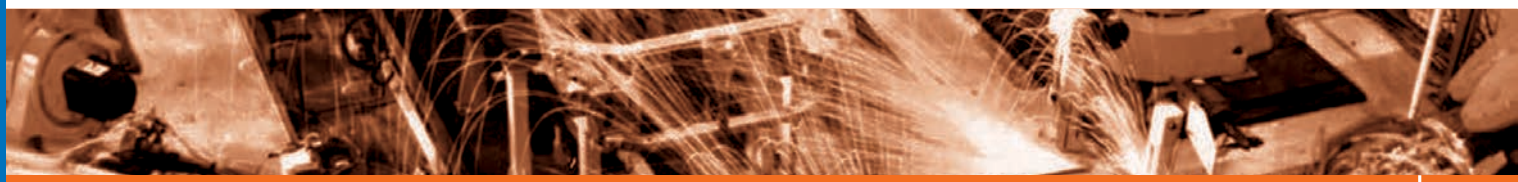
AUTOMATION INTERFACES

PRODUCT CATALOG

100% Made & Designed in Italy



DATA ACQUISITION & AUTOMATION SYSTEMS | 1

INDUSTRIAL COMMUNICATION & TELECONTROL | 2

POWER MONITORING & ELECTRICAL MEASUREMENT | 3

INSTRUMENTATION FOR CONTROL PANEL | 4

SENECA

www.seneca.it

HIGHLIGHTS AND NEW PRODUCTS

1 - DATA ACQUISITION & AUTOMATION SYSTEMS

P. 30 Z-TWS11

NEW

Z-TWS11 is a multifunction and multi-protocol programmable control unit based on IEC 61131-1 SoftPLC Straton workbench.
The controller also includes n. 2 16-bit analog inputs configurable voltage or current and can be the platform to realize automation systems with expandable ModBUS / Ethernet I/O modules.

P. 33 Z-PASS2-S

NEW

Z-PASS2-S is an advanced control unit IEC 61131-3 based with IDE Straton and 3G+/ETH VPN router.
This powerful RTU provides maximum reliability for remote maintenance, telecontrol and data monitoring applications.

P. 34 S6001-PC

NEW

S6001 Pump Controller is a controller for pumping units and pressurization systems managing from 2 to 6 pumps (with Z-D-IO expansion I/O modules), with adjustment of flow, level and pressure, up to 1 inverter changeover between pumps.

P. 35 Z-FLOWCOMPUTER

NEW

Z-FLOWCOMPUTER is a flow computer for steam and water application.
The unit is equipped with nr. 4 PNP / NPN digital inputs, nr. 2 voltage / current analog inputs, nr. 1 universal analog input, nr. 2 relay digital outputs and nr. 1 analog voltage / current output.

2 - INDUSTRIAL COMMUNICATION & TELECONTROL

P. 57 ADVANCED DATALOGGER

NEW

Z-LOGGER3, Z-GPRS3, Z-UMTS are multiprotocol unit, with built-in I/O's for high-performance data acquisition, datalogging, measurements and M2M telemetry.
They can work stand-alone or networked over ModBUS RTU as Master or ModBUS TCP-IP as client-server.

P. 62 Z-MINI-RTU

NEW

Z-miniRTU is a multiprotocol GPRS unit with built-in I/O's and IDE Straton environment.
It is suitable for small automation systems that require data acquisition, datalogging, commands, measurements and alarms management.

P.63 S6001-RTU

NEW

S6001-RTU all-in-one remote control unit that features 31 I/O channels: 15 PNP digital inputs, 2 digital inputs for thresholds monitoring, 4 analog inputs (0..20 mA), 8 SPDT relay outputs 5A - 250 Vac, 1 analog output (0..10 V), 1 analogue output (0..20 mA).

P. 65 LET'S

NEW

LET'S is the first VPN platform for machines and equipment that reduces maintenance, automation and management costs.
LET'S offers a 3 levels integrated connectivity service: remote access, programmable control, supervision.
The structure is based on the VPN Server BOX module in Remote Single LAN mode (always on) or Remote Maintenance Point-to-Point (on demand).

P. 72 Z-KEY

NEW FEATURES

Z-KEY is a communication device with Bridge, Ethernet / Modbus Gateway (from Modbus TCP to Modbus RTU) and Virtual COM integrated functions.
Equipped with 1-port 10/100 Mbps Fast Ethernet and 2 serial ports (RS485, RS232 / RS485
New features: gateway multiple call, http REST.)

P. 81 F.O. CONVERTERS

NEW

SENECA fiber optical converters can extend fiber optic networks on bus such as Ethernet, CAN and Serial (also Simultaneously). They ensure high levels of security and reliability with the use of monomodal or multimodal fiber.

P. 85 RADIOMODEM

NEW

For process and control signals radio transmission SENECA radio modules support UHF/VHF technologies with GFSK modulation and cover ranging from hundred meters up to few kilometers.
These radio modules are
suitable for indoor and outdoor applications.

CERTIFIED UL PRODUCTS

I/O Modules
Z-10-D-IN (P.12), Z-10-D-OUT (P.12), Z-8AI (P.14), Z-3AO (P.14), Z-4RTD2 (P.15)
A/D Converters
Z-4AI-D (P.72), Z-4TC-D (P.72)
T201 Series – AC/DC Current Transducers
T201 (P.107), T201DC (P.107), T201DC100 (P.107), T201DCH (P.108), T201DCH100 (P.108), T201DCH300 (P.108), T201DCH50-LP (P.109), T201DCH100-LP (P.109), T201DCH300-LP (P.109)
Z-Line – Signal Converters
Z109REG2-1 (P.123), Z109UI2-1 (P.123), Z109S (P.124), Z170REG-1 (P.125), Z203-1 (P.127), Z19PT2-1 (P.127), Z109TC2-1 (P.127), Z111 (P.128)
K-Line - Signal Converters
K109UI (P.133), K109S (P.133), K109PT (P.134), K109TC (P.134), K107A (P.135), K107B (P.135), K107USB (P.135)

3 - POWER MONITORING & ELECTRICAL MEASUREMENT

P. 91 S203 Series

S203 energy power meters are designed to detect power quality in single-phase or threephase loads networks.
S203 Series allows energy and power analysis. They support ModBUS RTU communucation protocols. S203TA-D and S203RC-D display models are now configurable via Android App (by Micro USB OTG interface).

P. 99 S604 Series

S604 Series energy Power Meters are innovative instruments for electrical parameters measurement and storage. Their excellent price/performance ratio and versatility in supporting MODBUS TCP - IP and MODBUS RTU protocols make them ideal for consumption analysis and control. KIT versions are sold in combination with 3 Rogowski current transducers. They benefit easy access even in environments with a very limited operational area.

P. 103 S711 Series

S711 Series Power Meters Series is characterized by compact front dimensions (96x96 mm) only 39 mm depth.
The S711 models provide bidirectional measurement of four quadrants for all energies and powers and the measurement of main parameters required for an effective analysis of consumption.

P. 111 S500 Series

S500 Series energy counters are used for industrial and civil environment energy measurement.
These are available with embedded communication interfaces such as ModBUS TCP-IP, ModBUS RTU, M-BUS or through external interface modules.
These counters are avaible with MID certification.LCD display shows totalizers and instantaneous powers.

P. 115 T201 Series

T201 Series, AC/DC current transducers, expands with three new models: T201DCH-50-LP, T201DCH-100-LP, T201DCH-300-LP (input range ± 50A, ± 100A, ± 300 Aac / dc). The entire range SENECA T201 Series (AC/DC current transformers) is UL compliant, raising standards of quality and reliability

P. 128 S201RC-LP

S201RC-LP is a Rogowski current transducer powered by 4..20 mA output loop. This low power device (max consumption 0,6W) works with 100mV/kA coils for TRMS measurement type.
Supported input scale are 250-500-1000-2000-4000 A.
S201RC-LP allows Overvoltage protection, polarity inversion and selectable damping filter (0,5 s / 1 s).

4 - INSTRUMENTATION FOR CONTROL PANEL

P. 143 Z-Line

Z-Line modules are reliable signal conditioners, easy to use and install. These devices are available in more power standards and meet the most common interface and conditioning needs. Most models feature galvanic 3-way isolation of 1.5 kVac and compact size (17.5 mm standard width). News: Z109S-DI high isolation model and configuration with Android APP for Z109REG2-1, Z109REG2-H, Z109UI2-1, Z109ERG-BP, Z170REG-1, Z109PT2-1, Z109TC2-1.

P. 163 S400 Series

S400 High Efficiency Power Surge Protections are designed to protect systems and electrical equipment against transient and pulse overvoltage.
The S400 Series includes type 2 and 3 surge protection devices for ICT networks, control systems, measurement and control devices and industrial power supply systems.

P. 171 S311G

S311G is a digital indicator with analog input and voltage / current generator. There are 2 different operating modes. In automatic mode S311G measures an analog value and retransmits it to the output.
In manual mode a setpoint is turned into a generated value by the output. It is available a signal attenuation feature (antibumper) in order to avoid actuator hammer or dangerous voltage / current surges.

P. 173 S20N1 / S21N1

SENECA S20N1 and S21N1 batch controllers are cost-effective, simple and safe solutions for process automation.
S20N1 and S21N1 batch controllers can be used as “stand-alone” metering unit or “auto-manual” station.

P. 177 MY Series

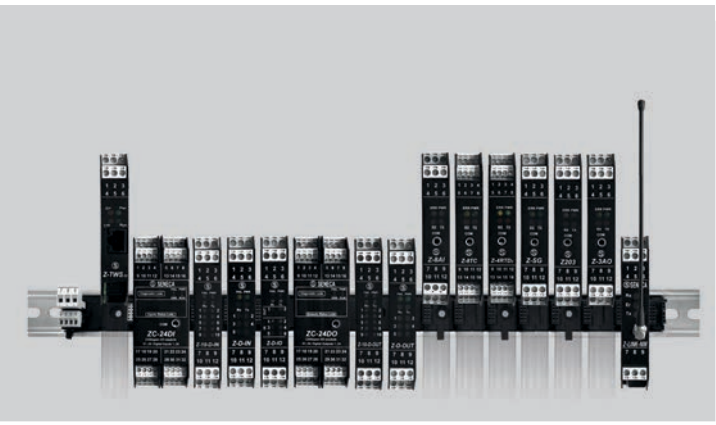
SENECA MY Series is a range of professional handheld transmitters that can turn your Android mobile devices with OTG port in data acquisition systems.
Easily configurable via dedicated app, SENECA MY Series allows the display of temperature and humidity values and the sharing of measurements via SMS, email and other common data platforms.

P.183 - SENECA Apps for Android/iOS mobile devices

COMPANY

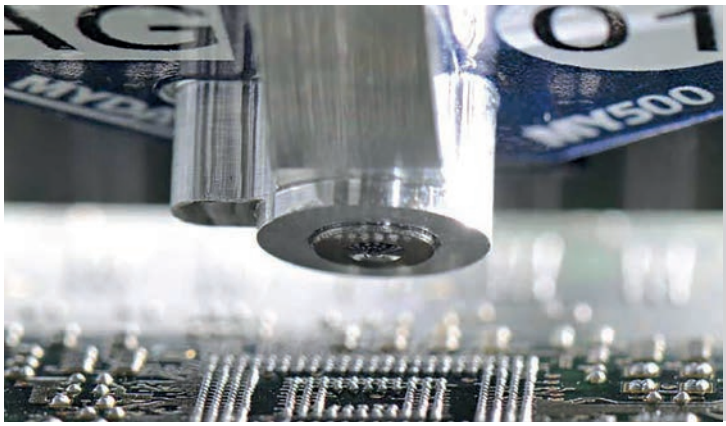
With over 25 years manufacturing in the industrial automation field, SENECA has grown to be a major force in the signal interfacing.
Our products lines, designed and developed in house, are compatible and open towards the more widespread technological standard.
Our innovative product lines, professional approach and worldwide network of trained distributors guarantee the most elegant solutions to all your process interfacing and data acquisition challenges.

PRODUCTS



SENECA produces multi-function device that supply, isolate and electrically condition the signal, so that after being connected to the unit of control, no device can be damaged.
SENECA Products provide standard signal through cable, on bus, wireless to most industrial control systems.
Over the last 10 years SENECA expanded portfolio with technology-oriented to data acquisition, remote monitoring, supervision and energy saving.
The portfolio SENECA includes hundreds of products developed by a high experienced Caring care all stages of product life cycle.
There are four main production lines: data acquisition systems and automation; systems for the industrial communication; energy efficiency devices; instrumentation for control panel.
All software packages and communication technologies integrated in hardware SENECA are developed and updated in accordance with recognized internationally standards

TECHNOLOGIES



The production cycles and internal control have processed through the best modern SMT (Surface Mounting Technology) & PTH (Pin Through Hole) lines.
The production capacity is thousands components/hours and this allows to combine high speed, flexibility, reduced MTBF and time-to-market.
The productive process is fully complies to the environmental and eco-compatible directives: RAEE, ROHS and REACH.
At the end of the cycle all products are strictly tested through automatic systems generating finally single testing reports.

QUALITY

SENECA supplies own products according to the total quality criterias.
Our company system is ISO 9001 certified since 1997.
The products are UL UR CSA approved for North American market and satisfies RINA requirements for naval applications, and ATEX directive.
The safety standard, electromagnetic compatibility and electric protection complies with CE, IEC, EN norms.
The communication software interfaces are developed according the international recognized standard (i.e IEC 61131, ModBUS RTU / TCP, IEC 870, CanOPEN, PPP, SMTP, HTML, OPC Server).

INDEX

INDEX

DATA ACQUISITION & AUTOMATION SYSTEMS

1

Data Acquisition & Automation Systems

Data Acquisition & Automation Systems product line includes I/O ModBUS, CANopen, Ethernet, LED and OLED HMI technology, IEC 61131 logic controllers for Energy Management, IEC 60870-5-101, IEC 60870-5 -104, IEC 61850 process controllers and flow computers. SENECA I/O systems are modular and open automation platforms suitable for both single and thousands I/O signals management.
They include the widest variety of I/O modules: digital inputs, high-speed counters, relay digital outputs and Mosfet, analog channels (mA, V, Ohm, mV), strain gauges, RTDs, thermocouples, measures of power grid.
SENECA systems are designed to help systems integrators, engineering/design firms, instrumentation manufacturers, electricians, qualified installers.

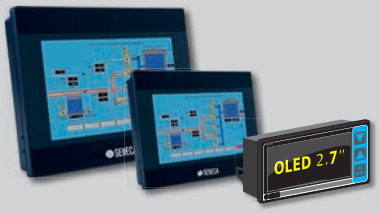
1.1 ModBUS I/O systems

1.2 ModBUS RTU / TCP-IP I/O systems

1.3 CANopen I/O systems

1.4 Controllers

1.5 HMI



1.6 Software

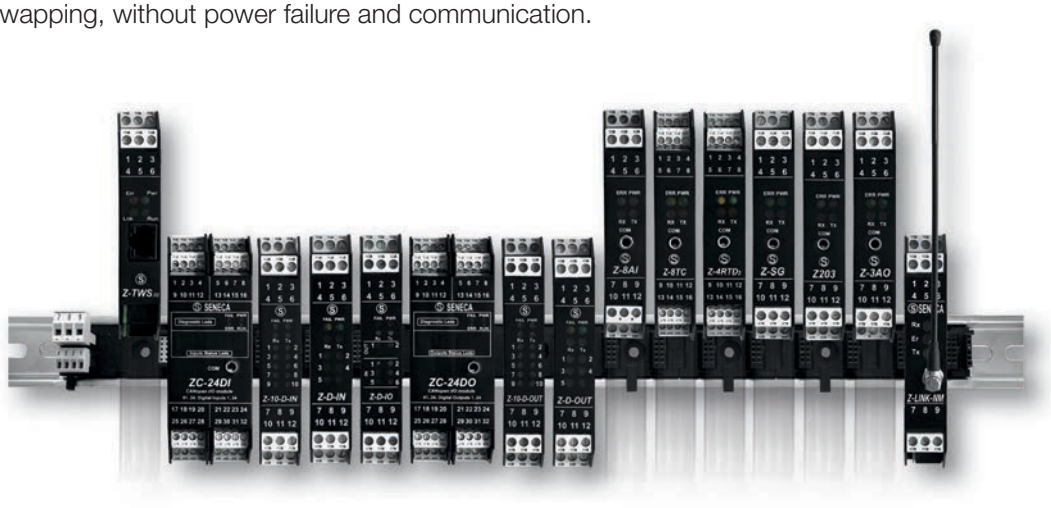
1.7 Accessories

MODBUS I/O SYSTEMS 1.1

Z-PC Line

MODBUS I/O SYSTEM

Z-PC Modbus is a modular system able to manage from simple to complex applications (up to thousands I/O's).
Z-PC includes a widest variety of I/O's with: digital input, high-speed counters, digital outputs and relay/mosfet, analog input (mA, V Ohm, mV), strain gauges, RTDs, thermocouples. It also guarantees the highest concentration data. For instance, up to 24 digital or 8 analog signals. The backplane (bus & power wiring) for DIN rail is modular and available with 1, 2, 4, 8 slots. The modules are Hot-swapping, without power failure and communication.



WIDE EXPANDABLE SYSTEM

More than 160 article codes including I/O modules, CPUs, RTUs, communicaton interfaces, HMIs, power meters, software, accessories

UNIVERSAL APPLICATION

- Remote I/O system stand alone
- Remote I/O + Seneca CPUs
- Remote I/O + third parts CPUs/ devices

STANDARD SYSTEM

- Product mark: CE, RINA, UL
- Communication technology: ModBUS RTU, MODBUS TCP-IP, Ethernet, CANOPEN, OPEN VPN
- Standard software: IEC 61131, OPCs

FAST CONFIGURATION

- EASY Suite
- Z-NET4 configurator System
- DIP-switches

DATA ACQUISITION TOOLS

- DATA RECORDER (DAQ software)
- Web Editor
- Microsoft Visual StudioTM Libraries
- OPC technologies
- NI LabView™ drivers

SYSTEM INTEGRATOR TOOLS

- Automation, data transmission, telecontrol functions ready-to-use
- IEC 61131 programming toolkit
- Advanced technical support

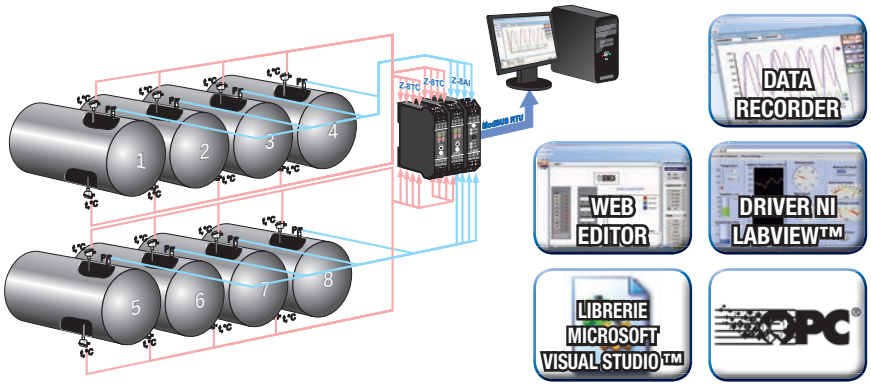
MODULAR SYSTEM

- Backplane bus/power support (1, 2, 4, 8 slot) for DIN rail
- Hot-Swapping

GALVANIC ISOLATION / POWER SUPPLY SYSTEM

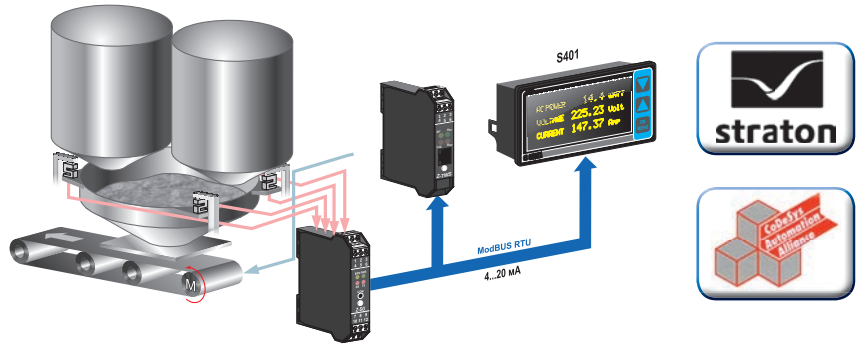
- 3-way electrical 1.5 KVac isolation among power supply // input // output Vac/dc power supply
- Power transducer

DATA ACQUISITION



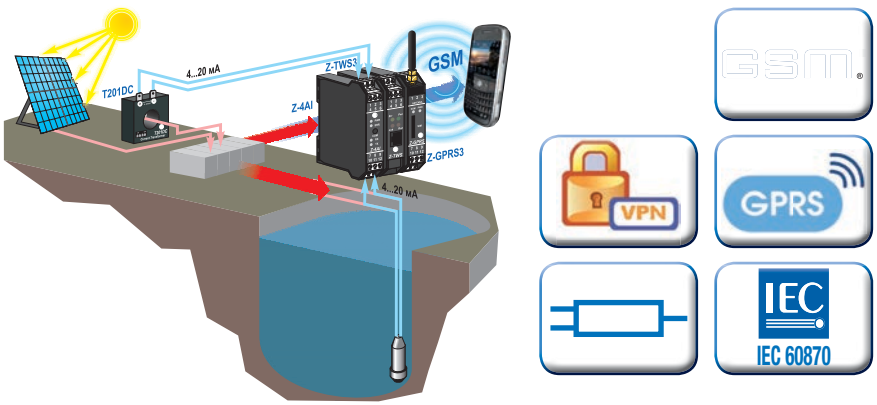
It is a perfect solution for laboratory applications, end of line test, process measurement. Z-PC offers simple tools suitable for data acquisition, recording and displaying data in combination with I/O modules: Data Recorder from 6 to 64 channels data exchange via OPC, LabVIEW ™ drivers and Visual Studio ™ specifically designed for Z-PC I/O modules.

AUTOMATION and softPLC



The IEC 61131 integrated soflogic and the distributed system features provides a maximum flexibility to implement logics of control, alarm management, datalogging.

REMOTE CONTROL



Remote control with Z-PC means having an integrated system based on a broad spectrum of RTUs (all-in-one, battery powered, small systems and cathodic protection), standard protocol and libraries of specific functions dedicated to the remote control applications.

STANDARD & APPROVALS

CANopen Modbus ISaGRAF OPC

APPLICATIONS

The flexibility and modularity of the Z-PC line makes it a distributed system for multi-field applications:
data acquisition, building automation, monitoring, remote control of energy consumption, production control, marine automation, commissioning and laboratory testing, environmental, water, etc.

DIGITAL I/O MODULES

	Z-D-IN	Z-D-OUT	Z-10-D-IN	Z-10-D-OUT	Z-D-IO
					
	5-CH Digital Input Module/ RS485 Modbus RTU	**5-CH Digital Output Module/ RS485 Modbus RTU**	**10-CH Digital Input Module/ RS485 Modbus RTU**	**10-CH Digital Output Module/ RS485 Modbus RTU**	**Multifunction Module, 6 Digital Input and 2 Digital Output/RS485**
GENERAL DATA					
Power supply	10..40 Vdc / 19..28 Vac / 50-60 Hz	10..40 Vdc / 19..28 Vac / 50-60 Hz	10..40 Vdc / 19..28 Vac / 50-60 Hz	10..40 Vdc, 19..28 Vac 50..60Hz	10..40 Vdc, 19..28 Vac 50..60Hz
Power Consumption	2,5 W	2,5 W	3,5 W	2,5 W	2 W
Isolation	1.500 Vac (3 way)	1.500 Vac(3 way)	1.500 Vac (3 way)	1.500 Vac (3 way)	1500 Vac (input//other circuits) 3750 Vac (output//other circuits)
Power Transducers	Max 20 mA	-	-	-	-
Thermocouple	Power supply - Error Data transmission Data reaception Input status	Power supply - Error Data transmission Data reception Output status	Power supply - Error Data transmission Data reception Input status	Power supply - Error Data transmission Data reception Output status Diagnostic	Power supply - Error Data transmission Data reception Intut status Output status
Protection Degree	IP20	IP20	IP20	IP20	IP20
THERMOMECHANICAL FEATURES					
Operating Temperature	-10..+65°C	-10..+65°C	-10..+65°C	-10..+65°C	-10..+65°C
Housing	Nylon 6 with 30% glass-fiber, V0 self-extinguished class	Nylon 6 with 30% glass-fiber, V0 self-extinguished class	Nylon 6 with 30% glass-fiber, V0 self-extinguished class	Nylon 6 with 30% glass-fiber, V0 self-extinguished class	Nylon 6 with 30% glass-fiber, V0 self-extinguished class
Connections	Removable terminals block, plug in connectors, max wire size 2.5 mm^2	Removable terminals block, plug in connectors, max wire size 2.5 mm^2	Removable terminals block, plug in connectors, max wire size 2.5 mm^2	Removable terminals block, plug in connectors, max wire size 2.5 mm^2	Removable terminals block, plug in connectors, max wire size 2.5 mm^2
Mounting	35 mm DIN rail guide 46277	35 mm DIN rail guide 46277	35 mm DIN rail guide 46277	35 mm DIN rail guide 46277	35 mm DIN rail guide 46277
COMMUNICATION, PROCESSING, MEMORY					
Interfaces	2 wires RS485	2 wires RS485	2 wires RS485	2 wires RS485	2 wire RS485
Speed	Up to 115.200 bps	Up to 115.200 bps	Up to 115.200 bps	Up to 115.200 bps	Up to 115.200 bps
Protocol	ModBUS RTU slave	ModBUS RTU slave	ModBUS RTU slave	ModBUS RTU slave	ModBUS RTU slave
Communication Time	< 10 ms (@ 38400 baud)	< 10 ms (@ 38400 baud)	< 10 ms (@ 38400 baud)	< 10 ms (@ 38400 baud)	< 10 ms (@ 38400 baud)
Data Memory	EEPROM for the configuration parameters, retention time 10 years, N° 5 registers 16 bit, N° 5 bit overflow Counters saved on FeRAM	EEPROM for the configuration parameters, retention time 10 years	EEPROM for the configuration parameters, retention time 10 years Counters saved on FeRAM	EEPROM for the configuration parameters, retention time 10 years	EEPROM
SIGNALS, MEASUREMENT, CONFIGURATIONS, NORMS					
Channels	5	5	10	10	6 input, 2 output
Type	Opto-isolated for REED, PROXIMITY PNP, NPN, contact, etc. N.5 counters at 16 bit frequency max 100 Hz N.1 counters at 32 bit, frequency max 10 KHz Bounce Filter 5..250 ms	N.5 SPST NO relay output with common terminal SPST N/O relay 5 A 250 Vac with resistive load, 2 A with inductive load Max total current on common terminal: 12 A	Input protected by fast transient suppressors TVS 600 W/ms N.8 counters at 16 bit, frequency max 100 Hz N.2 counters at 32bit, frequency max 10 Hz Measurement of the load supply voltage	MOSFET output protected against short circuit with common terminal 6 - 40 Vdc power supply, current carrying capacity 0.5 A, resistive load or inductive load Safe time: 33ms..2184s Measurement of the load supply voltage	OUTPUT N.2 SPST NO relay output with common termina, 5 A 250 Vac, contact NA / NC INPUT N.6 opto-isolated channels with common type Reed, proximity, PNP, NPN, contact, etc, internal/external power supply input, min pulse width 20 ms
Measurement & Diagnostic	Overflow indication for each totalizer	Diagnostic on/off, overload, short-circuit Fail-safe programmable functions 10..2.000 s	Frequency measurement for 10 KHz input Period, frequency and Ton, Toff measurement for 100 Hz input Forward or backward counting Overflow indication for each total counter	Diagnostic on/off, overload, short-circuit Fail-safe programmable functions 10..2.000 s	
Programming	Z-NET4 (IEC 61131software) EASY SETUP(plug&play software) DIP switches	Z-NET4 (IEC 61131software) EASY SETUP(plug&play software) DIP switches	Z-NET4 (IEC 61131software) EASY SETUP(plug&play software) DIP switches	Z-NET4 (IEC 61131software) EASY SETUP(plug&play software) DIP switches	Z-NET4 (IEC 61131software) DIP switches Internal Logic IEC1131.2 type 1 for motor, valves and alarms command
Norms & Approvals	CE, EN 50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4; EN 50140/141; EN 61010-1	CE, EN 50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4; EN 50140/141; EN 61010-1	UL-UR, CE, EN 50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4; EN 50140/141; EN 61010-1	UL-UR, CE, EN 50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4; EN 50140/141; EN 61010-1	CE, EN61000-6-4/2002; EN61000-6-2/2002; EN61010-1
ORDER CODES					
Code	Z-D-IN	Z-D-OUT	Z-10-D-IN	Z-10-D-OUT	Z-D-IO
Software & Accessories	Pg. 41	Pg. 41	Pg. 41	Pg. 41	Pg. 41

Technical data, diagrams and drawings in this catalog are indicative only and not binding

DIGITAL I/O MODULES

	ZC-24DI	ZC-24DO	ZC-16DI-8DO
Modbus			
	24-CH digital input CANopen - MODBUS module	**24-CH digital output CANopen - MODBUS module**	**16-CH digital input, 8-CH digital output CANopen - MODBUS module**
GENERAL DATA			
Power supply	10..40 Vdc / 19..28 Vac	10..40 Vdc / 19..28 Vac	10..40 Vdc / 19..28 Vac
Power Consumption	2,5 W	2,5 W	2,5 W
Operating Temperature	-10..-65°C	-10..-65°C	-10..-65°C
Status Indicators	Power supply Input State Communication	Power supply Input State Communication	Power supply Input State Communication
Isolation	1.5 kVac (3 way)	1.5 kVac (3 way)	1.5 kVac (3 way)
Communication Time	2,5 ms	1,2 ms	1,2..2,5 ms
Housing	Nylon 6 with 30% glass-fiber, V0 self-extinguished class	Nylon 6 with 30% glass-fiber, V0 self-extinguished class	Nylon 6 with 30% glass-fiber, V0 self-extinguished class
Connections	Removable screw terminals, IDC10 connector for Z-PC-DIN backplane 3.5 mm RS232, front jack	Removable screw terminals, IDC10 connector for Z-PC-DIN backplane 3.5 mm RS232, front jack	Removable screw terminals, IDC10 connector for Z-PC-DIN backplane 3.5 mm RS232, front jack
Protection Degree	IP20	IP20	IP20
Configuration	DIP switches (baud rate, Node ID) EDS file IEC 61131	DIP switches (baud rate, Node ID) EDS file IEC 61131	DIP switches (baud rate, Node ID) EDS file IEC 61131
Protocols supported	CAN bus standard (2.0A, 2.0B) CANopen (profile CiA 401v.2.01) ModBUS RTU (Through RS485)	CAN bus standard (2.0A, 2.0B) CANopen (profile CiA 401v.2.01) ModBUS RTU (Through RS485)	CAN bus standard (2.0A, 2.0B) CANopen (profile CiA 401v.2.01) ModBUS RTU (Through RS485)
CANopen max speed	1Mbps	1Mbps	1Mbps
Special functions	CANopen/ModBUS protocol switching	CANopen/ModBUS protocol switching	CANopen/ModBUS protocol switching
Norms & Approvals	CE, EN 61000-6-4, EN 64000-6-2, EN 61010-1 CAN 2.0A, 2.0B CiA 401 v.2.01 IEC EN 61131-2	CE, EN 61000-6-4, EN 64000-6-2, EN 61010-1 CAN 2.0A, 2.0B CiA 401 v.2.01 IEC EN 61131-2	CE, EN 61000-6-4, EN 64000-6-2, EN 61010-1 CAN 2.0A, 2.0B CiA 401 v.2.01 IEC EN 61131-2
INPUT DATA			
Channels	24 (with shared common powered at 16Vdc)		16 (with shared common powered at 16Vdc)
Polarity	EN 61131-2 type 2, synq (pnp)		EN 61131-2 type 2, synq (pnp)
Counters	Nr.8 @ 32 bit, Max Freq. 10 KHz Increment individual configurable, reset, preset Overflow indication		Nr.8 @ 32 bit, Max Freq. 10 KHz Increment individual configurable, reset, preset Overflow indication
Vmax	30V		30V
Minimum pulse width	250µs		250µs
ON/OFF delay	< 3ms		< 3ms
TPDO	< 1ms		< 1ms
OUTPUT DATA			
Channels		24	8
Type		Mosfet (open source) with shared common	Mosfet (open source) with shared common
Power Supply Voltage		5..30 Vdc	5..30 Vdc
Maxim Current		0.5A (connection from terminals) 25mA (connection from connectors)	0.5A (connection from terminals) 25mA (connection from connectors)
ON/OFF delay		< 1ms	< 1ms
RPDO		<1,25MS	<1,25MS
CANOPEN FEATURES			
NMT	Slave	Slave	Slave
Error Control	Node Guarding	Node Guarding	Node Guarding
Node ID	Free software, DIP switches	Free software, DIP switches	Free software, DIP switches
Nr.PDO	RX 5	RX 5	RX 5
PDO modes	Event triggered - Synq (cyclic) - Synq (acyclic)	Event triggered - Synq (cyclic) - Synq (acyclic)	Event triggered - Synq (cyclic) - Synq (acyclic)
PDO linking	yes	yes	yes
PDO mapping	variable	variable	variable
Nr. SDO server	1	1	1
Emergency message	yes	yes	yes
Application layer	CiA 301 v4.02	CiA 301 v4.02	CiA 301 v4.02
Profile	CiA 401 v2.01	CiA 401 v2.01	CiA 401 v2.01
ORDER CODES			
Code	ZC-24DI	ZC-24DO	ZC-16DI-8DO
Software & Accessories	Pg. 41	Pg. 41	Pg. 41

Technical data, diagrams and drawings in this catalog are indicative only and not binding

ANALOG I/O MODULES

	Z-DAQ-PID	Z-4AI	Z-8AI	Z-3AO
				
	Universal analog I/O module with pid control / RS485	**4-CH analog input module / RS485 MODBUS RTU**	**8-CH analog input module / RS485 MODBUS RTU**	**3-CH analog output module / RS485 MODBUS RTU**
GENERAL DATA				
Power Supply	10..40 Vdc / 19..28 Vac / 50-60 Hz	10..40 Vdc / 19..28 Vac / 50-60 Hz	10..40 Vdc / 19..28 Vac / 50-60 Hz	10..40 Vdc / 19..28 Vac / 50-60 Hz
Power Consumption	2,5 W	2,5 W	0,5 W	3,2 W
Isolation	1.500 Vac (3 way)	1.500 Vac (3 way)	1.500 Vac (3 way)	1.500 Vac (3 way)
Power Transducers	Min 18 Vdc, 20 mA	20 Vdc, 40 mA (up to 2 sensors)	-	-
Status Indicators	Power supply Error Data transmission Data reception	Power supply Error Data transmission Data reception	Power supply Error Data transmission Data reception	Power supply Error Data transmission Data reception
Protection Degree	IP20	IP20	IP20	IP20
THERMOMECHANICAL FEATURES				
Operating Temperature	-10..+65°C	-10..+65°C	-10..+65°C	-10..+65°C
Dimension	17.5 x 100 x 112 mm	17.5 x 100 x 112 mm	17.5 x 100 x 112 mm	17.5 x 100 x 112 mm
Weight	About 140 g	About 140 g	About 140 g	About 140 g
Housing	Nylon 6 with 30% glass-fiber, V0 self-extinguished class	Nylon 6 with 30% glass-fiber, V0 self-extinguished class	Nylon 6 with 30% glass-fiber, V0 self-extinguished class	Nylon 6 with 30% glass-fiber, V0 self-extinguished class
Connections	Removable terminals block, plug in connectors, max wire size 2.5 mm2	Removable terminals block, plug in connectors, max wire size 2.5 mm2	Removable terminals block, plug in connectors, max wire size 2.5 mm2	Removable terminals block, plug in connectors, max wire size 2.5 mm2
Mounting	35 mm DIN rail guide 46277	35 mm DIN rail guide 46277	35 mm DIN rail guide 46277	35 mm DIN rail guide 46277
COMMUNICATION, PROCESSING, MEMORY				
Interfaces	2 wires RS485	2 wires RS485	2 wires RS485 RS232 (DB9 Jack stereo 3.5 mm)	2 wires RS485 RS232 (DB9 Jack stereo 3.5 mm)
Speed	Up to 115.200 bps	Up to 115.200 bps	Up to 115.200 bps	Up to 115.200 bps
Protocol	ModBUS RTU slave	ModBUS RTU slave	ModBUS RTU slave	ModBUS RTU slave
Communication Time	< 10 ms (@ 38400 baud)	< 10 ms (@ 38400 baud)	< 10 ms (@ 38400 baud)	< 20 ms (@ 38400 baud)
Distance	up to 1.200 m	up to 1.200 m	up to 1.200 m	up to 1.200 m
Connectivity	Max 32 nodes	Max 32 nodes	Max 32 nodes	Max 32 nodes
Data Memory	EEPROM for the configuration parameters, retention time 10 years	EEPROM for the configuration parameters, retention time 10 years	EEPROM for the configuration parameters, retention time 10 years	EEPROM for the configuration parameters, retention time 10 years
SIGNALS, MEASUREMENT; CONFIGURATIONS, NORMS				
Channels	1,2 input, 1 output	4	8	3 (active)
Type	• INPUT mV: -10..+80mV Voltage: 0..10V Current: 0/4..20mA Potentiometer:1KΩ..100KΩ Thermocouple:J,K,R,S,T,B,E,N RTD: PT100,PT500,PT1000,NI100 • OUTPUT Voltage: 0..10V Current: 0..20mA,4..20mA	Bipolar Voltage: ±10 Vdc or ±2 Vdc, impedance 100 KΩ DC Bipolar Current ± 20 mA, impedance 100 Ω	Programmable bipolar input voltage(±2,5 Vdc, ±10 Vdc, impedence >100 kΩ)or current (±20mA)	Nr.3 programmable output voltage(±10V, 0/2..10 V,driven impedance >600Ω) or current (0/4..20mA, driven impedance <600Ω)
Resolution	14 bit + sign 14 bit	16 bit	16 bit	13 bit
Accuracy	0.1%	0,10%	0.1%	0.1%
Thermal Drift	0,01%/°C	0,01%/°C	0,01%/°C	0,01%/°C
Programming	Z-NET4 (IEC 61131software) EASY SETUP(plug&play software) DIP switches	Z-NET4 (IEC 61131software) EASY SETUP(plug&play software) DIP switches	Z-NET4 (IEC 61131software) EASY SETUP(plug&play software) DIP switches	Z-NET4 (IEC 61131software) EASY SETUP(plug&play software) DIP switches
Norms & Approvals	CE, EN 61000-6-4, EN 61000-6-2, EN 61010-1	CE, EN50081-2, EN 55011, EN 50082-2, EN 61000-2-2/4, EN 50140/141, EN 61010-1	UL-UR, CE, EN50081-2, EN 55011, EN 50082-2, EN 61000-2-2/4, EN 50140/141, EN 61010-1, EN 60742	UL-UR, CE, EN50081-2, EN 55011, EN 50082-2, EN 61000-2-2/4, EN 50140/141, EN 61010-1, EN 60742
ORDER CODES				
Code	Z-DAQ-PID	Z-4AI	Z-8AI	Z-3AO
Software & Accessories	Pg. 41	Pg. 41	Pg. 41	Pg. 41

Technical data, diagrams and drawings in this catalog are indicative only and not binding

Z-8AI

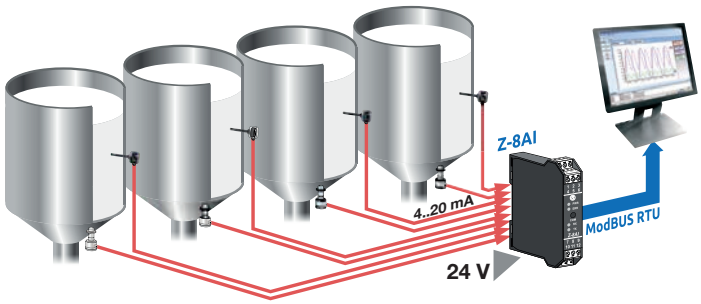
8-CH ANALOG INPUT MODULE/ RS485 MODBUS RTU

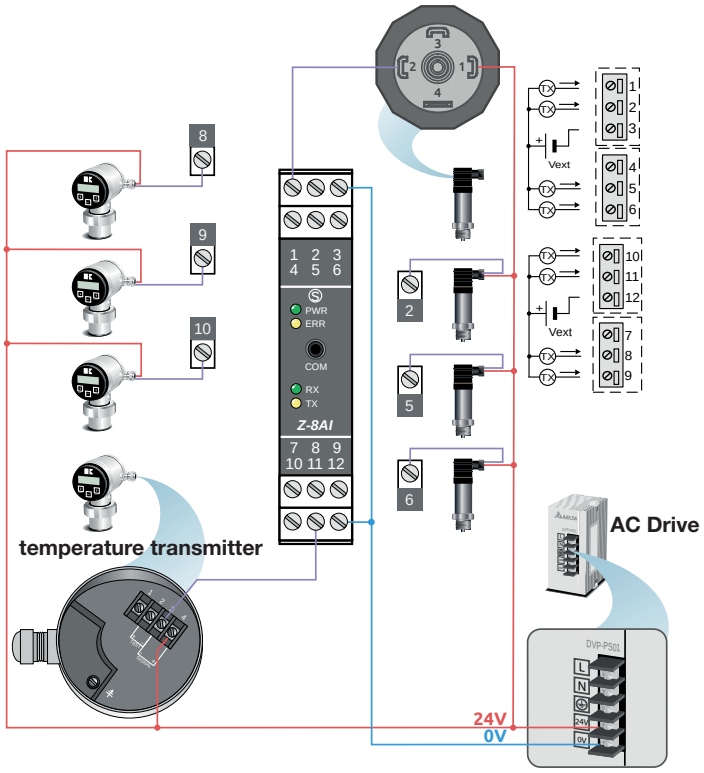
TOP PRODUCT

TECHNICAL DATA

GENERAL DATA	
Power Supply	10..40 Vdc / 19..28 Vac / 50-60 Hz
Power Consumption	0,5 W
Isolation	1.500 Vac (3 way)
Power Transducers	-
Status Indicators	Power supply Error Data transmission Data reception
Protection Degree	IP20
THERMOMECHANICAL FEATURES	
Operating Temperature	-10..+65°C
Dimension	17.5 x 100 x 112 mm
Weight	About 140 g
Housing	Nylon 6 with 30% glass-fiber, V0 self-extinguished class
Connections	Removable terminals block, plug in connectors, max wire size 2.5 mm2
Mounting	35 mm DIN rail guide 46277
COMMUNICATION, PROCESSING, MEMORY	
Interfaces	2 wires RS485 RS232 (DB9 Jack stereo 3.5 mm)
Speed	Up to 115.200 bps
Protocol	ModBUS RTU slave
Communication Time	< 10 ms (@ 38400 baud)
Distance	up to 1.200 m
Connectivity	Max 32 nodes
Data Memory	EEPROM for the configuration parameters, retention time 10 years
SIGNALS, MEASUREMENT; CONFIGURATIONS, NORMS	
Channels	8
Type	Programmable bipolar input voltage(±2,5 Vdc, ±10 Vdc, impedence >100 kΩ)or current (±20mA)
Resolution	16 bit
Accuracy	0.1%
Thermal Drift	0,01%/°C
Programming	Z-NET4 (IEC 61131software) EASY SETUP(plug&play software) DIP switches
Norms & Approvals	UL-UR, CE, EN50081-2, EN 55011, EN 50082-2, EN 61000-2-2/4, EN 50140/141, EN 61010-1, EN 60742

APPLICATION EXAMPLE





ORDER CODES

Code	Description
Z-8AI	8-CH analog input module/ RS485 MODBUS RTU
Software	pag. 41
Accessories	pag. 45

Technical data, diagrams and drawings in this catalog are indicative only and not binding

Z-4RTD2

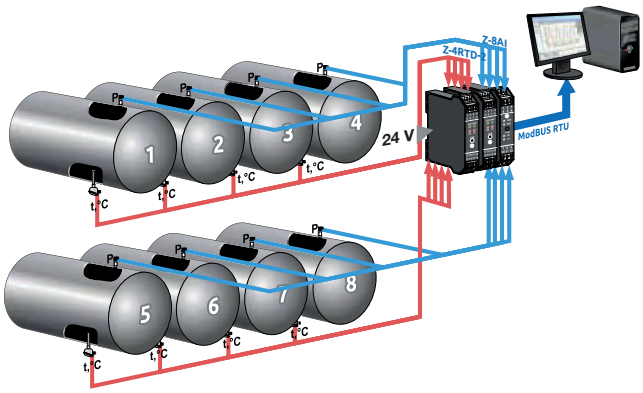
4-CH RTD INPUT MODULE / RS485 MODBUS RTU

TOP PRODUCT

TECHNICAL DATA

GENERAL DATA	
Power Supply	10..40 Vdc, 19..28 Vac 50..60 Hz
Power Consumption	0,7 W
Isolation	1.500 Vac (3 way)
Power Transducers	Power Supply Error Data Transmission Data Receiving
Protection Degree	IP20
THERMOMECHANICAL FEATURES	
Operating Temperature	-10..+65 °C
Housing	Nylon 6 with 30% glass-fiber, V0 self-extinguished class
Connections	Removable terminals block, plug in connectors, max wire size 2.5 mm^2 Rear IDC10 connector for Z-PC backplane
Mounting	35 mm DIN rail guide 46277
COMMUNICATION, PROCESSING, MEMORY	
Interfaces	2 wires RS485
Speed	Up to 115 kbps
Protocol	ModBUS RTU slave
Communication Time	-
Distance	Up to 1200 m
Connectivity	Max 32 nodes
Data Memory	EEPROM for the configuration parameters, retention time 40 years
SIGNALS, MEASUREMENT; CONFIGURATIONS, NORMS	
Channel	4
Type	clamps (ohmmeter 2,3,4 wire) Pt100: -200..+650°C (f.s. 330 Ω) Pt500: -200..+750°C (f.s 1.800 Ω) Pt1000: -200..+210°C (f.s. 1.800 Ω) Ni100: -60..+250°C (f.s. 330 Ω)
Resolution	16 bit
Accuracy	0,05%
Thermal Drift	25 ppm/K
Programming	Z-NET4 (IEC 61131software) EASY SETUP(plug&play software) DIP switches
Norms & Approvals	UL-UR, CE, EN 61000-6-4/2002, EN 61000-6-2/2002, EN 61010, EN 60742

APPLICATION EXAMPLE



ORDER CODES	
Code	Description
Z-4RTD2	4-CH RTD input module / RS485 MODBUS RTU
Software	pag. 41
Accessories	pag. 45

Technical data, diagrams and drawings in this catalog are indicative only and not binding

