



PRODUCT OVERVIEW

Data recorders
Meters
Controllers
Counters
Sensors / Transmitters
Isolators / Converters
Power supplies
Accessories



Measure,
Control and Log Data

2018 - 2019



SIMEX Company exists on the market of industrial automation since 1986 as a manufacturer and distributor of test and measurement instruments. The scope of our manufacture includes equipment used to measure, control and record the temperature, humidity, pressure, level and flow. The test and measurement instruments offered are applicable in many industrial branches such as energy industry, heat engineering, mining, chemical, food and machine branch, and waste water handling.

Our commercial offer can be operationally adapted to the expectations of our Customers, by reacting quickly to trends and market needs. In addition to standard solutions, we produce the equipment as prepared jointly or customized. We arrange also information and training meetings in our company, and direct presentations of our equipment at Customer's sites.



Design of industrial control and manufacturing equipment



Manufacture of industrial digital meters, data loggers and counters



Distribution of industrial control and manufacturing equipment



Providing services in scope of the integration of automatic control systems



Warranty and after warranty maintenance (teleservice)

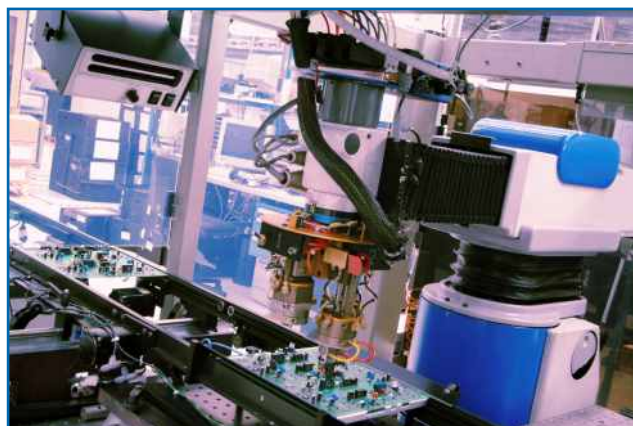


Services

We are specialized in designing the systems for weighing, among others, the storage and process tanks for food, and chemical and pharmaceutical industry.

SIMEX Ltd. specializes in advising on, designing and supplying industrial automation systems for the industry. We offer:

- advising on and technical consultancy,
- designing of automation systems - from simple few measuring points systems to more sophisticated and advanced control systems,
- assembling and supplying measuring and control instruments - our own meters as well as instruments manufactured by local and foreign companies,
- SCADA systems,
- installation and start up of designed systems,
- customer's training and support.



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TRANSMITTERS / DISPLAYS / CONTROLLERS FOR MEASURING & MONITORING ENVIRONMENTAL PARAMETERS

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for meters, counters and recorders - p.30



Transmitters / Displays / Controllers for measuring and monitoring environmental parameters

ProSens

- transmitter, display, controller in one
- integrated humidity and/or temperature probe
- up to 2 universal inputs (I, U, RTD, TC)
- measuring and monitoring parameters such as: temperature, humidity, dew point etc.
- displays up to 4 independent parameters



ProSens is a series of modern industrial instruments that integrate the functionality of sensors, meters and controllers. Due to the applied technology, the devices of small external dimensions may be equipped with 2 independent universal inputs, binary control outputs, analogue outputs and RS-485 communication port, which supports the Modbus RTU protocol.

With the wide range of available variants, the **ProSens** series also offers models with integrated probes, including temperature and humidity sensors, which can be operated within an incredibly wide temperature range of -50 to +120°C. Measured values are converted into other values corresponding to humidity, such as dew point temperature, relative humidity and specific humidity.

A large local display and the available control outputs facilitate the adaptation of equipment to control systems. The implemented communication protocol makes the **ProSens** series a perfect solution for distributed monitoring systems.

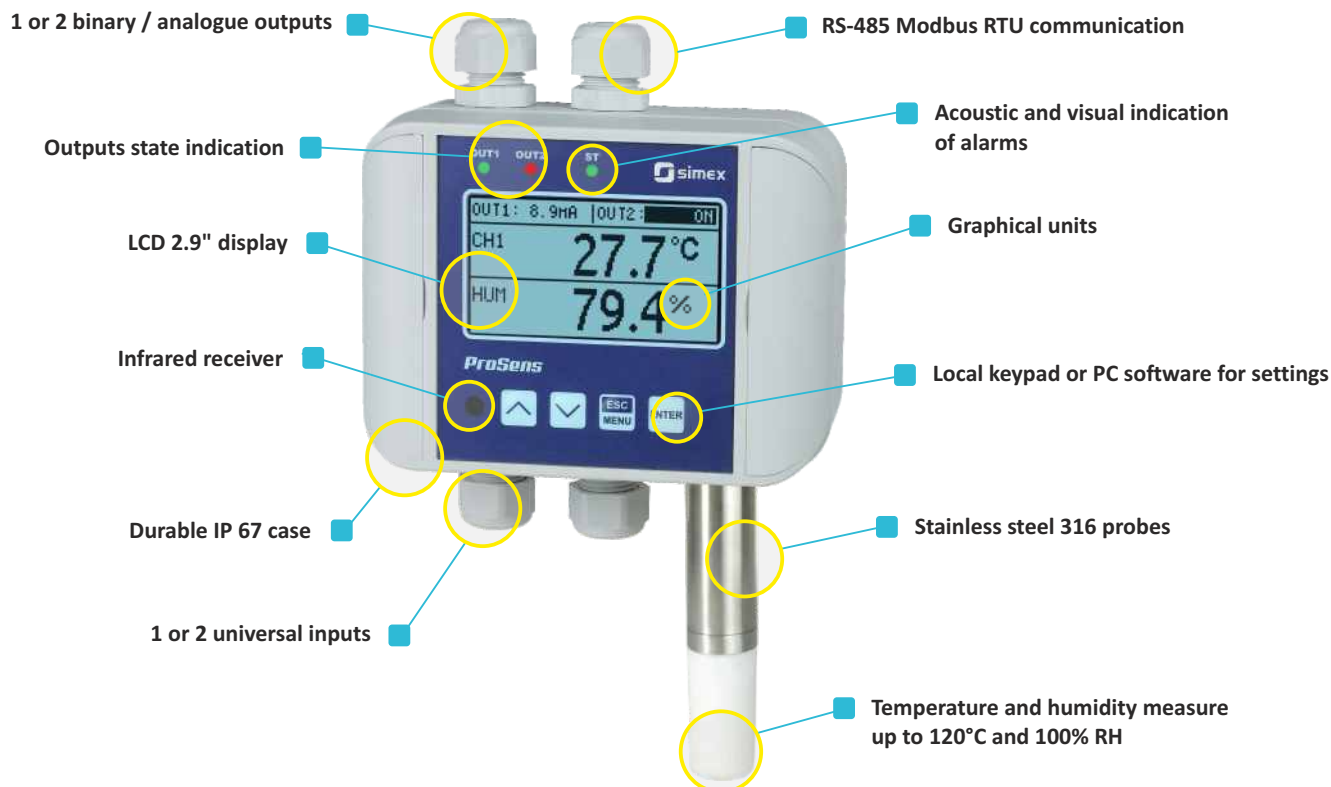


www.ProSens24.eu



| Series | ProSens 100 | | ProSens 200 | |
|--------------------------|---|---|---|---|
| Model | QM-100 | QM-211 | QM-212 | QM-213 |
| Power supply | 24V DC (11 ÷ 36V DC), power consumption: 2.5 W max. | | | |
| Display | none or graphic LCD, 128 x 64 points, with backlight | | | |
| Measuring probe | none | radial, length 40 mm, Ø 18 mm, stainless steel 316L, PTFE filter cap | radial, length 90 mm, Ø 18 mm, stainless steel 316L, PTFE filter cap | radial, length 145 mm, Ø 18 mm, stainless steel 316L, PTFE filter cap |
| Measuring sensor | none | temp.: measuring range -30 ÷ 80°C, typ.err. ±0.5°C @ -10 ÷ 80°C temp. & humidity: measuring range -30 ÷ 80°C, typ.err. ±0.2°C @ 10 ÷ 60°C (0.4°C @ -30°C; 0.7°C @ 120°C); 0 ÷ 100% RH; typ.err. ±1.8% RH (10 ÷ 90% @ 25°C) | temp.: measuring range -30 ÷ 105°C; typ.err. ±0.5°C @ -10 ÷ 85°C temp. & humidity: measuring range -30 ÷ 105°C; typ.err. ±0.2°C @ 10 ÷ 60°C (0.4°C @ -30°C, 0.7°C @ 120°C); 0 ÷ 100% RH; typ.err. ±1.8% RH (10 ÷ 90% @ 25°C) | temp.: measuring range -50 ÷ 120°C; typ.err. ±0.5°C @ -10 ÷ 85°C temp. & humidity: measuring range -40 ÷ 120°C; typ.err. ±0.2°C @ 10 ÷ 60°C (0.4°C @ -30°C, 0.7°C @ 120°C); 0 ÷ 100% RH; typ.err. ±1.8% RH (10 ÷ 90% @ 25°C) |
| Number of inputs | 0, 1 or 2 universal | | 0 or 1 universal | |
| Type of universal inputs | current: 0/4-20 mA; voltage: 0/1-5 V, 0/2-10V, 0-60 mV, 0-75 mV, 0-100 mV, 0-150 mV; RTD: Pt100, Pt500, Pt1000, measuring range: -100°C ÷ 600°C; thermocouple: type K, S, J, T, N, R, B, E; measuring ranges: -200°C ÷ +1370°C (K); -50°C ÷ +1768°C (S); -210°C ÷ +1200°C (J); -200°C ÷ +400°C (T); -200°C ÷ +1300°C (N); -50°C ÷ +1768°C (R); +250°C ÷ +1820°C (B); -200°C ÷ +1000°C (E) | | | |
| Binary outputs | 0, 1 or 2 electronic NO relays, 24V AC/35V DC, max. 200 mA | | | |
| Analogue outputs | 0, 1 or 2: active current: operating range 0/4-20 mA (0-24 mA max.); passive current: isolated, operating range 4-20 mA (2.8-24 mA max.); active voltage: operating range 0/1-5V, 0/2-10V (0-11V max.) | | | |
| Communication interface | RS-485, 8N1 and 8N2, 1200 bit/s ÷ 115200 bit/s, Modbus RTU, not galvanically isolated | | | |
| Operating temperature | -30°C ÷ +80°C, case with electronics (out of range -20 ÷ +70°C LCD and IR receiver turn off) | | | |
| Protection class | IP 67 (version without display); IP 65 (version with display) | | | |
| Case | wall mounted, 120 x 90 x 50 mm, ASA LURAN | | | |

