

ENERGY AND AUTOMATION

Switches Unlimited

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MOTOR PROTECTION AND CONTROL

MOTOR PROTECTION CIRCUIT BREAKERS

- · Wide adjustment range 0.1 to 100A
- IEC breaking capacity Icu 50kA (400V) up to 100A
- Comprehensive line of accessories
- High reliability and accuracy of tripping.



CONTROL AND SIGNALLING

PUSHBUTTONS AND SELECTOR SWITCHES

- · Simple and snap on installation
- Highly conductive contacts
- High degree of protection per IEC IP66, IP67, IP69K and UL type 4X.



CIRCUIT PROTECTION AND ISOLATION

SWITCH DISCONNECTORS

- 16A to 1600A ratings
- Versions: direct operating handle, door coupling and in housing
- Wide range of accessories
- Types for photovoltaic applications up to 850A (1000VDC, DC21-B)
- Changeover switches in non-metallic enclosure.



AUTOMATION AND CONTROL

TIME RELAYS

- Modular version for modular-slot switchboards
- · DIN mount version
- Plug-in or flush-mount version.



ENERGY MANAGEMENT

METERING INSTRUMENTS AND CURRENT TRANSFORMERS

- Digital voltmeters, ammeters, wattmeters, frequency meters and cosphi meters
- Digital multimeters and power analyzers, expandable, with graphic LCD
- Connection to single, two, three phase systems
- Totally programmable digital outputs
- RS485, RS232, USB, Ethernet, Profibus DP serial interface for remote control and data-logger.



CONTACTORS

- · Versions:
- Three-pole up to 630A in IEC AC3 duty
- Four-pole up to 1600A in IEC AC1 duty
- For power factor correction up to 60kvar at 400VAC
- Four-pole with 2NO+2NC or 4NC main poles Low-consumption with DC control circuit for control relays and 9-38A contactors in IEC AC3 duty.



MOTOR PROTECTION RELAYS

- · Thermal overload relays for currents between 0.09 and 420A
- · Phase failure sensitive and non phase failure sensitive versions
- Automatic and/or manual resetting
- · Thermistor protection relay.



SIGNAL TOWERS AND BEACONS

SIGNAL TOWERS Ø70MM

- · Modular and combinations up to 7 modules
- Steady or blinking light, pulsed or continuous sound modules.

SIGNAL BEACONS Ø62MM

· Steady or blinking light, pulsed or continuous sound modules.



LIMIT, MICRO AND FOOT SWITCHES

LIMIT SWITCHES

- · Dimensions to EN 50047 standards
- · Dimensions compatible to EN 50047
- Dimensions to EN 50041 standards
- · Extensive range of operating heads
- IP67 prewired limit switches.



FUSE HOLDERS AND FUSES

- Modular size for 10x38, 14x51 and 22x58mm fuses
- · Version with status indicator to quickly determine if the fuse is still operative or needs to be replaced
- · UL and CSA certified versions.



MINIATURE CIRCUIT BREAKERS

- · High breaking capacity
- · Different tripping curves: B, C or D type
- · Wide range of current 1 to 125A
- Differentials with type A and AC
- UL approved versions.



PROTECTION RELAYS

- Minimum and maximum voltage monitoring relays for single and three-phase systems, with or without neutral
- Voltage asymmetry, phase sequence and phase loss control relays
- · Minimum and maximum current monitoring relays
- Frequency monitoring relay
- Voltage and frequency control relay.



LEVEL CONTROL RELAYS

- · For electrically conductive liquids
- Modular and plug-in versions
- Adjustable 2.5-200kΩ sensitivity
- Single and three-pole electrodes
- Startup priority change relays.



POWER FACTOR CONTROLLERS AND THYRISTOR MODULES

- Versions with 2, 3, 5, 7, 8, 12, 14 and 16 steps
- · Versions with static outputs
- · Use in co-generation and medium-voltage systems
- · USB, serial and Ethernet communication interface
- ASCII and MODBUS-RTU communication protocols
- Thyristor modules for dynamic correction.



AUTOMATIC TRANSFER SWITCH CONTROLLERS

- · Supervision of two three-phase supply lines
- · Emergency demand supervision for stand-by generating set
- · Control of contactors, motorised circuit breakers or motorised changeover switches
- Event logging
- Microprocessor remote control and supervision
- Front optical port
- Dual power supply module.