Z-4TC

4-CH THERMOCOUPLE /MV INPUT MODULE / RS485 MODBUS RTU

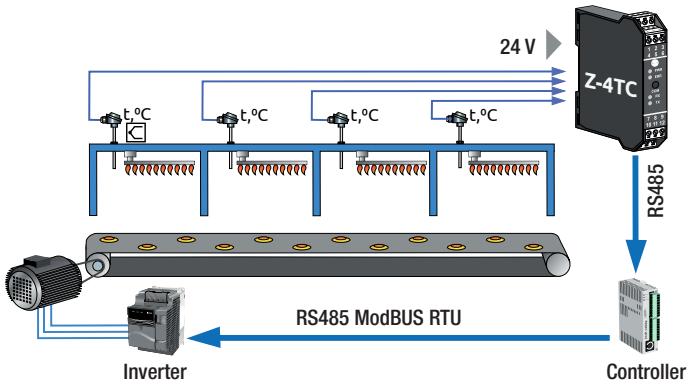
Modbus

TOP PRODUCT

TECHNICAL DATA

GENERAL DATA	
Power Supply	10..40 Vdc / 19..28 Vac / 50-60 Hz
Power Consumption	Max 2.5 W; 1.6 W @ 24 Vdc
Isolation	1.500 Vac (3 way)
Power Transducers	Power Supply Error Data Transmission Data Receiving
Protection Degree	IP20
THERMOMECHANICAL FEATURES	
Operating Temperature	-10..+65 °C
Housing	Nylon 6 with 30% glass-fiber, V0 self-extinguished class
Connections	Removable terminals block, plug in connectors, max wire size 2.5 mm^2
Mounting	35 mm DIN rail guide 46277
COMMUNICATION, PROCESSING, MEMORY	
Interfaces	2 wires RS485
Speed	Up to 115 kbps
Protocol	ModBUS RTU slave
Communication Time	< 20 ms (@ 38400 baud)
Distance	Up to 1200 m
Connectivity	Max 32 nodes
Data Memory	EEPROM for the configuration parameters, retention time 10 years
SIGNALS, MEASUREMENT; CONFIGURATIONS, NORMS	
Channel	4
Type	Thermocouple J, K, R, S, T. B, E, N (EN 60584-1, ITS-90) Voltage Input ± 160 mV
Resolution	13 bit+sign
Accuracy	0,10%
Thermal Drift	0,01%/°C c.d.m.
Programming	Z-NET4 (IEC 61131software) EASY SETUP(plug&play software) DIP switches
Norms & Approvals	CE, EN50081-2, EN 55011, EN 50082-2, EN 61000-2-2/4, EN 50140/141, EN 61010-1, EN 60742

APPLICATION EXAMPLE



ORDER CODES	
Code	Description
Z-4TC	4-CH thermocouple /mV input module / RS485 MODBUS RTU
Software	pag. 41
Accessories	pag. 45

Technical data, diagrams and drawings in this catalog are indicative only and not binding

Z-8TC

8-CH THERMOCOUPLE/ MV INPUT MODULE / RS485 MODBUS RTU

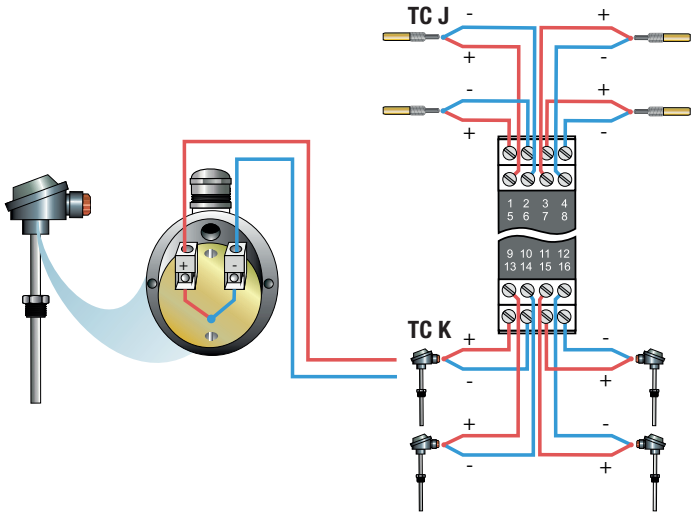
Modbus

TOP PRODUCT

TECHNICAL DATA

GENERAL DATA	
Power Supply	10..40 Vdc; 19..28 Vac (50-60 Hz) bus powered
Power Consumption	0,6 W
Isolation	1.500 Vac (6 way)
Power Transducers	Power Supply Error RS485 Communication
Protection Degree	IP20
THERMOMECHANICAL FEATURES	
Operating Temperature	-10..+65 °C
Housing	Nylon 6 with 30% glass-fiber, V0 self-extinguished class
Connections	Removable terminals block, plug in connectors, max wire size 2.5 mm^2 Rear IDC10 connector for Z-PC backplane
Mounting	35 mm DIN rail guide 46277
COMMUNICATION, PROCESSING, MEMORY	
Interfaces	2 wires RS485
Speed	Reading every 25 ms
Protocol	ModBUS RTU slave
Communication Time	
Distance	Up to 1200 m
Connectivity	Max 32 nodes
Data Memory	EEPROM for the configuration parameters, retention time 10 years
SIGNALS, MEASUREMENT; CONFIGURATIONS, NORMS	
Channel	8
Type	Thermocouple J, K, R, S, T. B, E, N (EN 60584-1, ITS-90) Voltage Input: -10,1..+81,4 mV Range: -210..+1820°C Current Shunt: Up to 70mV
Resolution	16 bit
Accuracy	0,05%
Thermal Drift	< 100 ppm/K
Programming	Z-NET4 (IEC 61131software) EASY SETUP(plug&play software) DIP switches
Norms & Approvals	CE, EN 61000-6-4/2002, EN 61000-6-2/2002, EN 61010, EN 60742

APPLICATION EXAMPLE



ORDER CODES

Code	Description
Z-8TC	8-CH thermocouple/ mV input module / RS485 MODBUS RTU
Software	pag. 41
Accessories	pag. 45

Technical data, diagrams and drawings in this catalog are indicative only and not binding

Z-SG

STRAIN GAUGE INPUT MODULE / RS485 MODBUS RTU

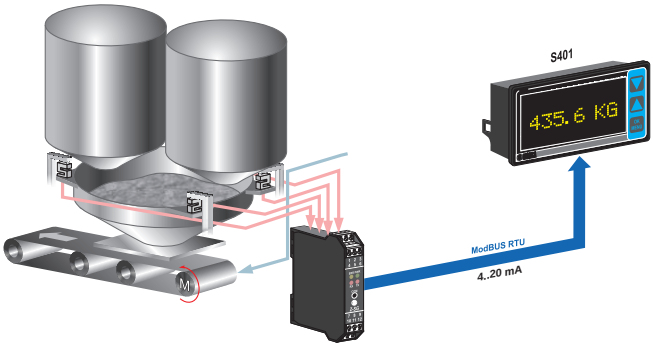
Modbus

TOP PRODUCT

TECHNICAL DATA

GENERAL DATA	
Power Supply	10..40 Vdc, 19..28 Vac 50..60 Hz
Power Consumption	2,5 W
Isolation	1.500 Vac (3 way)
Power Transducers	Power Supply Error Data Transmission Data Receiving
Protection Degree	IP20
THERMOMECHANICAL FEATURES	
Operating Temperature	-10..+65 °C
Housing	Nylon 6 with 30% glass-fiber, V0 self-extinguished class
Connections	Removable terminals block, plug in connectors, max wire size 2.5 mm^2 Rear IDC10 connector for Z-PC backplane
Mounting	35 mm DIN rail guide 46277
COMMUNICATION, PROCESSING, MEMORY	
Interfaces	2 wires RS485
Speed	Up to 115 kbps
Protocol	ModBUS RTU slave
Communication Time	< 10 ms (@ 38400 baud)
Distance	Up to 1200 m
Connectivity	Max 32 nodes
Data Memory	EEPROM for the configuration parameters, retention time 40 years
SIGNALS, MEASUREMENT; CONFIGURATIONS, NORMS	
Channel	1 input, 1 output
Type	INPUT N.1 analog channel for load cell (and power supply) up to 4 (350Ω) or 8 (1.000 Ω) strain gauge load cells, connection to 4 or 6 wires, impedance equal to 87 Ω OUTPUT N.1 analog retransmission channel of the net weight in current (0..20, 4..20 mA) or in voltage (0..5, 0..10 V) N.1 Digital Input or Output for calibration tare or weight limit Sensibility: from 1 to 64 mV/V
Resolution	24 bit
Accuracy	0,01%
Thermal Drift	25 ppm/K
Programming	Z-NET4 (IEC 61131software) EASY SETUP (plug&play software) DIP switches
Norms & Approvals	CE, EN 61000-6-4/2002, EN 61000-6-2/2002, EN 61010, EN 60742, IEC 61131

APPLICATION EXAMPLE



Z-SG

ORDER CODES

Code	Description
Z-SG	Strain gauge input module / RS485 MODBUS RTU
Software	pag. 41
Accessories	pag. 45

Technical data, diagrams and drawings in this catalog are indicative only and not binding

MIXED I/O MODULES

	Z-4DI-2AI-2DO
Modbus	
	4-CH Digital Input/ 2-CH Analogue Input / 2-CH Digital Output Modbus RTU
GENERAL DATA	
Power Supply	11.40 Vdc; 19..28 Vac
Max Consumption	4,5 W
Isolation	1.500 Vac
LED status indicators	RX/TX RS485
Protection degree	IP20
Operating temperature	-10..+65°C
Dimension	35x100x112 mm
Weight	Approx 170 g
Connection	Removable 2-way screw terminals for conductors up to 2,5 mm^2 Rear IDC10 connector for DIN rail
Mounting	35 mm mounting rail (DIN 46277)
COMMUNICATION	
Interfaces	Nr.2 RS485 Nr. 1 mini USB 2.0
Data rate	Up to 115.200 bps (RS485)
Protocols	MosBUS RTU
Communication time	From 5 to 300 ms
Max distance	Up to 1.200 m
Connectivity	Max 32 nodes
INPUT DATA	
Nr Channels	4DI, 2 AI
Type	Nr2 Analog Input 0-20 mA / 0-30 V Nr4 Digital Input PNP / NPN (also configurable as totalizers or counters @32 bit max 7 kHz)
Resolution	16 bit
Accuracy class	0,1%
Thermal Drift	100 ppm/K
OUTPUT DATA	
Nr Channels	2DO
Type	Relay NO / NC max 5 A
SETTING	
Programming	Plug&play software configurator (EASY SETUP) DIP switches Web Server
STANDARD	
Approvals	CE
Norms	EN 61000-6-4, EN 64000-6-2, EN 61010-1, EN 60950
ORDER CODES	
Code	Z-4DI-2AI-2DO
Software	Pg. 41
Accessories	Pg. 45

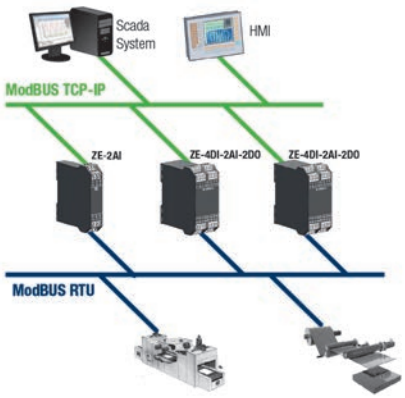
MODBUS RTU / TCP-IP I/O SYSTEMS 1.2

1

Z-PC Line - Mixed I/O Modules ModBUS RTU / ModBUS TCP-IP are high performance modules with 16-bit ADC, acquisition speed configurable from 5 to 300 ms, 100 MHz ARM processor. They support extended range for input voltage up to 30 V. These modules have built-in web server for remote visualization and configuration of the I/O values. They are fully compatible with iPhone, iPad and Android systems

I/O MODULES WITH MODBUS RTU / MODBUS TCP-IP INTERFACE

	ZE-2AI	ZE-4DI-2AI-2DO
		
	2-CH Analogue input Modbus RTU Modbus TCP-IP module	**4-CH Digital Input/ 2-CH Analogue Input, 2-CH Digital Output Modbus RTU-Modbus TCP-IP**
GENERAL DATA		
Power supply	11..40 Vdc; 19..28 Vac	11..40 Vdc; 19..28 Vac
Status indicators	RX/ TX RS485/ IP/ DHCP/ Ethernet Activity/ Ethernet Link	RX/ TX RS485/ IP/ DHCP/ Ethernet Activity/ Ethernet Link
Protection degree	IP20	IP20
Operating Temperature	-10..+65°C	-10..+65°C
Dimension	17.5 x 100 x 112 mm	35 x 100 x 112 mm
Weight	140 g	170 g
Connections	Removable screw terminals and rear connector IDC 10	Removable screw terminals and rear connector IDC 10
Mounting	DIN 35 mm rail guide 46277	DIN 35 mm rail guide 46277
COMMUNICATION, PROCESSING, MEMORY		
Interfaces	N°1 Ethernet 10/100 Mbps N°2 RS485 N°1 mini USB 2.0	N°1 Ethernet 10/100 Mbps N°2 RS485 N°1 mini USB 2.0
Speed	100 Mbps (TCP-IP) 115.200 bps (RS485)	100 Mbps (TCP-IP) 115.200 bps (RS485)
Protocol	ModBUS RTU ModBUS TCP-IP Http	ModBUS RTU ModBUS TCP-IP Http
Processor	ARM Cortex M4 100 MHz	ARM 100 MHz
Memory	RAM: 128 kB Flash: 512 kB FeRAM: 64 kB (Data storage digital counters)	RAM: 128 kB Flash: 512 kB FeRAM: 64 kB (Data storage digital counters)
I/O		
Channels	2	8
Type	N°2 Analog Inputs 0-20 mA / 0-30 V	N°2 Analog Inputs 0-20 mA / 0-30 V N°4 Digital Inputs PNP / NPN (N°4 totalizers @ 32 bit max 7 kHz) (N°4 resettable counters @ 32 bit max 7 kHz) N°2 Digital Outputs Relay NA / NC max 5 A
Resolution	16-bit ADC, acquisition speed from 5 to 300 ms	16-bit ADC, acquisition speed from 5 to 300 ms
Accuracy	0,1%	0,1%
Termal drift	100 ppm	100 ppm
CONFIGURATION		
Software	EASY SETUP	EASY SETUP
DIP-switch	Yes (address, speed)	Yes (address, speed)
Web Server	Yes (remote configuration I/O)	Yes (remote configuration I/O)
NORMS		
Approvals	CE	CE
Norms	EN 61000-6-4, EN 64000-6-2, EN 61010-1, EN 60950	EN 61000-6-4, EN 64000-6-2, EN 61010-1, EN 60950
ORDER CODES		
Code	ZE-2AI	ZE-4DI-2AI-2DO
Software	Pg. 41	Pg. 41
Accessories	Pg. 45	Pg. 45



Technical data, diagrams and drawings in this catalog are indicative only and not binding

CANOPEN IO SYSTEMS 1.3

Z-PC Line

HIGH PERFORMANCE I/O CANOPEN SYSTEM

Z-PC line is a complete line of I/O modules with CANopen standard interface that does not require any couplers, controllers, or repeaters. All modules have an integrated interface with CANopen communication, speeds up to 1 Mbps, and they are ideal for acquisition and control signals for system and machines where the distance between signals plays a key role. Z-PC line CANopen modules can be integrated with third parts configurators and master controllers / network managers, even on board existing machines and installations.
The advantage of not needing a fine line coupler dramatically reduces the cost for smallmedium installations.

I/O MODULES RANGE

I/O Modules for analog input (8), thermocouples and thermoresistance (4/8), digital input/output (16/24), analog output (3), load cells (1) etc.

CPU / INTERFACES

- Web server multi-function controller, datalogger with CAN interfaces, Ethernet,
- RS232/RS485, ModBUS RTU
- CANopen fiber optic / fiber optic repeater

SETTINGS

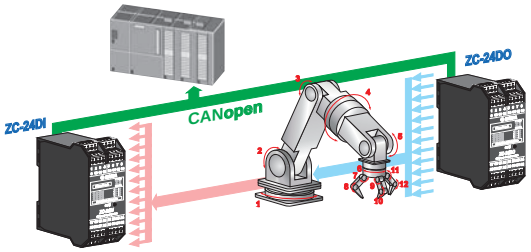
- IEC 61131 programming system (CoDeSys)
- EASY SETUP suite (plug & play software) by RS232
- DIP switches (address, baud rate)

HIGH PERFORMANCE

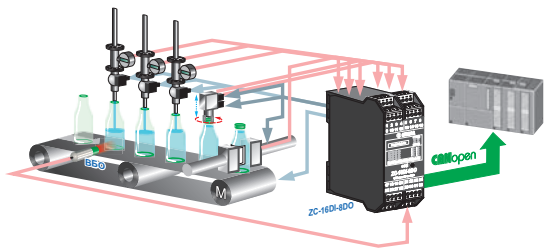
- High accuracy: 0,1..0,05%
- Isolation: 1,5Vac (3 way)
- Baud rate: up to 1 Mbps
- Response time for digital channel: 1 ms
- Response time for analog channel: 1 ms
- Power supply up to 8 sensors

APPLICATION NOTE

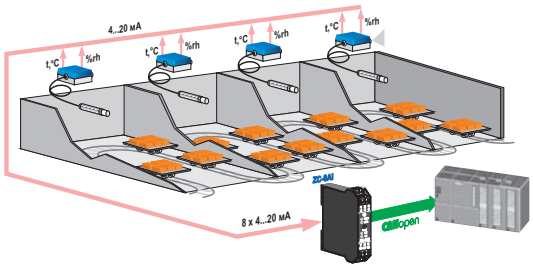
HANDLING SYSTEM



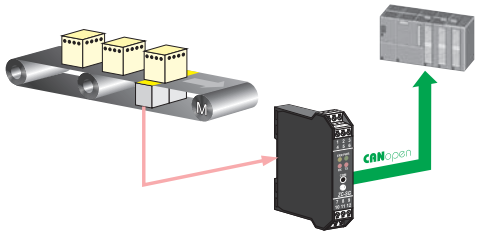
AUTOMATIC BOTTLING SYSTEM



CONTROL OF PROCESS PARAMETERS



CONTROL OF CONVEYOR BELT



DIGITAL I/O MODULES

	ZC-24DI	ZC-24DO	ZC-16DI-8DO
Modbus CANopen			
	24-CH digital input CANopen - MODBUS module	**24-CH digital output CANopen - MODBUS module**	**16-CH digital input, 8-CH digital output CANopen - MODBUS module**
GENERAL DATA			
Power supply	10..40 Vdc / 19..28 Vac	10..40 Vdc / 19..28 Vac	10..40 Vdc / 19..28 Vac
Power Consumption	2,5 W	2,5 W	2,5 W
Operating Temperature	-10..-65°C	-10..-65°C	-10..-65°C
Status Indicators	Power supply Input State Communication	Power supply Input State Communication	Power supply Input State Communication
Isolation	1.5 kVac (3 way)	1.5 kVac (3 way)	1.5 kVac (3 way)
Communication Time	2,5 ms	1,2 ms	1,2..2,5 ms
Housing	Nylon 6 with 30% glass-fiber, V0 self-extinguished class	Nylon 6 with 30% glass-fiber, V0 self-extinguished class	Nylon 6 with 30% glass-fiber, V0 self-extinguished class
Connections	Removable screw terminals, IDC10 connector for Z-PC-DIN backplane 3.5 mm RS232, front jack	Removable screw terminals, IDC10 connector for Z-PC-DIN backplane 3.5 mm RS232, front jack	Removable screw terminals, IDC10 connector for Z-PC-DIN backplane 3.5 mm RS232, front jack
Protection Degree	IP20	IP20	IP20
Configuration	DIP switches (baud rate, Node ID) EDS file IEC 61131	DIP switches (baud rate, Node ID) EDS file IEC 61131	DIP switches (baud rate, Node ID) EDS file IEC 61131
Protocols supported	CAN bus standard (2.0A, 2.0B) CANopen (profile CiA 401v.2.01) ModBUS RTU (Through RS485)	CAN bus standard (2.0A, 2.0B) CANopen (profile CiA 401v.2.01) ModBUS RTU (Through RS485)	CAN bus standard (2.0A, 2.0B) CANopen (profile CiA 401v.2.01) ModBUS RTU (Through RS485)
CANopen max speed	1Mbps	1Mbps	1Mbps
Special functions	CANopen/ModBUS protocol switching	CANopen/ModBUS protocol switching	CANopen/ModBUS protocol switching
Norms & Approvals	CE, EN 61000-6-4, EN 64000-6-2, EN 61010-1 CAN 2.0A, 2.0B CiA 401 v.2.01 IEC EN 61131-2	CE, EN 61000-6-4, EN 64000-6-2, EN 61010-1 CAN 2.0A, 2.0B CiA 401 v.2.01 IEC EN 61131-2	CE, EN 61000-6-4, EN 64000-6-2, EN 61010-1 CAN 2.0A, 2.0B CiA 401 v.2.01 IEC EN 61131-2
INPUT DATA			
Channels	24 (with shared common powered at 16Vdc)		16 (with shared common powered at 16Vdc)
Polarity	EN 61131-2 type 2, synq (pnp)		EN 61131-2 type 2, synq (pnp)
Counters	Nr.8 @ 32 bit, Max Freq. 10 KHz Increment individual configurable, reset, preset Overflow indication		Nr.8 @ 32 bit, Max Freq. 10 KHz Increment individual configurable, reset, preset Overflow indication
Vmax	30V		30V
Minimum pulse width	250µs		250µs
ON/OFF delay	< 3ms		< 3ms
TPDO	< 1ms		< 1ms
OUTPUT DATA			
Channels		24	8
Type		Mosfet (open source) with shared common	Mosfet (open source) with shared common
Power Supply Voltage		5..30 Vdc	5..30 Vdc
Maxim Current		0.5A (connection from terminals) 25mA (connection from connectors)	0.5A (connection from terminals) 25mA (connection from connectors)
ON/OFF delay		< 1ms	< 1ms
RPDO		<1,25MS	<1,25MS
CANOPEN FEATURES			
NMT	Slave	Slave	Slave
Error Control	Node Guarding	Node Guarding	Node Guarding
Node ID	Free software, DIP switches	Free software, DIP switches	Free software, DIP switches
Nr.PDO	RX 5	RX 5	RX 5
PDO modes	Event triggered - Synq (cyclic) - Synq (acyclic)	Event triggered - Synq (cyclic) - Synq (acyclic)	Event triggered - Synq (cyclic) - Synq (acyclic)
PDO linking	yes	yes	yes
PDO mapping	variable	variable	variable
Nr. SDO server	1	1	1
Emergency message	yes	yes	yes
Application layer	CiA 301 v4.02	CiA 301 v4.02	CiA 301 v4.02
Profile	CiA 401 v2.01	CiA 401 v2.01	CiA 401 v2.01
ORDER CODES			
Code	ZC-24DI	ZC-24DO	ZC-16DI-8DO
Software	Pg. 41	Pg. 41	Pg. 41
Accessories	Pg. 45	Pg. 45	Pg. 45

Technical data, diagrams and drawings in this catalog are indicative only and not binding

ANALOG I/O MODULES

	ZC-8AI	ZC-3AO	ZC-4RTD	ZC-8TC	ZC-SG
CANopen					
	8-CH analog input / CANopen module	**3-CH analog output / CANopen module**	**4-CH RTD input / CANopen module**	**8-CH thermocouple input / CANopen module**	**Strain gauge input / CANopen module**
GENERAL DATA					
Power supply	10..40 Vdc / 19..28 Vac	10..40 Vdc / 19..28 Vac	10..40 Vdc / 19..28 Vac	10..40 Vdc / 19..28 Vac	10..40 Vdc / 19..28 Vac (strain gauge powered by the instrument)
Power Consumption	5 W	2,5 W	1 W	1 W	2 W
Power Transducers	up to 8 (22 mA @ 16.5 V) 2/3 wires				5 Vdc , up to 4/8 load cells
Isolation	1.5 kVac (6 way)	1.5 kVac (5 way)	1.5 kVac (6way)	1.5 kVac (6 way)	1.5 kVac (3 way)
Input protection	Against ESD discharge up to 4KV	Against ESD discharge up to 4KV	Against ESD discharge up to 4KV	Against ESD discharge up to 4KV	Against ESD discharge up to 4KV
Status Indicator	Power - Communication Fault input	Power - Communication Fault input	Power - Communication Fault input	Power - Communication Fault input	Power - Communication Fault input
Response Time	< 28 ms	< 7 ms	< 28ms	< 28ms	< 7 ms
Accuracy	0,05%	0,01%	0,05%	0,10%	0,01%
A/D Resolution	14 or 15 bit	14 bit	13 or 14 bit	15 bit	ADC 24bit
Thermal Drift	<100 ppm/°C	<100 ppm/°C	<50 ppm/°C	<100 ppm/°C	<25 ppm/°C
Dimension	17,5 x 110 x 112 mm	17,5 x 110 x 112 mm	17,5 x 110 x 112 mm	17,5 x 110 x 112 mm	17,5 x 110 x 112 mm
Housing	Nylon 6 with 30% glass-fiber, V0 self-extinguished class	Nylon 6 with 30% glass-fiber, V0 self-extinguished class	Nylon 6 with 30% glass-fiber, V0 self-extinguished class	Nylon 6 with 30% glass-fiber, V0 self-extinguished class	Nylon 6 with 30% glass-fiber, V0 self-extinguished class
Weight	About 170 g	About 170 g	About 170 g	About 170 g	About 170 g
Operating Temperature	-10..+65°C	-10..+65°C	-10..+65°C	-10..+65°C	-10..+65°C
Connections	Removable screw terminals, IDC10 connector for Z-PC-DIN backplane 3.5 mm RS232, front jack	Removable screw terminals, IDC10 connector for Z-PC-DIN backplane 3.5 mm RS232, front jack	Removable screw terminals, IDC10 connector for Z-PC-DIN backplane 3.5 mm RS232, front jack	Removable screw terminals, IDC10 connector for Z-PC-DIN backplane 3.5 mm RS232, front jack	Removable screw terminals, IDC10 connector for Z-PC-DIN backplane 3.5 mm RS232, front jack
Protection Degree	IP20	IP20	IP20	IP20	IP20
Configuration	DIP switches (baud rate, Node ID)	DIP switches (baud rate, Node ID) - EDS file - IEC 61131	DIP switches (baud rate, Node ID) - EDS file - IEC 61131	DIP switches (baud rate, Node ID) - EDS file - IEC 61131	DIP switches (baud rate, Node ID) - EDS file - IEC 61131
Protocols supported	EDS file IEC 61131 CAN bus standard (2.0A, 2.0B) CANopen (profile CiA 401 v.2.01)	EDS file IEC 61131 CAN bus standard (2.0A, 2.0B) CANopen (profile CiA 401 v.2.01)	EDS file IEC 61131 CAN bus standard (2.0A, 2.0B) CANopen (profile CiA 401 v.2.01)	EDS file IEC 61131 CAN bus standard (2.0A, 2.0B) CANopen (profile CiA 401 v.2.01)	EDS file IEC 61131 CAN bus standard (2.0A, 2.0B) CANopen (profile CiA 401 v.2.01)
CANopen max speed	1Mbps	1Mbps	1Mbps	1Mbps	1Mbps
Norms & Approvals	CE, EN 61000-6-4, EN 64000-6-2, EN 61010-1 CAN 2.0A, 2.0B CiA 401 v.2.01 IEC EN 61131-2	CE, EN 61000-6-4, EN 64000-6-2, EN 61010-1 CAN 2.0A, 2.0B CiA 401 v.2.01 IEC EN 61131-2	CE, EN 61000-6-4, EN 64000-6-2, EN 61010-1 CAN 2.0A, 2.0B CiA 401 v.2.01 IEC EN 61131-2	CE, EN 61000-6-4, EN 64000-6-2, EN 61010-1 CAN 2.0A, 2.0B CiA 401 v.2.01 IEC EN 61131-2	CE, EN 61000-6-4, EN 64000-6-2, EN 61010-1 CAN 2.0A, 2.0B CiA 401 v.2.01 IEC EN 61131-2
INPUT DATA					
Channels	8 (4 isolation zones)		4, RTD with 2,3,4 wires, fully isolation	8 (thermocouples or mV)	1
Type	Voltage : 0-10V Current : 0-20 mA		PT100 (EN 60751/A2-ITS90), -200..+650°C PT500 (EN 60751/A2-ITS90), -200..+750°C PT1000 (EN 60751/A2-ITS90), -200..+210°C Ni100 (EN 60751/A2-ITS90), -60..+250°C	Thermocouple Type: J, K, E,N,S,R,B,T; EN 60584-1 (ITS-90) Span mV: -10,1 mV..+81,4 mV Impedance: 10 MΩ	ANALOG INPUT Input type: 6/4 wires differential measurement input Load cells (strain gauge), Voltage supply: 5Vdc Min impedance: 87Ω Sensitivity from ±1 to ±64 mV/V Full Scale : ±5.. ±320 mV DIGITAL INPUT Tare calibration and span (max 30 V)
OUTPUT DATA					
Channels		3			1
Type		Voltage : ±10V Current : 0-20, 4..20 mA			Digital Nr.1 channel for stable wight or threshold (max 30 V, 50 mA)
CANOPEN FEATURES					
NMT	Slave	Slave	Slave	Slave	Slave
Error Control	Node Guarding	Node Guarding	Node Guarding	Node Guarding	Node Guarding
Node ID	Free software - DIP switches	Free software - DIP switches	Free software - DIP switches	Free software - DIP switches	Free software - DIP switches
Nr.PDO	RX 5	RX 5	RX 5	RX 5	RX 5
PDO modes	Event triggered Synq (cyclic) - Synq (acyclic)	Event triggered Synq (cyclic) - Synq (acyclic)	Event triggered Synq (cyclic) - Synq (acyclic)	Event triggered Synq (cyclic) - Synq (acyclic)	Event triggered Synq (cyclic) - Synq (acyclic)
PDO linking	yes	yes	yes	yes	yes
PDO mapping	variable	variable	variable	variable	variable
Nr. SDO server	1	1	1	1	1
Emergency message	yes	yes	yes	yes	yes
Application layer	CiA 301 v4.02	CiA 301 v4.02	CiA 301 v4.02	CiA 301 v4.02	CiA 301 v4.02
Profile	CiA 401 v2.01	CiA 401 v2.01	CiA 401 v2.01	CiA 401 v2.01	CiA 401 v2.01
ORDER CODES					
Code	ZC-8AI	ZC-3AO	ZC-4RTD	ZC-8TC	ZC-SG
Software & Accessories	Pg. 41	Pg. 41	Pg. 41	Pg. 41	Pg. 41

Technical data, diagrams and drawings in this catalog are indicative only and not binding

CONTROLLERS 1.4

CONTROLLERS

		IEC 61131 STRATON CONTROLLERS	
		Z-TWS11	Z-TWS4
			
MAIN FEATURES	Built-in I/O	2AI	-
	CPU	ARM 32 bit @ 120 MHz	ARM9 32-bit @400MHz
	Memory (Flash/RAM)	- / 256 MB	1 GB / 64 MB
	Programming System	Straton	Straton
CONNECTIVITY	Modem / Router	-	-
	Industrial protocols	ModBUS RTU/TCP	ModBUS RTU/TCP
	IT protocols	http, ftp, smtp	http, ftp, smtp, ppp
	Energy protocols	-	IEC 60870-101/104, IEC 61850 (opt.)
	VPN Support	-	VPN Box, OpenVPN
	Private APN support	-	Yes
	Ethernet ports	1	2
	Serial ports	2	2
	USB ports	1	1
APPLICATION	Up to 1000 I/O		x
	Up to 100 I/O	x	
	Advanced Automation		x
	Remote Control / Remote Assistance		x
	Microautomation	x	
	Energy Management		x
	Pump control		
	Fluid regulation		

Technical data, diagrams and drawings in this catalog are indicative only and not binding

SENECA's IEC 61131 Controllers (Z-TWS11, Z-MINIRTU, Z-TWS4, Z-TWS5, Z-PASS2-S, S6001-RTU) combine PLC automation tasks (based on Straton workbench following IEC 61131 standard), such as web server, datalogger, data acquisition, remote control and energy management (IEC 6087'-101/104, IEC 61850). They can be used in many configurations and architectures different from each other based on system complexity and hardware features required. SENECA also provides process controllers for pump control and flow regulation.

IEC 61131 STRATON RTUs			PROCESS CONTROLLERS	
Z-MINI-RTU	**Z-PASS2-S**	**S6001-RTU**	**S6001-PC**	**Z-FLOWCOMPUTER**
				
4DI, 2DO, 2AI	-	15DI+2DI, 8DO, 4AI, 2AO	15DI+2DI, 8DO, 4AI, 2AO	4DI, 3AI, 2DO
ARM 32 bit @ 120 MHz	ARM9 32-bit @400MHz	ARM9 32-bit @400Mhz	ARM9@32bit 400 MHz	ARM 32 bit @ 120 MHz
- / 256 MB	1 GB / 64 MB	1 GB / 64 MB	1 GB / 64 MB	8 MB / 256 kB
Straton	Straton	Straton	HMI	HMI, EASY
2G	3G+	3G+	3G+	-
ModBUS RTU/TCP	ModBUS RTU/TCP	ModBUS RTU/TCP	ModBUS RTU/TCP(Slave)	ModBUS RTU/TCP(Slave)
http, ftp, smtp, ppp	http, ftp, smtp, ppp	http, ftp, smtp, ppp	http, ftp, smtp, ppp	http, ftp
-	IEC 60870-101/104, IEC 61850 (opt.)	IEC 60870-101/104, IEC 61850 (opt.)	-	-
-	VPN Box, OpenVPN	VPN Box, OpenVPN	VPN Box, OpenVPN	-
Yes	Yes	Yes	Yes	-
2	2	1	1	1
3	4	3	3	1
2	2	2	2	1
	x	x		
x				
x	x	x		
x	x	x		
	x	x		
			x	
				x

Technical data, diagrams and drawings in this catalog are indicative only and not binding

NEW

Z-TWS11

IEC 61131 MULTIFUNCTION CONTROLLER WITH BUILT-IN I/O

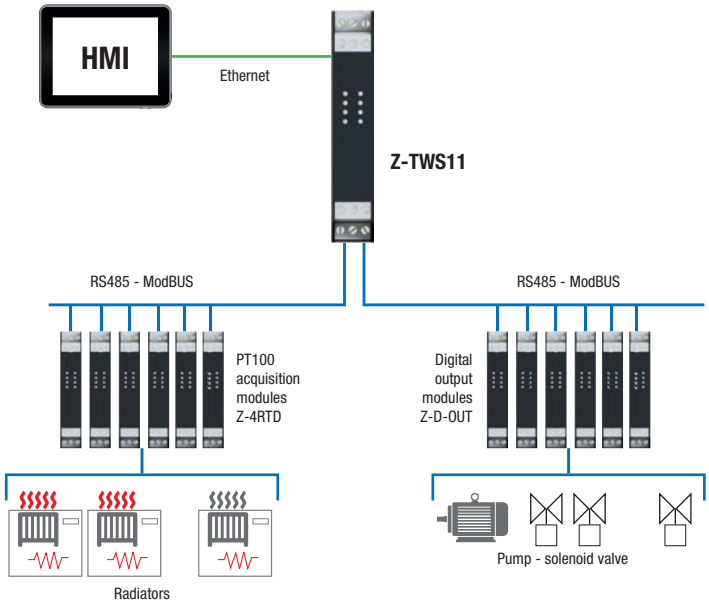
straton

TECHNICAL DATA

GENERAL DATA	
Power Supply	10..40 Vdc; 19..28 Vac
Isolation	1.500 V
LED status indicators	Power Supply Serial communication Ethernet SD card
Protection degree	IP20
Operating temperature	-10..+50°C
Dimension (wxhxd)	100 x 17.5 x 112 mm
Case	Nylon 6, 30% fiberglass filled self extinguishing class V0
Connection	Removable terminals with section of 2.5 mm2
Mouting	35 mm DIN rail (IEC EN 60715)
COMMUNICATION	
Ethernet	Nr.1 Ethernet Port 10/100 Mbps (RJ45)
Serial Ports	Nr 1 RS232 / RS485 switchable Nr. 1 RS485
USB	Nr 1 micro USB on side connector
Industrial protocols	ModBUS TCP-IP, ModBUS RTU, custom protocols
IT protocols	FTP client, SMTP client, http, ModBUS TCP, ModBUS RTU
INPUT DATA	
Channels / Type	Nr 2 Analog Input @16 bit configurable 0..30V, 0..20mA
PROCESSOR / MEMORY	
Processor	ARM 120 MHz, 32 bit
RAM / FeRAM	256 MB / 256 byte
Slot Micro SD	SD Card up to 32 GB
CONFIGURATON / NOMRS	
System softwre	Z-NET4 / Straton
Web Server	Yes
PLC programming	IEC 61131 (Straton) with custom libraries
Marking	CE
Norms	EN 61000-6-4, EN 61000-6-2

APPLICATION NOTE

TEMPERATURE REGULATION SYSTEM WITH HYSTERESIS LOOP



ORDER CODES

Code	Description
Z-TWS11	IEC 61131 multifunction controller with built-in I/O
SOFTWARE	
STRATON-D-USB	Straton activation key for IEC 61131 controllers
STRATON-IDE256	Straton development environment, 256 tags, USB activation key
STRATON-IDE512	Straton development environment, 512 tags, USB activation key
STRATON-SP	Straton SENECA Package - CPU Seneca Installer suite
STRATON-WB	Straton workbench IEC 61131 free editor
Z-NET4	Automation system configurator, Web Editor included
ACCESSORIES	
MSD	Micro SD memory card with adapter
Z-PC-DIN2-17.5	DIN rail bus system 2 slots 17.5 mm
Z-PC-DINAL2-17.5	DIN rail bus system head terminal + 2 slots 17.5 mm
Z-POWER-115-15VA	19 Vac transformer, 115 / 15 VA
Z-POWER-230-15VA	19 Vac transformer, 230 / 15 VA
Z-POWER-230-25VA	19 Vac transformer, 230 / 25 VA
Z-SUPPLY	Single-phase switching power supply 24V @ 1.5A
CABLES	
CE-RJ45-RJ45-C	Crossover Ethernet cable (RJ45-RJ45)
CE-RJ45-RJ45-R	Straight-thru Ethernet cable (RJ45-RJ45)
CS-DB9F-CLAMP	RS485 connection cable (DB9F-Clamps)
CS-DB9F-TIP-V	RS485 serial connection cable (DB9F - tips)
CS-DB9M-TIP-V	RS485 serial connection cable (DB9M - tips)
CU-A-MICROB	USB-A Micro USB-B 5 P plug cable

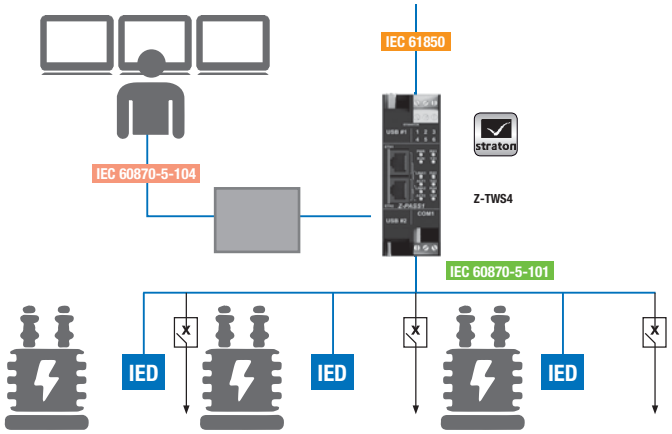
Z-TWS4

IEC 61131 MULTI-FUNCTION CONTROL UNIT, STRATON / LINUX EMBEDDED

TECHNICAL DATA

GENERAL DATA	
Power Supply	11..40 Vdc; 19..28 Vac
Power Consumption	Max 6 W
Isolation	Max 1.500 V
LED Status indicators	Power Supply Ethernet Communication Ethernet Data Transmission Serial Data Transmission
Protection Degree	IP20
Operating Temperature	-20..+55°C
Dimension	100 x 112 x 35 mm
Weight	250 g
Enclosure	Nylon 6, 30% fiberglass filled, self extinguishing class V0
Hot swapping	Yes
Connection	Removable 3-way screw terminals, 5.08 mm pitch Rear IDC10 connector for DIN rail RJ45 - 4/54, RJ45, USB, Micro USB Plug-in Micro SD Card
Mounting	35 mm DIN rail (IEC EN 60715)
COMMUNICATION	
Ethernet	Nr. 2 Ethernet 10/100 Mbps (RJ45) ports
Serial ports	Nr. 1 RS232/RS485 Nr.2 RS485
USB	Nr. 1 Micro USB Nr 1 USB host
Industrial protocols	ModBUS TCP-IP, ModBUS RTU, custom protocols
Network protocols	PPP, HTTP, FTP client/server, ModBUS TCP-IP Cient/Server, OpenVPN
Energy protocols	IEC 60870-101/104, IEC 61850
CPU / MEMORY	
SofPLC	IEC 61131-3 Straton
Processor	ARM9 32-bit @ 400 Mhz
Flash Memory (data)	1 GB
RAM	64 MB
FeRAM	4 kB
Slot Micro SD	SD card up to 32GB
SETTING	
System Software	Z-NET4 / StratON / OPC Server
Build-in Web Editor	Yes
Build-in datalogger	Yes
PLC programming	IEC 61131 (Straton) with specifiic libraries
STANDARD	
Approvals	CE
Norms	EN 61000-6-4, EN 61000-6-2, EN 60950, IEC 61131

APPLICATION EXAMPLE



ORDER CODES

Code	Description
CONTROLLERS	
Z-TWS4-L-0	IEC 61131 multifunction controller, Linux based, OEM version
Z-TWS4-L-K	IEC 61131 multifunction controller, Linux based, USB-SW-KEY
Z-TWS4-S-0	IEC 61131 multifunction controller, workbench Straton, OEM version
Z-TWS4-S-K	IEC 61131 multifunction controller, workbench Straton, USB-SW-KEY
Z-TWS4-E-0	IEC 61131 advanced multi-function controlller, including energy protocols (IEC 60870-5-101, IEC 60870-5-104, IEC 61850) support, Straton workbench, OEM version
Z-TWS4-E-K	IEC 61131 advanced multi-function controlller, including energy protocols (IEC 60870-5-101, IEC 60870-5-104, IEC 61850) support, Straton workbench, CS-DB9M-MEF-PH cable, USB-SW-KEY
SOFTWARE	
OPC-SERVER-IO-1	OPC Server I/O 100 tags
OPC-SERVER-IO-2	OPC Server I/O 500 tags
OPC-SERVER-IO-3	OPC Server I/O unlimited tags
OPC-SERVER-MB-1	OPC Server ModBUS Slave 100 tags
OPC-SERVER-MB-2	OPC Server ModBUS Slave 500 tags
OPC-SERVER-MB-3	OPC Server ModBUS Slave unlimited tags
STRATON-D-USB	Straton activation key for IEC 61131 controllers
STRATON-IDE256	Straton development environment, 256 tags, USB activation key
STRATON-IDE512	Straton development environment, 512 tags, USB activation key
STRATON-IDEUN	Straton development environment, unlimtited tags, USB activation key
STRATON-IEC-E1	IEC 60870-5-101/104 Slave activation license
STRATON-IEC-E2	IEC 61850 Server activation license
STRATON-IEC-E3	IEC 60870-5-101/104 slave + IEC 61850 Server activation license
STRATON-IEC-E4	IEC 60870-5-101/104 Master / Slave activation license
STRATON-IEC-E5	IEC 61850 Client / Server activation license
STRATON-IEC-EF	IEC 60870-5-101/104 Master / Slave + IEC 61850 Client / Server activation license
STRATON-SP	Straton SENECA Package - CPU Seneca Installer suite
STRATON-WB	Straton workbench IEC 61131 free editor
Z-NET4	IEC 61131 controllers and I/O system SENECA configurator
ACCESSORIES	
MSD	Micro SD memory card with adapter
USB-SW-KEY	USB-key with software, libraries, platforms and development environments, manuals for Multifunction controllers
Z-PC-DIN1-35	DIN rail bus system 1 slot 35 mm
Z-PC-DINAL1-35	DIN rail bus system head terminal + 1 slot 35 mm
Z-POWER-115-15VA	19 Vac transformer, 115 / 15 VA
Z-POWER-230-15VA	19 Vac transformer, 230 / 15 VA
Z-POWER-230-25VA	19 Vac transformer, 230 / 25 VA
Z-SUPPLY	Single-phase switching power supply 24V @ 1.5A

NEW

Z-miniRTU

GSM/GPRS TELECONTROL UNIT WITH BUILT-IN IO AND STRATON SOFTPLC

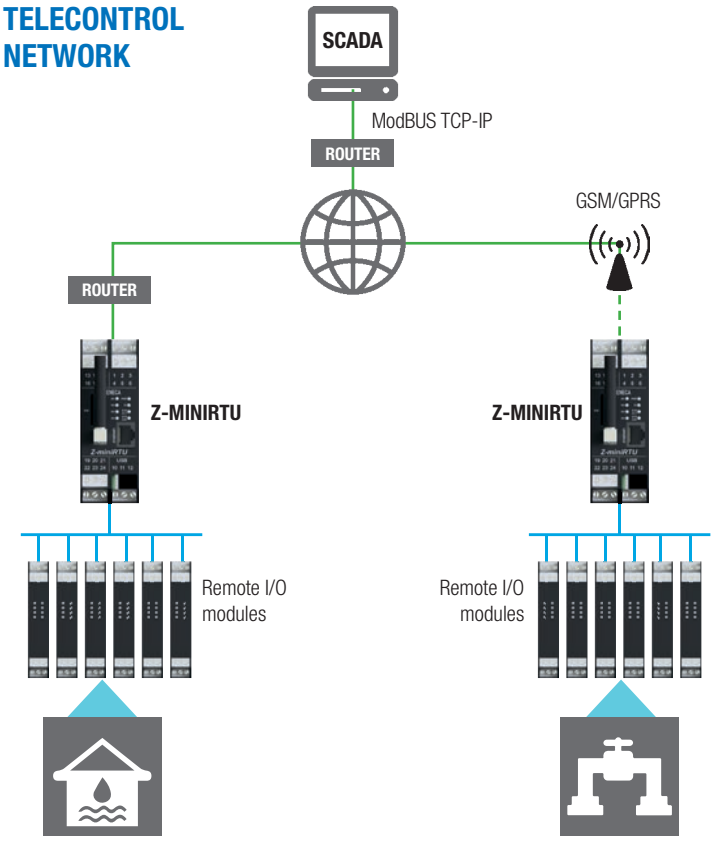
straton

TECNHICAL DATA

GENERAL DATA	
Power Supply	11..40 Vdc; 19..28 Vac
Consumption	6,5 W
UPS	Built-in (approx lifetime 1h)
Isolation	3.000 Vac (power supply/output); 1.500 (power supply/other circuits)
LED Status Indicators	Power Supply Serial Communication Ethernet SD card Input / Output status Modem status
Protection Degree	IP20
Operating temperature	-10..+50°C (-10..+40°C battery charging)
Dimension (whxd)	100 x 111 x 35 mm
Enclosure	Nylon 6, 30% fiberglass filled, self extinguishing class V0
Connection	Removable terminals with section of 2.5 mm2 / Rear IDC10 connector
Mounting	35 mm DIN rail (IEC EN 60715)
COMMUNICATION	
Ethernet	Nr.1 Ethernet Port 10/100 Mbps (RJ45)
Serial Ports	Nr.1 RS485 IDC10, max baud rate 115 kbps Nr.1 RS485/RS232 by terminals, max baud rate 115 kbps
USB	Nr 1 MicroUSB on side connector
Modem / Router	GSM/GPRS Quad-Band 850/900/1800/1900 MHz
Industrial protocols	ModBUS TCP-IP (Client/Server), ModBUS RTU (Master/Slave), custom protocols
IT protocols	PPP, HTTP Post, FTP Client, SMTP Client, NTP Client
INPUT DATA	
Channels / Type	N.4 Digital Input, PNP, NPN, max freq. 250 Hz; N.4 resettable counters / totalizers @32 bit N.2 Analog Input 0-20 mA, 0-30 Vdc, 16 bit resolution, 0,1% accuracy
OUTPUT DATA	
Channels / Type	Nr 2 Relay Output, SPDT, max 2A 250 Vac
PROCESSOR / MEMORY	
Processor	ARM 32 bit @ 120 MHz
O.S.	Real-Time multitasking
FeRAM (retentive variables)	Max 4 kB
Program memory size	Max 248 kB
Variable memory	Max 38 kB
Slot Micro SD	SD Card fino a 32 GB
SETTINGS	
Software environment	Z-NET4 / Straton
Web Editor	Built-in
Datalogger	Built-in
PLC progamming	IEC 61131-3 (Straton) with custom libraries
STANDARD	
Approvals	CE
Norms	EN 61000-6-4, EN 61000-6-2, EN 61010, EN 301511, EN 301489-1, EN 301489-7, EN 60950

