HABeR energia

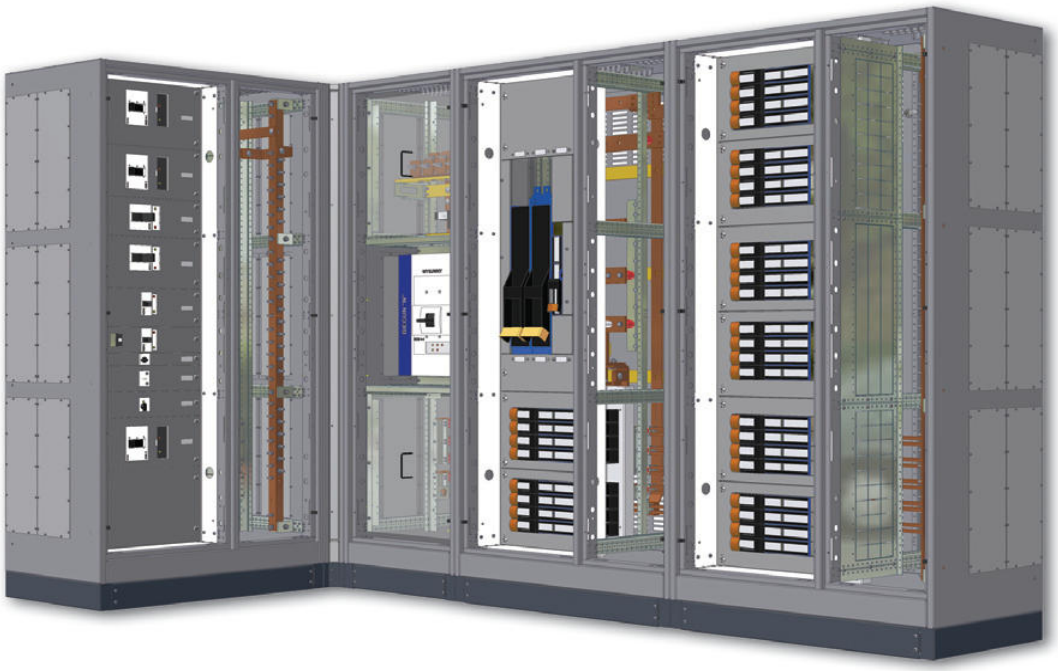
HULANICKI BEDNAREK *sp. z o.o.*

HABeR-M

Switchgear system
rated up to 1600A

- Low voltage switchgear system utilising moulded-case circuit-breakers up to 1,600 A and fuse-switch units, intended for powering industrial sites and public buildings.

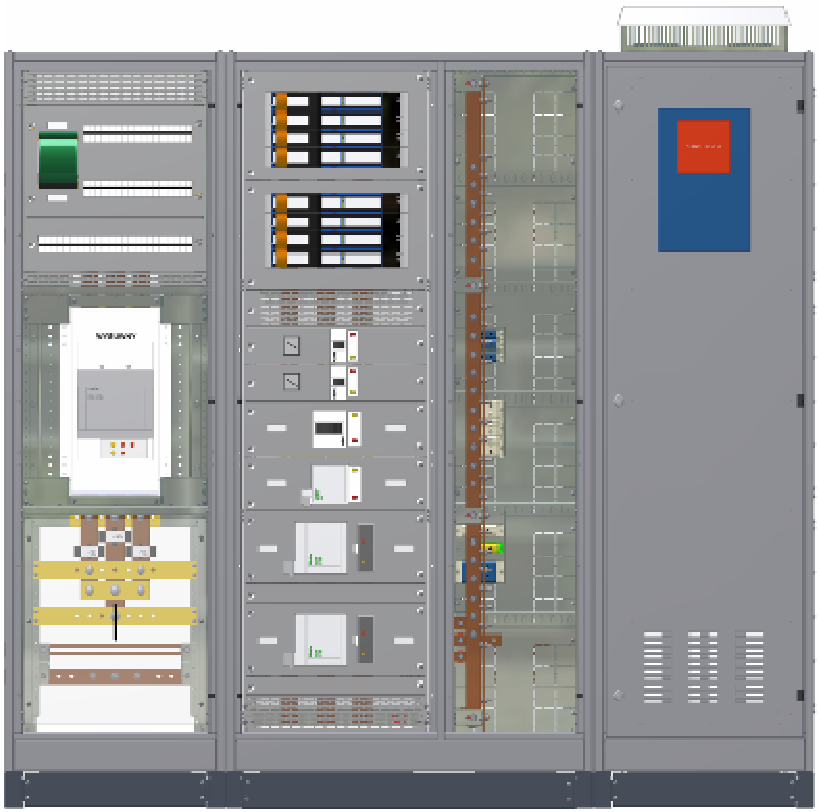
- The system is based on components from Moeller Electric and can be equipped with any device of these renowned companies: Siemens, ABB, Legrand and others