Transmitters / Displays / Controllers for measuring and monitoring environmental parameters



| Series | ProSens 400 | ProSens 600 | |
|--------------------------|---|--|---|
| Model | QM-421 / 422 | QM-612 | QM-621 / 622 |
| Power supply | 24V DC (11 ÷ 36V DC), power consumption: 2.5 W max. | | |
| Display | none or graphic LCD, 128 x 64 points, with backlight | | |
| Measuring probe | axial, L=200 or 300 mm, Ø 12 mm, stainless steel 316L probe and filter cap | the external probe L=90 mm on the cable, Ø 18 mm, stainless steel 316L, PTFE filter cap, gland or 4 pin M12 connector, cable, PUR or TPU covered (operating temp. -30 ÷ +80°C) or TPE covered (operating temp. -30 ÷ +120°C) | the external probe L=200 or 300 mm on the cable, Ø 12 mm, stainless steel 316L probe and filter cap |
| Measuring sensor | temp.: measuring range -50 ÷ 120°C; typ.err. ±0.5°C @ -10 ÷ 80°C temp. & humidity: temp. measuring range -40 ÷ 120°C; typ.err. ±0.2°C @ 10 ÷ 60°C (0.4°C @ -30°C, 0.7°C @ 120°C); humidity measuring range 0 ÷ 100% RH; typ.err. ±1.8% RH (10 ÷ 90% @ 25°C) | | |
| Number of inputs | 0 or 1 universal | | |
| Type of universal inputs | current: 0/4-20 mA; voltage: 0/1-5 V, 0/2-10V, 0-60 mV, 0-75 mV, 0-100 mV, 0-150 mV; RTD: Pt100, Pt500, Pt1000, measuring range: -100°C ÷ 600°C; thermocouple: type K, S, J, T, N, R, B, E; measuring ranges: -200°C ÷ +1370°C (K); -50°C ÷ +1768°C (S); -210°C ÷ +1200°C (J); -200°C ÷ +400°C (T); -200°C ÷ +1300°C (N); -50°C ÷ +1768°C (R); +250°C ÷ +1820°C (B); -200°C ÷ +1000°C (E) | | |
| Binary outputs | 0, 1 or 2 electronic NO relays, 24V AC/35V DC, max. 200 mA | | |
| Analogue outputs | 0, 1 or 2: active current: operating range 0/4-20 mA (max. 0-24 mA); passive current: isolated, operating range 4-20 mA (max. 2.8-24 mA); active voltage: operating range 0/1-5V, 0/2-10V (max. 0-11V) | | |
| Communication interface | RS-485, 8N1 and 8N2, 1200 bit/s ÷ 115200 bit/s, Modbus RTU, not galvanically isolated | | |
| Operating temperature | -30°C ÷ +80°C, case with electronics (out of range -20 ÷ +70°C LCD and IR receiver turn off) | | |
| Protection class | IP 67 (version without display); IP 65 (version with display) | | |
| Case | wall mounted, 120 x 90 x 50 mm, ASA LURAN | | |



Paperless data recorders - MultiCon



www.multicon24.eu

- meter + controller + recorder + HMI in one package
- SCADALite - graphical data presentation
- controller modes: ON/OFF, PID Autotuning, Fuzzy Logic
- mathematical and logical functions
- communication interfaces: Ethernet, RS-485 / Modbus RTU, USB Host
- built-in memory enabling for 125 000 000 records
- DAQ Manager software for maintenance

The MultiCon line instruments are advanced recorders with capability of control and measurement, closed in one compact case. They have been designed for both advanced and less demanding applications in industrial automatic control engineering. They feature a colour TFT display with a touch screen (3.5 or 5.7 inch, depending on version). Such a GUI is a pleasure to work with, and the operation of the MultiCon playing the HMI role is intuitive and comfortable. The kernel of the software is LINUX operating system, which ensures stable operation and enables installing advanced software.

MultiCon devices are equipped with a local touch screen (TFT LCD) that functions as an operator panel for configuration of the device and presentation of measured data. Easy change of the display mode for the individual channels is a very useful feature.

In the main configuration, data may be presented as:

- numerical values,
- quasi-analog indicators,
- phasor charts,
- horizontal or vertical charts,
- horizontal or vertical bars,
- simultaneous presentation of many groups.



MultiCon SCADALite

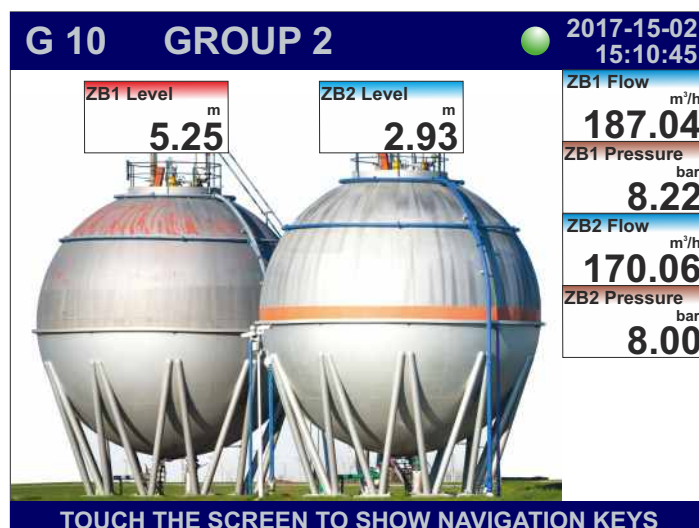


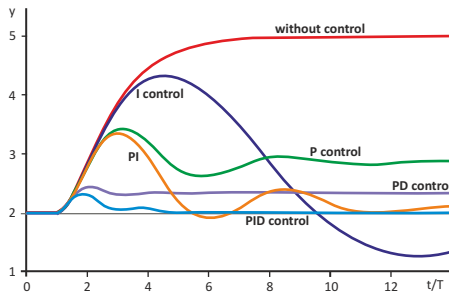
SCADALite is a functionality allowing for process management directly from the MultiCon screen.

Information important for the operator can be presented in graphical form, including animations, dynamic charts, the most important numbers and, in the case of alarm, also sounds. SCADALite enables definition of a specified number of screens to present different range of the required information.

The specified measurement parameters can be included in the graphics that reflects the monitored process/facility by means of a photo or drawing.

SCADALite is an innovation in data presentation.





PID AUTO TUNING FUZZY LOGIC

The advanced PID controllers provide a wide range of control methods. Multicon gives a user up to 8 independent controller settings and all of them can be run simultaneously. Each of them is equipped with the most innovative AutoTuning function, as well as additional Fuzzy Logic algorithms. The controllers can be stopped and started manually or automatically. All these features provide a perfect solution for the user to control the most difficult and complex objects.

up to 72 analogue / digital inputs

IP 65 front panel protection

Ethernet

2 x USB Host ports

MultiModbus
- up to 3 x RS-485 interfaces

HMI / SCADA

HTML5 widgets

a wide range of I/O modules



max. 10 Hz sampling frequency

3.5" / 5.7" LCD touchscreen

PC keyboard
and mouse operation

PID control autotuning

profiles / timers

mathematical functions

visualization as digits,
graphs, bargraphs, needles

125 000 000 records

free DAQ Manager software

Input / output / communication cards for CMC-99/141

Input cards

| | |
|------------|---|
| UN3 | 3 x universal inputs U/I/RTD/TC/mV, isolated |
| UN5 | 5 x universal inputs U/I/RTD/TC/mV, isolated |
| UI4 | 4 x voltage input + 4 x current input |
| UI8 | 8 x voltage input + 8 x current input |
| UI12 | 12 x voltage input + 12 x current input |
| U16 | 16 x voltage input |
| U24 | 24 x voltage input |
| IS6 | 6 x current input, isolated |
| I16 | 16 x current input |
| I24 | 24 x current input |
| UI4N8 | 4 x voltage input + 4 x current input + 8 x NTC input |
| UI4D8 | 4 x voltage input + 4 x current input + 8 x digital input |
| UI8N8 | 8 x voltage input + 8 x current input + 8 x NTC input |
| UI8D8 | 8 x voltage input + 8 x current input + 8 x digital input |
| RT4 | 4 x RTD input |
| RT6 | 6 x RTD input |
| TC4 | 4 x TC input |
| TC8 | 8 x TC input |
| TC12 | 12 x TC input |
| D8 | 8 x digital input |
| D16 | 16 x digital input |
| D24 | 24 x digital input |
| CP2 | 2 x pulse input, universal counters |
| CP4 | 4 x pulse input, universal counters |
| FT2 or FT4 | 2 or 4 x pulse input (for flow/rate applications, each to display both actual & total flow/rate) and 2 or 4 x current input (for general purpose measurement) |
| FI2 or FI4 | 2 or 4 x current input (for flow/rate applications, each to display both actual & total flow/rate) and 2 or 4 x current input (for general purpose measurement) |
| HM2 | 2 x hourmeters, isolated |
| HM4 | 4 x hourmeters, isolated |

Power supply cards

| | |
|------|--------------------------|
| PS32 | 19 ÷ 50V DC, 16 ÷ 35V AC |
| PS42 | 85 ÷ 260V AC/DC |

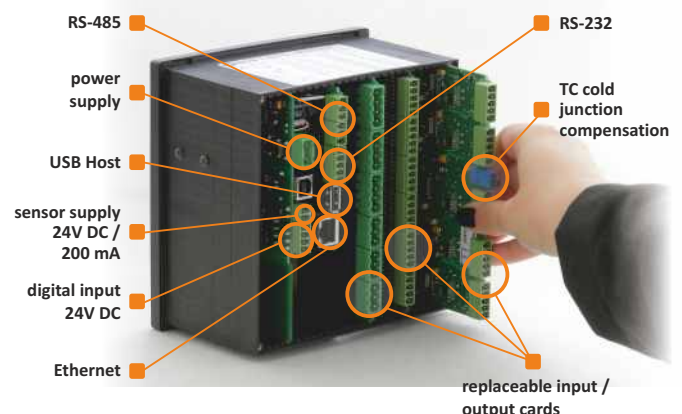
Communication cards

| | |
|-----|--|
| USB | USB port (rear) |
| ETU | 1 x USB Host, 1 x Ethernet 10 Mb/s |
| ACM | 1 x RS-485, 1 x RS-485/232, 1 x USB Host, 1 x Ethernet 10 Mb/s |

Output cards

| | |
|------|------------------------------|
| R81 | 8 x SPST relay 1A output |
| R121 | 12 x SPST relay 1A output |
| R45 | 4 x SPDT relay 5A output |
| R65 | 6 x SPDT relay 5A output |
| S8 | 8 x SSR output |
| S16 | 16 x SSR output |
| S24 | 24 x SSR output |
| IO2 | 2 x 4-20 mA output, isolated |
| IO4 | 4 x 4-20 mA output, isolated |
| IO6 | 6 x 4-20 mA output, isolated |
| IO8 | 8 x 4-20 mA output, isolated |

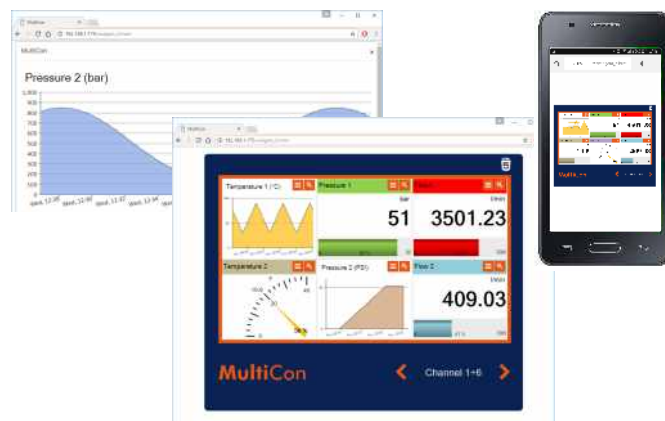
CMC-99 exemplary configuration





Paperless data recorders - MultiCon

The MultiCon line devices equipped with Ethernet port allow also a very easy remote monitoring of measurement results using a web browser, as well as a very attractive graphical presentation in the form of built-in or user-created websites. Along with the device, the manufacturer supplies a set of built-in visual components which using the HTML5 protocol, provide the programmers with easy mechanisms to retrieve data from the device, as well as ready-to-use formats of data presentation on the computer, tablet or mobile phone screen.



Data recording

The distinguishing feature of **MultiCon** is its capability of simultaneous implementation of tasks related to measurements, processing, control and recording of data.

