PRODUCT OVERVIEW

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

Measure,
Control and Log Data

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

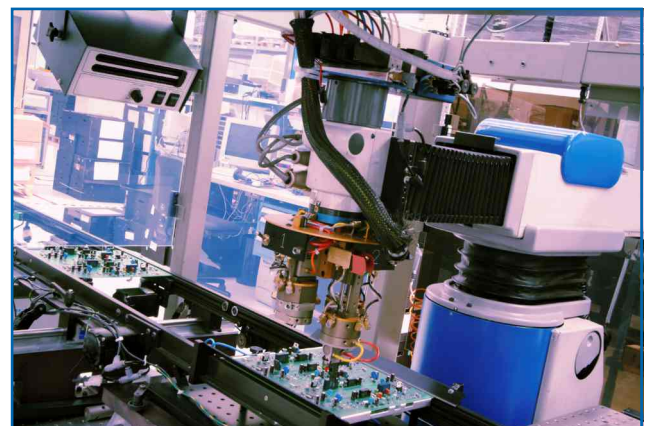Warranty and after warranty maintenance (teleservice)

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 suppling 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.

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

www.prosens24.eu

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.
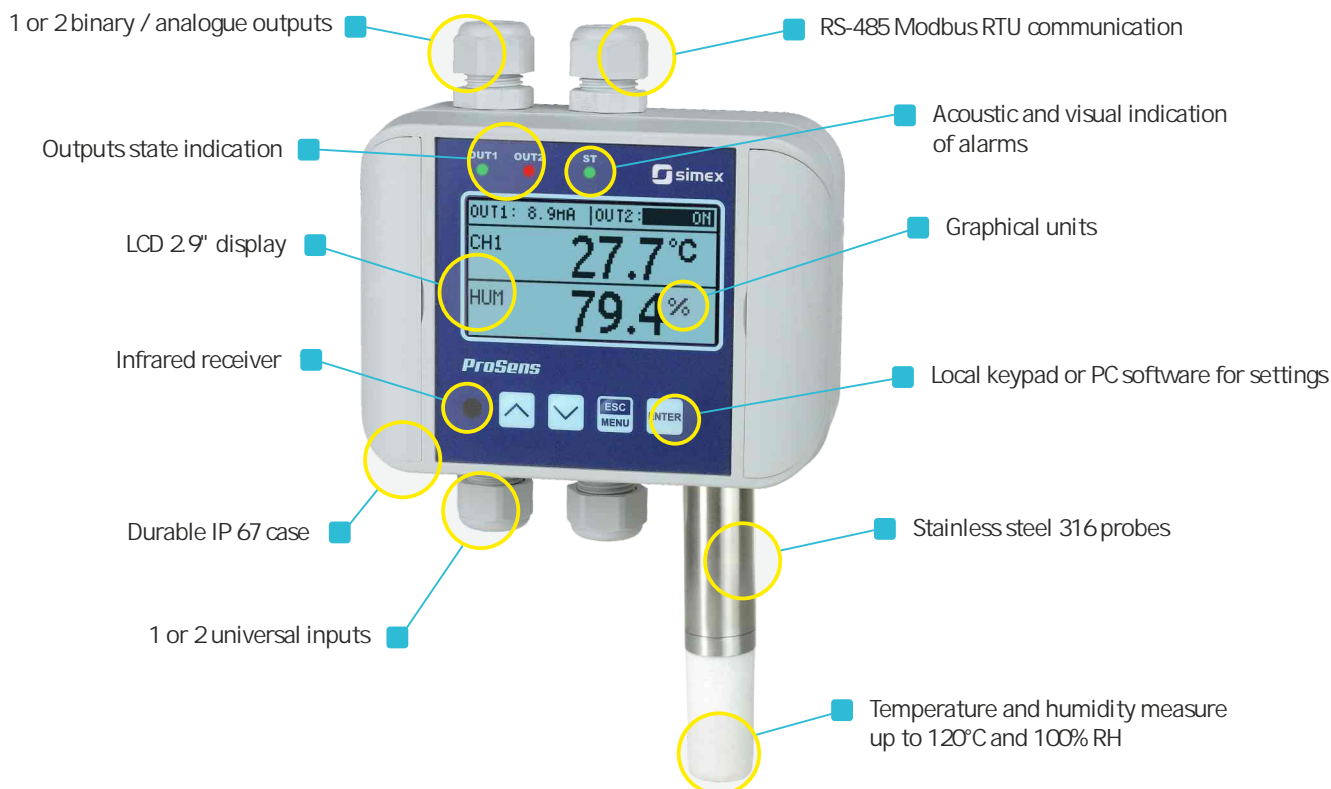
Series	ProSens 100	ProSens 200		
Model	QM-100	QM-211	QM-212	QM-213
Power supply	24V DC (11 ÷ 36V DC), power consumption: 2.5 W max.			
Display	none or graphic LCD, 128 x 64 points, with backlight			
Measuring probe	none	radial, length 40 mm, Ø 18 mm, stainless steel 316L, PTFE filter cap	radial, length 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

