



NAREW

Medium voltage metal-enclosed switchgear system



TERAZ POLSKA



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ELEKTROMONTAŻ

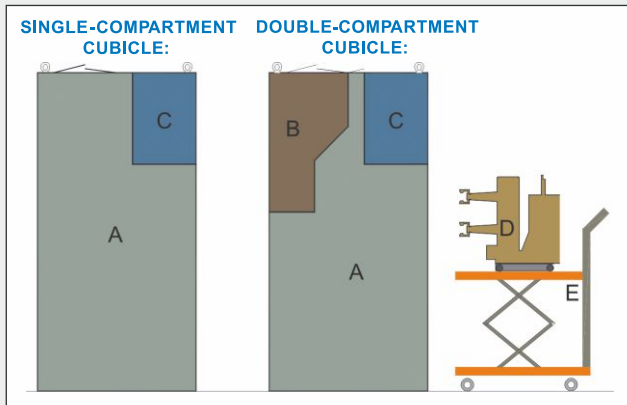
working with energy



Medium voltage metal-enclosed switchgear system

Medium voltage metal-enclosed switchgear **NAREW** is designed for distribution of AC three-phase electric energy with a rated frequency 50Hz and rated voltage up to 17.5 kV in distribution networks of industrial plants and public utilities.

Due to very small size the NAREW switchgear may be installed in new or modernized power and industrial station.



A - apparatus unit and cable connection compartment, B - busbar compartment, C - auxiliary circuit compartment, D - circuit breaker draw-out unit, E - transportation carriage

NAREW switchgear is:

- single or double compartment-depending on equipment
- with a separated busbar system (in truck-mounted design)
- indoor
- arc-proof
- safe
- metal-enclosed
- air insulation
- single busbar system
- equipped with modern switching apparatus

Advanced engineering solutions and simple construction of switchgear NAREW ensure its safe and easy operation and maintenance.

Advantages of **NAREW** switchgear:

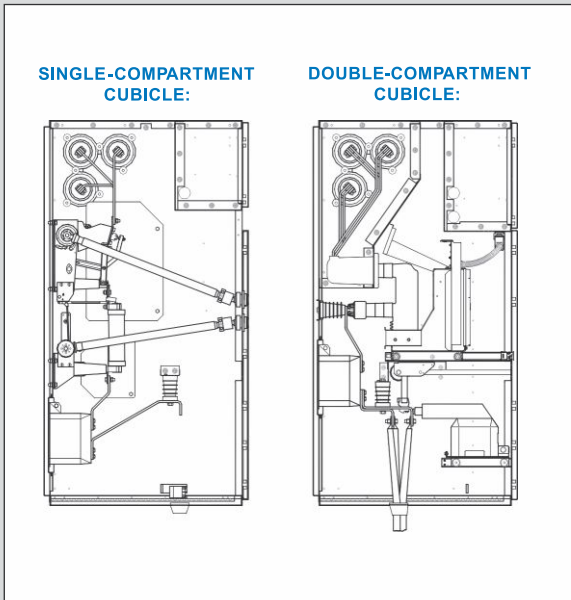
- compact overall dimensions
- high safety of operation ensured by:
 - mechanical and electrical interlocking system, which prevents erroneous switching operations
 - executing all switching operations with the doors closed
 - signalling voltage presence in the main circuit
 - structural protection from internal arc effects
 - use of insulation plate in version with disconnector.
- simple operation and maintenance thanks to easy access to switchgear and cable connections
- incorporation of the modern apparatus ensuring performance reliability of the switchgear
- different switchgear configurations are possible by setting up modules of various functions
- high resistance to corrosion



Main features



A great number of cubicle versions allows flexible designing of the switchgear NAREW according to the Customer needs.



- **NAREW** switchgear is set up either from cubicles of fixed mounted design or truck-mounted design with equipment depending on the function, assigned to the panel in the switchgear.
- Cubicles are made of metal plates covered by aluminum-zinc coating.
- Doors, enclosures and external covers are covered with powder varnish in RAL color according to the Customer needs.
- From the top the cubicle construction is enclosed by metal covers (blow-out valves), which in fault conditions open under pressure of arcing gases.
- The cubicle construction is properly reinforced in order to ensure high resistance to internal electric arc.
- Cubicles are equipped with interlocking system which ensures the safe and reliable operation of switchgear **NAREW**.

List of basic equipment

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

* other equipment to be agreed



Medium voltage metal-enclosed switchgear system **NAREW** consists of:

- **NAREW 12**
- **NAREW 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*	38/45
Rated frequency	Hz	50	
Rated continuous current	A	up to 1250	
Rated short time withstand current	kA	up to 25/3s	
Rated peak withstand current	kA	up to 63	
Withstand for internal arcing fault	kA	25/1s	
Degree of protection		IP 4X	
Busbar system		single	
IAC classification (class of resistance to internal arc)		AFLR	
PM/PI classification (class of partitions)		PM	
LSC classification (class of compartment accessibility)		LSC2A, LSC2	
Weight of a single switchgear cubicle	kg	350 - 900	
Overall dimensions**	Width	mm	600 - 750
	Depth	mm	1000 - 1085
	Height	mm	2000 - 2075

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

* according to ГОСТ

** without external protectors, covers, doors

NAREW switchgears can be installed among others in:

- step-down substations
- pad mounted transformers
- switchgear solutions for auxiliary consumption

NAREW switchgears are used in all branches of industry

Electrical Power Equipment Factory
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