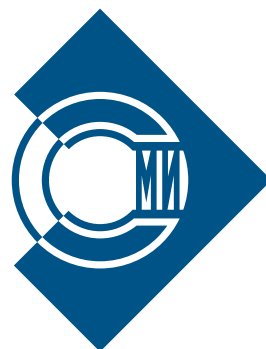


SERVIS MONTAZH INTEGRATSIYA

power distribution systems
automation and drive



smi.su





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COMPANY PROFILE

ServisMontazhIntegratsiya was founded in 2003 with the aim to meet demand for modern, reliable, high-quality power distribution equipment, automation and drive systems.

OUR ADVANTAGES



FAST ASSESSMENT / CALCULATION

Specialized software shortening price calculations time



HIGH QUALITY PRODUCTS

20 years of experience gave us the opportunity to develop a system eliminating manufacturing errors



TEAM OF PROFESSIONALS

We employ certified engineers, designers and use certified technologies



EXTENSIVE WORK EXPERIENCE

We know how to manage international projects



WIDE RANGE OF PRODUCT APPLICATIONS

Any customer requests in the field of 0.4-110 kV industrial power supply



INDUSTRY AUTOMATION

Drive and industrial automation from manufacturers of controller technology



PARTNERSHIP

Partnerships with Russian and foreign companies

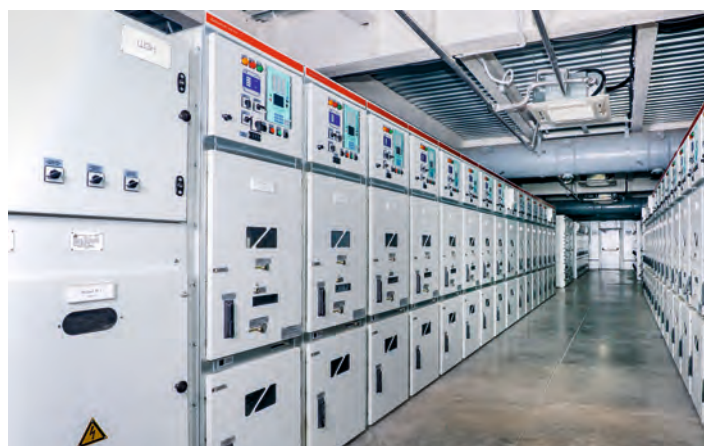
MAIN ACTIVITIES

- ▶▶ Manufacture of low voltage and medium voltage switchgear equipment.
- ▶▶ Engineering and system integration, industrial production control systems.
- ▶▶ Integrated design of power supply and distribution facilities.
- ▶▶ Package deliveries of electrical products complete with automated power supply systems for industrial enterprises.
- ▶▶ Installation and commissioning of equipment, electrical installation services.
- ▶▶ Tests and measurements of customers electrical equipment and electrical installations up to 220 kV.
- ▶▶ Energy inspection of facilities, technical reports and recommendations on introduction of energy-saving techniques.
- ▶▶ Warranty and post-warranty maintenance of delivered equipment.

PRODUCTS

Over the years our company has extended and upgraded the main product line:

- ▶▶ SPASSK-89 low voltage metal enclosed switchgear.
- ▶▶ GUDIRA-5110 medium voltage switchgear.
- ▶▶ Medium and low voltage power factor correction units.
- ▶▶ Control Power Cubicles.
- ▶▶ LV and MV Soft Starters.
- ▶▶ Instrument and PCS switchboards as per customer documentation.
- ▶▶ Process equipment control stations based on soft starters and VFDs.
- ▶▶ Relay protection and emergency controls cubicles for 110-750 kV open-type switchgear.
- ▶▶ Heating control cubicles.





COMPANY MANUFACTURING FACILITIES

- ▶▶ Manufacturing facilities, allowing over 3000 units of annual manufacture.
- ▶▶ Metal workshop equipped with modern high-performance metal-working machinery allowing substantial saving of manufacturing costs.
- ▶▶ The workshop facilities are designed for production of switchgear enclosures and other metal ware from sheet metal up to 3 mm thick and up to 3 m long.



SPASSK-89

LOW VOLTAGE SWITCHGEAR

SPASSK-89 low-voltage switchgear for up to 5000A - are single-front and double-front serviceable panels in metal enclosures with fixed or withdrawable air-insulated circuit breakers. SPASSK-89 switchgears serve as 0.4 kV switchboards, as main distribution boards (MDB) in industrial buildings, as control panels for motor loads. SPASSK-89 switchgears are designed to distribute 3-phase, up to 690 V, 50 Hz, AC current in networks with insulated or dead earthed neutral, for protection against overloads and short-circuits, for automatic load transfer and for control, metering and alarm purposes. The hardware is manufactured of hot-dip galvanized sheet steel. Doors, cladding and base are powder coated, RAL 7035, (light grey). Colour can be customized per Client requirements.

Outgoing SPASSK-89 panels with full-sized withdrawable modules for motor and cable units (motor control centre). Modular design of the switchgear allows optimal customization of SPASSK-89 to any requirements. Miniature draw-out modules (1/2, 1/4) for motor and cable assemblies up to 63A can be used. Reliable interlocking system increases resistance to arc faults. Mechanically interlockable "Service", "Test", "Open" positions with protection against faulty operation. Automatic protection against accidental contact (shutters) with mechanical drive when the module is withdrawn from panel. Contact module and distribution bus with a base, protected against electric arc. Modern design of front part provides clear and distinct identification of all elements.

High-quality switching equipment ensures reliable performance and prolonged service life. New withdrawable modules technology is based on "pressing of switch contacts to the bus instead of cutting them into the bus" principle which eliminates contact wear.

