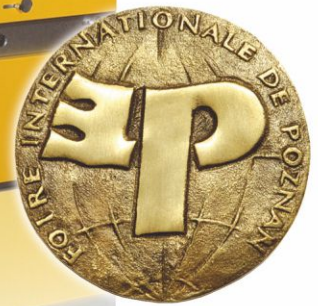




Medium voltage double busbar switchgear system



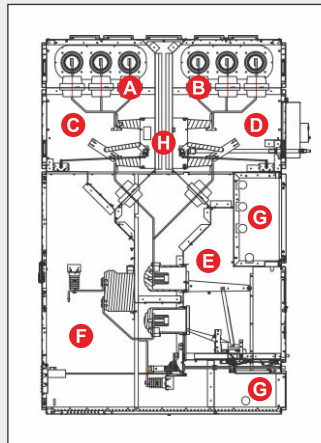
Medium voltage double busbar switchgear system

MV air insulated, metal clad double busbar switchgear BRDA is designed for primary distribution of AC three-phase electric energy with a rated frequency of 50 Hz and rated voltage up to 17.5 kV in electric power distribution networks of public utilities and industrial power distribution networks.

Thanks to the double busbar solution, the BRDA switchgear may be used in conditions, where reliability and flexibility of switching operations between two different power sources secure the continuity of power supply. This is very essential for objects of critical destination, production plants in processing industry and in electrical power distribution system of weak networks.

The **BRDA** switchgear system features:

- switchgear has two independent systems of busbar
- metal clad with two separate busbar compartments
- compartments separated with metallic partitions
- metal clad AIS
- free-standing
- indoor
- air insulated
- equipped with modern switching apparatus



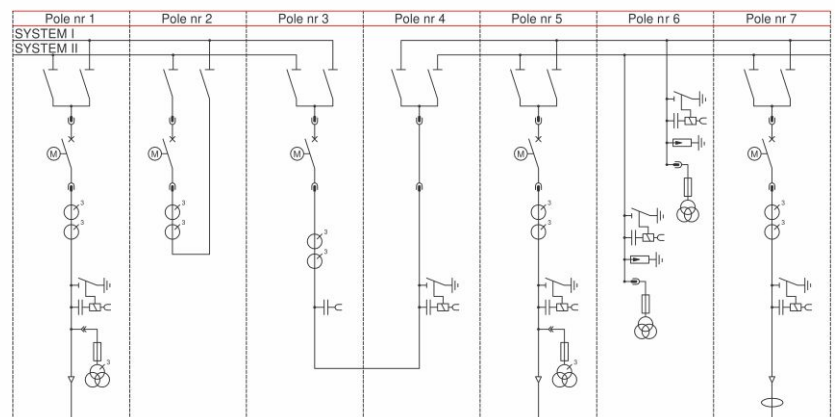
- A** busbar of system I compartment
- B** busbar of system II compartment
- C** disconnector of system I compartment
- D** disconnector of system II compartment
- E** withdrawable circuit breaker compartment
- F** cable terminals compartment
- G** auxiliary circuits compartment
- H** decompression channel

The innovative double busbar switchgear system **BRDA** is equipped with apparatus produced by leading international manufacturers which assures high quality, safety of work and easy maintenance.

Advantages of **BRDA** switchgear:

- innovative construction solutions
- high resistance to internal electric arc effect and arc protection
- configuration of different switchgear systems
- high service safety
- high operational reliability
- high corrosion resistance
- simple service and maintenance