APPLICATIONS

TELECONTROL NETWORK



ORDER CODES

Code	Description
Z-MINIRTU	GSM/GPRS telecontrol unit with built-in IO and Straton SoftPLC
SOFTWARE	
STRATON-D-USB	Straton activation key for IEC 61131 controllers
STRATON-IDE256	Straton development environment, 256 tags, USB activation key
STRATON-IDE512	Straton development environment, 512 tags, USB activation key
STRATON-SP	Straton SENECA Package - CPU Seneca Installer suite
STRATON-WB	Straton workbench IEC 61131 free editor
Z-NET4	Z-PC system configurator, Web Editor included
ACCESSORIES	
MSD	Micro SD memory card con adattatore
Z-PC-DIN1-35	DIN rail bus system 1 slot 35 mm
Z-PC-DINAL1-35	DIN rail bus system head terminal + 1 slot 35 mm
Z-POWER-115-15VA	19 Vac transformer, 115 / 15 VA
Z-POWER-230-15VA	19 Vac transformer, 230 / 15 VA
Z-POWER-230-25VA	19 Vac transformer, 230 / 25 VA
Z-SUPPLY	Single-phase switching power supply 24V @ 1.5A
CABLES	
CE-RJ45-RJ45-C	Crossover Ethernet cable (RJ45-RJ45)
CE-RJ45-RJ45-R	Straight-thru Ethernet cable (RJ45-RJ45)
CS-DB9F-CLAMP	RS485 connection cable (DB9F-Clamps)
CS-DB9F-TIP-V	RS485 serial connection cable (DB9F - tips)
CS-DB9M-TIP-V	RS485 serial connection cable (DB9M - tips)
CU-A-MICROB	USB-A Micro USB-B 5 P plug cable

NEW

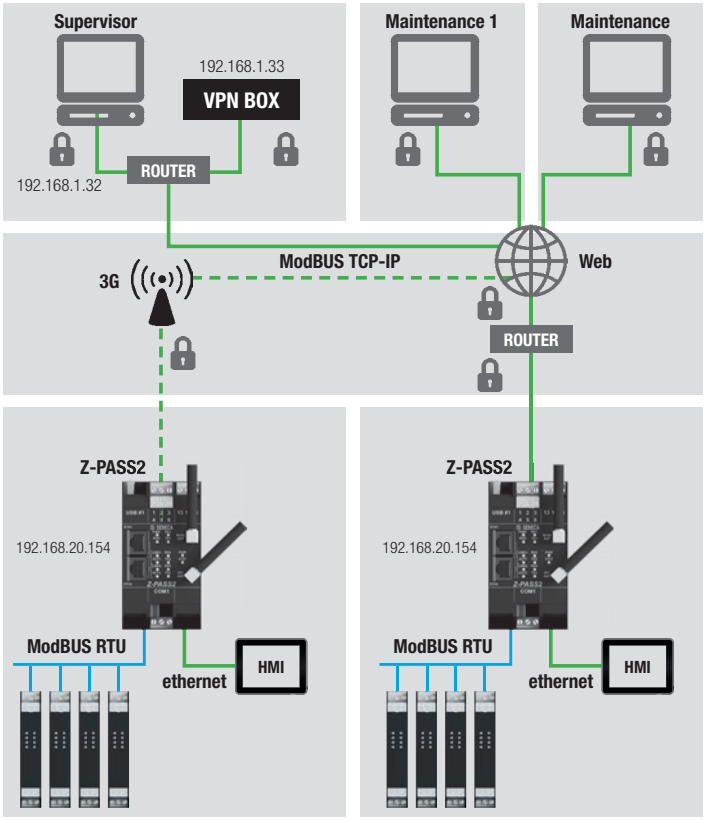
Z-PASS2-S

IEC 61131 ADVANCED CONTROL UNIT
STRATON EMBEDDED AND 3G+/ETH VPN ROUTING

straton

TECHNICAL DATA

GENERAL DATA	
Power Supply	11..40 Vdc; 19..28 Vac
Max Consumption	4 W @ 24Vac (typical), Max 6 W
Isolation	1500 Vac
LED status indicators	Power Supply Rx-Tx serial communication Ethernet link and traffic Modem status PLC working
Pollution Degree	2
Protection Degree	IP20
Operating Temperature	-20 °C..+55 °C
Dimension (lxhxw)	100 x 52,5 x 112 mm
Case	PA6 black plastic glass reinforced
Weight	450 g
Connection	Removable screw terminals 3 ways, step 5 mm
Mounting	35 mm DIN rail guide IEC EN 60715
COMMUNICATION	
Ethernet	Nr. 2 Fast Ethernet 10/100 Mbps, RJ45 front connector
Serial ports	Nr. 1 RS232/RS485 switchable port, max baud rate 115k on connector Nr. 1 RS485 port, baud rate max 115k on IDC connector Nr. 1 RS485 port, max baud rate 115k on terminals
USB ports	Nr. 1 USB host port on side connector
Modem	UMTS, HSDPA (dual band) ; EDGE, GPRS, GSM (quad band)
Supported protocols	ModBUS TCP-IP, ModBUS RTU, custom protocols
Function Modes	ModBUS Bridge, ModBUS Gateway*, Serial Tunnelling*, 3G/ Ethernet router/modem HSDPA, HSUPA*, VPN, Remote Control - Single LAN, Remote Assistance - Point-To-Point (*programmable functions)
CPU / MEMORY	
Processor	ARM9 @ 400 MHz
Flash Memory (data)	1 GB
RAM	64 MB / 64 kB
Slot Micro SD	Yes
Scheda Micro SD	Max 32 GB
SETTINGS	
Embedded Web Server	Http server with Php and Cgi support Security access through basic authentication (login/password) Custom web pages
Firmware update	Locally by USB pendrive
Seneca VPN Manager	Yes
Seneca Discovery Device	Yes
SESC (Seneca Ethernet to Serial Connection)	Yes
SoftPLC IEC 61131	StratON
Configuration tools	SENECA VPN BOX Manager, SDD (Seneca Discovery Device), SESC (Seneca Ethernet to Serial Connection), StratON, Z-NET4
NORMS	
Certification Marks	CE
Norms	EN61000-6-4, EN61000-6-2 EN60950, EN301 511, EN301 489-1, EN301489-7



ORDER CODES

Code	Description
VERSION	
Z-PASS2-S-A	StratON Advanced Control Unit with built-in Eth/3G+ router, RS485 serial interfaces
Z-PASS2-S-B	StratON Advanced Control Unit with built-in Eth/3G+ router, RS232/RS485 serial interfaces
Z-PASS2-S-A-E	StratON Advanced Control Unit with built-Eth/3G+ router, RS485 serial interfaces, including energy protocols (IEC 60870-5-101, IEC 60870-5-104, IEC 61850)
Z-PASS2-S-B-E	StratON Advanced Control Unit with built-in Eth/3G+ router, RS485 serial interfaces, including energy protocols (IEC 60870-5-101, IEC 60870-5-104, IEC 61850)
VPN SERVER	
VPN BOX	VPN Server & Connectivity module for remote control and remote assistance
VPN BOX VM	VPN Server - Virtual Machine for remote control and remote assistance
VPN BOX MANAGER	Configuration software for VPN BOX, Server, sign-in credentials
VPN CC	VPN Client Communicator. Software tool for VPN network connection to install on client PCs
ACCESSORIES	
A-GSM	Dual band swing GSM external antenna, cable 3,2 m, SMA
A-GSM-QUAD	GSM quadband antenna
CS-DB9M-MEF-1012	Serial communication cable (DB9M / MEF 10-12)
MSD	Micro SD memory card with adapter
Z-PC DINAL2-52.5	DIN rail bus system head terminal + 2 slots 52.5 mm
SOFTWARE	
SDD	SENECA Discovery Device, IP scanner for Z-KEY, Z-PASS1, Z-PASS2
SESC	SENECA Ethernet to Serial Connection tool for Z-KEY, Z-PASS1, Z-PASS2
TEMP-TAG-Z-PASS	Excel template for Z-PASS-1/2/2S tags (gateway mode)
Z-NET4	Z-PC system configurator, Web Editor included
IEC 61131 SOFTWARE	
Straton	IEC 61131 IDE and licenses (for detailed information please refert to www.seneca.it or support@seneca.it)

NEW

S6001-RTU

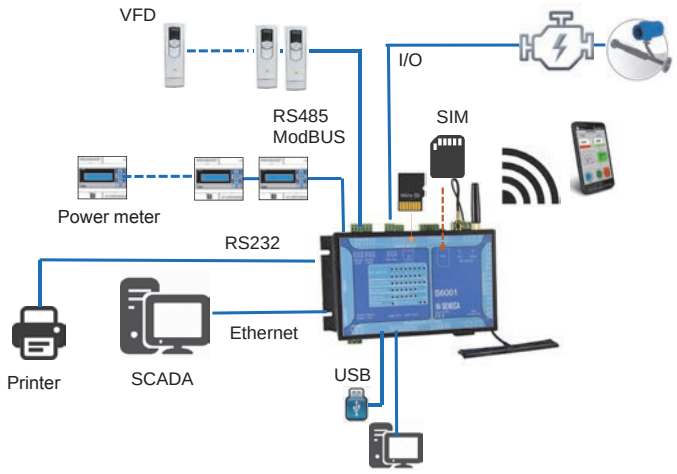
REMOTE CONTROL UNIT WITH BUILT-IN IO AND 3G+ MODEM

straton

TECHNICAL DATA

GENERAL DATA	
Power Supply	24 Vac ±15% @50/60Hz
Isolation	1.500 V
LED status indicators	Input / Output status Serial Communication Ethernet PLC status Modem status
Protection degree	IP20
Operating temperature	-10..+65°C
Dimension	190x105x60 mm
Enclosure	Aluminum
Connection	Removable terminals, max conductors dimension 2,5 mm^2
Mounting	35 mm DIN rail (IEC EN 60715)
COMMUNICATION	
Ethernet	Nr 1 Ethernet 10/100 Mbps (RJ45) port
Serial	Nr. 1 RS232 port; Nr. 2 RS485 ports
USB	Nr 1 USB host port
Modem / Router	Modem UMTS, HDSPA (dual band), EDGE, GPRS, GSM (quad band)
Industrial protocols	ModBUS RTU, ModBUS TCP-IP, custom protocols
Energy protocols	IEC 60870-101/104, IEC 61850
Network protocols	PPP, http, Ftp, Smtp, Open VPN
INPUT DATA	
Channels / Type	Nr 15 Digital Inputs PNP, (max voltage 24 Vdc) Nr 2 Digital Inputs (conductive liquid level switch) Nr 4 Analog Inputs (0..20 mA)
OUTPUT DATA	
Channels / Type	Nr 8 Digital Outputs SDPT 5A - 250 Vac relay Nr 1 Analog Output 0..10 V Nr 1 Analog Output 0..20 mA
PROCESSING / MEMORY	
Processor	ARM 32 bit @400 MHz
Flash Memory (data)	1 GB
RAM / FeRAM	64 MB / 4 kB
Slot Micro SD	SD Card up to32 GB
PROGRAMMING / SETTINGS	
System software environment	Z-NET4 / Straton
Web server / Datalogger	Yes
PLC programming	IEC 61131 (Straton) with specific libraries
STANDARDS	
Marking	CE
Norms	EN 61000-6-4, EN 61000-6-2, EN 60950, EN 301511, EN 301489-1, EN 301489-7

APPLICATION NOTE



ORDER CODES

Code	Description
S6001-RTU	Remote Control Unit with built-in IO and 3G+ modem
SOFTWARE	
STRATON-D-USB	Straton activation key for IEC 61131 controllers
STRATON-IDE256	Straton development environment, 256 tags, USB activation key
STRATON-IDE512	Straton development environment, 512 tags, USB activation key
STRATON-IDEUN	Straton development environment, unlimtited tags, USB activation key
STRATON-IEC-E1	IEC 60870-5-101/104 Slave activation license
STRATON-IEC-E2	IEC 61850 Server activation license
STRATON-IEC-E3	IEC 60870-5-101/104 slave + IEC 61850 Server activation license
STRATON-IEC-E4	IEC 60870-5-101/104 Master / Slave activation license
STRATON-IEC-E5	IEC 61850 Client / Server activation license
STRATON-IEC-EF	IEC 60870-5-101/104 Master / Slave + IEC 61850 Client / Server activation license
STRATON-WB	Straton workbench IEC 61131 free editor
ACCESSORIES	
STRATON-IDE	Activation key Straton IEC 6113
CE-RJ45-RJ45-C	Crossover Ethernet cable (RJ45-RJ45)
CE-RJ45-RJ45-R	Straight-thru Ethernet cable (RJ45-RJ45)
A-GSM	Dual band swing GSM external antenna, cable 3,2 m, SMA
A-GSM-DIR-5M	GSM-DECT-UMTS directive compact antenna
A-GSM-OMNIDIR	GSM-UMTS-WIFI Omnidirectional Antenna
A-GSM-OMNIDIR-10	GSM-UMTS-WIFI Omnidirectional Antenna, L=10 m
A-GSM-QUAD	GSM quadband antenna

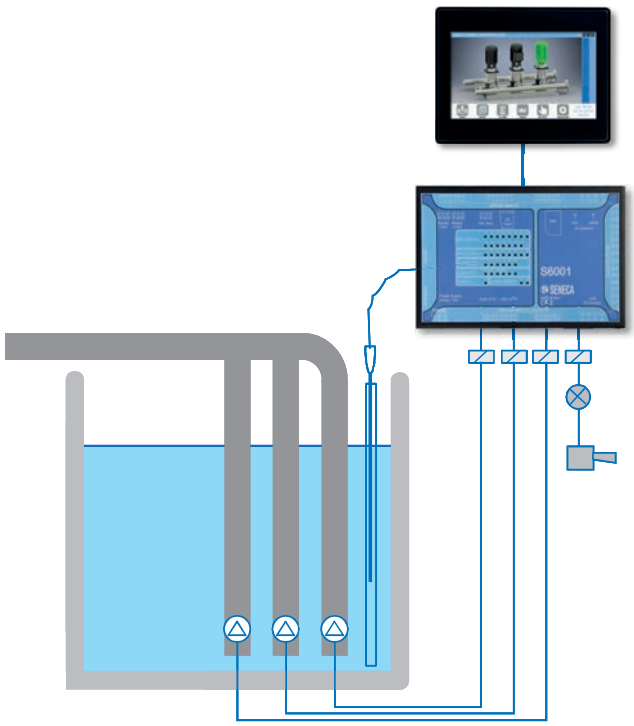
S6001-PUMP CONTROLLER

ADVANCED PUMP CONTROLLER WITH 7" HMI AND STRATON PROGRAMING SYSTEM

TECHNICAL DATA

GENERAL DATA	
Power Supply	10..40 Vdc; 19..28 Vac
Isolation	1.500 V
LED status indicators	Power Supply Serial communication Ethernet Gsm/Umts signal level I/O digital status
Protection degree	IP20
Operating temperature	-20..+50°C
Dimension	105 x 109 x 60 mm
Enclosure	Aluminum
Connection	Removable terminals, max conductors dimension 2,5 mm2
Mounting	35 mm DIN rail (IEC EN 60715)
COMMUNICATION	
Ethernet	Nr 1 Ethernet 10/100 Mbps (RJ45) port
Serial	Nr 2 RS485; Nr 1 RS232
USB	Nr 1 USB host port; Nr 1 USB micro USB
Modem	UMTS, HSDPA (dual band) or EDGE,GPRS,GSM (quad band)
INPUT DATA	
Channels / Type	Nr 15 Digital Inputs PNP, NPN (max voltage 24 Vdc) Nr 2 Digital Inputs (thresholds) Nr 4 Analog Inputs (0..20 mA)
OUTPUT DATA	
Channels / Type	Channels / Type Nr 1 Analog Output 0..10 V Nr 1 Analog Output 0..20 mA Nr 1 Alarm Output 12V/50 mA
PROCESSING / MEMORY	
Processor	ARM 32 bit @400 MHz
Flash Memory (data)	1 GB
RAM / FeRAM	64 MB / 4 kB
Slot Micro SD	SD Card up to32 GB
HMI	
Power Supply	24 Vdc
Display	7" TFT LED backlightened 800x480 pixel (WVGA), 64k colors Resistive touchscreen
Ports	Ethernet, USB
PROGRAMMING	
Setting	HMI application
Web Server	Yes
STANDARD	
Marking	CE
Norms	EN 301489-1, EN 301511, EN 301 489-7, EN61000-6-4, EN64000-6-2, EN60950

APPLICATION NOTE



ORDER CODES	
Code	**Description**
S6001-PC	Pump controller with built-in I/Os, modem 3G+, HMI 7"
ACCESSORIES	
CE-RJ45-RJ45-C	Crossover Ethernet cable (RJ45-RJ45)
CE-RJ45-RJ45-R	Straight-thru Ethernet cable (RJ45-RJ45)
A-GSM	Dual band swing GSM external antenna, cable 3,2 m, SMA
A-GSM-DIR-5M	GSM-DECT-UMTS directive compact antenna
A-GSM-OMNIDIR	GSM-UMTS-WIFI Omnidirectional Antenna
A-GSM-OMNIDIR-10	GSM-UMTS-WIFI Omnidirectional Antenna, L=10 m
A-GSM-QUAD	GSM quadband antenna
MSD	Micro SD memory card with adapter
Z-D-IO	8-CH, 6 digital input - 2 digital outputs control module

NEW

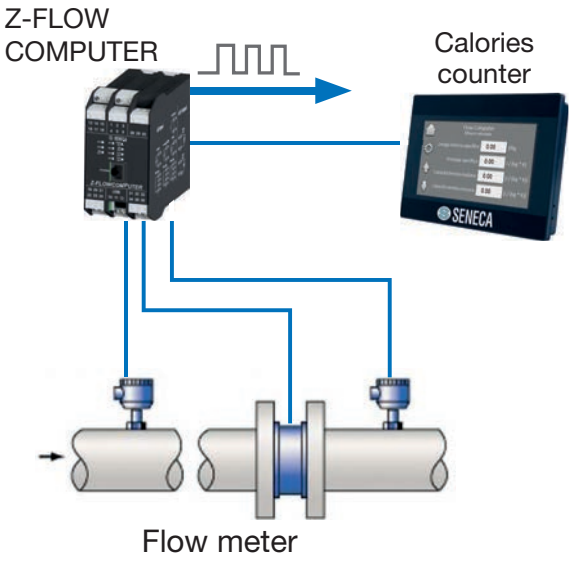
Z-FLOWCOMPUTER

UNIVERSAL WATER & STEAM FLOW COMPUTER WITH 4,3" HMI

TECHNICAL SPECIFICATIONS

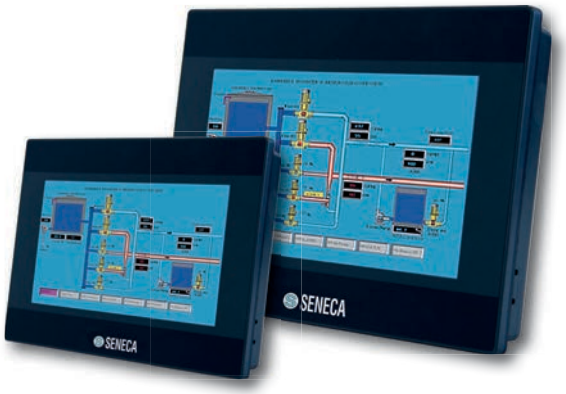
GENERAL DATA	
Power Supply	11..40 Vdc; 19..28 Vac
Power consumption	Max 4 W
Isolation	1500 Vac
LED status indicators	Power supply Serial communication Ethernet link and transmission SD card Digital I/O status
Protection degree	IP20
Operating temperature	-10..+50 °C
Dimension	100 x 52,5 x 112 mm
Enclosure	Nylon 6 with 30% glass fiber, V0 self-extinguished class
Connection	Removable screw terminals at 3 ways with 5 mm pitch
Mounting	35 mm DIN rail (IEC EN 60715)
COMMUNICATION	
Ethernet	Nr 1 10/100Tx Ethernet (RJ45) port
Serial	Nr. 1 RS232 / 485 port on clamps, baud rate 115k
USB	Nr. 1 USB port on side connector
Industrial protocols	ModBUS RTU, ModBUS TCP-IP Server
Network protocols	Http, Ftp
INPUT DATA	
Channels	Nr 4 Digital Inputs PNP, NPN (max voltage 30Vdc) Nr 2 Analog Inputs 0..20 mA / 0..30 Vdc @16bit Nr. 1 Analog Universal Input V / mA / RTD / TC
OUTPUT DATA	
Canali	Nr. 2 Digital Outputs SPDT relay max 2A 250 Vac Nr. 1 Analog Output mA / V
PROCESSING / MEMORY	
CPU	ARM 32 bit
Flash Memory (data)	1M + 2 MB
RAM	256 kB
FeRAM	256 byte
Slot Micro SD	Yes
Micro SD card (ext. memory)	Max 32 GB
HMI	
Display	4,3", 480x272, RM 600 MHz, TFT 16 million colors
RAM	128 MB
Communication ports	Nr.1 USB host 2.0 Nr. 1 RS232/RS485 Nr. 1 RS485 Nr. 1 Fast Ethernet
Dimension	128x102x32 mm
SETTINGS	
Software	EASY FLOW COMPUTER
Web server	Yes (Web Configurator)
Datalogger	Yes
STANDARD	
Marking	CE
Norms	EN 61000-6-4, EN 61000-6-2, EN 61000-1

APPLICATION NOTE



ORDER CODES	
Code	**Description**
Z-FLOWCOMPUTER	Universal water / steam flow computer with 4,3" HMI
ACCESSORI	
MSD	Micro SD memory card with adapter
CE-RJ45-RJ45-R	Straight-thru Ethernet cable (RJ45-RJ45)
CS-DB9F-CLAMP	RS485 connection cable (DB9F-Clamps)
SOFTWARE	
EASY FLOW COMPUTER	Z-FLOWCOMPUTER software manager


SENECA
SENECA
OLED 2.7”
OK
MENU



VISUAL

TOUCHSCREEN OPERATOR PANELS WITH TFT LCD 4,3" / 7" DISPLAY

VISUAL touchscreen Operator Panels are suitable to satisfy a wide range of applications from small automation to control of complex industrial processes.
With 4.3" and 7" widescreen format display they allow the visualization of more information than a traditional display, while ensuring external compact dimension.
HMI **VISUAL** screens can be freely horizontally or vertically oriented, depending on the needs of the application. TFT displays support up to 16 million colors with high resolution and LED backlighting.
VISUAL operator terminals are designed to be installed in the harshest environmental conditions thanks to IP65 front protection. The VISUAL Series is customizable through the design toolkit "EasyBuilder" provided with a powerful and simple user interface.
Through Ethernet and RS232 / RS485 communication interfaces, with protocol support MODBUS RTU / TCP-IP, the HMI operator terminals are matchable to the most common industrial controllers and other supervisory and automation systems.

- TFT high resolution display of up to 16 million colors, LED backlit
- CE and UL certifications
- 400 MHz RISC processor A8 600 MHz Cortex
- Rugged construction with NEMA4 / IP65 protection degree
- 128 MB Flash memory 256 kB recipes memory
- Windows programming tool with advanced editing functions
- RS232 / RS485 and Ethernet communication with ModBUS RTU and ModBUS TCP-IP protocol support
- 4-wire resistive touchscreen

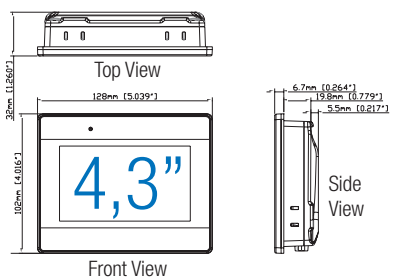
TOUSCHREEN OPERATOR PANELS TFT LCD

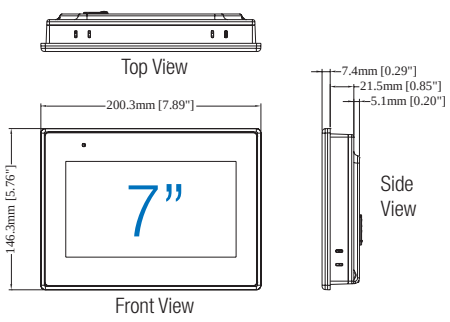
	VISUAL1	VISUAL2	VISUAL3	VISUAL4
				
	4,3" HMI color widescreen panel touchscreen	7" HMI color widescreen panel touchscreen	4,3" HMI color widescreen panel touchscreen with Ethernet interface	7" HMI color widescreen panel touchscreen with Ethernet interface
DISPLAY				
Dimension	4.3" TFT LCD	7" TFT LCD	4,3 " TFT LCD	7" TFT LCD
Resolution	480x272	800x480	480x272	800x480
Brightness	500 cd/m^2	350 cd/m^2	400 cd/m^2	350 cd/m^2
Contrast	500:1	500:1	500:1	500:1
Backlit	LED, > 30.000 hours	LED, > 30.000 hours	LED, > 30.000 hours	LED, > 30.000 hours
Colors	65536	65536	16,7 million	16,7 million
Touchscreen	4 wires, resistive type	4 wires, resistive type	4 wires, resistive type	4 wires, resistive type
Accuracy	±2%	±2%	±2%	±2%
CONNECTIONS				
USB	Nr.1 USB Client 2.0 (Mini USB)	Nr.1 USB Host 2.0 Nr.1 USB Client 2.0 (Mini USB)	Nr 1 USB Host 2.0	Nr1 USB Host 2.0
Ethernet	-		Nr.1 Ethernet 10/100BaseTx – RJ45	Nr.1 Ethernet 10/100BaseTx – RJ45
Serial	Nr 1 RS232/RS485	Nr 1 RS232/RS485	Nr 1 RS232/RS485	Nr 1 RS232/RS485
GENERAL DATA				
Storage Memory	128 MB	128 MB	128 MB	128 MB
RAM	64 MB	64 MB	128 MB	128 MB
Processor	32 bit RISC 400 MHz	32 bit RISC 400 MHz	32 bit RISC Cortex A8 600 MHz	32 bit RISC Cortex A8 600 MHz
RTC	Built-in	Built-in	Built-in	Built-in
Power Supply	24 Vdc ±20%	24 Vdc ±20%	24 Vdc ±20%	24 Vdc ±20%
Power consumption	250 mA @ 24 Vdc	350 mA @ 24 Vdc	300 mA @ 24 Vdc	350 mA @ 24 Vdc
Case, dimension	Plastic, 128 x102 x 32 mm	Plastic, 200,4 x146,5 x 34 mm	Plastica, 128x102x32 mm	Plastic, 200.3x146.3x34 mm
Weight	250 g	520 g	250 g	600 g
Operating temperature	0..+50°C	0..+50°C	0..+50°C	0..+50°C
Protection Degree	NEMA4 / IP65	NEMA4 / IP65	NEMA4 / IP65	NEMA4 / IP65
Certification	CE	CE	CE, UL	CE
Norms	EN 55022, EN 55024, EN 61000-3-2, EN 61000-3-3, AS/NZS CISPR22	EN 55022, EN 55024, EN 61000-3-2, EN 61000-3-3, AS/NZS CISPR22	EN 55022, EN 55024, EN 61000-3-2, EN 61000-3-3, AS/NZS CISPR22	EN 55022, EN 55024, EN 61000-3-2, EN 61000-3-3, AS/NZS CISPR22
SETTINGS				
Programming Toolkit	EASY BUILDER 8000	EASY BUILDER 8000	EASY BUILDER PRO	EASY BUILDER PRO

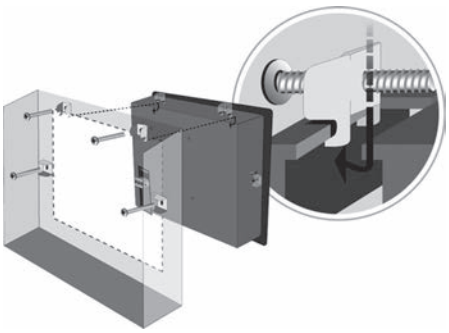
ORDER CODE

Code	Description
VISUAL1	4,3" Operator Panel, 480x272, RISC 400 MHz, TFT 65535 colors, Nr.1 RS232/RS485, Nr.1 USB client 2.0, RTC
VISUAL2	7" Operator Panel, 800x480, RISC 400 MHz, TFT 65535 colors, Nr.1 RS232/RS485, Nr.1 USB Host 1.1, Nr.1 USB Client 2.0, RTC
VISUAL3	4,3" Operator Panel, 480x272, ARM 600 MHz, TFT 16 million colors, RAM 128 MB, Nr.1 USB host 2.0, Nr.1 RS232/RS485, Nr.1 Ethernet
VISUAL4	7" Operator Panel, 800x480, ARM 600 MHz, TFT 16 million colors, RAM 128 MB, Nr.1 USB host 2.0, Nr.1 RS232/RS485, Nr.1 Ethernet
ACCESSORIES & SOFTWARE	
CS-DB9F-TIP-V	RS485 serial cable (DB9F / tips) for VISUAL1/2/3 operator panels connection
CS-DB9M-TIP-V	RS485 serial cable (DB9M / tips) for VISUAL4 operator panel connection
CE-RJ45-RJ45-R	Ethernet cable (RJ45 / RJ45) for VISUAL3/4 operator panel connection
EB 8000	VISUAL1/2 operator panels configuration software
EB PRO	VISUAL3/4 operator panels configuration software

DISPLAY DIMENSION AND MOUNTING







Technical data, diagrams and drawings in this catalog are indicative only and not binding

S401

OLED DISPLAY INDICATOR WITH MODBUS INTERFACE

EASY PC | Modbus | CE | OLED | RS232 RS485

TECHNICAL FEATURES

GENERAL DATA

Power supply	10-40 Vdc / 19-28 Vac
Power consumption	1 W
Isolation	1.500 Vac
Communication interface	2 x RS485 ModBUS RTU Master / Slave Speed 1.200..115.200 bps
Memory	RAM: 256 byte XRAM: 4kB Flash: 32 kB

VISUALIZATION AND MEASURE

Display	OLED 2,7", 128 x 64 pixel
Front keys	3 menu keys
Visualization	Up to 20 measures (max 3 per page) free settable
Serial communication	Address, parity, baud rate, response delay time, transmission delay time, data receiving timeout
Data storage	RAM, table 20 x 4 byte

THERMOMECHANICAL FEATURES

Operating temperature	-10..+60°C
Front protection	IP65
Dimension (w x h x d)	96x48x40 mm

CONFIGURATION, NORMS

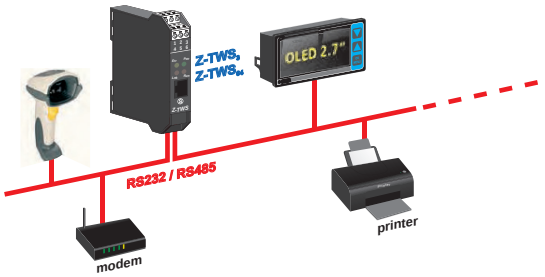
Software	Max 20 queries freely configurable, data management via Z-NET4
Programming	Communication parameters, language, contrast, brightness, range, offset, measure type
Norms	EN 61000-6-4/2002, EN 61000-6-2/2005, EN 61010-1/2001

ORDER CODES

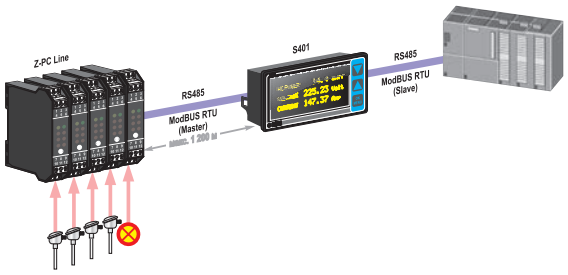
Code	Description
S401-L	ModBUS RTU indicator with OLED 2,7" display

APPLICATION NOTE

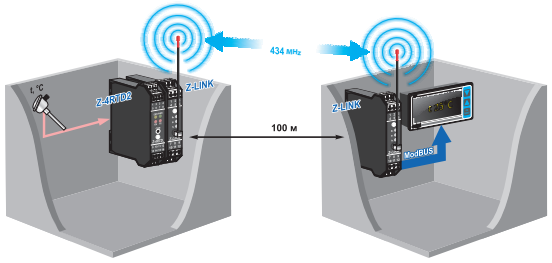
SERIAL LINE CONNECTION



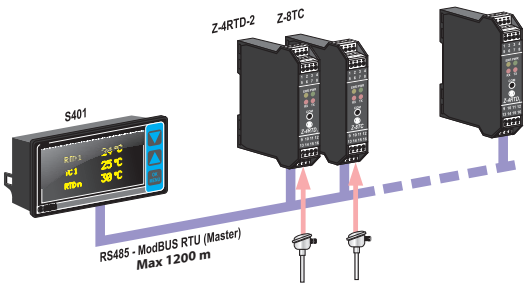
PLC LOCAL CONTROL



SIGNAL RE-TRANSMISSION



TEMPERATURE ACQUISITION



Technical data, diagrams and drawings in this catalog are indicative only and not binding


EASY
Znet4
SeAL
Seneca Advanced Language

Z-NET4

AUTOMATION AND I/O SYSTEM CONFIGURATION ENVIRONMENT

Straton / Codesys CPUs
Modbus I/O modules and devices
3rd part Modbus devices

Free download on www.seneca.it

- CPU/controller and I/O modules configurator
- Acquisition variables share memory
- Variables Database IEC61131 (StratON / CODESYS)
- Variables List OPC Server
- Variables trend, log variables, remote monitoring and remote alarm settings
- Creating hardware projects for SENECA controllers and RTU both Straton and CODESYS
- Reading existing configurations from SENECA controllers and RTU both Straton and CODESYS

EASY

PLUG&PLAY SOFTWARE SUITE FOR SENECA PROGRAMMABLE INSTRUMENTS

All SENECA programmable devices

Free download on www.seneca.it

Basic configuration for:

- Modbus I/O digital modules (Z-D-IN, Z-D-OUT, Z-10-D-IN, Z-10-OUT, Z-D-IO)
- Modbus I/O analog modules (Z-4AI, Z-8AI, Z-3AO, Z-4TC, Z-8TC, Z-DAQ, Z-4RTD-2, ZPID, Z-DAQ-PID, Z-SG, Z203, Z204, S203T, S203TA)
- Modbus/CANopen I/O digital modules (ZC-24DI, ZC-24DO, ZC-16DI-8DO)
- CANopen I/O analog modules (ZC-8AI, ZC-3AO, ZC-8TC, ZC-4RTD, ZC-SG)
- Displays (S401, S311A, S311D, S312A)
- Loop powered devices (T120, T121, K120RTD, K121)
- Signal converters (K111, Z109REG2, Z109UI2, Z109TC2, Z109RTD2, Z170REG)
- Remote Control Units (MY2, Z-GPRS2-SEAL)

SEAL

SENECA ADVANCED LANGUAGE, PROGRAMMING GRAPHIC SOFTWARE

MYALARM2
Z-GPRS2-SEAL
Z-GPRS3
Z-UMTS
Z-LOGGER-SEAL

Free download on www.seneca.it

- I/O channels, bit operations, comparators, trigger and timing settings.
- Function and control blocks settings
- Support and configuration of MYALARM2, Z-GPRS2-SEAL, Z-LOGGER, Z-LOGGERSEAL
- DTMF commands messages management for MYALARM2 and Z-GPRS2-SEAL
- Customizable text for fast commands towards MYALARM2 and Z-GPRS2-SEAL
- Diagnostic messages of non-response ModBUS Master requests (RTU Slave disconnection)
- Management of temporary variables for data exchange with SCADA systems
- Setting Ethernet/Web Server and Cloud mode with ftp, http and smtp protocols

OPC

PLUG&PLAY SOFTWARE SUITE FOR SENECA PROGRAMMABLE INSTRUMENTS

Straton / Codesys CPUs
Modbus I/O modules and devices
3rd part Modbus devices

- OPC-SERVER: OPC Server Z-TWS. Standard version for remote units connection and data download. Data exchange via web service / cgi
- OPC-SERVER I/O: ModBUS RTU slave or ModBUS TCP supported, PC ModBUS Master, GPRS connections, 100, 500 unlimited tag versions
- OPC-SERVER MB: ModBUSRTU slave or ModBUS TCP supported, slave devices simulations, GPRS connections, 100, 500 unlimited tag versions

STRATON

IEC 61131-3 INTEGRATED DEVELOPMENT TOOL BASED

Z-TWS11
Z-TWS4
Z-MINIRTU
S6001-RTU
Z-PASS-S

- Fast compiling
- Support all data types from 8 up to 64 bits
- Arrays and data structures
- User Defined Function Blocks
- Full support of OLE drag and drop
- Support of multitasking in a single project
- IEC 61131-3 programming languages supporting: Sequential Function Chart (SFC), Function Block Diagram (FBD), Ladder Diagram (LD), Structured Text (ST), and Instruction List (IL)

ORDER CODE

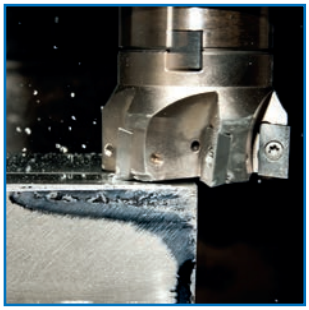
Code	Description
Z-NET	
Z-NET3	Z-TWS3 based system configurator, Web Editor included
Z-NET4	Z-PC system configurator, Web Editor included
SENECA PACKAGE	Z-NET software suite
EASY	
EASY FLOW COMPUTER	Z-FLOWCOMPUTER sofware manager
EASY LP	Plug&Play software suite for loop powered devices (K120RTD, K121, T120, T121)
EASY SETUP	Plug&Play software suite for SENECA programmable instruments
SEAL	
SEAL	SENECA Advanced language, programming graphic software for MYALARM2, Z-4000, Z-GPRS2-SEAL, Z-GPRS3, Z-LOGGER-SEAL
SEAL LEGACY	SENECA Advanced language, programming graphic software with wizard for Z-GPRS2-SEAL, Z-LOGGER-SEAL
OPC	
OPC-SERVER	OPC Server Z-TWS
OPC-SERVER-IO-1	OPC Server I/O 100 tags
OPC-SERVER-IO-2	OPC Server I/O 500 tags
OPC-SERVER-IO-3	OPC Server I/O unlimited tags
OPC-SERVER-MB-1	OPC Server ModBUS Slave 100 tags
OPC-SERVER-MB-2	OPC Server ModBUS Slave 500 tags
OPC-SERVER-MB-3	OPC Server ModBUS Slave unlimited tags
OPC-SERVER-D	OPC Server demo (30')
STRATON	
STRATON-D-USB	Straton activation key for IEC 61131 controllers
STRATON-IDE256	Straton development environment, 256 tags, USB activation key
STRATON-IDE512	Straton development environment, 512 tags, USB activation key
STRATON-IDEUN	Straton development environment, unlimtited tags, USB activation key
STRATON-IEC-E1	IEC 60870-5-101/104 Slave activation license
STRATON-IEC-E2	IEC 61850 Server activation license
STRATON-IEC-E3	IEC 60870-5-101/104 slave + IEC 61850 Server activation license
STRATON-IEC-E4	IEC 60870-5-101/104 Master / Slave activation license
STRATON-IEC-E5	IEC 61850 Client / Server activation license
STRATON-IEC-EF	IEC 60870-5-101/104 Master / Slave + IEC 61850 Client / Server activation license
STRATON-SP	Straton SENECA Package - CPU Seneca Installer suite
STRATON-UPGRADE1	STRATON UPGRADE From 256 To 512 tag
STRATON-UPGRADE2	STRATON UPGRADE From 512 To Unlimited tags
STRATON-UPGRADE3	STRATON UPGRADE From 256 To Unlimited tags
STRATON-WB	Straton workbench IEC 61131 free editor
CODESYS	
CODESYS	IEC 61131 CODESYS v.2.3 environment for Z-TWS5 programming
CODESYS-SP	CODESYS SENECA PACKAGE (CODESYS 2.3.9.22, JMobile 2.0.0.324, Windows CE Remote Host 3.00, Z-NET4 1.31, OPC Server IO 2.07, CODESYS Seneca Library 1.1.0 e 2.0.0)
DRIVERS AND TOOLS	
D-USB	USB drivers (S107USB, K107USB, EASY-USB, S117P1)
EDS	EDS files connection for CANopen I/P modules
KIT-USB	Programming toolkit for USB interface instruments
LS-C	SENECA - CoDeSys libraries
LS-I	SENECA - Isagraf libraries
LS-S	SENECA - Straton libraries
LS-VI	SENECA - LabVIEW Driver VI libraries
Z-CALC	Z-CALCULUS, energy counter software based on OPC technology

DATA RECORDER

DATA ACQUISITION, VISUALIZATION AND RECORDING SOFTWARE

DATA RECORDER is an open software, scalable and costeffective Windows PC-based, suitable for laboratories, testing rooms, process measurements monitoring. The physical data acquisition takes place via I/O modules of Z-PC Series also without SENECA CPUs.
The software is compatible with any standard ModBUS RTU slave devices and ModBUS TCP-IP. A tabular menu provides access to the configuration of the channels from where you can set various parameters (name, description, unit of measure, start-end scale) for each track.