Internal memory of **1.5 GB** is sufficient for over **125 000 000** records!, meaning that even in the intensive sampling mode (every second) you can record data, for example, from 24 channels for 2 months.

| | intense (every 1 sec.) | medium (every 10 sec.) | economy (every 1 min.) |
|-------------|---------------------------|---------------------------|---------------------------|
| 60 channels | 20 days | 6 months | 3 years |
| 48 channels | 30 days | 8 months | 4 years |
| 24 channels | 50 days | 15 months | 7 years |

DAQ Manager software is used for service of data loggers **MultiCon** type. The software allows to visualize recorded data in the form of graphs and tables, group measurement results, create reports and export data into other files.



| | CMC-99 | CMC-141 | CMC-N16 |
|--------------------------------|---|--|--|
| Power supply | 19 ÷ 50V DC, 16 ÷ 35V AC or 85 ÷ 260V AC/DC; 15 VA typ., 20 VA max. | 19 ÷ 50V DC, 16 ÷ 35V AC or 85 ÷ 260V AC/DC; 25 VA typ., 35 VA max. | 19 ÷ 50V DC, 16 ÷ 35V AC or 85 ÷ 260V AC/DC; 15 VA typ., 20 VA max. |
| Display | 3.5" graphic TFT, 320 x 240 pixels + touchscreen navigation | 5.7" graphic TFT, 320 x 240 pixels + touchscreen navigation | 3.5" graphic TFT, 320 x 240 pixels + touchscreen navigation |
| Measuring inputs | - up to 9 universal - up to 48 analogue - up to 24 TC - up to 12 RTD (Pt, Ni, Cu) - up to 24 NTC - up to 12 counters, flow- or ratemeters - mixed: analogue-NTC or analogue-digital | - up to 15 universal - up to 72 analogue - up to 36 TC - up to 18 RTD (Pt, Ni, Cu) - up to 24 NTC - up to 12 counters, flow- or ratemeters - mixed: analogue-NTC or analogue-digital | - 2 or 4 universal - 2 universal pulse counter / ratemeter (max. freq. 5 kHz) |
| Digital inputs | - up to 49 digital * | - up to 73 digital * | - up to 5 digital * |
| Outputs | - up to 8 analogue - up to 16 SPST relay 1A/250V - up to 4 SPDT relay 5A/250V - up to 48 SSR | - up to 24 analogue - up to 36 SPST relay 1A/250V - up to 18 SPDT relay 5A/250V - up to 72 SSR | - 2 or 4 analogue 4 ÷ 20 mA - 2 or 4 SPST relay 1A/250V - 2 or 4 SSR passive (OC with PWM) - mixed outputs: REL / 4 ÷ 20 mA / SSR |
| Sensor supply | - 1 x 24V DC ±5%, max. 200 mA | - 1 x 24V DC ±5%, max. 200 mA | - 1 x 24V DC ±5%, max. 200 mA |
| Communication interface | Basic version: RS-485, 1 x USB Host (front or back), ETU: 1 or 2 x USB Host, 1 x Ethernet 10 Mb/s ACM: 2 x RS-485, 1 x RS-485/232, 1 or 2 x USB Host, 1 x Ethernet 10 Mb/s | | Basic version: RS-485, 1 x USB Host ETE: 1 x Ethernet wired via gland to RJ45 built-in connector ETEC: 1 x Ethernet wired to M12 connector ETR: 1 x Ethernet wired via gland to RJ45 built-in connector + 2nd RS-485 ETRC: 1 x Ethernet wired to M12 connector + 2nd RS-485 |
| IP rate protection | IP 65 or IP 40 (with front USB), available additional frame IP 65 for panel cut-out sealing and transparent door IP 54 with key | | IP 65 |
| Operating temp. | 0°C ÷ +50°C (option -20°C ÷ +50°C) / -10°C ÷ +70°C (option -20°C ÷ +70°C) | | |
| Case dimensions (WxHxD) | panel mount, 96 x 96 x 100 mm | panel mount, 144 x 144 x 100 mm | wall mount, 166 x 161 x 103 mm (without glands); 166 x 191 x 103 mm (with glands) |

* one digital input is available in standard, integrated with power supply modules



- universal inputs: TC + RTD or mA + V (SRD-99)
- fixed inputs: TC, RTD, mA, V (SRD-N16)
- 2 relay outputs
- display backlight: amber or white
- panel or wall mount IP 65 case

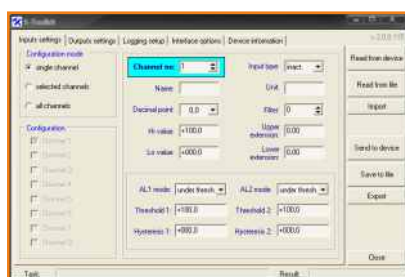
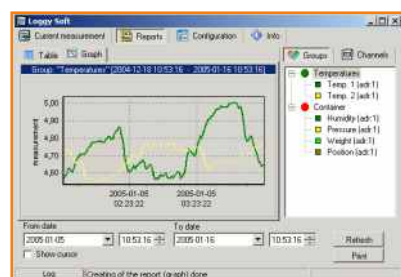
The **MultiLog** line instruments have been designed to display and record current values, as well as to present technological parameters in the form of graphs. The devices are equipped with up to 8 measuring inputs. The panel version, **SRD-99**, operates universal temperature (RTD+TC) or analogue (mA, V) inputs, which enables connecting different types of sensors to one device, while the wall mounted version, **SRD-N16**, operates fixed inputs. A USB flash drive enables a significant simplification of the unit application: it is no longer necessary to connect a PC and data logger via the RS-485 interface, data downloading can be completed 10 times sooner than in case of using the RS-485 interface.

The **MultiLog** is equipped with 2 relay outputs. The main function of the outputs is to signal critical situations, but thanks to the expanded menu it is possible to use it in numerous control and regulation applications. Both outputs can be driven by a single measurement channel or by a group of channels (from 1 to 8 channels) with individually adjustable thresholds for every measurement channel. Signalling output states is displayed in two fields, R1 and R2, in the left upper corner of the LCD screen.



Free software to work with data recorder:

- **S-Toolkit** : enables reading and writing configuration, updating the device firmware, and obtaining basic information through the RS-485 interface,
- **Loggy Soft**: enables visualising, archiving, and printing the measurements stored in the MultiLog device memory.



| | SRD-99X | SRD-N16 |
|------------------------------|--|--|
| Power supply | 19 ÷ 50V DC, 16 ÷ 35V AC or 85 ÷ 260V AC/DC; 7 VA typ., 12 VA max. | 19 ÷ 50V DC; 16 ÷ 35V AC or 85 ÷ 260V AC/DC; 3 VA typ.; 5 VA max. |
| Display | graphic LCD, 128 x 64 points, with backlight (amber or white) | |
| Measuring inputs | 1, 4 or 8 x 0/4-20 mA, 0/1-5 V, 0/2-10V or mixed; 1, 4 or 8 x Pt100/Pt500/Pt1000, TC K, S, J, T, N, R, B, E or mixed; | 1, 4 or 8 x 0/4-20 mA, 0/1-5 V, 0/2-10V; Pt100/Pt500/Pt1000 or TC K, S, J, T, N, R, B, E; |
| Digital inputs | 1 x 24V DC, optocoupled | 1 x 24V DC, optocoupled |
| Measuring range | current/voltage: ± 9999 + decimal point; RTD: -100,0°C ÷ +600,0°C / -148,0°F ÷ +999,9°F; TC: -200°C ÷ +1370°C (K); -50°C ÷ +1768°C (S); -210°C ÷ +1200°C (J); -200°C ÷ +400°C (T); -200°C ÷ +1300°C (N); -50°C ÷ +1768°C (R); +250°C ÷ +1820°C (B); -200°C ÷ +1000°C (E); 0-60 mV, 0-75 mV, 0-100 mV lub 0-150 mV | |
| Outputs | 2 electronic relays with max. load 24V AC (35V DC) / 200 mA | 2 relays (R1, R2), I _{max} =1A, U _{max} =30VDC/250VAC (cosφ=1) |
| Sensor supply | 1 x 24V DC ±5%, max. 200 mA (only 0/4-20 mA version) | |
| Data recording period | 1 s / 2 s / 5 s / 10 s / 15 s / 20 s / 30 s / 1 min / 2 min / 5 min / 10 min / 15 min / 20 min / 30 min / 60 min | |
| Communication | RS-485 (Modbus RTU), 1200 ÷ 115200 bit/s, USB PC, USB Host port | |
| Data memory | 8 MB internal; above 3 000 000 records | |
| Operating temp. | 0°C ÷ +50°C (standard), -20°C ÷ +50°C (option) | |
| Storage temp. | -10°C ÷ +70°C (standard), -20°C ÷ +70°C (depending on option) | |
| IP rate protection | IP 65 or IP 40 (with front USB), available additional frame IP 65 for panel cut-out sealing and transparent door IP 54 with key | IP 65 |
| Case dimensions | panel mount, 96 x 96 x 100 mm | wall mount, 166 x 161 x 103 mm (without glands), number of glands depends on number of channels - 1 channel: 2 x M20, 1 x M16; 4 channels: 3 x M20, 1 x M16; 8 channels: 2 x M25, 1 x M20, 1 x M16 |

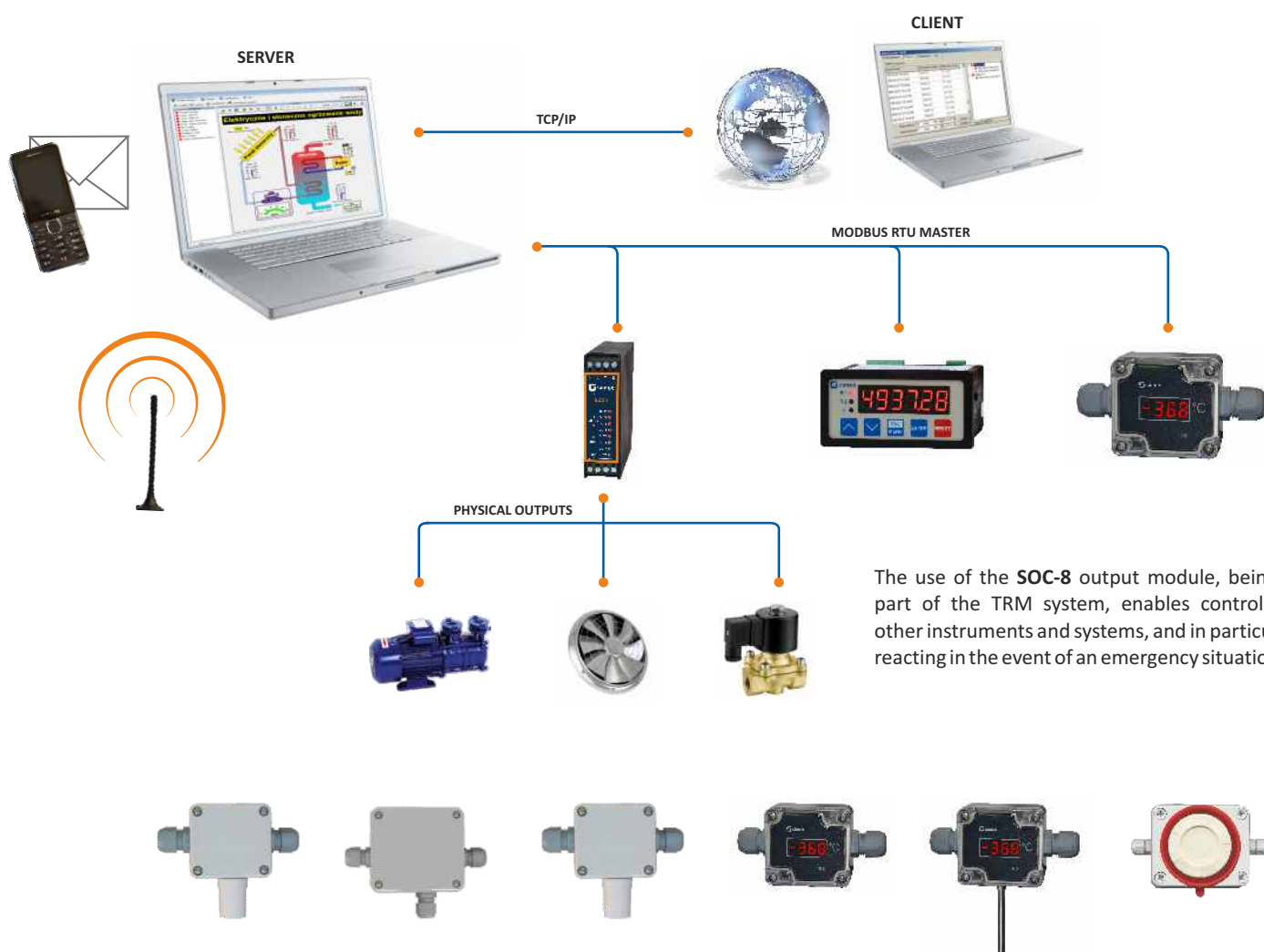


DAQ systems - TRS



- acquisition, recording and sharing of data on temperature and humidity
- RS-485 / Modbus RTU communication
- possibility of connecting up to 127 modules on the RS-485 line in one network
- easy to operate
- SimCorder PC software supporting the system

The temperature and humidity recording **TRS** system consists of a wide range of measuring instruments and the SimCorder PC software. Its main tasks can include: acquiring, recording, and sharing information on temperature and humidity, e.g. in cold rooms or production halls. The **TRS** system's main feature is its ease of mounting, so that a purchaser could install it by themselves.



