



A Reliable Partner IN ELECTRICAL SWITCHBOARD MANUFACTURING BUSINESS

We make the difference!



WHY US?



Test & Standards

Type – Tested Switchboard as per IEC 60439-1:2004
BS EN 60439-1 Certificated by ASEFA,
IEC 61439-1/2:2009 Certificated by ASTA,
IEC 62271-200 Certificated by PEHLA.



Dust and waterproof

IP30 up to IP54 as per IEC 529-1
Enables the erection of the equipment in a production environment



Internal form of separation

Up to Form 4B as per IEC 60439-1
Enables safe modification under energised conditions



Compact

Increase functional floor space in building services



Smart and simple design

Secure fast deliveries



Durable surface protection

Shock and scratch resistant
Minimise damages during transportation



Maintenance free busbar system

Lower investment costs



Complete Documentation

Technical document; As-built drawings are in hard and soft copies.

Contents

3	About us
4	Hainam, A Reliable Power
5	Hight Quality
6	Blokset - Schneider
7	Simoprime World & A4
8	Perfect Manufacturing System
10 - 12	Technical Data
10	Blokset (Schneider)
11	Simoprime (Siemens)
12	Hai Nam
13	Complete Range of Electrical Switchboards
16 - 20	Products Range
16	Medium Voltage Switchgear
	Synchronization Panels
	Main Low Voltage Switchboards
	Kiosk Station
	Subdistribution Boards
17	Motor control center
	Fire Fighting Control Panel
	Hosereel Cabinet NEW
18	Distribution Boards
19	Consumer Unit - Embed/Flush Mounting
	Consumer Unit - Surface Mounting
20	Cable Trunking
21	Feature Projects



ABOUT US

Hai Nam is a specialist in designing and manufacturing of Low Voltage & Medium Voltage Switchboards, Services, and Automations.

We found in 2002 in Southern HCMC, Vietnam, Hai Nam Switchboard Manufacturing Co., Ltd. is currently located in a 6,650 square meter facility with 03 lines of production machines.

In 2004, we proudly successful achieved ASTA type-test certification. The certification, with a comprehensive range, has helped us to be eligible for participation in a wide spectrum of projects.

In addition our quality is assured by Hai Nam's certification to SGS ISO 2001:2008. The year 2007 represented another corporate milestone when we became the licensee of Blokset, a type-tested low voltage & high dependability switchboards from Schneider Electric.

In 2013, we established a factory in Phnom Penh, Kampuchea.

In 2014, Siemens enlisted Hai Nam as a certified technology partner to promote and sell SIMOPRIME WORLD & A4, through the eyes of new IEC 62271-200.

In 2015, we achieved multiple goals of establishing a factory in Ha Noi; a factory in Yangon, Myanmar; and an Automation Centre in HCMC.

You, our clients are the life-blood of our company that everything we do we do it for you to exceed your expectations for performance and reliability. We promise to deliver on time, to stay within budgets, and to meet specifications.



HAI NAM, A RELIABLE POWER!

We are a team of 200 people including 50 Engineers & Bachelor Holders. Many of whom have worked together for years. The success which the Company has achieved is based squarely on the body of knowledge, skill and expertise of its workforce.

What makes Hai Nam different from our competitors?

Unique Capabilities: We are turnkey Solutions in Power & Automation. In house expertise includes:

- Well-trained Engineers using Electrical CAD, Eplan, NX-Tool, Elcad.
- Fabrication, Assembly, Testing & Simulator Test.
- Great production floor with 03 CNC machine lines for metal fabricating; Electro Powder Coating line with 04 automatic temperature control ovens; Full range of test kits for quality controls.
- Skilled Services Team to support at site during turn on periods, modifications & trouble shooting.

HIGHT QUALITY

ASTA TYPE-TESTED CERTIFICATE, A GUARANTEE OF QUALITY

Electrical Switchboards fulfill a vital function in a company's operations, and must be perfectly suited to our client's needs. Companies purchase Hai Nam's Electrical Switchboards will be able to take advantage of Hai Nam's know-how and years of manufacturing experiences in production of internationally certified by ASTA. Hai Nam enables its clients to choose the equipment best suited for their applications.

