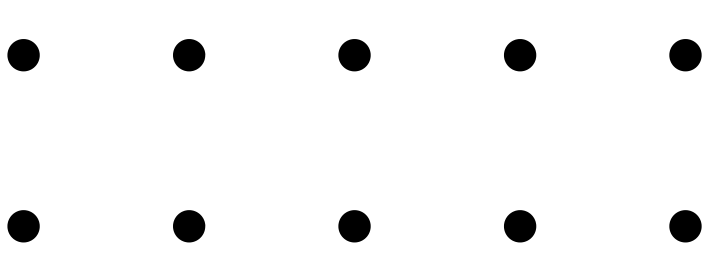


# The Power of **MODULARITY**

Hai Nam Automation Technology JSC

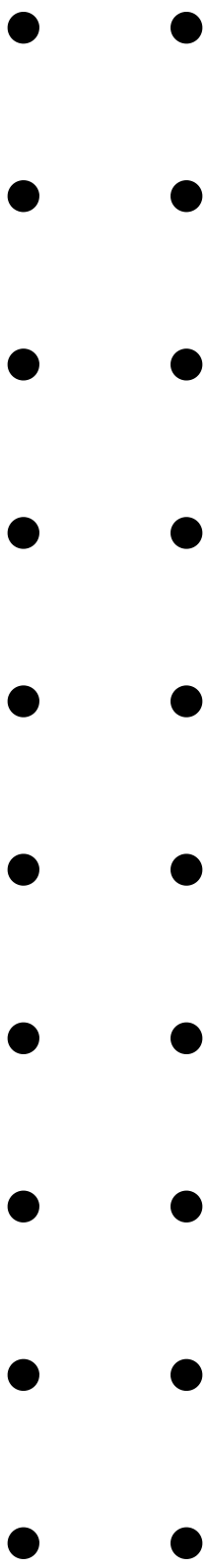
The CUBIC modular system is based on a concept of standard modules for the construction of electrical panels. Using a relatively few standard parts it is possible to construct a bespoke enclosure from a range of standard components. The versatility of the modular system makes it easy and quick to assemble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





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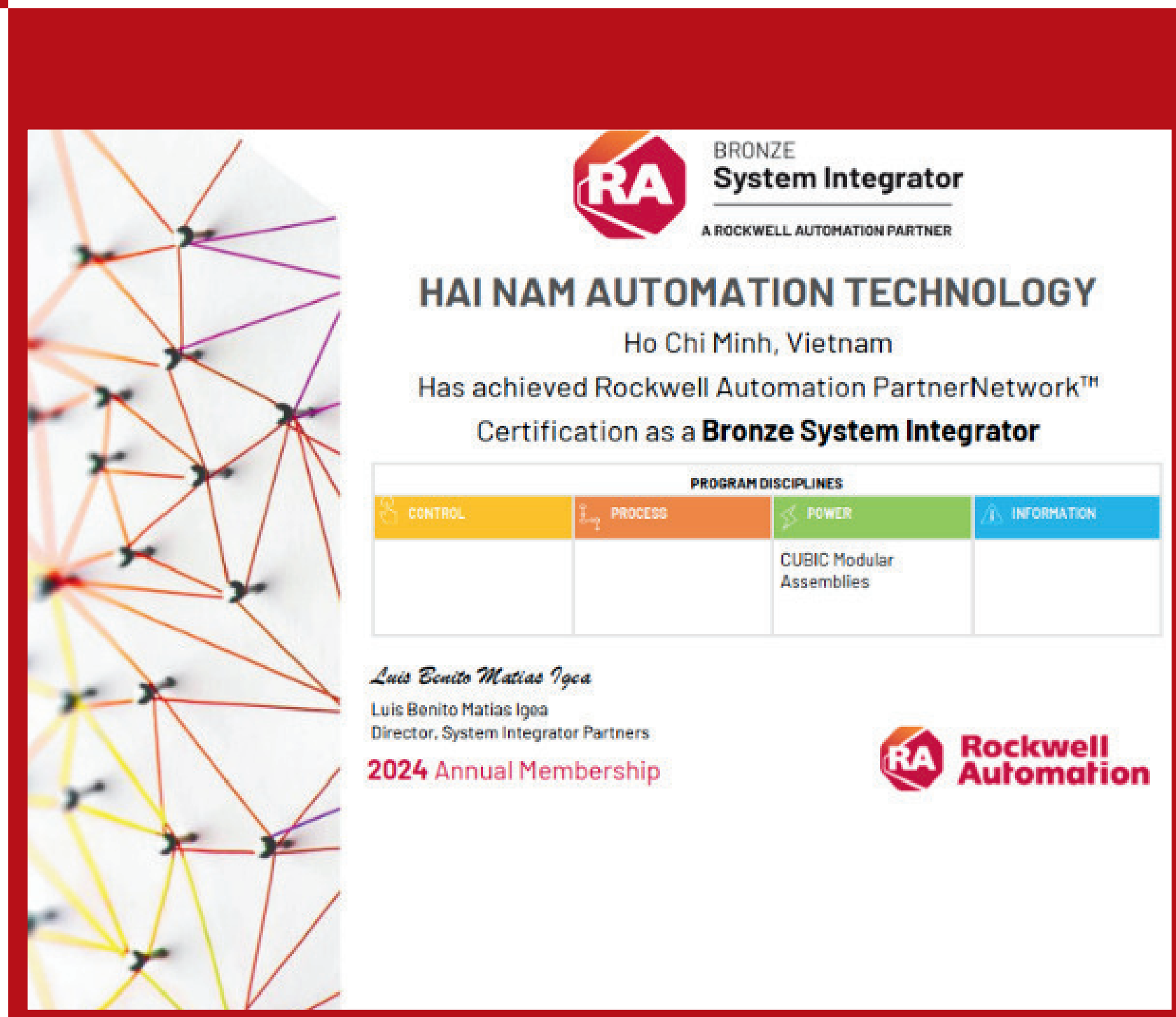


