

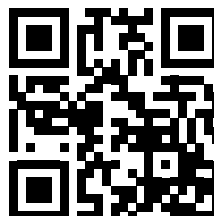


ENERGY.
KNOWLEDGE.
FUTURE



**PROCESS
AUTOMATION
SOLUTIONS
AND EQUIPMENT**

global.ekfgroup.com



FIND OUT MORE
AT OUR WEBSITE

EKF is a leading Russian manufacturer of electrical equipment, integrated energy-efficient power and automation solutions for industrial, civil and infrastructure facilities, as well as a developer of software under his own brand – EKF Connect Home smart home software and EKF Connect Industry IIoT cloud platform.



19 000+ SKUs



20+ countries of operation



Extensive logistics and distribution network



Rapid delivery



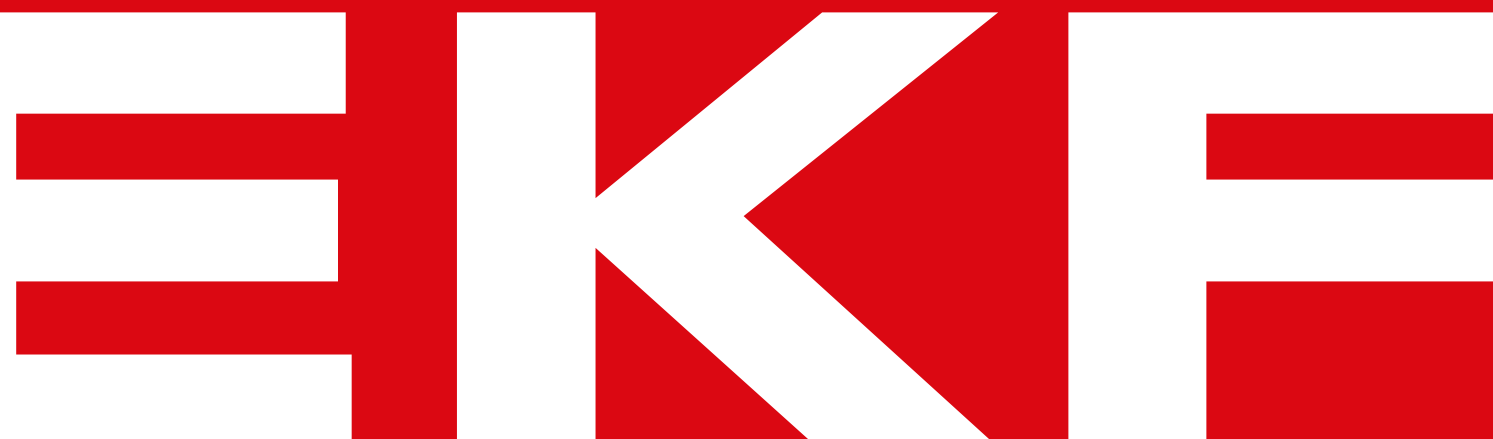
20+ years of experience



In-house Research & Development



Design and project support department



Global Team and Local Presence in Eastern Europe, Asia and Middle East



QUALITY ASSURANCE LABORATORIES

ISO 9001:2015 compliant world-class manufacturing facilities



Quality control by an in-house testing lab. Products certified by DEKRA, TÜV and other globally accredited certification companies.



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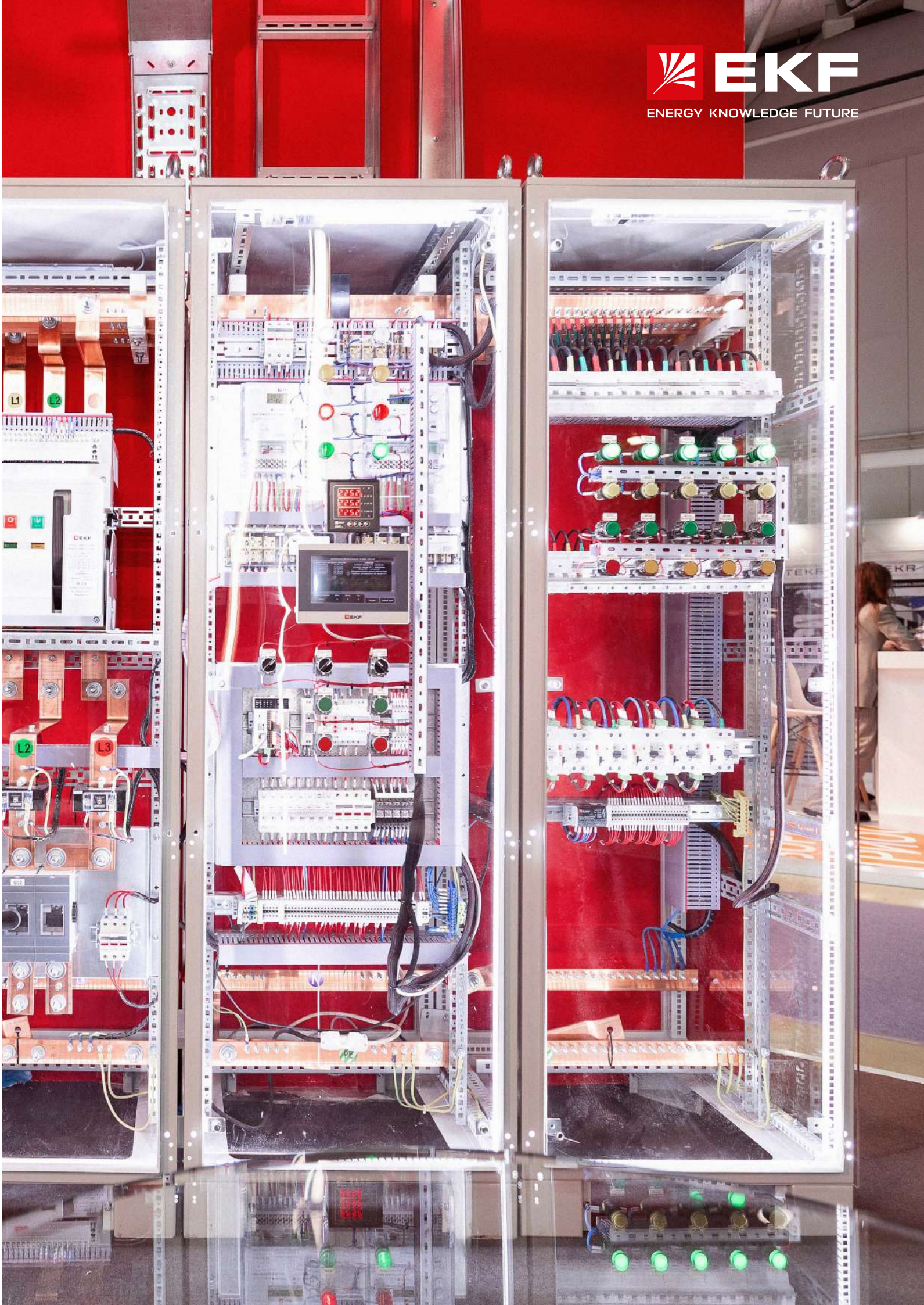
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EKF CONNECT INDUSTRY

CLOUD-BASED ANALYTICAL IIOT PLATFORM FOR BETTER ENTERPRISE EFFICIENCY

EKF CONNECT INDUSTRY FEATURES

- Improved efficiency of monitored process equipment
- Remote monitoring, control, and management of distributed objects
- Energy consumption analytics and cost reduction
- Prompt alerts and notification of changes in equipment operation and emergency situations
- Equipment lifecycle management and preventive maintenance

EKF CONNECT INDUSTRY BENEFITS



ACCESS FROM ANYWHERE IN THE WORLD

Access from any device that has access to the Internet. Cloud servers in the Russian Federation.



EASY INTEGRATION

Support for common industrial data transfer protocols, including Modbus and OPC UA.



INTUITIVE DATA PRESENTATION

Dashboards, analytical reports and graphs.



DIGITAL TWINS

Digital models based on process documentation and analytical data.



ROBUST SECURITY AND RELIABILITY

Platform hosted with leading cloud providers with Tier III reliability and up.



ENHANCED ANALYTICAL CAPABILITIES

Extensive suite of analytical tools and pre-configured templates, empowering users to derive maximum insights from their collected data. Support for custom Python scripts and algorithms.

EKF CONNECT INDUSTRY ADVANTAGES



LARGE-SCALE INDUSTRIAL ENTERPRISES

- Equipment utilization efficiency improvement by 10-15%
- Energy costs lowered by 5-10%.
- Maintenance and repair costs reduction by 10-15%.



