



Low Voltage Packaged Device «Sphere-N»



JSC "REP Holding" is a leading Russian power engineering company, a manufacturer and supplier of the new-generation power equipment. It performs engineering design, manufacture and package supply of power and electrical equipment for gas, oil, metallurgical and chemical industry, power generation and integrated power grid.

The new low voltage packaged control and distribution unit has been developed and manufactured on the production site of REP Holding – "Plant ELECTROPULT".

JSC "Plant ELECTROPULT" is an enterprise with a complete production cycle. It is a modern production complex producing electrical equipment, control systems, electric power distribution and conversion systems. In addition to its own developments, the company has acquired more than 10 licenses for manufacture of electrical products from the leading foreign companies (Rittal, Siemens, S2M).

Low Voltage Packaged Device "Sphere – N"

The universal low voltage packaged device "Sphere – N" is designed to receive and distribute three-phase AC el. power with voltage of 220/380/660 V, 50 Hz. It performs protection functions in case of excess voltage and short-circuits, as well as the functions of guaranteed power supply of critical power consumers.

Depending on its applicability, low-voltage packaged devices are produced as per TU 3433-003-71439231-2005 "Low-Voltage Packaged Devices. Control and distribution. Technical Specifications" or, if included into a Packaged Transformer Substation, as per TU 3412-018-05758859-2004 "Packaged Transformer Substations ranging from 25 to 2500 kVA. Technical Specifications".

"Sphere – N" low-voltage packaged devices cabinets are available in home-made metal casings.



External view of "Sphere – N"
low-voltage packaged device

The main advantages

- versatility;
- a possibility to use component parts of both domestic and import suppliers;
- the construct is used based on both plug-in, draw-out and stationary modules and on the equipment installed on mounting panels.

In accordance with implementation of the State program on import substitution "Sphere-N" is manufactured from the materials produced on the territory of the Russian Federation (metal sheet, glass sheet, copper, aluminum, etc.), as well as is oriented on the components and devices made by domestic companies.

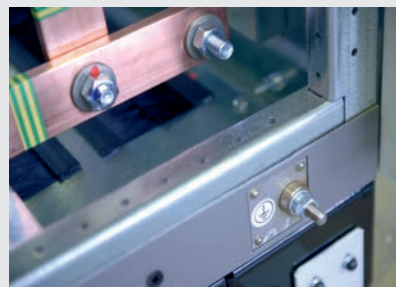
Types of cabinets by their functionality

- Entrance (including emergency entrance) – with stationary or draw-out switching units;
- Outgoing lines - with stationary, plug-in or draw-out switching units, as well as with with drawable cells. The maximum number of outgoing lines in the cabinets with drawable cells is 36;
- Sectional - with stationary or draw-out switching units;
- Reactive power compensation;
- Control panels;
- Electric power metering – with power consumption metering and control instruments installed;
- Combined – one cabinet contains units of different functionality. For example, entrance and outgoing line.

Each cabinet is completed with additional elements on the face side to provide visible earthing by a conductor to the room earthing loop.



Draw-out module



The element providing visible earthing

The main characteristics

- The product cabinets can be both for one-side and two-side service;
- Cabinet width, mm: 400-1400 (in increments of 100);
- Cabinet depth, mm: 400-1200 (in increments of 200);
- Cabinet height, mm: 1400-2000 (in increments of 200);
- Protection level – up to Ip54*.

* There are design restrictions

An important feature of the “Sphere – N” construct is a possibility to use draw-out modules.

Draw-out modules are equipped with mechanical interlocks and fixed positions. There are three fixed positions at all: “Connected”, “Test” and “Disconnected”. The modules are completed with actuating mechanisms preventing the module movement under load.

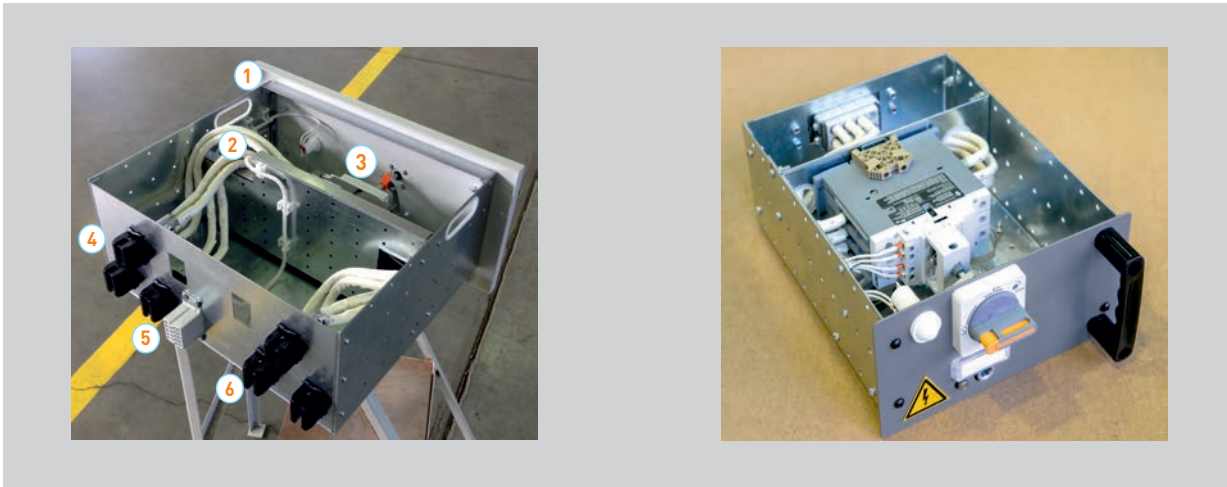


Low voltage packaged device “Sphere – N” with outgoing lines cabinet modules

Standard draw-out modules

Height of draw-out module, mm	0.4 kV / direct start	0.4 kV / cable
150	40 kW	100 A
200	64 kW	160 A
250	100 kW	250 A
300	-	400 A
400	160 kW	630 A
600	250 kW	-

Arrangement of outgoing lines cabinet modules



- ① - Draw-out module base; ② - Unit holder; ③ - Actuating mechanism; ④ - Output pins;
 ⑤ - Control circuit connector; ⑥ - Power supply contacts

Besides draw-out modules, the equipment in the outgoing lines cabinets can be placed in stationary cells wherein switching units, stationary, plug-in and draw-out, are arranged.

Technical characteristics

- Nominal current I_n up to 630 A
- 3- and 4- pole
- Manual or motor actuator
- Actuator on the door or behind the door
- Wire-circuit boards for auxiliary units



Stationary cabinet cell

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