1 or 2 binary / analogue outputs

RS-485 Modbus RTU communication

Outputs state indication

Acoustic and visual indication of alarms

Graphical units

LCD 2.9" display

Infrared receiver

Local keypad or PC software for settings

Durable IP 67 case

Stainless steel 316 probes

1 or 2 universal inputs

Temperature and humidity measure up to 120°C and 100% RH

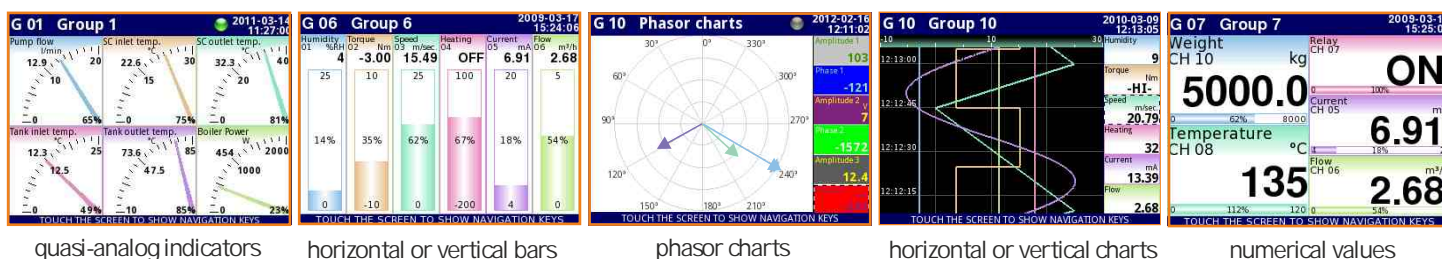| Model	QM-421 / 422	QM-612	QM-621 / 622
Power supply	24V DC (11 ÷ 36V DC), power consumption: 2.5 W max.		
Display	none or graphic LCD, 128 x 64 points, with backlight		
Measuring probe	axial, L=200 or 300 mm, Ø 12 mm, stainless steel 316L probe and filter cap	the external probe L=90 mm on the cable, 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**

- 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 300 000 000 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 MutiCon 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.

www.multicon24.eu

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:

| quasi-analog indicators | horizontal or vertical bars | phasor charts | horizontal or vertical charts | numerical values |

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.

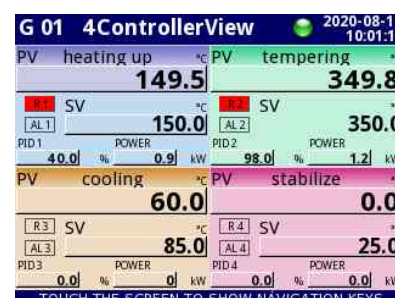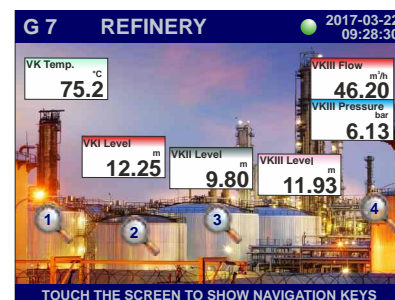**PID** **AUTO TUNING** **FUZZY LOGIC**
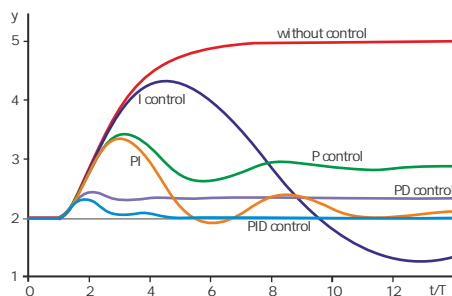
The advanced PID controllers provide a wide range of control methods. Multicon gives a user up to 8 independent controller settings and all of them can be run simultaneously. Each of them is equipped with the most innovative AutoTuning function, as well as additional Fuzzy Logic algorithms. The controllers 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.

4ControllerView

NEW

4ControllerView functionality is a new mode of presenting the state of logic channels for a given measurement group, designed especially for the use of MultiCon as a regulator.
Each MultiCon line device has eight independent PID control loops. The 4ControllerView function displays four channels in the numerical value mode (including: two "major" and two "auxiliary" ones), and two in the binary mode. The first two lines are the typical PID control values which are PV and SV, each with its own percentage indication, description, and process unit. The SV value as a variable parameter can be set directly from the screen in the dynamic configuration mode.

