



# Low Voltage Main Distribution Board **Dunes M Series**



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*Plugged into your needs*

# **Al Hamad is the leading manufacturing enterprise specialized in Low voltage to Medium voltage electrical products.**

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Headquartered in Abu Dhabi, UAE, the company covers entire MENA region and provide expert solutions in view of the local environment, requirements and necessities.

With an extensive experience of more than 2 decades and a thorough knowledge on Low and Medium voltage products, the team at Al Hamad understand the increased demands of the products in upcoming years and worked collaboratively

to manufacture and provide high quality solutions in utilities and many industrial applications.

*The team is dedicated to providing Electrical Solutions to multiple sectors including utilities, Oil & Gas, Defense & infrastructure segment.*



## Safe and intelligent power distribution

Whether in industrial plants, in infrastructure or in buildings, all technical plant depends on the reliable supply of electricity, even a short outage can have grave consequences.

**Al Hamad Switchgear** (a division of Al Hamad Industries International) offers the best technology for the responsible use of electrical energy and at the same time help to protect people and property and to conserve natural resources.

Low-voltage switchboards forms one of the most important links at the end of energy supply chain following the supply equipment (generators), transmission (cables, overhead lines) and transformation (transformers) of electrical energy, providing electrical power at the desired low voltage. In addition to providing a secure source of electrical energy the distribution switchboards main function is to safe guard the loads, such as motors, solenoid valves, actuators and devices for heating, lighting, IT systems and air conditioning plus various other types of critical loads.

As the majority of applications are supplied with low voltage, the low-voltage switchboard is of special significance in both public supply systems, industrial plants and both commercial and residential infrastructure which are totally dependent on reliable, secure and continuous availability of power supply.

Power distribution in a low-voltage system usually takes place via a main switchboard (power center or main distribution board) and a number of sub-distribution boards or motor distribution boards, also known as motor control centers (MCC), feeder panels and smaller distribution boards.

The **DUNES series of Distribution Boards** was designed by Al Hamad Switchgear and type tested to the latest IEC 61439 international standards at DEKRA in Europe specifically for the intense climatic and environmental conditions found in the Middle East. The DUNES series offers optimal solutions for low voltage power distribution applications up to 5000 Amps.

The **DUNES M series** of Main Distribution Boards (MDB) system was type tested with Air Circuit Breakers (ACB's), Molded Case Circuit Breakers (MCCB's) and Miniature Circuit Breakers (MCB's) from ABB which can be supplemented by communication-capable modules connecting the power distribution system to distribution control systems, industrial automation solutions or building automation system. Smart switching devices, typically ACB'S and/or MCCB'S contribute to optimizing the consumption of electricity, increased load management, safety and hence to lowering the costs of operation.

As a competent and reliable partner, we also offer customers innovative solutions from the original equipment designer and manufacturer, flexibility and comprehensive support – from the initial information, estimation preparation, through planning, configuring and ordering, project management, factory tests to commissioning and technical support, to after sales support.

Through years of experience in the region and equipment supply the Al Hamad Switchgear engineers have come to know the needs of our regional climatic challenges and equipment working environment. Based on our DUNES designs, we provide flexible low voltage distribution solutions designed, manufactured and verified in accordance with our accredited type tests.

In addition due to our strong engineering team, years of experience, extensive fabrication and powder coating paint facility we are able to offer safe customized solutions, enclosures or panels and colors to meet custom specific requirements.

Maximum safety and attractive design are combined in an efficient solution in the new generation of **DUNES M series** switchboards for consistent and easy power distribution in infrastructure projects and industrial projects as well as in the process industry up to 5000 A. The DUNES main or power distribution board series consists of standardized and proven components which can be flexibly combined as a cost-effective overall solution.

## Safe and intelligent power distribution

DUNES M series of switchboards and distribution boards are a type tested assembly (TTA), suited for most applications especially primary distribution due to the robust design and high ratings, ensuring a safe and reliable power supply. Fully designed, developed and manufactured by Al Hamad Switchgear engineers in the UAE plus type tested at DEKRA (KEMA) Europe to the latest international standards and in addition tested for 50°C ambient temperatures to meet regional utility specifications. With DUNES M switchboards you can rely upon high quality, safety and flexibility, thus covering every installation requirement in the field of low-voltage power distribution, whether in industrial applications, infrastructure or buildings.