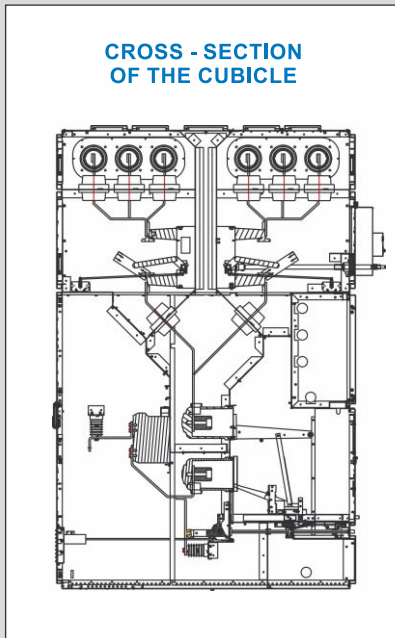
SINGLE-LINE DIAGRAM OF DISTRIBUTION SUBSTATION WITH BRDA SWITCHGEAR



Main features



High safety of operation of MV switchgear BRDA has been obtained due to properly reinforced cubicle construction and decompression channels, which ensure high resistance to internal electric arc effect and the discharge of gases outside the switchgear.

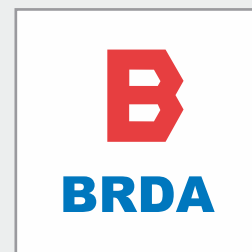


- The construction of **BRDA** cubicles is made of steel sheets covered by zinc or aluminum-zinc coating.
- Doors and outside shields are covered with powder varnish in a colour adjusted to the Client's demands.
- The cubicle construction is appropriately strengthened to assure high endurance of the action of the internal electric arc and structural stability.
- The system of mechanical and electrical interlockings ensures safety of operation.
- In switchgears **BRDA** is possible to use an additional electronic arc fault detection system, which increases the safety of operation.
- The switchgear system **BRDA** allows flexible designing of various configurations of MV part in distribution substations.

List of basic equipment

No.	Apparatus	Type	Manufacturer
1	Circuit breakers	VD4	ABB
		3AH	Siemens
		3AE	Siemens
2	Disconnectors	OW	ZWAE
3	Earthing switches	E	ABB
4	Current transformers	TPU	ABB
		ACI	ARTECHE
		CTS	KPB Intra
		AB / ATB	ALCE / ESITAS
5	Voltage transformers	TJP, TJC	ABB
		UCI, UCIF	ARTECHE
		VTS	KPB Intra
		VB / VTB	ALCE / ESITAS
6	Earth fault instrument transformers	IO	SPIE Energotest
		IO-1s, IFW, KOKM, KOLMA	ABB
		CTR1	KPB Intra
7	Surge arresters	POLIM	Hitachi Energy
		ASM, ASW	Apator
		3EK	Siemens
		Proxar	Protektel
8	Protection Relays	REF	ABB
		MiCOM	Schneider Electric
		Ex-BEL	Apator
		SIPROTEC	Siemens

* other equipment to be agreed



MV double busbar switchgear system BRDA consists of:

- **BRDA 12**
- **BRDA 17,5**

Technical data:

Rated insulation voltage	kV	12		17.5
Rated lightning impulse withstand voltage (1.2/50µs)	kV	75/85		95/110
Rated power frequency withstand voltage	kV	28/32 42/48*	28/32	38/45
Rated frequency	Hz	50		
Rated continuous current	A	up to 2500	up to 4000	up to 1250
Rated short time withstand current	kA	up to 31.5/3s	up to 72/1s	up to 25/3s
Rated peak withstand current	kA	up to 80	up to 180	up to 63
Withstand for internal arcing fault	kA	up to 31.5/1s	up to 72/1s	25/1s
Degree of protection		IP 4X	IP 4X	IP 4X
Busbar system		double		
IAC classification (class of resistance to internal arc)		AFLR		
PM/PI classification (class of partitions)		PM		
LSC classification (class of compartment accessibility)		LSC2B		
Weight of a single switchgear cubicle	kg	950 - 3500		
Overall dimensions**	Width	mm	600 - 1200	
	Depth	mm	1725 - 2350	
	Height	mm	2750 - 3500	

Certificate of compliance with the standards PN-EN 62271...

* according to ГOCT

** without external protectors, covers, doors

BRDA switchgears can be installed among other, in:

- **power plants**
- **power stations**
- **industrial plants**

Electrical Power Equipment Factory

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