Paperless data recorders - MultiCon

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

300 000 000 records

free DAQ Manager software

CMC-99 examplary configuration

RS-485

power supply

USB Device (service)

USB Host

sensor supply 24V DC / 200 mA

digital input 24V DC

Ethernet

RS-232

TC cold junction compensation

replaceable input / output cards

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

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
Input cards	
UN3	3 x universal inputs U/I/RTD/TC/mV, isolated
UN5	5 x universal inputs U/I/RTD/TC/mV, isolated
EFUN4	4 x universal inputs U/I/RTD/TC/mV, non-isolated
EFUN6	6 x universal inputs U/I/RTD/TC/mV, non-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
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

Paperless data recorders - **MultiCon**

HTML5 & Sidgets

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 (sidgets) 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.
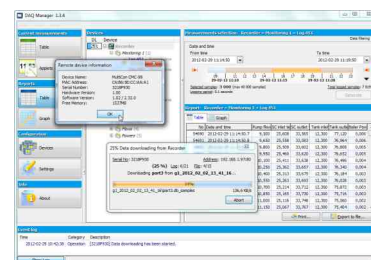
Simex Sidgets
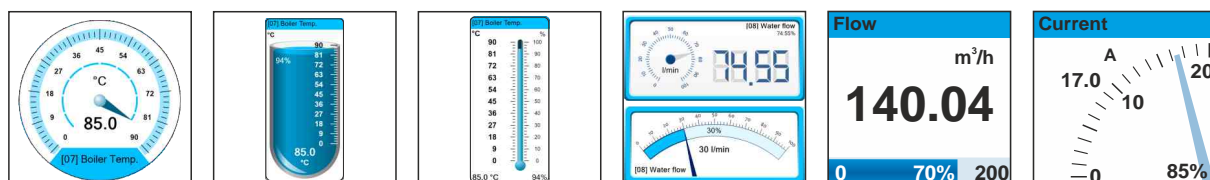
Data recording

Data recording makes a kind of a value added to the tremendous possibilities shown above. MultiCon can record any 60 measurement channels at a speed of 10 samples per second. It has 2 or 4 GB built-in flash memory, enabling for data logging up to 300 000 000 records. The function of data logging has been also optimized for the use of hardware resources of this device - the channels for data logging are grouped (1-6 channels) and in each group a speed of data logging can be freely set. Additionally, there is a unique option of alternative (higher or lower) speed data logging, which is set off only under user-specified conditions. This solution allows you to precisely trace the object parameters in critical situations. The data recording functionality requires the license key (LKS).

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 12 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 18 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

www.simex.pl

Paperless data recorders - **MultiLog**

- 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
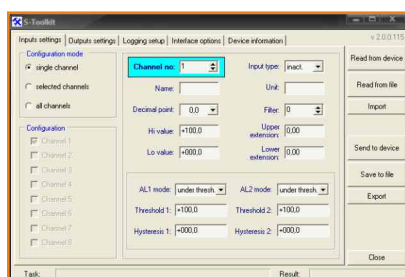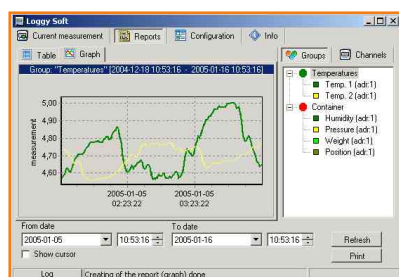- panel or wall mount IP 65 case

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. Signalising 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 (cosø=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), optional integrated 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.