- The system is fully TTA/PTTA tested and certified by the Institute of Electrical Power Engineering in Warsaw
- Flexibility of the system allows the designer to quickly configure typical device modules to meet the requirements of a specific application
- As a manufacturer we develop the necessary technical documentation, perform testing and provide declaration of conformity.
- We guarantee short delivery time and provide flexibility required when implementing project modifications.
- We provide professional service both during the guarantee period and when it expires
- Customers can refer to out Technical Department for advice on system performance and configuration:

+48 82 564 07 11

General information		
Standards and regulations		PN EN 60439-1
Ambient temperature	℃	-5 to +40, 24 hour average: +35
max altitude of installation	m	1000
Insulation class		1
Degree of protection		IP 30/31/43
Installation requirements		Indoor according to IEC EN 60529
Dimensions height width depth	mm	 1950 400, 500, 600, 800, 1000, 1200 600
Segment pedestal	mm	100, others on customer order
Module dimensions	mm	25 and multiples
Installation compartment	mm	1800 mm
Forms of internal separation		Forms 2b to 3b

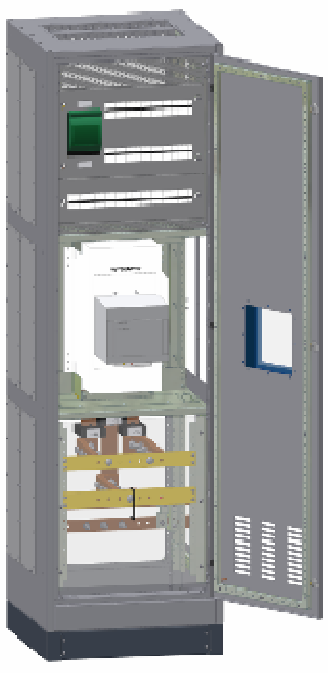


- Support structure built from bolted vertical and horizontal elements made from 2 mm steel sheet.
- lateral covers of the cubicle made from 1.25 mm profiled galvanised steel sheet.
- Breakable plates are installed in compartment sides to route primary and branch busbars to vertical strip-mounted disconnectors. In far side compartments they are sealed with special bolted covers.
- Doors are made from 1.5 mm galvanised steel sheets with single point locks and bottom ventilation perforation.
- Ful sized or 2/3 doors can be made with PVC sight glass.
- Panel system for installation of control gear without the need to drill the doors.
- Single enclosures are bolted together to achieve the required configuration.
- Switchgear is delivered on a segment pedestal 100 mm in height.
- Cabling and wires are routed to the switchgear through cable glands appropriate for the cubicle's degree of protection.
- All compartments are loaded separately on standard wooden pallets for transportation.