ADVANTAGES AND DISTINCTIVE FEATURES:

- ▶▶ Perfect industrial design for integration of low-voltage switchgear into modern engineering solutions.
- ▶▶ Single-front and double front access.
- ▶▶ Combination of various installation methods in one section.
- ▶▶ Flexible adjustment of internal separation types to individual customer requirements.
- ▶▶ Standard type tested 5000A busbar system positioning.
- ▶▶ Rated shock current up to 220 kA.
- ▶▶ Standard full size and small (1/2 and 1/3) typical modules.
- ▶▶ Test and disconnected status with door closed ensuring IP54 degree of protection.
- ▶▶ Deep switching device compartment for versatile installation capabilities.
- ▶▶ Maximum safety for operating personnel due to short circuit arc resistant design.
- ▶▶ Cable connection: top, bottom or rear.
- ▶▶ Framework is a structure consisting of strong steel profiles, which forms support for all components and the enclosure.
- ▶▶ Door opening angle – up to 125° (in case of stand alone installation – 180°).
- ▶▶ Reliable interlocking system increases resistance to arc faults.
- ▶▶ Compact contact system leaves more space for distribution and communication devices.
- ▶▶ Type of contacts switch over allows for fast and precise switching between the various operating statuses using minimum effort.
- ▶▶ Up to 48 control circuits per withdrawable module provide unlimited possibilities for control, communication and visual representation,
- ▶▶ The switchgear can be expanded without de-energizing
- ▶▶ Removable elements can be replaced without de-energizing.
- ▶▶ Power supply from distribution busbar can be cut without drawing out the module.
- ▶▶ Customizable selection of components, not limited to particular manufacturer.



TECHNICAL CHARACTERISTICS:

Parameter Description		Value
Highest ambient air temperature during operation		up to + 40°C
Lowest ambient air temperature during operation		above + 5°C
Upper value of humidity at 20°C		90% max.
Rated operational voltage (Ue)		up to 690 V
Rated insulation voltage (Ui)		1000 V
Main horizontal busbars	Rated current (Top busbar arrangement)	up to 5000 A
Vertical busbars for cubicles with circuit-breakers	Rated current	up to 5000 A
Vertical busbars for universal and fixed type design cubicles	Rated current	up to 1600 A
Vertical busbars for cubicles with 3NJ4 plate fuse-switch disconnectors (fixed type)	Rated current	up to 1600 A
Vertical busbars for cubicles with 3NJ6 plate fuse-switch disconnectors (fixed type)	Rated current	up to 2100 A
IP protection degree	Acc. To GOST 14254-96, IEC 60529, EN 60529	IP30, IP31, IP40, IP41, Ip54
Internal separation	GOST P 51321.1-2007 IEC 60439-1, part 7.7, DIN EN 60439-1	Types 1 to 4b
Dimensions	Height	2000; 2200, 2300 mm
	Width	400; 600; 650, 800; 1000; 1200 mm
	Depth – single front design	600; 800, 1000 mm
	Depth – double front design	1000; 1200 mm



LOW VOLTAGE POWER FACTOR CORRECTION UNITS

Adjustable Power Factor Correction (PFC) units are designed to maintain constant set power factor value ($\cos \varphi$) in electrical distributing three phase networks. PFC units maintain constant pre-set $\cos \varphi$ in periods of maximum and minimum loads and eliminate reactive power generation mode.

In networks with excessive level of harmonic distortions and non-linear consumers exceeding 20% of total load, it is recommended to use PFC units which improve the power factor preventing increase of current and voltage harmonic component.

For networks with abruptly variable load the range of PFC's is extended by thyristor type capacitor units for systems with static compensation of reactive power. These units are equipped with thyristor starters instead of traditional contactors and are designed for rapid compensation of loads which are sensitive to voltage swings.

For compensating constant reactive power we manufacture non-adjustable PFC units.

Types of power-factor compensation:

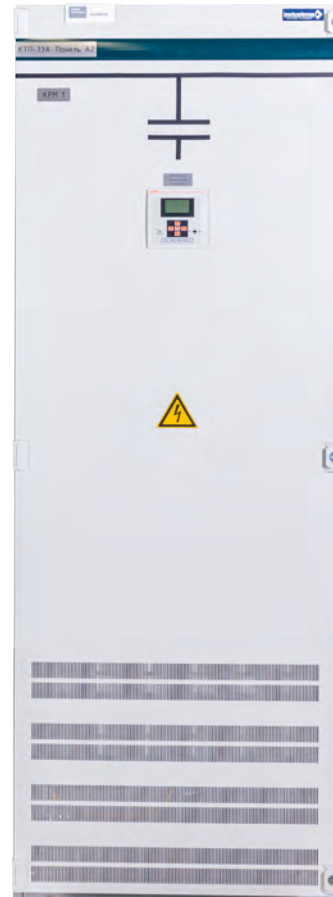
▶▶ Individual compensation. In this case, reactive power is compensated at the point of origin, which decreases loads in wires.

▶▶ Group compensation. In this case by analogy with constant compensation for several inductive loads, a common bank of capacitors is connected. The electrical network is unloaded.

▶▶ Centralized compensation. In this case, a number of capacitors are connected to a group switchboard or main switchboard. This method is used mostly in large systems with variable loads, reactive power compensation is compensated with its actual consumption. The capacitor bank is controlled by an electronic controller which analyzes reactive power consumption. Such regulators perform switching of steps with capacitors. In addition to step control, modern automatic regulators enable simultaneous monitoring the status of capacitors and measure the power quality parameters of a compensated network with the results displayed on LCD display, as well as data transfer via an interface to computer memory.

ADVANTAGES AND DISTINCTIVE FEATURES:

- ▶▶ Modular design principle – enables gradual increase of rated capacity.
- ▶▶ Accurate adjustment of $\cos \varphi$ (minimum step starting from 1 kVAr).
- ▶▶ Specialized contactors, with early closing contacts and current-limiting resistors which increase service life of contactors and capacitors;
- ▶▶ Capacitors capable of self-repair after breakdown of insulating layer.
- ▶▶ Specialized controllers for automatic adjustment of $\cos \varphi$ with protection against harmonic distortions.
- ▶▶ High breaking capacity fuses, connected to busbar system.
- ▶▶ Compact and light-weight.
- ▶▶ PFC units can be customized to client dimensions.