SYSTEMS INTEGRATORS

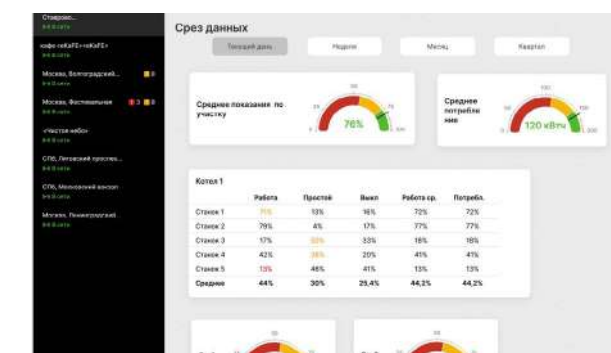
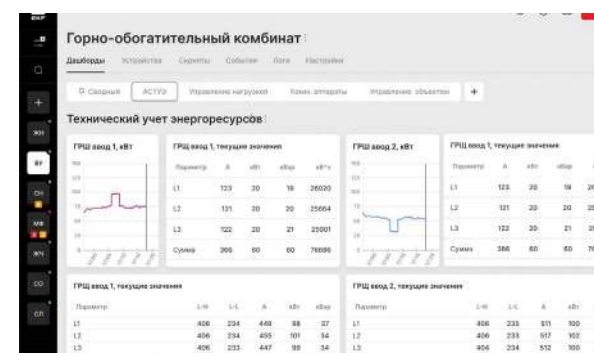
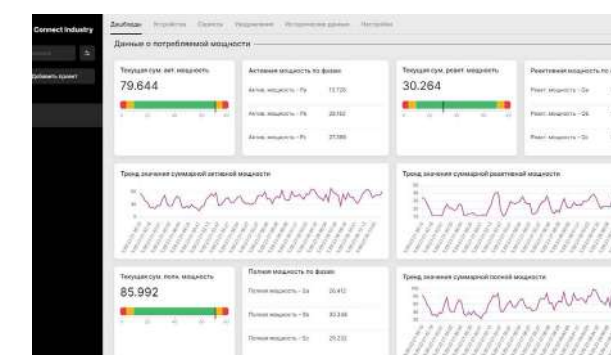
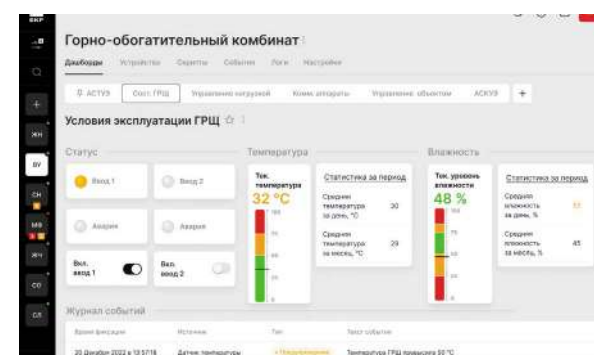
- 3-5 times better emergency response time.
- System after-sales support cost reduction by 15-20%.



OEM & MACHINE BUILDERS

- Continuous equipment improvement based on actionable feedback.
- Equipment after-sales support cost reduction by 15-20%.
- 3-5 times better emergency response time.

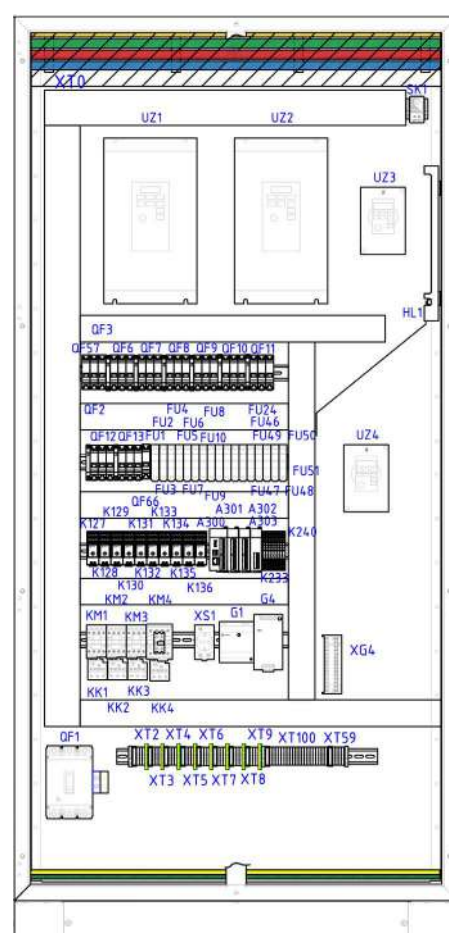
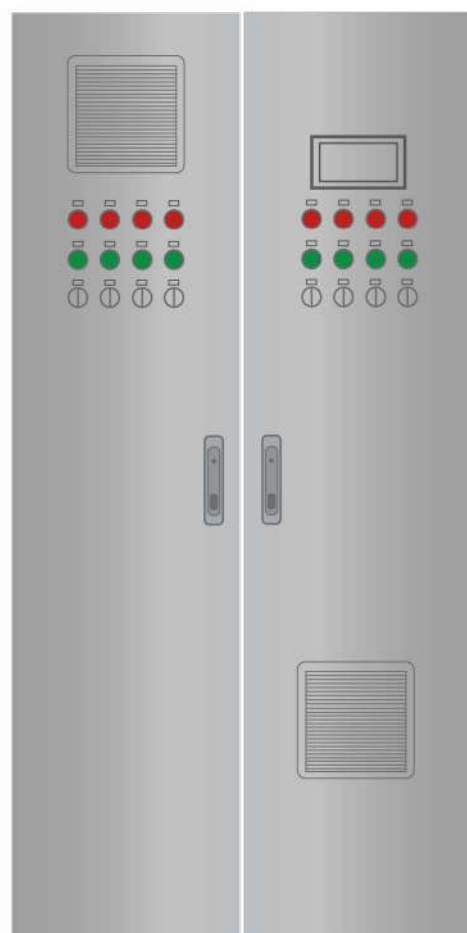
SAMPLE DASHBOARDS



COMPREHENSIVE SOLUTIONS



AUTOMATION CABINET DESIGN



COMPREHENSIVE SOLUTIONS

LV electrical enclosures



PLCs, configurable controllers



Operator panels, meters, process indicators and controllers



I/O modules and industrial Ethernet switches



Contactor, motor starters, and accessories



Frequency converters and accessories



Power supplies



MCBs and accessories



MCCBs and accessories



Automation and interface relays



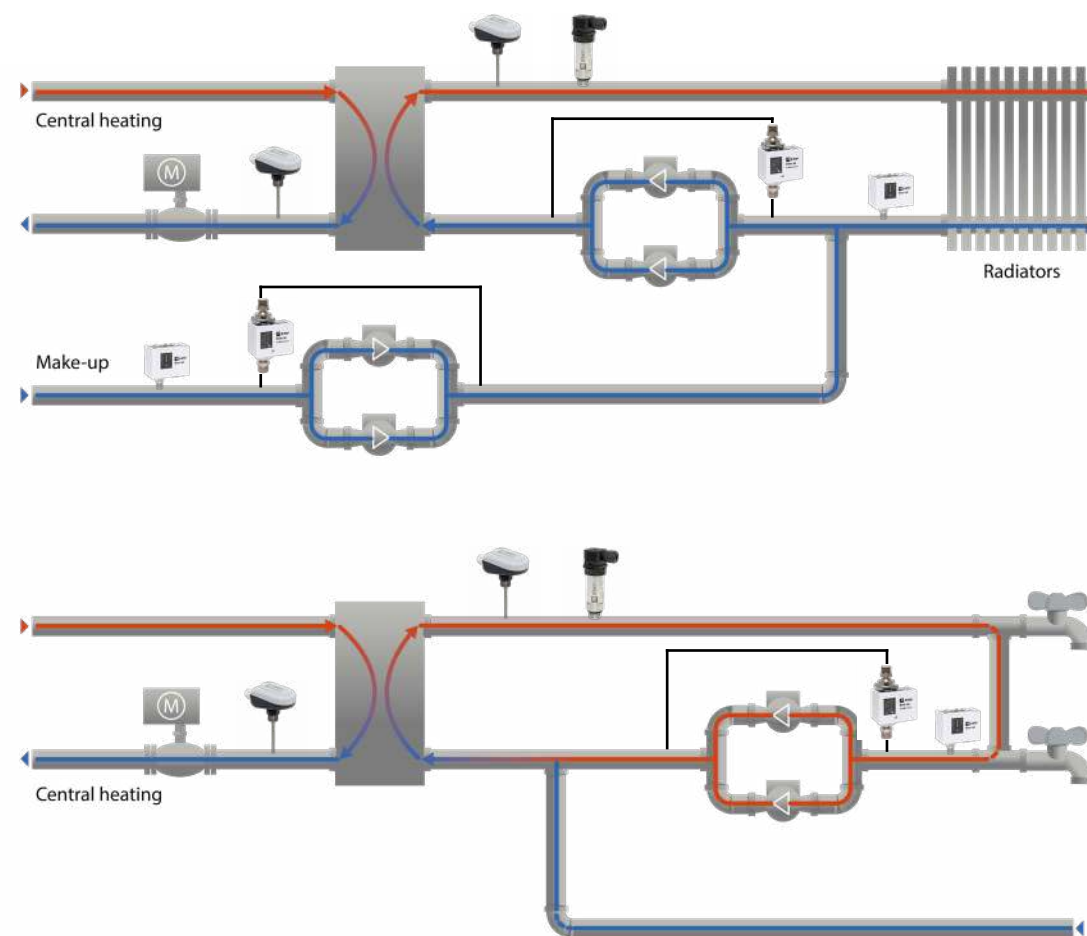
Electrical installation products and enclosure components