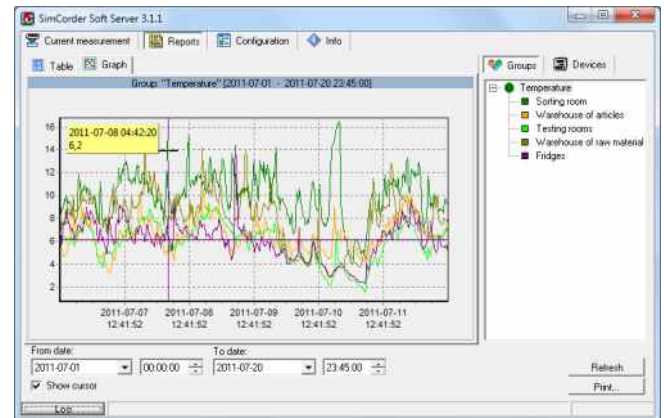
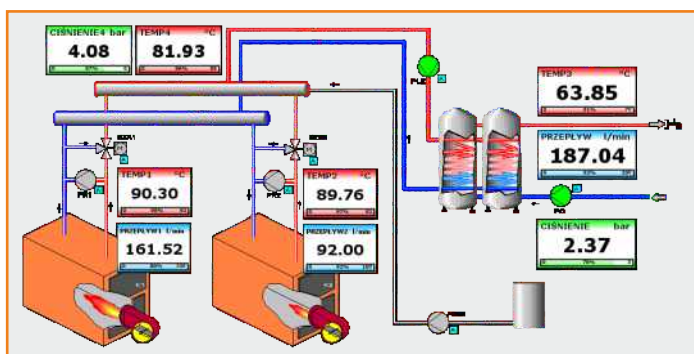
The use of the **SOC-8** output module, being a part of the TRM system, enables controlling other instruments and systems, and in particular reacting in the event of an emergency situation.

| | TRS-01a | TRS-02a | TRS-04a | TRS-10a | TRS-11a | TRS-B1a |
|--------------------|---|---------------------------------|--|------------------|---|-----------------------|
| Measuring sensor | temperature sensor (semiconductor integrated circuit) | Pt 100 sensor | temperature sensor (semiconductor integrated circuit); humidity sensor | - | temperature sensor (semiconductor integrated circuit) | - |
| Range / Error | -40 ÷ +85°C / ±0,5°C (-10 ÷ +50°C) | -50 ÷ +550°C / ±0,2% | 0 ÷ +70°C / ±0,5°C 0 ÷ 100% RH / ±2% RH | - | -40 ÷ +85°C / ±0,5°C (-10 ÷ +50°C) | - |
| IP rate protection | IP 65 | IP 65 | IP 65 | IP 65 | IP 65 (case) IP 40 (sensor) | IP 65 |
| Comments | - | required external Pt 100 sensor | - | display 4 x 9 mm | display 4 x 9 mm | sound or light signal |



- easy software configuration
- ability to send email notifications and SMS
- extended reporting systems
- graphical process visualisation
- operates with SIMEX instruments equipped with Modbus RTU SLAVE

SimCorder Soft visualisation software was created to improve the operation with extended networks of SIMEX Company's devices. Acquisition, archiving, visualisation, reporting, and exporting measurement data from all the devices in the network has become extremely easy. You need only one computer. SimCorder Soft communicates with equipment via RS-485/Modbus RTU interface and automatically reads measurement data from it.



The **network** module provides a preview of measurement data, alarm status, and device configuration via the Ethernet/Internet. Up to 10 various computers (terminals) can be connected to the Server of data via TCP/IP, depending on the license selected.

A more advanced **SemiSCADA** visualization allows you to graphically present a process status, which greatly facilitates the observation and analysis to persons being responsible for service and maintenance.

| Device name | Unit | Cur. measurement | Avg. measurement | Max measurement | Min measurement |
|---------------------|---------|------------------|------------------|-----------------|-----------------|
| Pump flow | [l/min] | 20.0 | 15.8 | 20.0 | 13.5 |
| SC inlet temp. | [°C] | 15.7 | 20.1 | 24.6 | 15.7 |
| SC outlet temp. | [°C] | 30.2 | 21.3 | 34.4 | 20.2 |
| Tank inlet temp. | [°C] | 12.3 | 12.3 | 12.3 | 12.3 |
| Tank outlet temp. | [°C] | 66.2 | 65.3 | 72.4 | 65.2 |
| Boiler Power | [kW] | 527 | 254 | 527 | 0 |
| Boiler Temp. | [°C] | 85.0 | 85.0 | 85.0 | 85.0 |
| Water flow | [l/min] | 50.0 | 41.0 | 50.0 | 32.0 |
| Pump Power | [kW] | 116 | 104 | 116 | 92 |
| Air Temp. (in wall) | [°C] | 33.2 | 36.4 | 38.5 | 33.2 |
| CNC-98 CH17 (1) | [°C] | --- | --- | --- | --- |
| CNC-98 CH18 (1) | [°C] | --- | --- | --- | --- |
| CNC-98 CH19 (1) | [°C] | --- | --- | --- | --- |
| CNC-98 CH20 (1) | [°C] | --- | --- | --- | --- |
| CNC-98 CH21 (1) | [°C] | --- | --- | --- | --- |
| CNC-98 CH22 (1) | [°C] | --- | --- | --- | --- |
| CNC-98 CH23 (1) | [°C] | --- | --- | --- | --- |



The **SimCorder Soft Alarm** offers wide possibilities to react to a system alarm state. The software can send notification alarms by SMS and e-mail to relevant telephone numbers and e-mail accounts. The SimCorder can also run actuators giving an immediate response if the system fails.

IN SIMCORDER SOFT OFFER THERE ARE FOLLOWING LICENSES:

- SB** SimCorder Soft Basic USB License Dongle
- SBS** SimCorder Soft Basic & semiSCADA USB License Dongle
- SA** SimCorder Soft Alarm (software with SMS and e-mail alarm functions) USB License Dongle
- SAS** SimCorder Soft Alarm (software with SMS and e-mail alarm functions) & semiSCADA USB License Dongle
- SN3** SimCorder Soft Network (licence for 3 PC stations) USB License Dongle
- SNS3** SimCorder Soft Network (licence for 3 PC stations) & semiSCADA USB License Dongle
- SN10** SimCorder Soft Network (licence for 10 PC stations) USB License Dongle
- SNS10** SimCorder Soft Network (licence for 10 PC stations) & semiSCADA USB License Dongle



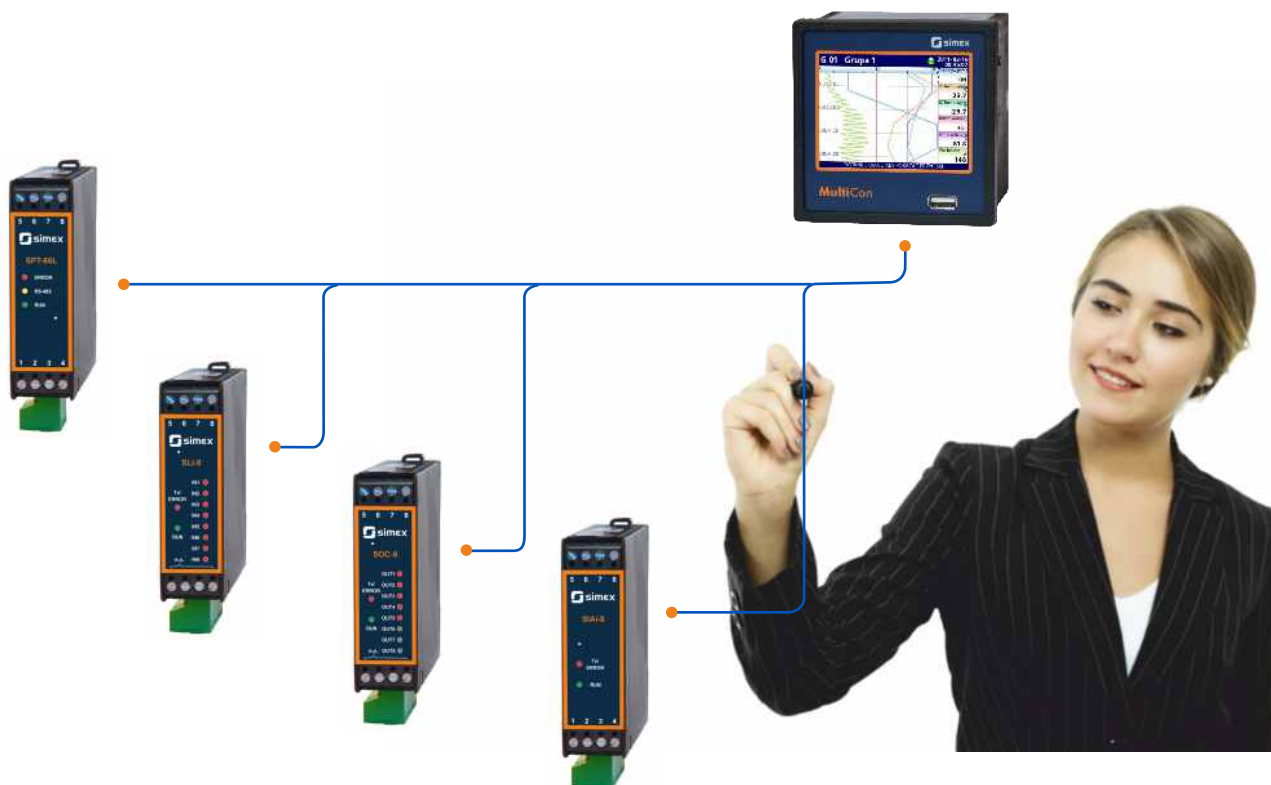


DAQ systems - TRM

- Modbus RTU Slave
- DIN rail mount (TS-35 or TS-32)
- full equipment diagnostics
- multi-point inspection of process parameters
- galvanic separation of inputs/outputs from the voltage



The **TRM** DAQ system is based on multi-point communication modules. It uses the RS-485 network, Modbus RTU protocol, and enables inspecting process parameters. Thanks to a significant reduction of required wiring (usually one four-wire line) it is more and more widely used in the newly constructed and upgraded systems. The Modbus RTU communication makes it possible to inspect and diagnose an entire system, which is equal in priority to a measurement and process control themselves.



| | SIN-8 | SOC-8 | SLI-8 | SIAi-8P | SIAi-8N | SPT-86L |
|-----------------|---|------------|--------------------|---|--|---|
| Power supply | 24V DC (16 ÷ 30V DC) | | | | | |
| Inputs | 8 x binary voltage: low: 0V (0 ÷ 3V) high: 24V (15 ÷ 24V) | - | 8 x multi counters | 8 x analog current: 0-20 mA; 4-20 mA | 8 x analog voltage: 0/2-10 V; 0/1-5 V | 0-60/75/100/150 mV Pt100, Pt500, Pt1000 TC (K, S, J, T, N, R, B, E) |
| Outputs | - | 8 x binary | - | - | - | 3,4 ÷ 24 mA |
| Case dimensions | 101 x 22,5 x 80 mm | | | | | |



- portable data logging systems based on MultiCon or MultiLog devices
- up to 23 input/output/communication connectors
- RS-485, USB or Ethernet ports
- waterproof and dustproof IP 67 housing, designed to work in harsh environment



The portable data logging systems are built of high IP67 protection casing and connectors, and can include either the **MultiCon** or the **MultiLog** devices. Such a system enables autonomous operating of the controller/recorder under harsh environmental conditions.