We have also been awarded ISO 9001:2008 Certified Quality Control System, The Certificate is given by SGS System & Services Certification. It is meaningful for our quality system and customer services.



Imoulse Voltage Withstand Test



High Voltage Test



Imoulse Voltage Withstand Test



IP Test



Short Circuit Test



Short Circuit Test from Control room

To obtain international certification for its switchboards, tests have been carried out on the whole configuration, including metal work structures, circuit breaker, and breaker and busbar system. Verifications have been conducted on the excellence of Hai Nam's Switchboard products, including:

- Temperature-rise limits
- Dielectric properties
- Short-circuit to withstand strength
- Effectiveness of the protective circuit
- Clearance and creepage distance
- Mechanical operation
- Degree of protection
- Electromagnetic compatibility (EMC)



BLOKSET - SCHNEIDER ELECTRIC

Licensing Products

A global design

Type-tested and compliant with IEC60439-1/ IEC 61439-1/2.

With a flexible and modular system, designed for the maximum safety and reliability.

Exclusively designed for and type-tested with Schneider Electric components: guarantee of the highest performance and safest use of components from the world leader in protection and control.

Focussing on safety, reliability and adaptation to high-end needs...

Certified IEC60439-1 compliance guaranteeing in-depth thermal rise effects and short-circuit withstand.

Internal arc withstand.
Earthquake/ seismic withstand.
Corrosive ambient protection...

With all low voltage applications necessary in large industrial sites, large commercial buildings and infrastructure...

Both withdrawable and fixed designs available.

Electrical distribution, with Schneider Electric circuit breakers: busbar rating up to 6300A.

Completely centralized and modular motor control, using state-of-the-art Schneider Electric components: conventional and intelligent Motor control centers (MCC/iMCC), variable speed drives and soft-starters.

Power factor and harmonics compensation with Schneider Electric capacitors: high performance, high safety and long lasting installation by design.





SIMOPRIME WORLD & A4

Only benefits, no worries



SIMOPRIME, the air insulated primary distribution switchgear, is the best solution from a global player for standard applications. It is a result of the best practise sharing methods and experiences, which Siemens has nurtured for more than a century across the globe.

When you opt for SIMOPRIME, you opt for a perfect harmony between technology, reliability, quality, delivery and service. That's what Hai Nam stands for and that's what you are ultimately looking for. Peace of mind the ultimate aim in everyone's life.

Product Features:

1. Factory assembled type tested switchgear as per IEC62271-200 and VDE 0671-200
2. Rated nominal current of busbar 2500A (24kV), 3600A (7.2-17.5kV)
3. Rated short time withstand current 3s: 25kA, Yota (7-17.5kV)
4. Type testing of circuit breaker and make proof earthing switch inside the panel
5. All switching including emergency manual operations and rack-in / rack-out of switching device with high-voltage door closed
6. Interlocking between high-voltage door and the switching device
7. Highest service continuity LSC2B
8. Partition class PM through earthed metallic shutters and partitions
9. Internal arc tested design IAC AFLR up to 31.5kA; 0.1/1.0 Sec.
10. Use of maintenance free vacuum circuit breakers from Siemens
11. Design based on global best practise sharing methods and experiences with use of standard worldwide available components



PERFECT MANUFACTURING SYSTEM

1. Quotation

- Well-trained personal
- Specific software

2. CAD/CAM Design

- Qualified engineers
- Im-house CAD/CAM facilities

3. Sheet Metal Fabrication

- 30 tin CNC turret punch with ability to process up to 6mm thick metal sheet
- CNC shearing and bending machines