Indicator lights, buttons & switches



HEATING AND HOT WATER SUPPLY AUTOMATION



RECOMMENDED EQUIPMENT



Pro-Drive 90 frequency converter to maintain pump pressure setpoint, as well as:

- reduce pump power consumption
- ensure soft pump starting to prevent hydraulic shock
- prolong the life of pumping equipment
- protect the pumps from overload
- provide feedback for monitoring and analytics



PRT-100 pressure transmitter for monitoring and maintaining pumping pressure in conjunction with the frequency converter



RTD-20 temperature sensor for monitoring the hot water supply and return temperature



RTD-20-OUT wall-mounted outdoor temperature sensor for controlling the heating temperature

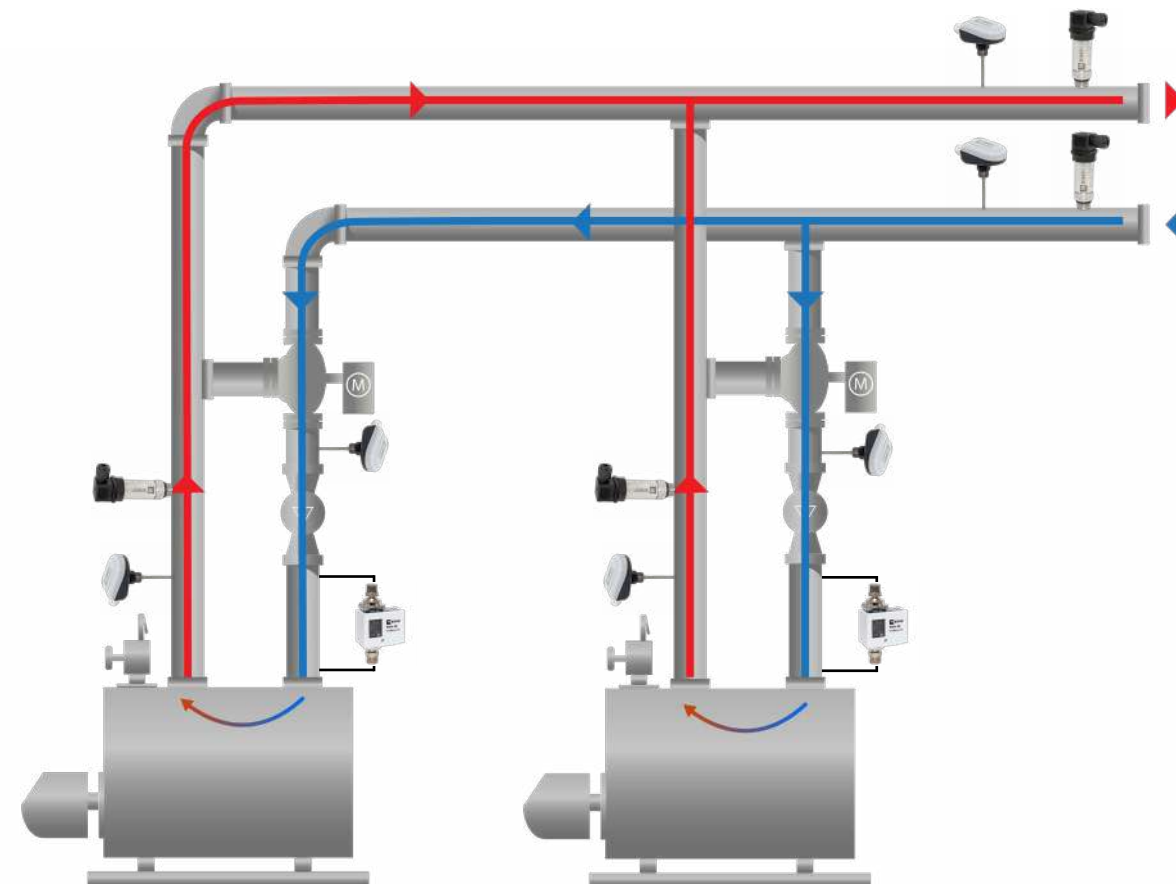


RVG-20 pressure switch for make-up circuit and to prevent dry running of the pumps



RVG-30 differential pressure switch for switching to a backup pump when the main pump is turned off

BOILER PLANT AUTOMATION



RECOMMENDED EQUIPMENT



Pro-Drive 90 frequency converter to maintain pump pressure setpoint, as well as:

- reduce pump power consumption
- ensure soft pump starting to prevent hydraulic shock
- prolong the life of pumping equipment
- enable remote pump operation
- provide feedback for monitoring and analytics



PRT-100 pressure transmitter to measure the pressure in the boiler circuit and maintain pumping pressure the supply circuit in conjunction with the frequency converter



RTD-20 temperature sensor for monitoring the boiler and supply circuit temperature



RTD-20-OUT outdoor temperature sensor for weather-dependent heat generation

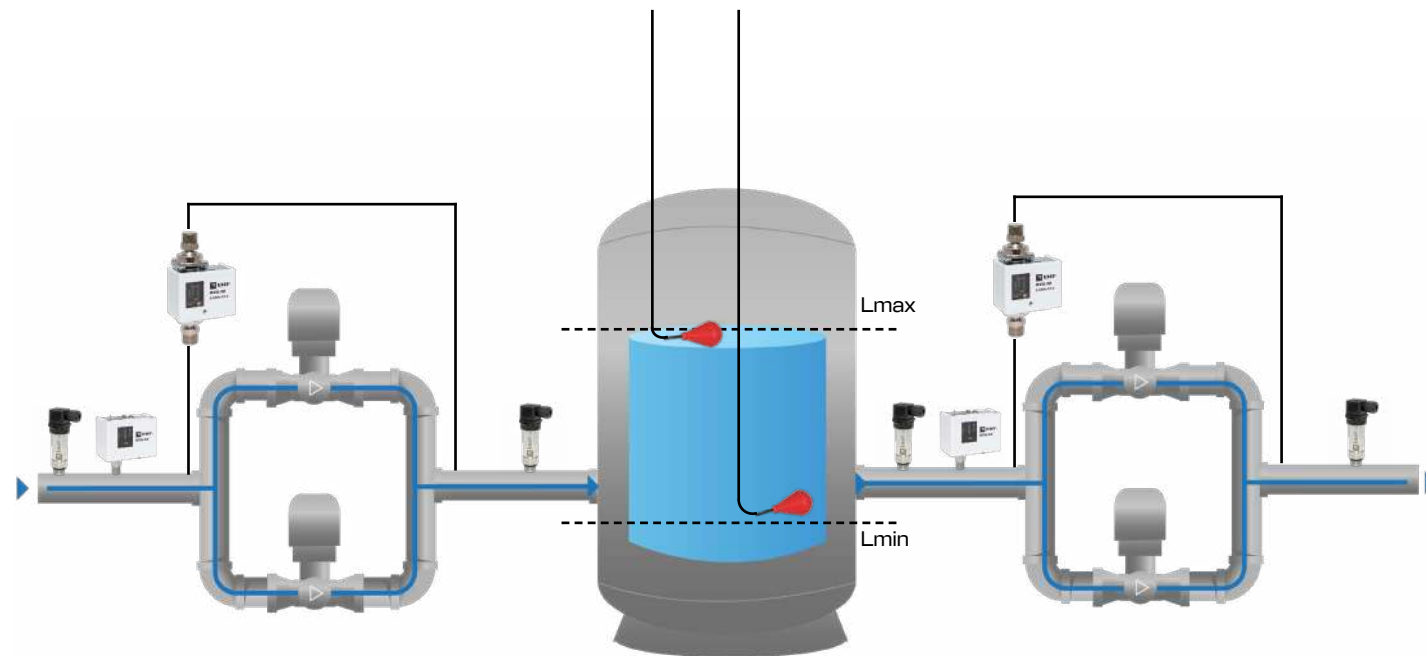


RVG-20 pressure switch for make-up circuit and to prevent dry running of the pumps



RVG-30 differential pressure switch for switching to a backup pump when the main pump is turned off

TANKS AND PUMPING STATIONS AUTOMATION



RECOMMENDED EQUIPMENT



Pro-Drive 90 frequency converters maintain pressure setpoints, as well as:

- reduce pump power consumption
- ensure soft pump starting to prevent hydraulic shock
- prolong the life of pumping equipment
- enable remote pump operation
- provide feedback for monitoring and analytics



RVG-30 differential pressure switch for switching to a backup pump when the main pump is turned off



PRT-100 pressure transmitter for monitoring and maintaining pumping pressure in conjunction with the frequency converter