TECHNICAL CHARACTERISTICS:

Parameter Description		Value
Rated voltage		0,4-0,69 kV
Max. operating voltage		0,44-0,72 kV
Rated frequency		50 Hz
Capacitor Voltage		400-850 V
Adjustment step		0,5-60 kVAr
Filter Detuning		5,67%-210 Hz 7%-189 Hz 14%-134 Hz
Design Type		Free Standing / Part of Switchboard
Connection		Top / Bottom
Degree of Protection		IP31/IP41
Type		KRM/KRMF/KRMT/KRMFT
Adjustment		Manual / Automatic
Dimensions	Width	400/600/800/1000 mm
	Depth	600/800/1000 mm
	Height	2000/2200 mm



CONTROL POWER CUBICLES

Control power cubicles are used for various applications for ensuring uninterrupted power supply of control circuits, drives of incoming and sectionalizing breakers, relay protection devices, emergency lighting of premises, as well as alarm devices at power stations, substations and in other industries. They can be either self-sufficient devices for uninterruptible power supply of automation systems, or part of control DC system.

Principal application of Control Power Cubicles is reliable uninterrupted power supply of most critical consumers by automatic switching to backup power source – batteries in situations when main power supply is lost.

After restoration of power from the main source, the Control Current Cubicle provides automatic battery charging with simultaneous power supply to consumers.

Control Current Cubicles are used in single-phase and three-phase AC networks with input voltage 220-380V, 50Hz frequency and solidly grounded neutral.

The hardware is based on new generation HVR intelligent, high-frequency DC power systems of using advanced patented technologies. The system is available with standard 220V, 110V and 48V DC output voltages and a number of additional options. Battery charging process fully meets modern safety requirements for lead-acid

and nickel-cadmium batteries, controlled by special intelligent battery charging system.

HVR EMS070 series system controller – the control centre of Control Current Switchboard has a 7" colour graphic touch LCD display with Russian language support. HVR EMS070 has several key features such as: temperature compensation, manual and automatic charging, dynamic control of battery charge current, flexible configuration of user signals and non-volatile event memory for more than 200 entries. Controller is equipped with standard interface RS-232/485, Ethernet (RJ-45)/with optional IEC 61850 support.

ADVANTAGES AND DISTINCTIVE FEATURES:

- ▶▶ Advantages of HVR series systems are high efficiency and reliability combined with high power density, small size, light weight, and remote monitoring and control capability.
- ▶▶ These series provide possibility to build systems with parallel connection, N+1 redundancy, hot-swap modules (for safety, avoid swapping while load is connected) and configuration flexibility, which, combined with the remote monitoring and control, makes power systems safer and more stable.
- ▶▶ The systems are equipped with an intelligent monitoring system, LCD display, visual and audible alarms, and event log which registers events in case of power failure.
- ▶▶ Switching between AC inputs and starting the charger is smooth due to built-in protection against phase change and delay.
- ▶▶ Battery charge control system provides possibility to monitor voltage on contacts, charging / discharging current, test throughput (Ah) and recording results, automatic stabilization and recharging, initiate regular stabilization of battery charge.
- ▶▶ Temperature control function provides adjusting temperature compensation depending on type and parameters of batteries, which extends battery life.
- ▶▶ Efficiency at full load > 95%; with passive

power factor correction technology, full load power factor > 0.92.

- ▶▶ Current stabilization $\leq \pm 1\%$; voltage stabilization $\leq \pm 0.5\%$; pulsation factor $\leq \pm 0.5\%$.



TECHNICAL CHARACTERISTICS:

Parameter Description	Value
Input AC current	380V +/- 15%
Frequency	50Hz +/- 10%
Output current	10A~320A
Battery capacity	10Ah~3000A*h
Rated output voltage	220V/110V
Output voltage range	198V~286V/99V~143V with stepless regulation
Output current limit	Rated current × (10%~105%)
Dynamic characteristic	Recovery time from 20% load to 80% load ≤200μs, excess ≤ +/- 5%
Efficiency	≥95% (single module system)
Insulation resistance	≥20 MΩ
Insulation strength	Output to ground, input to ground input to output without sparking for 1 minute at 2.5kV AC
Relative humidity	≤90%
Height of unit	≤2000m
Earthquake Safety	≤7
Air temperature	min +5°C / max +40°C
Noise level	Natural cooling ≤40dB, ventilation ≤55dB (outside cubicle)
IP level	≥IP30



GUDIRA-5110 MEDIUM VOLTAGE METAL CLAD SWITCHGEAR

GUDIRA -5110 medium voltage metal clad switchgear designed for use in industrial power supply and 3-phase AC 50 Hz distribution networks with 12 kV maximum operating voltage.

Modern switching devices and a number of engineering solutions provide high reliability and maintenance safety of the switchgear.

Excellent corrosion protection is ensured by zinc- aluminium coated sheet steel, as well as powder coating of doors and external covers and panels of the switchgear.

GUDIRA-5110 switchgear were tested at All-Russian Electrotechnical Institute and received certificate, confirming operational parameters and permitting its application in electrical networks, power stations, utilities and industrial facilities as well as other organisations generating, transmitting or consuming electrical energy.