SERVER

CLIENT

TCP/IP

MODBUS RTU MASTER

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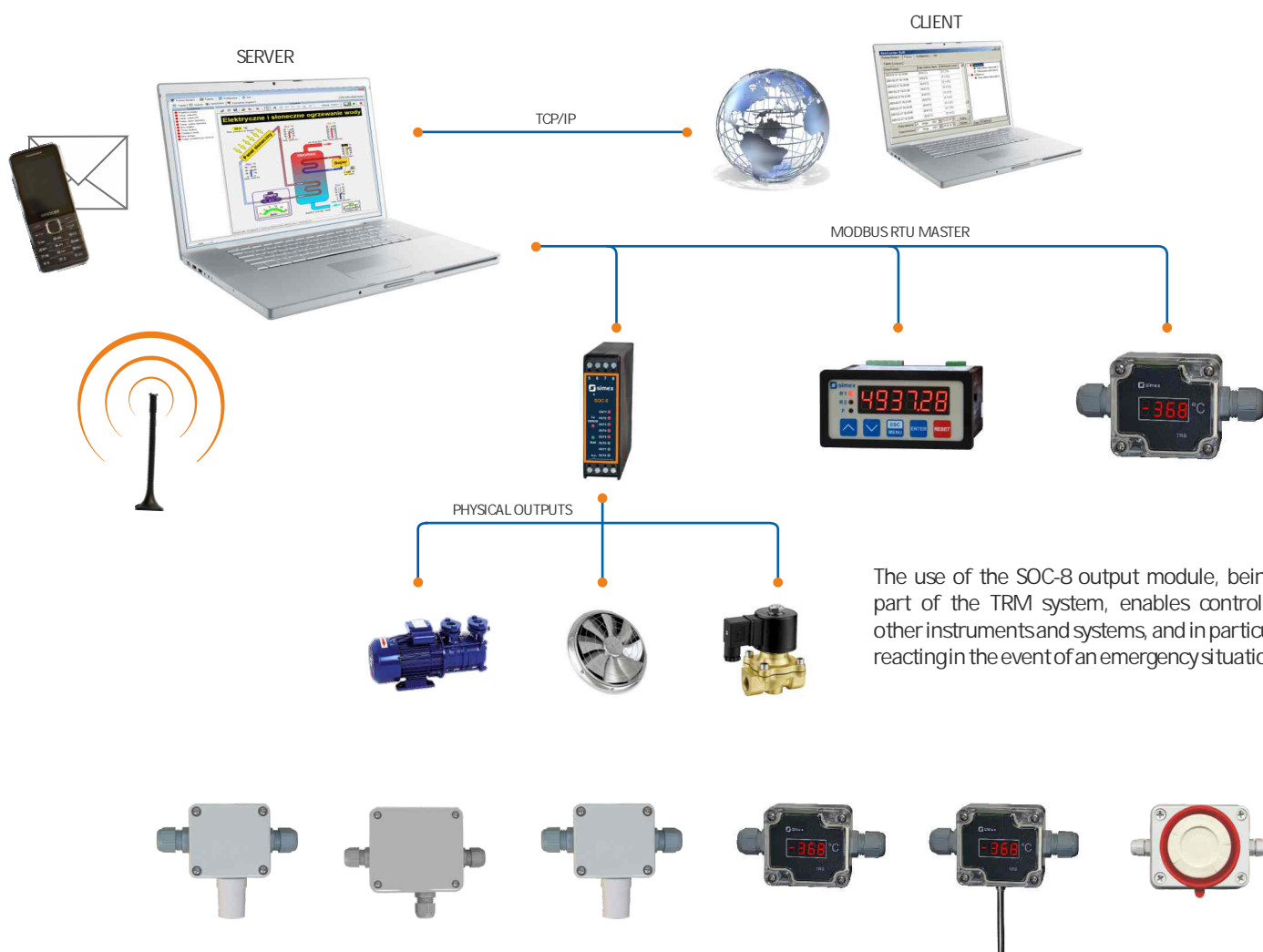
The use of the SOC-8 output module, being a part of the TRM system, enables controlling other instruments and systems, and in particular reacting in the event of an emergency situation.

	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

www.simex.pl

DAQ systems - SimCorder Soft

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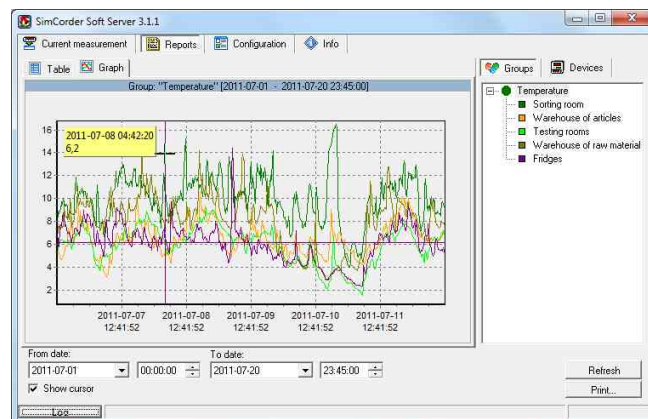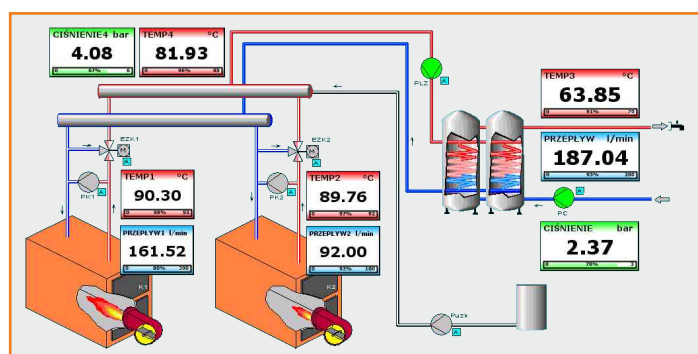
The network module provides a preview of measurement data, alarm status, and device configuration via the Ethernet/Internet. Up to 10 various computers (terminals) can be connected to the Server of data via TCP/IP, depending on the license selected.

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.