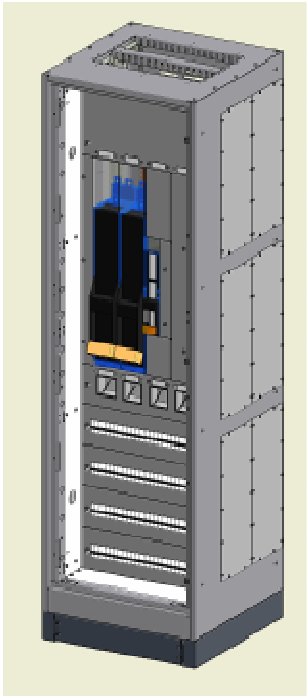
Rated electrical parameters						
Rated insulation voltage Ui	V	1000				
Rated operational voltage Ue	V	690				
Rated frequency	Hz	50				
Rated current of the primary busbars	A	800	1000	1250	1600	
Rated short-time withstand current Icw (1 s)	kA	31,5	31,5	31,5	45	
Rated peak current srength Ipk	kA	65	65	65	95	

Mechanical parameters		
Support structure		bolted
Material / thickness	mm	galvanised steel sheet ; covers 1.25 / doors 1.5
Surface treatment		All doors and covers powder-painted
Paint colour		RAL 7032, coarse (other available on request)
Door opening angle		160° for both standalone and serial arrangement

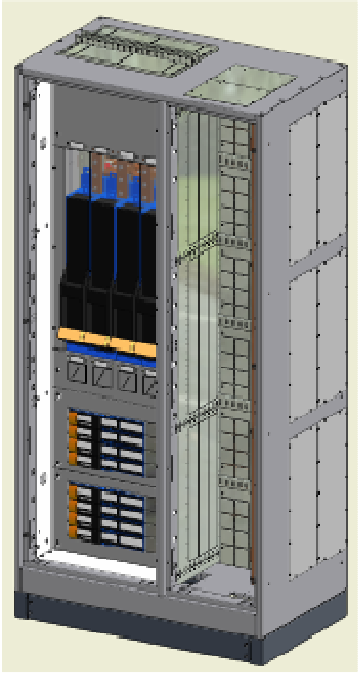
P



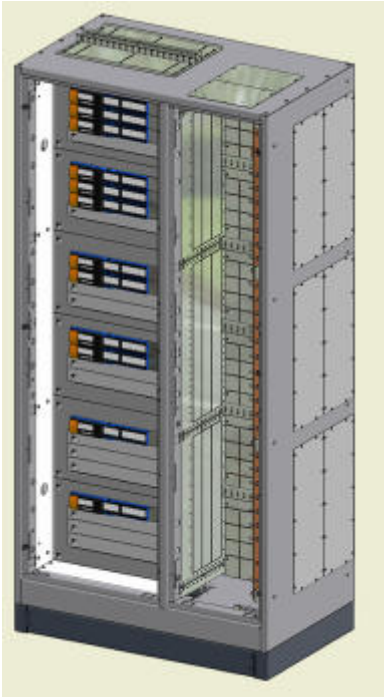
FV



FHV



FH



HABeR-M typ pola **P**

- Feeders, outgoers or couplings rated up to 1,600A
- Withdrawable or fixed modules, 3-pole or 4-pole circuit breakers
- Operational voltage up to 690 V AC
  Rated current from 800 to 1,600 A
  Rated short-time withstand current Icw = 45 kA (1 s)
- Compartment width: 400/600 mm
- Cable or busbar trunking connection from bottom or from top
- Separate functional compartments: power, circuit-breaker and measurement

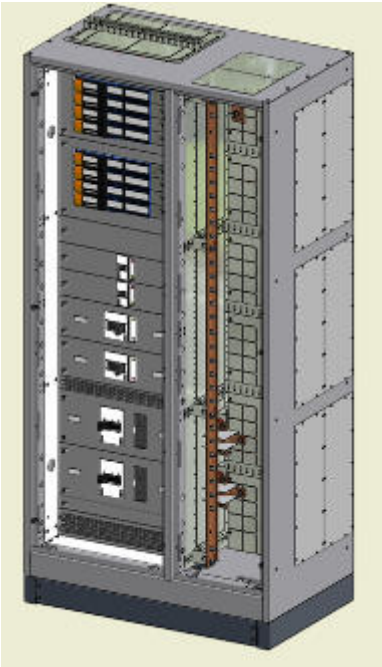
HABeR-M typ pola **FV, FHV i FH**

- Outgoer bays, single and double-compartment, designed for installation of:

  - strip mounted switch fuse units vertical NSL 1-4a to 630 A
  - strip mounted switch fuse units horizontal NSL 00 up to 160 A

- Configuration of suitable functional blocks
- Compartment width:
  400 / 500 / 600 / 800 or
  400+600 / 600+400 mm
- Cable connection from top and bottom

MFV



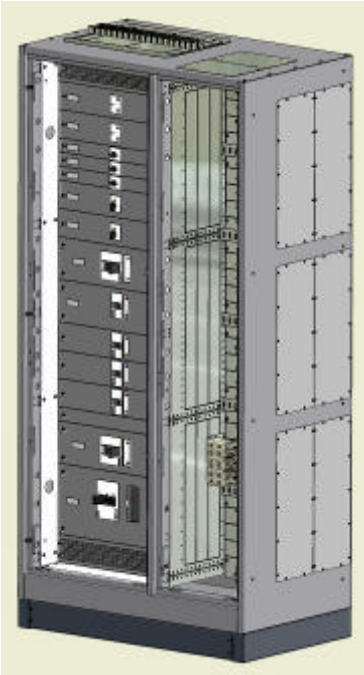
HABeR-M compartment type **MFH**

- Outgoer bays, double-compartment, designed for installation of:

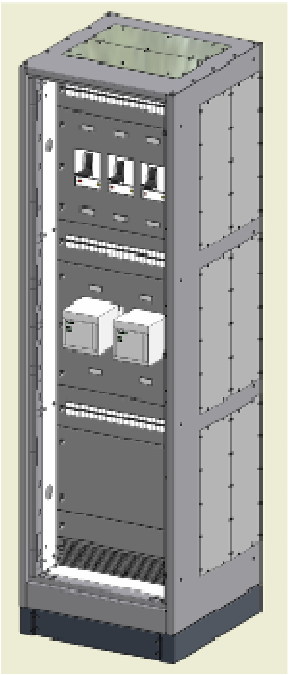
  - moulded-case circuit-breakers up to 630A
  - strip mounted switch fuse units horizontal NSL 00 up to 160 A
  - horizontal arrangement

- Configuration of suitable functional blocks
- Compartment width:
  400+600 / 600+400 / 600+600 mm
- Cable connection from top and bottom

MH



MV



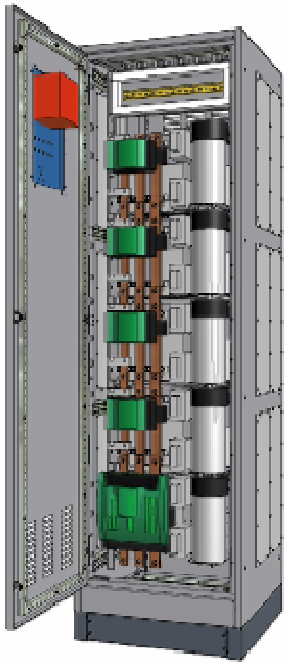
HABeR-M compartment type **MH & MV**

- Outgoer bays, single and double-compartment, designed for installation of:

  - moulded-case circuit-breakers up to 630A
  - vertical and horizontal arrangement

- Configuration of suitable functional blocks
- Compartment width:
  400 / 600 mm or
  400+600 / 600+400 / 600+600 mm
- Cable connection from top and bottom