TECHNICAL CHARACTERISTICS

Parameter Description		Value
Max. operating voltage		7.2/12 kV
Rated voltage		6/10 kV
Rated frequency of grid		50 Hz
1 min. power frequency test voltage		32/42 kV
Lighting impulse withstand test voltage (1.2/50 microseconds).		60/75 kV
Rated current of main circuits		630 A 1000 A 1250 A 2000 A 2500 A 3150 A
Thermal current (1 and 3 sec)		up to 31.5kA
Electrodynamic current		up to 81 kA
Internal electric arc resistance		up to 31.5 kA
Protection degree, doors closed as per GOST 14254		Ip41
Cubicle dimensions*	Width	650; 800; 1000 mm
	Depth	1340 mm
	Height	2200 mm**
Certificates		Conformity certificate No 1928970 Declaration of conformity №POCC RU.АГ42.Д00096



* without external barrier, panels, doors
** for extended LV compartment +300 mm



ADVANTAGES AND DISTINCTIVE FEATURES

RELIABILITY

- ▶▶ Factory-assembled switchgear, type tested as per GOST R 14693-90.
- ▶▶ Type (standard) tests of circuit-breaker mounted in the cubicle.
- ▶▶ Standard components available worldwide.
- ▶▶ Application of vacuum circuit breakers BB/TEL (Tavrida Electric), VF-12 (Eltehnika), Metasol и Susol (LS Electric), BB-43A3-2-10 (43A3), HVG (HYUNDAI), Nv2 (CHINT), VH12 (AKEL).
- ▶▶ Quality Management System is certified as per DIN EN ISO 9001.

PERSONNEL PROTECTION

- ▶▶ All switching operations, including emergency manual switching, are possible only with high-voltage compartment door and circuit-breaker compartment door in closed position.
- ▶▶ High-voltage compartment door mechanically interlocked with the switching device.
- ▶▶ Maintenance possible without interfering with normal operation of adjacent panels due to grounded metal protective shutters and partitions.
- ▶▶ GUDIRA-5110 switchgear conforms to GOST and GOST 14693-90 requirements on protection of service personnel against accidental contacts with live parts and moving parts and protection of equipment against ingress of foreign objects and

water splash according to designed degree of protection, i.e.: outer metal enclosures – IP41; compartment partitions - IP 2X.

- ▶▶ Modern switching devices and a number of engineering solutions provide high reliability and maintenance safety of the switchgear.



MEDIUM VOLTAGE POWER FACTOR CORRECTION UNITS

Adjustable Power Factor Correction (PFC) units for 6 kV and 10 kV voltage, 50Hz frequency, 150 to 10 000 kVAr capacity are designed to increase the power factor value ($\cos \varphi$) in electrical distributing 3-phase networks during fluctuations of reactive power in industrial plants and other facilities.

The need for higher harmonic filters in capacitor units is dictated by the nature of the consumers with which the capacitor unit is installed. If the PFC is installed where there is no non-linear load (motors equipped with soft starters, variable frequency drives, no welding machines, arc or induction melting furnaces), the harmonic filters are not required.

If there are consumers with non-linear load in the network, the capacitor unit has to be designed with harmonic filters.

Prerequisite for selecting capacitor units is resonance calculation. If calculation reveals that with the introduction of PFC unit resonance will occur on any harmonic in the network, the PFC unit must be equipped with harmonic filters.

ADVANTAGES AND DISTINCTIVE FEATURES

- ▶▶ Three-phase power capacitors of European and Russian manufacturers are designed for reactive power compensation. Capacitor electrodes are made of aluminium foil, dielectric is made up of polypropylene film impregnated with special solution. The capacitors have built-in discharge resistors.
- ▶▶ In order to improve reliability and provide protection against fault situations additional high voltage fuses are installed in the capacitor bank cells (in line with PUE (Russian Electrical Installations Code) cl. 5.6.20).
- ▶▶ Modular design permits gradual increase of the unit capacity.
- ▶▶ 6 (10) kV PFC units are free standing and not included into 6(10) kV switchgears. 6 (10) kV PFC units are connected to 6(10) kV switchgears by cable via cubicle with breaker and relay protection, which significantly improves operational reliability.
- ▶▶ Low weight and compact dimensions.
- ▶▶ Upon request, a vacuum circuit breaker with relevant microprocessor-based relay protection device is installed in the incomer cabinet.
- ▶▶ Forced ventilation to keep up proper operation of capacitors.



TECHNICAL CHARACTERISTICS

Parameter Description		Value
Rated voltage		6/10 kV
Max. operating voltage		6,3/10,5 kV
Rated frequency		50 Hz
Capacitor Voltage		6/6,3/10,5 kV
Adjustment step		75 kVAr-30 mVAr
Filter Detuning		5,67%-210 Hz 7%-189 Hz 14%-134 Hz
Design Type		Free Standing
Connection		Top / Bottom
Degree of Protection		IP31/IP41
Type		KRM/KRMF/KRMT/KRMFT
Adjustment		Manual / Automatic
Dimensions	Width	400/600/800/1000 mm
	Depth	600/800/1000 mm
	Height	2000/2200 mm



SOFT STARTERS (SS)

Soft starter manufactured by SMI is a powerful and reliable solution for starting medium voltage motors. SMI soft starter combines advanced soft start and soft stop functions with extensive motor and system protection, as well as a user-friendly interface and complete commissioning diagnostics.

With advanced personal safety features, an easy-to-use graphical interface and comprehensive built-in motor/load protection, this soft starter is a balanced solution for a wide range of medium voltage applications.

SMI soft starter is delivered as complete cubicle, which reduces the time for installation, commissioning and start up.

ADVANTAGES AND DISTINCTIVE FEATURES

- ▶▶ Various start/stop techniques makes it possible to use SMI soft starters in various fields of application.
- ▶▶ Large range of protection functions implemented in the MVE Multilingual Controller provides complete motor protection.
- ▶▶ Ease of use and communication with the MVE Multilingual Controller's multilingual graphic display.
- ▶▶ Motor protection in direct start mode via bypass.
- ▶▶ Possibility to test the soft starter on site with a low voltage motor before connecting the medium voltage motor.
- ▶▶ Real-time graphs clearly illustrate motor operation.
- ▶▶ Detailed event log. 99-entry event log records operation and performance data with