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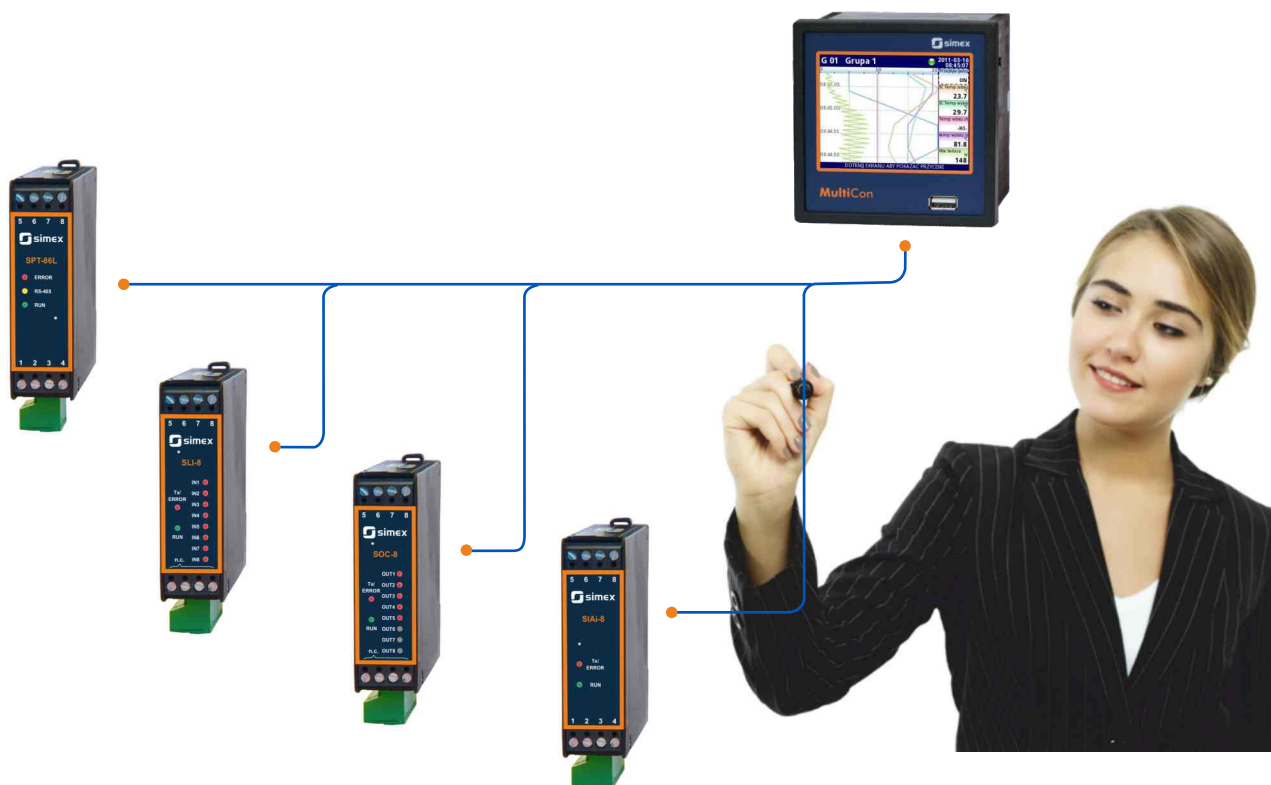
	SIN-8	SOC-8	SLI-8	SIAi-8P	SIAi-8N	SPT-86L
Power supply	24V DC (16 ÷ 30V DC)					
Inputs	8 x binary voltage: low: 0V (0 ÷ 3V) high: 24V (15 ÷ 24V)	-	8 x multi counters	8 x analog current: 0-20 mA; 4-20 mA	8 x analog voltage: 0/2-10 V; 0/1-5 V	0-60/75/100/150 mV Pt100, Pt500, Pt1000 TC (K, S, J, T, N,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

Portable data logging systems

- two cases available: P130 and P150
- portable data logging systems based on MultiCon or MultiLog devices
- up to 23 or 41 input/output/communication connectors
- RS-485, USB or Ethernet ports
- waterproof and dustproof IP 67 housing, designed to work in harsh environment
- possibility to order battery-ready version

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 P150-SRD-99X	P130-CMC-99 P150-CMC-99	P130-CMC-141 P150-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 41 input/output connectors: universal, analogue (0/4 ÷ 20 mA, 0/1 ÷ 5V, 0/2 ÷ 10V), termocouple (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 , 0 ÷ 3 k), counter/ flowmeter/ ratemeter, digital	
Sensor supply output	24V DC ±5% / typically 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 2 GB (125 000 000 records) or 4 GB (300 000 000 records)	
Protection class	IP 67		
Operating temperature	0°C ÷ +50°C (optional -20°C ÷ +50°C)		
Weight	ca. 2,5 kg (P130); 4 kg (P150)		
Dimensions	P130 portable case: 285 x 246 x 174 mm P150 portable case: 464 x 366 x 176 mm MultiLog SRD-99: 96 x 96 x 100 mm	P130 portable case: 285 x 246 x 174 mm P150 portable case: 464 x 366 x 176 mm MultiCon CMC-99: 96 x 96 x 100 mm	P130 portable case: 285 x 246 x 174 mm P150 portable case: 464 x 366 x 176 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: mA, V, 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
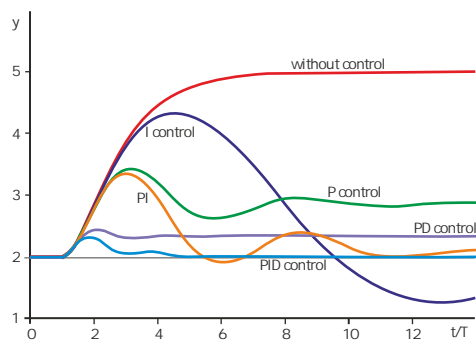
The advanced PID controllers provide two control loops (heating / cooling), supported by the Autotuning function and Fuzzy-Logic algorithm. The devices are equipped with universal (mA, V, RTD or TC) type input. They feature a built-in REL, OC (SSR), or analogue output, according to the customer's selection: 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) is available for current and voltage inputs. The 24V DC 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.