The Ethernet or RS-485 interfaces can provide measurement data to a PC or the SCADA system.

Applications:

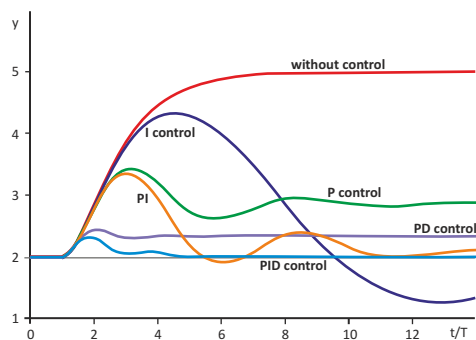
- Operational parameters recording in water and sewage pumping stations
- Operational parameters recording in heat chambers and heat exchange units
- Hydrophore stations pressure controlling
- Change of river level recording

| | P130-SRD-99X | P130-CMC-99 | P130-CMC-141 |
|-------------------------|--|---|---|
| Power supply | 19V ÷ 50V DC, 16V ÷ 35V AC or 85V ÷ 260V AC/DC, 50-60 Hz | | |
| Inputs / outputs | up to 11 input/output connectors: Pt100 / Pt500 / Pt1000, TC, mV; 0/4-20 mA, 0/1-5V, 0/2-10V; 1 digital input, 10-30V DC; 2 electronic relays (ER1, ER2), 24VAC (35VDC)/200 mA | up to 23 input/output connectors: universal, analogue (0/4 ÷ 20 mA, 0/1 ÷ 5V, 0/2 ÷ 10V), thermocouple (J, K, S, T, N, R, B, E, L, ± 25 mV, ± 100 mV, -10 ÷ 25 mV, -10 ÷ 100 mV), resistance (Pt100, Pt500, Pt1000, Pt'50, Pt'100, Pt'500, Ni100, Ni500, Ni1000, Cu50, Cu100, Cu'50, Cu'100, 0 ÷ 300 Ω, 0 ÷ 3 kΩ), counter/ flowmeter/ ratemeter, digital | |
| Sensor supply output | 24V DC ±5% / max. 200 mA | | |
| Display | 2.9" LCD, graphic, 128 x 64 points, with backlight, amber or white | TFT 3.5"; colour, graphic TFT, 320 x 240 pixels, with touchscreen | TFT 5.7"; colour, graphic TFT, 320 x 240 pixels, with touchscreen |
| Communication interface | RS-485, Modbus RTU, 1200 ÷ 115200 bit/s; USB Host | options: RS-485, Modbus RTU, 1200 ÷ 115200 bit/sec., Ethernet; USB Host | |
| Memory capacity | internal 8 MB; 1 200 000 records | internal 1.5 GB; 125 000 000 records | |
| Protection class | IP 67 | | |
| Operating temperature | 0°C ÷ +50°C (optional -20°C ÷ +50°C) | | |
| Weight | 2,5 kg (case 1,4 kg) | | |
| Dimensions | portable case: 285 x 246 x 174 mm MultiLog SRD-99: 96 x 96 x 100 mm | portable case: 285 x 246 x 174 mm MultiCon CMC-99: 96 x 96 x 100 mm | portable case: 285 x 246 x 174 mm MultiCon CMC-141: 144 x 144 x 100 mm |



PID controllers

- PID controllers with Auto-tuning and Fuzzy-Logic
- standard panel case dimensions
- universal, RTD or TC input
- REL / OC (SSR) outputs
- analogue output: active or passive
- power supply output: 24V DC
- RS-485 / Modbus RTU

PID
**AUTO
TUNING**
**FUZZY
LOGIC**


The advanced **PID** controllers provide two control loops (heating / cooling), supported by the Autotuning function and Fuzzy-Logic algorithm. The devices are equipped with universal, RTD or TC type input. They feature a built-in REL, OC (SSR), or analogue output, according to the customer's selection: active current output, passive isolated current output or active voltage output, which can be used in the process of control. The cold junction of the thermocouple sensor gets compensated automatically. RTD and TC inputs feature fully linearized characteristics. A wide range of characteristic curves (linear, square root, quadratic, user-defined and volume characteristic for cylindrical tanks) is available for current and voltage inputs. The 24V DC / 100 mA output has been designed to supply measuring transducers, and the RS-485 port enables data transmission in production process monitoring systems. The controllers can be configured with the local keyboard or the free S-Config software via the RS-485 communication port.



| | PRT-73 | PRT-77 | PUR-94 |
|-------------------------|---|---|---|
| Power supply | 19 ÷ 50V DC; 16 ÷ 35V AC or 85 ÷ 260V AC/DC | | |
| Display | LED, two-coloured (red-green), 4 x 13 mm or red, 5 x 9 mm | LED, double: 4 x 13 mm (red) and 4 x 10 mm (green) | LED, 4 x 20 mm, red or green |
| Input | Pt100, Pt500, Pt1000; TC: K, S, J, T, N, R, B, E | Pt100, Pt500, Pt1000; TC: K, S, J, T, N, R, B, E | 0/4-20 mA; 0/1-5 V, 0/2-10V; 0-60 mV, 0-75 mV, 0-100 mV, 0-150 mV; Pt100, Pt500, Pt1000; TC: K, S, J, T, N, R, B, E |
| Binary output | 1 or 2 REL / OC PWM | | 2 or 4 REL / OC PWM |
| Analogue output | none | | active current: operating range 0/4-20 mA passive current: isolated, operating range 4-20 mA active voltage: operating range 0/1-5V, 0/2-10V |
| Communication interface | RS-485 / Modbus RTU | | |
| Protection class | 5 x 9 mm display: IP 65 (front), available additional frame IP 65 for panel cut-out sealing 4 x 13 mm display: IP 40 (front) | IP 65 (front side when an optional seal is installed); IP 40 (front side) | |
| Operating temperature | 0°C ÷ +50°C (standard), -20°C ÷ +50°C (option) | | |
| Case dimensions | 72 x 36 x 97 mm | 72 x 72 x 100 mm | 96 x 48 x 100 mm |



- 1 universal input: 0/4-20 mA, 0-10V, 0-150 mV, RTD or TC
- 1, 2 or 4 control outputs: REL or OC
- analogue output: active or passive
- power supply output: 24V DC
- RS-485 / Modbus RTU communication
- multicolour or ultra bright display: red, green, blue
- panel or wall mount



Universal meters is a specific group of equipment. The user can choose the input from the device's menu : 0/4-20 mA, 0-10V, 0-150 mV, Pt 100/500/1000, or the thermocouple (K, S, J, T, N, R, B, E). The user receives 2 or 4 REL or OC type and analogue outputs (unavailable in SWE-94-U) to control and indicate process statuses. This type of configuration enables using the meter in almost any kind of adjustment and control processes. Process meters with a universal input are of a particular importance for persons responsible for service and maintenance. As a result of eliminating many process meters configurations we can reduce the actual cost of its upkeeping.



| | SWE-94-U | SUR-94 | SUR-147 | SUR-457 |
|-------------------------|---|---|---------------------------------|---|
| Power supply | 110V AC ± 10%; 230V AC ± 10% or 24V DC | 19V ÷ 50V DC; 16V ÷ 35V AC or 85 ÷ 260V AC/DC | | |
| Display | LED, 4 x 20 mm, red | LED, 4 x 20 mm, red or green | LED, 4 x 38 mm, red or green | LED, 4 x 57 mm, red, green, blue or multicolor |
| Input | current: 0-20 mA / 4-20 mA; voltage: 0-5V / 1-5V / 0-10V / 2-10V; milivoltage: 0-60 mV / 0-75 mV / 0-100 mV / 0-150 mV; RTD Pt100, Pt500, Pt1000: zakres -100°C ÷ 600°C; TC: K: -200°C ÷ +1370°C; S: -50°C ÷ +1768°C; J: -210°C ÷ +1200°C; T: -200°C ÷ +400°C; N: -200°C ÷ +1300°C; R: -50°C ÷ +1768°C; B: +250°C ÷ +1820°C; E: -200°C ÷ +1000°C | | | |
| Binary output | none | 0, 2 or 4 REL / OC | | |
| Analogue output | none | active current: operating range 0/4-20 mA; passive current: isolated, operating range 4-20 mA active voltage: operating range 0/1-5V, 0/2-10V | | |
| Communication interface | RS-485 / Modbus RTU | | | |
| IP rate protection | IP 65 (front side when an optional seal is installed); IP 40 (front side) | | | IP 67 |
| Operating temperature | 0°C ÷ +50°C (standard), -20°C ÷ +50°C (option) | | | |
| Case dimensions | 96 x 48 x 72 mm | 96 x 48 x 100 mm | 144 x 72 x 100 mm | 230 x 140 x 96.5 mm |



Process meters



- 1 ÷ 8 measurement inputs: current or voltage
- 1, 2 or 4 control outputs: relay or OC
- analogue output: active or passive
- power supply output: 24V DC
- RS-485 / Modbus RTU communication
- red, green or blue ultra bright display
- standard case dimensions
- panel or wall mount



The digital process meters are equipped with one measuring input: current (0/4-20 mA) or voltage (0/1-5V, 0/2-10V, 0-60 / 0-75 / 0-100 / 0-150 mV). Easy programming and installation, small size and high 1, 2 or 4 relay outputs make it possible to control the processes of ON/OFF type and to adjust the level of the measured signal. The 24V DC output is used to power the measuring transducers.

The RS-485/Modbus RTU enables data transmission in production process monitoring systems. The user can select conversion characteristics of several kinds: linear, square, square root, user defined (max. 20 points length), and volume characteristics of a cylindrical tank positioned vertically or horizontally.



| | | SWE-73-A | SWE-73-L | SWE-N55L | SWP-99 | SRP-73 | SRP-94/ SRP-946 | SRL-49 | SRP-147 | SRP-N118/ SRP-N1186 |
|----------------------|--------------------------|--------------------------------------|------------------|------------------|--------------------------------------|---------------------------------|----------------------------------|---|------------------|-------------------------------|
| Outputs | REL | - | 1 | 1 | 2 | 1 or 2 | 2 or 4 | 2 or 4 | 2 or 4 | 2 |
| | OC | - | - | - | - | 1 or 2 | 2 or 4 | 2 or 4 | 2 or 4 | 2 |
| | 24V DC | - | - | - | • | • | • | • | • | • |
| | 0-20 mA, 4-20 mA, 0-10V | - | - | - | - | - | • | • | • | • |
| Inputs | 0-20 mA, 4-20 mA | • | • | • | 2, 4 or 8 | • | • | • | • | • |
| | 0-5V, 1-5V, 0-10V, 2-10V | • | - | - | 2, 4 or 8 | • | • | • | • | • |
| | 0-60, 75, 100, 150 mV | - | - | - | - | • | • | - | • | - |
| Supply | loop powered | - | • | • | - | - | - | - | - | - |
| | AC: 24V / 110V / 230V | - / • / • | - / - / - | - / - / - | - / - / - | - / - / - | - / - / - | - / - / - | - / - / - | - / - / - |
| | DC: 24V | • | - | - | - | - | - | - | - | - |
| | AC DC: 85÷260V / 16÷35V | - / - | - / - | - / - | • / • | • / • | • / • | • / • | • / • | • / • |
| Display | | LED 4 x 13 mm | LED 4 x 13 mm | LED 4 x 13 mm | graphic LCD, with backlighting | LED 4 x 13 mm or 4 x 9 mm | LED 4 x 20 mm or 6 x 13 mm | LED 4 x 9 mm + 20-points bargraph | LED 4 x 38 mm | LED 4 x 20 mm or 6 x 13 mm |
| Case dimensions [mm] | | DC: 72 x 36 x 77 AC: 72 x 36 x 94 | 72 x 36 x 77 | 64 x 58 x 36 | 96 x 96 x 100 | 72 x 36 x 97 | 96 x 48 x 100 | 48 x 96 x 100 | 144 x 72 x 100 | 110 x 105 x 67 |