ELECTROMECHANICAL STARTERS

- Direct-on-line starters in non-metallic enclosure complete with or without thermal relay
- Reversing and changeover contactor assemblies
- Star-delta starters, open frame and in non-metallic enclosure versions.



SOFT STARTERS

- 12A to 1200A starter ratings
- Standard and severe-duty types
- Internal by-pass contactor up to 245A rating
- Torque ramp starting
- Total motor protection incorporated
- · Digital control and adjustment
- RS232 and RS485 serial ports for remote supervision and control.



MICRO SWITCHES

- · Polymer thermoplastic housing
- Changeover contact switch.

FOOT SWITCHES

- · Version with or without protection cover
- Self-extinguishing polymer thermoplastic housing
- Aluminium-zinc alloy housing.



ROTARY CAM SWITCHES

- Suitable for circuit connection, changeover, switching on and off as well as motor starting
- Possibility of special circuit schemes
- IEC IP40 or IP65 front degree of protection
- · Wide range of features.



SURGE PROTECTION DEVICES

- Types with plug-in cartridges provide fast servicing capability
- Mechanical indicator for visual failure status signalling of single modules
- Versions with or without contact type of remote SPD status indicator signalling
- Versions for photovoltaic applications.



MODULAR CONTACTORS

- Two, three and four-pole versions, 20A to 63A
- · Very silent during operation or control stage
- Operation flag indicator
- Add-on auxiliary contacts.



MICRO PLCs

- 10, 12 and 20 Input-Output base units
- Expansion modules with 4 digital Inputs and 4 digital Outputs
- Expansion modules with analog Inputs-Outputs
- Modbus®-RTU communication module
- RS232 serial interface port for PC, HMI operator panel or program backup memory connection.



SWITCHING POWER SUPPLIES

- Versions: modular and 35mm DIN rail mount
- Output voltage adjustment by front potentiometer
- Short-circuit protection
- Built-in input voltage surge suppressor.



ENGINE AND GENERATOR CONTROLLERS

- Engine protection controllers
- Stand alone gen-set controllers
- Auto mains failure (AMF) gen-set controllers
- Paralleling controller for mainsgenerator and generator-generator
- Optical front port
- Expandable with inputs, outputs and communications interface (RS232, RS485, Ethernet, etc.)



SOFTWARE AND APPLICATIONS

- Synergy is a web-based, multiclient software for energy management
- 3 level multiclient web access
- Simultaneous control of multiple communication channels.
- Sam1 is an APP to view alarms, send commands, read measurements, set parameters, download events and send data via e-mail
- iOs and Android compatible.



AC MOTOR DRIVES

- . Versions for single-phase up to 2.2kW / 3HP and three-phase up to 630kW / 1000HP
 • Special function for pump and
- fan control using PID algorithm
- Active earth leakage protection
- EMC suppressor built in all versions
- Selectable motor control mode: V/f, vector, energy saving.





ENERGY AND AUTOMATION

EARTH LEAKAGE RELAYS

- · Modular, flush and internal panel mount version, with or without flag indicator, configurable prealarm indication and fail safe operation
- Versions with automatic toroid connection control.



AUTOMATIC BATTERY CHARGERS

- · Switching or linear technology
- 1 charging level
- · For sealed and non sealed lead-acid batteries
- 1.25 to 12A ratings
- · Charging current limitation selectable.



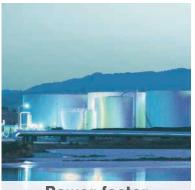
EXPANSION MODULES AND ACCESSORIES

- · Digital inputs and outputs
- · Analog inputs and outputs
- · Communication interface (RS232, RS485, Ethernet, Profibus-DP, etc.)
- · Data storage with clock-calendar
- GPRS/GSM modem
- · Communication devices to connect LOVATO Electric products to personal computers, smartphones and tablets.









Power factor correction



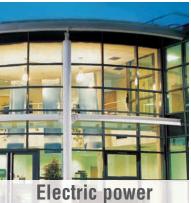
Lifting systems



Photovoltaics



Generating sets



distribution



Energy management