BK



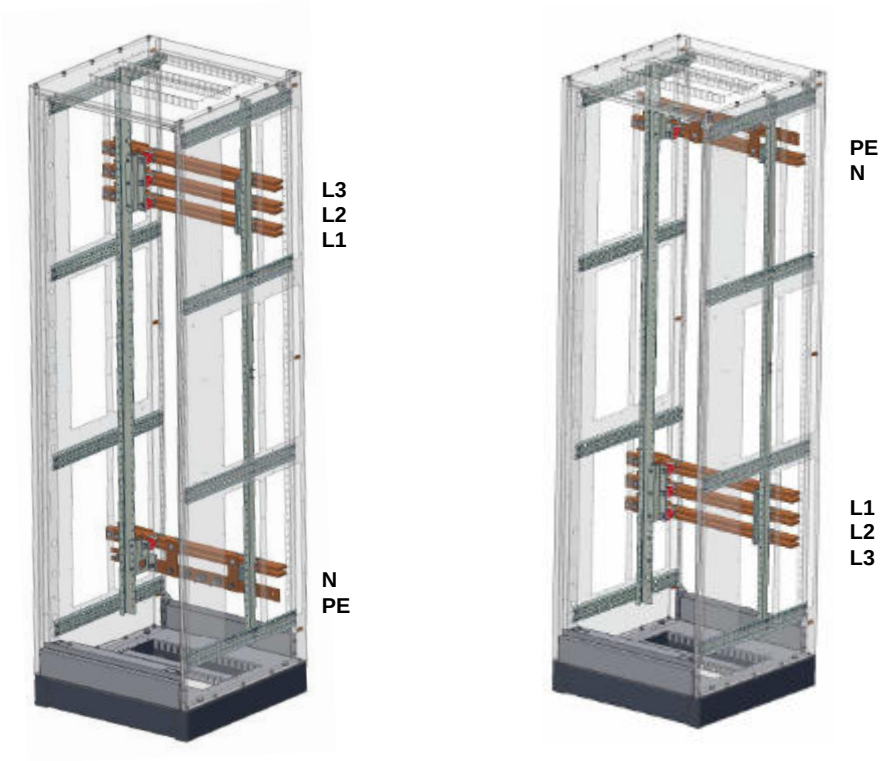
HABeR-L compartment type **BK**

- compartments for reactive power compensation
- Panel with door embedded regulator
- Section with compensation circuit up to 400 kVAR with 7% suppression and up to 600kVAR without suppression
- Compensation units built as panels
- Compartment width: 600/800/1000/1200 mm
- Ventilation forced or by natural convection

Primary busbars

- Busbar system with post insulators, flat arrangement, routed on rear enclosure wall at the top and / or bottom of the cubicle.
- Each phase consists of 70 mm busbars spaced 70 mm apart.
- Neutral busbar has the same size as the regular phase. For providing power with significant asymmetry N busbar has double size.
- There is no need to drill holes as busbars are bolted together using special connectors preventing the busbars from separating while being tightened.
- Along their length, busbars are divided into sections matching individual compartments and connected together using special fork connectors.
- Thanks the use of special contact washers and bolts of sufficient hardness in conjunction with a torque spanner provides a reliable connection every time.

Busbar arrangement top & bottom



Busbar conductor cross-section for different rated currents				
Rated current of busbars	800	1000	1250	1600
Busbars L1-L2-L3	2*P20*10 mm	2*P30*10 mm	2*P40*10 mm	2*P50*10 mm
PE busbar	P40*5 mm			
N & PEN busbar	2*P30*10 mm	2*P30*10 mm	2*P40*10 mm	2*P40*10 mm

Careful manufacturing – the basis for *HABeR* quality

As the manufacturer of HABeR system we have the necessary technical know-how and experince to build a system with optimum parameters. We can fit and make cable or busbar connections to switchgear compartments to your specific requirements.

CERTYFIKAT nr 586/S/2007

HULANICKI BEDNAREK Sp. z o.o.

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PN-EN ISO 9001:2001

projektowanie, wytwarzanie, montaż i serwis rozdzielnic elektrycznych nn i SN oraz obudów rozdzielnic elektrycznych.

Tested safety you can rely on

Each of fitted units, both fixed and withdrawable, and each section undergoes special final tests. The thorough testing of the power distribution system maximises safety for persons and system, and ensures the availability of the power supply.

The basis for customer satisfaction

We will take all the time necessary for a thorough consultation. We make use of powerful tools to design the switchboard systems and create the documentation, and can offer a high level of flexibility during the planning stage.

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