APPLICATIONS



TEST BENCH

R&D LAB

HVAC SYSTEMS

QUALITY CONTROL

TEMPERATURE MONITORING

PUMPS & MOTORS TESTING ROOMS

Software license from 2 to 64 channels

Real-time data recording with pen or display (digit)

Logging files (mdb, csv) displayed with Trend Viewer software tool

Data and project integration with Z-NET suite configuration

PLUS package with math, report, alarm, multiclient functions

Scheduling recording

Serial, Ethernet, Wireless connection support

Advanced temperature sensors calibration

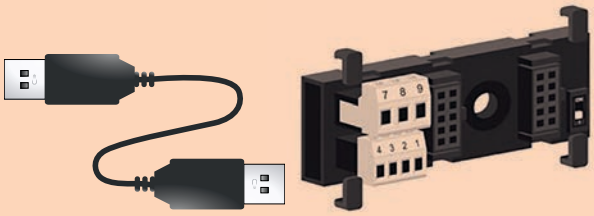
ORDER CODES

Code	Description
DR-2	2-CH Data Recorder, data acquisition and visualization software for Modbus IO modules
DR-4	4-CH Data Recorder, data acquisition and visualization software for Modbus IO modules
DR-8	8-CH Data Recorder, data acquisition and visualization software for Modbus IO modules
DR-16	16-CH Data Recorder, data acquisition and visualization software for Modbus IO modules
DR-32	32-CH Data Recorder, data acquisition and visualization software for Modbus IO modules
DR-64	64-CH Data Recorder, data acquisition and visualization software for Modbus IO modules

ORDER CODES

Code	Description
DR-2-PLUS	2-CH Data Recoder + plus package (alarm, math, report, multi-client)
DR-4-PLUS	4-CH Data Recoder + plus package (alarm, math, report, multi-client)
DR-8-PLUS	8-CH Data Recoder + plus package (alarm, math, report, multi-client)
DR-16-PLUS	16-CH Data Recoder + plus package (alarm, math, report, multi-client)
DR-32-PLUS	32-CH Data Recoder + plus package (alarm, math, report, multi-client)
DR-64-PLUS	64-CH Data Recoder + plus package (alarm, math, report, multi-client)

ACCESSORIES 1.8



MSD
MICRO SD MEMORY CARD WITH SD ADAPTER

Order Codes: P.49

OPERATING VOLTAGE: 2.7 ~ 3.6V
OPERATING TEMPERATURE: -25 ~ 85°C
DURABILITY: 10,000 insertion/removal cycles
SD COMPATIBILITY: SD card spec. v1.1, MultiMediaCard upward compatibility, SD Association File System Specification
MECHANICAL WRITE PROTECTION: Switch with microSD adapter
FORM FACTOR: 11x15x1 mm

S20ADP-CM-S
ADAPTER MODULE FOR SINUSOIDAL SENSOR INPUT

Order Codes: P.49

VERSION: DIN module
POWER SUPPLY: Self-powered by output loop (NPN square weave)
INPUT: photoelectric sensor, AICHI turbine

COMBINED WITH:
K111, K112, S111, S112A/D/M, S20N, S21, S30, S311D, Z-10-D-IN - Z111, ZC-16DI-8DO, ZC-24DI, Z-D-IN, Z-D-IO

SG-EQ4
LOAD CELL CONNECTION AND EQUALIZATION SYSTEM

Order Codes: P.49

4-wire / 6-wire load cells Built-in Jumpers
2 methods excitation trimming

COMBINED WITH:
Z-SG, ZC-SG

Z-8R-10A
8 RELAY BOARD WITH 250 VAC - 10 A

Order Codes: P.49

POWER SUPPLY: 24 Vdc
CONNECTORS: IDC 10, 16(2), 20 pins for flat cable; screw terminals pitch 3,5 mm
Relay capacity: 250 Vac, 10 A
CHANNEL: 8
DIMENSION: (LxHxW): 160 x 80 x 46 mm

COMBINED WITH:
ZC-16DI-8DO, Z-10-D-OUT, ZC-24DO

Z-POWER
DIN RAIL 19 VAC V OLTAGE TRANSFORMER

Order Codes: P.49

PRIMARY VOLTAGE: 230 (115) Vac ± 10%
CASE: Self-extinguish thermoplastic material (V-0 class)
PROTECTION METHOD: Thermofuse
DIMENSION: 3 DIN modules (15 VA version), 5 DIN modules (25 VA)
PROTECTION DEGREE: IP 40

COMBINED WITH: I/O modules an CPUs

Z-SUPPLY
SINGLE-PHASE SWITCHING POWER SUPPLY 24V @ 1.5A

Order Codes: P.49

INPUT VOLTAGE RANGE: 110..230 Vac @ 47-63 Hz 0,7 A; 110..315 Vdc, 0,7 A
OUTPUT VOLTAGE: 24 Vdc ± 2%
REDUNDANCY: Parallel connection of 2 zsupply by IDC10 connector
OUTPUT CURRENT: 1,5 A
INTERNAL FUSE: 1,25A T type (delayed)
MOUNTING: On DIN 46277 rail
ISOLATION: Up to 3 KV input

COMBINED WITH: I/O modules an CPUs

Z-PC DIN
DIN RAIL BUS SYSTEM FOR FAST MOUNTING AND CONNECTION

Order Codes: P.49

MOUNTING: On 35 mm Din rail guide(DIN 46277)
HOT SWAPPING: Yes
MATERIAL: Nylon PA6 charged with 30% glass fiber
MOUNTING: on 35 mm din rail guide
TERMINAL: Power / data line

COMBINED WITH: I/O modules an CPUs

CABLES
SERIAL, ETHERNET, USB COMMUNICATION CABLES

Order Codes: P.49

ORDER CODE

Code	Description
MEMORY SUPPORT	
MSD	Micro SD memory card with adapter
ADAPTERS	
S20ADP-CM-S	Adapter module for sinusoidal sensor input
SG-EQ4	Equalization and connection circuit up to 4 load cell in parallel
SG-EQ4-BOXPG7	Equalization and connection circuit up to 4 load cell in parallel + IP67 box
Z-8R-10A	8 relay board with 250 Vac - 10 A
BUS SYSTEM	
Z-PC-DIN1-35	DIN rail bus system 1 slot 35 mm
Z-PC-DIN2-17.5	DIN rail bus system 2 slots 17.5 mm
Z-PC-DIN4-35	DIN rail bus system 4 slot 35 mm
Z-PC-DIN8-17.5	DIN rail bus system 8 slot 17.5 mm
Z-PC-DINAL1-35	DIN rail bus system head terminal + 1 slot 35 mm
Z-PC-DINAL2-17.5	DIN rail bus system head terminal + 2 slots 17.5 mm
Z-PC-DINAL2-52.5	DIN rail bus system head terminal + 2 slots 52.5 mm
POWER SUPPLY UNITS	
Z-POWER-115-15VA	19 Vac transformer, 115 / 15 VA
Z-POWER-230-15VA	19 Vac transformer, 230 / 15 VA
Z-POWER-230-25VA	19 Vac transformer, 230 / 25 VA
Z-SUPPLY	Single-phase switching power supply 24V @ 1.5A
CABLES	
CE-RJ45-RJ45-C	Crossover Ethernet cable (RJ45-RJ45)
CE-RJ45-RJ45-R	Straight-thru Ethernet cable (RJ45-RJ45)
CS-DB9F-CFV10	RS232 connection cable (DB9F-CFV10)
CS-DB9F-CLAMP	RS485 connection cable (DB9F-Clamps) for operator panels VISUAL
CS-DB9F-DB25M	Serial connection cable S21N - FH190-24
CS-DB9F-DB9F	RS232 serial connection cable (DB9F / DB9F)
CS-DB9F-TIP	RS232 communication cable (DB9F - tips)
CS-DB9F-TIP-V	RS485 serial connection cable (DB9F - tips) for operator panels VISUAL1/2/3
CS-DB9M-DB9F	RS232 straight thru programming cable (DB9M - DB9F)
CS-DB9M-DB9M	RS232 serial connection cable (DB9M - DB9M)
CS-DB9M-MEF-1012	Serial communication cable (DB9M / MEF 10-12) for Z-KEY
CS-DB9M-MEF-PH	Serial communication cable (DB9M / MEF 10-12) 3 wires, 1,5 mt
CS-DB9M-MICROB	Serial communication cable (DB9M / Micro USB) Z-TWS5
CS-DB9M-TIP	RS485 serial connection cable (DB9M - tips)
CS-DB9M-TIP-V	RS485 serial connection cable (DB9M - tips) for operator panel VISUAL4
CS-JACK-DB9F	Serial programming cable (Jack / DB9F)
CS-JACK-JACK	Programming cable Z109REG2-1 (Jack / Jack)
CS-RJ10-AMP	Programming cable for T120 / K120RTD (RJ10 / AMP MODU II 4 F)
CS-RJ10-DB25M-1	Communication cable for modem (RJ10 / DB25M)
CS-RJ10-DB25M-2	Communication cable for modem and operator panels (RJ10 / DB25M)
CS-RJ10-DB9F	RS232 serial connection cable (RJ10 / DB9F)
CS-RJ10-DB9M	Modem serial connection cable (RJ10 / DB9M)
CS-RJ10-TIP	Serial communication cable (RJ10 / 4 tips) 1,5 mt
CS-TIP-MEF-PH	Serial communication cable (tips/4-ways connector)
CS-TIP-MICROB	Serial communication cable (Tips / Micro USB) - ZTWS5
CS-TPW-TIP	RS485 Tp-Wire serial cable (Tp-Wire / tips)
CS-TPW-TPW	Tp-Wire cable (Tp-Wire / Tp-Wire)
CU-A-MICROB	USB-A Micro USB-B 5 P plug cable
CU-A-MINIB-1	USB-A Mini USB-B 5 P plug cable, 1 mt
CU-A-MINIB-2	USB-A Mini USB-B 5 P plug cable, 2 mt
CU-A-MICRO-OTG	Micro USB OTG to USB Type A (female) Adapter Cable

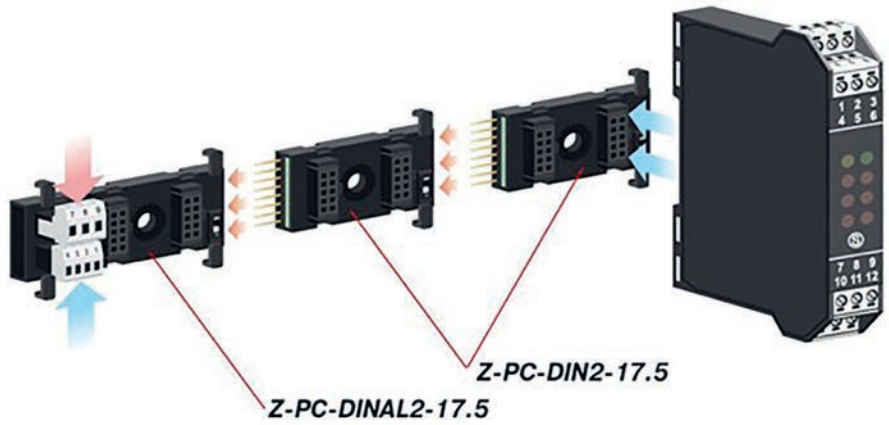
Z-PC DIN - BACKPLANE FOR POWER & BUS COMMUNICATION FOR Z-PC LINE

Category	Code	Width	Z-PC DIN system: Power Supply + bus communication with IDC10 backplane			Mandatory Z-PC Line system	Connection Mode
			Z-PC DINAL2 17.5	Z-PC DINAL1 35	Z-PC DINAL2 52.5		
ModBUS Digital I/O modules	Z-D-IN	17,5 mm	x			No	A
	Z-D-OUT	17,5 mm	x			No	A
	Z-10-D-IN	17,5 mm	x			Yes	C
	Z-10-D-OUT	17,5 mm	x			Yes	C
	Z-D-IO	17,5 mm	x			Yes	C
ModBUS (CANopen) Digital I/O modules	ZC-24DI	35 mm		x		Yes	C
	ZC-24DO	35 mm		x		Yes	C
	ZC-16DI-8DO	35 mm		x		Yes	C
ModBUS Analog I/O modules	Z-DAQ-PID	17,5 mm	x			Yes, only for RS485 ModBUS communication	B
	Z-4AI	17,5 mm	x			No	A
	Z-8AI	17,5 mm	x			Yes	C
	Z-3AO	17,5 mm	x			No	A
	Z-4RTD2	17,5 mm	x			Yes	C
	Z-4TC	17,5 mm	x			No	A
	Z-8TC	17,5 mm	x			Yes	C
	Z-SG	17,5 mm	x			Yes, only for RS485 ModBUS communication	B
ModBUS (Ethernet) mixed I/O modules	ZE-2AI	17,5 mm	x			No	A
	ZE-4DI-2AI-2DO	35 mm		x		No	A
	Z-4DI-2AI-2DO	35 mm		x		No	A
CANopen Analog I/O modules	ZC-8AI	17,5 mm	x			Yes	C
	ZC-3AO	17,5 mm	x			Yes	C
	ZC-4RTD	17,5 mm	x			Yes	C
	ZC-8TC	17,5 mm	x			Yes	C
	ZC-SG	17,5 mm	x			Yes	C
Power measurement modules	Z203-1	17,5 mm	x			Yes, only for RS485 ModBUS communication	B
	Z204-1	35 mm		x		No	A
Controllers	Z-TWS4	35 mm		x		Yes	C
	Z-TWS11	17,5 mm		x		Yes with nr.2 enabled serial ports	D
	Z-PASS2-S	52,5 mm			x	Yes with nr.3 enabled serial ports	E
	Z-MINIRTU	35 mm		x		Yes with nr.3 enabled serial ports	E
	Z-FLOWCOMPUTER	35 mm				No	A
Dataloggers	Z-GPRS2-SEAL	35 mm		x		Yes with nr.2 enabled serial ports	D
	Z-GPRS3	35 mm		x		Yes with nr.2 enabled serial ports	D
	Z-LOGGER3	35 mm		x		Yes with nr.2 enabled serial ports	D
Networking	Z-KEY	17,5 mm	x			Yes with nr.2 enabled serial ports	D
	Z-PASS1	35 mm		x		Yes	C
	Z-PASS2	52,5 mm			x	No	E
	Z-MODEM	35 mm		x		No	A
	Z-MODEM-3G	17,5 mm	x			Yes	C

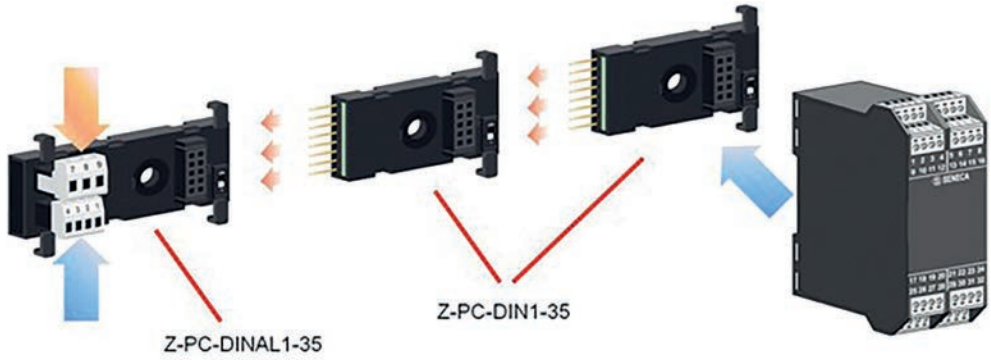
BACKPLANE FOR POWER & BUS COMMUNICATION FOR Z-PC LINE

	DESCRIPTION	SLOT	STEP	SUPPLY/BUS TERMINAL	HOT SWAPPING	DIN RAIL MOUNTING
	**Z-PC-DINAL1-35** DIN rail bus system head terminal + 1 slot 35 mm	1	35 mm	Yes	Yes	Yes
	**Z-PC-DINAL2-17.5** DIN rail bus system head terminal + 2 slots 17.5 mm	2	17,5 mm	Yes	Yes	Yes
	**Z-PC DINAL2-52.5** IN rail bus system head terminal + 2 slots 52.5 mm	2	52,5 / 17,5 mm	Yes	Yes	Yes
	**Z-PC-DIN1-35** DIN rail bus system 1 slot 35 mm	1	35 mm	-	Yes	Yes
	**Z-PC-DIN2-17.5** DIN rail bus system 2 slots 17.5 mm	2	17,5 mm	-	Yes	Yes
	**Z-PC-DIN4-35** DIN rail bus system 4 slot 35 mm	4	35 mm	-	Yes	Yes
	**Z-PC-DIN8-17.5** DIN rail bus system 8 slot 17.5 mm	8	17,5 mm	-	Yes	Yes

17.5 mm DIN MODULE CONNECTION EXAMPLE



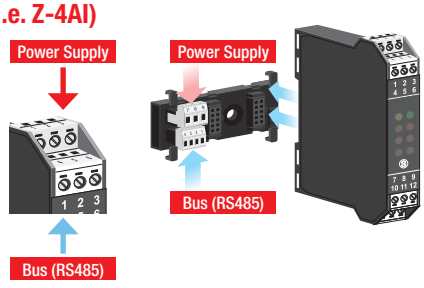
35 mm DIN MODULE CONNECTION EXAMPLE



CONNECTION MODES

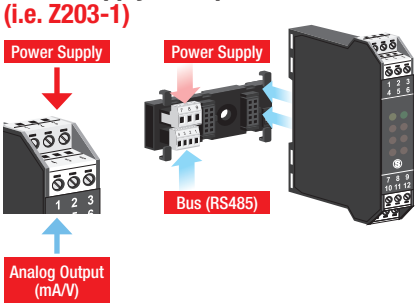
A BUS (RS485): CLAMPS OR IDC10

POWER SUPPLY: CLAMPS OR IDC10
(i.e. Z-4AI)



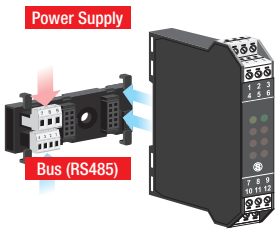
B BUS (RS485): ONLY IDC10

Power Supply: Clamps or IDC10
(i.e. Z203-1)



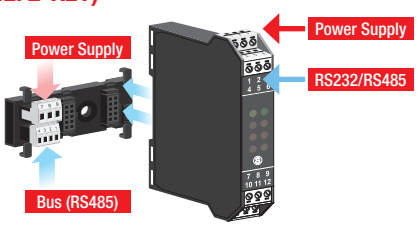
C BUS (RS485): ONLY IDC10

Power Supply: IDC10
(i.e. Z-8TC)



D BUS (RS485): IDC10 ONLY WITH NR.2 ENABLED SERIAL PORTS

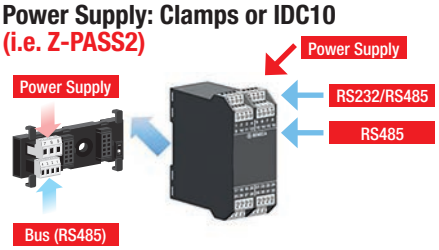
POWER SUPPLY: CLAMPS OR IDC10
(I.E. Z-KEY)



INDEPENDENT SERIAL PORTS
Nr.1 RS232/RS485 port (clamps)
Nr.1 RS485 port (bus/IDC10)

E BUS (RS485): IDC10 ONLY WITH NR.3 ENABLED SERIAL PORTS

Power Supply: Clamps or IDC10
(i.e. Z-PASS2)



INDEPENDENT SERIAL PORTS
Nr.1 RS232/RS485 port (clamps)
Nr.1 RS485 port (clamps)
Nr.1 RS485 port (bus/IDC10)

INDUSTRIAL COMMUNICATION & TELECONTROL

2

Industrial Communication & Telecontrol

Industrial Communication & Telecontrol product line includes industrial modems and gateways, VPN routers, radios UHF/VHF, serial communications interfaces and fiber optics, remote control units, remote alarm and assistance units. SENECA products for industrial communication support leading network protocols HTTP, FTP, SMTP, TCP-IP, and technologies web-based and wireless like VPN and 3G+. SENECA communication equipments allow the extension of scalable networks and allow data communication between different levels of IT and industrial network architecture.
Networking and remote monitoring SENECA solutions offer open standards, scalability and highest connectivity for data transmission from and to supervision centers.

2.1 MYALARM2 Datalogger & Alarm Unit

2.2 Advanced Datalogger

2.3 IEC 61131-3 Straton RTUs

2.4 VPN Connectivity Solutions

LET'S VPN CONNECTIVITY SOLUTIONS

2.5 Networking Gateways Routers Modems

2.6 Serial / USB Converters

2.7 Fiber Optic Converters

2.8 Radiomodems

DATALOGGER MYALARM2 2.1

2

MyALARM2

GSM/GPRS DATALOGGER, ALARM UNIT

MYALARM2 is a GSM / GPRS remote alarm / control system for building automation and small-medium industrial plants and machines.
The device supports also data logging function, GPS locator and dialer systems for access control and intrusion detection.
Thorugh simple commands sent by SMS text messages, phone rings, emails or mobile App, MYALARM2 can interact with remote systems just to switch a boiler on/off, turn a digital output on/off etc.

AUTOMATIC GATES CONTROL

HVAC / HEATING CONTROL SYSTEM

ANTI THIEFT / INTRUSION / ACCESS CONTROL SYSTEM

ANTI FLOOD SYSTEM, LEAKS AND WATER MONITORING

POWER FAILURE CONTROL

EMAIL, SMS AND INSTANT ALARM MESSAGES

GSM COMMUNICATOR VIA DTMF

GPS TRACKER

MAKE THE CHOICE FOR YOUR APPLICATION

MY2B

MY2B Basic Version

Datalogger
Allarming via SMS/E-mail
Commands via SMS/ring call

Applications
- Heating system control
- Automatic gate management
- Irrigation plants control
- Timed automations
- Temperature Acquisition
- Energy consumption monitoring
- Gas leaks monitoring
- Black out control

MY2S

SECURITY AND AUDIO VERSION

Basic Version + Alarm
via Multilanguage Audio messages
Commands via DTMF tones
Supplied Micro SD Card

Applications
- Access Control
- Alarms for maintenance people
- Domotic plant control

MY2G

MYALARM2 GPS

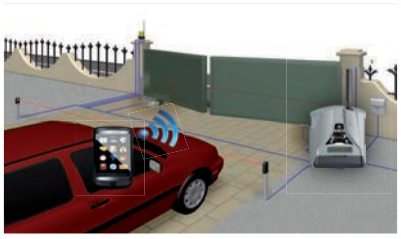
Basic Version + GPS localization
GPS localization sending complete of link for Google map
Tracking function
Alarm on virtual fence and speed
Supplied with Micro SD Card

Applications
- Vehicles and boat localization
- Light turning on-off according to the twilight functions

	Basic functions	Commands via DTMF tones	Supplied Micro SD	Audio message	Integrated GPS antenna
MY2B	•				
MY2S	•	•	•	•	
MY2G	•		•	•	•

APPLICATION NOTE

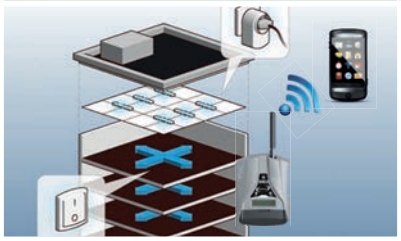
HOME AUTOMATION

AUTOMATIC GATE SYSTEMS	
HVAC / BOILER CONTROL	
INTRUSION DETECTION SYSTEMS	
ANTI-FLOOD SYSTEMS	

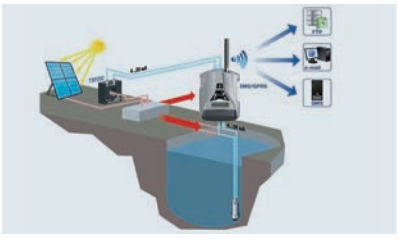
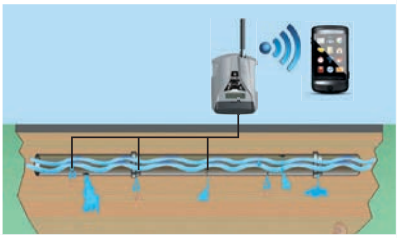
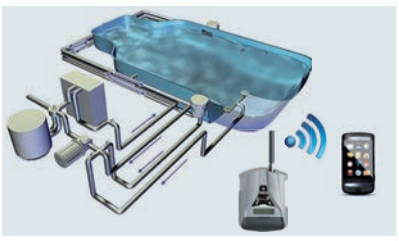
AUTOMATION

TIME-BASED AUTOMATION	
PUMPS TURNOVER	

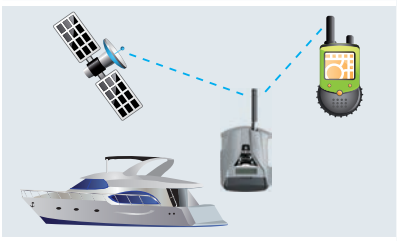
ENERGY MANAGMENT

POWER MONITORING, BLACKOUT ALARMS	
SOLAR PV MONITORING SYSTEMS	

PLANT MONITORING

AQUEDUCT SECURITY ALARM SYSTEMS	
TELECONTROL / REMOTE ACCESS	
WATER LOSS CONTROL	
COLD ROOM MONITORING	
VENDING MACHINE	
AUTOMATIC POOL CONTROL	

GPS TRACKING

GPS-BASED BOAT CONTROL	
GPS FLEET TRACKING SYSTEM	

DATALOGGER MYALARM2

	MY2B	MY2G	MY2S
			
	MyALARM2 - GSM/GPRS datalogger, standard version	**MyALARM2 - GSM/GPRS datalogger, GPS version**	**MyALARM2 - GSM/GPRS datalogger, Security Audio version**
GENERAL DATA			
Power Supply	6-15 Vdc @500mA	6-15 Vdc @500mA	6-15 Vdc @500mA
Power Consumption	3,5 W (max)	3,5 W (max)	3,5 W (max)
Protection Degre	IP20	IP20	IP20
Rechargeable battery	Li-On (1.000 mAh), lifetime 8 h	Li-On (1.000 mAh), lifetime 8 h	Li-On (1.000 mAh), lifetime 8 h
LED Status indicators	Power Supply - GSM / GPRS - Device Status	Power Supply - GSM / GPRS - Device Status	Power Supply - GSM / GPRS - Device Status
Operating Temperature	0…45 °C (best recommended*)	0…45 °C (best recommended*)	0…45 °C (best recommended*)
NTC Sensor	Built-in	Built-in	Built-in
Connections	Apring terminal clamps for 0.2 -1 mm² flexible conductors GSM antenna SMA connector GPS antenna MMCX connector Micro USB	Apring terminal clamps for 0.2 -1 mm² flexible conductors GSM antenna SMA connector GPS MMCX Antenna Micro USB	Apring terminal clamps for 0.2 -1 mm² flexible conductors GSM antenna SMA connector GPS MMCX Antenna Micro USB
Flash Memory	512 kB + 2 MB (log)	512 kB + 2 MB (log)	512 kB + 2 MB (log)
RAM	128 kB	128 kB	128 kB
SD Support	MicroSD and MicroSDHC Slot up to 32 GB	MicroSD and MicroSDHC Slot up to 32 GB	MicroSD and MicroSDHC Slot up to 32 GB
Display	Graphic LCD 32x128 pixels Display scroll button Visible area 29 x 8.6 mm	Graphic LCD 32x128 pixels Display scroll button Visible area 29 x 8.6 mm	Graphic LCD 32x128 pixels Display scroll button Visible area 29 x 8.6 mm
GSM	Quad band 850 / 900 / 1800 / 1900 MHz; Push-Pull SIM connector, voice & data SIM Card support	Quad band 850 / 900 / 1800 / 1900 MHz; Push-Pull SIM connector, voice & data SIM Card support	Quad band 850 / 900 / 1800 / 1900 MHz; Push-Pull SIM connector, voice & data SIM Card support
Dimension	80 x 105 x 30 mm	80 x 105 x 30 mm	80 x 105 x 30 mm
Weight	150 g	150 g	150 g
Material	ABS polycarbonate	ABS polycarbonate	ABS polycarbonate
Protocols	FTP client, SMTP client, SMTPS with client SSL	FTP client, SMTP client, SMTPS with client SSL	FTP client, SMTP client, SMTPS with client SSL
Configuration	Software (EASY SETUP)	Software (EASY SETUP)	Software (EASY SETUP)
FUNCTIONS			
Datalogger	x	x	x
Multiple Commands with SMS / Email / Ring	x	x	x
DTMF Commands	-	-	x
SD card bundle	-	x	x
Voice Alarms	-	x	x
GPS	-	x	-
DIGITAL INPUT			
Channels	4	4	4
Type	REED Contact, PNP, Pulscap, dry contact	REED Contact, PNP, Pulscap, dry contact	REED Contact, PNP, Pulscap, dry contact
Max frequency	30 Hz	30 Hz	30 Hz
ANALOG INPUT			
Channels	2	2	2
Type	Current 0..20 mA (max impedance 60 Ω); Voltage 0..30 V (max impedance 100 kΩ)	Current 0..20 mA (max impedance 60 Ω); Voltage 0..30 V (max impedance 100 kΩ)	Current 0..20 mA (max impedance 60 Ω); Voltage 0..30 V (max impedance 100 kΩ)
Resolution	16 bit	16 bit	16 bit
Accuracy	0,1% f.s.	0,1% f.s.	0,1% f.s.
DIGITAL OUTPUT (OPTION)			
Channels	2	2	2
Type	SPST Relay 3 A / 250 Vac	SPST Relay 3 A / 250 Vac	SPST Relay 3 A / 250 Vac
STANDARD			
Approvals	CE	CE	CE
Norms	EN 301 511, EN301 489-1, EN301 489-7, EN60950, ETSI	EN 301 511, EN301 489-1, EN301 489-7, EN60950, ETSI	EN 301 511, EN301 489-1, EN301 489-7, EN60950, ETSI

ORDER CODES

Code	Description	Code	Description
MY2B-0-0-M-B	MyALARM2 - GSM/GPRS datalogger, standard version, clamps, blue color	**MY2G-0-0-M-B-4X**	MyALARM2 - GSM/GPRS datalogger, GPS version, clamps, blue color, IP66 case
MY2B-0-0-M-G	MyALARM2 - GSM/GPRS datalogger, standard version, clamps, grey color	**MY2G-0-0-M-G-4X**	MyALARM2 - GSM/GPRS datalogger, GPS version, clamps, grey color, IP66 case
MY2B-R-0-M-B	MyALARM2 - GSM/GPRS datalogger, standard version, relay, clamps, blue color	**MY2G-R-0-M-B-4X**	MyALARM2 - GSM/GPRS datalogger, GPS version, relay, clamps, blue color, IP66 case
MY2B-R-0-M-G	MyALARM2 - GSM/GPRS datalogger, standard version, relay, clamps, grey color	**MY2G-R-0-M-G-4X**	MyALARM2 - GSM/GPRS datalogger, GPS version, relay, clamps, grey color, IP66 case
MY2B-0-0-M-B-4X	MyALARM2 - GSM/GPRS datalogger, standard version, clamps, blue color, IP66 case	**MY2S-0-0-M-B**	MyALARM2 - GSM/GPRS datalogger, security audio version, clamps, blue color
MY2B-0-0-M-G-4X	MyALARM2 - GSM/GPRS datalogger, standard version, clamps, grey color, IP66 case	**MY2S-0-0-M-G**	MyALARM2 - GSM/GPRS datalogger, security audio version, clamps, grey color
MY2B-R-0-M-B-4X	MyALARM2 - GSM/GPRS datalogger, standard version, relay, clamps, blue color, IP66 case	**MY2S-R-0-M-B**	MyALARM2 - GSM/GPRS datalogger, security audio version, relay, clamps, blue color
MY2B-R-0-M-G-4X	MyALARM2 - GSM/GPRS datalogger, standard version, relay, clamps, grey color, IP66 case	**MY2S-R-0-M-G**	MyALARM2 - GSM/GPRS datalogger, security audio version, relay, clamps, grey color
MY2G-0-0-M-B	MyALARM2 - GSM/GPRS datalogger, GPS version, clamps, blue color	**MY2S-0-0-M-B-4X**	MyALARM2 - GSM/GPRS datalogger, security audio version, clamps, blue color, IP66 case
MY2G-0-0-M-G	MyALARM2 - GSM/GPRS datalogger, GPS version, clamps, grey color	**MY2S-0-0-M-G-4X**	MyALARM2 - GSM/GPRS datalogger, security audio version, clamps, grey color, IP66 case
MY2G-R-0-M-B	MyALARM2 - GSM/GPRS datalogger, GPS version, relay, clamps, blue color	**MY2S-R-0-M-B-4X**	MyALARM2 - GSM/GPRS datalogger, security audio version, relay, clamps, blue color, IP66 case
MY2G-R-0-M-G	MyALARM2 - GSM/GPRS datalogger, GPS version, relay, clamps, grey color	**MY2S-R-0-M-G-4X**	MyALARM2 - GSM/GPRS datalogger, security audio version, relay, clamps, grey color, IP66 case

Technical data, diagrams and drawings in this catalog are indicative only and not binding

* For other details about temperature range please look at the product manuals

ADVANCED DATALOGGER 2.2

2

Z-LOGGER3, Z-GPRS3, Z-UMTS

DATALOGGER WITH ALARM MANAGEMENT, PROGRAMMABLE LOGICAL FUNCTIONS AND SERIAL PORTS

Z-LOGGER3, Z-GPRS3, Z-UMTS are multiprotocol unit, with built-in I/O's for high-performance data acquisition, datalogging, measurements and M2M telemetry. They can work stand-alone or networked over ModBUS RTU as Master or ModBUS TCP-IP as client-server.
These dataloggers operate with built-in I/O's and Ethernet interfaces Master Modbus unit on RS485 serial ports and can support 2G/3G+ communication.
The free software package SEAL is an object oriented programming tool, allows logic control, automation routines, alarms, thresholds, timers, report management with the possibility to configure and upgrade the device from remote.

#4 DIGITAL INPUTS
PNP, NPN
(resettable counters or totalizers @32bit up to 30 Hz)

#2 ANALOG INPUTS
0..20 mA, 0..30 V
Accuracy 0,1% f.s.

MEMORY
RAM 256 kB
Flash 1MB+8MB (log)

AC/DC POWER SUPPLY
11..40 Vdc; 19..28 Vac
Power failure battery backup

RS485 MODBUS MASTER
#2 serial interfaces for I/O extension with programmable parameters

BUILT-IN MODEM
GSM, GPRS, UMTS, HSPA+

#2 RELAY OUTPUT
SPDT free contacts
(max 2A - 250 Vac)

ETHERNET MODBUS TCP/IP INTERFACE
10/100 Mbps (RJ45)

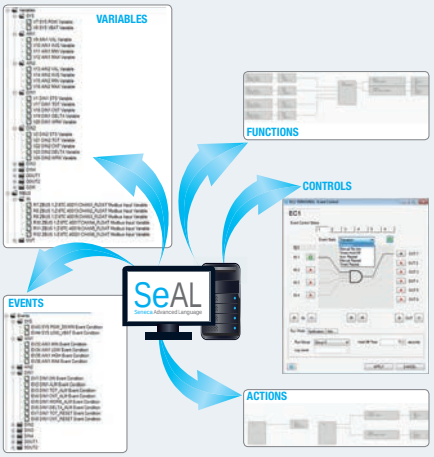
MICRO USB INTERFACE

COMPACT DIMENSION
100 x 112 x 35 mm (h x d x w)

	BUILT-IN MODEM	PROTOCOLS	BUILT-IN I/OS	VOICE ALARMS/ COMMANDS	INTERFACES
Z-LOGGER3	-	FTP, SMTP, MODBUS TCP, MODBUS RTU	4DI, 2AI, 2DO	-	1 ETH 1 RS485 1 RS485/RS232 1 MICRO USB
Z-GPRS3	GSM/GPRS	PPP, FTP, SMTP, MODBUS TCP, MODBUS RTU	4DI, 2AI, 2DO	✓	1 ETH 1 RS485 1 RS485/RS232 1 MICRO USB
Z-UMTS	GSM, GPRS, UMTS, HSPA+	PPP, FTP, SMTP, MODBUS TCP, MODBUS RTU	4DI, 2AI, 2DO	✓	1 ETH 1 RS485 1 RS485/RS232 1 MICRO USB

PROGRAMMING

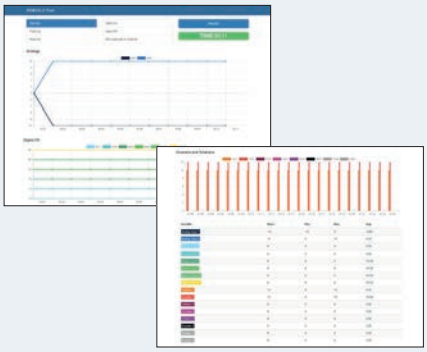
SeAL
Seneca Advanced Language



SEAL (Seneca Advanced Language) is a software designed by Seneca that allows through object oriented programming, to manage the controls, automations, alarms, thresholds and reports with possibility of configuration and remote update via SIM or static IP.

DATA VISUALIZATION

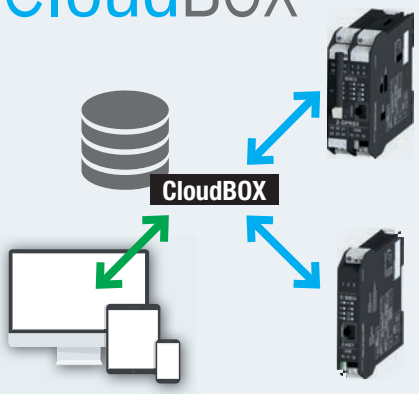
WebSERVER



Real-time visualization analog / digital variabled, counters, totalizers, log files download, firmware update

CONNECTIVITY

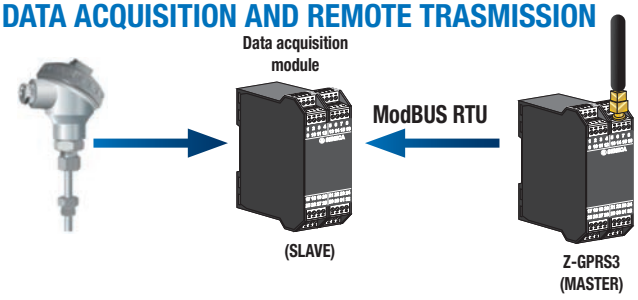
CloudBOX



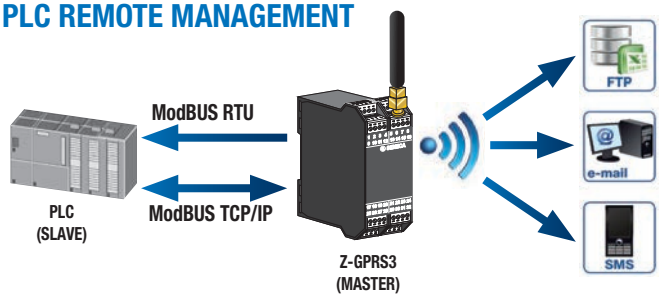
CloudBOX is a Server Cloud system – hardware or virtual machine - based on a remote connection service and a web based Micro SCADA. Micro SCADA allows near real-time telemetry, RTU commands sending, log files analysis, events and alarms log archiving. CloudBOX supports standard SIM card M2M with xDSL connection. Each device connected to CloudBOX sends data and executes commands. CloudBOX save incoming data on a database and is accessible through customizable web pages.

APPLICATION EXAMPLES

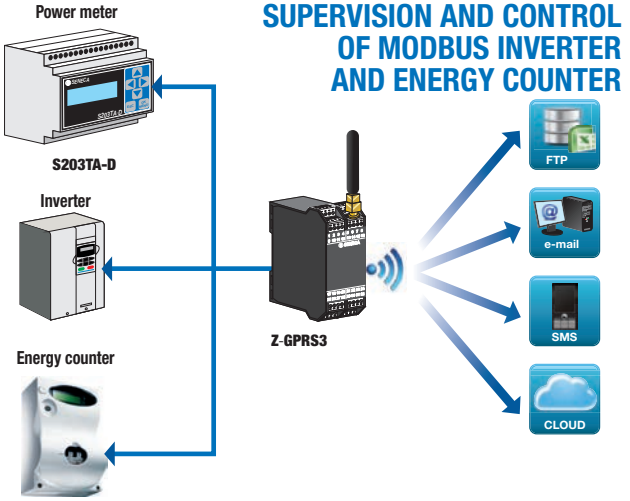
DATA ACQUISITION AND REMOTE TRASMISSION



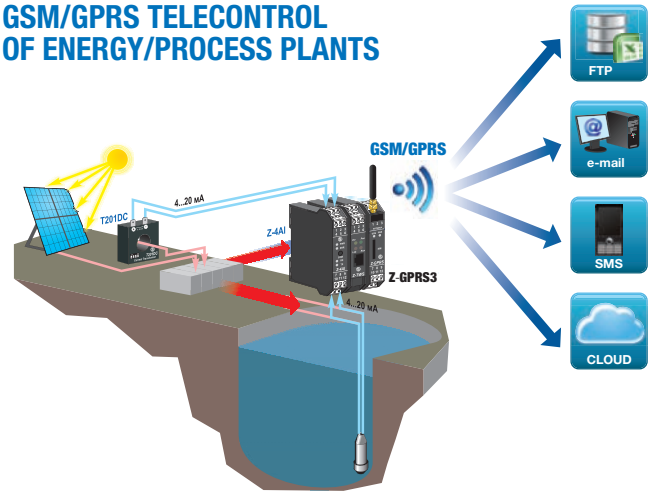
PLC REMOTE MANAGEMENT



SUPERVISION AND CONTROL OF MODBUS INVERTER AND ENERGY COUNTER



GSM/GPRS TELECONTROL OF ENERGY/PROCESS PLANTS



ADVANCED DATALOGGER

	Z-LOGGER3	Z-GPRS3	Z-UMTS
	NEW 	NEW 	COMING SOON 
	Datalogger with built-in I/Os and telecontrol functions	**GSM/GPRS datalogger with built-in IOs, telecontrol functions, voice alarm**	**3G+ datalogger with built-in IOs, telecontrol functions, voice alarm**
GENERAL DATA			
Power Supply	11..40 Vdc; 19..28 Vac	11..40 Vdc/ 19..28 Vac	11..40 Vdc/ 19..28 Vac
Power transducer	Yes, +12Vdc@40mA	Yes, +12Vdc@40mA	Yes, +12Vdc@40mA
Consumption	Max 3,5 W	6,5 W (max)	6,5 W (max)
Backup battery	Yes (approx 60 min lifetime)	Yes (approx 60 min lifetime)	Yes (approx 60 min lifetime)
On/Off button	Yes	Yes	Yes
SD ejection button	Yes	Yes	Yes
Voice Alarm and DTMF Commands	No	Yes	Yes
Isolation	1.500 Vac	1.500 Vac	1.500 Vac
Protection degree	IP20	IP20	IP20
LED status indicators	Power Supply – Serial Communication – Ethernet – SD card – Input / Output status	Power Supply – Serial Communication – Ethernet – SD card – Input / Output status – Modem Status	Power Supply – Serial Communication – Ethernet – SD card – Input / Output status – Modem Status
Operating temperature	-10..+50°C	-10..+50°C	-10..+50°C
Weight	250 g	280 g	280 g
Dimension (wxhxd)	100 x 112 x 35 mm	100 x 112 x 35 mm	100 x 112 x 35 mm
Mounting	DIN rail	DIN rail	DIN rail
Case	PBT, black	PBT, black	PBT, black
I/O CHANNELS			
Ethernet interface	10/100 Mbps (RJ45)	10/100 Mbps (RJ45)	10/100 Mbps (RJ45)
Serial interface #1	RS485 ModBUS Master, programmable baud rate	RS485 ModBUS Master, programmable baud rate	RS485 ModBUS Master, programmable baud rate
Serial Interface #2	RS485/RS232 on terminal, programmable baud rate	RS485/RS232 on terminal, programmable baud rate	RS485/RS232 on terminal, programmable baud rate
Switchable RS232/RS485	Yes RS232	Yes RS232	Yes RS232
USB interface	Micro USB tipo B HOST (local programming)	Micro USB tipo B HOST (local programming)	Micro USB tipo B HOST (local programming)
Protocols	Ftp, Smtp, http, ModBUS TCP, ModBUS RTU, HTTP	Ftp, Smtp, http, ModBUS TCP, ModBUS RTU, HTTP, PPP	Ftp, Smtp, http, ModBUS TCP, ModBUS RTU, HTTP, PPP
Modem	no	GSM/GPRS Quad Band 850/900/ 1800/1900 MHz	UMTS/HSPA+ 900/2100MHz (standard) UMTS/HSPA+ 850/1900/2100 MHz (option) GSM/GPRS quad-band 850/900/1800/1900 MHz (standard)
PROCESSING, MEMORY			
CPU	ARM 32bit@120MHz, O.S. real-time	ARM 32bit@120MHz, O.S. real-time	ARM 32bit@120MHz, O.S. real-time
RAM	256 kB	256 kB	256 kB
Flash (program)	1 MB	1 MB	1 MB
Flash (serial)	8 MB	8 MB	8 MB
Expandable memory	Micro SD slot up to 32 GB	Micro SD slot up to 32 GB	Micro SD slot up to 32 GB
Datalogging	Measurement, alarms, events, logging on Micro SD card (max 32 GB) or onFlash. Synchronous and asynchronous datalogger	Measurement, alarms, events, logging on Micro SD card (max 32 GB) or onFlash. Synchronous and asynchronous datalogger	Measurement, alarms, events, logging on Micro SD card (max 32 GB) or onFlash. Synchronous and asynchronous datalogger
PROGRAMMING			
Software platform	SEAL	SEAL	SEAL
Web Server	Yes	Yes	Yes
DIP-switch	Yes	Yes	Yes
Libraries & Functions	Alarm management, commands, events, FTP/MAIL send, HTTP Log and real-time ModBUS / Ethernet variables, I/O channels, thresholds, controls and bit operations management Firmware update and remote configuration via ftp and webserver ModBUS TCP-IP, ftp e webserver, http functions	GSM/GPRS data exchange, alarm management, commands, events, FTP/MAIL send, HTTP Log and real-time ModBUS / Ethernet variables, I/O channels, thresholds, controls and bit operations management Firmware update and remote configuration via ftp and webserver ModBUS TCP-IP, ftp e webserver, http functions supported via Ethernet or modem	GSM/GPRS/HSPA+data exchange, alarm management, commands, events, FTP/MAIL send, HTTP Log and real-time ModBUS / Ethernet variables, I/O channels, thresholds, controls and bit operations management Firmware update and remote configuration via ftp and webserver ModBUS TCP-IP, ftp e webserver, http functions supported via Ethernet or modem
Advanced functions	Math functions, filters on ModBUS alarms, post/get http function, blocks counter, events block	Math functions, filters on ModBUS alarms, post/get http also via Ethernet and PPP functions, gsm alarm no signal, Ethernet alarm communication, blocks counters, events block, Webserver and Modbus TCP by GPRS (with fixed IP SIM or private APN) and Ethernet	Math functions, filters on ModBUS alarms, post/get http also via Ethernet and PPP functions, gsm alarm no signal, Ethernet alarm communication, blocks counters, events block, Webserver and Modbus TCP by GPRS/HSPA+ (with fixed IP SIM or private APN) and Ethernet

ORDER CODES

Code	Description	Code	Description
Z-LOGGER3	Datalogger, alarm module, web server with built-in IO	**MSD**	Micro SD memory card with adapter
Z-GPRS3	GSM/GPRS datalogger with built-in IOs, telecontrol functions, voice alarm	**Z-PC-DIN1-35**	DIN rail bus 1 slot 35 mm
Z-UMTS	3G+ datalogger with built-in IOs, telecontrol functions, voice alarm	**Z-PC-DINAL1-35**	DIN rail bus system head terminal + 1 slot 35 mm
A-GSM	External GSM antenna dual band swing, cable 3,2 m	**CU-A-MINIB-1**	USB-A Mini USB-B 5 P plug cable, 1 mt
A-GSM-DIR-5M	GSM directive antenna, cable 5 m	**CU-A-MINIB-2**	USB-A Mini USB-B 5 P plug cable, 2 mt
A-GSM-OMNIDIR	GSM-UMTS-WIFI Omnidirectional Antenna	**Z-SUPPLY**	24V @ 1,5 A single phase switching power supply
FD01	Photodiode for pulses counting, max freq. 10Hz	**SEAL**	SENECA Advanced language, programming graphic software
KIT-USB	Programming toolkit for USB interface instruments	**SEAL LEGACY**	SENECA Advanced language with wizard

Technical data, diagrams and drawings in this catalog are indicative only and not binding

STRATON BASED RTUs 2.3

2

NEW

Z-miniRTU

GSM/GPRS TELECONTROL UNIT WITH BUILT-IN IO AND STRATON SOFTPLC

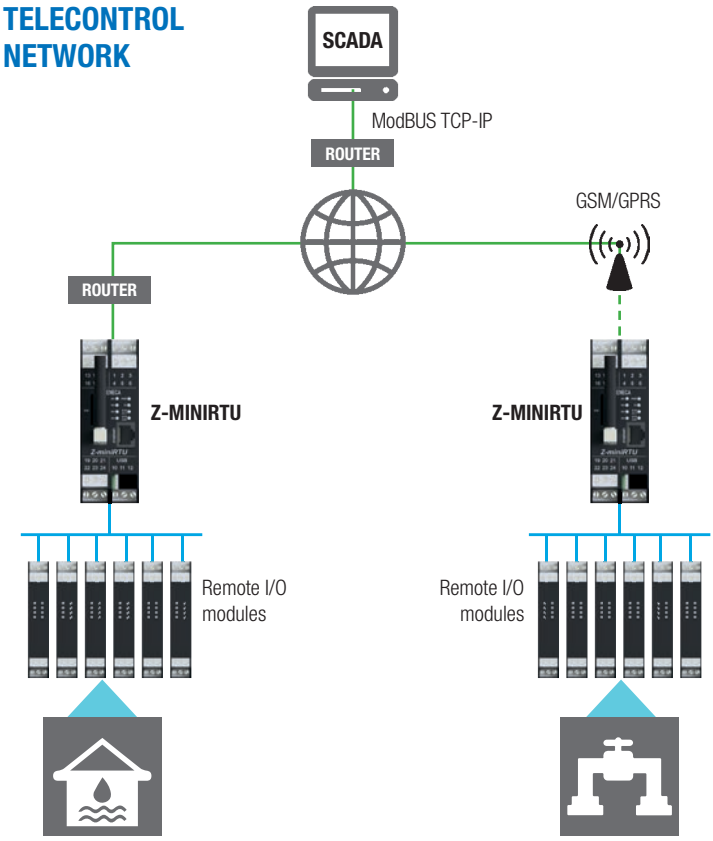
straton

TECNHICAL DATA

GENERAL DATA	
Power Supply	11..40 Vdc; 19..28 Vac
Consumption	6,5 W
UPS	Built-in (approx lifetime 1h)
Isolation	3.000 Vac (power supply/output); 1.500 (power supply/other circuits)
LED Status Indicators	Power Supply Serial Communication Ethernet SD card Input / Output status Modem status
Protection Degree	IP20
Operating temperature	-10..+50°C (-10..+40°C battery charging)
Dimension (whxd)	100 x 111 x 35 mm
Enclosure	Nylon 6, 30% fiberglass filled, self extinguishing class V0
Connection	Removable terminals with section of 2.5 mm2 / Rear IDC10 connector
Mounting	35 mm DIN rail (IEC EN 60715)
COMMUNICATION	
Ethernet	Nr.1 Ethernet Port 10/100 Mbps (RJ45)
Serial Ports	Nr.1 RS485 IDC10, max baud rate 115 kbps Nr.1 RS485/RS232 by terminals, max baud rate 115 kbps
USB	Nr 1 MicroUSB on side connector
Modem / Router	GSM/GPRS Quad-Band 850/900/1800/1900 MHz
Industrial protocols	ModBUS TCP-IP (Client/Server), ModBUS RTU (Master/Slave), custom protocols
IT protocols	PPP, HTTP Post, FTP Client, SMTP Client, NTP Client
INPUT DATA	
Channels / Type	N.4 Digital Input, PNP, NPN, max freq. 250 Hz; N.4 resettable counters / totalizers @32 bit N.2 Analog Input 0-20 mA, 0-30 Vdc, 16 bit resolution, 0,1% accuracy
OUTPUT DATA	
Channels / Type	Nr 2 Relay Output, SPDT, max 2A 250 Vac
PROCESSOR / MEMORY	
Processor	ARM 32 bit @ 120 MHz
O.S.	Real-Time multitasking
FeRAM (retentive variables)	Max 4 kB
Program memory size	Max 248 kB
Variable memory	Max 38 kB
Slot Micro SD	SD Card fino a 32 GB
SETTINGS	
Software environment	Z-NET4 / Straton
Web Editor	Built-in
Datalogger	Built-in
PLC progamming	IEC 61131-3 (Straton) with custom libraries
STANDARD	
Approvals	CE
Norms	EN 61000-6-4, EN 61000-6-2, EN 61010, EN 301511, EN 301489-1, EN 301489-7, EN 60950

APPLICATIONS

TELECONTROL NETWORK



ORDER CODES

Code	Description
Z-MINIRTU	GSM/GPRS telecontrol unit with built-in IO and Straton SoftPLC
SOFTWARE	
STRATON-D-USB	Straton activation key for IEC 61131 controllers
STRATON-IDE256	Straton development environment, 256 tags, USB activation key
STRATON-IDE512	Straton development environment, 512 tags, USB activation key
STRATON-SP	Straton SENECA Package - CPU Seneca Installer suite
STRATON-WB	Straton workbench IEC 61131 free editor
Z-NET4	Z-PC system configurator, Web Editor included
ACCESSORIES	
MSD	Micro SD memory card con adattatore
Z-PC-DIN1-35	DIN rail bus system 1 slot 35 mm
Z-PC-DINAL1-35	DIN rail bus system head terminal + 1 slot 35 mm
Z-POWER-115-15VA	19 Vac transformer, 115 / 15 VA
Z-POWER-230-15VA	19 Vac transformer, 230 / 15 VA
Z-POWER-230-25VA	19 Vac transformer, 230 / 25 VA
Z-SUPPLY	Single-phase switching power supply 24V @ 1.5A
CABLES	
CE-RJ45-RJ45-C	Crossover Ethernet cable (RJ45-RJ45)
CE-RJ45-RJ45-R	Straight-thru Ethernet cable (RJ45-RJ45)
CS-DB9F-CLAMP	RS485 connection cable (DB9F-Clamps)
CS-DB9F-TIP-V	RS485 serial connection cable (DB9F - tips)
CS-DB9M-TIP-V	RS485 serial connection cable (DB9M - tips)
CU-A-MICROB	USB-A Micro USB-B 5 P plug cable