# PROLOGUE

Hai Nam has become a system integrator for the CUBIC Modular System in Vietnam.



With a strong track record in serving across a diverse range of industries since 2002, Hai Nam Automation specializes in electrical switchboards, switchgear, Motor Control Center (MCC), and electrical panels.



This appointment aligns with our continuous regional investment strategy and commitment to expand the CUBIC intelligent motor control offering across Southeast Asia.

# INTRODUCTION

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

The CUBIC modular system offers extensive options for constructing tested panels, allowing full flexibility in choosing electrical components. Its adaptable dimensions ensure panels can be tailored to fit the installation site and can be modified or extended as needed.

The system is fully documented and supplied as flat-pack globally to trained panel builders, ensuring consistent quality. With years of experience, CUBIC delivers enclosure solutions across various industries, including infrastructure, OEMs, offshore, mining, marine, and the energy sector, serving both fossil and renewable energy projects such as power plants, 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.

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.

# INTRODUCTION



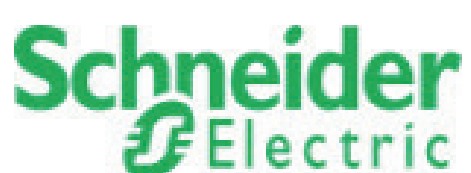
## THE MODULAR SYSTEM

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.

## TESTED BUSBAR SYSTEMS

CUBIC's busbar systems, made from standard components, support up to 6300 Amps and are tested by DEKRA according to IEC/EN 61439 standards, withstanding short-circuits up to 120 kA for 1 second and peak currents up to 264 kA. The busbar sections are easily assembled in templates and fitted into panels without the need for drilling or threading, thanks to CUBIC's specially designed assembly bolt. All busbar joints are maintenance-free as per DIN 43673. These systems are part of the modular design and detailed in CUBIC's Instruction Manual for easy installation.





