



Your Partner in Reliable Solutions for Power Distribution



Engineered to the highest
Standards

More than 30,000 verticals installed
50+ Authorized partners, Global Solutions



 INTRODUCTION	 APPLICATIONS	 SAFETY & RELIABILITY	 COMPACTNESS & CONVENIENCE
 DIGITAL SOLUTIONS	 RANGE & CHARACTERISTICS	 CONFIGURATION	 SUPPORT

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-  website

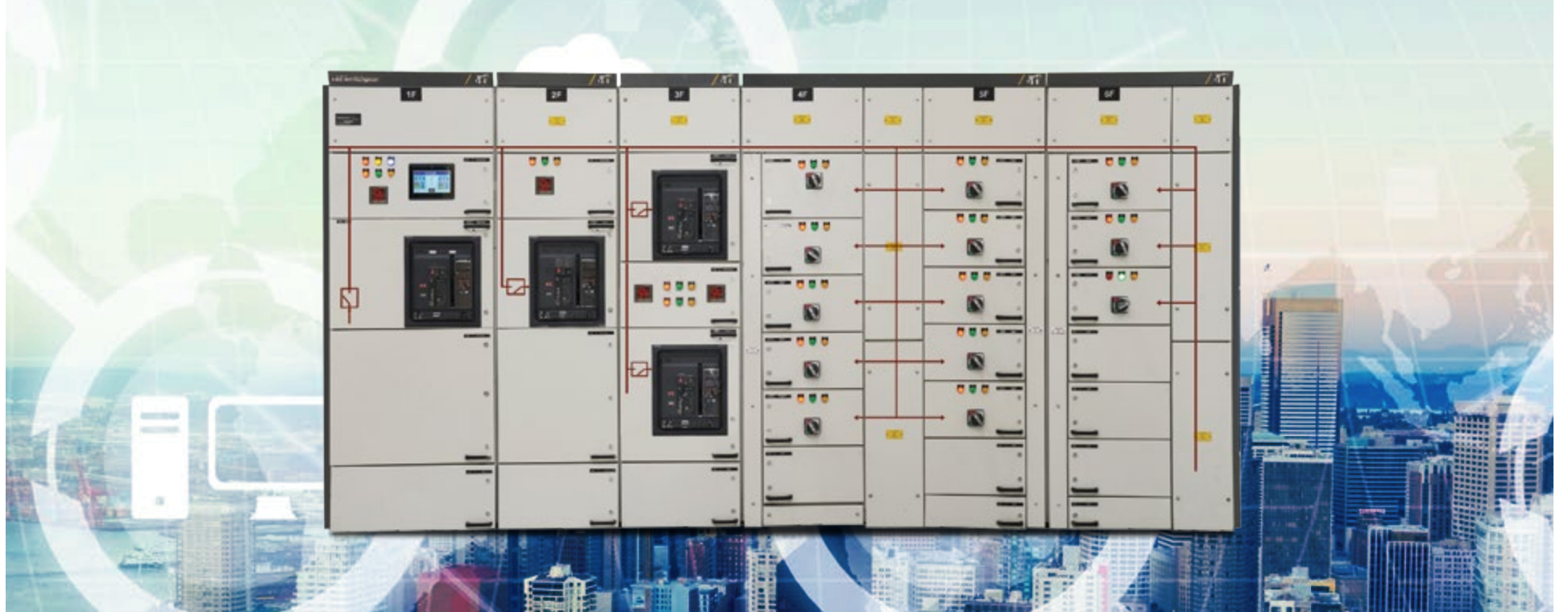
Introduction

Power Distribution

Motor Distribution

Outdoor Solutions

Digital Solutions



In the infrastructure business, every element of construction, installation and maintenance contributes to a project's long-term profitability. Being one of the leaders in switchgear industry, we are constantly innovating to help infrastructure developers make the most of their distribution systems. The new Ti range designed by our switchgear Design & Development Center, is a product of this quest. It is design verified with aluminium and

copper busbars, providing the perfect balance of cost-effectiveness, compactness and safety that infrastructure developers have always looked for. L&T Electrical & Automation has been a market leader in the low voltage switchgear category. Our Ti range with aluminium and copper busbar options is developed on the voice of customers and positioned to set new benchmarks in electrification solutions for building and industry.