### DUNES M series features at a glance

- Fully Type Tested Assembly at DEKRA(KEMA) of switchgear and control-gear in accordance with the latest international standards - IEC 61439-1/2
- High current ratings tested to ambient of 50°C for Middle East climatic conditions
- New design, new ventilation and closure system
- Functional system available in various widths and depths
- Robust structure made of electro-galvanized sheet steel with powder-coated external cladding
- Degree of protection up to IP54
- Internal separation up to Form 4b Type 6
- Simple system that allows for changes to be made easily during design and construction
- Rear connected as standard
- Doors with universal hinges
- Designed and tested to fit ABB circuit breakers or equivalent
- Color RAL 7032 or 7035 (Other colors on request)
- Dimensions:
  - Frame height 2200 mm
  - Base height 100 mm
  - Frame width 400, 600, 800, 1000 or 1200 mm
  - Frame depth 800, 1000 mm

### System

DUNES M series of low-voltage power and main distribution boards are designed as a side by-side cabinet design enclosed on all sides by a sheet steel cabinet for indoor applications, optionally for wall or free-standing installation. The DUNES (TTA) switchboard series designed to protect the switchboard user against the main risk of accidents (direct contact protection, indirect contact protection and fire risk) and for safe and reliable installation on projects, allowing a high availability of the electrical energy.

### Frames

The frame is constructed for standard and custom height, width and depth profiles. It is a welded construction and the supporting structure for all built-in and surface-mounted components. Use of galvanized frame profiles and self-tapping screws creates a mechanically highly stable construction with safe grounding of the built-in components.

### Enclosures

The enclosure parts enable versions in degrees of protection up to IP43. The powder-coated electro-galvanized (zinc-electro plate) enclosure parts are finished in RAL7032 or 7035 (other colors optional). Doors come as standard with a coupled double-bit lock or optionally with a wide range of operating mechanisms, as well as twist lever catches with or without a lock.

# Busbar Systems

The DUNES M series main busbar system is flat high grade copper (tin plated) arrangement positioned at the top of the enclosure to minimize temperature rise and offers a practical grading of rated currents up to 5000 A. Vertical busbar systems are available as cascaded busbar systems up to 1600 A, or as a non-cascaded system up to 3200 A.

## Form of internal partitions

Depending on the individual requirements, the form of internal partitions can be implemented up to Form 4 Type 6.

## Switchgear components

It is possible to install the full range of ABB circuit breakers including the System pro M modular apparatus, the range of XT and Tmax T1, T2, T3, T4, T5, T6 & T7 moulded-case circuit-breakers and the Emax E1, E2, E3, E4 and E6 series of air circuit-breakers inside the DUNES series of switchboards.

DUNES M series of low voltage switchgear products provide specific benefits, some of these include:

DUNES main distribution switchboards Up to 5000 A (amps)	additional safety due to fully type-tested design, flexibility, design team based in region
ABB Emax ACB's (air circuit breakers) or equivalent, up to 6300 A (amps)	compact, space-saving, reduced costs, modular design, communications capability
ABB XT or Tmax MCCB's (moulded case circuit breakers) or equivalent, up to 1600 A (amps)	compact, space-saving, wide range of protection options, communications capability
ABB S series MCB's (miniature and residual current circuit breakers) or equivalent, up to 125 A (amps)	compact DIN rail mounting, wide range of protection options

Al Hamad Switchgear offers a comprehensive range of low voltage power distribution switchboard solutions and products to Middle East requirements. Optimally equipped, whatever the future holds. Our type tested products and systems ensure flexible and economical power distribution in every situation.

**Al Hamad Switchgear the original equipment designer, manufacturer and verifying team that designed and type tested DUNES series to the latest IEC standards – NOT a third party panel builder!**



***“Low voltage power distribution solutions, type tested internationally but designed and manufactured locally to meet local applications.”***