NEW

S6001-RTU

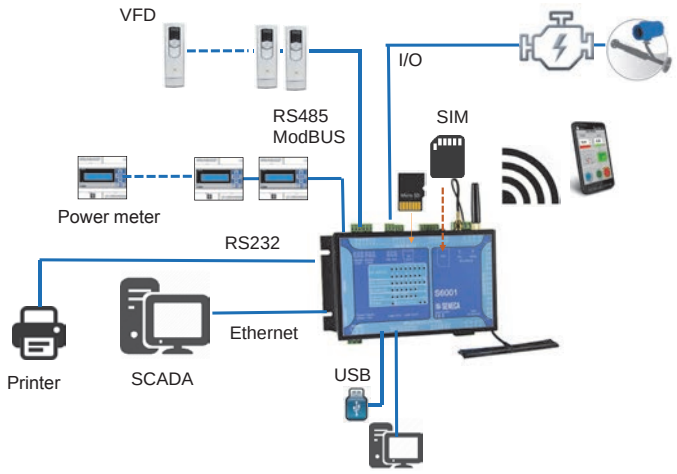
REMOTE CONTROL UNIT WITH BUILT-IN IO AND 3G+ MODEM

straton

TECHNICAL DATA

GENERAL DATA	
Power Supply	24 Vac ±15% @50/60Hz
Isolation	1.500 V
LED status indicators	Input / Output status Serial Communication Ethernet PLC status Modem status
Protection degree	IP20
Operating temperature	-10..+65°C
Dimension	190x105x60 mm
Enclosure	Aluminum
Connection	Removable terminals, max conductors dimension 2,5 mm²
Mounting	35 mm DIN rail (IEC EN 60715)
COMMUNICATION	
Ethernet	Nr 1 Ethernet 10/100 Mbps (RJ45) port
Serial	Nr. 1 RS232 port; Nr. 2 RS485 ports
USB	Nr 1 USB host port
Modem / Router	Modem UMTS, HDSPA (dual band), EDGE, GPRS, GSM (quad band)
Industrial protocols	ModBUS RTU, ModBUS TCP-IP, custom protocols
Energy protocols	IEC 60870-101/104, IEC 61850
Network protocols	PPP, http, Ftp, Smtp, Open VPN
INPUT DATA	
Channels / Type	Nr 15 Digital Inputs PNP, (max voltage 24 Vdc) Nr 2 Digital Inputs (conductive liquid level switch) Nr 4 Analog Inputs (0..20 mA)
OUTPUT DATA	
Channels / Type	Nr 8 Digital Outputs SDPT 5A - 250 Vac relay Nr 1 Analog Output 0..10 V Nr 1 Analog Output 0..20 mA
PROCESSING / MEMORY	
Processor	ARM 32 bit @400 MHz
Flash Memory (data)	1 GB
RAM / FeRAM	64 MB / 4 kB
Slot Micro SD	SD Card up to32 GB
PROGRAMMING / SETTINGS	
System software environment	Z-NET4 / Straton
Web server / Datalogger	Yes
PLC programming	IEC 61131 (Straton) with specific libraries
STANDARDS	
Marking	CE
Norms	EN 61000-6-4, EN 61000-6-2, EN 60950, EN 301511, EN 301489-1, EN 301489-7

APPLICATION NOTE



ORDER CODES

Code	Description
S6001-RTU	Remote Control Unit with built-in IO and 3G+ modem
SOFTWARE	
STRATON-D-USB	Straton activation key for IEC 61131 controllers
STRATON-IDE256	Straton development environment, 256 tags, USB activation key
STRATON-IDE512	Straton development environment, 512 tags, USB activation key
STRATON-IDEUN	Straton development environment, unlimtited tags, USB activation key
STRATON-IEC-E1	IEC 60870-5-101/104 Slave activation license
STRATON-IEC-E2	IEC 61850 Server activation license
STRATON-IEC-E3	IEC 60870-5-101/104 slave + IEC 61850 Server activation license
STRATON-IEC-E4	IEC 60870-5-101/104 Master / Slave activation license
STRATON-IEC-E5	IEC 61850 Client / Server activation license
STRATON-IEC-EF	IEC 60870-5-101/104 Master / Slave + IEC 61850 Client / Server activation license
STRATON-WB	Straton workbench IEC 61131 free editor
ACCESSORI	
STRATON-IDE	Activation key Straton IEC 6113
CE-RJ45-RJ45-C	Crossover Ethernet cable (RJ45-RJ45)
CE-RJ45-RJ45-R	Straight-thru Ethernet cable (RJ45-RJ45)
A-GSM	Dual band swing GSM external antenna, cable 3,2 m, SMA
A-GSM-DIR-5M	GSM-DECT-UMTS directive compact antenna
A-GSM-OMNIDIR	GSM-UMTS-WIFI Omnidirectional Antenna
A-GSM-OMNIDIR-10	GSM-UMTS-WIFI Omnidirectional Antenna, L=10 m
A-GSM-QUAD	GSM quadband antenna

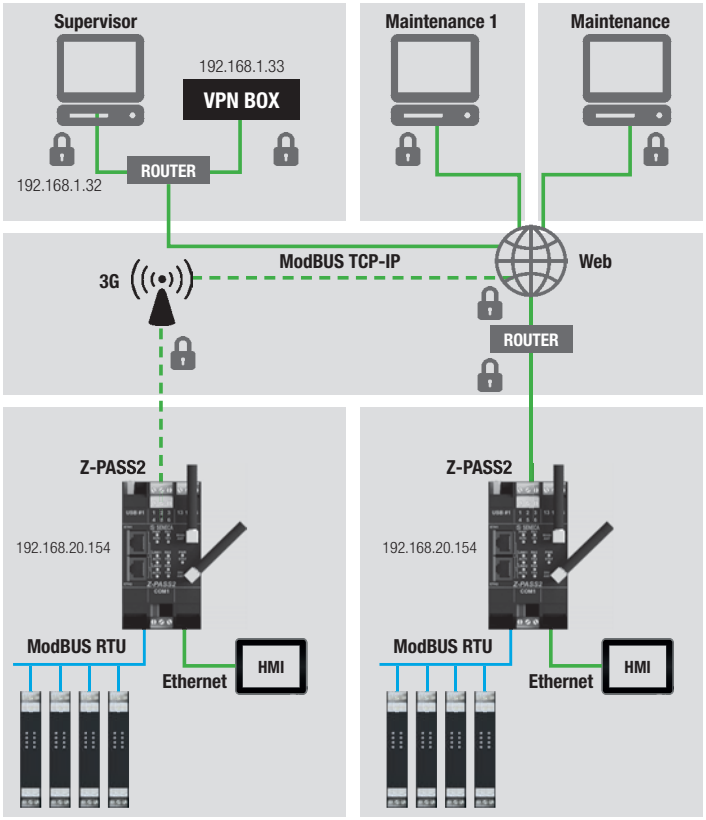
Z-PASS2-S

ADVANCED CONTROL UNIT IEC 61131, STRATON EMBEDDED AND 3G+/ETH VPN ROUTING

straton

TECHNICAL DATA

GENERAL DATA	
Power Supply	11..40 Vdc; 19..28 Vac
Max Consumption	4 W @ 24Vac (typical), Max 6 W
Isolation	1500 Vac
LED status indicators	Power Supply Rx-Tx serial communication Ethernet link and traffic Modem status PLC working
Pollution Degree	2
Protection Degree	IP20
Operating Temperature	-20 °C..+55 °C
Dimension (lxhxw)	100 x 52,5 x 112 mm
Case	PA6 black plastic glass reinforced
Weight	450 g
Connection	Removable screw terminals 3 ways, step 5 mm
Mounting	35 mm DIN rail guide IEC EN 60715
COMMUNICATION	
Ethernet	Nr. 2 Fast Ethernet 10/100 Mbps, RJ45 front connector
Serial ports	Nr. 1 RS232/RS485 switchable port, max baud rate 115k on connector Nr. 1 RS485 port, baud rate max 115k on IDC connector Nr. 1 RS485 port, max baud rate 115k on terminals
USB ports	Nr. 1 USB host port on side connector
Modem	UMTS, HSDPA (dual band) ; EDGE, GPRS, GSM (quad band)
Supported protocols	ModBUS TCP-IP, ModBUS RTU, custom protocols
Function Modes	ModBUS Bridge, ModBUS Gateway*, Serial Tunnelling*, 3G/ Ethernet router/modem HSDPA, HSUPA*, VPN, Remote Control - Single LAN, Remote Assistance - Point-To-Point (*programmable functions)
CPU / MEMORY	
Processor	ARM9 @ 400 MHz
Flash Memory (data)	1 GB
RAM	64 MB / 64 kB
Slot Micro SD	Yes
Scheda Micro SD	Max 32 GB
SETTINGS	
Embedded Web Server	Http server with Php and Cgi support Security access through basic authentication (login/password) Custom web pages
Firmware update	Locally by USB pendrive
Seneca VPN Manager	Yes
Seneca Discovery Device	Yes
SESC (Seneca Ethernet to Serial Connection)	Yes
SoftPLC IEC 61131	StratON
Configuration tools	SENECA VPN BOX Manager, SDD (Seneca Discovery Device), SESC (Seneca Ethernet to Serial Connection), StratON, Z-NET4
NORMS	
Certification Marks	CE
Norms	EN61000-6-4, EN61000-6-2 EN60950, EN301 511, EN301 489-1, EN301489-7



ORDER CODES

Code	Description
VERSION	
Z-PASS2-S-A	StratON Advanced Control Unit with built-in Eth/3G+ router, RS485 serial interfaces
Z-PASS2-S-B	StratON Advanced Control Unit with built-in Eth/3G+ router, RS232/RS485 serial interfaces
Z-PASS2-S-A-E	StratON Advanced Control Unit with built-Eth/3G+ router, RS485 serial interfaces, including energy protocols (IEC 60870-5-101, IEC 60870-5-104, IEC 61850)
Z-PASS2-S-B-E	StratON Advanced Control Unit with built-in Eth/3G+ router, RS485 serial interfaces, including energy protocols (IEC 60870-5-101, IEC 60870-5-104, IEC 61850)
VPN SERVER	
VPN BOX	VPN Server & Connectivity module for remote control and remote assistance
VPN BOX VM	VPN Server - Virtual Machine for remote control and remote assistance
VPN BOX MANAGER	Configuration software for VPN BOX, Server, sign-in credentials
VPN CC	VPN Client Communicator. Software tool for VPN network connection to install on client PCs
ACCESSORIES	
A-GSM	Dual band swing GSM external antenna, cable 3,2 m, SMA
A-GSM-QUAD	GSM quadband antenna
CS-DB9M-MEF-1012	Serial communication cable (DB9M / MEF 10-12)
MSD	Micro SD memory card with adapter
Z-PC DINAL2-52.5	DIN rail bus system head terminal + 2 slots 52.5 mm
SOFTWARE	
SDD	SENECA Discovery Device, IP scanner for Z-KEY, Z-PASS1, Z-PASS2
SESC	SENECA Ethernet to Serial Connection tool for Z-KEY, Z-PASS1, Z-PASS2
TEMP-TAG-Z-PASS	Excel template for Z-PASS-1/2/2S tags (gateway mode)
Z-NET4	Z-PC system configurator, Web Editor included
IEC 61131 SOFTWARE	
Straton	IEC 61131 IDE and licenses (for detailed information please refert to www.seneca.it or support@seneca.it)

Technical data, diagrams and drawings in this catalog are indicative only and not binding

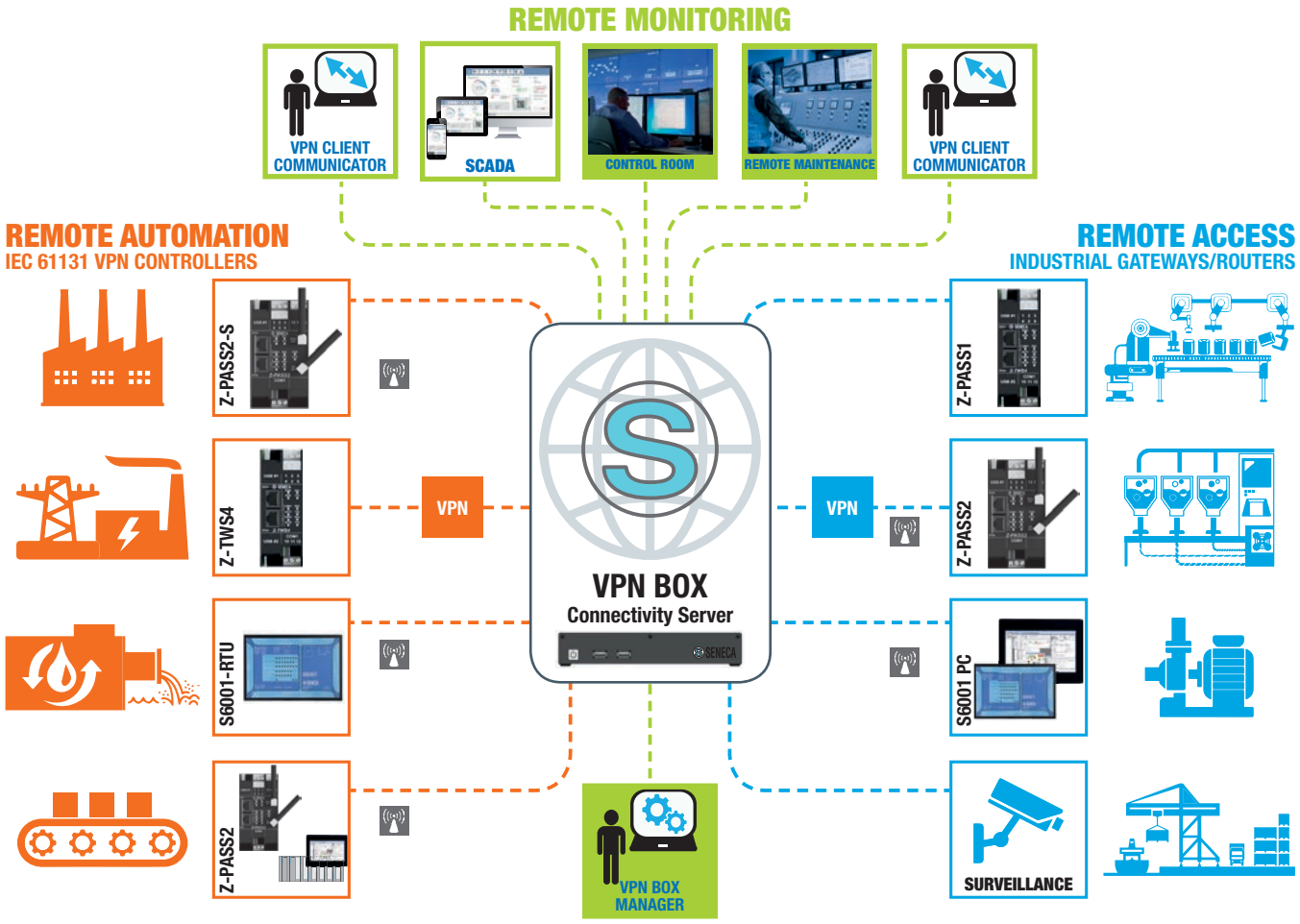
LET'S VPN CONNECTIVITY SOLUTIONS 2.4

LET'S - VPN CONNECTIVITY SOLUTIONS

LET'S
VPN CONNECTIVITY
SOLUTIONS

LET'S is the first VPN platform for machines and equipment that reduces maintenance, automation and management costs. LET'S offers a 3 levels integrated connectivity service: remote access to systems machines, programmable control, supervision and monitoring network.
The structure is based on the VPN Server BOX module that provides 2 operating modes: Single LAN (always on) or Remote Maintenance Point-to-Point (on demand). With VPN BOX Manager software, the server management network configuration can be set in a few steps. Each client can join the network through an intuitive software VPN Client Communicator to reach plant sites and network devices.
LET'S industrial router, **Z-PASS1** and **Z-PASS2**, extend the serial and Ethernet networks with access to remote networks via local addresses with all kinds of ICT SIMs. Z-PASS1 and Z-PASS2 are multifunction devices (bridges, gateways, routers, serial device server) that allow the data transfer between IT-ICT network and industrial network.
The Z-PASS2 model also performs functions of tunneling, 3G+/Ethernet switching and redundant communications. With these all-in-one routers you can avoid cost of expensive travels for facilities inspections.
One of the main innovations of LET'S is to integrate remote access functions with those of programmable automation controllers. These combination is granted by our IEC 61131 multifunction controllers **Z-TWS4**, **Z-PASS2-S**, **S6001-RTU** and **S6001 PUMP CONTROLLER** for motorized and electric actuators.

ARCHITECTURE



COMPONENTS

GATEWAYS / ROUTERS

Z-PASS1

Z-PASS2

SERVERS

VPN BOX

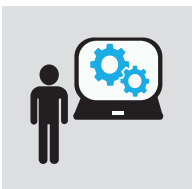
CONTROLLERS

Z-TWS4

Z-PASS2-S

S6001-PC
S6001-RTU

SOFTWARE



VPN BOX MANAGER
VPN CLIENT COMMUNICATOR

LET'S VPN GATEWAYS/ ROUTERS

	Z-PASS1	Z-PASS2
	NEW FEATURES* 	NEW FEATURES* 
	VPN Industrial Gateway Serial Device Server	VPN Industrial Gateway Serial Device Server 3G/Ethernet Router
GENERAL DATA		
Power Supply DC	11..40 Vdc; 19..28 Vac	11..40 Vdc; 19..28 Vac
Power Consumption max	4 W @ 24Vac, Max 6 W	4 W @ 24Vac, Max 6 W
Isolation	1500 Vac	1500 Vac
Status Indicators	Power Supply Rx-Tx serial communication Link and Ethernet PLC function	Power supply Rx-Tx serial communication Link and Ethernet PLC function Modem Status
Degree of pollution	2	2
Protection Degree	IP20	IP20
Operating Temperature	-20 °C..+55 °C	-20 °C..+55 °C
Dimension (wxhxd)	100 x 35 x 112 mm	100 x 52,5 x 112 mm
Housing	Nylon PA6 with glass-fiber	Nylon PA6 with glass-fiber
Connections	Removable screw terminals 3-way, 5 mm	Removable screw terminals 3-way, 5 mm
Mounting	35 mm DIN rail guide IEC EN 60715	35 mm DIN rail guide IEC EN 60715
COMMUNICATION		
Ethernet	Nr.2 10/100 Mbps on RJ45 front port (LAN/WAN)*	Nr.2 10/100 Mbps on RJ45 front port (LAN/WAN)*
Serial Ports	Nr.1 RS232 / 485 switchable serial port, max 115k baud rate on connector Nr.1 RS485, baud rate max 115k on IDC10 connector for bus and terminals Nr.1 RS485, baud rate max 115k on terminals	Nr. 1 RS232 / 485 switchable serial port, baud rate max 115k on connector Nr.1 RS485, baud rate max 115k on IDC10 connector for bus and terminals Nr.1 RS485, baud rate max 115k on terminals
USB	Nr.1 USB host on side connector Nr.1 Micro USB side connector (for Z-MODEM-3G connection)	Nr.1 USB host on side connector
Modem	-	UMTS, HSDPA (dual band) ; EDGE, GPRS, GSM (quad band)
FUNCTION MODE		
ModBUS Bridge	x	x
Gateway	x	x
Remote Virtual COM	x	x
Tunnel P2P / P2MP / TCP / UDP	x	x
3G / Ethernet Industrial Router		x
VPN	x	x
Remote control with local addresses	x	x
Remote maintenance with local addresses	x	x
LAN/WAN Ethernet mode	x	x
CPU AND MEMORY		
CPU	ARM 32 bit @ 400 MHz	ARM 32 bit @ 400 MHz
Flash Memory (data)	1 GB	1 GB
RAM	64 MB	64 MB
Slot Micro SD	YES	YES
Micro SD CARD (not included)	Max 32 GB	Max 32 GB
SETTINGS		
Web server	YES	YES
Seneca VPN Manager	YES	YES
Seneca Discovery Device	YES	YES
SESC (Seneca Ethernet to Serial Connection)	YES	YES
NORMS & APPROVALS		
Approvals	CE	CE
Norms	EN61000-6-4 (electromagnetic emissions - industrial environments) EN61000-6-2 (electromagnetic immunity - industrial environments) EN61010-1 (security)	EN61000-6-4 (electromagnetic emissions - industrial environments) EN61000-6-2 (electromagnetic immunity - industrial environments) EN60950 (security), EN301 511, EN301 489-1, EN301489-7

ORDER CODES

Code	Description
Z-PASS1-A	VPN Industrial Gateway, Serial Device Server, 3 RS485 serial ports
Z-PASS1-B	VPN Industrial Gateway, Serial Device Server, 2 RS485 and 1 RS232 serial port
Z-PASS2-A	VPN Industrial Gateway, Serial Device Server, 3G/Ethernet Router, 3 RS485 serial ports
Z-PASS2-B	VPN Industrial Gateway, Serial Device Server, 3G/Ethernet Router, 2 RS485 and 1 RS232 serial port
SOFTWARE	
SIVCS	SENECA VPN Center
SDD	SENECA Discovery Device, IP scanner for Z-KEY, Z-PASS1, Z-PASS2
SESC	SENECA Ethernet to Serial Connection for Z-KEY, Z-PASS1, Z-PASS2

ORDER CODES

Code	Description
ACCESSORIES	
A-GSM	Dual band swing GSM external antenna, cable 3,2 m, SMA
A-GSM-QUAD	High performance Quadband GSM Antenna
CS-DB9M-MEF-1012	Z-KEY / RS232-DB9M serial connection cable
MSD	Micro SD memory card with adapter
Z-PC-DIN1-35	DIN rail bus support, 1 slot, step 35 mm
Z-PC-DIN4-35	DIN rail bus support, 4 slots, step 35 mm
Z-PC-DINAL1-35	DIN rail bus / power supply support, 1 slot, step 35 mm
Z-PC DINAL2-52.5	DIN rail bus / power supply support, 2 slot, step 52,5 mm, 17.5 mm

Technical data, diagrams and drawings in this catalog are indicative only and not binding

LET'S – VPN CONNECTIVITY SOLUTIONS

	Z-TWS4	Z-PASS2-S	S6001-RTU	S-6001 PUMP CONTROLLER
		NEW FEATURES* 	NEW 	NEW 
	Advanced Control Unit IEC61131, Straton / Linux embedded	Advanced Control Unit IEC 61131, Straton IDE and 3G+/ETH VPN routing	Remote Control Unit IEC 61131 with built-in I/Os and 3G+ router	Advanced Pump Controller with built-in I/Os and 7" HMI
GENERAL DATA				
Power Supply	11..40 Vdc; 19..28 Vac	11..40 Vdc; 19..28 Vac	24 Vac /dc	24 Vac /dc
Isolation	1.500 V	1.500 V	1.500 V	1500 Vac
LED status indicators	Power Supply - Serial Communication Ethernet - PLC status	Power Supply - Serial Communication Ethernet - PLC status - Modem Status	Power Supply - Serial Communication Ethernet - Gsm-Umts signal I/O status - Modem Status – PLC Status	Power Supply - Serial Communication Ethernet - Gsm-Umts signal I/O status - Modem Status – PLC Status
Protection degree	IP20	IP20	IP20	IP20
Operating temperature	-20..+55°C	-20..+55°C	-20..+50°C	-20..+50°C
Dimension		100 x 52.5 x 112 mm	105 x 109 x 60 mm	105 x 190 x 60 mm
Case	Nylon 6 with 30% glass fiber class, self-extinguish - class V0	Nylon 6 with 30% glass fiber class, self-extinguish - class V0	Nylon 6 with 30% glass fiber class, self-extinguish - class V0	Nylon 6 with 30% glass fiber class, self-extinguish - class V0
Connection	Removable 3-way screw terminals, 5,08 mm pitch	Removable 3-way screw terminals, 5,08 mm pitch	Removable 3-way screw terminals, 5 mm pitch	Removable 3-way screw terminals, 5 mm pitch
Mounting	35 mm DIN rail (IEC EN 60715)	35 mm DIN rail (IEC EN 60715)	35 mm DIN rail (IEC EN 60715)	35 mm DIN rail (IEC EN 60715)
COMMUNICATION				
Ethernet	Nr 2 Ethernet 10/100 Mbps (RJ45) ports	Nr 2 Ethernet 10/100 Mbps (RJ45) ports (LAN / WAN)*	Nr.1 Ethernet 10/100 Mbps (RJ45) port	Nr.1 Ethernet 10/100 Mbps (RJ45) port
Serial ports	Nr.1 RS232 / RS485 switchable Nr.2 RS485 ModBUS	Nr.1 RS232 / RS485 switchable Nr.2 RS485 ModBUS	Nr 2 RS485 Nr 1 RS232	Nr 2 RS485 Nr 1 RS232
USB	Nr. 1 micro USB Nr 1 USB host	Nr. 1 mini USB Nr 1 USB host	Nr 1 USB host	Nr 1 USB host
Modem / Router		3G+ Router	Modem UMTS, HDSPA (dual band), EDGE, GPRS, GSM (quad band)	Modem UMTS, HSDPA (dual band) o EDGE,GPRS,GSM (quad band)
Industrial protocols	ModBUS TCP-IP, ModBUS RTU, custom protocols	ModBUS TCP-IP, ModBUS RTU, custom protocols	ModBUS TCP-IP, ModBUS RTU, custom protocols	ModBUS RTU/TCP (Slave)
IT protocols	Http, Ftp client / server, Smtp client, PPP, Modbus TCP client / Server, OpenVPN	Http, Ftp client / server, Smtp client, PPP, Modbus TCP client / Server, OpenVPN	Http, Ftp client / server, Smtp client, PPP, Modbus TCP client / Server, OpenVPN	Http, Ftp, Smtp, PPP, OpenVPN
Energy Protocol (option)	IEC 60870-101/104, IEC 61850	IEC 60870-101/104, IEC 61850	IEC 60870-101/104, IEC 61850	
VPN Support	Yes, VPNBox, OpenVPN	Yes, VPNBox, OpenVPN	Yes, VPNBox, OpenVPN	Yes, VPNBox, OpenVPN
INPUT DATA				
Channel / Type	-	-	Nr 15 Digital Input PNP, NPN (max voltage 24 Vdc) Nr 2 Digital Input Nr 4 Analog Input 0..20 mA	Nr 15 Digital Input PNP, NPN (max voltage 24 Vdc) Nr. 2 Digital Input - flow level control Nr 4 Analog Input 0..20 mA
OUTPUT DATA				
Channel / Type	-	-	Nr 8 Relay Output SDPT 5A - 250 Vac Nr 1 Analog Output 0..10 V Nr 1 Analog Output 0..20 mA	Nr 8 Relay Output SDPT 5A - 250 Vac Nr 1 Analog Output 0..10 V Nr 1 Analog Output 0..20 mA
CPU / MEMORY				
Processor	ARM9 32-bit @400MHz	ARM9 32-bit @400MHz	ARM9 32-bit @400MHz	ARM9 32-bit @400MHz
Flash Memory (data)	1 GB	1 GB	1 GB	1 GB
RAM / FeRAM	64 MB / 4 kB	64 MB / 4 kB	64 MB / 4 kB	64 MB / 4 kB
Slot Micro SD	SD Card up to 32 GB	SD Card up to 32 GB	SD Card up to 32 GB	SD Card up to 32 GB
SETTINGS				
System Software	Z-NET4 / StratON / OPC Server	Z-NET4 / Straton	Z-NET4 / Straton	HMI
Web Editor	Yes, built-in	Yes, built-in	Yes, built-in	Yes, built-in
Web Configurator	Yes, built-in	Yes, built-in	Yes, built-in	
PLC Programming	IEC 61131 (Straton)	IEC 61131 (Straton)	IEC 61131 (Straton)	
STANDARD				
Approvals	CE	CE	CE	CE
Norms	EN 61000-6-4, EN 61000-6-2, EN 60950, IEC 61131	EN 61000-6-4, EN 61000-6-2, EN 60950	EN 61000-6-4, EN 61000-6-2, EN 60950, EN 301511, EN 301489-1, EN 301489-7	EN 61000-6-4, EN 61000-6-2, EN 60950, EN 301511, EN 301489-1, EN 301489-7

ORDER CODES

Code	Description
CONTROLLERS	
Z-TWS4-L-0	IEC 61131 multifunction controller, Linux based, OEM version
Z-TWS4-L-K	IEC 61131 multifunction controller, Linux based, USB-SW-KEY
Z-TWS4-S-0	IEC 61131 multifunction controller, workbench Straton, OEM version
Z-TWS4-S-K	IEC 61131 multifunction controller, workbench Straton, USB-SW-KEY
Z-TWS4-E-0	IEC 61131 advanced multi-function controlller, including energy protocols (IEC 60870-5-101, IEC 60870-5-104, IEC 61850) support, Straton workbench, OEM version
Z-TWS4-E-K	IEC 61131 advanced multi-function controlller, including energy protocols (IEC 60870-5-101, IEC 60870-5-104, IEC 61850) support, Straton workbench, CS-DB9M-MEF-PH cable, USB-SW-KEY
Z-PASS2-S-A	Remote Control Unit with built-in IO and 3G+ router, RS485 serial interfaces
Z-PASS2-S-B	Remote Control Unit with built-in IO and 3G+ router, RS232/RS485 serial interfaces
Z-PASS2-S-A-E	StratON Advanced Control Unit with built-in IO and 3G+ router, RS485 serial interfaces, including energy protocols (IEC 60870-5-101, IEC 60870-5-104, IEC 61850)
SOFTWARE	**Pg. 37**

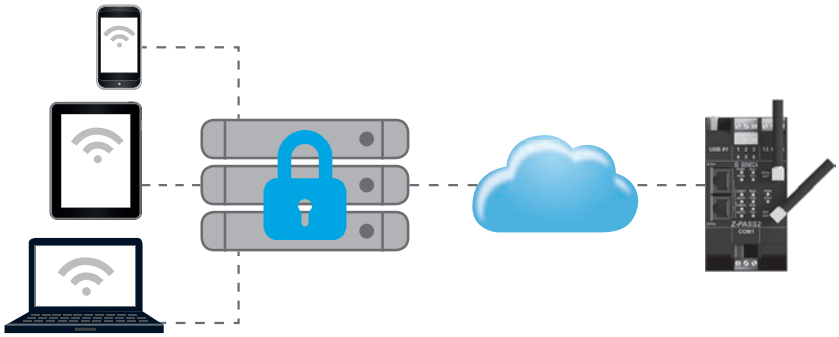
Code	Description
CONTROLLERS	
Z-PASS2-S-B-E	StratON Advanced Control Unit with built-in IO and 3G+ router, RS485 serial interfaces, including energy protocols (IEC 60870-5-101, IEC 60870-5-104, IEC 61850)
S6001-RTU	Remote Control Unit with built-in IO and 3G+ modem
S6001-RTU-E	Remote Control Unit with built-in IO, 3G+ modem, Energy Management protocols
S6001-PC	Advanced Pump Controller with 7" HMI
VPN TOOLS	
VPN BOX	VPN Server & Connectivity module for remote control and remote assistance
VPN BOX VM	VPN Server - Virtual Machine for remote control and remote assistance
VPN BOX MANAGER	Configuration software for VPN BOX, Server, sign-in credentials
VPN CC	VPN Client Communicator. Software tool for VPN network connection to install on client PCs
ACCESSORIES	**Pg. 41**

Technical data, diagrams and drawings in this catalog are indicative only and not binding

VPN & TUNNELING

VPN (Virtual Private Network) is a mechanism to create secure connections between two or more nodes (PC, devices, networks etc.) geographically distributed over the Internet.

Tunneling is the transmission of data over a public network, which causes the routing nodes of the public network are not capable detect that the transmission is part of a private network.



VPN BOX

Server Connectivity Module for remote control & remote assistance

FEATURES

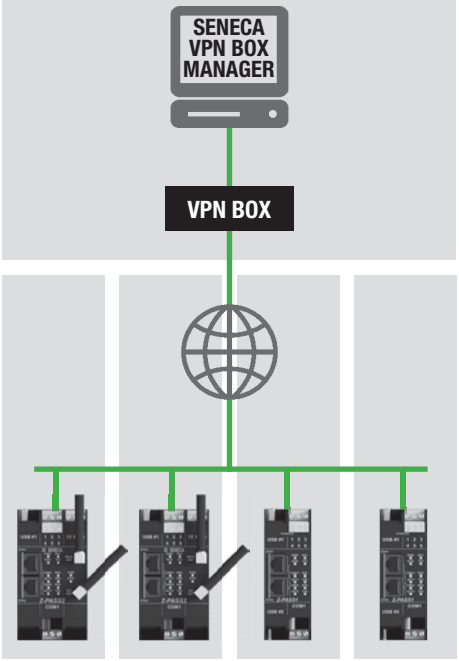
- Max 496 subnets (Single LAN mode)
- Server to be installed on customer network with static OP or DynDNSS
- Automated and centralized configuration
- Backup configuration and restore on file
- Remote access management: Point-to-Point remote assistance, Single LAN Remote Control
- Remote access Security via SSL / VPN
- Available as Device / Appliance HW or Software / Virtual Machine

ORDER CODES

Code	Description
VPN BOX	Server & Connectivity module for remote control and remote assistance

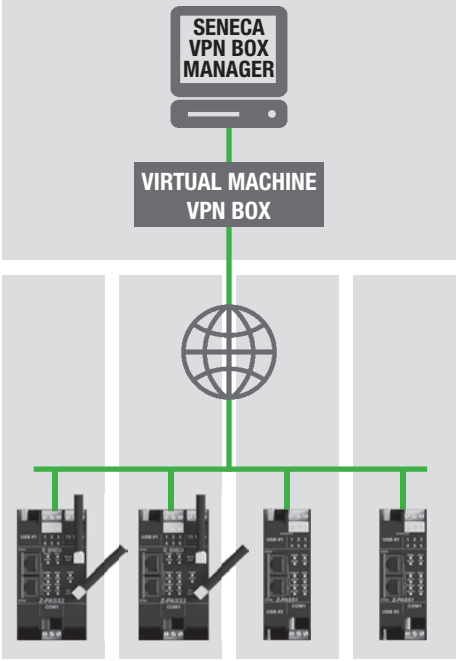
VPN CONFIGURATIONS

VPN BOX SENECA SOLUTION



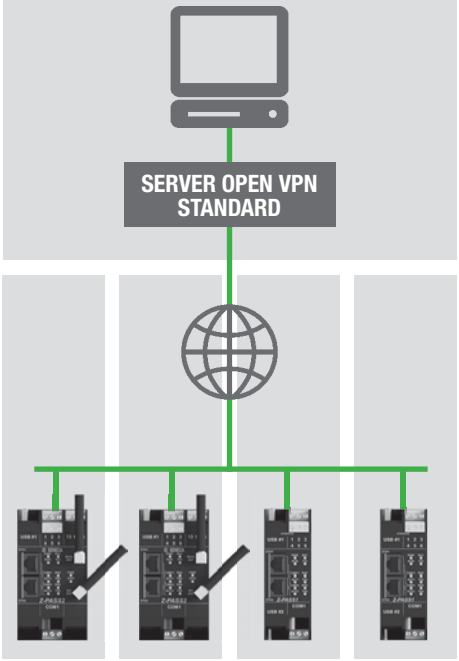
Plug&Play solution guaranteed, optimized and supported in all of the functionality

VIRTUAL VPN BOX SENECA SOLUTION



Guaranteed and supported solution on client side. User need to install and setup Seneca VPN appliance on his own or third part server.

CUSTOMER OPEN VPN SERVER SOLUTION



Client VPN (Z-PASS1/2) support OPEN VPN functions of customer network.

VPN BOX APPLICATIONS

SINGLE LAN – REMOTE CONTROL

HIGHLIGHTS

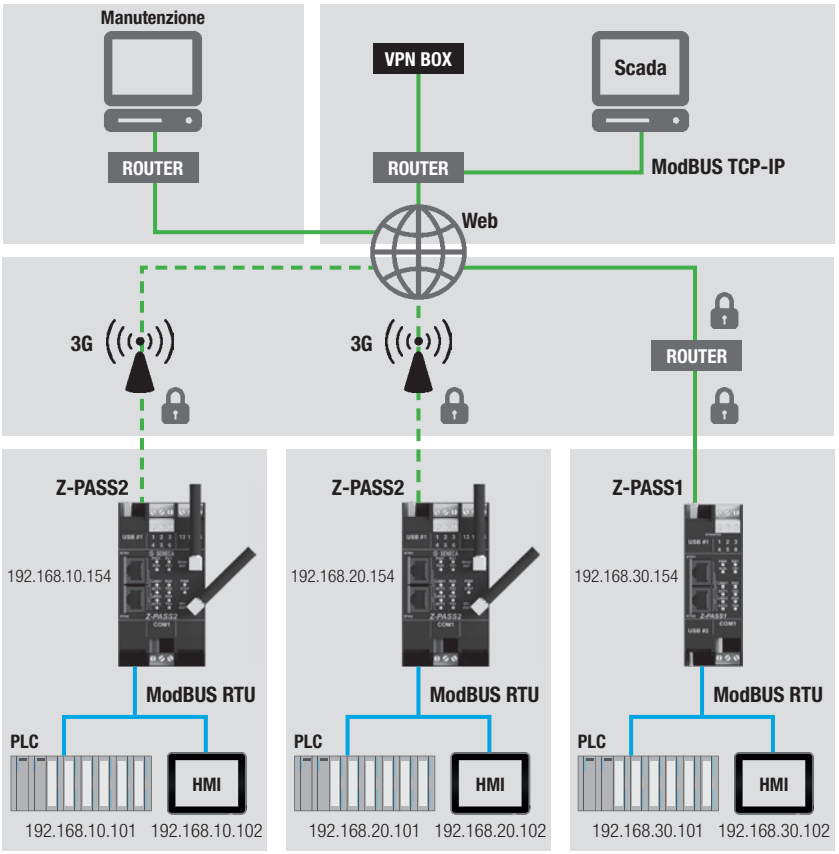
- Different Networks connection through VPN (Single LAN)
- Always-on connections
- Transparent nodes to all VPN users
- Access to remote subnetwork (connected to Z-PASS) through local IP
- Installations on different subnetworks (i.e. 192.168.30.x, 192.168.40.x…)
- Real time alarm monitoring on Scada

ADVANTAGES

- Direct call device as if you were in a local plant
- Remote and simultaneous monitoring on different plants
- Heterogeneous network integration
- Application working for all kind of SIM Cards

SENECA SOLUTION

Z-PASS1, Z-PASS2, VPN BOX



POINT-TO-POINT– REMOTE ASSISTANCE

HIGHLIGHTS

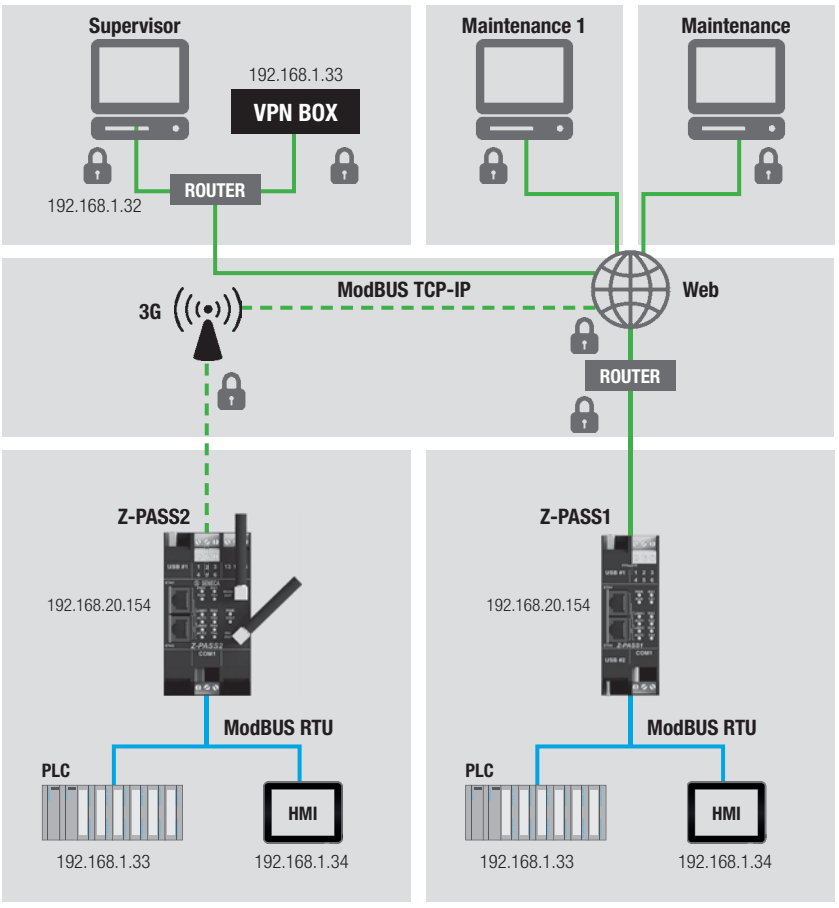
- Point-to-Point connection, PC-device / machine
- On-demand connection
- Multi-User management
- Access to remote subnetwork (connected to Z-PASS) through local IP
- Nodes on equal subnetworks (i.e. 192.168.20.x)
- Alarm monitoring kit based on I/O module connected at Z-PASS

ADVANTAGES

- Reduction logistics and maintenance cots
- Remote control of machines
- Fast remote maintenance
- Personnel safety assured
- Application working for all kind of SIM Cards

SENECA SOLUTION

Z-PASS1, Z-PASS2, VPN BOX



2

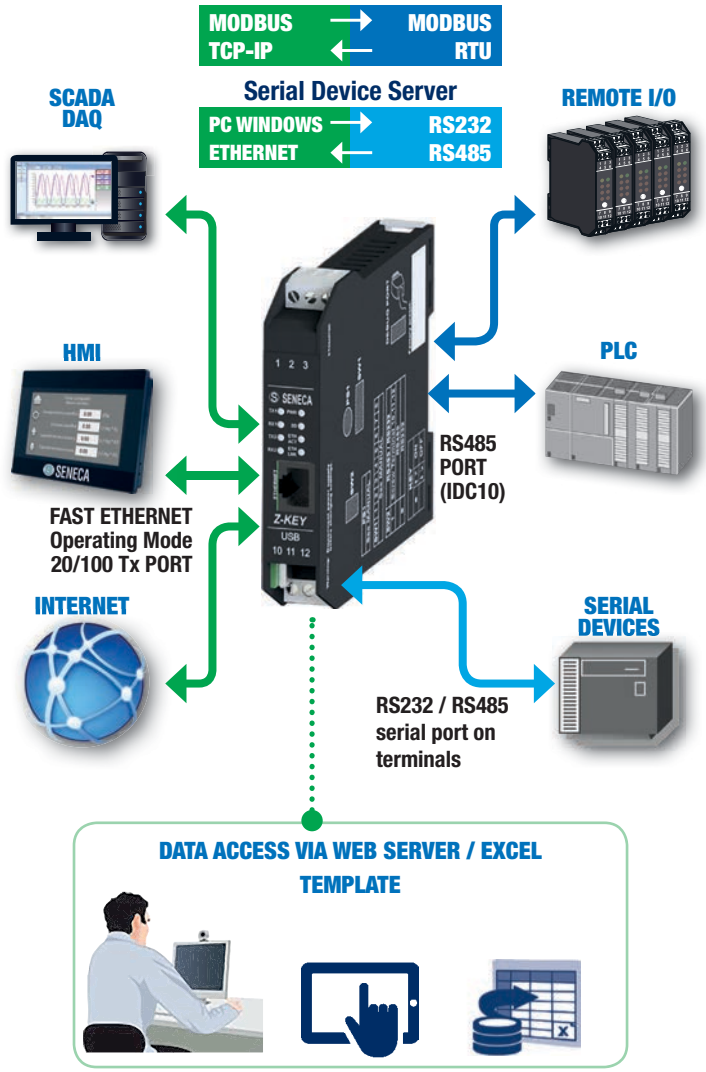
KEY

INDUSTRIAL GATEWAY
SERIAL DEVICE SERVER

NEW FEATURES*

TECNHICAL DATA

GENERAL DATA	
Power supply	11..40 Vdc, 19..28 Vac (50-60 Hz)
Consuption	1,5W @ 24 Vac (typical)
Isolation	1,5 kVac
State indicators	Power supply, serial communication, Ethernet connection, microSD in use
Pollution degree	2
Protection degree	IP20
Enclosure	Nylon 6 with 30% glass fiber, V0 self-extinguished class
Installation	35 mm DIN rail guide
Connections	Removable terminal block
Operating Temperature	-20..+50°C
Dimensions	17,5x100x112 mm
Weight	170 g
COMMUNICATION	
Ethernet	Nr. 1 Fast Ethernet PORT 10/100Tx RJ 45 on frontal Up to 8 simultaneous client Modbus TCP-IP supported
Serial	Nr. 1 RS232/485 port switchable, baud rate max 115k on terminals Nr. 1 RS485 port, baud rate max 115k on IDC10 connector
USB	Nr. 1 micro USB port
Supported protocols	Modbus TCP-IP, Modbus RTU, http REST
Operating Mode	ModBUS Bridge (From ModBUS TCP-IP to ModBUS RTU) ModBUS Gateway (Multiple calls, from ModBUS TCP-IP to ModBUS RTU/TCP-IP) Transparent Gateway (Serial Device Server / Tunnelling), remote virtual COM ModBUS Reverse Bridge (From ModBUS RTU to ModBUS TCP-IP)* Http post variables publication*
CPU, MEMORY	
CPU	ARM 32 bit @ 120 MHz
Slot per microSD	Yes
Supported memories	Up to 32 GB HC
PROGRAMMING	
Software	EASY SETUP, Template Excel (tag), SDD, SESC, EASY Z-KEY
Webserver	Yes
STANDARD	
Approval	CE
Norms	EN61000-6-4, EN61000-6-2, EN61010-1



MANDATORY ACCESSORIES*

Z-PC-DINAL2-17.5

*enabling nr.2 serial ports

CS-DB9M-MEF-1012

*using RS232 port

ORDER CODES

Code	Description
Z-KEY-0	Modbus / Ethernet Industrial Gateway – Serial Device Server
SOFTWARE	
EASY SETUP APP	App ioS / Android EASY SETUP suite
EASY Z-KEY	Configuration tool for Z-KEY IP address
SDD	SENECA Discovery Device, IP scanner for Z-KEY, Z-PASS1, Z-PASS2
SESC	SENECA Ethernet to Serial Connection tool for Z-KEY, Z-PASS1, Z-PASS2
TEMP-TAG-Z-KEY	Excel template for Z-KEY tags (gateway mode)
TEMP-WEB-Z-KEY	Web page template for Z-KEY
ACCESSORIES	
CS-DB9M-MEF-1012	Serial communication cable (DB9M / MEF 10-12) for Z-KEY
CU-A-MICROB	USB-A Micro USB-B 5 P plug cable
CU-A-MICRO-OTG	Micro USB OTG to USB Type A (female) Adapter Cable
KIT-USB	Programming toolkit for USB interface instruments
MSD	Micro SD memory card with adapter
Z-PC-DIN2-17.5	DIN rail bus system 2 slots 17.5 mm
Z-PC-DINAL2-17.5	DIN rail bus system head terminal + 2 slots 17.5 mm