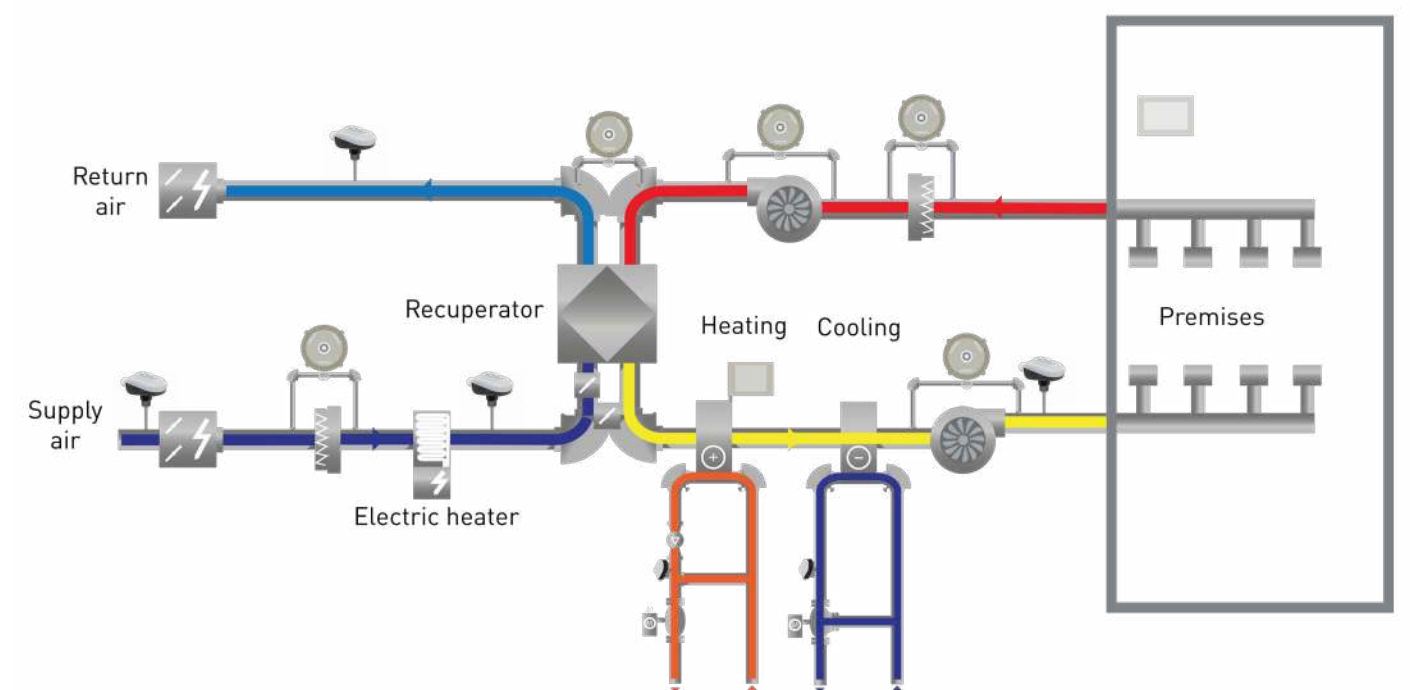


RVG-20 pressure switch for make-up circuit and to prevent dry running of the pumps



RL-1 float switches for monitoring the level of liquid in the tank

VENTILATION SYSTEM AUTOMATION



RECOMMENDED EQUIPMENT



Pro-Drive 90 frequency converter maintain fan operation at a required airflow rate as well as:

- reduce fan power consumption
- improve the service life of ventilation equipment
- enable remote control of the fans
- provide feedback for monitoring and analytics
- start and stop the impellers while limiting the torque



RTD30-IN wall-mounted indoor air temperature sensors for providing feedback to heating and air conditioning systems



RTD-20 duct temperature sensor for monitoring air temperature in air ducts, temperature control, and protecting the HVAC equipment from freezing



RVG-10 pressure switch for monitoring air filter clogging, fan operation and pressure difference on the recuperator

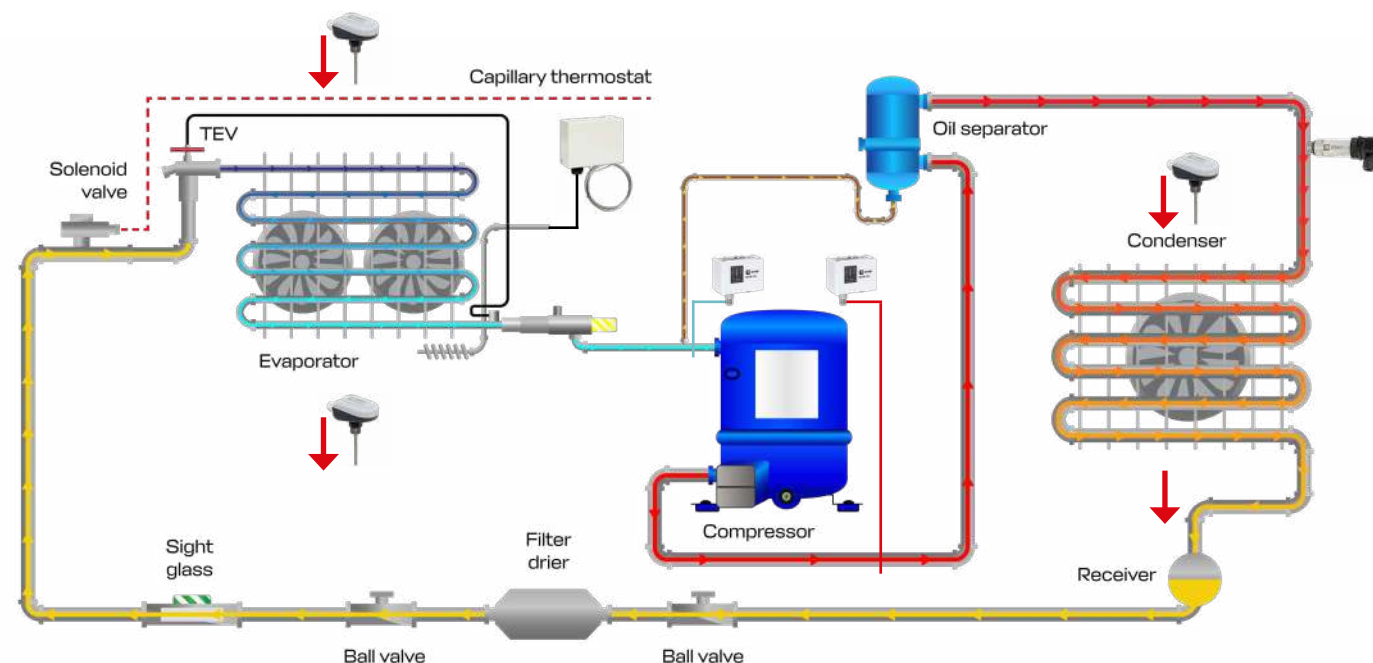


RTD-20 screw-in temperature sensors with a protective outer sleeve for regulating the operation of air heating and cooling systems



TR-15 capillary thermostat for protecting the air heater from freezing

REFRIGERATION SYSTEMS AUTOMATION



RECOMMENDED EQUIPMENT



VECTOR -100 frequency converter ensures smooth operation of compressors:

- monitors compressor heating
- increases compressor service life
- maintains suction line accumulator pressure
- provides feedback for monitoring and analytics



VECTOR-100 and **Pro-Drive 90** frequency converters installed in high-capacity refrigeration units (cooling towers) to increase the efficiency of compressors and fans



RTD-20 duct temperature sensor to control the air temperature at the inlet into the condenser and maintaining the evaporator temperature mode



RVG-20 differential pressure switch for protecting against low inlet pressure at the compressor

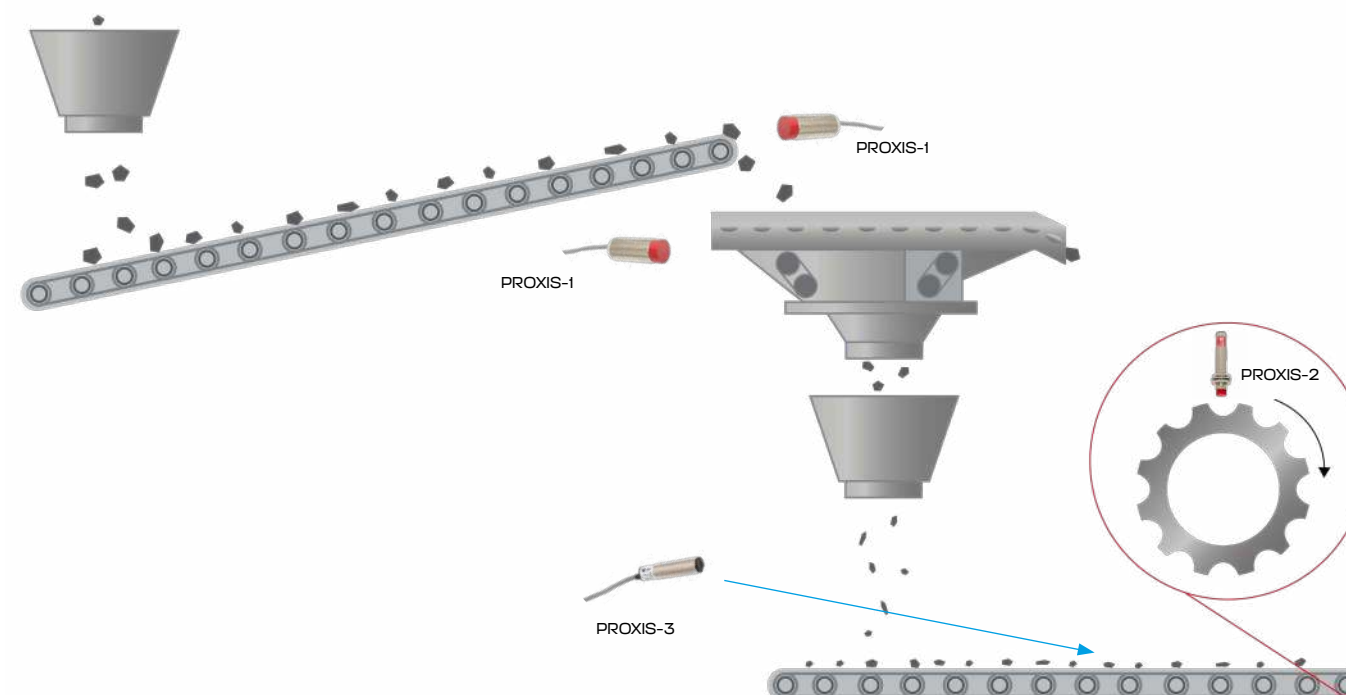


TR-15 capillary thermostat for protection against high or low temperatures by shutting off the coolant flow through the solenoid valve