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Power control center including protection and power quality solutions

- Main Busbar upto 8000A
- Upto 5000A (Omega Breakers ACB)

- Upto 1250A (MCCB)
- Power factor correction upto 300kVAR/vertical



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Motor control center including protection, starters, drives

- Starter Feeders upto 250kW (MCCB/SDF/MPCB)
- Soft starters upto 375kW
- VFD Drive feeders up to 250kW



Introduction

Power Distribution

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Outdoor Power Distribution Solutions with protection and metering

- Assembly for outdoor installation - Tested & certified as per IEC61439-1&2
- Degree of protection upto IP55
- Digital Panel with complete range of connected products & edge control solution

- Main Incomer Feeders upto 1600A Feeders
 - ◆ Upto 1600A (Omega Breakers ACB)
 - ◆ Upto 800A (MCCB Feeders)



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Digitalization plays foundational role in Energy management and efficient operation of plant/building. The future of power digitalization is getting us there with Ti uniquely designed smart communication solutions - **'SmartComm'**.

Powered by Ivisionmax platform SmartComm is a state-of-the-art SCAD- based unified software platform for device communication, integration, data acquisition, data management, monitoring & control and business intelligence.

Uniquely virtual and sustainable, SmartComm is the total 'Smart' package.

Ti Digital Panel solution can enhance the operation and provide savings for a number of applications:

- Integration
- Monitoring
- Control & Diagnostics
- Energy management solutions
- Power management solutions
- Energy & power quality management





Introduction

Key Features

The Power of IEC61439 & Ti



The Ti range of distribution boards is backed by many years of knowledge and experience in systems and switchgear, as well as feedback from consulting engineers, electrical contractors and end-users. With Ti, you are assured of cutting-edge performance, superior safety, higher reliability, effective use of your capital and space, and high-class protection for your power distribution systems.

The design-verified assembly, together with increased versatility, makes Ti efficient for today's challenging demands and moves towards fulfilling future expectations. Designed to be fully compartmentalised, bolted, and flat-packed, Ti complies with IEC 61439 standards and elevates your power distribution to a new level. Ti is suited for Indian tropical conditions that demand innovative and cost-effective measures.



Introduction

Key Features

The Power of
IEC61439 & Ti



Complete



61439-1&2

- Robust panel structure with grade mechanical strength is ensured by closed profile roll formed structural members
- Unique Double deck busbar system reduces impedance & heat loss
- Best in class polyester glass supports for busbars
- Assured quality by unique structural & busbar noble components

- Multi level safety with padlockable doors, protective layers
- High clearances & creepage of 25mm ph-ph
- High internal Arc withstand upto 85kA-0.5 Sec
- Seismic resistance design and verified in accordance with global standards of IEC60068-3 (richter scale 9), ICC ES AC 156 & IS 1893 Zone V requirement



Introduction

Key Features

The Power of
IEC61439 & Ti 

Safest Structure

Reliable Performance



All our Ti range are completely design verified by testing
as per latest IEC standard 61439-1&2