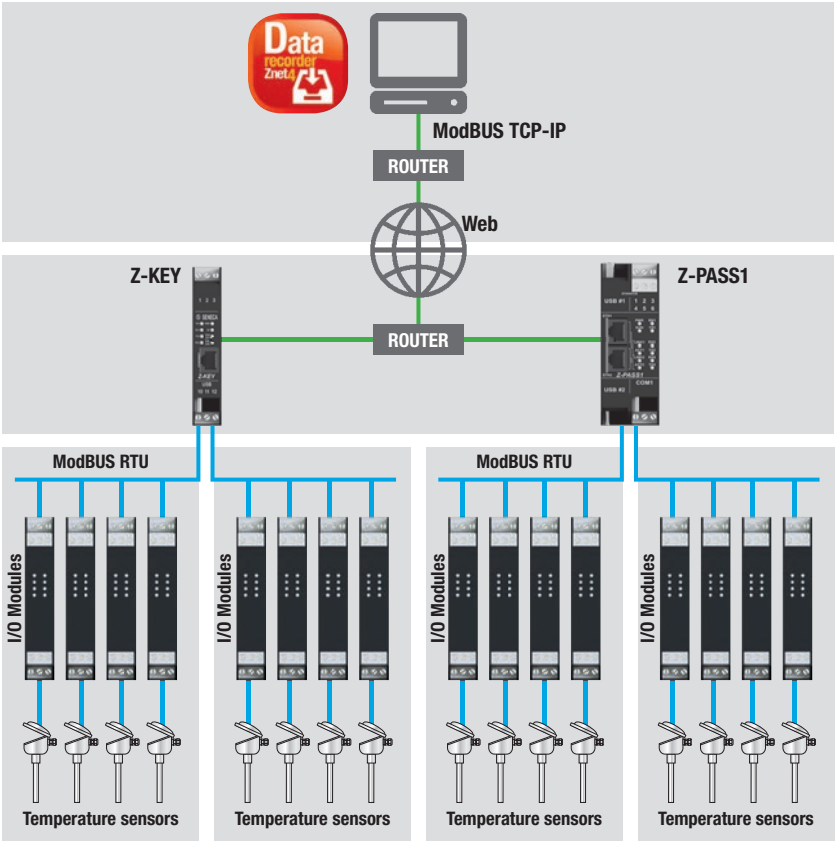
NETWORKING APPLICATION

MODBUS BRIDGE / DATA ACQUISITION

HIGHLIGHTS
- Typical applications: protocol conversion, data acquisition with DATA RECORDER software
- Configuration by Web Server also remotely
- Max 8 / 32 simultaneous clients

ADVANTAGES
- Measurement acquisition with DATA RECORDER software
- Functional testing & automated report
- Oven / HVAC independent control
- Dimension inspection and material quality engineering

SENECA SOLUTION
Z-KEY
Z-PASS1
Z-PASS2 (with free static IP SIM, private APN, VPN BOX system)

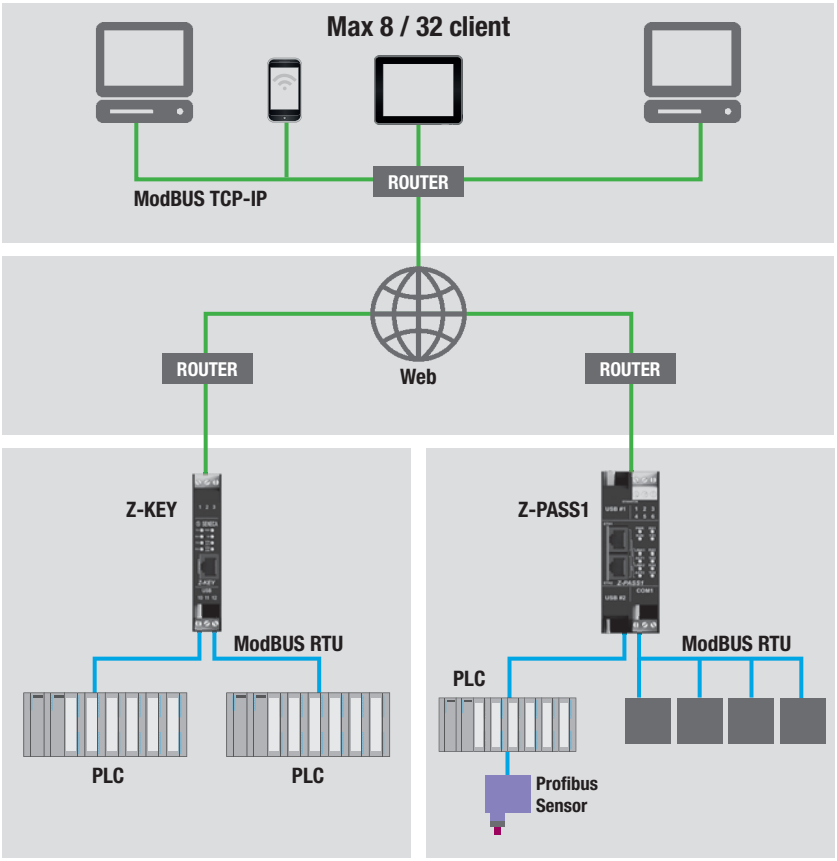


GATEWAY WITH MODBUS RTU SLAVE PORT

HIGHLIGHTS
- Typical applications: remote access via Ethenet at ModBUS RTU Master PLC without Ethernet port
- Confguration by Web Server also remotely
- Max 8 / 32 simultaneous clients
- Tag configuration through Web Server, Macro Excel
- Fail-safe mode configuration
- ModBUS request optimization by using a multiple register call

ADVANTAGES
- Increasing devices connectivity
- Revamping and performance optimization of existing infrastructures
- Exploiting existing IP infrastructure

SENECA SOLUTION
Z-KEY
Z-PASS1
Z-PASS2 (with free static IP SIM, private APN, VPN BOX system)



GATEWAYS/ ROUTERS

	Z-PASS1	Z-PASS2
	NEW FEATURES* 	NEW FEATURES* 
	VPN Industrial Gateway Serial Device Server	VPN Industrial Gateway Serial Device Server 3G/Ethernet Router
GENERAL DATA		
Power Supply DC	11..40 Vdc; 19..28 Vac only by rear IDC10 connector	11..40 Vdc; 19..28 Vac
Power Consumption max	4 W @ 24Vac, Max 6 W	4 W @ 24Vac, Max 6 W
Isolation	1500 Vac	1500 Vac
Status Indicators	Power Supply Rx-Tx serial communication Link and Ethernet PLC function	Power supply Rx-Tx serial communication Link and Ethernet PLC function Modem Status
Degree of pollution	2	2
Protection Degree	IP20	IP20
Operating Temperature	-20 °C..+55 °C	-20 °C..+55 °C
Dimension (wxhxd)	100 x 35 x 112 mm	100 x 52,5 x 112 mm
Housing	Nylon PA6 with glass-fiber	Nylon PA6 with glass-fiber
Connections	Removable screw terminals 3-way, 5 mm	Removable screw terminals 3-way, 5 mm
Mounting	35 mm DIN rail guide IEC EN 60715	35 mm DIN rail guide IEC EN 60715
COMMUNICATION		
Ethernet	Nr. 2 10/100 Mbps on RJ45 front port (LAN/WAN)*	Nr. 2 10/100 Mbps on RJ45 front port (LAN/WAN)*
Serial Ports	Nr.1 RS232 / 485 switchable serial port, max 115k baud rate on connector Nr.1 RS485, baud rate max 115k on IDC10 connector for bus and terminals Nr.1 RS485, baud rate max 115k on terminals	Nr. 1 RS232 / 485 switchable serial port, baud rate max 115k on connector Nr.1 RS485, baud rate max 115k on IDC10 connector for bus and terminals Nr.1 RS485, baud rate max 115k on terminals
USB	Nr.1 USB host on side connector Nr.1 USB otg on micro-USB side connector for Z-MODEM-3G connection)	Nr.1 USB host on side connector
Modem	-	UMTS, HSDPA (dual band) ; EDGE, GPRS, GSM (quad band)
FUNCTION MODE		
ModBUS Bridge	x	x
Gateway	x	x
Remote Virtual COM	x	x
Tunnel P2P / P2MP / TCP / UDP	x	x
3G / Ethernet Industrial Router		x
VPN	x	x
Remote control with local addresses	x	x
Remote maintenance with local addresses	x	x
CPU AND MEMORY		
CPU	ARM 32 bit @ 400 MHz	ARM 32 bit @ 400 MHz
Flash Memory (data)	1 GB	1 GB
RAM	64 MB	64 MB
Slot Micro SD	YES	YES
Micro SD CARD (not included)	Max 32 GB	Max 32 GB
SETTINGS		
Web server	YES	YES
Seneca VPN Manager	YES	YES
Seneca Discovery Device	YES	YES
SESC (Seneca Ethernet to Serial Connection)	YES	YES
NORMS & APPROVALS		
Approvals	CE	CE
Norms	EN61000-6-4 (electromagnetic emissions - industrial environments) EN61000-6-2 (electromagnetic immunity - industrial environments) EN61010-1 (security)	EN61000-6-4 (electromagnetic emissions - industrial environments) EN61000-6-2 (electromagnetic immunity - industrial environments) EN60950 (security), EN301 511, EN301 489-1, EN301489-7

ORDER CODES

Code	Description
Z-PASS1-A	VPN Industrial Gateway, Serial Device Server, 3 RS485 serial ports
Z-PASS1-B	VPN Industrial Gateway, Serial Device Server, 2 RS485 and 1 RS232 serial port
Z-PASS2-A	VPN Industrial Gateway, Serial Device Server, 3G/Ethernet Router, 3 RS485 serial ports
Z-PASS2-B	VPN Industrial Gateway, Serial Device Server, 3G/Ethernet Router, 2 RS485 and 1 RS232 serial port
SOFTWARE	
SIVCS	SENECA VPN Center
SDD	SENECA Discovery Device, IP scanner for Z-KEY, Z-PASS1, Z-PASS2
SESC	SENECA Ethernet to Serial Connection for Z-KEY, Z-PASS1, Z-PASS2

ORDER CODES

Code	Description
ACCESSORIES	
A-GSM	Dual band swing GSM external antenna, cable 3,2 m, SMA
A-GSM-QUAD	High performance Quadband GSM Antenna
CS-DB9M-MEF-1012	Z-KEY / RS232-DB9M serial connection cable
MSD	Micro SD memory card with adapter
Z-PC-DIN1-35	DIN rail bus support, 1 slot, step 35 mm
Z-PC-DIN4-35	DIN rail bus support, 4 slots, step 35 mm
Z-PC-DINAL1-35	DIN rail bus / power supply support, 1 slot, step 35 mm
Z-PC DINAL2-52.5	DIN rail bus / power supply support, 2 slot, step 52,5 mm, 17.5 mm

Technical data, diagrams and drawings in this catalog are indicative only and not binding

NETWORKING APPLICATION

SERIAL TUNNEL POINT-TO-POINT

HIGHLIGHTS

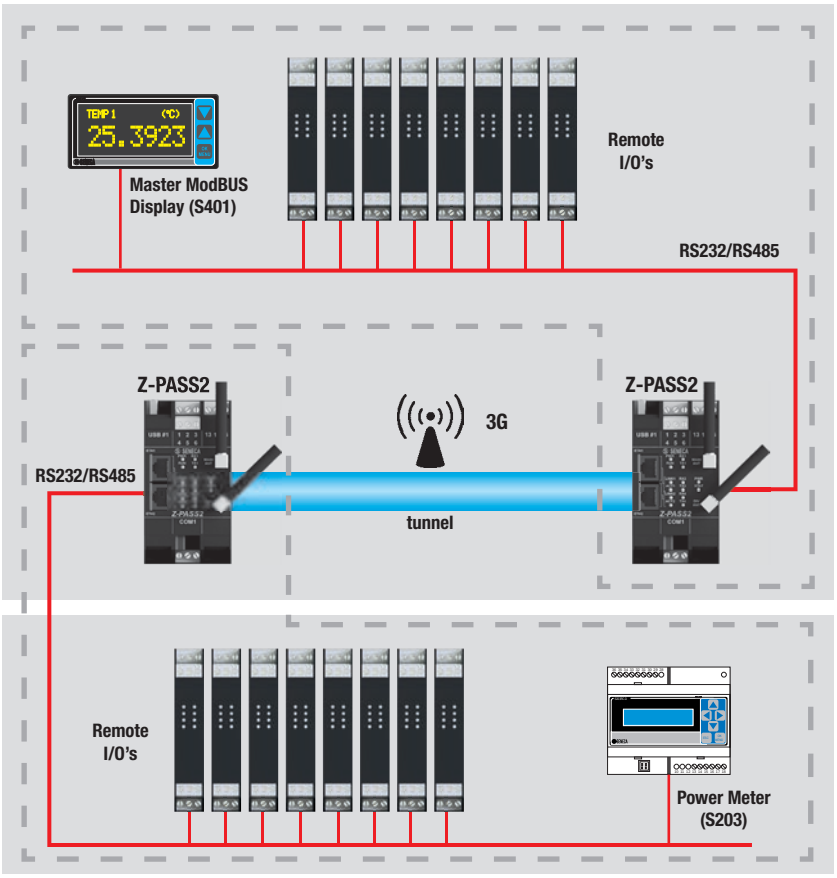
- P2P UDP / TCP tunnel transparent to serial protocol on IP network
- Serial communication extension between 2 devices through LAN/3G
- Web Server configuration
- Fixes IP SIM card / Private APN

ADVANTAGES

- Signal repetition with PLC Master coupling, cable replacement
- Measurement parameters monitoring
- Real-time cost analysis
- Integration with I/O modules, energy meters, ModBUS devices

SENECA SOLUTION

Z-PASS1/2



SERIAL DEVICE SERVER – VIRTUAL COM

HIGHLIGHTS

- Appliance software and/or device not supporting TCP-IP
- Remote configuration by Web Server
- Transparency to serial communication protocol
- SENECA driver availability

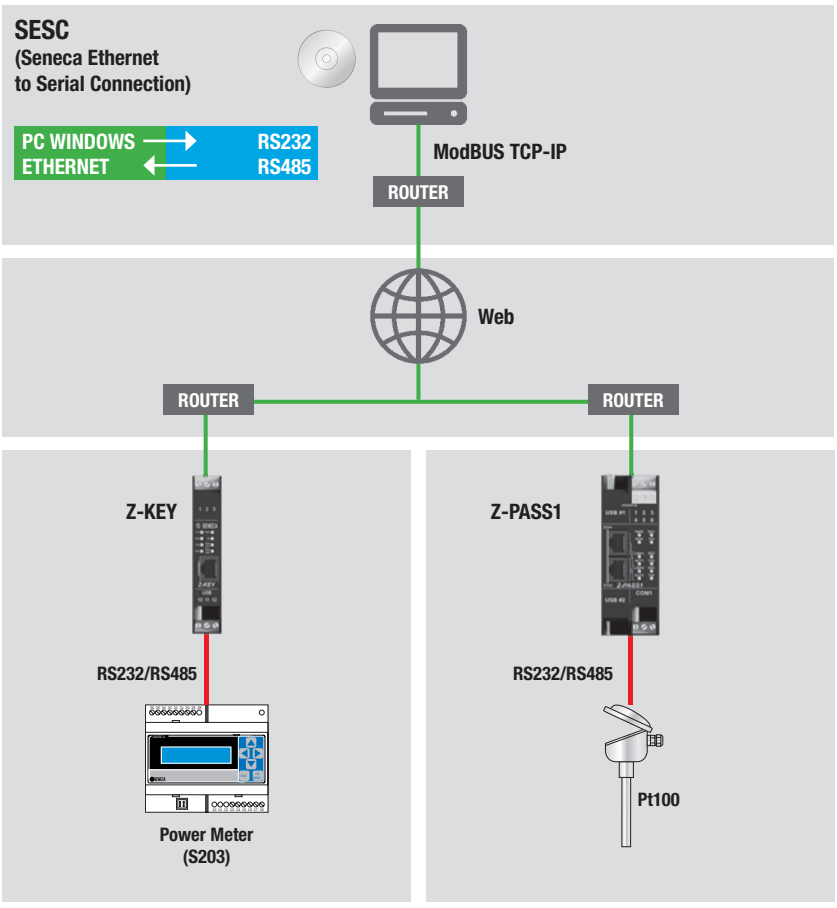
ADVANTAGES

Reachability serial devices by Internet LAN

SENECA SOLUTION

Z-KEY
Z-PASS1
Z-PASS2 (*)

(*) SIM with Dynamic or Fixed IP, Private or Public



WIRELESS INDUSTRIAL MODEM

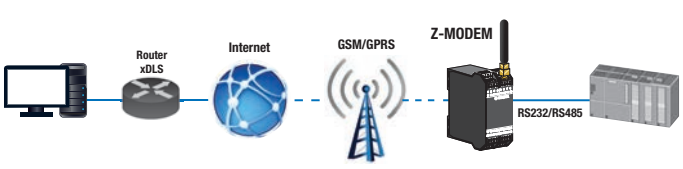
With the new range of wireless modem SENECA offers GSM, GPRS, and 3G Quadband equipment, ideal for industrial and professional use. Applications range include automation, remote control, M2M telemetry connections, data transfer from/to each type of installation.

The SENECA wireless modem run remote applications of any serial device. Equipped with RS232 or Micro USB and Vac / dc power supply, they support data transfer via TCP / IP Socket in a compact and rugged design for DIN rail mounting.

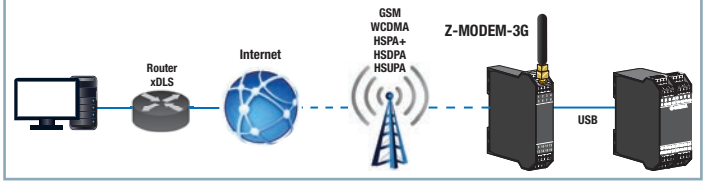
	Z-MODEM	Z-MODEM-3G
		
	Quadband GSM/GPRS industrial modem with RS232 serial port	3G industrial modem with micro USB interface
GENERAL DATA		
Power supply	11..40 Vdc; 19..28 Vac	11..40 Vdc; 19..28 Vac
Power consumption	2W (standby), 6.5 W (MAX)	2W (standby), 5 W (MAX)
Protection degree	IP20	IP20
Isolation	1.500 Vac power supply / RS232	1.500 Vac power supply / 3G USB
LED signalling	Power, communication	Power, communication
Antenna connector	SMA type	SMA type
SIM card	Standard (25 x15 mm)	Micro SIM @ 3V con connettore push pull
Dimension	100x 112 x 35 (l x h x p)	100x 112 x 17.5 (l x h x p)
Mounting	Fast mounting for DIN rail 46277	Fast mounting for DIN rail 46277
Connection	Removable terminals for conductors up to 2,5 mm²	Removable terminals for conductors up to 2,5 mm²
Operating Temperature	-10..+50°C	-20..+60°C
Material, color	PBT, black	PBT, black
Dimension	100 x 35 x 112 mm	100 x 17,5 x 112 mm
Weight	280 g	225 g
COMMUNICATION		
Serial Interface	RS232 IDC10 side	
USB		Micro USB
Modem frequency	Quad-Band GSM 850 MHz, EGSM 900MHz, DCS 1800 MHz, PCS 1900 MHz	GSM /GPRS/EDGE Quad-band: GSM 850 / 900 MHz, DCS 1800 Mhz, PCS 1900 MHz UMTS/HSPA+ Dual-Band: WCDMA 2100/900, 2100/850, 1900/850 MHz
Connection rate	Downlink max 85.6 kbps, Uplink max 42.8 kbps	Downlink max 14.4 Mbps, Uplink max 5.76 Mbps
STANDARD		
Certifications	CE	CE
Norms	EN 61000-6-4, EN 61000-6-2, EN 301511, EN 301489-1, EN 301489-7, EN 60950	FCC part 15 class B, EN 55024, EN 301511, EN 301489-7, EN 301489-1, EN 60950

APPLICATION EXAMPLES

DATA TRANSMISSION BY MODEM WITH PLC SERIAL CONNECTION



DATA TRANSMISSION BY MODEM WITH USB CONNECTION TO Z-TWS4/Z-PASS1



ORDER CODES

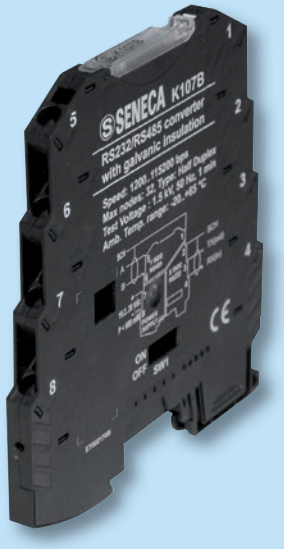
Code	Description
Z-MODEM	Quadband GSM/GPRS industrial modem with RS232 serial port
Z-MODEM-3G	3G industrial modem with micro USB interface

ACCESSORI

Code	Description	Z-MODEM	Z-MODEM-3G
A-GSM	Dual band swing GSM external antenna, cable 3,2 m, SMA	x	x
CU-A-MICROB	USB-A Micro USB-B 5 P cable		x
CS-DB9M-DB9F	RS232 (DB9M / DB9F) serial cable	x	
CS-DB9F-CFV10	RS232 (DB9F-CFV10) serial cable wth adapter	x	
Z-PC-DINAL1-35	DIN rail bus system head terminal + 1 slot 35 mm	x	
Z-PC-DIN1-35	DIN rail bus system 1 slot 35 mm	x	
Z-PC-DINAL2-17.5	DIN rail bus system head terminal + 2 slots 17.5 mm		x
Z-PC-DIN2-17.5	DIN rail bus system 2 slots 17.5 mm		x

Technical data, diagrams and drawings in this catalog are indicative only and not binding

SERIAL / USB CONVERTERS 2.6



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SERIAL CONVERTERS

	Z107/S107P	Z-4AI-D	Z-4TC-D	K107A	K107B
					
	RS232 <-> RS485 Serial converter	**4-CH DC Current-Voltage A/D Converter**	**4-CH DC Thermocouple A/D Converter**	**RS485 <-> RS485 serial isolator/amplifier**	**RS232 <-> RS485 serial converter**
GENERAL DATA					
Power supply	Z107: 10..40 Vdc, 19..28 Vac 50..60 Hz -S107P: 9..12 Vdc (with power supply 220 Vac)	19..40 Vdc 19..28 Vac (50..60 Hz)	19..40 Vdc 19..28 Vac (50..60 Hz)	19,2..30Vdc	19,2..30Vdc
Power Consumption	Z107: 2,5 W -S107P: 1 W	2,5 W	2 W	0,5 W	0,5 W
Isolation	1.500 Vac (3 way)	1.500 Vac (3 way)	1.500 Vac, (3 way)	1.500 Vac, (3 way)	1.500 Vac, (3 way)
Status Indicator	Power supply, RST signal status, data transmission, data reception	Power supply Error Data Transmission Data reception	Power supply Error Data Transmission Data reception	Data, inverted connection, Power Supply	Data, inverted connection, Power Supply
Protection Degree	IP20	IP20	IP20	IP20	IP20
THERMOMECHANICAL FEATURES					
Operating Temperature	Z107: -20..+60°C S107P: 0..+55°C	0..+55 °C	0..+55 °C	-20..+65 °C	-20..+65 °C
Dimension (W x H x D)	Z107: 17,5 x 100 x 112 mm S107P: 100,5 x 50 x 24 mm	17.5 x 100 x 112 mm	17.5 x 100 x 112 mm	6,2 x 93,1 x 102,5 mm	6,2 x 93,1 x 102,5 mm
Weight	Z107: 200 g S107P: 90 g	200 g	200 g	45 g	45 g
Housing	Z107: Nylon 6 with 30% glass-fiber, V0 self-extinguished class S107P: ABS	Nylon 6 with 30% glass-fiber, V0 self-extinguished class	Nylon 6 with 30% glass-fiber, V0 self-extinguished class	PBT, black	PBT, black
Connections	Z107: Removable terminal block, max wire size 2,5 mm2	Removable terminal block, wire size up to 2.5 mm2	Removable terminal block, wire size up to 2.5 mm2	Spring clamp	Spring clamp
Mounting	Z107: 35 mm DIN rail guide	35 mm DIN rail guide	35 mm DIN rail guide	35 mm DIN rail guide	35 mm DIN rail guide
COMMUNICATION, MEMORY PROCESS					
Interface	Z107 RS232 on RJ10 frontal connector RS485/RS422, removable terminal block with screw type connection S107P RS232, DB9 connector RS485/RS422, removable clamps 5 poles	RS232 (configuration)	RS232 (configuration)	RS485 half duplex, 32 nodes, line termination, protection up to 30 Vdc RS485 half duplex, 32 nodes, line termination, protection up to 30 Vdc	RS232, protection up to 30 Vdc RS485 half duplex, 32 nodes, line termination, protection up to 30 Vdc
Input	-	VOLTAGE 2..10 V f.s (bipolar) Resolution: 14bit+sign Impedance: 100 K Ω CURRENT ± 20 mA (bipolar) Resolution: 14bit+sign Impedance: 100 Ω	VOLTAGE ± 80 mV f.s (bipolar) Impedance 10 M Ω THERMOCOUPLE Type J, K, R, S, T, E; B, N	-	-
Output	-	DIGITAL Channel from/to control unit (1 settable as clock or reset input)	DIGITAL Channel from/to control unit (1 settable as clock or reset input)	-	-
Direction change	Automatic timing, command from RTS on RS232 interface			Automatic timing	Automatic timing
Speed	Up to 115 kbps			Up to 250 kbps	Up to 250 kbps
Protocol	ModBUS RTU slave			ModBUS RTU slave	ModBUS RTU slave
Distance	Up to 1.200 m			Up to 1.200 m	Up to 1.200 m
CONFIGURATIONS, NORMS					
Programming	DIP switches (speed, communication, change of direction)	PLC IEC 61131 Libraries DIP Switches Z-PROG (PC software)	PLC IEC 61131 Libraries - DIP Switches – Z-PROG (PC software)	DIP switches	DIP switches
Norms & Approvals	CE, EN 50081-2, EN 55011, EN 50082-2, EN 61000-2-2/4, EN 50140/141, EN 61010-1, EN 60742	EN 55011, EN 61000-4-2, EN61000-4-4, EN 50140 / 141	EN 55011, EN 61000-4-2, EN61000-4-4, EN 50140 / 141	UL-UR, CE, EN 61010-1, EN 60742, EN 61000-6-2, EN 61000-6-4	UL-UR, CE, EN 61010-1, EN 60742, EN 61000-6-2, EN 61000-6-4
ORDER CODES					
Code	Z107 (din rail version), S107P (desk)	Z-4AI-D	Z-4TC-D	K107A	K107B

Technical data, diagrams and drawings in this catalog are indicative only and not binding

USB CONVERTERS

	K107USB	S117P1	S107USB	EASY-USB
				
	USB <-> RS485 serial converter / isolator (din version)	**USB <-> RS232 , USB <-> RS485 and USB <-> TTL serial converter / isolator (desk)**	**USB <-> RS485 serial converter / isolator (desk version)**	**USB-UART TTL CONVERTER**
GENERAL DATA				
Power supply	Through USB port of PC	Through USB port of PC	Through USB port of PC	From PC 5 V @ 100 mA
Power Consumption	0,5W	0,35W	0,5W	0,35W
Isolation	1.500 Vac	1.500 Vac	1.500 Vac	
Status Indicator	Power supply, data transmission, data reception	Power supply, data transmission, data reception	Power supply, data transmission, data reception	Type J, K, R, S, T, E, B, N
Protection Degree	IP20	IP20	IP20	IP20
THERMOMECHANICAL FEATURES				
Operating Temperature	-20..+65°C	-20..+65°C	0..+55 °C	-10..+65°C
Dimension (w x h x d)	6,2 x 93,1 x 102,5 mm	90 x 50 x 25 mm	40 x 48 x 20,17 mm	84 x21 x 17 mm
Weight	45 g	50 g	ABS	
Housing	PBT, black	ABS	ABS	PVC, transparent
Connections	Spring clamp	DB9 (RS232) RJ10 (TTL)	5 poles connector	USB
Mounting	35 mm DIN rail guide	Type J, K, R, S, T, E, B, N	Type J, K, R, S, T, E, B, N	Type J, K, R, S, T, E, B, N
COMMUNICATION, MEMORY PROCESS				
Interface	RS485, line termination and speed (from 1.200 bps a 250 kbps) settable USB 1.0 e 2.0, connectors USB A e MINI USB B, multiple connection on the same PC	RS232 USB 1.0, 1.1 and 2.0	RS485, line termination and speed (from 1.200 bps a 250 kbps) settable USB 1.0 e 2.0, connectors USB A e MINI USB B, multiple connection on the same PC	UART TTL serial, RJ11 connector USB, connector type A standard, USB compatibility 1.0, 1.1, 2.0
Direction change	Automatic timing	Automatic timing		
Speed	Up to 250 Kbps	From 300bps to 250 Kbps	Up to 250 Kbps	From 300bps to 250 Kbps
Protocol	Modbus RTU Slave		Modbus RTU Slave	
Distance	Up to 1.200m		Up to 1.200m	
CONFIGURATIONS, NORMS				
Programming	Cd with driver, USB connection cable	CD driver support Windows (XP, Vista, XP Embedded, CE .net 4.2 e 5.0); Mac OS 8,9, OS-X; Linux (2.4.20 and next)	Cd with driver, USB connection cable	Cd with driver, TTL connection cable
Norms & Approvals	UL-UR, CE, EN 61010-1, EN 60742, EN 61000-6-2, EN 61000-6-4	CE, EN 61000-6-4, EN 61000-6-2, EN 61010-1	CE, EN 61010-1, EN 60742, EN 61000-6-2, EN 61000-6-4	CE, EN 61010-1, EN 60742, EN 61000-6-2, EN 61000-6-4, EN 60742
ORDER CODES				
Model	K107USB	S117P1	S107USB	EASY-USB

PROGRAMMING KIT

D-USB	**Programmable Devices**	**K107USB S107USB USB <-> RS485**	**S117P1 USB <-> RS485 USB <-> RS232 USB <-> TTL**	**EASY USB USB <-> TTL**
 **Free download on www.seneca.it**	Z-PC Line ModBUS / CANopen (Z-DIN, Z-D-OUT, Z-10-D-IN, Z-10-D-OUT, Z-D-IO, Z-4AI, Z-8AI, Z-3AO, Z-4TC, Z-8TC, Z-4RTD2, Z-SG, Z-DAQ-PID, ZC-24DI, ZC-24DO, ZC-16DI-8DO, Z203-1, Z204-1)	x	x	-
Driver per S.O. Windows, Mac OS, OS-X, Linux	Serie S (S203T, S203TA)	x	x	-
CS-JACK-DB9F	HMI (S401)	x	x	-
	Indicators (S311A and S311D with optional board, S312A)	x	x	-
Programming cable (Z109REG, Z-4AI-D, Z-4TC-D, Z3AO, Z8AI, Z-8TC...) (Jack / DB9F)	Z Line (Z109REG, Z203-1, Z204-1	-	x	-
	K Line (K121, K111, K120RTD)	-	x	x
	T Line (T120, T121)	-	x	x

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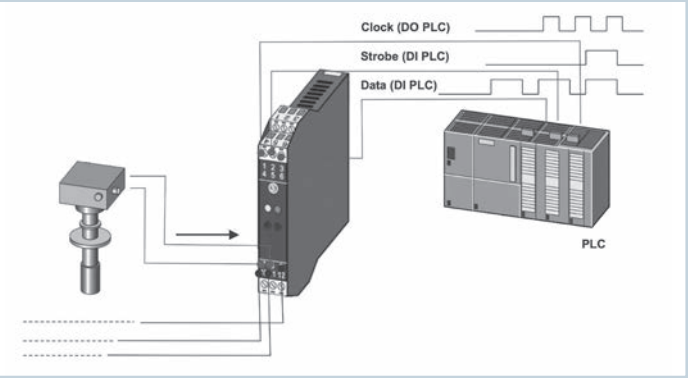
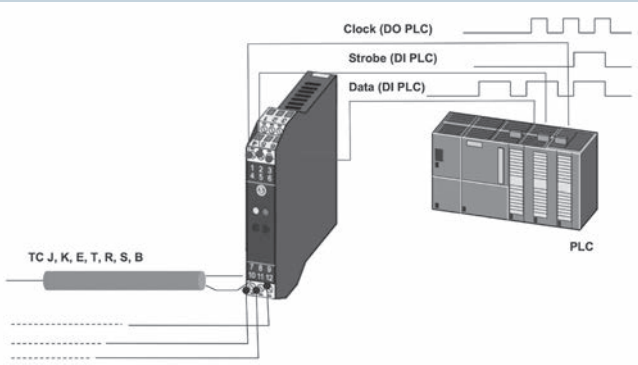
APPLICATION EXAMPLES

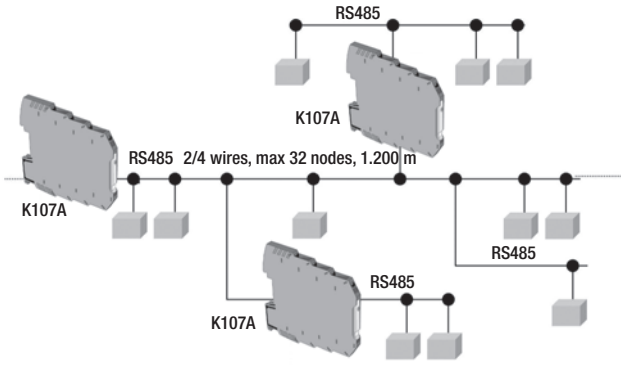
A/D CONVERSION FOR mA/V INPUT SIGNAL



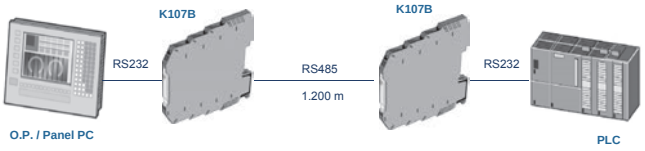
A/D CONVERSION FOR THERMOCOUPLE INPUT SIGNAL



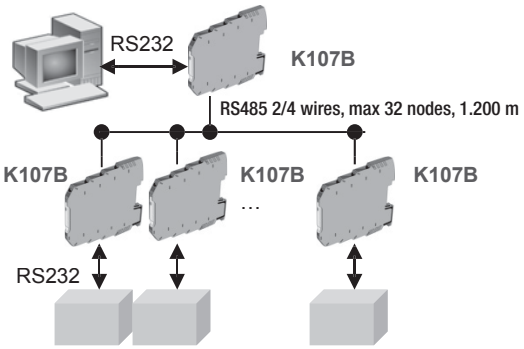
RS485 MULTISERIAL CONNECTION WITH GALVANIC ISOLATION



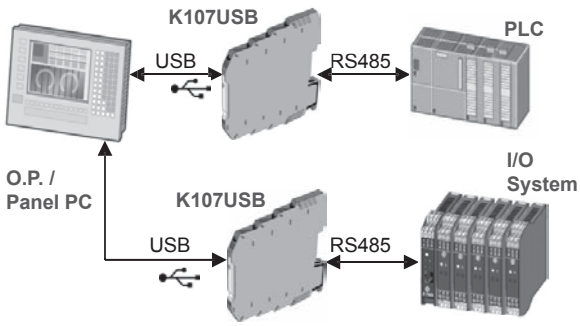
RS232/RS485 CONVERSION WITH GALVANIC ISOLATION



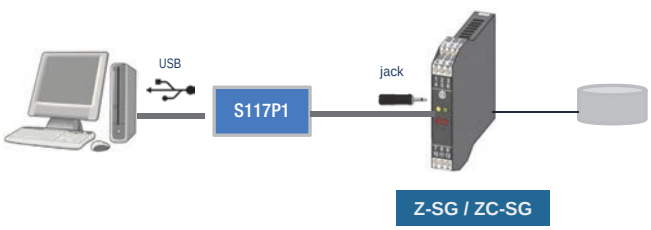
RS232/RS485 CONVERSION WITH GALVANIC ISOLATION UP TO 32 NODES



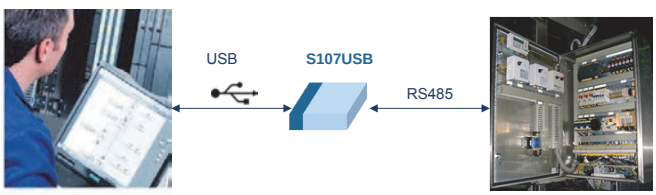
DATA TRANSMISSION AND MULTIPLE CONNECTION WITH GALVANIC ISOLATION USB/RS485



STRAIN GAUGE MODULE CONFIGURATION



CONTROL PANEL DIAGNOSTIC



FIBER OPTIC CONVERTERS 2.7

2

FIBER OPTIC CONVERTERS

SENECA fiber optic converters - S232, S485, SETH, SCAN Series – offer the possibility to extend fiber optic to any type of network / bus (LAN / Ethernet, CAN, serial) at the same time. They also ensure high levels of security and reliability. The modules make it possible to use both the single mode and multi-mode fiber, ensuring a reliable and very high speed communication.
Fiber optic applications include from power plants, telecommunications and control systems, intelligent transportation systems.

HIGH-SPEED COMMUNICATION

SEPARATION BETWEWN POWER ANDA DATA LINES NOT NECESSARY

PROTECTION AGAINST ELECTRICAL DISCHARGE

EASIER AND FASTER NETWORK DIAGNOSTIC

REAL-TIME DATA DISTANCE EXTENSION TRANSMISSION

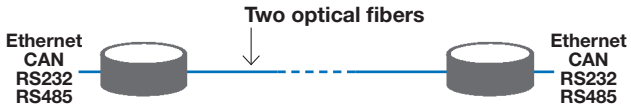
LONG TIME LASTING COMMUNICTION MEDIUM

DISTANCE EXTENSION

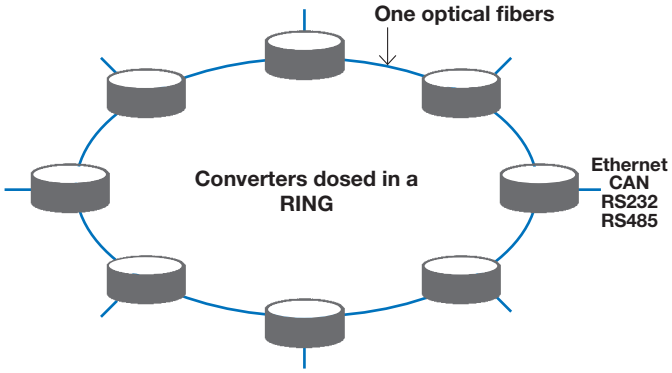
TOTAL NOISE IMMUNITY

CONNECTION TOPOLOGIES

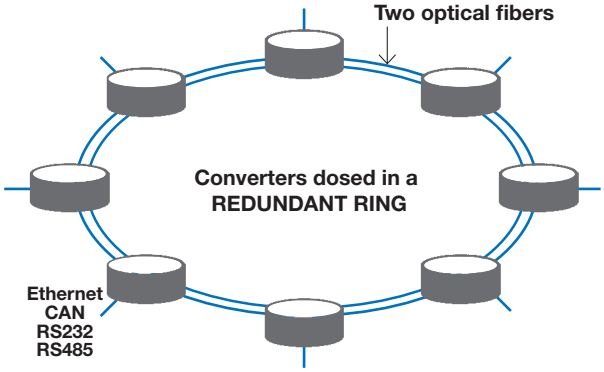
1. POINT TO POINT (LINKED DIRECTLY)



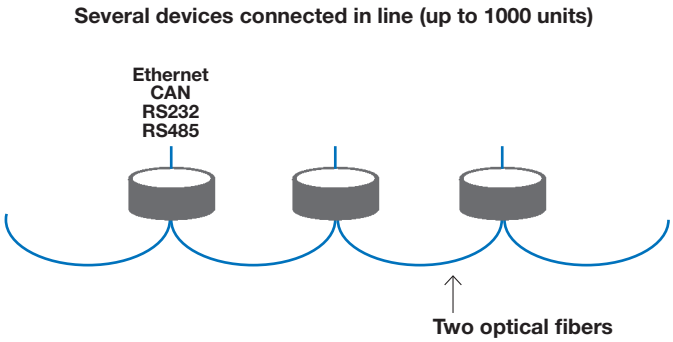
2. RING (SINGLE LOOP)



3. REDUNDANT RING (DOUBLE LOOP)

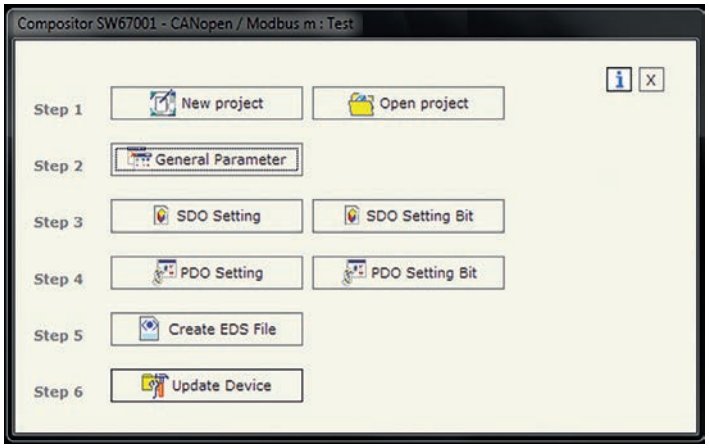


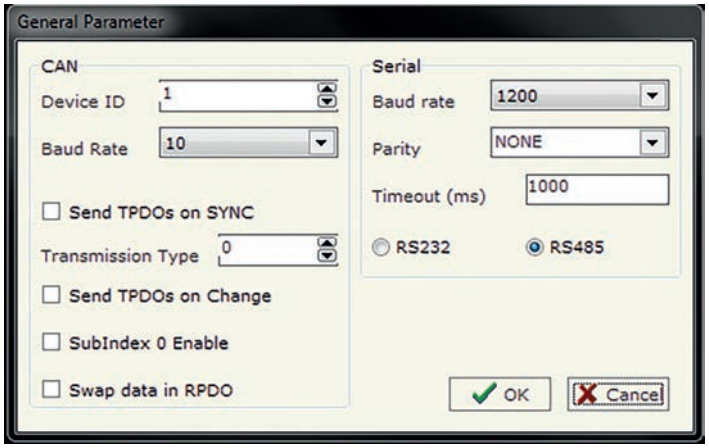
4. MULTI-DROP (IN-LINE)



	SERIAL CONVERTERS		BUS CONVERTERS	
	S232-FO	**S485-FO**	**SETH-FO**	**SCAN-FO**
			NEW 	NEW 
	RS232 - single / multi mode fiber, single / double loop converter	**RS485 - single / multi mode fiber, single / double loop converter**	**Ethernet - single / multi mode fiber, single / double loop converter**	**CAN - single / multi mode fiber, single / double loop converter**
GENERAL DATA				
Power Supply	12..35 Vdc; 8..24 Vac	12..35 Vdc; 8..24 Vac	12..35 Vdc; 8..24 Vac	12..35 Vdc; 8..24 Vac
Max consumption @24V	4 W	4 W	4 W	4 W
Isolation	4 kV @ 3 ways	4 kV @ 3 ways	4 kV @ 3 ways	4 kV @ 3 ways
Status indicators	Fiber optic communication, serial communication, device status	Fiber optic communication, serial communication, device status	Fiber optic communication, Ethernet communication, device status	Fiber optic communication, CAN communication, device status
Operating temperature	-40..+85°C	-40..+85°C	-40..+85°C	-40..+85°C
Dimension (lxhxp)	71 x 95 x 60 mm	71 x 95 x 60 mm	71 x 95 x 60 mm	71 x 95 x 60 mm
Weight	200 g	200 g	200 g	200 g
Enclosure	PVC, white	PVC, white	PVC, white	PVC, white
Mounting	DIN Rail (DIN 462777)	DIN Rail (DIN 462777)	DIN Rail (DIN 462777)	DIN Rail (DIN 462777)
Programming	Software COMPOSITOR	Software COMPOSITOR (S485-FO-MONO) DIP Switch (S485-FO-MULTI)	Software COMPOSITOR	Software COMPOSITOR
Self-diagnostic	Yes	Yes	Yes	Yes
Conformity	CE	CE	CE	CE
Norms	EN 61000-6-4, EN 61000-6-2	EN 61000-6-4, EN 61000-6-2	EN 61000-6-4, EN 61000-6-2	EN 61000-6-4, EN 61000-6-2
COMMUNICATION				
Communication ports	Nr 1 RS232 optoisolated	Nr.1 RS485 optoisolated	Nr 1 Ethernet port, RJ45 100 Mbps, cat.7E cable	Nr 1 CAN port
Topology	Single Loop models (S232-..-SL) Double Loop models (S232-..-DL	Single Loop models (S485-..-SL) Double Loop models (S485-..-DL)	Single Loop models (SETH-..-SL) Double Loop models (SETH-..-DL)	Single Loop models (SCAN-..-SL) Double Loop models (SCAN-..-DL)
Max serial converters	1.000	1.000	1.000	1.000
Max independent networks	6	6	6	6
Fiber optic / connectors	Single-mode, LC-LC connectors (S232-FO-MONO) Multi-mode (62,5/125 o 50/125 µm), ST/ST connectors (S232-FO-MULTI)	Single-mode, LC-LC connectors (S485-FO-MONO) Multi-mode (62,5/125 o 50/125 µm), ST/ST connectors (S485-FO-MULTI)	Single-mode, LC-LC connectors (SETH-FO-MONO) Multi-mode, LC connectors (SETH-FO-MULTI)	Single-mode, LC-LC connectors (SCAN-FO-MONO) Multi-mode, LC connectors (SCAN-FO-MULTI)
Max distance	10 km (S232-FO-MONO) 2 km (S232-FO-MULTI)	10 km (S232-FO-MONO) 2 km (S232-FO-MULTI)	10 km (SETH-FO-MONO) 500 m (SETH-FO-MULTI)	10 km (SCAN-FO-MONO) 500 m (SCAN-FO-MULTI)
Interfaces & protocols	ModBUS RTU,seamless communication	ModBUS RTU, seamless communication	Ethernet, ModBUS TCP-IP, seamless communication	CAN (CAN 2.0, CANopen), seamless communication
Speed	From 1.200 to 115.200 bps	From 1.200 to 115.200 bps	10 / 100 Mbps	10 / 100 Mbps

SOFTWARE TOOL





Through software tool “COMPOSITOR” available by www.seneca.it it is possible to create projects configuration and network parameters, identify devices on the network and their connections. Besides performing diagnostics and monitoring networks, diagnostic registers are easily accessible from SCADA and management software.

ORDER CODE	
SERIAL CONVERTERS	
S232-FO-MONO-SL	RS232 - single mode fiber, single loop converter
S232-FO-MONO-DL	RS232 - single mode fiber, double loop converter
S485-FO-MONO-SL	RS485 - single mode fiber, single loop converter
S485-FO-MONO-DL	RS485 single mode fiber, double loop converter
S232-FO-MULTI-SL	Multidrop fiber optic - RS485 double loop converter
S232-FO-MULTI-DL	Multidrop fiber optic - RS485 single loop converter
S485-FO-MULTI-SL	Multidrop fiber optic - RS232 single loop converter
S485-FO-MULTI-DL	Multidrop fiber optic - RS232 double loop converter
ETHERNET CONVERTERS	
SETH-FO-MONO-SL	Ethernet - single mode fiber, single loop converter
SETH-FO-MONO-DL	Ethernet - single mode fiber, dobule loop converter
SETH-FO-MULTI-SL	Ethernet - multimode fiber, single loop converter
SETH-FO-MULTI-DL	Ethernet - multimode fiber, double loop converter
CAN CONVERTERS	
SCAN-FO-MONO-SL	CAN - single mode fiber, single loop converter
SCAN-FO-MONO-DL	CAN - single mode fiber, double loop converter
SCAN-FO-MULTI-SL	CAN - multimode fiber, single loop converter
SCAN-FO-MULTI-DL	CAN - multimode fiber, double loop converter
CABLES	
CU-A-MINIB-1	USB-A Mini USB-B 5 P plug cable, 1 mt
CU-A-MINIB-2	USB-A Mini USB-B 5 P plug cable, 2 mt
CE-RJ45-RJ45-C	Crossover Ethernet cable (RJ45-RJ45)
CE-RJ45-RJ45-R	Straight-thru Ethernet cable (RJ45-RJ45)
SOFTWARE	
COMPOSITOR	Test and programming toolkit for fiber optic converters
FO TEST	Fiber optics automatic test software

RADIO MODULES 2.8

2

RADIO MODULES

Z-LINK1-NM, Z-AIR, RM169, RTURADIO

Our experience in interface technology, radio modules and radio modems is one of the key elements of automation and communication systems, especially in signal transmission from a few meters to several tens of kilometers. UHF / VHF equipment and industrial modem allow you to reach wide distances with maximum reliability.
They also grant you to perform remote control and field devices diagnostics via point-to-point multipoint, broadcasting, mesh, signal repetition mode.