	PUR-44D	PUR-49D	PUR-94D	PUR-99
Power supply	19 ÷ 50V DC; 16 ÷ 35V AC; 85 ÷ 260V AC/DC or 12V AC/DC			
Display	LED, dual: 4 x 9 mm (PV) + 4 x 7 mm (SV), red or green	LED, dual: 4 x 9 mm (PV) + 4 x 9 mm (SV), red or green	LED, dual: 4 x 13 mm (PV) + 4 x 9 mm (SV), red or green	LED, dual: 4 x 20 mm (PV) + 4 x 13 mm (SV) + single indicator 1 x 10 mm, red or green
Input	current: 0-20 mA / 4-20 mA; voltage: 0-5V / 1-5V / 0-10V / 2-10V, 0-60 mV / 0-75 mV / 0-100 mV / 0-150 mV; RTD: Pt100, Pt500, Pt1000, range -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 Power supply output	1 or 2 x REL NO 5A/250V AC (resistance), 3A/250V AC (reactance) or OC (SSR) I_{max}=30mA, U_{max}=30VDC, P_{max}=100mW 24V DC +5%, -10% / max. 100 mA (24V and 85 ÷ 260V AC/DC), stabilized; 24V DC +5% / max. 50 mA (for 12V AC/DC)			
Analogue output	active current: operating range 0/4-20 mA (max. 0-24 mA), load resistance 700 max., resolution 13 bit passive current: isolated, operating range 4-20 mA (max. 2,8-24 mA), load resistance 600 @ 24VDC, resolution 13 bit active voltage: operating range 0/1-5V, 0/2-10V (max. 0-11V), load resistance min. 2000 , resolution 13 bit			
Communication interface	RS-485 / Modbus RTU			
Protection class	IP 65 (front), optional integrated frame for panel cut-out sealing: IP 20 (case and connection clips)			
Operating temperature	0°C ÷ +50°C (standard), -20°C ÷ +50°C (option)			
Case dimensions	48 x 48 x 100	48 x 96 x 100	96 x 48 x 100	96 x 96 x 100

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Universal meters

- 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-49B	SUR-94	SUR-94B	SUR-457	SUR-W410
Power supply	110V AC ± 10%; 230V AC ± 10% or 24V DC	19V ÷ 50V DC; 16V ÷ 35V AC; 85 ÷ 260V AC/DC or 12V AC/DC				
Display	LED, 4 x 20 mm,	LED, 4 x 9 mm + 20-points bargraph	LED, 4 x 20 mm	LED, 4 x 13 mm + 20-points bargraph	LED, 4 x 57 mm	LED, 4 x 100 mm
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 40 (front side); IP 65 (with optional seal)	IP 65 (front), optional integrated frame for panel cut-out sealing; IP 20 (case and connection clips)			IP 67	IP 30
Operating temperature	0°C ÷ +50°C (standard), -20°C ÷ +50°C (option)					
Case dimensions	96 x 48 x 72	48 x 96 x 100	96 x 48 x 100	96 x 48 x 100	230 x 140 x 96,5	578 x 208 x 102

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

Temperature meters

- 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

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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

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Weight meters

- 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
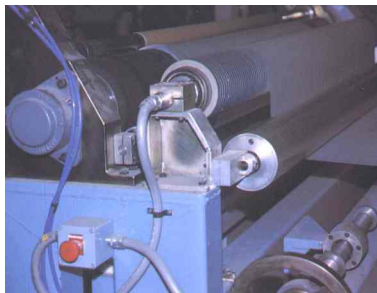- detection of peak values

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 signalised 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).
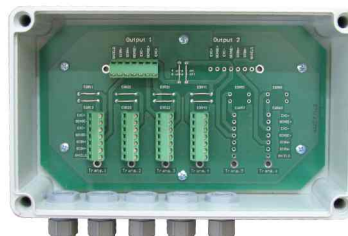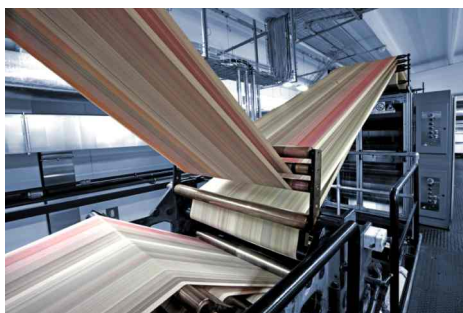
Electronic counters

