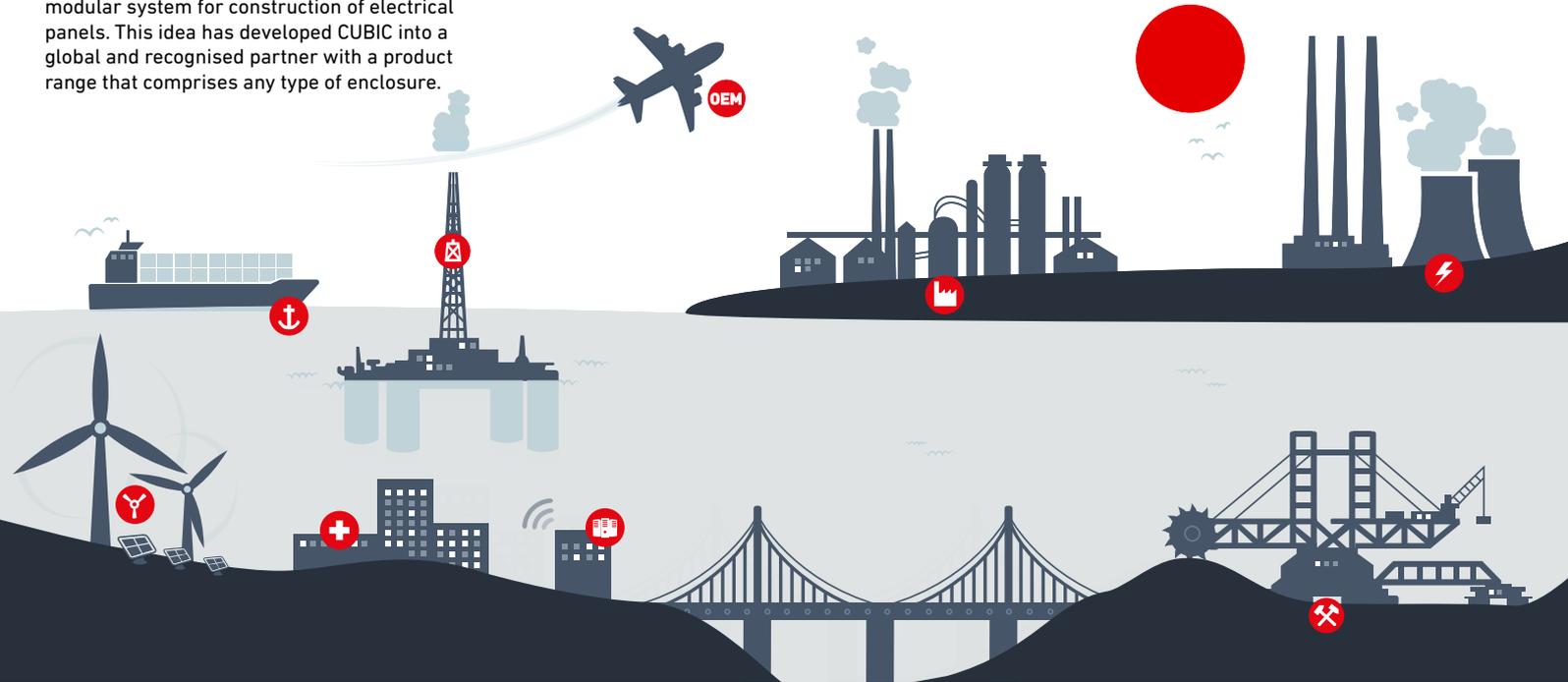
iht. IEC/TR 61641, AS/NZS 3439.1 and IEC TS 63107.

Surface treatment:

Class C2 high, according to ISO 12944

Worldwide solutions

CUBIC is founded on a unique idea of a modular system for construction of electrical panels. This idea has developed CUBIC into a global and recognised partner with a product range that comprises any type of enclosure.



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