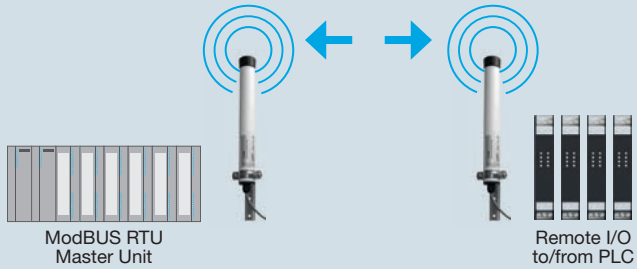
NBFM/ GFSK | RS232 RS485 | Vac/dc | I/O | 25..500 mW | MODBUS | 169..869 MHz | Operating Modes

Z-AIR 868 – 870 MHZ RADIOMODEM WITH BUILT-IN ANTENNA

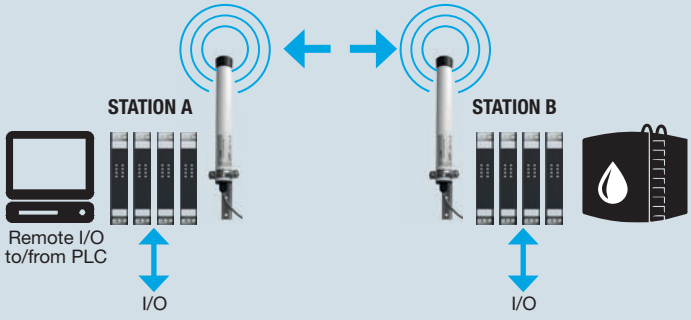
LICENSE FREE | IP65 | Z-AIR SETUP
LOW CONSUMPTION | BUILT-IN COAXIAL ANTENNA

Power Supply: 8-32 Vdc
Operating bandwidth: 868 - 870 MHz
Modulazione: NBFM / GFSK
Transmission Power: 25 / 150 / 500 mW
Built-in I/O
Interfaces: RS485
Operating mode: Point-to-Point, Point-to-Multipoint, Broadcasting, Digipeater, LBT (Listen Before Talk), Agility

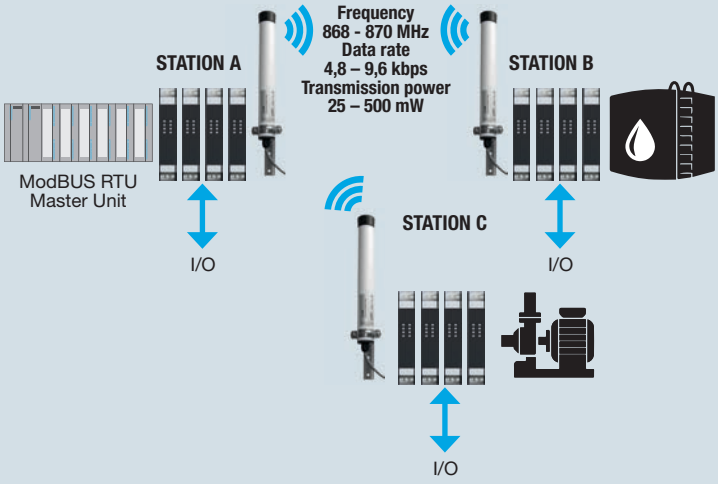
Data transmission from Master ModBUS Unit



Point-to-point data transmission (i.e. I/O repetion)



Point-to-Multipoint data transmission



Glossary

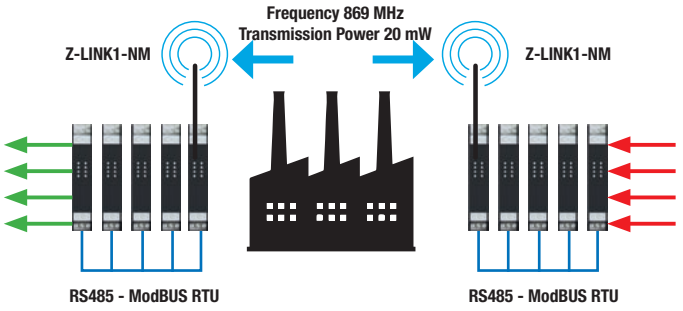
AGILITY System that combines the most spread radio communication technologies with safety systems, alarm management, with remote control, web and mobile applications.
BROADCASTING
Broadcasting is the distribution of communication content or other messages to a dispersed audiance via any electronic mass communications medium, but typically one using the electromagnetic spectrum (radio waves) in a one-to-many model.
DIGIPEATER (Digital Repeater)
Digipeater or Digital Repeater" is a repeater for packet data rather than voice. Unlike the standard voice repeater that receives on one frequency and retransmits what it hears simultaneously on another frequency, the usual digipeater is a single frequency device.
GFSK (Gaussian Frequency Shift Keying)
GFSK stands for Gaussin Frequency Shift Keying modulation. In GFSK, baseband pulses are first passed through the gaussian filter before modulation. This makes pulses smooth and hence limit the modulated spectrum width. This process is known as pulse shaping.
LBT (Listen Before Talk)
Technique used in radiocommunications whereby a radio transmitters first sense its radio environment before it starts a transmission.
NBFM (Narrow Band Frequency Modulation)
A narrow band FM is the FM wave with a small bandwidth .The modulation of narrow band FM is small as compared to one radiant. Hence, the spectrum of narrow band FM consists of the carrier and upper sideband and a lower sideband.
POINT-TO-MULTIPOINT
Communication mode which is accomplished via a distinct type of one-to-many connection, providing multiple paths from a single location to multiple locations. Point-to-multipoint is often abbreviated as P2MP, PTMP, or PMP.
POINT-TO-POINT
Point-to-Point Protocol (PPP) is a data link (layer 2) protocol used to establish a direct connection between two nodes. It can provide connection authentication, transmission encryption and compression.

	Z-LINK1-NM	Z-AIR	RM169	RTURADIO
			NEW 	NEW 
	869 Mhz Radiomodem with RS232/ RS485 interface	**Radiomodem with omnidirectional antenna, outdoor applications, IP65 protection**	**169MHZ Radiomodem, 1DI,1DO,1RS485**	**169MHZ 500mW Radiomodem, 4DI, 2 DO, 1 counter, 2 AO, 2 AI, RS485**
GENERAL DATA				
Power Supply	10..40 Vdc; 19..28 Vac	8 – 32 Vdc	8 -36 Vdc with limited power source	9-32 Vdc with limited power source; 3,3-4,8 Vdc with battery supply
External device supply	-	-	-	Yes
Consumption	1W @ 12 Vdc	150 mA @12 Vdc	-	-
Status indicators	Power Supply / Error / Rx/Tx Data	ONAIR / On	ONAIR / On / Data	ONAIR / On / Data / I/O
Operating bandwidth	g3, annexed 1 ERC 70-03 (869.4 MHz – 869.650 MHz)	868 – 870 MHz	169.400 – 169.475 Mhz	169.400 - 169.475 MHz
Modulation	GFSK	9K00F1D (@ 12,5 kHz di canalization); 18K00F1D (@ 25 kHz canalization)	9K00F1D o 18K0F1D (NBFM / GFSK)	9K00F1D o 18K0F1D (NBFM / GFSK)
Data rate (radio)	-	4.800 bps (@ 12,5 kHz canalization); 9,6 kbps (@ 25 kHz canalization)	4.800 bps (@ 12,5 kHz canalization); 9,6 kbps (@ 25 kHz canalization)	4,800 bps @ 12.5 kHz – 9,600 bps @ 25 kHz
Frequency stability	-	± 1 ppm/°C	±500 Hz	±500 Hz
Crypting	AES 128 bit	AES 128 bit	AES 128 bit	AES 128 bit
RTC	-	-	Built-in for custom application	Built-in for custom application
Antenna	ANT Mag (standard) SMA maschio , ANT-LINK1-MG (opt)	λ/2 integrated	λ/4 - λ/2 or 3 Yagi elements	Short vertical stilo λ1/2 / λ1/4 / 3 Yagi elements
Dimension	17,5 x 100 x 112 mm	Ø 40 x L 320 mm	90 x 100 x 40 mm	140 x 110 x 50 mm
Operating temperature	0..55°C	-30..+70 °C	-30..70°C	-30..70°C
Weight	200 g	750 g	210 g	330 g
Protection degree	IP20	IP65 (outdoor installation)	IP20	IP20
Mounting	DIN rail 35 mm	Mounting bracket and screws in stainless steel	Wall / panel mounting	Wall / panel mounting
Aux Digiital Output	-	-	N.O. 28 Vac @ 0,5 A o 60 Vdc @ 1 A	nr. 2 N.O. 28 Vac @ 0,5 A o 60 Vdc @ 1 A
Digital Input	-	-	5-24 Vdc o 3,50-20 Vac. Zinp. 2.2 kΩ (optoisolated)	nr. 4 PNP 0-12 Vdc + 1 counter 10Hz
Built-in I/O	-	-	1 DI , 1 DO	4DI, 2DO (relay), 1 counter, 2AO (4-20 mA), 2 AI (4-20 mA)
Operating Mode / Functions	Point-to-point, Point-multipoint, I/O repeater	Point-to-point, Point-multipoint, Broadcasting, digital repeater	Point-to-point, Point-multipoint, Broadcasting, digital repeater, DTE addressing, ACK, message repetition, ECHO, LBT, AFA, remote programming	Point-to-point, Point-multipoint, broadcasting, Modbus (master/slave), Mesh support (static)
Settings (software)	EASY SETUP	Z-AIR-SETUP	RM169-SETUP	RTURADIO-SETUP
TRANSMITTER				
Output power	20 mW	25/150/500 mW	0.20 WERP (DL169-IN-B); 0.5 WERP (DL169-IN-B-Y3)	500 mWERP
Frequency deviation	-	± 1.8 kHz @ 12,5 kHz - ± 3.6 kHz @ 25 kHz	± 1.8 kHz @ 12,5 kHz - ± 3.6 kHz @ 25 kHz	± 1.8 kHz @ 12,5 kHz - ± 3.6 kHz @ 25 kHz
Output power stability	-	±1.5 dB	±1.5 dB	±1.5 dB
RECEIVER CLASS 1/2 - LBT - AGILITY				
Type	-	CLASS 2 - LBT, AGILITY	CLASS 2 - LBT, AGILITY	CLASS 1 - LBT, AGILITY
Sensitivity	-	BER $<10^{-3}$ @ 9.600 bps < -107 dBm @ 25 kHz	<-110 dBm @ 12,5 kHz - <-107 dBm @ 25 kHz BER 10-2	<-110 dBm @ 9.600 bps
COMMUNICATION				
Interfaces	N°1 RS232, N° 1 RS485	RS485	RS232 / RS485	RS485
Protocols	ModBUS RTU	Protocol transparent (max buffer 448 bytes)		
Data rate	1.200…115.200 bps	1.200...38.400 bps	1.200...38.400 bps	2.400...57.400 bps
Transmission mode	Half Duplex	Simplex / Half Duplex	Simplex / Half Duplex	
STANDARD				
Approvals	CE, ETSI	CE	CE	CE
Norms	ETSI EN 300 220-2 V2.1.2 (2007-06) ETSI EN 301 489-3 V1.4.1 (2002-08) CEI EN 61010 Radio and telecommunications terminal equipment directive 99/5/EC Electromagnetic compatibility directive 2004/108/EC Low Voltage equipment directive 2006/95/EC	EN 301 489 – 1 v 1.9.2 EMC Compatibility general directive EN 301 489 – 3 v 1.4.1 EMC Compatibility specific for Short Range Devices (SRD) EN 60950 – 1 Safety requirements plus Attachement 11 2004 EN 300 220 – 1 v 2.3.1 Short Range Devices specifications EN 61000 – 4 – 4	EN 300 220-1 v2.3.1 , EN 300 220-2 v2.3.1	EN 300 220-1 v2.3.1 , EN 300 220-2 v2.3.1

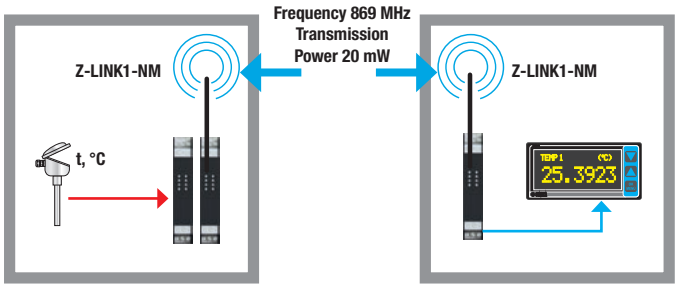
Technical data, diagrams and drawings in this catalog are indicative only and not binding

APPLICATION EXAMPLES

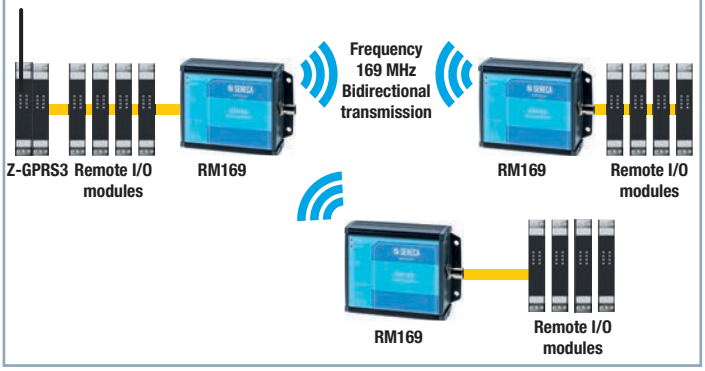
Z-LINK1-NM
ANALOG SIGNAL CONVERSION AND RE-TRANSMISSION



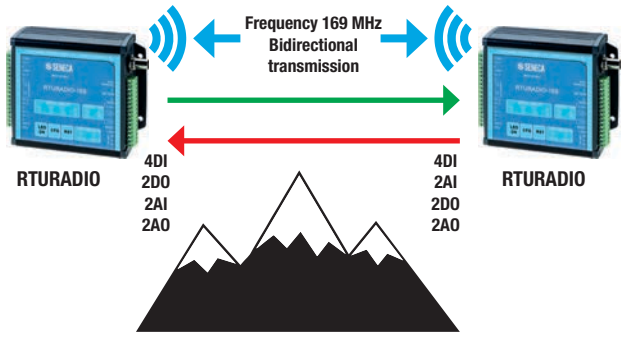
Z-LINK1-NM
«SHORT RANGE» SIGNAL REPETITION



RM169
POINT-TO-POINT / POINT-TO-MULTIPOINT TRANSMISSION



RTURADIO
I/O MIRRORING – REMOTE SIGNAL TRANSMISSION



ORDER CODES

Code	Description
Z-LINK1-NM	
Z-LINK1-NM	869 MHz Radiomodem with RS232/RS485 interface
CS-RJ10-DB9F	RS232 (RJ10 / DB9F) serial cable
Z-PC-DIN2-17.5	Power supply / data bus support for DIN rail, 2 slots, step 17.5 mm
Z-PC-DINAL2-17.5	Power supply / data bus support for DIN rail, head terminal + 2 slots, step 17.5mm
A-DIR-10-869	Directive external antenna, 10 elements, 824-960 MHz
A-DIR-6-869	Directive external antenna, 6 elements, 824-960 MHz
ANT-LINK1-MG	Dual Band external magnetic antenna
EASY SETUP	Programming software
Z-AIR	
Z-AIR	Radiomodem with integrated antenna, outdoor applications, IP65 protection
S107USB	RS485/USB Asynchronous Serial converter, handheld version
Z-AIR-SETUP	Z-AIR software configurator
RM169	
RM169	169MHZ Radiomode, 1DI,1DO,1RS485, BNC-F connector
RM169-169DV12	169MHZ Radiomodem, 1DI,1DO,1RS485, vertical dipole antenna
RM169-169YAGI	169MHZ Radiomodem, 1DI,1DO,1RS485, 3 elements Yagi antenna
RM169-169DV14	169MHZ Radiomodem, 1DI,1DO,1RS485, vertical stilo antenna
A-169DV12	169MHz vert.Dip. lambda/2 ant, BNC M, 5mt,low loss cable
A-169DV14	169MHz vert.Dip. lambda/2 ant, BNC M, 5mt
A-169YAGI	169MHz 3 elem. Yagi Ant., BNC M, 10 mt, low loss cable
RM169-SETUP	RM169 radiomodem software configuration
RTURADIO	
RTURADIO-169	RTU RADIO VHF 169MHZ 500mW, 4DI, 2 DO, 1 counter, 2 AO, 2 AI, RS485 port, BNC-F connector
RTURADIO-169DV14	RTU RADIO VHF 169MHZ 500mW, 4DI, 2 DO, 1 counter, 2 AO, 2 AI, RS485 port, BNC-F connector + short vertical antenna ¼
RTURADIO-169DV12	RTU RADIO VHF 169MHZ 500mW, 4DI, 2 DO, 1 counter, 2 AO, 2 AI, RS485 port, BNC-F connector + dipole antenna ½
RTURADIO-169YAGI	RTU RADIO VHF 169MHZ 500mW, 4DI, 2 DO, 1 counter, 2 AO, 2 AI, RS485 port, BNC-F connector + 3 elements Yagy antenna
S117P1	RS232/USB, TTL/USB, RS485/USB asynchronous serial converter
RTURADIO-SETUP	RTURADIO radiomodem software configuration

POWER MONITORING & ELECTRICAL MEASUREMENT

3

ENERGY EFFICIENCY SOLUTIONS

- CUTTING CABLING COST
- POWER CONSUMPTION MONITORING
- COMPACT MULTIFUNCTION INSTRUMENTS
- EASY CONFIGURATION
- I/O OPTIMIZATION

ENERGY MANAGEMENT DATA ACQUISITION

TIME & MATERIAL SAVING

KWH / CO2 SAVING

SENECA proposal for Energy Efficiency and electrical measurements includes power meters, energy counters, current transformers, modular signal converters, remote control units.

Through these systems it is possible to carry out analysis, countabilization, conversion and acquisition of electrical power data.

The reliability and ease of use of this instrumentation allow to achieve important savings and energy efficiency goals.

Obsolete technologies in field

Energy Optimization

DAQ technologies

High efficiency motors, drives and inverters

Energy saving technologies

MULTIFUNCTION POWER METERS

ENERGY COUNTERS

LOW CONSUMPTION CURRENT TRANSDUCERS

MODULAR ENERGY MEASUREMENT CONVERTERS

ENERGY CONTROLLERS ANS REMOTE MANAGEMENT UNITS

ADVANCED MODBUS POWER METERS - S203 SERIES 3.1

3

S203 Series

ADVANCED MODBUS POWER METERS

S203 Series is a ModBUS advanced range of CT / Rogowski coils power meters providing all the following electrical measurable variables: Vrms, Irms, Watt, VAR, VA, Frequency, Cosϕ and Active Energy. All measurements given above (except frequency) are available both single-phase and threephase. Measurements are read through serial communication both in floating point and normalized format (except Frequency and Active Energy).It is possible the analog retransmission of one the following values: Vrms, Irms, Watt and Cosϕ.

600 Vac

VOLTAGE INPUT

S203 Series power meters support voltage input with max load up to 600 Vac (50- 60 Hz).

100 mA 5 Arms 4.000 A

CURRENT VOLTAGE

S203 Series power meters support current input up to 100 mA (S203T), 5 Arms (S203TA, S203TA-D), 4.000 A (S203RC-D).

MEASURED VALUES

The analyzers of S203 Series provide single or three phase value of the main electrical measures: RMS voltage, RMS current, active power, reactive power, apparent power, frequency, power factor, energy (bi-directional). Configurable analog output allows to use the analyzer as measure converter.

ENERGY COUNTER

S203TA-D and S203RC-D have pulse digital output and retentive memory for the energy counter.

Modbus

COMMUNICATION

Mini-USB port for programming (S203TA-D and S203RC-D) and RS485 port. All models support the ModBUS RTU protocol up to a max of 32 nodes and 115.200 bps without using amplifiers or repeaters.

CONFIGURATION

All models are configurable through free software EASY SETUP and connection from USB port easily accessible.
Versions without display are programmable also via DIP-switch, the ones with display also via keypad protected by password.

LCD

DISPLAY

S203 Series includes models with high brightness backlit LCD display (2 rows x 16 characters)

CONNECTIONS

Single phase, Aron 3-phase, 3-phase at 4 wires. The analyzers are connected to commercial CTs with secondary max 5A, current transformers with f.s. from 15 to 100 A, Rogowski sensors 4000 A.

S203T

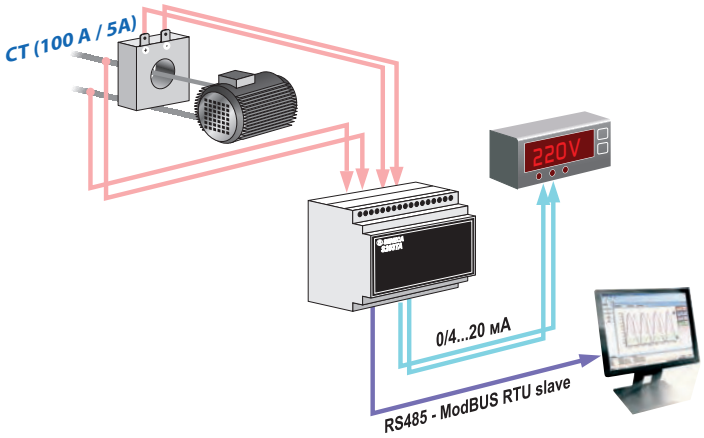
3-PHASE POWER METER, UP TO 100 mA CURRENT INPUT

TOP PRODUCT

TECHNICAL DATA

TECHNICAL SPECIFICATIONS	
Power Supply	10-40 Vdc, 19-28 Vac (50-60 Hz)
Power consuption	2,5 W
Isolation	4 kVac between input measurement and other circuits 1.500 Vac between power supply and communication // retransmitted output
Installation Category	350 V CAT II
Status indicator	Power supply, Fail, RS485 communication
Display	-
Retransmission error	0,1% (full range)
Band-Pass	7 kHz
Accuracy class	0,2%
Insertion Type	1- phase, 3-phase Aron, 3- phase with 4 wires
Connections	Precision CT full scale between 15 to 100 A, accuracy 0,1%
Protection Degree	IP20
Mounting	35 mm DIN rail guide
Connection	Screw terminal, pitch 5,08 mm
Operating Temperature	-10..+65°C
Dimensions [W*H*D]	105 x 89 x 60 mm
Weight	200 g
Enclosure	Plastic Material UL V0
COMMUNICATION	
Interface	RS485, 2 wire
Speed	Sampling time 25 ms
Protocol	ModBUS RTU slave
Distance	Up to 1.200 m
Connectivity	Max 32 nodes
I/O	
Channels Numbers	1 input, 1 output (Baud Rate max 115.200 b/s)
Input Type	Voltage: max 600 Vac, 50-60 Hz Current: 15, 25, 100mA from CT (S203T) -Single phase -Aron (three phase with N.2 CT) -Four wires (three-phase with N.3 CT)/ current)
Output Type	N.1 Analog Output Voltage: 0..5/10 Vdc, min load resistance 2kΩ Current: 0/4..20 mA, max load resistance 500Ω
PROGRAMMING	
Configuration	DIP-switch or software (EASY SETUP)
STANDARD	
Approval	CE
Norms	EN 61000-6-4, EN 61000-6-2, EN 61010-1, EN 60742

APPLICATION EXAMPLE



ORDER CODES

Code	Description
S203T	3-phase power meter, up to 100 mA current input
ACCESSORIES	
TA100	High precision Current Transformer for S203T (f.s.100 A)
TA15	High precision Current Transformer for S203T (f.s.15 A)
TA25	High precision Current Transformer for S203T (f.s.25 A)
SOFTWARE	
Z-NET4	Z-PC System configurator, Web Editor included
EASY SETUP	Plug&Play suite for programmable devices

S203TA

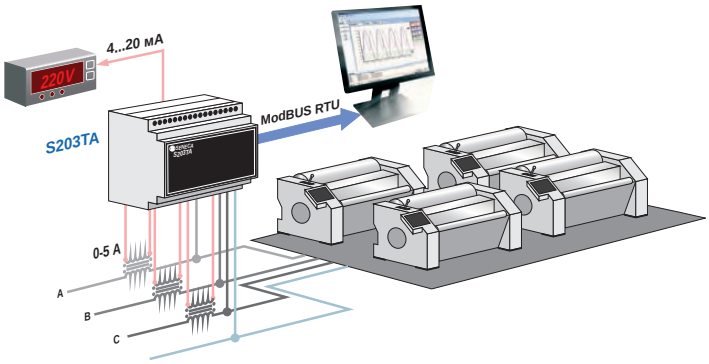
3-PHASE POWER METER, UP TO 5 A CURRENT INPUT

TOP PRODUCT

TECHNICAL DATA

TECHNICAL SPECIFICATIONS	
Power Supply	10-40 Vdc, 19-28 Vac (50-60 Hz)
Power consuption	2,5 W
Isolation	4 kVac between input measurement and other circuits 1.500 Vac between power supply and communication // retransmitted output
Installation Category	350 V CAT II
Status indicator	Power supply, error, RS485 communication
Display	-
Retransmission error	0,1% (full range)
Band-Pass	7 kHz
Accuracy class	0,2%
Insertion Type	1- phase, 3-phase Aron, 3- phase with 4 wires
Connections	CTs with max 5A output standard accuracy 0,5%
Protection Degree	IP20
Mounting	35 mm DIN rail guide
Connection	Screw terminal, pitch 5,08 mm
Operating Temperature	-10..+65°C
Dimensions [W*H*D]	105 x 89 x 60 mm
Weight	200 g
Enclosure	Plastic Material UL V0
COMMUNICATION	
Interface	RS485, 2 wire
Speed	Sampling time 25 ms
Protocol	ModBUS RTU slave
Distance	Up to 1.200 m
Connectivity	Max 32 nodes
I/O	
Channels Numbers	1 input, 1 output (Baud Rate max 115.200 b/s)
Input Type	Address setting Baud rate setting Selection of insertion type Selection of 3 phase or 1 phase
Output Type	N.1 Analog Output Voltage: 0..5/10 Vdc, min load resistance 2kΩ Current: 0/4..20 mA, max load resistance 500Ω
PROGRAMMING	
Configuration	DIP-switch or software (EASY SETUP)
STANDARD	
Approval	CE
Norms	EN 61000-6-4, EN 61000-6-2, EN 61010-1, EN 60742

APPLICATION EXAMPLE



ORDER CODES

Code	Description
S203TA	3-phase power meter, up to 5 A current input
SOFTWARE	
Z-NET4	Z-PC System configurator, Web Editor included
EASY SETUP	Plug&Play suite for programmable devices

Technical data, diagrams and drawings in this catalog are indicative only and not binding

S203TA-D

3-PHASE POWER METER, WITH DISPLAY, UP TO 600 Vac VOLTAGE INPUT AND 5A CURRENT RANGE

NEW FEATURES

TOP PRODUCT

TECHNICAL DATA

TECHNICAL SPECIFICATIONS

Power Supply	10-40 Vdc, 19-28 Vac (50-60 Hz)
Power consuption	2,5 W
Isolation	4 kVac between input measurement and other circuits 1.500 Vac between power supply and communication // retransmitted output
Installation Category	350 V CAT II
Status indicator	Power supply, Fail, RS485 communication
Display	Front LCD 2 lines x 16 characters alphanumeric (backlighted)
Retransmission error	0,1% (full range)
Band-Pass	7 kHz
Accuracy class	0,2%
Insertion Type	1- phase, 3-phase Aron, 3- phase with 4 wires
Connections	CTs with max 5A output standard accuracy 0,5%
Protection Degree	IP20
Mounting	35 mm DIN rail guide
Connection	Screw terminal, pitch 5,08 mm
Operating Temperature	-10..+65°C
Dimensions [W*H*D]	105 x 89 x 60 mm
Weight	200 g
Enclosure	Plastic Material UL V0

COMMUNICATION

Interface	N°1 RS485, N° 1 Mini-USB, for programming (software EASY SETUP)
Speed	Sampling time 25 ms
Protocol	ModBUS RTU slave
Distance	Up to 1.200 m
Connectivity	Max 32 nodes

I/O

Channels Numbers	1 input, 2 output (Baud Rate max 115.200 b/s)
Input Type	Voltage: max 600 Vac, 50-60 Hz Current: 5 Arms (from CT) Single phase, Aron (three phase with N.2 CT), Four wires (three-phase with N.3 CT)
Output Type	N.1 Analog Output Voltage: 0..5/10 Vdc, min load resistance 2kΩ Current: 0/4..20 mA, max load resistance 500Ω n° 1 digital output (pulse for produced/consumed energy or to report the direction of the current)

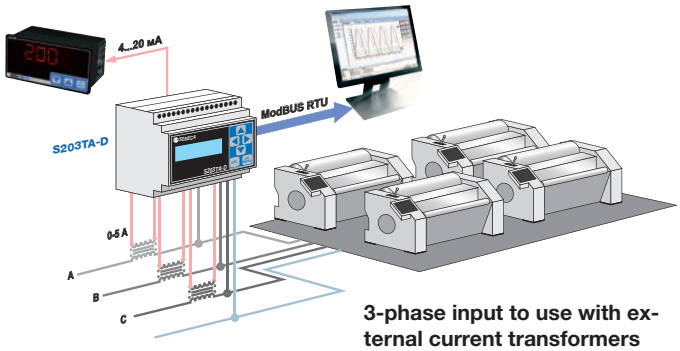
PROGRAMMING

Configuration	Front keys DIP-switches Software (EASY SETUP / Z-NET4) Android App (EASY SETUP APP)

STANDARD

Approval	CE
Norms	EN 61000-6-4, EN 61000-6-2, EN 61010-1

APPLICATION EXAMPLE



3-phase input to use with external current transformers

ORDER CODES

Code	Description
S203TA-D	3-phase power meter, with display, up to 600Vac voltage input and 5A current range
SOFTWARE	
Z-NET4	Z-PC System configurator, Web Editor included
EASY SETUP	Plug&Play suite for programmable devices

Technical data, diagrams and drawings in this catalog are indicative only and not binding

S203RC-D

3-PHASE POWER METER, WITH DISPLAY AND INPUT FROM ROGOWSKI SENSORS

NEW FEATURES

TOP PRODUCT

TECHNICAL DATA

TECHNICAL SPECIFICATIONS

Power Supply	10-40 Vdc, 19-28 Vac (50-60 Hz)
Power consuption	2,5 W
Isolation	4 kVac between input measurement and other circuits 1.500 Vac between power supply and communication // retransmitted output
Installation Category	350 V CAT II
Status indicator	Power supply, Fail, RS485 communication
Display	Front LCD 2 lines x 16 characters alphanumeric (backlighted)
Retransmission error	0,1% (full range)
Band-Pass	7 kHz
Accuracy class	0,5% (except the Rogowski error)
Insertion Type	1- phase, 3-phase Aron, 3- phase with 4 wires
Connections	Rogowsky sensors with output max 200 mV RMS
Protection Degree	IP20
Mounting	35 mm DIN rail guide
Connection	Screw terminal, pitch 5,08 mm
Operating Temperature	-10..+65°C S203RC-D, -20...+70°C Rogowski sensor
Dimensions [W*H*D]	105 x 89 x 60 mm
Weight	200 g
Enclosure	Plastic Material UL V0

COMMUNICATION

Interface	N°1 RS485, N° 1 Mini-USB, for programming (software EASY SETUP)
Speed	Sampling time 25 ms
Protocol	ModBUS RTU slave
Distance	Up to 1.200 m
Connectivity	Max 32 nodes

I/O

Channels Numbers	1 input, 2 output (Baud Rate max 115.200 b/s)
Input Type	VOLTAGE up to 600 Vac (50-60 Hz); CURRENT from Rogowski transducers with max output 200 mV
Output Type	N.1 Analog Output Voltage: 0..5/10 Vdc, min load resistance 2kΩ Current: 0/4..20 mA, max load resistance 500Ω n° 1 digital output (pulse for produced/consumed energy or to report the direction of the current)

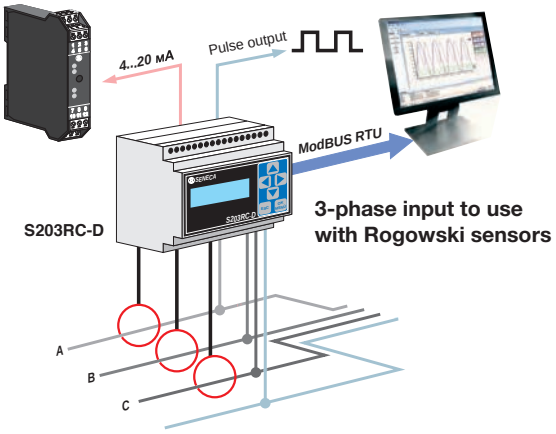
PROGRAMMING

Configuration	Front keys DIP-switches Software (EASY SETUP / Z-NET4) Android App (EASY SETUP APP)

STANDARD

Approval	CE
Norms	EN 61000-6-4, EN 61000-6-2, EN 61010-1

APPLICATION EXAMPLE



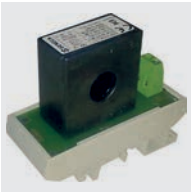
ORDER CODES

Code	Description
S203RC-D	3-phase power meter, with display and input from Rogowski sensors
SOFTWARE	
EASY SETUP	Plug&Play suite for programmable devices
ACCESSORIES	
RC-V250-100	Rogowski coil, 100 mv/kA output, 50-60 Hz, Ø 115 mm
RC-V400-050	Rogowski coil, 50 mv/kA output, 50-60 Hz, Ø 115 mm
RC-V400-100	Rogowski coil, 100 mv/kA output, 50-60 Hz, Ø 115 mm
RC-V500-100	Rogowski coil, 100 mv/kA output, 50-60 Hz, Ø 147 mm
RC150-025-100-3M	Rogowski Coil L=25cm Øint.8cm,100mV/1KA-50Hz,cable L=3mt.
RC150-040-100-3M	Rogowski Coil L=40cm Øint.12cm,100mV/1KA-50Hz,cable L=3mt.
RC150-060-100-3M	Rogowski Coil L=60cm Øint.19cm,100mV/1KA-50Hz,cable L=3mt.

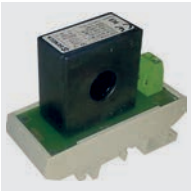
ACCESSORIES

S203T CURRENT TRANSFORMERS

TA100
High precision Current Transformer for S203T (f.s.100A)
Cod. TA100



TA15
High precision Current Transformer for S203T (f.s.15 A)
Cod. TA15



TA25
High precision Current Transformer for S203T (f.s.25 A)
Cod. TA25

S203RC-D ROGOWSKI COILS

RC-V250-100
Rogowski Coil, output 100 mV/kA 50-60 Hz, Ø 115 mm

RC-V400-050
Rogowski Coil, output 50 mV/kA 50-60 Hz, Ø 115 mm

RC-V400-100
Rogowski Coil, output 100 mV/kA 50-60 Hz, Ø 115 mm

RC-V500-100
Rogowski Coil, output 100 mV/kA 50-60 Hz, Ø 147 mm

RC150
High performance Rogowski Coil Ø 8 mm, 100 mV /1 kA

SOFTWARE

Z-NET4

- I/O setting
- Communication parameters setting
- Variable addressing
- Counters and retransmitted output setting
- CT/VT parameters setting
- Energy counter setting
- Test configuration

- **Free download on www.seneca.it**
- **S203T, S203TA, S203TA-D models**

EASY SETUP
EASY SETUP APP

Mobile Phone with USB OTG support

Google play

- Communication parameters setting
- Modbus parameters settings
- Copy, edit, test configuration
- Measured values setting and retransmission

- **Free download on www.seneca.it or Google Play**
- **S203T, S203TA, S203TA-D, S203RC-D models**

ORDER CODES

Code	Description
ACCESSORIES	
RC-V250-100	Rogowski coil, 100 mv/kA output, 50-60 Hz, Ø 115 mm
RC-V400-050	Rogowski coil, 50 mv/kA output, 50-60 Hz, Ø 115 mm
RC-V400-100	Rogowski coil, 100 mv/kA output, 50-60 Hz, Ø 115 mm
RC-V500-100	Rogowski coil, 100 mv/kA output, 50-60 Hz, Ø 147 mm
RC150-025-100-3M	Rogowski Coil L=25cm Øint.8cm,100mV/1KA-50Hz,cable L=3mt.
RC150-040-100-3M	Rogowski Coil L=40cm Øint.12cm,100mV/1KA-50Hz,cable L=3mt.
RC150-060-100-3M	Rogowski Coil L=60cm Øint.19cm,100mV/1KA-50Hz,cable L=3mt.
TA100	High precision Current Transformer for S203T (f.s.100 A)
TA15	High precision Current Transformer for S203T (f.s.15 A)
TA25	High precision Current Transformer for S203T (f.s.25 A)

MULTI-FUNCTION POWER METERS - S604 SERIES 3.2

3

S604 SERIES

MULTIFUNCTION POWER METERS

The S604 series includes innovative three-phase network analyzers for the measurement and storage of electrical parameters. All versions for TA standard 1/5 A, for direct link up to 80 A or for Rogowski coils input, enclose the ideal functions for energy management applications. Depending on the model, the device can communicate through the RS485 serial port with ModBUS RTU / ASCII or through the Ethernet port with ModBUS protocol TCP-IP. Onboard Ethernt models is very useful the Web server interface to remotely manage surveys and export logged data for energy audits. The top features of the advanced versions ENERGY Plus are 8 MB for data logs, the recording of harmonics up to 15^ and the recording of MIN./AVG/ MAX values of all the active and reactive powers.

INSERTION MODE

- Three phase 4 wires
- From 3x400 V to 3x415 V threephase 3 wires
- From 230 V to 240 V single phase

POWER SUPPLY

- Self-Powered models
- Auxiliary supply models

DIGITAL I/O'S

I/O

#1/2 alarm/pulse output
#1 average values calculation (DMD)

DATA STORAGE

- Active/Reactive Power average values recording (S604B – Basic versions) or All Power MIN/AVG/MAX values di tutte le potenze (S604E Energy Plus versions)
- Up to 8 MB memory for data recording

TYPICAL APPLICATION

- Monitoring system and energy control.
- Individual machine load monitoring.
- Power peak control
- Switchboards, gensets, motor control centers etc.
- Remote metering and cost allocation

SETTINGS

- ENERGY POWER PACK (software)
- Web Server
- Front Key buttons

OPTIONAL COMMUNICATION

- ModbBUS RTU/ASCCI (RS85 port)
- ModBUS TCP-IP (LAN port)

ENERGY COUNTERS AND MEASUREMENS

- Total counters
- Inductive / capacitive independent counters
- Bidirectional measurement on 4 quadrants for all powers and energies
- Energy efficiency parameters measurement

THD & HARMONICS

- Current / Voltage THD Values
- Current / Voltage THD Values uo tp 15th harmonics

CURRENT INPUT

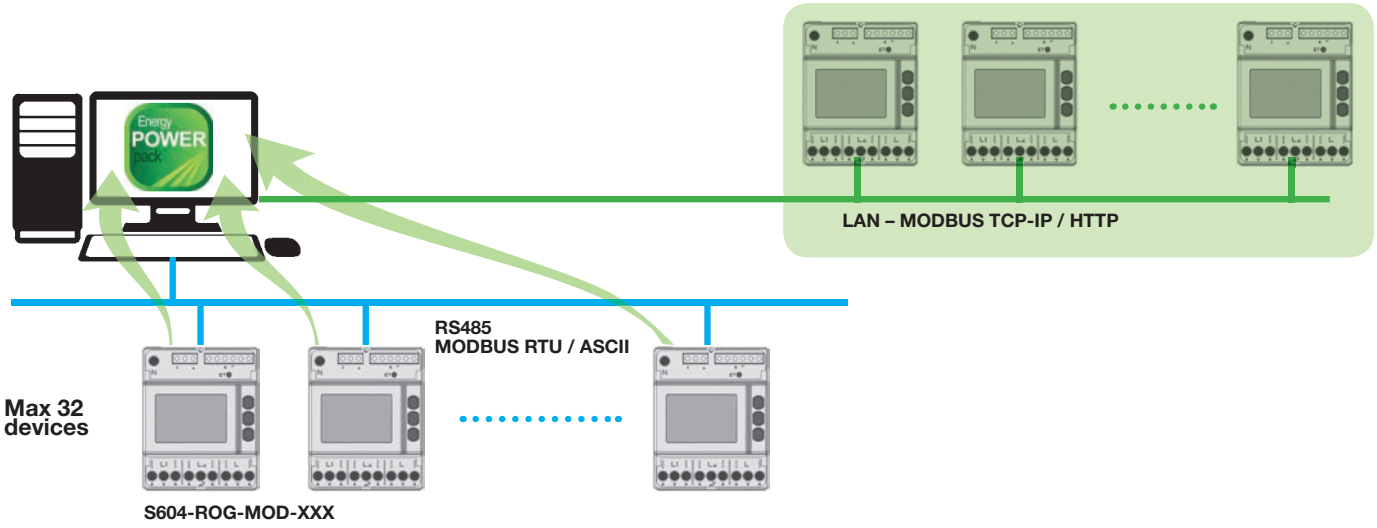
- Version for 1 or 5A CT, for direct connection up to 6A or 80A
- 3 current measurement scales for Rogowski model

ROGOWSKI MULTI-FUNCTION POWER METERS

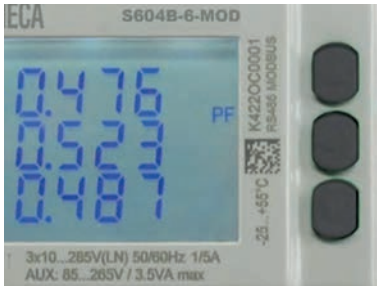
	S604B	S604E	S604E-ROG
			
	Three-phase Power Meter BASIC version	**Three-phase Power Meter ENERGY Plus version**	**Three-phase power meter kit including nr.1 S604E + nr. 3 Rogowski coils**
GENERAL DATA			
Power supply	180..285 Vac line-neutral, Cat III (self powered models) 85..265 Vac, Aux, Cat II (auxiliary powered models)	85..265 Vac, Aux, Cat II (auxiliary powered models)	180..285 Vac line-neutral, Cat III (self powered models) 85..265 Vac, Aux, Cat II (auxiliary powered models)
Max consumption	3,5 VA - 1 W each phase (self-powered models) 1,6 VA - 1 W (auxilary powered, RS485 models) 4,5 VA - 1,6 W (auxiliary powered, Ethernet models)	1,6 VA - 1 W (auxilary powered, RS485 models) 4,5 VA - 1,6 W (auxiliary powered, Ethernet models)	1,6 VA - 1 W (auxilary powered, RS485 models) 4,5 VA - 1,6 W (auxiliary powered, Ethernet models)
Display	LCD, backlighted, 43x29 mm, 3 rows, 4 digit+symbols	LCD, backlighted, 43x29 mm, 3 rows, 4 digit+symbols	LCD, backlighted, 43x29 mm, 3 rows, 4 digit+symbols
Keyboard	3 front button, 1 protected button	3 front button, 1 protected button	3 front button, 1 protected button
Operating temperature	-25..+55°C	-25..+55°C	-25..+55°C
Sinusoidal vibration amplitude	50 Hz ± 0.075 mm	50 Hz ± 0.075 mm	50 Hz ± 0.075 mm
Memory (instrument with communication port)	1 MB	8 MB	8 MB (min/avg/max)
Recordings	AGV values for active and reactive powers	Min/ Avg/Max values for all powers, selectable	AGV values for active and reactive powers
THD & Harmonics	Voltage and current THD values	Voltage and current THD values Voltage and current up to 15th	Voltage and current THD values Voltage and current up to 15th
Apparent Energy Counters	Total counters or separated inductive/capacitive counters	Total counters or separated inductive/capacitive counters	Total counters or separated inductive/capacitive counters
Wiring modes	Three-phase, 4 wires, 3 currents Three-phase, 3 wires, single phase, 2 currents	Three-phase, 4 wires, 3 currents Three-phase, 3 wires, single phase, 2 currents	Three-phase, 4 wires, 3 currents Three-phase, 3 wires, single phase, 2 currents
Front protection degree	IP51	IP51	IP51
Terminals protection degree	IP20	IP20	IP20
Dimension (lxhxw)	72x90x65 mm	72x90x65 mm	72x90x65 mm
Weight	436 g	436 g	436 g
ACCURACY			
Voltage	±0,2% reading 10% FS...FS (FS=full scale value)	±0,2% reading 10% FS...FS (FS=full scale value)	±0,2% reading 10% FS...FS (FS=full scale value)
Current	±0,4% reading in 5% FS...FS	±0,4% reading in 5% FS...FS	±0,4% reading in 5% FS...FS
Power	±0,5% reading ±0,1% FS (PF=1)	±0,5% reading ±0,1% FS (PF=1)	±0,5% reading ±0,1% FS (PF=1)
Frequency	±0,1% reading ±1 digit in 45...65 Hz	±0,1% reading ±1 digit in 45...65 Hz	±0,1% reading ±1 digit in 45...65 Hz
Active Energy	Class 1 according to IEC/EN 62053-21	Class 1 according to IEC/EN 62053-21	Class 1 according to IEC/EN 62053-21
Reactive Energy	Class 2 according to IEC/EN 62053-23	Class 2 according to IEC/EN 62053-23	Class 2 according to IEC/EN 62053-23
COMMUNICATION			
Serial Port	RS485 optoisolated, 300..57.600 bps (optional)	RS485 optoisolated, 300..57.600 bps	RS485 optoisolated, 300..57.600 bps (optional)
Ethernet Port	10/100 Mbps, RJ45 connector (optional)	10/100 Mbps, RJ45 connector	10/100 Mbps, RJ45 connector (optional)
Supported protocols	ModBUS RTU/ASCII (RS485); http, Ntp, Dhcp, ModBUS TCP-IP (Ethernet)	ModBUS RTU/ASCII (RS485); http, Ntp, Dhcp, ModBUS TCP-IP (Ethernet)	ModBUS RTU/ASCII (RS485); http, Ntp, Dhcp, ModBUS TCP-IP (Ethernet)
I/O			
Voltage Input	3x180/310..3x285/495 Vacm Cat III, 300 V (self powered models) 3x10/17…3x285/495 Vac, Cat III 300 V (auxiliary powered models)	3x180/310..3x285/495 Vacm Cat III, 300 V (self powered models) 3x10/17…3x285/495 Vac, Cat III 300 V (auxiliary powered models)	3x180/310..3x285/495 Vacm Cat III, 300 V (self powered models) 3x10/17…3x285/495 Vac, Cat III 300 V (auxiliary powered models)
Current Input	6A (1/5A CT models); 80 A (80 A models)	6A (1/5A CT models); 80 A (80 A models)	3 selectable scales: 500 / 4.000 / 20.000 A by Rogowski Coils
Digital Input	N1 optoisolated active channel (NO COM), DMD synchronization range 80..276 Vac/dc	-	N1 optoisolated active channel (NO COM), DMD synchronization range 80..276 Vac/dc
Digital Output	Nr 1 (RS485 models) / 2 (NO COM models) optoisolated passive channel, IEC/EN 62053-31	Nr 1 (RS485 models) / 2 (NO COM models) optoisolated passive channel, IEC/EN 62053-31	Nr 1 (RS485 models) / 2 (NO COM models) optoisolated passive channel, IEC/EN 62053-31
PROGRAMMING			
Configuration systems	Front key buttons Energy Power Pack software (ModBUS/Ethernet models) Webserver (Ethernet models)	Front key buttons Energy Power Pack software (ModBUS/Ethernet models) Webserver (Ethernet models)	Front key buttons Energy Power Pack software (ModBUS/Ethernet models) Webserver (Ethernet models)
STANDARD			
Certifications	CE	CE	CE
Directives	2006/95/CE, 2004/108/CE	2006/95/CE, 2004/108/CE	2006/95/CE, 2004/108/CE
Norms	EN 61010-1, EN 61010-2-030, EN 61326-1, EN 55011, EN 61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11, EN61000-6-2	EN 61010-1, EN 61010-2-030, EN 61326-1, EN 55011, EN 61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11, EN61000-6-2	EN 61010-1, EN 61010-2-030, EN 61326-1, EN 55011, EN 61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11, EN61000-6-2

PROGRAMMING SYSTEM

ETHERNET / MODBUS COMMUNICATION / PROGRAMMING



FRONT KEY BUTTONS



Readings, settings and recording are available through tramite front key buttons with 7 display page groups management.