Introduction

Key Features

The Power of IEC61439 & Ti

Safest Structure

Reliable Performance



Complete

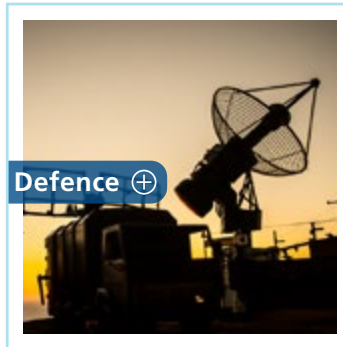
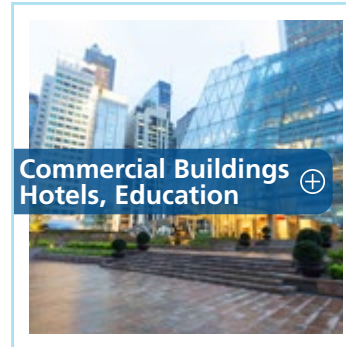
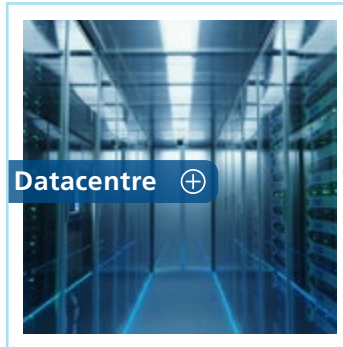
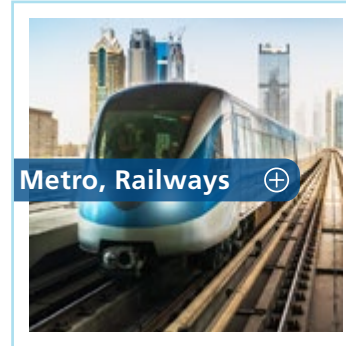
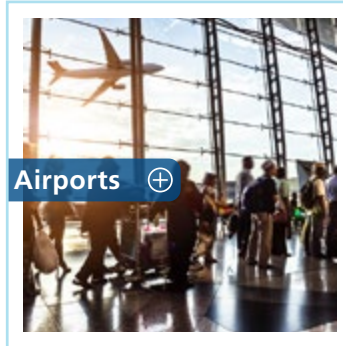


61439-1&2

Ti range of panels are designed for high reliability & safety for operation and maintenance in Indian tropical conditions



Applications

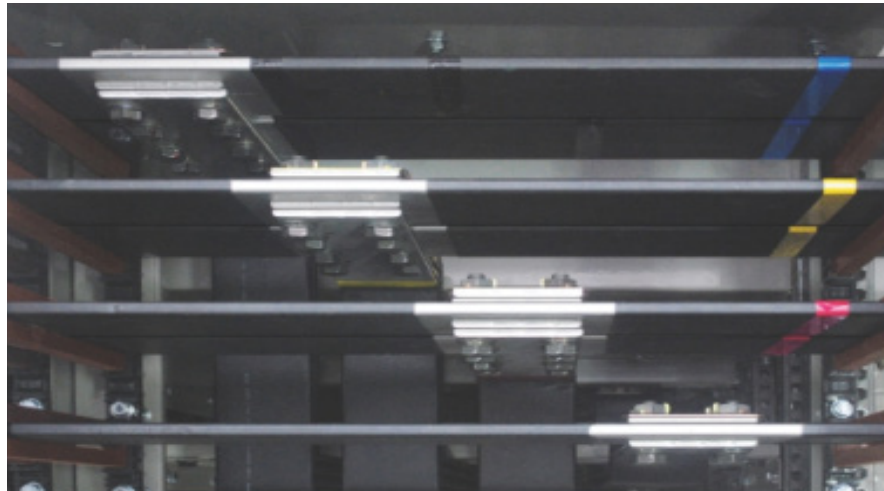


In the current scenario, each activity of construction, installation and maintenance contributes to a project's long-term profitability.

We constantly innovate to offer industries and infrastructure developers, a state of art economical solution for all their requirements.

Diverse solutions to address unique application requirements of utility & infra, buildings & industrial projects.

Safety & Reliability



Safer busbars – Busbars in Ti range have higher clearances than those provided by global switchboard standards (25mm - Ph to Ph and 19mm - Ph to N/E) offering superior safety.

Design Verified for safety < ○ ○ ○ ○ ○ >

VERIFIED SAFE

When dealing with electrical systems, there are no second chances. Ti is equipped with a range of safety features to safeguard your system as well as the people who operate it.