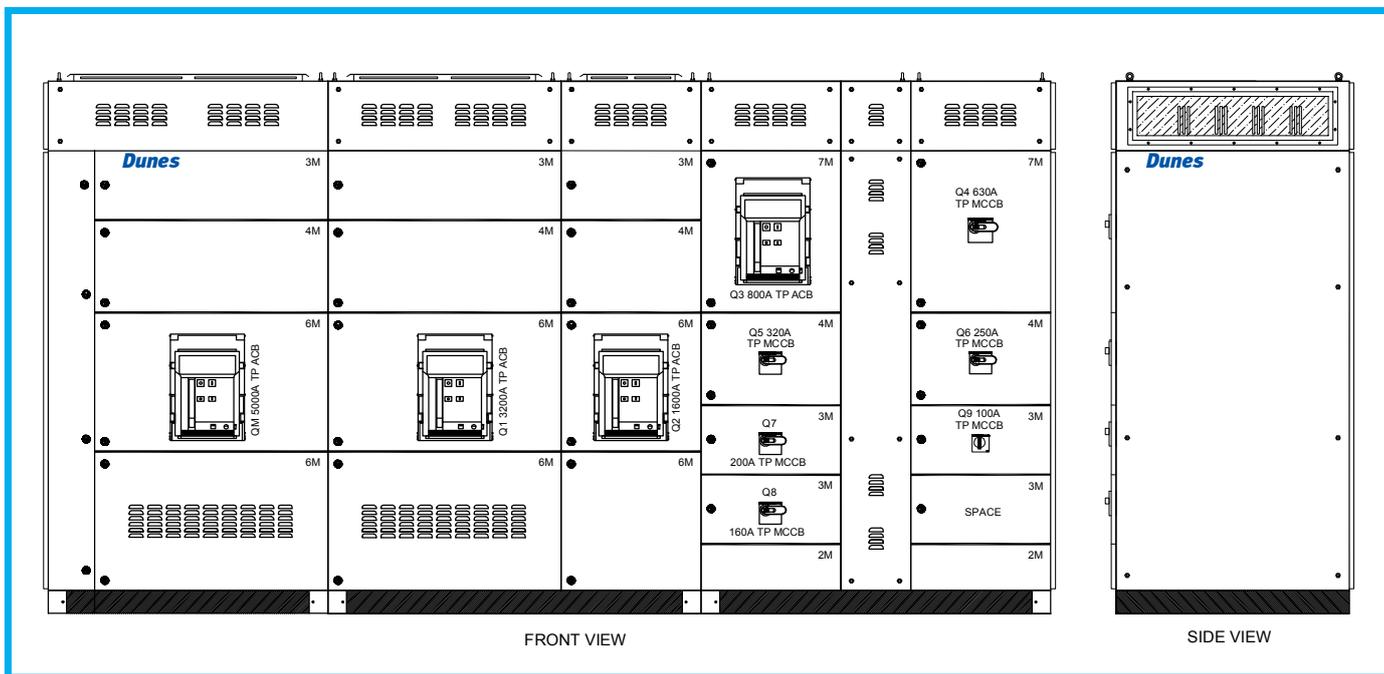
## DUNES M SERIES - TECHNICAL DATA

Description		Up to 5000A Main Distribution Board (Form IV Type 6)	
Standards		TYPE TESTED ASSEMBLY (TTA) - DEKRA (Formerly KEMA, in The Netherlands)	IEC 61439-2 (2011)
Electrical data	Rated Voltage	Rated Insulation Voltage (Ui) Rated Voltage (Un) Rated Operational Voltage (Ue) Rated Impulse Withstand Voltage (Uimp) Rated Frequency	1000V 690V 415V 8kV up to 60Hz
	Rated Current*	Rated Operational Frequency (fn) ACB Rated Impulse Withstand Voltage (Uimp) MCCB Rated Impulse Withstand Voltage (Uimp) Main Busbar (InA) Rated current (InC): IP43 @ Ambient Temperature IP43 @ 50°C Temperature Busbar Rated Short-Time Withstand Current (Icw) Busbar Rated Peak Withstand Current (Ipk) Incoming Air Circuit Breaker (ACB) Short-Time Withstand Current (Icw) Distribution Busbars Rated Current (InC): IP43 @ Ambient Temperature IP43 @ 50°C Temperature Busbar Rated Short-Time Withstand Current (Icw) Busbar Rated Peak Withstand Current (Ipk)	50Hz 12kV 8kV up to 5000A up to 4800A up to 4200A 50kA (3s) ~ 86kA (1s) 105kA 100kA (1s) up to 3200A up to 2600A 50kA (3s) 105kA
Mechanical characteristics	Dimensions	Cubicles and Frames Height Panel Width Depth	DIN sizes 2200 mm 400, 600, 800, 1000, 1200 mm 800/1000 mm
	Degrees of Protection	According to IEC 60529 and IEC 61439-2 Clause 10.3 Additional the internal separation is verified according to BS EN 61439-2 for Form 4b type 6.	External up to IP 54 Internal to IP2X
	Steel Components	Frame Incl. Internal subdivisions Cladding, internal Cladding, external	2.0 / 2.5 mm Minimum 1.5 mm Minimum 2.0 mm
	Surface protection/ Paint	Frame Incl. Internal subdivisions Cladding, internal Cladding, external Powder coated	Zinc-Electro plate coated Zinc-Electro plate coated Zinc-Electro plate coated RAL 7032 or 7035 (Light Grey)
	Busbar system	Flat High Conductivity Tin Plated Copper Busbars (Termate Busbar support system)	Insulated
	Insulation materials	Resistance of insulating materials to abnormal heat, in conformity with IEC 61439-2, clause 10.2.3.2	VMS, RMS 3-10 & C2X
	Temperature-rise	Passed in conformity with IEC 61439-2, clause 10.10.2.3.5, at normal ambient temperature and additionally at 50°C ambient.	up to 50°C ambient
	Form of Construction	Cable Entry	Bottom
	Form 4B Type 6	Power Cable Access Control Cable Access	Rear Front
Distribution Board	Operational Conditions	Usage/Installation Location Environmental Conditions (Micro-Environment) Relative Humidity @ 40°C Ambient Temperature (24h mean value) Altitude above sea level	Indoors Pollution Degree 3 100% 35°C up to 2000 m

\* Rated current is dependent on load configuration

- Note:**
1. For Sub-Distribution Board - see the Dunes S series catalogue.
  2. For Final Distribution Board - see the Dunes F series catalogue.

### Typical drawing for Dunes M series... Main Distribution Board



### DEKRA Certification for Dunes M series...





# ALHAMAD

## SWITCHGEAR

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