- 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

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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 or 4	2	2 or 4
	OC	1	2 or 4	2	2 or 4	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

Timers / Clocks

- 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
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
Input	-			pulse: Dry Contact/ OC/Voltage	pulse: START, STOP, RESET	pulse: START, RESET
REL / OC output	-			-	2 x REL / OC	-
Power supply output	-			-	24V DC/100 mA	24V DC/100 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
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

Energy Monitoring and Control
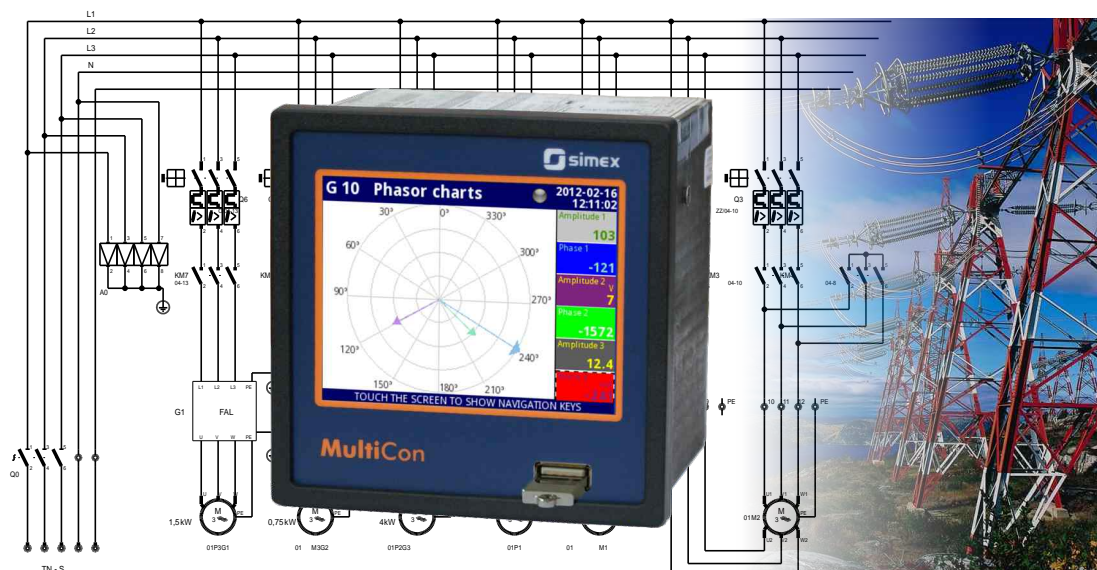
Power energy measurement is a key issue for the automation processes. For some of them, it is extremely important to estimate the consumption of electricity. With counters and grid analysers available in our offer, and through using a series of mathematical functions implemented, the MultiCon is a perfect 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.

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
- SO 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

Temperature sensors - head version

- measuring element: RTD (Pt 100/500/1000), NTC or thermocouples: K, J, E, T, N, S, B, R
- temperature range: -50°C up to 1800°C
- many types of connection heads: B, MA, NA, DAN, DANW with local display
- stainless steel sheath
- optional: sensor with a replaceable measuring insert
- possibility of mounting a 4...20 mA or 0...10 V temperature transmitter

The resistance and thermocouple head temperature sensors consist of an optional exchangeable measuring insert, outer protective tube (thermowell) and aluminum connection head, where mounting a temperature transmitter with 4...20mA or 0...10V output signal is possible. The measuring insert represents the replaceable element of the complete sensor, which reduces time and costs of maintenance of the measuring apparatus installed in the object.

Temperature sensors - cable version

- measuring element: RTD (Pt 100/500/1000), NTC or thermocouples: K, J, E, T, N, S, B, R
- measuring range: -50°C up to +400°C (depending on the cable used)
- stainless steel sheath
- thermowell spring protection against excessive cable bending

The resistance and thermocouple cable temperature sensors are designed for fitting directly into a drilled hole or process. Consist of a measuring element, a protection tube made out of stainless steel, and a connection cable. Insertion length, thermowell diameter, process connection thread, number of sensors, accuracy, cable length, insulation can be selected individually for the respective application.
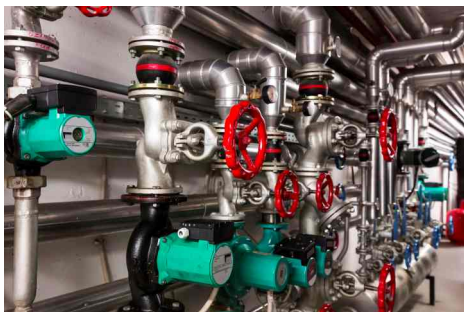
Application areas:
- machine construction, tanks or containers,
- fine chemical industry,
- light energy industry,
- general industrial services.