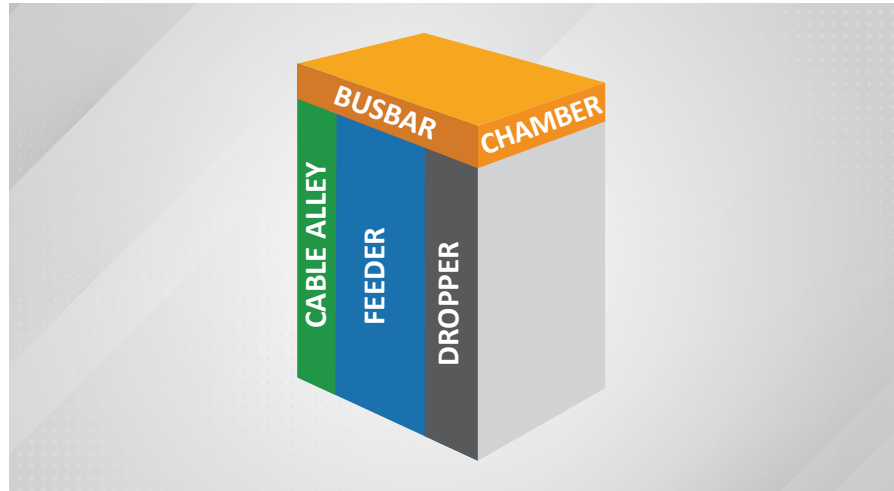
Verified for higher impact resistant (IK 10) as per IEC 62262(2002)-relates to IK ratings. Better mechanical strength with increased product life.

Designed for reliability < ○ ○ ○ >

DESIGNED FOR RELIABILITY

The design verified assembly together with increased versatility makes Ti efficient for today's challenging demands. Uninterrupted and smooth operation of various equipments in a factory largely depends on the performance of this switchboard.

Compactness & Convenience



Flexible busbar configurations with top or bottom busbar system gives the edge to optimize foot print and cable entry

Designed for convenience < ○ ○ ○ ○ ○ ○ ○ ○ ○ >

DESIGNED FOR CONVENIENCE

The Ti range incorporates a number of features that make your installation and maintenance easy, in the form of wide cable alley, flexible busbar configuration, range of design configuration with different heights and easy access doors.



Choose from a range of full or half width modules with size optimized to achieve compactness without compromising on safety and reliability

Compact solution < ○ ○ ○ >

THE SMART SPACE SAVER

In the urban scenario, space means money. Hence saving space saves money. Ti offers flexibility and customization to suit your space requirements, ensuring that you maximize value on the space available to you. In the form of the double front, multi-tier, halfwidth modules, 440mm depth, etc.



Digital Solutions

Complete range of Smart Devices



The perfect match for your Ti System
 L&T Electrical Automation is India's leading switchgear company and offers the widest range of electrical standard products, compliant with Indian and global standards. Digital and intelligent panel solutions offer more convenience, comfort and safety through the state of -the art smart communication system with the complete range of connected products. With the latest technologies,

digital panel solutions have access and collaborate information in real-time to meet the rising demands of energy optimization/remote monitoring and control of switchgear The emerging global concept of gave E&A the opportunity to leverage strengths to bring you more convenience,comfort and safety through its uniquely designed smart communication solution – Smartcomm.



Digital Solutions

Complete range of Smart Devices



Digital Solution supports wide range of devices (ACB, MCCB, Meters, Drives, Soft Starters, iMMR Relays, MCOMP Relays, etc) and protocols Modbus