4. Electro-Power Coating

- Semi-auto power system
- Color-customisation facilities available

5. Machine Assembly

- Modular design
- G-profile frames for added strength

6. Electrical Assembly

- Well-trained technician
- Appropriate tools for electriacal wering

7. Final Quality Control

- Primary and secondary injection tests
- Dielectric test
- Functional test

8. Delivery

- Professional team
- Always on time

9. Testing and Commisioning at site

- Experienced engineers
- Fast action

ELECTRICAL SWITCHGEARS
HOLD IMPORTANCE ROLE
IN THE STABILITY OF YOUR
ELECTRICAL SYSTEM



TECHNICAL DATA - SIMOPRIME (SIEMENS)



Ratings (max.)	Rated values
Rated voltage	Up to 24kV
Rated frequency	50/60Hz
Rated short-duration power-frequency withstand voltage	Up to 50kV
Rated lightning impulse withstand voltage	Up to 125kV
Rated short-time withstand current, 3s	Up to 40kA
Rated peak withstand current at 50/60Hz	Up to 100kA
Rated short-circuit breaking current	Up to 40kA
Rated short-circuit making current at 50/60Hz	Up to 100kA
Rated normal current of busbar	Up to 3600A

Classification of the MV switchgear according to IEC 62 271-200

Resistance to internal arcs

Classification	IAC A FLR
Accessibility	
- Front	Type A
- Rear	Type A
- Lateral	Type A
Test current	kA 25/31.5/40
Test duration	s 0.1/1.0

Construction and design

Class of partitions	PM (metallic partition)
Service continuity category	LSC2B (metal-clad)
Compartment accessibility (standard)	Tool-based
- Busbar compartment	Interlock-controlled
- Switching-device compartment	Tool-based
- Low-voltage compartment	Interlock-controlled
- Connection compartment	And Tool-based

Switchgear up to 7.2kV

Rated voltage	7.2kV
Rated frequency	50/60Hz
Rated short-duration power-frequency withstand voltage	20kV
Rated lightning impulse withstand voltage	60kV
Rated short-time withstand current, 3s	40kA
Rated peak withstand current at 50/60Hz	100kA
Rated short-circuit breaking current	40kA
Rated short-circuit making current at 50/60Hz	100kA
Rated normal current of busbar	Up to 3600A

Switchgear 12kV

Rated voltage	12kV
Rated frequency	50/60Hz
Rated short-duration power-frequency withstand voltage	28kV
Rated lightning impulse withstand voltage	75kV
Rated short-time withstand current, 3s	40kA
Rated peak withstand current at 50/60Hz	100kA
Rated short-circuit breaking current	40kA
Rated short-circuit making current at 50/60Hz	100kA
Rated normal current of busbar	Up to 3600A

Switchgear 15kV

Rated voltage	15kV
Rated frequency	50/60Hz
Rated short-duration power-frequency withstand voltage	35kV
Rated lightning impulse withstand voltage	95kV
Rated short-time withstand current, 3s	40kA
Rated peak withstand current at 50/60Hz	100kA
Rated short-circuit breaking current	40kA
Rated short-circuit making current at 50/60Hz	100kA
Rated normal current of busbar	Up to 3600A

Switchgear 17.5kV

Rated voltage	17.5kV
Rated frequency	50/60Hz
Rated short-duration power-frequency withstand voltage	38kV
Rated lightning impulse withstand voltage	95kV
Rated short-time withstand current, 3s	40kA
Rated peak withstand current at 50/60Hz	100kA
Rated short-circuit breaking current	40kA
Rated short-circuit making current at 50/60Hz	100kA
Rated normal current of busbar	Up to 3600A

Switchgear 24kV

Rated voltage	24kV
Rated frequency	50/60Hz
Rated short-duration power-frequency withstand voltage	50kV
Rated lightning impulse withstand voltage	125kV
Rated short-time withstand current, 3s	25kA
Rated peak withstand current at 50/60Hz	63kA
Rated short-circuit breaking current	25kA
Rated short-circuit making current at 50/60Hz	63kA
Rated normal current of busbar	Up to 2500A

TECHNICAL DATA - BLOKSET (SCHNEIDER)

ACCORDING TO STANDARD(s):

CEI/IEC 61439-1 (2009-01), CEI/IEC 61439-2 (2009-01):