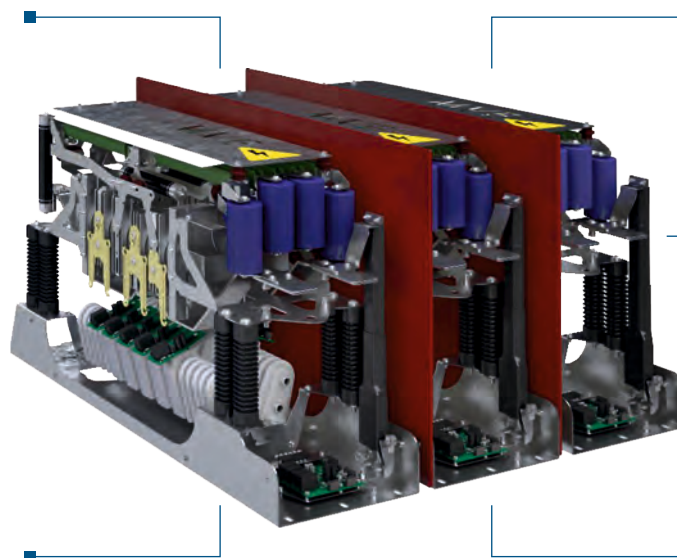
timestamps, which facilitates monitoring of motor operation.

- ▶▶ The 8-entry trip log contains trip statuses and operating parameters at time of trip, including the following:

- Phase currents and voltages
- Network frequency
- Soft Starter status
- Time and date

- ▶▶ 100% galvanic isolation. Soft starter control panel is installed in the low voltage compartment of the cubicle. Power section is connected by fibre optic cables through an interface board, eliminating the need for copper wiring and providing complete galvanic isolation of low voltage compartment from the medium voltage power section.

Design based on standard components reduces demand for spare parts and simplifies maintenance



Separate design of power phase modules facilitates installation, maintenance and replacement

PCB coating with protection in environments with pollution levels up to class 3

Minimal implementation time due to design which can be easily integrated into plant automation systems

Ultra-compact dimensions enable integration of power electronics in both vertical and horizontal positions and save valuable space



TECHNICAL CHARACTERISTICS



- Easy-to-read programmable screen
- Start, stop, reset, local/remote control push buttons
- Action buttons for quick access to common tasks
- Multilingual controller with eight selectable languages
- Status LEDs for instant feedback
- Intuitive interface and menu structure for easy setup, with multi-level password protection
- Control panel with IP54 degree of protection, installed outside the cabinet

Parameter Description	Value
Network Voltage	10 kV
Rated lighting impulse withstand voltage (1.2/50 microseconds).	75 kV
Power frequency withstand voltage	42 kV
Network frequency	50/60 Hz
Rated current	from 75 to 540 A
Thermal current	31.5 kA
Electrodynamic current	81 kA
Degree of Protection	IP 31
Climatic category	UHL 3
Access	Double-front
Internal short-circuit arc classification	AFLR
Partition class	PM
Loss of service continuity category	LSC1
Weight per cubicle	1200 kg
Dimensions, WxDxH	1000x1360x2200 mm
Conformity to standards	GOST, IEC
Power module of Soft Starter	MVE (AuCom)
MVE Multilingual Controller. ANSI protections	48, 66, 37, 51L, 51R, 50, 49/51, 46, 27, 59, 47, 50G, 85, 94/95, 23, 49, 32.




DIGITALIZATION OF FACILITIES AND SYSTEMS

Information Analysis and Control Systems department of ServisMontazhIntegratsiya provides a full range of services in developing automation systems for a broad spectrum of industrial plants including all control levels, such as relay protection and local automation systems for process and power plants and units, Process Control Systems, Automated Control Systems for power generation, automation systems for process and

industrial facilities, information analysis system, MES-systems as well as integrating systems designed to bond separate sub-systems into a unified production management complex.

ASUE (Automated Power Management System), ASU TP (Substations Automated Process Control System and Telecontrol). Integrated solutions for substations.

Communications solutions IEC 61850 IEC 60870-5-101/104 Modbus RTU/TCP Profibus / Profinet	Power system Management		Dispatching	Software for dispatch centers Human-machine interface (HMI) for automated process control in power engineering REDKIT SCADA Master SCADA SICAM SCC
Metering converters EC «Energoservice» CHEAZ	Communications		Substations automation	ASUTP PS (Substation automated process control system) Prosoft systems EC «Energoservice» KEAZ CHEAZ SICAM PAS
				
RZA (Relay protection and automation) equipment EKRA Mehanotronika SIPROTEC 4,5				
AIISKUE (Automated system of control and metering of energy resources) Intelligent meters Data Acquisition/ Transmission Devices	Relay protection and automation	Power metering	Power quality	Software SICAM Device Manager SICAM PAS UI Toolbox II DIGSI
				



THESE SERVICES INCLUDE FOLLOWING ACTIVITIES:

- ▶▶ Audit of the software and hardware solutions used for production management.
- ▶▶ Formulation of development concept for production and process management systems.
- ▶▶ Pre-design studies and development of a system technical requirements.
- ▶▶ Development of performance specification.
- ▶▶ Development of design specification.
- ▶▶ Development of application software.
- ▶▶ Delivery of components and assembly of control cubicles and operator panels.
- ▶▶ Installation, installation supervision and commissioning of automation systems.
- ▶▶ Integrated testing and commissioning of systems for trial operation.
- ▶▶ Training of customer's operating and maintenance personnel.
- ▶▶ Commissioning of systems for commercial operation.
- ▶▶ Warranty and post-warranty maintenance.
- ▶▶ Supply of spare parts, tools and accessories

In our projects we use equipment manufactured by international leaders in industrial automation. Depending on reliability requirements addressed to the systems which we create, their functional content and the project budget for software development, we use controller programming tools, such as TIA PORTAL, Step7, Digsii, Toolbox II, Sicam Device Manager, SCADA systems Sicam SCC, WinCC, InTouch, TraceMode, Genesis, database management systems MS SQL, Oracle, substation operational control system SICAM PAS.



AUTOMATED POWER CONTROL SYSTEMS

In the era when the world is undergoing swift digitization, creation of "Digital Substation" has become urgent and highly demanded. The term "Digital substation" means a special (digital) structure and interaction of technological systems of the substation (such as relay protection and automation systems, automated process control systems, automated power control systems) within each system, between systems, as well as between systems and primary equipment.