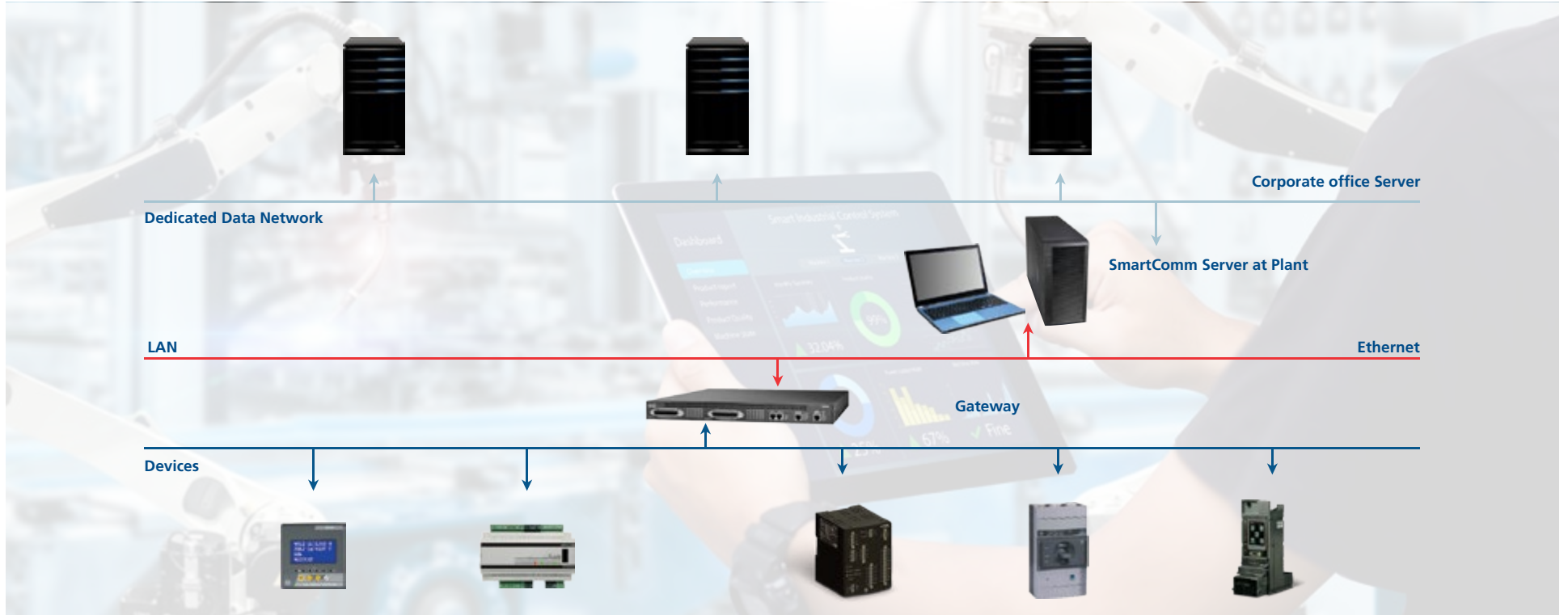
TCP/IP/Modbus RTU/Profibus/Ethernet
Scalable - It can expand its functionality to address the growing requirements of smart grids and smart cities





Digital Solutions

Smart solution & Automation system



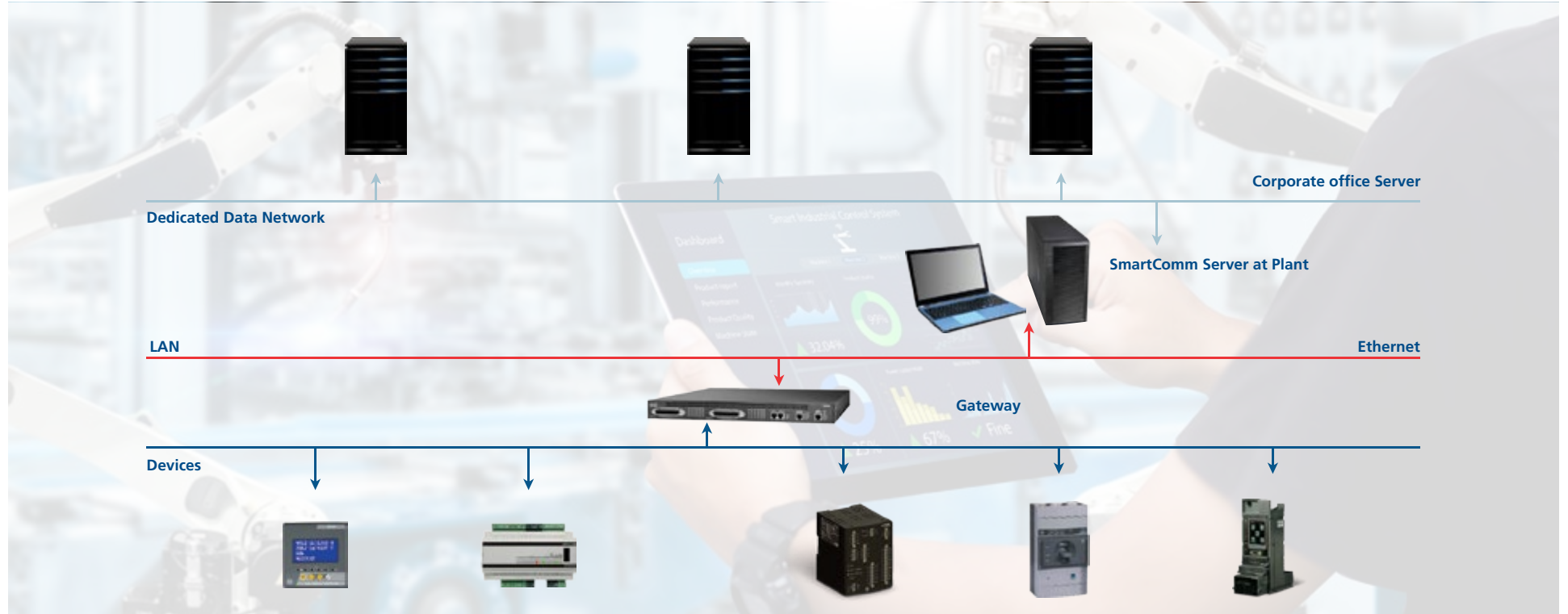
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Smart solution & Automation system



