

Dorman Smith Switchgear Limited

With over 130 years of experience in switchgear design and production Dorman Smith Switchgear Limited continues to provide high quality equipment for low-voltage electrical distribution and circuit protection.

Our product range begins with single-pole and neutral distribution board systems and continues up to custom designed, factory built low-voltage electrical switchboards for a broad range of commercial, industrial and retrofit applications.

We continue to build on our extensive technical knowledge and awareness of customer and market demands, operating conditions and current regulations.

This breadth of experience supports the development and manufacturing techniques of our electrical products to exceed the industry standards.



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Modis 25/32

Modular Switchboard
Solution

Key Features

Dorman Smith Switchgear Ltd offers the Modis 25/32 LV distribution switchboard systems were the components that are delivered on a pallet enabling assembly to a fully type tested unit.

- Fully and partially type tested options in accordance with BS EN 61439-2
- Wide range of busbar fault ratings options up to 80kA for 1s
- ASTA certified
- Form 4 type 2 or 6
- Horizontal busbars up to 3200A





Features

- Fully type-tested in accordance with BS EN 61439-2
- ASTA certified
- Form 4b Type2 or Type6
- Compartmentalised as standard
- Horizontal busbars from 800A up to 3200A
- Wide range of busbar fault withstand options up to 80kA for 1 second
- Option for extending at either end
- Front or rear access with cable entries top or bottom to suit application
- Compact modular design
- ACB, MCCB, Fuse Combination Units and MCB options
- IP3X or IP41 options

Benefits

- Improved stacking densities
- Complete range of services ensures Modis switchboard is suitable for any LV application
- Cost effective and time/cost efficient system build

Applications

LV power distribution and protection

Approvals

BS EN 61439-2
ISO 9001
BS EN 60529

Manufacturer	Dorman Smith Switchgear Limited
Quality certification	ISO9001
Product	LV Switchboard
Standards	BS EN 61439-2: 2011 EN 61439-2: 2011 IEC 61439-2: 2011
Forms of separation	Complies with EN 61439-2: 2011, Form 4. British National Annex accommodated
IP rating: External	IP3X or IP41 to IEC 60529
IP rating: Internal	IP2X minimum to the above named standard
Construction: Frame structure	2mm gauge folded, painted and preplated steel
Construction: Cover plates	1.6mm screw fixed, painted and preplated steel
Construction: Integral segregation	Plated sheet steel, perforated sheet steel or transparent polycarbonate sheet
Cabling access:	Suitable for front or rear access cabling entry via the top gland plates or the optional bottom gland plate.
Busbars: Material	HDHC copper. Multiple laminations per phase
Busbars: Mounting	4-pole air insulated in glass fibre reinforced moulded supports
Busbars: Shielding	Non-conductive rigid insulated barriers or rigid sheet steel barriers
Busbars: Maximum current and fault withstand ratings	1250-1600A: 50kA for 1s or 3s 2500A: 80kA for 1s or 3s or 80kA for 1s 3200A: 80kA for 1s or 50kA for 3s
Earthing	2 earth bar sizes: 300mm ² for 50kA for 1s fault withstand and 500mm ² for 50kA for 3s and 80kA for 1s fault withstanding. Earth continuity of cladding is maintained by specifically designed fixing screws
Rated operational voltage	400V
Power frequency withstand voltage	2500V
Rated operational current	Project specific
Paint finish	Light grey RAL 7035 semi-gloss
Paint depth	40/60 microns
Paint process	4-stage process that includes chemical spray degreasing, iron phosphate coating, automatic electro-static epoxy polyester film application and curing in a high temperature oven

Independent Switchboard Certification

IEC 61439-2: Edition 2.0 2011-08

Verifications with reference to the tests listed in Annex D of IEC 61439-1

1:	Strength of material and parts	9:	Dielectric properties
2:	Degree of protection of enclosures	10:	Temperature-rise limits
3:	Clearances	11:	Short-circuit withstand strength
4:	Creepage distances	12:	Electromagnetic compatibility (EMC)
5:	Protection against electric shock	13:	Mechanical operation
6/7/8:	No verification by testing required		

Components

Modis 25/32

Cubicles

The Modis system houses all devices and busbars within modular frames. Frames come in widths of 500, 600 and 800mm and depths of 500, 800, 1000 and 1300mm. This combination can achieve 12 different footprints. The standard frame heights are 1984, 2170 and 2356mm of which the shortest frame can fit under an industrial standard height door.

Frames are designed with the ability to remove horizontal angles, allowing the installer to move frames easily over trenches where existing cables protrude, saving time on site.