Operation and management of such substations is based on the software and hardware complex of a digital substation, divided into structural levels (process, connections and substations), which are interconnected by Ethernet local area network segments.

ServisMontazhIntegratsiya LLC offers modern solutions in the field of creating control systems for power facilities using the latest IEC61850 protocol. IEC 61850 standardized communication processes and the design process itself on a global scale. This means that users are no longer

dependent on one manufacturer, and the number of interfaces which are incompatible with each other has been significantly reduced. IEC 61850 protocol permits:

- ▶▶ Reduce the time and cost of introducing MV and LV smart devices into distribution grid management systems due to the simulation approach implemented in the standard.
- ▶▶ Increase visibility and manageability of medium and low voltage sections of the network, including areas of distributed generation.
- ▶▶ Improve the quality of services through partial or complete decentralization of feeder automation systems.
- ▶▶ Add support for many additional features (low voltage feeder load balancing, voltage variation limits control, etc.).
- ▶▶ Optimize equipment and reduce site visits.

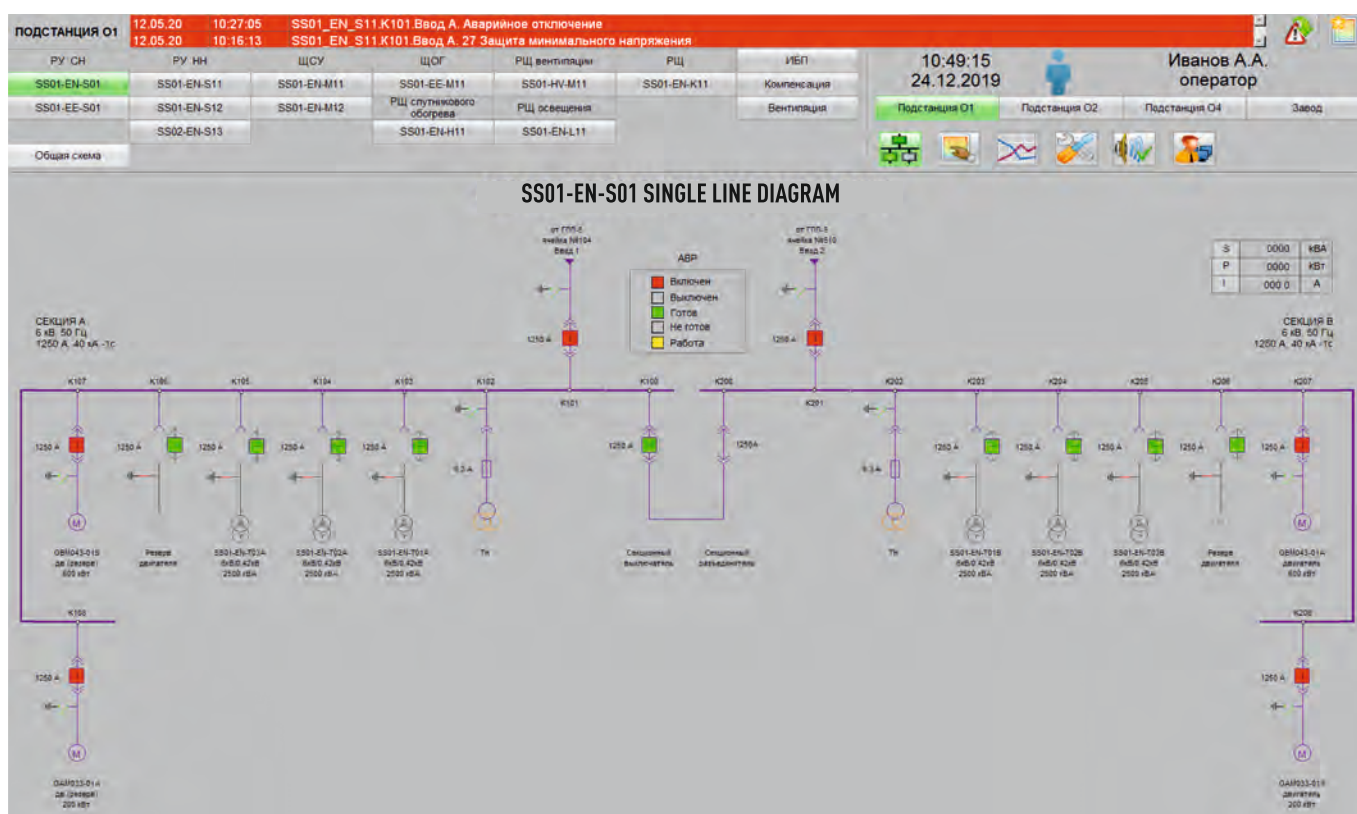
AUTOMATED POWER CONTROL SYSTEMS PERFORM THE FOLLOWING FUNCTIONS:

- ▶▶ monitoring of operation and management of power equipment;
- ▶▶ prevention of emergencies;
- ▶▶ increasing the level of information support for process and operational personnel;
- ▶▶ increasing reliability of control system through the use of modern technical devices based on electronic and computing tools and the availability of self-diagnostics;
- ▶▶ technical measurement of energy consumption;
- ▶▶ providing operational personnel with relevant operational and historical process information, reports, including those on paper.