PRT-100 pressure transmitter for monitoring condensation pressure and fan control

CONVEYOR SYSTEMS AUTOMATION



RECOMMENDED EQUIPMENT



Pro-Drive 150 frequency converter enabling:

- automatic conveyor speed maintenance in sync with the production speed
- zero speed drop when switching on additional conveyors
- reducing the number of failures during operation
- maintenance of constant conveyor belt tension



PROXIS-3 optical sensors, available in 3 versions:

- **PROXIS-3T** through-beam sensors, consisting of an emitter and receiver
- **PROXIS-3R** retro-reflective sensors
- **PROXIS-3D** diffuse optical sensors



PROXIS-1 capacitive sensors for counting objects of any kind on the conveyor belt and monitoring the positioning



PROXIS-2 inductive sensors to control the rotation of shafts and gears, as well as positioning of metal objects on conveyors

PRO-LOGIC PROGRAMMABLE LOGIC CONTROLLERS

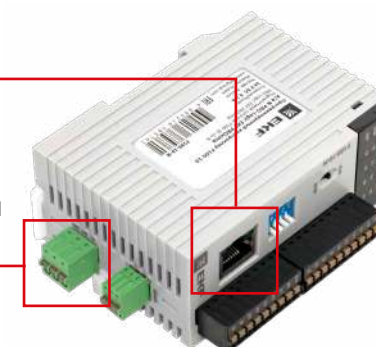


- Ethernet + RS-485 (Modbus TCP/RTU)
- Up to 15 expansion modules via internal bus
- 200 kHz high-speed inputs/outputs
- Support for thermocouples and RTDs
- Push-in terminal blocks
- LED indicator panel
- Compact size
- Free Pro-logic Master software

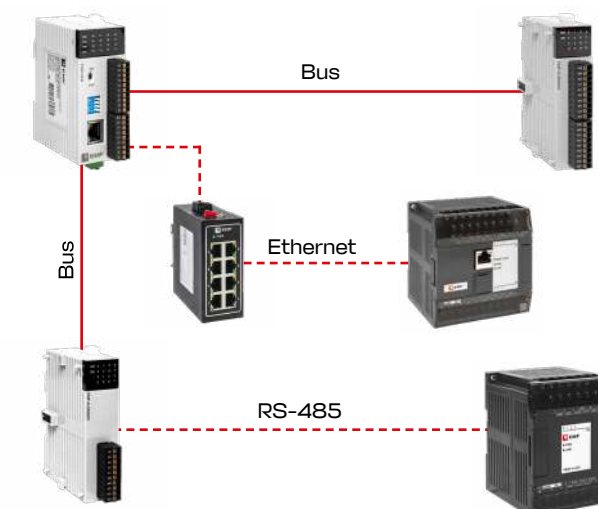
Easy integration into control and monitoring systems

Ethernet
Modbus TCP support

RS-485/232
1x integrated port
+ up to 3x Modbus RTU/ASCII
expansion modules

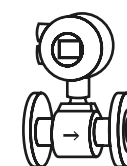


Scalability



500 input/output points with a single PLC device

High-speed monitoring and control



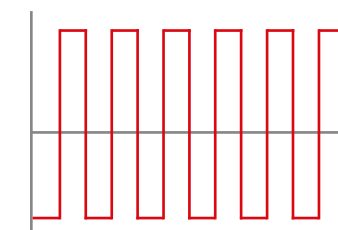
200 kHz
inputs

Flow meter



200 kHz
outputs

And encoder support
Pulse-width modulation control



**AUTOMATION
AND POWER SUPPLY
EQUIPMENT**

PRO-SCREEN OPERATOR TOUCH PANELS

- Resistive TFT LCD display
- Screen size: 4,3"/7"/10,1"/15,6"
- Interfaces: RS-232/485, Ethernet
- Protocols: Modbus RTU/TCP, TCP/IP
- USB ports and SD card slot
- Real time clock (RTC)
- Support for C macros
- VNC support
- IP65
- Free Pro-Screen Master software



PRO-SCREEN MODEL RANGE



RSC-4
4,3" screen
800×480 px
RS-232/422/485
Housing: ABS+PC



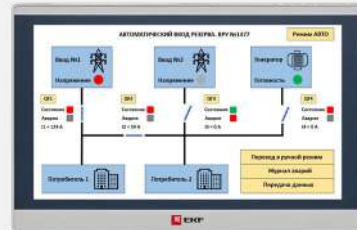
RSC-7
7" screen
1024×600 px
RS-232/422/485
Housing: ABS+PC



RSC-7E
7" screen
1024×600 px
RS-232/422/485
Ethernet
Housing: ABS+PC



RSC-10E
10,1" screen
1024×600 px
RS-232/422/485
Ethernet
Housing: ABS+PC



RSC-15E
15,6" screen
1920×1080 px
RS-232/422/485
Ethernet
Housing: aluminum

SEAMLESS

PRO-Screen programming projects enable

Directly addressing

PRO-Logic PLC by component type and ID. **No need** to specify a register third-party network drivers **support**

Process flow diagrams



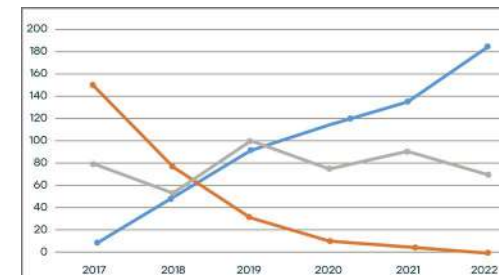
Logs

Статистика событий и аварий				
ИВ	Событие	И	Приоритет	Вкл-выкл
01.01	Установка датчика температуры	1	2	1
01.02	Установка датчика давления	2	2	1
01.03	Установка датчика расхода	3	2	1
01.04	Установка датчика уровня	4	2	1
01.05	Установка датчика температуры	5	2	1
01.06	Установка датчика давления	6	2	1
01.07	Установка датчика расхода	7	2	1
01.08	Установка датчика уровня	8	2	1
01.09	Установка датчика температуры	9	2	1
01.10	Установка датчика давления	10	2	1
01.11	Установка датчика расхода	11	2	1
01.12	Установка датчика уровня	12	2	1

Reports

Дата	Температура	Давление	Расход	Уровень	Плотность	Сила	Подогреватель
25.05.2021	15	2	88	1234	0.45	100	
25.05.2021	15	2	87	1237	0.45	100	
25.05.2021	15	2	88	1235	0.45	100	
27.05.2021	15	2	89	1244	0.45	100	
28.05.2021	15	2	94	1244	0.45	100	
29.05.2021	15	2	94	1244	0.45	100	
30.05.2021	15	2	94	1244	0.45	100	
31.05.2021	15	2	94	1244	0.45	100	
01.06.2021	15	2	94	1244	0.45	100	
02.06.2021	15	2	94	1244	0.45	100	
03.06.2021	15	2	94	1244	0.45	100	
04.06.2021	15	2	94	1244	0.45	100	
05.06.2021	15	2	94	1244	0.45	100	
06.06.2021	15	2	94	1244	0.45	100	
07.06.2021	15	2	94	1244	0.45	100	
08.06.2021	15	2	94	1244	0.45	100	
09.06.2021	15	2	94	1244	0.45	100	
10.06.2021	15	2	94	1244	0.45	100	
11.06.2021	15	2	94	1244	0.45	100	
12.06.2021	15	2	94	1244	0.45	100	
13.06.2021	15	2	94	1244	0.45	100	
14.06.2021	15	2	94	1244	0.45	100	
15.06.2021	15	2	94	1244	0.45	100	
16.06.2021	15	2	94	1244	0.45	100	
17.06.2021	15	2	94	1244	0.45	100	
18.06.2021	15	2	94	1244	0.45	100	
19.06.2021	15	2	94	1244	0.45	100	
20.06.2021	15	2	94	1244	0.45	100	
21.06.2021	15	2	94	1244	0.45	100	
22.06.2021	15	2	94	1244	0.45	100	