Verification of construction:

- §10.2 Strength of materials and part : corrosion, insulation materials, lifting
- §10.3 Degree of protection
- §10.4 Clearances and creepage distances
- §10.5 Effectiveness of the protective circuit
- §10.6 Incorporation of switching devices and components
- §10.7 Internal electrical circuits and connections
- §10.8 Terminals of external conductors

Verification of performance:

- §10.9 Dielectric properties
- §10.10 Temperature-rise
- §10.11 Short-circuit withstand strength
- §10.12 Electromagnetic compatibility

CHARACTERISTICS OF THE ASSEMBLY

Rated operational voltage (Ue)	Main circuit	Up to 415 V a.c.
Rated frequency		50/60 Hz
Rated current (In)		Up to 6000 A
Rated diversity factor		1
Dielectric properties (§10.9)	Pollution degree Material group Overvoltage category	3 IIIa IV
Rated insulation voltage (Ui) - (§10.9)	Main circuit	1000 V
Rated impulse withstand voltage (Uimp) - (§10.9)	Main circuit	12 kV

Short-circuit withstand strength

Rated short-time withstand current (Icw) - (§10.11)	All busbar - Incoming unit 3 phases Phase-Neutral	Up to 100 kA/1s 60 kA/1s
Rated peak withstand current (Ipk) - (§10.11)	All busbar - Incoming unit 3 phases Phase-Neutral	220 kA 132 kA
Rated conditional short-circuit current (Icc)	Each outgoing unit 3 phases Phase-Neutral	Up to 100 kA/415V Up to 60 kA/415V
Internal Arc		85kA - 0.4s / 415V