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TCP/IP/Modbus RTU/Profibus/Ethernet
Scalable - It can expand its functionality to address the growing requirements of smart grids and smart cities





Range & Characteristics

Insulation Characteristics	Standards	IEC 61439 - 1&2		
	Clearance	25mm Ph-Ph		
	Creepage distances	>25mm		
	Overtoltage category	II / III / IV		
	Pollution degree	3		
	Field condition	Inhomogeneous (non-uniform)		
Electrical characteristics	Voltage rating	Rated operational voltage (U_e)	415-690 VAC, 24-22- VDC	
		Rated insulation voltage (U_i)	690 V	
		Rated impulse withstand voltage (U_{imp})	8 / 12 kV	
		Rated frequency (f_n)	50 / 60 Hz	
	Current ratings	Main Horizontal busbars:		
		Rated current (I_{nA})	up to 5000A	
		Rated peak withstand current (I_{pk})	up to 220kA	
		Rated short-time withstand current (I_{cw})	up to 100kA 1s	
		Vertical Distribution busbars:		
		Rated current (I_{nA})	up to 3000A	
		Rated peak withstand current (I_{pk})	up to 154kA	
		Rated short-time withstand current (I_{cw})	up to 70 kA (1s) / 100 kA (1s)*	
Mechanical Characteristics	Degree of protection	In accordance with IEC 60529:		
		External	IP-43/IP-54/IP-55*	
	Internal	IP 2X		
	Forms of separation	as per IEC 61439-2	up to form 4b type 6	
	Dimensions	Height (mm)	1800, 2000, 2200, 2400	
		Width (mm)	440, 600, 800, 1000 (ACB section)*	
		Depth (mm)	850, 1100, 1400, 1650, 1900 (Outgoing section)*	
		Depth (mm)	440, 600, 900, 1000, 1100 (ACB section)*	
	Surface Treatment	Structure	Powder coated	
		Internal Components	Powder coated	
		External Components	Powder coated	
	Resistance to Corrosion	Damp heat cycling test	IEC 60068-2-30	
		Salt mist test	IEC 60068-2-11	
	Plastic Components	Flame retardant, self-extinguishing, Halogen-free	IEC 60695-2-10. IEC 60695-2-11	

*Customised solution can be offered on request.



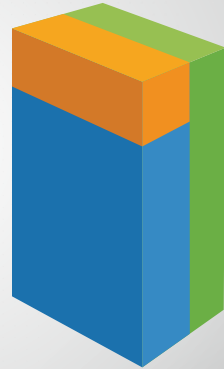
Configuration

Typical Arrangements Configurations

Configurations

ACB panel

- Feeder
- Cable alley
- Busbar



Outgoing section with front cable entry

- Feeder
- Cable alley
- Busbar



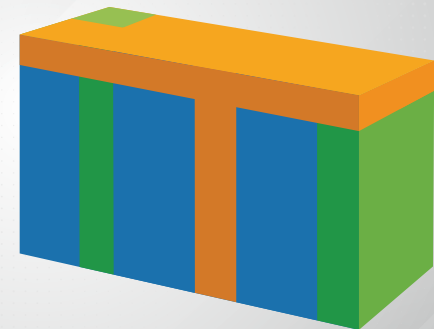
Outgoing section (double front arrangement)