Trends



PRO-SCREEN AND PRO-LOGIC INTEGRATION INPUT/OUTPUT MODULES



Pro-logic REMF and EREMF remote I/O modules with RS-485 and Ethernet

- Digital and analog inputs/outputs
- Support for thermocouples and RTDs
- Interfaces:
 - RS-485 (REMF)
 - Ethernet + RS-485 (EREMF)
- Protocols: Modbus RTU/ASCII/TCP
- Mounting: Wall / DIN rail
- Setup via free Pro-Logic software



EMF-TZ-1 Load cell input module with RS-485

- Connect 1 or 4 load cells
- Connect to Pro-logic PLC via internal bus
- Can be used with third-party devices
- RS-485 (Modbus RTU)

CONTROLLERS AND COMMUNICATION DEVICES



TER101 and TER104 process indicator-controllers

- 1 or 4 control channels
- ON/OFF and PID control
- PID controller auto-tuning
- RS-485 (Modbus RTU)
- Mounting: panel or DIN rail
- LED display
- Operating temperature: -20 ... +50 °C



Configurable HVAC controllers RX500

- Integrated algorithms for controlling heating, ventilation, and hot water supply systems
- RS-485 connectivity (Modbus RTU)
- Setup via configurator utility or front panel controls



Remote controllers ePRO24

- Connectivity: Wi-Fi and GSM
- Up to 54 inputs and 36 outputs
- Free mobile app and web client
- Connect up to 8 expansion modules via RS-485
- 10A changeover relay
- Opto-coupled inputs



WDT Wireless data modems

- Connectivity: LoRa or GPRS/GSM
- License-exempt frequency bands: 433/868 MHz
- LoRa communication up to 3 km
- RS-485 and RS-232
- Universal power supply 8...28 VDC



RS485-USB interface converter RSU-C-1

- Direct USB connection
- USB powered
- Compact size
- Works with Windows and Linux



RS232/485 to Ethernet interface converters

- Convert RS-232/485 to Ethernet.
Used to connect serial devices to the Ethernet network:
- Electricity meters
 - Sensors (control and instrumentation)
 - Cash registers, etc.

CONTROL AND INSTRUMENTATION



RTD Resistance temperature detectors

- Sensor types: Pt100, Pt1000, NTC10k
- Temperature range: -50... +180 °C
- Modifications: surface-mounted, screw-in, duct, outdoor, indoor
- Made in Russia



IS Thermowells and FL-6 mounting flanges

- Easy installation on pipelines and in air ducts
- Material: AISI 304 stainless steel
- Thread: G1/2
- Pressure: 16 bar
- Made in Russia



TR-15 Capillary thermostats

- Capillary length from 2 to 6 m
- Setpoint range: -15...+15 °C
- Automatic fault reset
- Medium: R134a gas
- Operating temperatures: -10...+55 °C
- Made in Russia



PRT-100 Pressure transmitters with ceramic diaphragm

- Output signal: 4...20 mA
- Chemically inert ceramic sensor
- Accuracy class: 1,0
- Pressure measurement up to 6, 10 and 16 bar
- M20x1.5, G1/2
- IP65



PRT-101 Pressure transmitters with steel membrane

- Output signal: 4...20 mA
- Ceramic sensor, steel diaphragm
- Accuracy class: 0,5
- Pressure measurement up to 4, 6, 10, 16 and 25 bar
- M20x1,5, G1/2, G1/4
- IP65
- Measurement instrument certificate



RVG-10 Differential pressure switch

- Configurable pressure setpoint
- Upper setting limits: 200, 400, 500 and 1000 Pa
- Output: SPDT flip relay
- IP54



RVG-20 Overpressure switch

- Adjustable setpoints: 6 and 16 bar
- Output: SPDT relay
- Deep drawn bellows
- G1/4
- IP54



RVG-30 Differential pressure switch

- Adjustable setpoints: 0,2; 0,35 and 0,6 MPa
- Output: SPDT relay
- Deep drawn bellows
- G1/4, G1/2
- IP42



SONIC-1 Ultrasonic level sensor

- Liquid and bulk media
- Suitable for corrosive and viscous media
- Level measurement up to 10 m
- Measurement accuracy: ± 3 mm
- Setup and calibration from the built-in display
- Level measurement without direct contact with the medium
- PTFE sensor head



RLF Float level sensor

- Material: AISI 304 stainless steel
- Vertical and horizontal mounting
- NO or NC



RL-1 Float switches

- For SPS and septic tanks
- Polypropylene housing, PVC cable
- 16A switch (3-wire connection)
- Cable length: 5, 10, and 20 m



PROXIS Proximity sensors

- Three types: capacitive, inductive and optical.
- Case diameters: 12, 18 and 30 mm
- Models with integrated cable and M12 detachable connection
- Sensing distance up to 20 m



FREQUENCY CONVERTERS AND EMC FILTERS



Pro-Drive 90 frequency converters

- Applications: HVAC, water treatment, sewerage
- Model range from 1,5 to 400 kW; 3-phase 415 V
- Vector and scalar control
- Built-in RS-485 (Modbus RTU)
- Linear and quadratic loads
- Compact design
- Improved cooling for side-by-side
- Includes: Detachable LCD control panel, control panel extension cable, control panel mounting frame



VECTOR-100 Frequency converter

- Applications: HVAC, water treatment, sewerage, conveyor equipment
- Model range from 0,4 to 630 kW
- Vector and scalar control
- Built-in RS-485 (Modbus RTU)
- Integrated brake modules for models up to 37 kW
- Overload capacity: 150%-60s, 180%-3s
- Includes: Detachable LCD control panel, control panel extension cable, control panel mounting frame
- Operating temperature: -10...+50 °C



Pro-Drive 150 Frequency converters

- Applications: lifting and hoisting equipment, FMCG plants, packaging equipment, pumps and compressors
- Model range from 0,4 to 800 kW
- Synchronous and asynchronous motor control
- Supply voltages: 1×220-240 V, 3×380-415 V, 3×690 V
- Built-in RS-485 (Modbus RTU)
- Modbus TCP, ProfiBus, ProfiNet, EtherCAT, CANopen support
- Encoder support
- I/O expansion boards
- Specialized models for lifting and hoisting equipment
- Includes: Detachable LCD control panel, control panel extension cable, control panel mounting frame
- Import/export of parameters and settings via the control panel



VECTOR-EMI EMC filters for frequency converters

- Used in conjunction with frequency converters up to 630 kW
- Surge protection up to 1500 V
- Rated current up to 1250 A
- Operating temperatures: -25...+85 °C



Pro-Drive 500 frequency converters

- Applications: process machinery; custom solutions: brake control, master-slave configuration; positioning circuit; multi-drive systems (e.g. portal crane); high starting torque applications
- Model range from 0,75 to 4000 kW
- Direct torque control
- Synchronous and asynchronous motor control
- Supply voltages: 3×380-415 V, 3×690 V
- Ethernet (Modbus TCP), RS-485 (Modbus RTU), CANopen
- Versions: ProfiNet, EtherCAT
- Transfer to mains
- Self-contained and modular versions
- Energy recovery models (generator mode)
- External 24 V control board power supply in the event of loss of mains power
- Pre-magnetization at 0 Hz
- Load swing response time less than 5 ms
- Closed loop positioning
- Functional analogue of top-tier VFDs
- Includes: Detachable LCD control panel, control panel extension cable, control panel mounting frame

INTERFACE & SOLID STATE RELAYS



RPA (t) AVERES interface relays

- Rated coil voltage: 24 VDC, 110 VDC, 220 VDC, 230 VAC
- Switching current up to 12 A
- SPDT contact groups: 1; 2; 3; 4
- LED status indication
- Mechanical status indication
- Manual activation



RP Slim AVERES Interface Relays

- Rated coil voltage: 24 VDC, 230 VAC
- Switching current: up to 10 A
- SPDT contact groups: 1, 2
- Compact size



RP Interface Relays

- Rated coil voltage: 12 VAC, 12 VDC, 24 VAC, 24V DC, 230 VAC
- Switching current up to 10 A
- SPDT contact groups: 3, 4



Interface relay accessories

- Modular DIN rail relay sockets with push-in or screw terminals
- LED modules
- Relay holder brackets
- Label holders
- Connecting busbars for relay sockets



RTP 2A Single-phase solid state relay

- Switching capacity: 2 A
- Compact size
- Can be installed into the PM slim 23/1 relay socket connector or onto a mounting panel



RTP Solid State Relays

- 1 and 3 phase relays
- Load current: up to 80 A
- Control signal:
 - 3...32 VDC
 - 90...250 VAC
 - 4...20 mA
- Switching voltage: 24 to 480 VAC
- Mounting: onto a mounting panel or a radiator



Radiators for RAD-RTP solid state relays

Designed to remove heat generated by solid state relays

CONTROL RELAYS



Level monitoring relays



Temperature monitoring relays



Pulse relays



Twilight relays



Timers and time relays



Power limiters



Phase monitoring relays



Automatic phase switches



ATS Controllers



Voltage monitoring relays



Motor protection relays



UNINTERRUPTED POWER SUPPLIES



DR DIN rail power supplies

- Power: 15 to 240 W
- Output voltage (V DC): 5, 12, 24, 48
- Protection against overload, overheating and short circuit at the output
- DC OK signal
- Metal DIN rail latch
- Dual load terminals
- Galvanic isolation
- Compact size



E-Power DIN Rail UPS

- Rated power: 15 W
- Built-in battery (Li-Pol)
- Capacity: 3 600 mAh
- Battery time (12 W): 50 min.