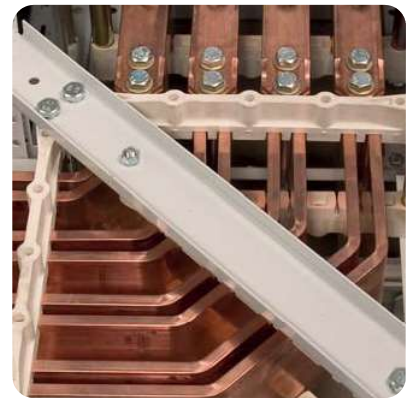
The Modis system is designed for installation in enclosed locations. The standard cubicles are IP3X with options of IP42. Frames are painted in light grey RAL 7035 epoxy polyester film.

Busbars

Busbar systems are four-pole with a fully rated neutral, available in 800A, 1250A, 1600A, 2500A and 3200A. All systems are tested for temperature rise and short circuit withstand:

- 800A tested at 25kA for 1s
- 1250A tested at 50kA for 1s and 3s
- 1600A tested at 50kA for 1s and 3s
- 2500A and 3200A tested at 80kA for 1 second and 50kA for 3 second

The busbars are manufactured from HDHC copper and are mounted on a patented, insulated and reinforced support. All connections to the busbar are clamped with no drilling required. This makes the system easy both to connect and extend, saving time during build and on site. Busbars can be mounted at the top, middle or bottom of each cubicle depending upon the location of cable entry. More than one busbar set can be accommodated in each cubicle.



Modis 25/32



Internal Devices

General

MCCBs are available up to 800A in TP&N or four-pole. Fuse Combination Units are available up to 800A SP&N, TP&N or four-pole. All types are fitted with door-interlocking handles for operator safety. Modis switchboard accommodates the Dorman Smith range of withdrawable ACBs with current ratings up to 3200A TP&N or four-poles. The solid copper busbar connection has been tested to the devices' breaking capacity (80kA in the case of fuse combination units) ensuring fault withstand to the point of cable termination.

For more detailed information on all circuit protection devices please refer to the relevant Dorman Smith Switchgear Ltd publications.

MCBs

The Loadlimiter 63 family of devices comprises a comprehensive series of MCBs with B, C & D characteristics and current range of 6A to 63A. These come in one to four-pole format, together with a range of complementary RCBOs and RCCBs. The Loadlimiter 63 range is the premier choice for final circuit protection within any switchboard or distribution scheme.

An extensive range of enclosure systems is also available, suitable for instances where final circuit distribution boards are sited remote from the main switchboard.

MCCBs

Loadline MCCBs have current ratings of 20A to 800A and support a comprehensive range of accessories. All devices comply with EN 60947-2 standards. Loadline MCCBs meet market demands for higher breaking capacities, having optional thermal/magnetic or electronic trip unit protection. Electronic variants attain Category B selectivity utilisation and can read up to the 19th harmonic. The thermal/magnetic devices are unaffected by harmonic distortion. This range is completed by a series of generator MCCBs and temperature-calibrated thermal/magnetic devices for tropical climates.

ACBs

Loadline Z-Frame air circuit breakers utilise leading-edge technologies and features a number of innovations that make this family of ACBs a leader in its class. All devices comply with EN 60947-2 standards. With just three ratings, this range spans an input current spectrum of 800A to 3200A. Units are available as three or four-pole variants and offer a choice of fixed or withdrawable chassis patterns. The ACBs are complemented with a wide range of accessories, from simple key locks to intelligent trip units that offer data measuring and communication facilities.

Fuse Combination Units

Loadswitch FCUs have been designed to meet customer needs for straightforward installation and the acceptance of large cable sizes, whilst exceeding EN 60947-3 standards. The full-uninterrupted duty ensures that these units can indefinitely maintain the full rated load indefinitely. With utilisation category of AC23A and short-circuit capacity of 80kA, Loadswitch devices can be installed with confidence on any inductive or resistive load.

The housed variant has a robust steel enclosure, a door that opens 180 degrees for easy access and is finished in a light grey epoxy powder coating RAL 7035. Padlocking is standard with room for up to three padlocks. Room for cable spreading (easily reversed by installer) is at the bottom of the housed unit.

Further details of these products can be found in the appropriate product catalogues.

Transient Voltage Surge Suppression

Modis 25/32

Modular Distribution Surge Protectors

The Modis system supports several forms of TVSS, including modular distribution surge protectors for single and three-phase power systems with exceptionally high surge handling capabilities of 90, 150 and 300kA. The MDSP product is intended for high lightning exposure areas and critical systems where long life and low maintenance are required.

Distribution Surge Protector

A series of general purpose, hardwired, single and three-phase distribution surge protectors with 30kA of surge capacity and two stage (redundant) protection provide pre-failure indication. The DSPE600 Series L & N types have site fault condition indicators and relay contacts that enable remote indication of protection status.

Sub Panel Protectors

The compact, 10kA rated, DSPM Protector has been designed for subdistribution panels that supply mission-critical hardware such as minicomputers, PABX systems, network file servers and mainframes. This hardwired, panel mounting surge suppression device has redundant protection and offers full status monitoring in single and three-phase versions.

Further details of these products can be found in the appropriate product catalogues.