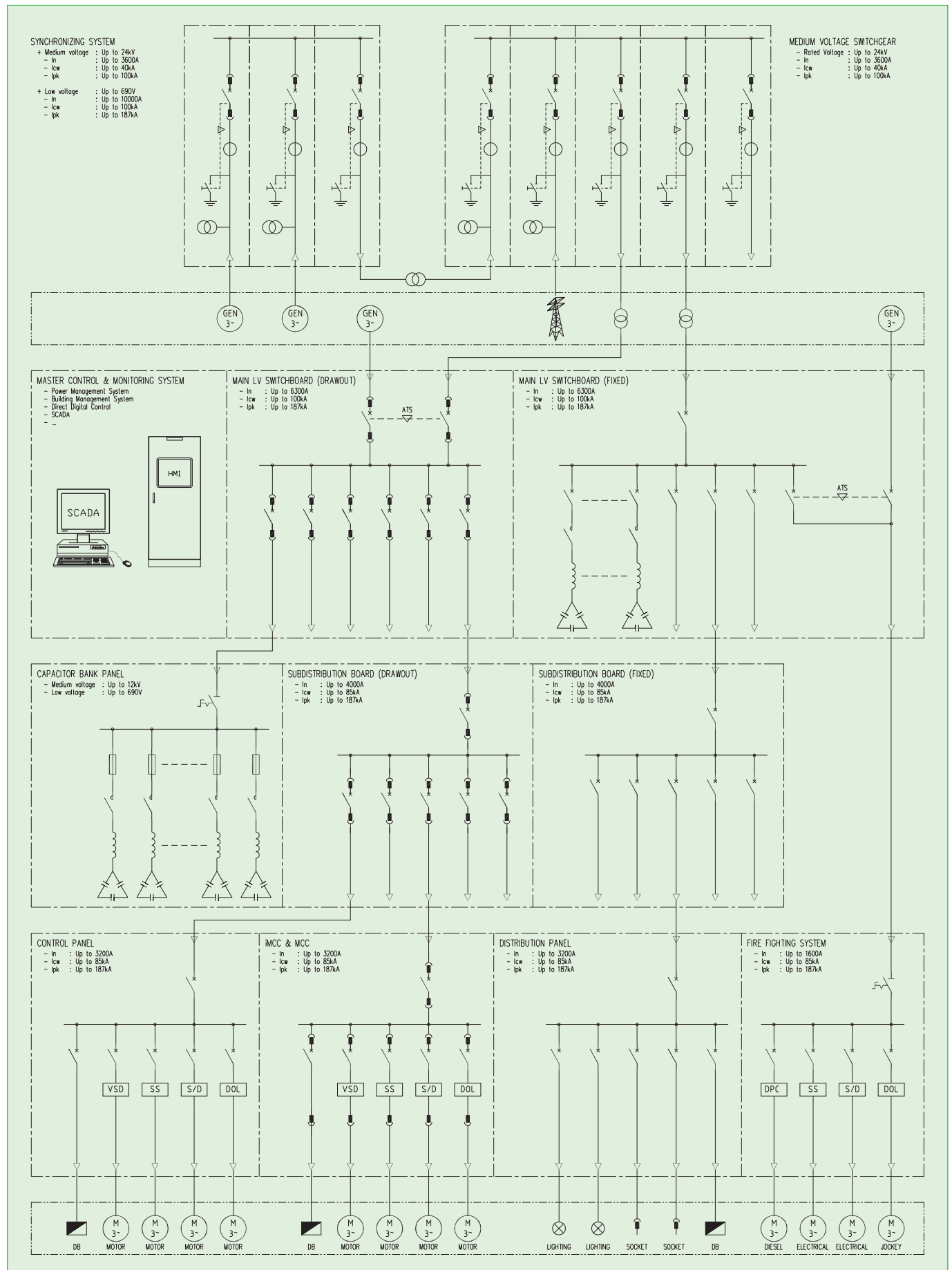
Protective circuit

Rated short-time withstand current (Icw) - (§10.5)		60 kA/0.5s
Effective connection between the exposed conductive part of the assembly and the protective circuit - (§10.5)		R < 0.1 Ohm
Clearances and creepage distances - (§10.4)	Clearances Creepage distances	> 14 mm > 16 mm
Degree of protection - (§10.3)		Up to IP54
Forms according to IEC 61439-1		1/2b/3b/4b

TECHNICAL DATA - HAINAM

Type Test Certificate of Switchgear and Control gear assembly (TTA)	IEC Publication 60439-1:2001 Edition 4.1 and EN 60439-1:1999 with Admendment 1:2004 Clause 8.2.1, 8.2.2, 8.2.3, 8.2.4, 8.2.5, 8.2.6, 8.2.7 and 8.2.8	Issued by ASTA for Switchgear: Incoming 3200A ACB, operation current 3000A
Specifications and Standard Items	Details	Values
Switchgear rated currents	Incoming Air Circuit Breakers	Up to 6300A
	Outgoing feeders	Up to 3200A
Temperature-rise limits (Clause 8.2.1)	Rated current of the assembly	Up to 6000A
	Rated current of incoming 6300A ACB unit	Up to 6000A
	Rated diversity factor of the outgoing units	0.8
	Outgoing 3200A MCCB units	Up to 3000A
Dielectric properties (Clause 8.2.2)	Rated insulation voltage of the assembly	690V
	Rated impulse withstand voltage of the assembly	6KV
Short-circuit withstand strength (Clause 8.2.3)	Rated conditional short-circuit current (Clause 8.2.3.2.3 a&b) - Incoming 6300A ACB unit - Outgoing 3200A MCCB unit	100kA at 400V
	Rated peak and short-time withstand current (Clause 8.2.3.2.3 b) - Incoming 6300A 3P ACB unit and its connection phase busbars - Main horizontal phase busbars 3P tinned Cu busbars	100kA rms for 3s, 220kA Peak
	Rated peak and short-time withstand current (Clause 8.2.3.2.3 d) - Main horizontal neutral busbars (half size)	60kA rms for 3s, 132kA Peak
Effectiveness of the protective circuit (Clause 8.2.4)	Rated conditional short-circuit current (Clause 8.2.4.2) Protective circuit of the outgoing MCCB unit	60kA rms for 1s, 132kA Peak
Clearance and creepage distances (Clause 8.2.5)	Rated insulation Voltage 690V (Ui) for pollution degree 3	> 8mm > 10mm
Mechanical operation (Clause 8.2.6)	Incoming ACB unit and Outgoing MCCB's	50
Degree of protection (Clause 8.2.7)		IP30 to IP54
Electromagnetic Compatibility (EMC) Tests (Clause 8.2.8)	Emission and immunity tests for Enviroment A conditions	Verified
Internal separation	Form 1 to form 4	IEC 60439-1, section 7.7, BS EN 60439-1
Material	Type: Thickness:	Electro-Gavalnized Steel Sheet 2mm, 3mm
Finishing	Frame part Enclosure Door	Electro Powder Coated not less than 50µm
Dimensions		Height: 2090 mm Width: 800, 1000, 1200 mm Depth: 800, 1000, 1200, 1400 mm