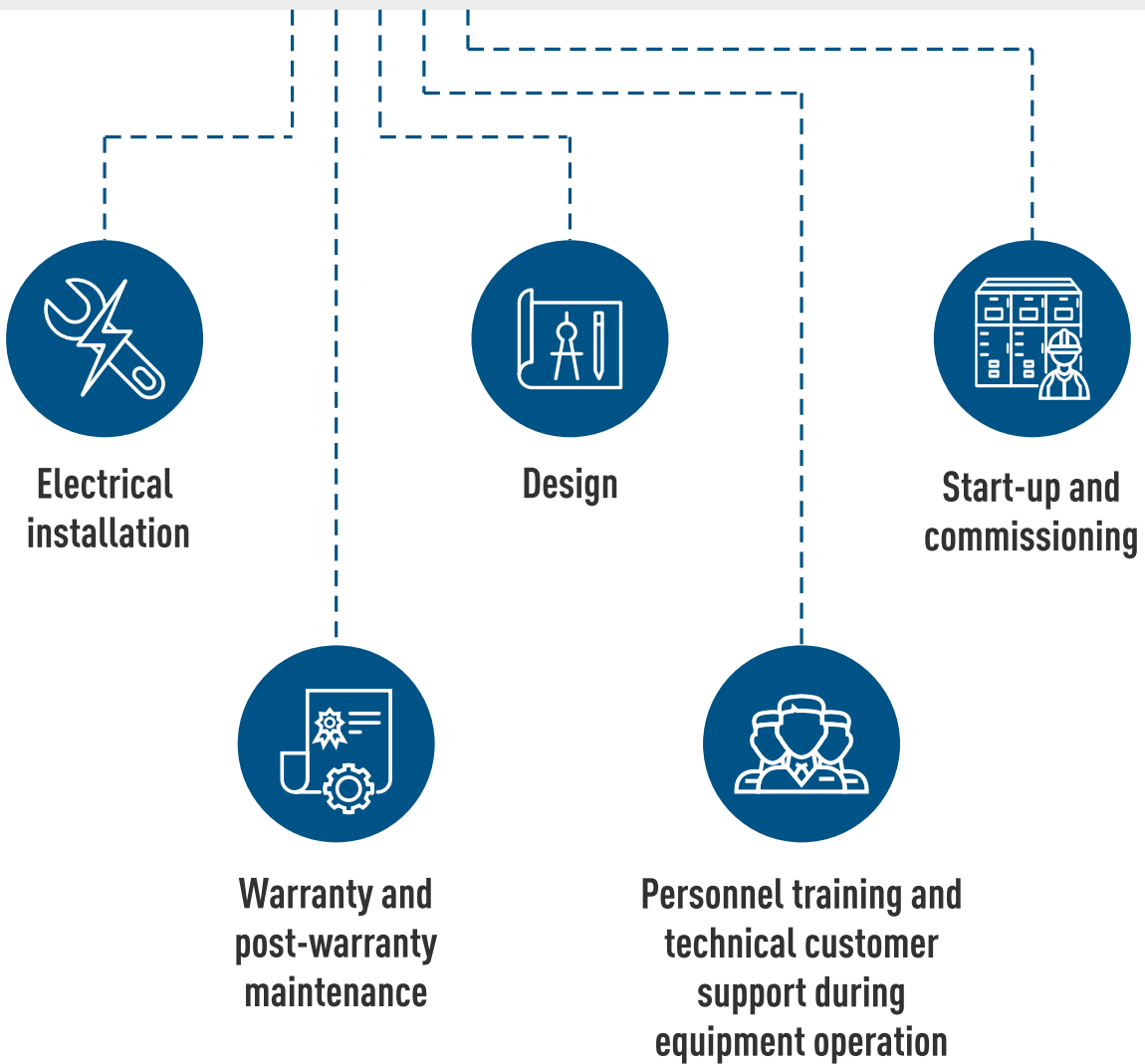
AUTOMATED POWER CONTROL SYSTEMS HAVE FOLLOWING FEATURES:

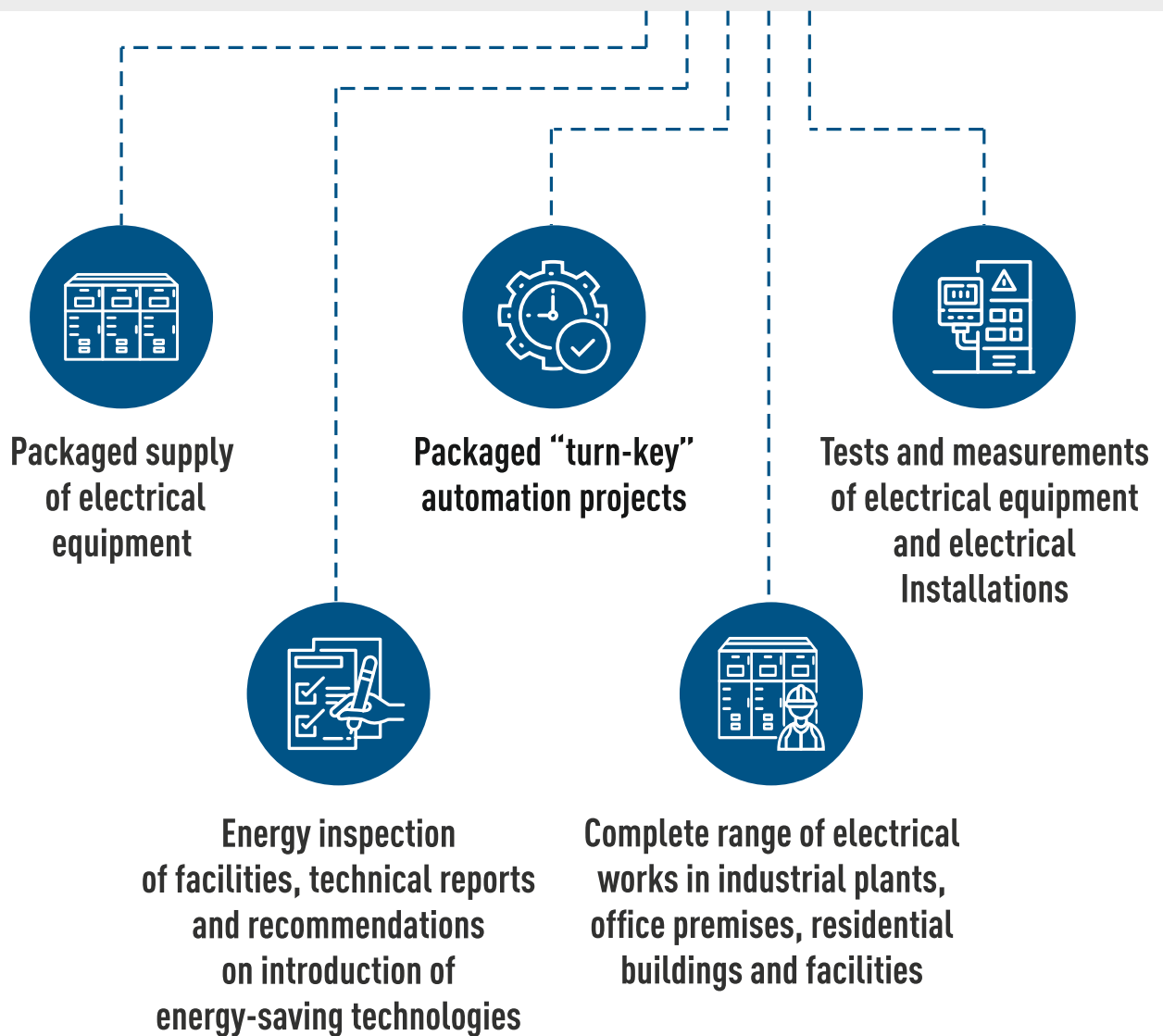
- ▶▶ Monitoring of signal reliability and faultless operation of communication lines.
- ▶▶ Continuous collection of electrical equipment parameters in accordance with the approved list of parameters. Data collection is carried out via standard exchange protocols (Modbus, Profibus, IEC61850, IEC60870, etc.).
- ▶▶ Each signal has a timestamp and signal quality flag in accordance with IEC61850 standard.
- ▶▶ Storage of archives of events and trends of analogue parameters on dedicated archive servers.
- ▶▶ Full redundancy of all system components: controllers, servers, power supplies, switches, communication lines.
- ▶▶ Reliable multi-layer structure of communication lines via network redundancy protocols such as RSTP, PRP, MRP.
- ▶▶ System components comply with IEC 61850-3: increased requirements for climatic design, vibration resistance, shock resistance, EMC.