Legend: „•“ standard, „-“ option unavailable



- 1 ÷ 8 measurement inputs: RTD or TC
- 1, 2 or 4 control outputs: relay or OC
- analogue output: active or passive
- power supply output: 24V DC
- RS-485 / Modbus RTU communication
- red, green or blue ultra bright display
- standard case dimensions
- panel or wall mount



The digital temperature meters are equipped with one measuring input: thermoresistance (Pt100/500/1000) or thermocouple (K, S, J, T, N, R, B, E). Measurement is linearised by the polynomial characteristics. The devices equipped with the thermocouple input have an additional measurement range (-10 ÷ 90 mV) mainly used to diagnose the measurement circuits. Easy programming and installation, small size and high reliability are the primary advantages of these meters. 1, 2 or 4 relay outputs make it possible to control the processes of ON/OFF type, and to adjust the level of the measured signal. The 24V DC output is used to power the measuring transducers. The RS-485/Modbus RTU enables data transmission in production process monitoring systems.



| | | SWE-73-T | SWT-99 | SRT-73 | SRT-94 | STN-94 | SRT-147 | SRT-N118 | SRT-L70 |
|----------------------|-------------------------|--------------------------------------|--------------------------------|---------------------------|---------------|---------------------------|----------------|----------------|---------------|
| Outputs | REL | - | 2 | 1 or 2 | 2 or 4 | 1 | 2 or 4 | 2 | 3 |
| | OC | - | - | 1 or 2 | 2 or 4 | - | 2 or 4 | 2 | - |
| | 24V DC | - | • | • | • | • | • | • | • |
| | 0-20 mA, 4-20 mA, 0-10V | - | - | - | • | - | • | • | - |
| Inputs | Pt100, Pt500, Pt1000 | • | 2, 4 or 8 | • | • | • | • | • | • |
| | TC, mV | - | 2, 4 or 8 | • | • | - | • | • | - |
| Supply | AC: 24V / 110V / 230V | - / • / • | - / - / - | - / - / - | - / - / - | - / - / - | - / - / - | - / - / - | - / - / - |
| | DC: 24V | • | - | - | - | - | - | - | - |
| | AC DC: 24V | - | • | • | • | • | • | • | - |
| | AC DC: 85÷260V / 19÷70V | - / - | • / - | • / - | • / - | • / - | • / - | • / - | • / • |
| Display | | LED 4 x 13 mm | graphic LCD, with backlighting | LED 4 x 13 mm or 4 x 9 mm | LED 4 x 20 mm | LED 3 x 13 mm + 3 x 13 mm | LED 4 x 38 mm | LED 4 x 20 mm | LED 4 x 13 mm |
| Case dimensions [mm] | | DC: 72 x 36 x 77 AC: 72 x 36 x 94 | 96 x 96 x 100 | 72 x 36 x 97 | 96 x 48 x 100 | 96 x 48 x 100 | 144 x 72 x 100 | 110 x 105 x 67 | 72 x 91 x 59 |

Legend: „•” standard, „-” option unavailable



Serial displays



- RS-485 serial input / Master or Slave
- display data in the binary, BCD or byte format
- power supply output: 24V DC
- red, green or blue ultra bright display
- colour and brightness adjustment of the display
- large-size models available
- programming with IR remote controller
- panel or wall mount



The serial meters are intended for displaying any numerical data and characters defined by the user and sent from a master device over the RS-485 link (Modbus RTU protocol). The user has the possibility of brightness adjustment and (in some models) colour adjustment (red, yellow, and green among others) of the display. They feature a 4-button keypad for programming basic settings. The user can change presets without opening the cover thanks to the IR receiver that has been mounted in the device. The remote controller is an equivalent to the device keypad.

The **SW-BCD-94** indicators can be used as the indicator output for PLCs to display data in the binary, BCD, or byte format, or to show typical information transmitted over the RS-485 interface.



| | SWE-73-S | SWE-94-S | SWS-73 | SWS-94 | SW-BCD-94 | SWS-N118 | SWS-638 | SWS-W606 | SWS-W510 |
|----------------------|--------------------------------------|-------------------------------|-------------------------------|---------------------------|---------------|---------------------------|------------------|----------------|-----------------|
| Inputs | 24V DC output | - | - | • | • | • | • | - | • |
| | RS-485 MASTER | • | • | - | • | • | • | • | • |
| | RS-485 SLAVE | • | • | • | • | • | • | • | • |
| | BCD parallel | - | - | - | - | - | - | - | - |
| Supply | AC: 24V / 110V / 230V | - / • / • | - / • / • | - / - / - | - / - / - | - / - / - | - / - / - | - / - / - | - / - / - |
| | DC: 24V | • | • | - | - | - | - | • | - |
| | AC DC: 24V / 85÷260V | - / - | - / - | • / • | • / • | • / • | • / • | - / - | • / • |
| LED Display | 4 x 13 mm | 4 x 20 mm | 4 x 13 mm or 4 x 9 mm | 4 x 20 mm or 6 x 13 mm | 4 x 20 mm | 4 x 20 mm or 6 x 13 mm | 6 x 38 mm | 6 x 57 mm | 5 x 100 mm |
| IP rate protection | IP 40 front IP 65 (option) | IP 40 front IP 65 (option) | IP 40 front IP 65 (option) | IP 65 front | IP 65 front | IP 67 | IP 67 | IP 40 | IP 30 |
| Case dimensions [mm] | DC: 72 x 36 x 77 AC: 72 x 36 x 94 | 96 x 48 x 72 | 72 x 36 x 97 | 96 x 48 x 100 | 96 x 48 x 100 | 110 x 105 x 67 | 230 x 140 x 96,5 | 364 x 112 x 44 | 578 x 208 x 102 |

Legend: „•” standard, „-” option unavailable



- work with load cells in weighing and force measurement systems
- calibrated using theoretical characteristic or real load
- 1 digital input
- 2 relay outputs
- active current output
- RS-485 / Modbus RTU communication
- detection of peak values



The weight meter **SWI-94** has been designed to work with load cells (strain gages) in applications not required to be approved. The device is equipped with push-buttons which enable easy setting of tare and zero, and also switching between nett and gross indications. The built-in analogue output and RS-485 interface enable controlling the device remotely by a host system, if required. 2 relay outputs enable using the SWI-94 as a controller for simple systems with a batching function. The device's software enables using two calibration methods: data sheet calibration, or dead weight calibration. All critical states of the device are signalled by proper error messages.

Force measurement
in materials testing



Multi-Zone Web Tension
Measurement and Control



Batching Processes
Reactors and Process Vessels



Single- or Multi-Vessel
Process Weighing



Accessories

SP-4 or SP-6 load cell junction box

The junction box enables a quick and easy connection from 2 up to 6 load cells in multisensor systems, such as tank scales. The large enclosure of the junction box lets you put the excess cable of the load cells into the box (the cable's length shortening is not recommended).

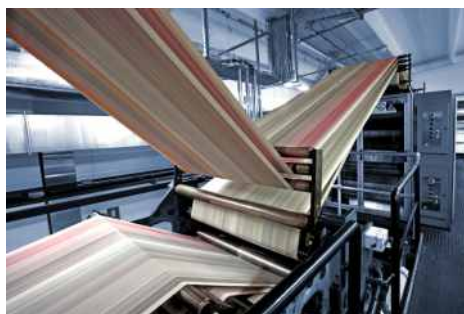




Electronic counters



- counting, programmable and reset inputs
- 1, 2 or 4 control outputs: relay or OC
- power supply output: 24V DC
- RS-485 / Modbus RTU communication
- digital debouncing filter
- red, green or blue ultra bright display
- panel or wall mount



The counters are equipped with 1 or 2 independent counting inputs that can operate in various configurations (pulse or quadrature). An additional programmable input can change the basic function of counting inputs (addition or subtraction of pulses from inputs, change in the direction of counting), or hold counting without clearing. The counters feature: an independent reset input, programmable multiplier, divider, offset and 1, 2 or 4 relay (or OC) outputs with a programmable threshold, which can be used to control external equipment. The built-in RS-485 communication interface enables controlling all settings by a master device, as well as using the unit in advanced network systems.



| | | SLE-42 | SLE-73 | SLN-44 | SLN-94 | SLIK-73 | SLIK-94 | SLK-94T / SLB-94 | SLIK-N118 | SLIK-638 |
|----------------------|-----------------------|----------------|--------------|-------------------------------|------------------------|--------------|---------------|------------------|----------------|------------------|
| Outputs | REL | - | - | 1 or 2 | 2 | 1 | 2 or 4 | 4 | 2 | 2 or 4 |
| | OC | - | - | 1 or 2 | 2 | 1 | 2 or 4 | 4 | 2 | 2 or 4 |
| | 24V DC | - | • | - | • | • | • | • | • | • |
| | 12V DC | - | - | • | - | - | - | - | - | - |
| Inputs | counting | 1 | 1 | 1 | 1 | 2 | 2 | 1 | 2 | 2 |
| | counter reset | 1 | 1 | 1 | 1 | 1 | 1 | 2 / 3 | 1 | 1 |
| | programmable | - | 1 | - | 1 | 1 | 1 | 2 / - | 1 | 1 |
| Supply | lithium battery 3,6V | • | - | - | - | - | - | - | - | - |
| | AC: 24V / 110V / 230V | - / - / - | - / - / - | - / - / - | - / - / - | - / - / - | - / - / - | - / - / - | - / - / - | - / - / - |
| | AC: 100÷240V | - | - | • | - | - | - | - | - | - |
| | DC: 24V | - | - | • | - | - | - | - | - | - |
| | AC DC: 24V / 85÷260V | - / - | • / • | - / - | • / • | • / • | • / • | • / • | • / • | • / • |
| Display | | LCD 7 x 8 mm | LED 6 x 9 mm | LCD 6 x 10 mm | LED, double, 3 x 13 mm | LED 6 x 9 mm | LED 6 x 13 mm | LED 6 x 13 mm | LED 6 x 13 mm | LED 6 x 38 mm |
| Case dimensions [mm] | | 48 x 24 x 42,4 | 72 x 36 x 97 | DC: 48x48x64 AC: 48x48x100 | 96 x 48 x 100 | 72 x 36 x 97 | 96 x 48 x 100 | 96 x 48 x 100 | 110 x 105 x 67 | 230 x 140 x 96,5 |

Legend: „•” standard, „-” option unavailable

Flow meters

- 1 input: pulse or current 4-20 mA
- 1, 2 or 4 control outputs: relay or OC
- power supply output: 24V DC
- RS-485 / Modbus RTU communication
- panel or wall mount
- pulse or current
- batching and counting of doses
- red, green or blue ultra bright display
- display: flow rate and the total flow
- various volume units



The flow counters have been designed to work in tandem with the pulse flow meters with coefficients ranging from 0.01 to 9999.99 pulses per unit, equipped with an electronic or reed contact output. The flow counter enables measuring the actual flow rate value, and calculating the total flow of fluids, gases, or bulk materials. A wide range of a total flow counter (up to 16 significant digits) enables the flow volume control for a long time. The built-in batcher function enables applying it in a wide range of industry branches (food production, pharmacy, paint and varnish). The devices can be equipped with 1, 2 or 4 relay (or OC type) outputs, which can be driven due to the flow rate, total flow, or batcher counter value.