COMPLETE RANGE OF ELECTRICAL SWITCHBOARDS





PRODUCTS RANGE

Medium Voltage Switchgear

Synchronization Panels

Main Low Voltage Switchboards

Kiosk Station

Subdistribution Boards

Motor control center

Fire Fighting Control Panel

Hosereel Cabinet NEW

Consumer Unit - Flush

Consumer Unit - Surfaced

Distribution Boards

Cable Trunking





Medium Voltage Switchgear



Synchronization Panels



Main LV Switchboards



Kiosk Station



Subdistribution Boards



Motor control center



Fire Fighting Control Panel



Hosereel Cabinet NEW

WE OFFER A RANGE OF POWER DISTRIBUTION
BOARDS WITH SOPHISTICATED OPTIONS OF
POWER MONITORING SYSTEM



Distribution Boards



Consumer Unit - Embed/Flush Mounting



Consumer Unit - Surface Mounting

CABLE TRAY

1. Adjustale horizontal trunking connector
2. Adjustale horizontal tray connector (orange)
3. Adjustale horizontal ladder connector
4. Adjustale horizontal tray connector
5. Adjustale horizontal trunking connector
6. Adjustale horizontal ladder connector
7. Outside vetical risers cable ladder
8. Horizontal elbow cable ladder (round)
9. Horizontal elbow cable ladder
10. Ladder connector
11. Horizontal cross cable trunking
12. Horizontal tee cable trunking
13. Horizontal elbow cable trunking (round)
14. Horizontal elbow cable trunking (chamfer)
15. Horizontal elbow cable tray
16. Adjustale vertical ladder connector
17. Straight section cable ladder (zam steel)
18. Straight section cable trunking
19. Straight section cable tray
20. Straight section cable tray (zam steel)



FEATURE PROJECTS



VIETNAM PROJECTS REFERENCE

2009

1. Bitexco Financial Tower

2012

2. MGM Ho Tram
3. Noi Bai International Airport

2013

4. Tan Son Nhat International Airport

2014

5. SC VIVO City
6. AEON Mall Ha Noi
7. US Based Microelectronic company
8. Amway Vietnam
9. Manufacturing Facility

2015

10. P&G Ben Cat
11. The Vista

OVERSEA PROJECTS REFERENCE

2012

12. Laos Nam Ngum II Hydropower

2013

13. Vattanac Capital Cambodia

2014

14. Phnom Penh International Airport
15. Crown-Cork Sihanoukville
16. Sihanouk International Airport

2015

17. Yangon International Airport
18. Chardonnay Denso Cambodia



BLOKSET

A complete range of LV switchboards – type tested
to meet IEC 60439-1/61439-1

To meet all your needs:

It is a modular multi-function system

It is a high-dependability system for trouble free
operation of your installation

It is a uniform, high performance, cost-effective solutions

It is the guarantee of Schneider Electric

It is quality, technical excellence & services

Fixed/Draw-out MSB, Fixed/Draw-out MCC/iMCC

Rated Voltage up to 690V

Rated Current up to 6,300A

Index Protection up to IP54

Rated Short Circuit Current up to 100kA/1sec

Forms up to Form 4



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