SERVICES





PROJECTS

Thanks to high quality and reliability of manufactured equipment and a long history of faultless performance our company has earned itself a reputation of a reliable supplier of electrical equipment both - in the Russian market and abroad.

Some of our clients:

AO TAIF-NK
OOO CARGILL
PAO NIZHNEKAMSKNEFTEKHIM
PAO KAZANORGSINTEZ
OAO MOZYR REFINERY
PAO NK ROSNEFT
AO GAZPROMNEFT-MNPZ
AO GAZPROMNEFT-ONPZ
PAO ANK BASHNEFT
OOO MAZADA SOLLERS MANUFACTURING RUS
OOO LUKOIL-NIZHEGORODNEFTEORGSYNTEZ
LINDE AG
OOO FORD SOLLERS ELABUGA
PAO SIBUR-HOLDING
VOSTOCHNY SPACEPORT
PRIMORSKY AQUARIUM
PAO KAMAZ
AO BASHKIR SODA COMPANY
OAO CASPIAN FLAT GLASS FACTORY
TATENERGO KAZAN TEC-2 (CHP plant)
THE STATE ACADEMIC BOLSHOI THEATRE OF RUSSIA
OOO VESTAS RUS
OOO VELESSTROY
OAO TANECO
AO CHEPETSK MECHANICAL PLANT
OOO SIBUR TOBOLSK
OOO NLMK-KALUGA
AO LEBEDINSKY GOK
OOO EUROCHEM - USOLSKY POTASH PLANT
AO KENTAU TRANSFORMER PLANT
TOO AKTAU TRANSFORMER PLANT
TATENERGO KAZAN TEC-1 (CHP plant)
TATENERGO KAZAN TEC-2 (CHP plant)
"VODOKANAL" MUNICIPAL UNITARY ENTERPRISE
OOO SIEMENS





CERTIFICATES

ServisMontazhIntegratsiya LLC Integrated Management System is certified to comply with requirements of ISO 9001:2015, ISO 14001:2015, OHSAS 18001:2007 international standards.

OUR COMPANY IS LICENSED IN THE FIELD OF NUCLEAR ENERGY FOR THE FOLLOWING TYPES ACTIVITIES:

- Manufacturing of equipment for nuclear installation at nuclear power plants (blocks of nuclear power plants); ships and other floating craft with nuclear reactors, nuclear service ships containing nuclear materials VO-(C)-12-101-3840.
- Operation of nuclear installation at facilities, complexes, installations with nuclear materials intended for the production, processing, transportation of nuclear fuel and nuclear materials VO-(U)-03-115-3842.



SERVISMONTAZHINTEGRATSIYA LLC IS A MEMBER OF THE FOLLOWING SELF-REGULATORY ORGANIZATIONS:

Self-regulatory organization in the field of construction, reconstruction, capital repairs, demolition of capital construction objects ASRO "Commonwealth of Builders of the Republic of Tatarstan" (Reg. No. SRO-S-014-23062009).

Self-regulatory organization based on the membership of persons involved in the preparation of design documentation SRO "SOYUZATOMPROEKT" (Reg. No. SRO-S-010-30062009).

Self-regulatory organization in the field of energy audit NP "Assistance in the field of energy saving and energy efficiency of fuel and energy resources" (Reg. No. SRO-E-008).

OUR COMPANY COMPLIES WITH REQUIREMENTS OF RUSSIAN MARITIME REGISTER AS AN ENTERPRISE IMPLEMENTING:

- Installation and commissioning of electrical equipment and automation equipment.
- Maintenance and repair of electrical and automation equipment.
- Design and engineering.

Certificate of conformity No. 17.02141.130 dated 10.08.2017.



Servis MONTAZH INTEGRATSIYA
power distribution systems automation and drive



420053, Republic of Tatarstan, Kazan,
Poperechno-Noksinskaya-str., 50



+7 (843) 234-46-13, 234-46-33, 234-46-43



office@smi.su



smi.su