MPS mounting panel power supplies

- Power: 35 to 500 W
- Output voltage (V DC): 12, 24
- Protection against overload, overheating and short circuit at the output
- Installation onto a mounting panel or any flat surface
- Dual load terminals
- Galvanic isolation



Uninterrupted power supply units

- Single-phase, Line-interactive, 800-3000 VA
- Single-phase, double conversion, 1000-30 000 VA
- Three-phase, double conversion, 10 000-30 000 VA
- Voltage regulators



MEASURING EQUIPMENT



Digital multifunctional meters

- Measured parameters
 - Current
 - Active power
 - Reactive power
 - Apparent power
 - Power factor
 - Frequency
 - Active energy
 - Reactive energy
 - Harmonic distortions (up to 51st harmonic)
- RS-485 (Modbus RTU)



Ammeters & voltmeters

- Digital
 - Accuracy class 0,5
 - DIN rail mount
- Analog
 - Accuracy class 1,5
 - EMI protection

CONTACTORS & MOTOR STARTERS



KME Contactors

- Rated current: 9–95 A
- Maximum power 25 kW at 230 V / 45 kW at 660 V
- High electrical endurance – up to 1 million cycles
- Plate terminals for a secure connection of conductors
- Wide range of additional accessories: auxiliary contact blocks, time relays, interlocks, thermal overload relays
- Wide range of rated AC coil voltages: 24 V, 36 V, 110 V, 230 V, 415 V



KTE Contactors

- Rated current: 115–630 A
- High electrical endurance – up to 3 million cycles
- Bridge contact for faster arc quenching
- Low contact resistance, reduced thermal losses at the pole
- Wide range of Rated AC coil voltages: 230–415 V
- Quick-replace coil
- Two connectors for auxiliary contacts and accessories
- Reversible contactor assemblies with mechanical interlock



KM Modular Contactors

- Rated current: 16–63 A
- AC control circuit
- Rated control circuit voltage: 24–230 V
- Wide range of models by dimensions: from 1 to 3 modules wide
- Design: standard, manual control
- Accessories: 1NO+1NC, 2NO auxiliary contacts



Motor Starters

- Rated current (AC-3):
 - GV2P – 0,1 to 32 A
 - APD-32 – 0,1 to 32 A
 - APD-80 – 16 to 80 A
- Overload, short circuit, and phase failure protection
- Integrated short circuit protection
- Accessories for APD-32 and GV2P motor starters:
 - Shunt release
 - Undervoltage release
 - Auxiliary contacts

CIRCUIT BREAKERS & AUTOMATIC TRANSFER SWITCHES



AV POWER Molded Case Circuit Breakers

- Rated current: 10–1600 A
- 3 types of trip units: thermomagnetic, electronic (ETU2), electronic with LCD (ETU6)
- Wide range of overload and short circuit trip settings
- Low contact resistance
- Modbus-RTU connectivity (ETUX.2 models)
- Wide range of accessories: motor mechanisms, auxiliary and alarm contacts, shunt releases, undervoltage releases, manual rotary handles, terminal extensions, plug-in and draw-out base kits



VA-99S Molded Case Circuit Breakers

- Rated current: 10–1600 A
- 2 types of trip units (thermomagnetic, electronic)
- Double break contact mechanism
- Wide range of accessories: motor mechanisms, auxiliary contacts, shunt releases, undervoltage releases, terminal extensions, plug-in and draw-out base kits



TCM Automatic Transfer Switches

- Rated current: 25–630 A
- Based on two interconnected MCCBs
- Integrated controller with remote monitoring and control capabilities
- Phase loss protection, voltage monitoring
- Changeover time delay function
- Fire alarm integration (power cutoff in the event of fire)
- Generator auto-start contacts



Miniature Circuit Breakers

- Rated current: 1–125 A
- B, C, D trip curves
- Rated breaking capacity (Icn) – 6 kA and 10 kA
- DC models
- Instantaneous trip mechanism
- Rigid 9 rivet housing
- True contact position indicator with transparent protective cover
- Error-proof screw terminals
- Wide range of accessories: Auto-reclosers, auxiliary and alarm contacts, shunt releases, under- and overvoltage releases

SWITCH DISCONNECTORS (ISOLATORS), FUSED DISCONNECTORS



TwinBlock Switch Disconnectors

- Rated current: 40–2500 A
- Utilization category: AC-23
- 3 and 4 pole versions; regular and changeover
- Visible contact break (for models from 160 A and above) ensures the safety of service personnel
- Lock-out tag-out compatible
- Wide range of accessories: auxiliary contacts, external rotary handles with 280, 400 and 520 mm shafts, phase barriers and jumper brackets for changeover models
- Fourth pole for models from 40 to 800 A



PowerSwitch Switch Disconnectors

- Rated current: 63–4000 A
- Utilization category: AC-21B, AC-22B, AC-23B
- Unsaturated glass fiber reinforced polyester resin housing
- 3 and 4 pole versions; regular and changeover
- Double break at each pole
- Contact position indicator to ensure the safety of maintenance personnel
- Lock-out tag-out compatible
- Pre-installed auxiliary contact (for 250 A and up models)



MS Modular switch disconnectors

- Rated current: 16–63 A
- Utilization category: AC-22A, AC-23A
- Flame-resistant glass fiber reinforced polyamide housing
- Lock-out tag-out compatible
- DIN rail and mounting panel installation options
- Double break at each phase to ensure reliable arc quenching
- Quick switching mechanism to prevent contact welding
- Copper and aluminum wiring support



Fuse disconnectors for cylindrical fuse links

- Rated current: 0,5–125 A
- Easy installation and replacement of fuses
- Reliable protection against high short-circuit currents (50 kA breaking capacity)
- Blown fuse indication on the front of fuse disconnectors
- Breaks circuit when the hinged cover is opened
- DIN rail mounting

ELECTRICAL ENCLOSURES



FORT Electrical cabinets up to 4000A

- High-quality sheet steel construction: 1,5 mm thick steel frame and doors, 1 mm thick steel side panels
- 2 mm thick galvanized steel mounting panel with U-shaped frame for added rigidity
- IP31 and IP54
- Broad selection of sizes and accessories



IP65 Metal Enclosures with mounting panel

EKF metal enclosures with high degree of ingress protection are a reliable choice for power distribution control, and automation panels. Can be used to house a multitude of modular and power equipment. Contoured runners to prevent water and dust ingress.



IP65 Vandal-resistant fiberglass enclosures

- Glass fiber reinforced
- UV-resistant
- Service life over 25 years
- External dimensions up to 800×600×220 mm



IP66 Stainless Steel Enclosures

- Resistant to detergents and most corrosive environments
- High-quality AISI 304 stainless steel
- External dimensions up to 1200×800×300 mm



IP 65 Plastic enclosures with mounting panel

- Impact-resistant ABS plastic
- Extended range of operating temperatures: –45 to 80 °C
- Transparent front door version
- External dimensions up to 800×600×220 mm



ENCLOSURE CLIMATE CONTROL



Enclosure thermostats and humidistats



Enclosure heaters



Fans and grilles



CONTROL & SIGNALING



Pilot lights



IP67 stainless steel buttons and pilot lights



XB4 modular push buttons and lights



Limit switches



Cam switches



Push-button controllers, pendant control stations.



Potentiometers



**DISTRIBUTION ENCLOSURE COMPONENTS
AND ELECTRICAL INSTALLATION PRODUCTS**



Terminals & terminal blocks



Insulators and mounting hardware



Earth and neutral terminal bars



Heatshrink



Cable lugs and end terminals



DIN RAILS, BRACKETS AND CLAMPS



Distribution blocks & branching clamps



TOOLS AND CONSUMABLES



Multimeters, current clamps and radiation thermometers



Tool bags and organizers



Crimpers and wire strippers



Step drill bits



Measuring tools



Diamond discs



Diamond core drill bits

INDUSTRIAL UNMANAGED SWITCHES



TSX-U DIN rail mounted switches

- Entry-level switch models
- Fast Ethernet 10/100Base (up to 100 Mbps)



TSX-U DIN rail mounted switches

- Gigabit unmanaged switches with copper and optical ports
- Full GE 1000Base (up to 1 Gbit/s)



TSX-U DIN rail mounted PoE switches

- Gigabit unmanaged switches with copper and optical ports
- Full GE 1000Base (up to 1 Gbit/s)



TSX-U Rack mounted POE switches

- Gigabit unmanaged switches with copper and optical ports
- Full GE 1000Base (up to 1 Gbit/s)

**ACTIVE INDUSTRIAL
TELECOMMUNICATION
EQUIPMENT**



INDUSTRIAL MANAGED SWITCHES



TSX-ML2

- Full GE 1000Base (up to 1 Gbit/s)
- Management: CLI, Console, IP4/IPv6, Tenet/SSH, Web interface, SNMPv1/V2C/v3, System Log