| | SPI-73 | SPI-94 | SPI-N118 | SPI-638 | SPP-94 | SPP-N118 | SPP-638 |
|----------------------|---|---------------|----------------|------------------|---------------|----------------|------------------|
| Outputs | REL | 1 | 2 or 4 | 2 | 2 or 4 | 2 | 2 or 4 |
| | OC | 1 | 2 or 4 | 2 | 2 or 4 | 2 | 2 or 4 |
| | 24V DC | • | • | • | • | • | • |
| | 0-20 mA, 4-20 mA, 0-10V | - | • | • | • | • | • |
| Inputs | 0-20 mA, 4-20 mA | - | - | - | • | • | • |
| | pulse | • | • | • | - | - | - |
| | counter reset | • | • | • | + | + | + |
| | counting blockade | - | • | • | + | + | + |
| | programmable | - | - | - | • | • | • |
| Power supply | 19V ÷ 50V DC; 16V ÷ 35V AC or 85 ÷ 260V AC/DC | | | | | | |
| Display | LED 6 x 9 mm | LED 6 x 13 mm | LED 6 x 13 mm | LED 6 x 38 mm | LED 6 x 13 mm | LED 6 x 13 mm | LED 6 x 38 mm |
| Case dimensions [mm] | 72 x 36 x 97 | 96 x 48 x 100 | 110 x 105 x 67 | 230 x 140 x 96,5 | 96 x 48 x 100 | 110 x 105 x 67 | 230 x 140 x 96,5 |

Legend: „•“ standard, „-“ option unavailable, „+“ possibility function of programmable input

Ratemeters / Tachometers



- pulse rate / period meter
- rotational / linear speed control
- revolution / movement period control
- 1, 2 or 4 control outputs: relay or OC
- power supply output: 24V DC
- RS-485 / Modbus RTU communication
- red, green or blue ultra bright display
- panel or wall mount



The ratemeters have been designed to control the rotational / linear speed, indicate the pulse rate / period, and display the revolution / movement period. Available parameters, such as a divider and multiplier, enable flexible scaling of measure and transforming it into the linear speed. On top of that, they enable operating in the frequency and period meter mode, which makes it possible to show, e.g. material linear speed, baking time, drying time, revolution period. The ratemeters have been equipped with 1, 2 or 4 relay (or OC) outputs, which are programmable depending on the instantaneous rotational speed / period of time, and can be equipped with a passive / active current output or a voltage output. The main feature of the devices is their high precision of measurement (0.02%) in a full temperature range.



| | | STI-73 | STI-94 | STI-N118 | STI-638 |
|----------------------|-------------------------|---|---------------|----------------|------------------|
| Outputs | REL | 1 | 2 or 4 | 2 | 2 or 4 |
| | OC | 1 | 2 or 4 | 2 | 2 or 4 |
| | 24V DC | • | • | • | • |
| | 0-20 mA, 4-20 mA, 0-10V | - | • | • | • |
| Inputs | pulse | • | • | • | • |
| | counter reset | • | • | • | • |
| | counting blockade | - | • | • | • |
| Measurement range | | 0 ÷ 999999 + decimal point | | | |
| Power supply | | 19V ÷ 50V DC; 16V ÷ 35V AC or 85 ÷ 260V AC/DC | | | |
| Display | | LED 6 x 9 mm | LED 6 x 13 mm | LED 6 x 13 mm | LED 6 x 38 mm |
| Case dimensions [mm] | | 72 x 36 x 97 | 96 x 48 x 100 | 110 x 105 x 67 | 230 x 140 x 96,5 |

Legend: „•“ standard, „-“ option unavailable



- manual or remote reset
- large-size models available
- RS-485 / Modbus RTU communication
- brightness adjustment of the display
- panel or wall mount



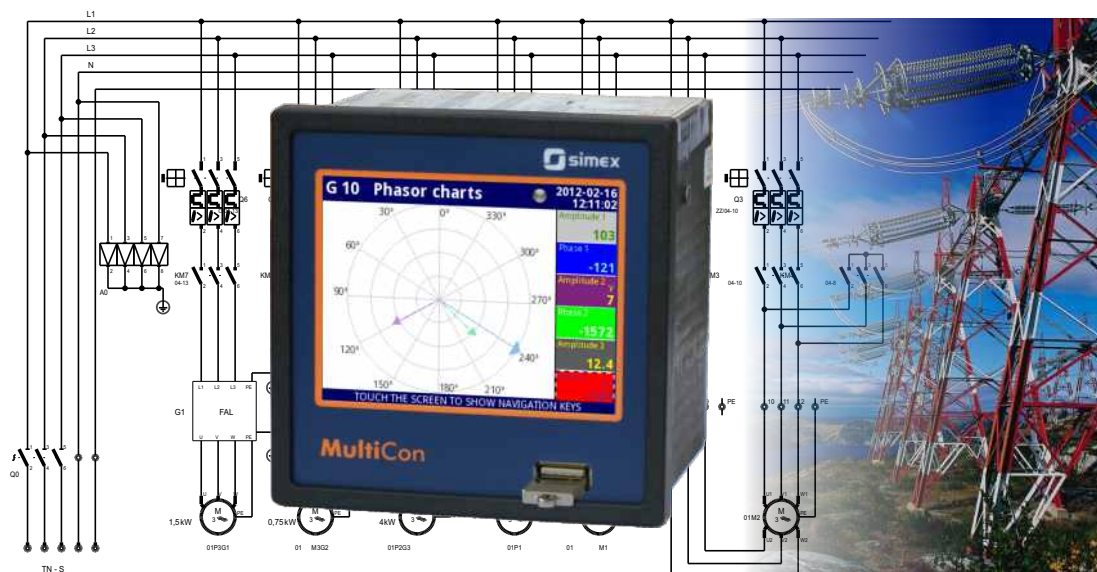
The timers are intended to measure the precise time, e.g. in production cycles, to check the operation time of machinery, equipment and production lines, and also to determine the time between repairs, guarantee time, wear degree, etc.

Signals from push-buttons or contactors of control devices are connected to the terminals located at the back of the counter. A properly programmed counter enables measuring the time period between the „START“ and „STOP“ signals. Another configuration enables measuring the activity time of the „START“ signal. In addition, the measure can be started, stopped and cleared by means of the local keyboard (at the front of the device), or via the RS-485 interface. Apart from the basic function of time counting, what is also available is the totalizer. The built-in relay outputs enable using this counter to control time-depending processes.



| | SLC-30 | SLC-46 | SLC-47 | STH-42 | SLC-94 | SLC-457 | SWZ-W610 |
|----------------------|--|--------------|---------------------------------|--|---|---|---|
| Power supply | AC: 24, 48, 60, 110, 120, 220, 230, 240, 400V DC: 6-12, 12-36, 36-80, 110, 220V | | | replaceable lithium battery 3,6V 1/2AA | 16V ÷ 35V AC 19V ÷ 50V DC 85 ÷ 260V AC/DC | 16V ÷ 35V AC 19V ÷ 50V DC 85 ÷ 260V AC/DC | 16V ÷ 35V AC 19V ÷ 50V DC 85 ÷ 260V AC/DC |
| Input | - | | | pulse: Dry Contact/ OC/Voltage | pulse: START, STOP, RESET | pulse: START, RESET | digital temperature or temp. & humidity sensor |
| REL / OC output | - | | | - | 2 x REL / OC | - | - |
| Power supply output | - | | | - | 24V DC/100 mA | 24V DC/100 mA | 24V DC/100 mA, 5V DC/50 mA |
| Display | 7 x 4 mm (AC: 5 + 2, DC: 6 + 1) | | | LCD 7 x 8 mm | LED 6 x 13 mm | LED 4 x 57 mm | LED 4 x 100 mm + 2 x 57 mm |
| Case dimensions [mm] | 36 x 24 x 51 | 48 x 48 x 38 | Ø 58 / 56 mm or Ø 80 / 61 mm | 48 x 24 x 42,4 | 96 x 48 x 100 | 230 x 140 x 115 | 578 x 208 x 102 |

Energy Monitoring and Control



Power energy measurement is a key issue for the automation processes. For some of them, it is extremely important to estimate the consumption of electricity. With counters and grid analysers available in our offer, and through using a series of mathematical functions implemented, the MultiCon is a perfect diagnostic tool. It calculates the balance and current energy consumption easily, as well as provides information regarding common parameters, starting from voltage, intensity, the sum of intensities of three phases, energy, and finishing with the phase and individual harmonic shifts.

According to the application type and requirements, you can choose between two devices, both equipped with the RS-485 module for easy communication with the MultiCon, energy counter, or network analyser.

NEW

SNA-L70 : Multifunction three-phase meter

- 4 DIN modules compact version
- fully bi-directional four quadrants measurements for all energies and powers
- main electrical parameters measured and displayed for a cost-effective consumption analysis
- version for 1 or 5A CT, for direct connection up to 6A or 80A or for Rogowski coils
- 3 current measurement scales for Rogowski model
- possible connection by PT
- MODBUS RTU/ASCII communication by RS-485 port



SEC-L70 : three phase energy counter with built-in communication

- version for 1 or 5A CT, for direct connection up to 6A or 80A
- fully bi-directional four quadrants measurements for all energies and powers
- for 3 / 4 wire networks with balanced or unbalanced load
- class B according to EN 50470-3
- S0 output for energy pulse emission
- RS-485 Modbus RTU/ASCII communication



Energy Monitoring and Control

SNA-L70

SNA-L70 is an innovative instrument for measuring the electrical parameters. It is particularly suitable for the consumption analysis and control, with an excellent quality/price ratio.

For the version with Rogowski coils (RGW model), connections are very quick and easy, very useful for retrofitting applications on existing switchboards, or for the energy audit.

SNA-L70 is an ideal instrument to establish the measurement points on the plant.

The instrument can communicate through the RS-485 serial port by the MODBUS RTU/ASCII protocol.



SEC-L70



4 DIN modules energy counter SEC-L70 for the energy measurement in industrial and civilian applications, with the RS-485 Modbus RTU/ASCII built-in communication. Besides the energy, the counter can measure the main electrical parameters and makes them available on the built-in COM port. The LCD display shows the energies and the instantaneous powers. The COM port enables managing the connected meter by a remote station. Data gets transmitted to the RS-485 line.

The counter SEC-L70 has been built in accordance with the EN 50470-1 standard. The accuracy of the active energy fulfils class B requirements in accordance with the EN 50470-3. The accuracy of the reactive energy is compliant with the IEC/EN 62053-23 class 2.

Wide backlighted LCD display with clear graphic symbols comprehensible at a glance. Metrological LED in the front panel and sealable terminal covers. The analysis of the MTBF values, the accurate selection of components and the reduction of the internal working temperatures together with strict production and control standards guarantee a product of an excellent quality and a long-lasting reliability.

| | Energy counters SEC-L70-111 model 6A SEC-L70-211 model 80A | Network analyzers SNA-L70-111 model 6A SNA-L70-211 model 80A SNA-L70-511 model RGW |
|--------------------|---|---|
| Display | backlighted LCD | backlighted LCD |
| Input | voltage range: 3 x 230/400 V ... 3 x 240/415 V current: - 1/5A CT model: 6A - 80A model: 80A tariff input: active optoisolated, 80 ... 276 V AC/DC | voltage range: - self-powered model: 3x180/310 ... 3x285/495 VAC - auxiliary power supply (AUX) model: 3x10/17 ... 3x285/495 VAC current: - 1/5A CT model: 6A - 80A model: 80A - RGW model: 3 selectable scales, 500/4000/20000A (Rogowski coils) digital: active optoisolated, voltage range for DMD synchronisation: 80 ... 276 VAC |
| Output | passive optoisolated, maximum values: 27 VDC - 27 mA, pulse length: 50 ±2ms | digital: passive optoisolated; self-powered model: 250 VAC/DC - 100 mA; auxiliary power supply (AUX) model: 27 VDC - 27 mA |
| Accuracy | active energy: class B according to EN 50470-3 reactive energy: class 2 according to IEC/EN 62053-23 | voltage: ±0,2% reading in 10% FS...FS range; current: ±0,4% reading in 5% FS...FS range; power: ±0,5% reading ±0,1% FS (PF=1); frequency: ±0,1% reading ±1 digit in 45...65 Hz range; active energy: Class 1 according to IEC/EN 62053-21; reactive energy: Class 2 according to IEC/EN 62053-23 |
| Communication port | RS-485, Modbus RTU/ASCII | RS-485 optoisolated, Modbus RTU/ASCII |
| Protection degree | IP 51 (frontal part), IP 20 (terminals) | IP 51 (frontal part), IP 20 (terminals) |
| Operating temp. | -25°C ÷ +55°C | -25°C ÷ +55°C |
| Size & weight | 72 x 90 x 64 mm, DIN TS-35 mounting | 72 x 90 x 65 mm, DIN TS-35 mounting, max 436 g |



Level switches

- push-pull output
- small dimensions
- additional reference electrode
- 3 m wire length



The liquid sensor type DRS-303 has been designed for the conducted liquid presence detection. The parameters of the detector have been fixed to enable detection of actual presence of liquid on its electrodes and to be resistant to low impedance conducted surfaces (e.g. wet fingers). The additional reference electrode prevents the detector from false signalling when the liquid covers its surface only. The PUSH-PULL output offers an opportunity to get connected to the devices equipped with either direct or inverse logic inputs. The wide range of supply voltage ($12 \div 30V$ DC) and operation temperatures ($-40^{\circ}C \div +85^{\circ}C$) enable using the sensor in most systems (e.g. pump dry run detection, full tank detection etc.).