# INTRODUCTION



## 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.



## 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.



# 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+

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

# INTRODUCTION

## 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.

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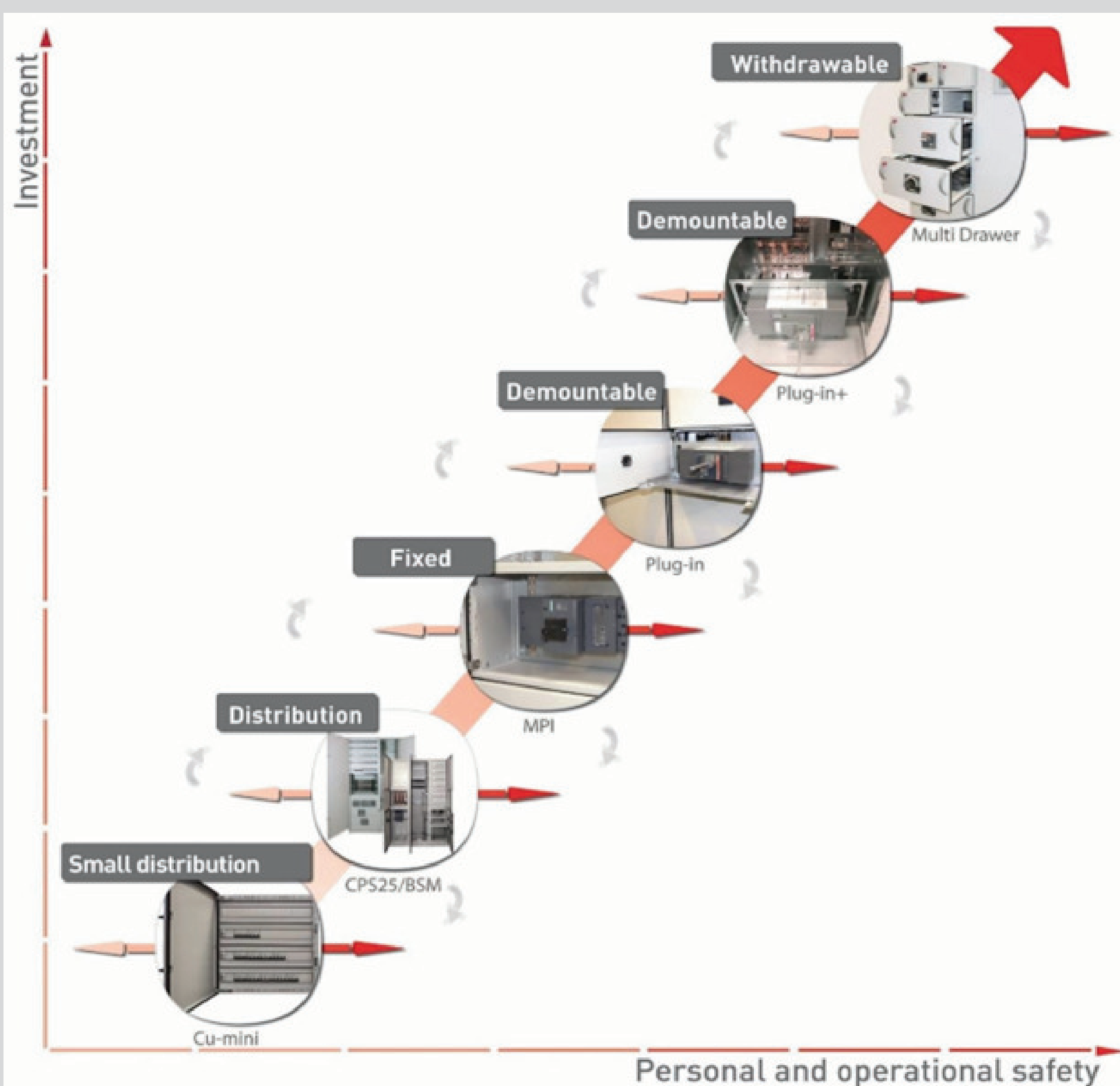
# A COMPLETE RANGE

## CUBIC MODULAR PRODUCT OVERVIEW

- Main switchboards
- Distribution switchboards
- MCC panels
- Control desk
- 19" rack
- Marine panels
- Emergency switchboards
- PDU / PSU Solution
- HVAC / CTS



## CHOICE OF SOLUTION



CUBIC's wide product range ensures an optimal solution to almost any kind of project. Many different technologies are often used for large projects, as they secure competitiveness and a technically safe solution for the end customer many years ahead.

# APPLICATION

CUBIC – Outstanding safety and customized solutions for any applications: asevere environments



WATER AND WASTEWATER INDUSTRY



PETROCHEMICALS



AIRPORT & SEAPORT



DATA CENTER



HEALTHCARE FACILITIES



FOOD & BEVERAGE



COMMERCIAL BUILDING



POWER PLANT



# CUBIC SWITCHBOARD SPECIFICATIONS

## GENERAL DATA

Standards	AS/NZS/IEC 61439-1/-2, IEC TR 61641, AS/NZS 3439.1, IEC 60529, IEC 60068-2-6, IEC 60068-2-57, IEC TS 63107, UL 67, UL 508 A, UL 845 and UL 891, CSA C22.2 No. 29-M1989, CSA C22.2 No. 14-95, CSA C22.2 No. 31-M89, ISO 6270, ISO 7253/9227, ISO 1520, ISO 2409 and ISO 12944.
Certificate	Certified by recognized certification bodies ASEFA, ASTA, Dekra, and tested by independent laboratories

## ELECTRICAL DATA

Rated insulation voltage $U_i$	1000 V 3~
Rated operating voltage $U_e$	690 V 3~
Rated impulse withstand voltage $U_{imp}$	Up to 12 kV
Rated frequency	50/60 Hz
Main Busbar:	
Rated current $I_e$	Up to 7000A
Rated peak withstand current $I_{pk}$	Up to 264 kA
Rated short-time withstand current $I_{cw}$	Up to 120 kA – 1s
Arc fault containment	
Prospective short-circuit current	Up to 100 kA
Duration	1000 ms
Criteria (IEC TR 61641)	1 to 7
Earthing system	TT, IT, TNS, TNC, and TN-C-S

## MECHANICAL DATA

Form of separation	Up to Form 4b, Type 1-7
Seismic and Earthquake	IEC 60068-2-57
Installation	EMC environment A and B
Degree of protection	Up to IP54
Operating temperature	
Vibrations and Shocks	IEC 60068-2-6
Corrosive atmosphere	Class C2 high, according to ISO 12944

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