# Temperature sensors - special versions

NEW

- measuring element: RTD (Pt 100/500/1000) or thermocouples: K, J
- measuring range: -40°C up to +1200°C
- mineral insulated, with local display or connector GDM, with wall-mount housing

Regardless the catalog temperature sensors, different applications may require usage of non-standard, customized shaped solutions. Replying to that need, almost any kind of sensor can be manufactured on request. This way the customer receives item perfectly-suited to the requirements of this system.

Application areas:
- fine chemical industry,
- light energy industry,
- general industrial services,
- pharmaceutical,
- and more.
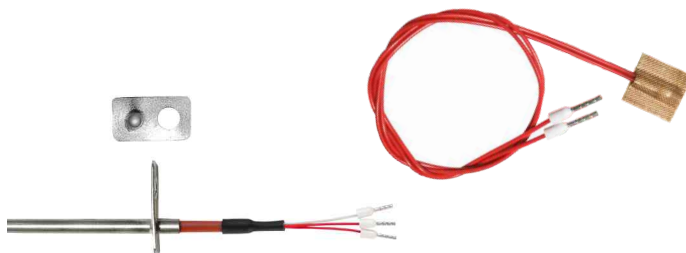
Temperature sensors - accessories

Accesories for temperature sensors:
Compensation and extension (thermocouple) cables
Standard or miniature plugs and sockets
Fittings and brackets
Protection tubes
Measuring inserts
Other on request

NEW

Compensation cables

Drilled, threaded drilled and ceramic thermowells

Measuring inserts

Plugs and sockets

Mounting brackets

Compression fittings

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 ÷ 30V DC) and operation temperatures (-40°C ÷ +85°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

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.

Software and drivers for the temperature converter modules:
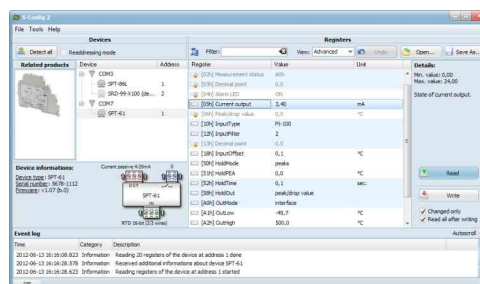
S-Config 2
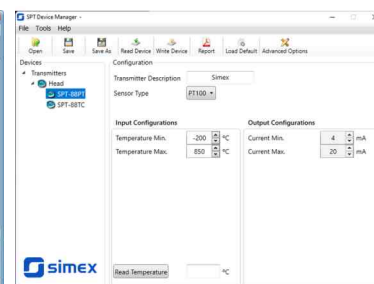
SPT Device Manager

	SPT-61	SPT-86L	SPT-87U	SPT-88
Power supply	24V DC (9,5 ÷ 36V DC)	24V DC (16 ÷ 30V DC)	10 ÷ 30V DC	9 ÷ 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, Pt1000, Ni100, Ni1000; TC: K, J, N, W5, B, R, S, T, E; -10 ÷ 62 mV DC; 0 ÷ +360 Ohm, 0 ÷ +4000 Ohm	Pt100, 2-/3-/4-wires; TC K, J, N, R, S, T, E
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	-	3000V AC	1500V AC	1500V 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-12-8-8-2-3-001	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	universal	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	universal	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
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	0.4 A, 1.2 A or 3.1 A	5 A or 10 A
Output rated power	24 W	10 W, 30 W or 75 W	120 ÷ 240 W
Efficiency	84%	80% ÷ 89%	88% ÷ 90%

Accessories for meters, counters and recorders
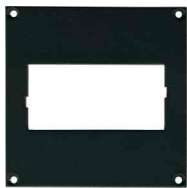
Mounting adaptors

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-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-25

The SIR-25 infraRed remote control may be used as external programming keyboard for all SIMEX devices equipped with IR receivers and remote programming functions. Pressing of any local IR controller key, causes transmission of it's code to the device. The remote control features a five-button keyboard, including the F/ /RESET function button dedicated to the operation of the devices in the following group: counters, flow meters, and tachometers. Functions of particular keys depend on devices features.
Power supply voltage: 3V DC - 1 lithium battery CR2032 type
Operation range: from 0,5 to 5 m (depend on 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-16: the mini USB memory stick is an incredibly small and stylish flash drive offering 16 GB data storage, ideal for transporting data, and fits inside the optional lockable door STD-99/141.
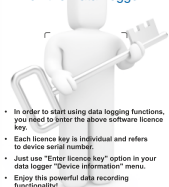
Licence keys for MultiCon line (also 30 days trial versions)

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

Polska

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