MNS Light F
Low-voltage switchgear with fixed units
Cubicle design
MNS Light F switchgear is a flexible system with a large selection of cubicle variants that can be built together in optional combinations.

Busbar systems
The busbar systems are protected against accidental human contact. The horizontal busbars are placed at the top of the switchgear and/or at the bottom. They are connected with screwed joints between each cubicle unit, thus simplifying assembly, replacement and extension. The vertical busbars are located at the rear of each apparatus cubicle.

A neutral or protective earth busbar can be included in the horizontal and vertical busbar systems.

Ventilation
The cubicles are self-ventilating. Air is taken in at the front and led out at the rear/top.

Incoming cubicle
The incoming cubicles can be fitted with circuit-breakers, ACBs, MCCBs, or disconnectors. Earthing switches can always be included.

Connection possibilities:
- cables from below
- cables from above
- busduct trunking
- sectioning.

Apparatus cubicles
The apparatus cubicles have separate spaces for busbar systems, apparatus units and cables. The apparatus space is divided vertically into 72 E modules (36 M modules)*. Each apparatus unit is screened against adjacent units.

* 1 E = 25 mm, 1 M = 50 mm.

Other cubicle types available
The range also includes:
- transformer cubicles
- corner cubicles
- cubicles for extra equipment.

Connecting the horizontal busbars between the cubicle units with bolted joints is easy to carry out from the front.

The horizontal busbar system is placed in a screened-off space at the top or at the bottom of the switchgear.
Apparatus units
The apparatus units are fixed connected to the vertical busbar system. Breakers in apparatus units are available for fixed, plug-in and withdrawable cassette mounting.

Range of apparatus units
Distribution units with MCCB or switchfuse for rated currents up to 800 A.
Starters up to 260 A (132 kW/400 V) for:
- direct-on-line starting
- direct-on-line starting with heavy start
- two-direction starting

Distribution boards with MCBs or D-type fuses. MCBs or switchfuses up to 800 A for cubicle supply.

Mounting alternatives for breakers in apparatus units

- Fixed mounted breaker.
- Plug-in mounted breaker. The door is interlocked so that it cannot be opened, and so that the breaker cannot be pulled out, while the breaker is closed.
- Withdrawable, cassette-mounted breaker. The breaker can be cranked out with the door closed. Interlocking stops withdrawal while the breaker is closed.

Operation alternatives for apparatus units

- Unit mounted behind a full height door. (Many units behind one door.)
  - to be operated with open door
  - no interlocking with the door
- Operation type C.
  - to be operated with open door
  - no interlocking with the door
- Operation type A.
  - to be operated with closed door
  - interlocking with the door *
- Operation type B.
  - rotary handle mounted in the door
  - to be operated with closed door
  - interlocking with the door *

* The interlocking with the door means that the door normally can not be opened when the breaker is closed.
Withdrawable, cassette-mounted MCCB for 800 A. Size: 12 E modules (8 M).

Plug-in mounted MCCB for 125 A. Size: 6 E modules (3 M).

Starter with MCCB. Size: 6 E modules (3 M).

Screening (IP 20) between cable cubicle and apparatus units (Form 4).

MCB board with MCCB as current limiter/mainswitch. Size: 14 E modules (7 M).

Switchfuse OESA 1 and 2. Size 8 E modules (4 M).
Installation and service
MNS Light F switchgear assembly is delivered in the form of complete, function-tested cubicles that are easy to install and commission. The CenterPro engineering system makes it possible to provide complete switchgear documentation immediately after ordering.

Installation and commissioning
The horizontal busbars are ready-mounted upon delivery and can easily be connected at site with joints between each cubicle. They can be located at the top or low down and there is ample space for cable connection both from above and below. The connections for outgoing cables are easily accessible.

Service and extension
The modular system makes it easy to replace units or add new ones in the cubicles. Since the horizontal busbar system can be divided up between each cubicle, it is also easy to replace or add with new cubicles in the switchgear assembly.

Safety
The individually screened busbar compartments, apparatus and cable spaces minimize the risk for unintentional contact with live parts. Operating handles and knobs are located on the outside and have distinct position indications. They can be locked with up to three padlocks.

Drilling for anchor bolts can be done with the cubicles in place.
Technical data for MNS Light F

Rated insulation voltage 1000 V AC
Rated operation voltage up to 690 V
Rated current IP 21, IP 31: max 1900 A (Transformer 1250 kVA)
               IP 43, IP 54: max 1600 A
Rated short-circuit strength 35 or 50 kA_{RMS}
Ambient conditions as per IEC 439-1
   Temperature Max 35 °C for 24 hours
   Relative humidity Max 50 % at < 40 °C
Degree of protection as per IEC 529
   With door closed IP 21, IP 31, IP 41, IP 43, IP 54
   With door open IP 20
   Internal separation Form 4a
Dimensions
   Height 2129 mm
   Height module E = 25 mm (M = 50 mm)
   Depth 450 mm
Cubicle width
   Circuit-breaker cubicle MCCB 500 mm
   Circuit-breaker cubicle ACB 600 mm
   Disconnector cubicle up to 1600 A 500 mm
   Disconnector cubicle 2000 A 600 mm
   Apparatus cubicle 1000 or 1200 mm
   Apparatus cubicle for extra equipment 500 or 600 mm
Material
   Cubicle 1.5 mm Aluzink sheet steel
   Busbar system Exconal (copper-clad aluminium) or copper
Finish
   Doors and external surfaces Polyester paint RAL 7035
   Frame and internal surfaces Aluzink
Operating conditions as per IEC 439-1 Normal
Phase sequence
   Horizontal busbars L1, L2, L3 from above and downwards
   Vertical busbars L1, L2, L3 from left to right

Design, data and dimensions are subject to change without prior notice.