Angle sensors

- inclinometer with two orthogonal axes
- high accuracy, temperature compensated
- high resistance to vibrations
- precision internal accelerometer
- IP protection rate IP67



The SCK-11 dual axis inclinometer module has been designed for stationary measurements of inclinations of two orthogonal axes in relation to the earth. The unit is equipped with software offset registers, which enable setting the relative zero position. In addition to two registers containing information on the SCK-11 installation plane angle relative to the earth, there are two additional records available, containing information on the accelerations in the same axes, which makes the measurement of the transducer movement more precise. This feature eliminates assembly errors, and makes it possible for the user to measure the difference between independent positions. The embedded temperature sensor measures the ambient temperature of accelerometer, which enables compensating its flow to the angle measurement accuracy. Additionally, temperature can be read as the third measurement channel. Due to its tight aluminium housing, the unit offers high resistance to environmental conditions and mechanical damage.

Temperature transmitters



- fully programmable temperature transmitters
- universal measuring input
- DIN rail or in-head mount
- in-built, programmable digital filter
- any temperature range within limits
- output linear with temperature



NEW

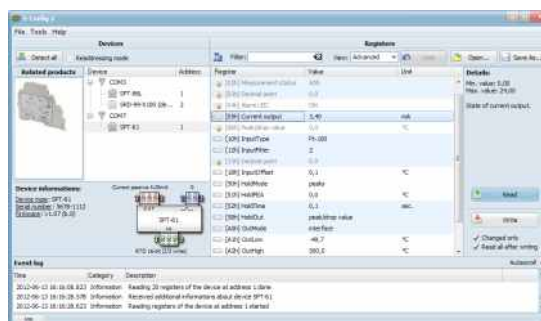


The smart temperature transmitters can be very useful in different industrial applications requiring temperature conversion before performing measurement and control. They are produced for in-head or DIN-rail mounting. These transmitters make it possible for the user:

- to select the sensor and input signal type,
- to select and adjust the input range,
- to perform the offset correction and device calibration,
- to specify the input ranges and output type,
- to select the output reaction on sensor break,
- to adjust the digital filter.

S-Config 2

Software and drivers for the temperature converter modules SPT-61 and SPT-86L.



NEW



NEW

| | SPT-61 | SPT-86L | SPT-87E | SPT-87U |
|--------------------|---------------------------|---|--------------------|--|
| Power supply | 24V DC (9,5 ÷ 36V DC) | 24V DC (16 ÷ 30V DC) | 8 ÷ 30V DC | 10 ÷ 30V DC |
| Input signal | Pt100, Pt500, Pt1000 | Pt100, Pt500, Pt1000; TC: K, S, J, T, N, R, B, E 0 ÷ 60/75/100/150 mV | Pt100, 2-/3-wires | Pt100, Pt1000, Ni100, Ni1000; TC: K, J, N, W5, B, R, S, T, E; -10 ÷ 62 mV DC; 0 ÷ +360 Ohm, 0 ÷ +4000 Ohm |
| Output signal | passive, max. 3,4 ÷ 24 mA | passive, max. 3,4 ÷ 24 mA; RS-485 | 4 ÷ 20 mA, 2-wires | 4 ÷ 20 mA, 2-wires |
| Galvanic isolation | - | 3000 V AC | 1500 V AC | 1500 V AC |
| Mounting | DIN rail (35 mm) | DIN rail (35 mm) | in-head | in-head |



Galvanic isolators

TRG
line

- galvanic isolation between input/output/supply circuits
- 1 or multi-tracks versions
- self-powered or external power supply
- DIN rail mount (TS-35 or TS-32)
- calibrating potentiometers and LED indicators in the front panel
- versions with additional 24V DC supply to power two-wire transmitters



The isolators have been designed for the galvanic separation of the input and output measuring circuits. They convert the standard input signal into the standard output signal. Applying the isolator reduces the influence of object-originated interferences, protects against overvoltage and short-circuits in field circuits, and enables matching various signal standards. A significant advantage of the isolators over the barriers is that they do not need to be earthed, and they are fully immune to interference. Apart from standard versions, our offer also includes the Ex versions designed for use in the zones under explosion hazard. Moreover, thanks to applying the Zener diodes, resistors and fuses, our isolators effectively reduce the energy level of signals transmitted into a dangerous zone.



| | SGS-61 | SGS-12 | SGS-22 | SGT-12 | SGT-22 | SGZ-12 | SGZ-22 |
|-----------------------------|-------------------------------|-------------------------------|-------------------------------|---|-----------------------------------|---|---|
| Output signal | 4 ÷ 20 mA | 0 ÷ 20 mA, 4 ÷ 20 mA | 0 ÷ 20 mA, 4 ÷ 20 mA | 4 ÷ 20 mA current loop supplied from external power | 0/4 ÷ 20 mA 0 ÷ 10V | 0/4 ÷ 20 mA, 0 ÷ 5 mA 0/1 ÷ 5V, 0 ÷ 10V | 0/4 ÷ 20 mA, 0 ÷ 5 mA 0/1 ÷ 5V, 0 ÷ 10V |
| Input signal | 4 ÷ 20 mA | direct current 0 ÷ 30 mA | direct current 0 ÷ 30 mA | 0/4 ÷ 20 mA, 0 ÷ 5 mA 0/1 ÷ 5V, 0 ÷ 10V | 0 ÷ 5A, 0 ÷ 750V | 0/4 ÷ 20 mA, 0 ÷ 5 mA 0/1 ÷ 5V, 0 ÷ 10V | 0/4 ÷ 20 mA, 0/1 ÷ 5 mA 0/1 ÷ 5V, 0 ÷ 10V |
| Power supply | directly from current loop | directly from current loop | directly from current loop | 7 ÷ 36V DC | 18V ÷ 350V DC or 18V ÷ 230V AC | 21 ÷ 28 V DC | 21 ÷ 28 V DC |
| Number of tracks | 1 | 1 / 2 | 3 / 4 | 1 / 2 | 1 | 1 | 1 / 2 |
| Case dimensions [mm] | 6.1 x 80 x 93.8 | 12.5 x 99 x 114.5 | 22.5 x 99 x 114.5 | 12.5 x 99 x 114.5 | 22.5 x 99 x 114.5 | 12.5 x 99 x 114.5 | 22.5 x 99 x 114.5 |

Converters



- galvanic isolation between RS-485 / USB interfaces
- transmission rate control using RTS signal
- programming mode signalling
- operation set-up signalling
- transmit and receive signalling

The converter modules are used to connect devices with a built-in USB or RS-232 port to the RS-485 bus. The modules support any SIMEX devices equipped with the RS-485 standard port. The converter modules are intended to connect a PC computer with the devices equipped with the RS-485 interface in order to set up, test and service the devices.



Power supplies

- universal AC input / full range
- protections: short circuit / overload / overvoltage / over-temperature
- DIN rail mount (TS-35/7.5 or 15)
- cooling by free air convection
- 100% full load burn-in test
- LED indicator for power on



The narrow-type power supplies of the **SPX** family are used whenever it is required to minimise the amount of space occupied by a power supply on the DIN bus, e.g. in interphone systems or industrial electronics. They provide a long-term and stable operation at 5-48V (depending on the type), and are equipped with signalling equipment to indicate correct operation.

Class II type DIN power supplies of the **SPS** family are intended for industrial automation, power engineering, industrial protection and security systems. They are characterised by featuring a mounting for a 35 mm - wide DIN bus. Virtually all output configurations are available (voltage, current).

The power supplies of the **SPS** family in a metal case are equipped with the 3-phase 4-conductor power supplies and feature a constant frequency of impulse operation at 100 kHz. The two-phase operation is also possible. Cooling is carried out by means of the open circuit (without forced air circulation).



| | SPX | class II SPS | SPS in metal case |
|----------------------|--------|----------------|-------------------|
| Output voltage | 24V DC | 24V DC | 24V DC |
| Output rated current | 1 A | 1.5 A or 2.5 A | 3.2 A ÷ 20 A |
| Output rated power | 24 W | 36 or 60 W | 76.8 ÷ 480 W |
| Efficiency | 84% | 83% ÷ 86% | 80% ÷ 89% |



Accessories for meters, counters and recorders

Mounting adaptors



SMP-99/94: to mount 96 x 48 mm size unit in a place of 96 x 96 mm cut-out

SMP-147/94: to mount 96 x 48 mm size unit in a place of 144 x 72 mm cut-out

SMP-147/73: to mount 72 x 36 mm size unit in a place of 144 x 72 mm cut-out

SMP-1414/99: to mount 96 x 96 mm size unit in a place of 144 x 144 mm cut-out

DIN Rail brackets



SRH-94: TS-35 DIN rail brackets for 96 x 48 mm case

SRH-99: TS-35 DIN rail brackets for 96 x 96 mm case

SRH-141: TS-35 DIN rail brackets for 144 x 144 mm case

Security door with lock



A transparent door with a moulded frame in accordance with the DIN 43700, lockable with a security key. The door and frame are made in the process of injection moulding, thus assuring a perfect fit, an optimal choice of the material which is very strong and with no risk of corrosion; the perfect seal-protective system IP 54 provided by all-round soft rubber sealing the moulding; the door does not swing in or out sideways on opening.

STD-77: transparent IP 54 door with lock for 72 x 72 mm case

STD-99: transparent IP 54 door with lock for 96 x 96 mm case

STD-141: transparent IP 54 door with lock for 144 x 144 mm case

Remote controller SIR-15



The InfraRed remote controllers can be used as an external programming keyboard for all the SIMEX devices equipped with the IR receivers and remote programming functions. Pressing any local IR controller key triggers transmitting its code to the device. Functions of particular keys depend on the devices' features.

Power supply voltage: 6V DC - 4 alkaline batteries type LR44

Operation range: from 0.5 to 5 m (depending on the programmed device features)

Mounting brackets



SPH-07: 1 ÷ 7 mm board thickness brackets (2 pcs) **standard included with device**

SPH-05: 1 ÷ 5 mm board thickness brackets (2 pcs)

SPH-45: 1 ÷ 45 mm board thickness brackets (2 pcs)

USB memory



MF-8: the mini USB memory stick is an incredibly small and stylish flash drive offering 8GB data storage, ideal for transporting data, and fits inside the optional lockable door STD-99/141.

UF-8: MultiCon shape 8GB USB flash drive / give away USB memory.

Licence keys for MultiCon line (also 30 days trial versions)

Licence Key
to activate recording functions
on the Data Logger



- In order to start using data logging functions, you need to enter the above software licence key.
- Each licence key is individual and refers to device serial number.
- Just use "Enter licence key" option in your data logger "Device Information" menu.
- Enjoy this powerful data recording functionality!

LKS-99/141: Data logging licence key for MultiCon line

MLS-99/141: MultiLevel Access licence key for MultiCon line (USB dongle option only)

ENS-99/141: E-mail notifications licence key for MultiCon line

SLS-99/141: SCADALite licence key for MultiCon line



SIMEX Ltd.
Wielopole 11
80-556 Gdańsk
Poland
tel. (+48) 58 762-07-77
fax (+48) 58 762-07-70
e-mail: info@simex.pl
www.simex.pl



www.simex.pl