- Feeder
- Cable alley
- Busbar



ACB section coupled with outgoing section

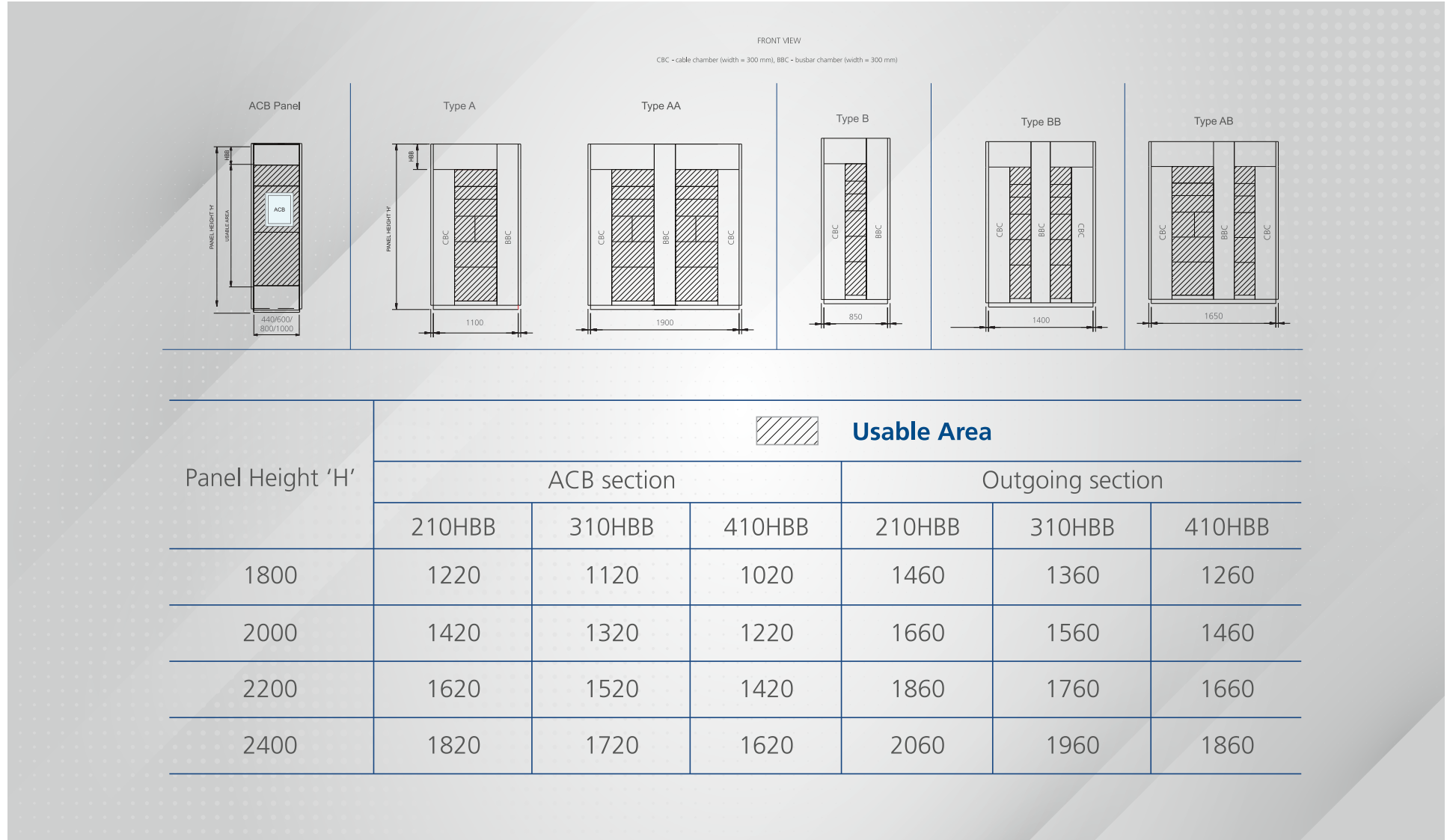
- Feeder
- Cable alley
- Busbar



Configuration

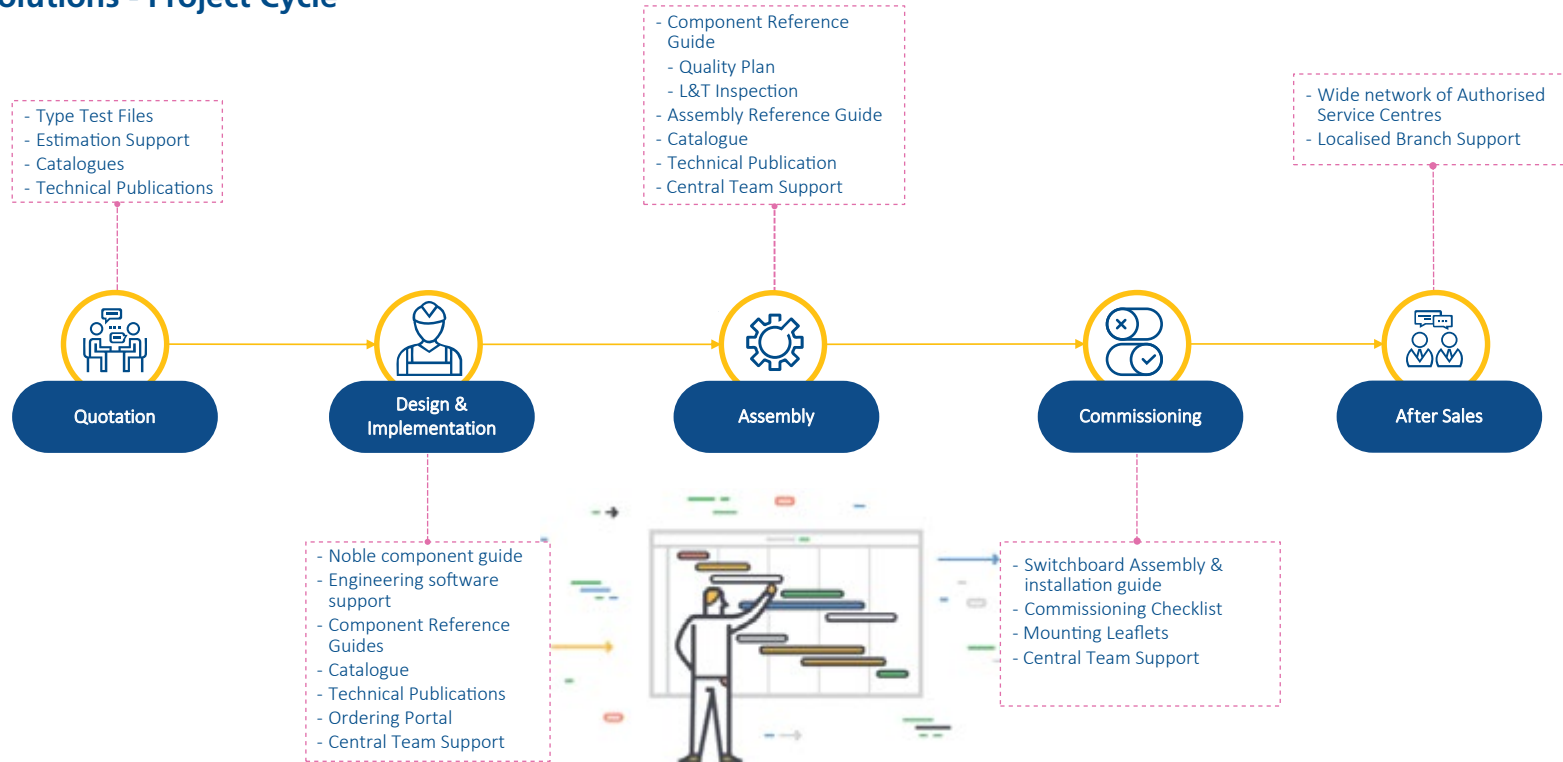
Typical Arrangements
Configurations

Configurations



Support

Ti Panel Solutions - Project Cycle



Superior after-sales support: The most important aspect of our business is you, our customer. At the Customer Interaction Centre, our Customer Care Executives provide information about all the products and services. Our dedicated team

makes sure that the products we sell live up to their expectations and our efforts are geared towards high customer satisfaction. That is why our centrally coordinated service team is on hand to give you prompt after-sales support.



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