TSX-ML2 with PoE

- Full GE 1000Base/2500GE (up to 2.5 Gbit/s)
- ACL (Access Control List): ACL 500, standard IP ACL, advanced MAC ACL, advanced IP ACL
- Redundancy: STP/RSTP/MSTP/ERPS

MEDIA AND INTERFACE CONVERTERS



TSX-MC Single-port RS to Ethernet Converters

- 1-port RS-485 to Ethernet (TSX-MC-485-TCP)
- 1-port RS-232 to Ethernet (TSX-MC-232-TCP)
- Supported network protocols: TCP, UDP, DHCP, DNS, HTTP, ARP, ICMP



TSX-MC-232/485-TCP-MB RS-232/485 to Ethernet converter

- 2-port RS-232/485 to Ethernet
- Supported network protocols: TCP, UDP, DHCP, DNS, HTTP, ARP, ICMP, Web socket, HTTPD Client, Modbus TCP/ Modbus RTU



TSX-MC Media Converters

- Ethernet (twisted pair)
- Optical fiber
- SFP
- Connectors: FC, SC, ST

SFP MODULES



SFP Optical Transceivers

- Multi-mode optical fiber
- Single-mode fiber
- Wavelength division multiplexing



**COMPLETED
PROJECTS**



Khabarovsk Gorelectroset JSC utilities operator, Khabarovsk. Automatic transfer systems.

Six cabinets in operation since 2021. Standard design solution. Equipment: PRO-logic PLCs, PRO-screen operator touch panels.

POWER SUPPLY AND LIGHTING



Data center, Yandex, Moscow. Automatic transfer systems.

7 panels in operation since 2023. Standard design solution. Equipment: PRO-Logic programmable logic controllers, relay automation.

Airport, Novokuznetsk. Automation of lighting systems.

Three panels in operation since 2019. Equipment: PRO-Logic programmable logic controllers.



Moscow Metro, Moscow Automation of supply and exhaust ventilation systems for Bolshaya Koltsevaya line (BKL) stations.

114 cabinets and panels in operation since 2022. Equipment: PRO-Logic PLCs, PRO-Screen operator touch panels, control equipment.

Krasnogorsk Hydroelectric Power Station, Karachay-Cherkessia Automation of heating, ventilation and water supply systems.

Twelve cabinets and panels in operation since 2020. Equipment: PRO-Logic PLCs, PRO-Screen operator touch panels.

VENTILATION, HEATING, ELECTRIC HEATING



Samolet Group real estate development company, Moscow. Automation of heating substations.

Automation of heating and water supply systems. Panels in mass production since 2023. Equipment: PRO-Logic programmable logic controllers.

Mining and Processing Plant, Udokan. Field electrical heating automation.

13 panels in operation since 2022. Equipment: PRO-Logic programmable logic controllers, PRO-Screen operator touch panels.

Natural gas field, Saratov. Automation and remote control of electric heating system, remote monitoring and logging of adverse events and switching operations.

Three panels in operation since 2023. Equipment: PRO-Screen operator touch panels, control equipment.

City Clinical Hospital No. 3, Krasnodar. Lighting, ventilation, and UV disinfection lamps control system.

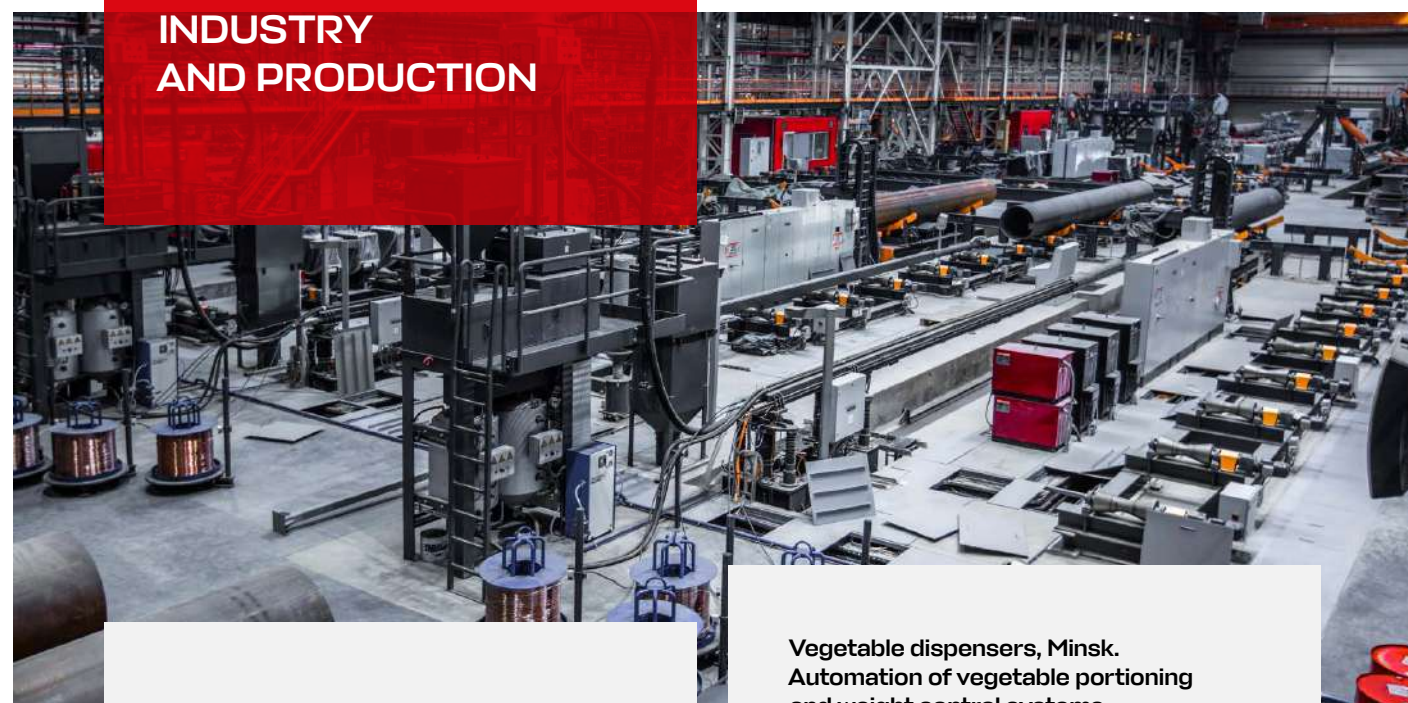
27 panels in operation since 2022. Equipment: PRO-Logic PLCs, PRO-Screen operator touch panels.



Vacuum mixers-homogenizers, Kolchugino. Automation of homogenization and heat treatment of liquid and semi-solid products.

Three panels in operation since 2023. Panels in mass production. Equipment: PRO-Logic PLCs, PRO-Screen operator touch panels.

INDUSTRY AND PRODUCTION



Gas converter units, Moscow. Automation of cooling system and air purification systems.

118 panels in operation since 2021. Panels in mass production. Equipment: PRO-Logic programmable logic controllers, ePro24 remote controllers, PRO-Screen operator touch panels.

Vegetable dispensers, Minsk. Automation of vegetable portioning and weight control systems.

Three panels in operation since 2023. Panels in mass production. Equipment: PRO-Logic programmable logic controllers.

Grain elevator complex, Tambov. Process automation (conveyors, dryers, valves).

In operation since 2023. Equipment: PRO-Logic PLCs, PRO-Screen operator touch panels.



Airport, Beslan. Automation of water supply and water treatment systems.

One panel in operation since 2023. Equipment: PRO-Logic programmable logic controllers, PRO-screen operator touch panels, WDT modems.



WATER SUPPLY AND WATER TREATMENT



Water treatment plant, Rostov-on-Don. Automation of water treatment and wastewater disposal systems.

38 panels in operation since 2023. Equipment: PRO-Logic programmable logic controllers.

Reconstruction of utility facilities, Voronezh. Automation of water supply stations.

Panels in mass production since 2022. Equipment: PRO-Logic programmable logic controllers, PRO-Screen operator touch panels.



We aim to assist our clients in enhancing their operational efficiency at every stage, from the initial design stage, as well as through retrofits, by providing comprehensive support.

FRONT-END ENGINEERING DESIGN

Assistance in drafting technical specifications, site visits and inspections.

DESIGN

Assistance in developing a draft design and detailed engineering design.
Standard and bespoke design solutions for a wide range of industries.

SOFTWARE DEVELOPMENT

Development of software for PLCs and HMIs.

EQUIPMENT INSTALLATION SUPERVISION

Installation of equipment by a team of qualified specialists.

COMMISSIONING

Setting up, testing, and debugging equipment. Personnel training.

OPERATIONS AND MAINTENANCE

Preventive maintenance and repair services.

TRAINING

Online and in-person training for maintenance and engineering personnel.
Expanding the competencies of your staff.

MAINTNANCE, DIAGNOSTICS AND REPAIRS

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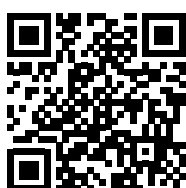
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