Configuration tool for Energy power meters SERVER S604B and S604E. ENERGY POWER PACK assures reading and visualization of all measurements, it also provides a overall setup of parameters, downloading and converting recording and it manages remote connections

By Web Server it's possible visualizing all device values and associate a recording exportabla into a csv file

ORDER CODES

Code	Description
S604B-6-MOD	Three phase power meter, BASIC version, for CT/5A, RS485 Modbus,1MB mem. log.
S604B-6-ETH	Three phase power meter, BASIC version, for CT/5A, Ethernet, 1MB mem. log.
S604B-80	Three phase power meter, BASIC version, 80A, self-powered
S604B-80-MOD	Three phase power meter, BASIC version, 80A-RS485 Modbus,1MB mem. log.
S604B-80-ETH	Three phase power meter, BASIC version, 80A- Ethernet,1MB mem. log.
S604E-6-MOD	Three-phase Power Meter ENERGY Plus version, CT1/5A-RS485 Modbus,8MB log. harmonics
S604E-6-ETH	Three-phase Power Meter ENERGY Plus version, CT1/5A- Ethernet,8MB log. harmonics
S604E-80-MOD	Three-phase Power Meter ENERGY Plus version, 80A-RS485 Modbus,8MB log. harmonics
S604E-80-ETH	Three-phase Power Meter ENERGY Plus version, 80A- Ethernet,8MB log. harmonics
S604E-ROG-MOD-30	Threee-phase power meter kit including nr.1 S604E RS485 Modbus,1MB mem. Log + nr. 3 Rogowski coils RC150 L= 30cm Øint. 9,5 cm
S604E-ROG-MOD-45	Threee-phase power meter kit including nr.1 S604B RS485 Modbus,1MB mem. Log + nr. 3 Rogowski coils RC150 L= 45cm Øint. 14 cm
S604E-ROG-MOD-70	Threee-phase power meter kit including nr.1 S604E RS485 Modbus,1MB mem. Log+ nr. 3 Rogowski coils RC150 L= 70cm Øint. 22 cm
S604E-ROG-ETH-30	Threee-phase power meter kit including nr.1 S604E Ethernet,1MB mem. Log + nr. 3 Rogowski coils RC150 L= 30cm Øint. 9,5 cm
S604E-ROG-ETH-45	Threee-phase power meter kit including nr.1 S604E Ethernet,1MB mem. Log + nr. 3 Rogowski coils RC150 L= 45cm Øint. 14 cm
S604E-ROG-ETH-70	Threee-phase power meter kit including nr.1 S604B Ethernet,1MB mem. Log+ nr. 3 Rogowski coils RC150 L= 70cm Øint. 22 cm

ROGOWSKI COILS	
RC150-025-100-3M	Rogowski Coil L=25cm Øint.8cm,100mV/1KA-50Hz,cable L=3mt.
RC150-040-100-3M	Rogowski Coil L=40cm Øint.12cm,100mV/1KA-50Hz,cable L=3mt.
RC150-060-100-3M	Rogowski Coil L=60cm Øint.19cm,100mV/1KA-50Hz,cable L=3mt.
RC150-RIC-KIT30	Rogowski Coil Kit Spare Parts RC150 L= 30cm Ø int. 9,5 cm, 100mV/1KA-50Hz,cable L=3mt.
RC150-RIC-KIT45	Rogowski Coil Kit Spare Parts RC150 L= 45cm Ø int. 14 cm, 100mV/1KA-50Hz,cable L=3mt.
RC150-RIC-KIT70	Rogowski Coil Kit Spare Parts RC150 L= 70cm Ø int. 22 cm, 100mV/1KA-50Hz,cable L=3mt.
RC150-CAVEX-ROG1	Cable extension beyond 3 mt. for Rogwski Coil connection L.1
RC150-CAVEX-ROG2	Cable extension beyond 3 mt. for Rogwski Coil connection L.2
RC150-CAVEX-ROG3	Cable extension beyond 3 mt. for Rogwski Coil connection L.3

ACCESSORIES	
S107USB	RS485/USB serial converter, portable version

MULTIFUNCTION PANEL POWER METERS - S711 SERIES 3.3

3

S711 SERIES

MULTIFUNCTION PANEL POWER METERS

S711 Series Power Meters Series are characterized by compact front dimensions (96x96 mm) for only 39 mm depth. The S711 models provide bidirectional measurement of four quadrants for all energies and powers and in general the measurement of main parameters required for an effective analysis of consumption.
The Rogowski versions (S711EROG) are available in kit with length sensors 30, 45 and 70 cm. The ENERGY PLUS versions (S711E, S711EROG) allow recording up to 8 MB and 24 selectable parameters between the instantaneous variables for recording MIN / MED / MAX.
The S711 Series is available with models supporting communications in ModBUS RTU / ASCII via RS485 port or ModBUS TCP-IP via port Ethernet. The panel meters can also be configured remotely with ENERGY POWER Software PACK or via Web Server

INSERTION MODE

- Voltage measurement up to 600 V, TA 1/5 currents or Rogowski Coils
- Energies an Powers bidirectional measurement all over 4 quadrants

POWER SUPPLY

- Self-Powered models
- Auxiliary supply models

DIGITAL I/O'S

#1/2 alarm/pulse output
#1 average values calculation (DMD)

DATA STORAGE

- Up to 24 parameters among instant variables for MIN/Average/Max values
- Up to 8 MB memory for data recording

TYPICAL APPLICATION

- Monitoring system and energy control
- Individual machine load monitoring.
- Power peak control
- Switchboards, gensets, motor control centers etc.
- Remote metering and cost allocation

SETTINGS

- ENERGY POWER PACK (software)
- Web Server
- Front Key buttons

OPTIONAL COMMUNICATION

- ModbBUS RTU/ASCCI (RS85 port)
- ModBUS TCP-IP (LAN port)

ENERGY COUNTERS AND MEASUREMENTS

- Total counters
- Inductive / capacitive independent counters
- Bidirectional measurement on 4 quadrants for all powers and energies
- Energy efficiency parameters measurement

THD & HARMONICS

- Current / Voltage THD Values
- Current / Voltage THD Values uo tp 15th harmonics

CURRENT INPUT

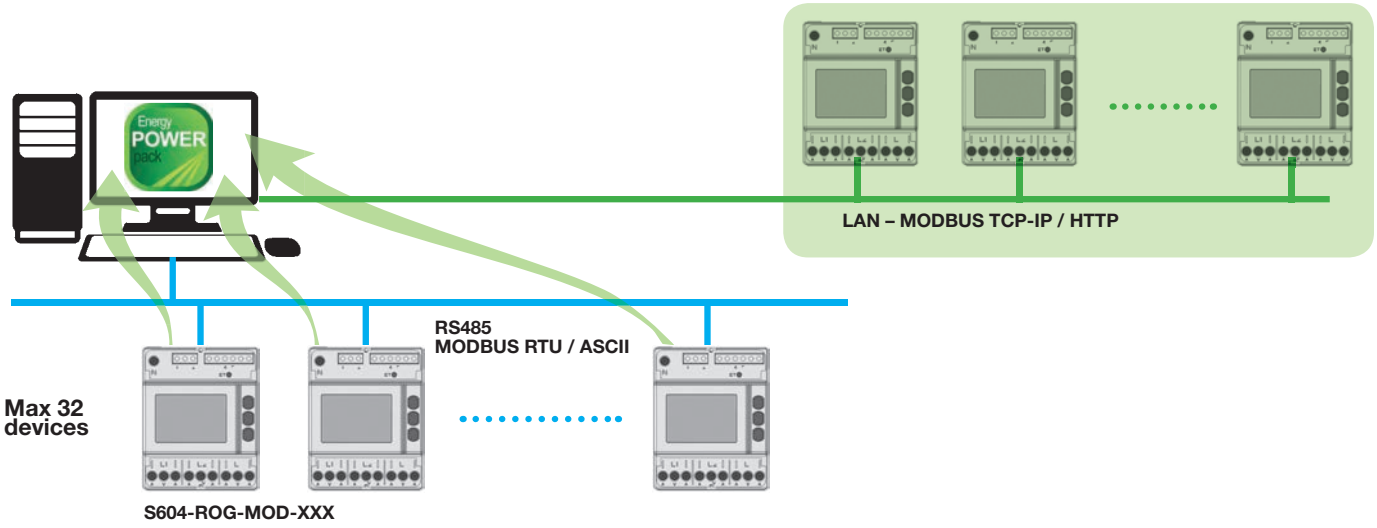
- Version for 1 or 5A CT, for direct connection up to 6A or 80A
- 3 current measurement scales for Rogowski model

	S711B	S711E	S711EROG
			
	Three-phase Power Meter BASIC version, DIN 96x96 mm	**Three-phase Power Meter ENERGY Plus version, DIN 96x96 mm**	**Threee-phase power meter kit including nr.1 S711B + nr. 3 Rogowski coils**
GENERAL DATA			
Power Supply	230 Vac / 115 vac (RS485 models) 85..265 Vac, Aux, Cat II (auxiliary powered models)	230 Vac / 115 vac (RS485 models) 85..265 Vac, Aux, Cat II (auxiliary powered models)	230 Vac / 115 vac (RS485 models) 85..265 Vac, Aux, Cat II (auxiliary powered models)
Display	LCD, backlighted, 43x29 mm, 3 rows, 4 digit+symbols	LCD, backlighted, 43x29 mm, 3 rows, 4 digit+symbols	LCD, backlighted, 43x29 mm, 3 rows, 4 digit+symbols
Keyboard	3 front button, 1 protected button	3 front button, 1 protected button	3 front button, 1 protected button
Operating temperature	-25..+55°C	-25..+55°C	-25..+55°C
Sinusoidal vibration amplitude	50 Hz ± 0.075 mm	50 Hz ± 0.075 mm	50 Hz ± 0.075 mm
DMD calculation	DI or window synchronization	DI or window synchronization	DI or window synchronization
Memory (instrument with communicatio port)	1 MB	8 MB	8 MB
Recordings	AGV values for active and reactive powers	Min/ Avg/Max values for all powers, selectable	Min/ Avg/Max values for all powers, selectable
THD & Armoniche	Voltage and current THD values	Voltage and current THD values Voltage and current up to 15th	Voltage and current THD values Voltage and current up to 15th
Apparent Energy Counters	Total counters or separated inductive/capacitive counters	Total counters or separated inductive/capacitive counters	Total counters or separated inductive/capacitive counters
Wiring modes	Three-phase, 4 wires, 3 currents Three-phase, 3 wires, single phase	Three-phase, 4 wires, 3 currents Three-phase, 3 wires, single phase	Three-phase, 4 wires, 3 currents Three-phase, 3 wires, single phase
Front protection degree	IP51	IP51	IP51
Terminals protection degree	IP20	IP20	IP20
Measuring termiinal wire diameter	2,5 mm^2 / 14 AWG	1,5.. 6 mm^2 (models with CT)	1,5.. 6 mm^2 (models with CT)
I/O/Supply/COM terminal wire diamater	1,5.mm^2 / 16 AWG	1,5.. 35 mm^2 (models with 80A input)	1,5.. 35 mm^2 (models with 80A input)
Dimension (lxhxw)	96x96x39 mm	96x96x39 mm	96x96x39 mm
Weight	310 g	436 g	436 g
ACCURACY			
Voltage	±0,2% reading 10% FS...FS (FS=full scale value)	±0,2% reading 10% FS...FS (FS=full scale value)	±0,2% reading 10% FS...FS (FS=full scale value)
Current	±0,4% reading in 5% FS...FS	±0,4% reading in 5% FS...FS	±0,4% reading in 5% FS...FS
Power	±0,5% reading ±0,1% FS (PF=1)	±0,5% reading ±0,1% FS (PF=1)	±0,5% reading ±0,1% FS (PF=1)
Frequency	±0,1% reading ±1 digit in 45...65 Hz	±0,1% reading ±1 digit in 45...65 Hz	±0,1% reading ±1 digit in 45...65 Hz
Active Energy	Class 1 according to IEC/EN 62053-21	Class 1 according to IEC/EN 62053-21	Class 1 according to IEC/EN 62053-21
Reactive Energy	Class 2 according to IEC/EN 62053-23	Class 2 according to IEC/EN 62053-23	Class 2 according to IEC/EN 62053-23
COMMUNICATION			
Serial Port	RS485 optoisolated, 300..57.600 bps (optional)	RS485 optoisolated, 300..57.600 bps	RS485 optoisolated, 300..57.600 bps
Ethernet Port		10/100 Mbps, RJ45 connector	10/100 Mbps, RJ45 connector
Supported protocols	ModBUS RTU/ASCII (RS485)	ModBUS RTU/ASCII (RS485); http, Ntp, Dhcp, ModBUS TCP-IP (Ethernet)	ModBUS RTU/ASCII (RS485); http, Ntp, Dhcp, ModBUS TCP-IP (Ethernet)
MEASUREMENT INPUT			
Voltage Input	Max voltage: 600 Vac max L-L 20/35 VCA (* VT ratio, using VT) Input impedance: ›1,3 MOhm Frequency: 45 -65 Hz	Max voltage: 600 Vac max L-L 20/35 VCA (* VT ratio, using VT) Input impedance: ›1,3 MOhm Frequency: 45 -65 Hz	Max voltage: 600 Vac max L-L 20/35 VCA (* VT ratio, using VT) Input impedance: ›1,3 MOhm Frequency: 45 -65 Hz
Current Input	Max nominal value: 7 A Starting current (Ist): 2 mA CT load: max 0,15 VA per phase Min FFT calculation value: 100 mA * CT ratio	Maxnominalvalue: 7 A Starting current (Ist): 2 mA CT load: max 0,15 VA per phase Min FFT calculation value: 100mA*TA ratio	Nr 3 selectable scales: 500 / 4.000 / 20.000 A by Rogowski Coils
I/O			
Digital Input	Nr1 optoisolated channel for DMD sinchronization, range 80..265 Vac/dc	Nr1 optoisolated channel for DMD sinchronization, range 80..265 Vac/dc	Nr1 optoisolated channel for DMD sinchronization, range 80..265 Vac/dc
Digital Output	Nr 2 optoisolated passive channels for alarms/pulses, NPN/PNP, max 27 Vcc - 27 mA, pulse lenght 50 ± 2 ms, output reaction time 1 s	Nr 2 optoisolated passive channels for alarms/pulses, NPN/PNP, max 27 Vcc - 27 mA, pulse lenght 50 ± 2 ms, output reaction time 1 s	Nr 2 optoisolated passive channels for alarms/pulses, NPN/PNP, max 27 Vcc - 27 mA, pulse lenght 50 ± 2 ms, output reaction time 1 s
Analog Output		Nr 1 optoisolated active channel 0/4..20 mAcc, max load 500 W (model S711E6MODAO)	Nr 1 optoisolated active channel 0/4..20 mAcc, max load 500 W (model S711EROGMOD30AO)
PROGRAMMING			
Configuration systems	Front key buttons Energy Power Pack software (ModBUS/Ethernet models) Webserver (Ethernet models)	Front key buttons Energy Power Pack software (ModBUS/Ethernet models) Webserver (Ethernet models)	Front key buttons Energy Power Pack software (ModBUS/Ethernet models) Webserver (Ethernet models)
STANDARD			
Certifications	CE	CE	CE
Directives	2006/95/CE, 2004/108/CE	2006/95/CE, 2004/108/CE	2006/95/CE, 2004/108/CE
Norms	EN 61010-1, EN 61010-2-030, EN 61326-1, EN 55011, EN 61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11, EN61000-6-2	EN 61010-1, EN 61010-2-030, EN 61326-1, EN 55011, EN 61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11, EN61000-6-2	EN 61010-1, EN 61010-2-030, EN 61326-1, EN 55011, EN 61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11, EN61000-6-2
BLUNDE			
Rogowski Coils	-	-	Nr 3 Rogowski Coils RC150 30, 45, 70 cm (10/14/22 cm internal diameter), 3 m lenght cable

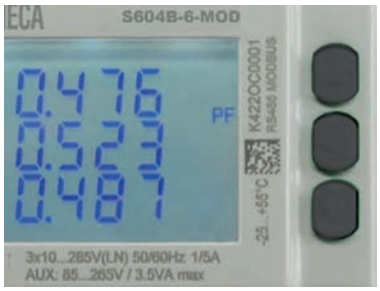
Technical data, diagrams and drawings in this catalog are indicative only and not binding

PROGRAMMING SYSTEM

ETHERNET / MODBUS COMMUNICATION / PROGRAMMING



FRONT KEY BUTTONS



Readings, settings and recording are available through tramite front key buttons with 7 display page groups management.

Energy POWER pack

Configuration tool for Energy power meters SERVER S604B and S604E. ENERGY POWER PACK assures reading and visualization of all measurements, it also provides a overall setup of parameters, downloading and converting recording and it manages remote connections

WEB SERVER

By Web Server it's possible visualizing all device values and associate a recording exportabla into a csv file

ORDER CODES

Code	Description
S711	
S711B6MOD	LCD 96x96 BASIC Power Meter, TA1/5A-RS485 Modbus,1MB mem. log.,1 DI 2 DO
S711E6MOD	LCD 96x96 Energy PLUS Power Meter, TA1/5A-RS485 Modbus,8MB log.,1 DI 2 DO, harmonics
S711E6ETH	LCD 96x96 Energy PLUS Power Meter, TA1/5A-Ethernet,8MB log, 1 DI 2 DO, harmonics
S711EROGETH45	LCD 96x96 Energy PLUS Power Meter Kit , Ethernet,8MB log.,1 DI 2 DO, harmonics, 3 Rogowski RC150 L= 45 cm Øint. 14cm

Code	Description
ROGOWSKI COILS	
RC150-025-100-3M	Rogowski Coil L=25cm Øint.8cm,100mV/1KA-50Hz,cable L=3mt.
RC150-040-100-3M	Rogowski Coil L=40cm Øint.12cm,100mV/1KA-50Hz,cable L=3mt.
RC150-060-100-3M	Rogowski Coil L=60cm Øint.19cm,100mV/1KA-50Hz,cable L=3mt.
RC150-RIC-KIT30	Rogowski Coil Kit Spare Parts RC150 L= 30cm Ø int. 9,5 cm, 100mV/1KA-50Hz,cable L=3mt.
RC150-RIC-KIT45	Rogowski Coil Kit Spare Parts RC150 L= 45cm Ø int. 14 cm, 100mV/1KA-50Hz,cable L=3mt.
RC150-RIC-KIT70	Rogowski Coil Kit Spare Parts RC150 L= 70cm Ø int. 22 cm, 100mV/1KA-50Hz,cable L=3mt.
RC150-CAVEX-ROG1	Cable extension beyond 3 mt. for Rogwski Coil connection L.1
RC150-CAVEX-ROG2	Cable extension beyond 3 mt. for Rogwski Coil connection L.2
RC150-CAVEX-ROG3	Cable extension beyond 3 mt. for Rogwski Coil connection L.3
ACCESSORIES	
S107USB	RS485/USB serial converter, portable version

ROGOWSKI COILS 3.4

3

RC150
ROGOWSKI COILS

An air-cored toroidal winding is placed around the conductor, the magnetic field produced by the current induces in the coil a voltage proportional to the rate of change of current.
Integrating this voltage the output become proportional to the current (as for a current transformer).
Coil length variates from 25 to 300 cm for a cord diameter up to 8 mm

TECHNOLOGY
- The junction point is insensitive to both the position of the internal conductor and to currents carried by external conductors
- Coil and cable shielded against electromagnetic noise

ENGINEERING
- Cross section reduced up to approx. 8mm
- High fl exibility

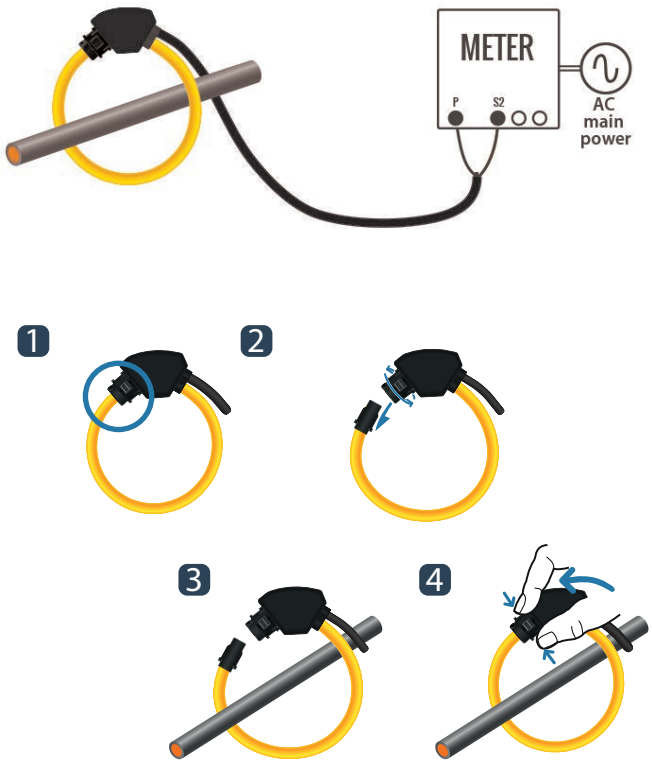
CALIBRATION
- Better than 1% accuracy, even close to the junction point
- Accessible calibration point for easy recalibration, if required

OPTIMAL LOCK
- Secure lock even in presence of vibration and/or pull-ups
- Stable lock ensuring repeatability in measurement

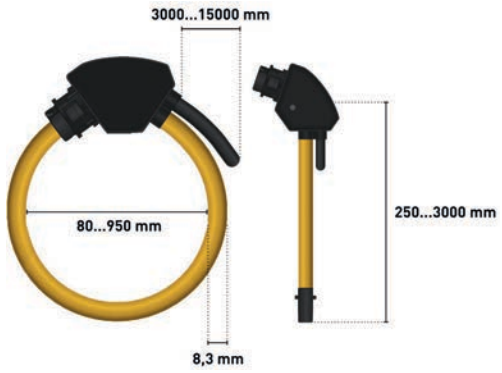
INSTALLATION
- Limited access applications
- Non-Intrusive Current Measurement

TYPICAL APPLICATIONS
- Very high current monitoring
- Harmonics and transients monitoring
- DC ripple measurement
- Power monitoring and control systems
- Measuring devices, lab instrumentation
- Welding machine control

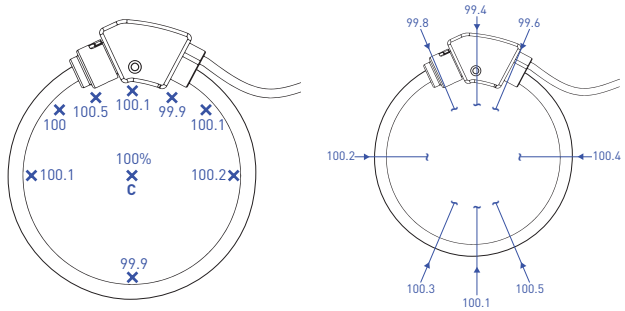
INSTALLATION



DIMENSION



ACCURACY RANGE



C (center based conductor)

HIGH PERFORMANCE ROGOWSKI COILS

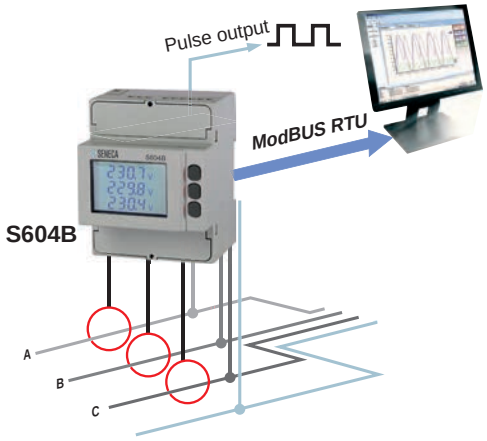
RC150

Rogowski coils have been used for the detection and measurement of electric currents for decades. They are based on a simple principle where an “air-cored” coil is placed around the conductor in a toroidal fashion and the magnetic field produced by the current induces a voltage in the coil. The voltage output is proportional to the rate of change of current. This voltage is integrated, thus producing an output proportional to the current. By using precision winding techniques, especially developed for the purpose, the coils are manufactured so that their output is not influenced by the position of the conductor within the toroid, and to reject interference from external magnetic fields caused, for example, from nearby conductors. Basically, a Rogowski coil current measuring system consists of a combination of a coil and conditioning electronics. Rogowski coil current transducers are used for the AC measurement.

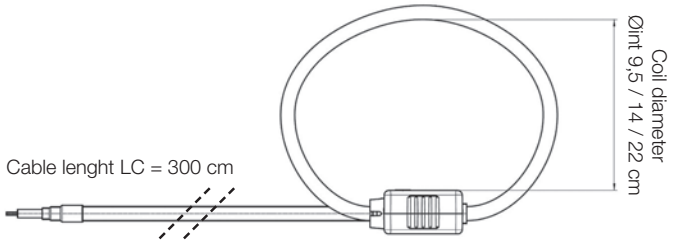
TECHNICAL FEATURES

GENERAL DATA	
Coil lenght	From 25 to 300 cm
Coil diameter	From 8 ±0,2 mm to 57 cm
Cable lenght	3 m
Lock	Bayonet
Protection Degree	IP67
Material	UL94-V0
Operating temperature	-30..+80°C
Weight	da 150 a 500 g
ELECTRICAL DATA	
Output level (RMS)	100 mV / 1 kA @50 Hz (standard)
Transducer resistance	70..900 Ω (RC150) 300..2.000 Ω (RC190)
Accuarcy	Better than ±1% reading valuer (conductor diameter 15 mm)
Frequency	From 40 Hz a 20 kHz
Working voltage	1.000 Vrms CAT III, 600 Vrms CAT IV, pollution degree 2
Test voltage	7.400 Vrms / 1 min
STANDARD	
Marking	CE
Norms	EN 61010-1, EN 61010-031, EN 61010-2-031, EN 61010-2-032

APPLICATION NOTE



ROGOWSKI COIL KIT / SPARE PARTS



S60B-ROG and S604E-ROG models are supplied as KIT in bundle with 3 Rogowski coils available in 3 different circumferences (30, 45, 70 cm)

Kit / coil length	Order Code	Øint / internal diameter	Cable lenght
30 cm	S604B-ROG-000-30 S604B-ROG-MOD-30 S604B-ROG-ETH-30 S604E-ROG-MOD-30 S604E-ROG-ETH-30	9,5 cm	300 cm
45 cm	S604B-ROG-000-45 S604B-ROG-MOD-45 S604B-ROG-ETH-45 S604E-ROG-MOD-45 S604E-ROG-ETH-45	14 cm	300 cm
70 cm	S604B-ROG-000-70 S604B-ROG-MOD-70 S604B-ROG-ETH-70 S604E-ROG-MOD-70 S604E-ROG-ETH-70	22 cm	300 cm

ORDER CODE

Code	Description
RC150-025-100-3M	Rogowski Coil L=25cm Øint.8cm,100mV/1KA-50Hz,cable L=3mt.
RC150-040-100-3M	Rogowski Coil L=40cm Øint.12cm,100mV/1KA-50Hz,cable L=3mt.
RC150-060-100-3M	Rogowski Coil L=60cm Øint.19cm,100mV/1KA-50Hz,cable L=3mt.
RC150-RIC-KIT30	Rogowski Coil Kit Spare Parts RC150 L= 30cm Ø int. 9,5 cm, 100mV/1KA-50Hz,cable L=3mt.
RC150-RIC-KIT45	Rogowski Coil Kit Spare Parts RC150 L= 45cm Ø int. 14 cm, 100mV/1KA-50Hz,cable L=3mt.
RC150-RIC-KIT70	Rogowski Coil Kit Spare Parts RC150 L= 70cm Ø int. 22 cm, 100mV/1KA-50Hz,cable L=3mt.
RC150-CAVEX-ROG1	Cable extension beyond 3 mt. for Rogwski Coil connection L.1
RC150-CAVEX-ROG2	Cable extension beyond 3 mt. for Rogwski Coil connection L.2
RC150-CAVEX-ROG3	Cable extension beyond 3 mt. for Rogwski Coil connection L.3

ENERGY COUNTERS - S500 SERIES 3.5

3

S500 Series
ENERGY COUNTERS

The new SENECA energy counters for DIN rail mounting cover the most different application requirements for single-phase and threephase systems.
Available with RS485 Modbus, M-BUS or Ethernet + webserver communication interfaces, the energy counters are compliant with MID (2004/22 / EC Directive) in class B with EN 50470 standard. Equipped with Wide backlighted LCD display for easy consultation of the values of energy and power, the counters also make avalilable the diagnostic function signaling polarity errors in the connection.

M-BUS COMMUNICATION
- European standard (EN 13757-2 physical and link layer, EN 13757- 3 application layer) for the remote reading of gas or electricity meters.
- 2-wires connection
- High number of nodes

MID CERTIFICATION
- Fiscal devices
- European Directive 2004/22/EC for measuring instruments
- Supplementary metrology marking

S0 OUTPUT / TARIFF INPUT
- Nr. 1 tariff input
- Nr.2 S0 output for energy pulse reatransmission

COMMUNICATION PROTOCOLS
- External or built-in communication with optical port
- Supported protocols: ModBUS, Ethernet, M-BUS, Konnex

ACCURACY
- Active Energy: class B, EN 50470-3
- Reactive Energy: class 2, IEC EN 62053-23

CONNECTIONS
- For 3 / 4 wires power networks with balanced / unbalanced load
- Current: direct connection or by Current Transformer
- Single phase / Three phase voltage

SETTINGS
- Front keys
- ENERGY MODBUS PACK software tool
- ENERGY M-BUS PACK software tool
- Web Server

TYPICAL APPLICATIONS
- Energy totalization for industrial machinery
- Power consumption remote monitoring
- Measurement of energy generated by renewable sources
- Accounting and billing of power consumptions

	S501-32	S502-80	S534-6	S534-80	S504C-6	S504C-80
MID						
	32A single phase 2 wires energy counter	**80A single phase 2 wire energy counter**	**6A three phase 3/4 wire energy counter**	**80 A three phase 3/4 wire energy counter**	**6A thee phase 4 wire energy counter with built-in communi-cation**	**80A thrre phase 4 wire energy counter with built-in communication**
GENERAL DATA						
Power Supply	From voltage circuit	From voltage circuit	From voltage circuit	From voltage circuit	From voltage circuit	From voltage circuit
Max consumption	0,8 VA	7,5 VA - 0,5 W (for each phase)	7,5 VA - 0,5 W (for each phase)	7,5 VA - 0,5 W (for each phase)	7,5 VA - 0,5 W (for each phase) - M-BUS version 3,5 VA - 1 W (for each phase) -Modbus/Ethernet version)	7,5 VA - 0,5 W (for each phase) - M-BUS version 3,5 VA - 1 W (for each phase) -Modbus/Ethernet version)
Accuracy	Active Energy class B according to EN 50470-3	Active Energy class B according to EN 50470-3 Reactive Energy class 2 according to IEC/EN 62053-23	Active Energy class B according to EN 50470-3 Reactive Energy class 2 according to IEC/EN 62053-23	Active Energy class B according to EN 50470-3 Reactive Energy class 2 according to IEC/EN 62053-23	Active Energy class B according to EN 50470-3 Reactive Energy class 2 according to IEC/EN 62053-23	Active Energy class B according to EN 50470-3 Reactive Energy class 2 according to IEC/EN 62053-23
Tariff input		Active optoisolated Voltage range for tariff 2: 80..276 Vac/dc	Active optoisolated Voltage range for tariff 2: 80..276 Vac/dc	Active optoisolated Voltage range for tariff 2: 80..276 Vac/dc	Active optoisolated Voltage range for tariff 2: 80..276 Vac/dc	Active optoisolated Voltage range for tariff 2: 80..276 Vac/dc
Metrological LED	Meter constant 5000 imp/kWh	Meter constant 1000 imp/kWh	Meter constant 10000 imp/kWh Pulse length 10±2ms	Meter constant 10000 imp/kWh Pulse length 10±2ms	Meter constant 10000 imp/kWh Pulse length 10±2ms	Meter constant 1000 imp/kWh Pulse length 10±2ms
Reset Counters		Option	Option	Option		
Operating Temperature	-25..+55°C	-25..+55°C	-25..+55°C	-25..+55°C	-25..+55°C	-25..+55°C
Protection Degree	IP51 (front), IP20 (terminals)	IP51 (front), IP20 (terminals)	IP51 (front), IP20 (terminals)	IP51 (front), IP20 (terminals)	IP51 (front), IP20 (terminals)	IP51 (front), IP20 (terminals)
Dimension (lxhxd)	18x90x64 mm	36x90x64 mm	72x90x64 mm	72x90x64 mm	72x90x64 mm	72x90x64 mm
VOLTAGE						
Nominal Values	230 V, 50-60 Hz, 2 wire	230 V 50 Hz 240 V 50 Hz 230 V 50/60 Hz 230..240 V 50/60 Hz	3x230/400 V 50 Hz 3x240/415 V 50 Hz 3x230/400 V 50/50 Hz 3x230/400..3x240/415 V 50/60 Hz	3x230/400 V 50 Hz 3x240/415 V 50 Hz 3x230/400 V 50/50 Hz 3x230/400..3x240/415 V 50/60 Hz	3x230/400..3x240/415 V 50/60 Hz	3x230/400..3x240/415 V 50/60 Hz
CURRENT						
Starting current Ist	20 mA	20 mA	2 mA	2 mA	2 mA	20 mA
Minimum current Imin	250 mA	250 mA	10 mA	10 mA	10 mA	250 mA
Transitional current Itr	500 mA	500 mA	50 mA	50 mA	50 mA	500 mA
Reference current Iref (Ib)	5 A	5 A	1 A	1 A	1 A	5 A
Maximum current Imax	32 A	80 A	6 A	6 A	6 A	80 A
S0 OUTPUTS / ENERGY PULSE EMISSION						
Q.ty / Type	Passive optoisolated	2 passive optoisolated	2 passive optoisolated	2 passive optoisolated	Passive optoisolated	Passive optoisolated
Max Values	27 Vdc - 27 mA	250 Vac/dc - 100 mA	250 Vac/dc - 100 mA	250 Vac/dc - 100 mA	27 Vdc - 27 mA	27 Vdc - 27 mA
Pulse lenght	100 ms (@1000 imp/kWh); 500 ms (@100 imp/kWh)	50±2 ms	50±2 ms	50±2 ms	50±2 ms	50±2 ms
COMMUNICATION						
Supported protocols	M-BUS	ModBUS, M-BUS, Ethernet, Konnex	ModBUS, M-BUS, Ethernet, Konnex	ModBUS, M-BUS, Ethernet, Konnex	ModBUS, M-BUS, Ethernet	ModBUS, M-BUS, Ethernet
Type	Built-in / By optical interface	By optical interface	By optical interface	By optical interface	RS485 port, Modbus RTU/ASCII, 30..57600 bps EN 1434-3 wired port, M-BUS, 300..38400 bps 10/100BaseT, http, Ntp, Dhcp, Modbu TCP, 10/100 Mbps, data recording, web server Built-in	RS485 port, Modbus RTU/ASCII, 30..57600 bps EN 1434-3 wired port, M-BUS, 300..38400 bps 10/100BaseT, http, Ntp, Dhcp, Modbu TCP, 10/100 Mbps, data recording, web server Built-in
CONFIGURATION						
Programming System	Front key buttons E-MODBUS-PACK, E-MBUS-PACK	Front key buttons E-MODBUS-PACK, E-MBUS-PACK	Front key buttons E-MODBUS-PACK, E-MBUS-PACK	Front key buttons E-MODBUS-PACK, E-MBUS-PACK	Front key buttons E-MODBUS-PACK, E-MBUS-PACK Web Server	Front key buttons E-MODBUS-PACK, E-MBUS-PACK Web Server
STANDARD						
Norms	EN 50740-3	EN 50740-3	EN 50470-3, EN 62053-23	EN 50470-3, EN 62053-23	EN 50470-3, EN 62053-23	EN 50470-3, EN 62053-23
Certifications	CE, MID (option)	CE, MID (option)	CE	CE	CE, MID (option)	CE, MID (option)

Technical data, diagrams and drawings in this catalog are indicative only and not binding

ENERGY COUNTERS

ORDER CODES

Codes	Description
S501-32-0	32A single phase energy counter, 2 wires, 1 DIN
S501-32-MBU-MID	32 A single-phase energy counter, 2 wires, M-BUS MID certified
S502-80-MID	80A single phase energy counter 2 wires 2 DIN MID certified
S502-80-R	80A single phase energy counter 2 wires 2 DIN MID certified, counters reset
S504C-6-MOD-MID	6A three phase energy counter 4 wires 4 DIN, RS485 Modbus, MID certified
S504C-6-MBU-MID	6A three phase energy counter 4 wires 4 DIN, M-BUS, MID certified
S504C-6-ETH-MID	6A three phase energy counter 4 wires 4 DIN, Ethernet, MID certified
S504C-80-MOD-MID	80A three phase energy counter 4 wires 4 DIN, RS485 Modbus, MID certified
S504C-80-MBU-MID	80A three phase energy counter 4 wires 4 DIN, M-BUS, MID certified
S504C-80-ETH-MID	80A three phase energy counter 4 wires 4 DIN, Ethernet, MID certified
S534-6-MID	6A three phase energy counter 3/4 wires 4 DIN, MID certified
S534-80-MID	80A three phase energy counter 3/4 wires 4 DIN, MID certified

OPTICAL COMMUNICATION MODULES

ORDER CODES

Codes	Description
S500-MOD	RS485 Modbus RTU optical interface module
S500-MBU	M-BUS optical interface module
S500-ETH	Ethernet optical interface module
S500-KNX	Konnex optical interface module

ADATTATORI BUS

ORDER CODES

Codes	Description
S107MBU	USB - M-BUS converter / adapter 5 Vdc, 9.600 bps, up to 10 M-BUS nodes
S107USB	RS485/USB serial converter, portable version

CAVI

ORDER CODES

Codes	Description
CE-RJ45-RJ45-C	Crossover Ethernet cable (RJ45-RJ45)
CE-RJ45-RJ45-R	Straight-thru Ethernet cable (RJ45-RJ45)

S500 SERIES - PROGRAMMING

FRONT KEY BUTTONS

By f ront key buttons on all models can be programmed these functions:

- **Page scroll Temporary visualization of secondary values**
- **Access / exit Programming pages**
- **Start / stop / reset partial hour counter**
- **Setting parameters**
- **Display test**

WEBSERVER

All counters S500 Series energy counters - Ethernet or external COM version - have access to a **WEB SERVER** accessible through protected connection. WEB SERVER prov ides real-time values and recorded data in .csv exportable files.

ENERGY MODBUS PACK

Free download by www.seneca.it

Modbus models can be configured through sof tware package **ENERGY MODBUS PACK** downloadable by www.seneca.it.

- **Serial port setting**
- **Search / addition counters**
- **Network parameters configuration for each counter**

ENERGY M-BUS PACK

Free download by www.seneca.it

Communication models with M-BUS interface can be configured by the software package **ENERGY M-BUS PACK** downloadable by www.seneca.it.

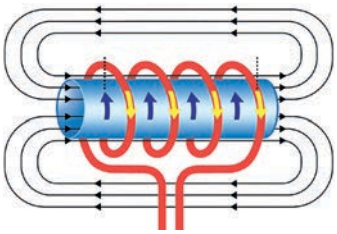
- **Serial port setting**
- **Search / addition counters network**
- **Parameters configuration network for each meter**

AC/DC CURRENT TRANSDUCERS – T201 SERIES 3.6

3

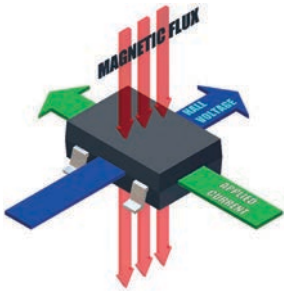
T201 Series
AC/DC Current Transformers

MAGNETIC INDUTION



The Transducers that use the measurement based on magnetic induction technology are long life devices thanks to the principle of measurement that avoids thermal drifts and which exploits the generation of an induced current on the transducer output, through the variation of a magnetic field. A direct use will be possible without any external shunts, even for pulsed currents.

HALL EFFECT



When a magnetic field is applied perpendicularly to a conductor, a voltage is generated transversally to the direction of the current flow.
The Hall Effect Current Transducers are used as alternative to shunt when dealing with high voltages and high galvanic isolation.

SELECTABLE CURRENT
Wide range input through dip-switches from 5 A to 40 / 100 / 300 A, single or double polarity Output: Voltage (V) or Current (mA)

OUTPUT: VOLTAGE (V) OR CURRENT (mA)

DIRECT USE WITHOUT SHUNT FOR PULSE CURRENT

COMPACT DIMENSION

WIDE CONFIGURATION RANGE

ACCURACY CLASS: 0,2 / 0,5 %

ENERGY EFFICIENCY
Loop power supply /auxiliary power supply Low consumption < 21 mA

UL CERTIFICATION

T201

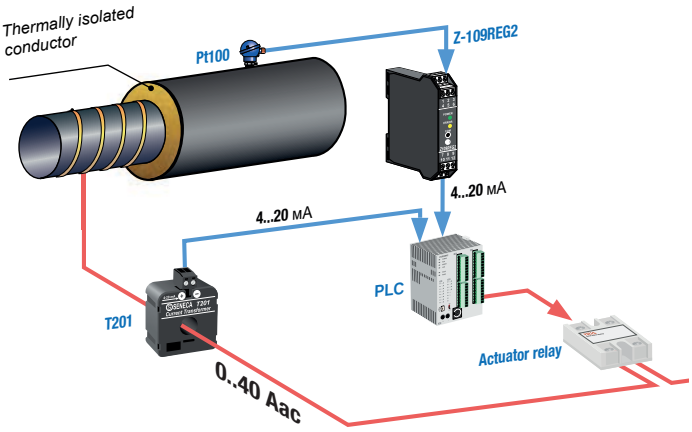
AC CURRENT TRANSDUCER TO DC CURRENT (4..20 mA -LOOP POWERED)

TECHNICAL DATA

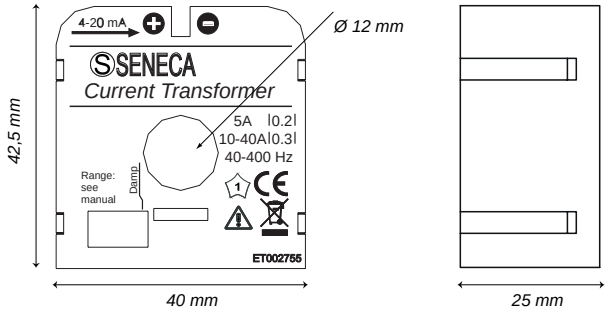
GENERAL DATA	
Power supply	Loop powered (5..28 Vdc)
Power consumption	< 21 mA
Isolation / protection	3 kVdc (on bare conductors)
Installation category	300 V CAT III (bare conductor); 600 V CAT III (bare conductor)
Measurement polarity	Positive (incoming current on label side)
Protection degree	IP20
Response time	100 ms (without filter) 2,5 s (with filter)
Accuracy class	AC: 0,2% f.s.
Thermal drift	< 150 ppm/K
Settings	DIP switch
Operating temperature	-20..+65°C
Storage temperature	-40..+85°C
Humidity	10..90%RH non condensing
Connections	Removable terminals
Max diameter conductor	12, 5 mm
Dimension	54 x 41 x 30 mm
Mounting	35 mm DIN rail with adapter
Weight	50 g
INPUT DATA	
Channels	1
Range	5, 10, 15, 20, 25, 30, 35, 40 A
Measurement type	Average adjusted
Bipolar measurement	No
Max instantaneous overcurrent	800 A
Bandwidth / frequency	20..1.000 Hz
Crest factor	2
OUTPUT DATA	
Channels	1
Range	4..20 mA (2 wires)
Resolution	Unlimited
Max load	< 5000 Ohm @ 100 Vdc
STANDARD	
Approvals	CE, UL-UR
Norms	EN60688 EN61000-6-4 EN61000-6-2 EN61010-1

APPLICATION EXAMPLE

Induced current measurement



DIMENSION



ORDER CODES

Code	Description
T201	AC current transducer to DC current (4..20 mA -loop powered)
A-DIN-T201	DIN railplasticclip for T201

T201DC

DC CURRENT TRANSDUCER
TO DC CURRENT (4..20 mA -LOOP POWERED)

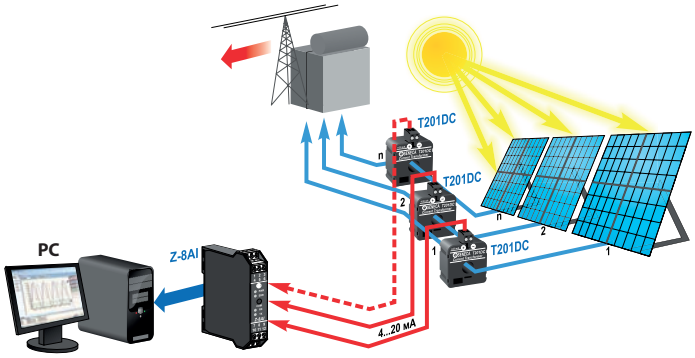
Patented technology

TECHNICAL DATA

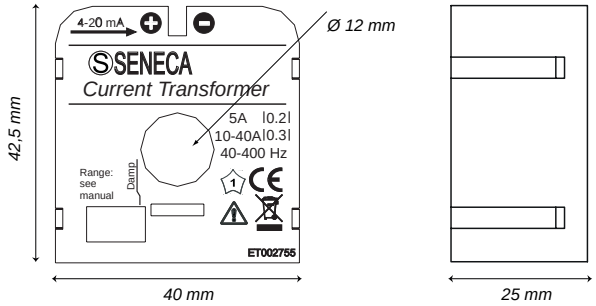
GENERAL DATA	
Power supply	Loop powered (6..100 V - 6..28 for UL use)
Power consumption	< 21 mA
Isolation / protection	3 kVdc (on bare conductors)
Installation category	300 V CAT III (bare conductor); 600 V CAT III (bare conductor)
Measurement polarity	Positive (incoming current on label side)
Protection degree	IP20
Response time	100 ms (without filter) 600 ms (with filter)
Accuracy class	DC: 0,2% f.s.
Thermal drift	< 150 ppm/K
Settings	DIP switch
Operating temperature	-10..+65°C
Storage temperature	-40..+85°C
Humidity	10..90%RH non condensing
Connections	Removable terminals
Max diameter conductor	12,5 mm
Dimension	54 x 41 x 30 mm
Mounting	35 mm DIN rail with adapter
Weight	50 g
INPUT DATA	
Channels	1
Range	Monopolar 0..5, 0..10, 0..20,0.. 40 A Bipolar -5..5, -10..10, -5..20, -10..40 A
Measurement type	Magnetic balance
Bipolar measurement	Yes
Max instantaneous overcurrent	800 A
Bandwidth / frequency	n.d.
Crest factor	1,2
OUTPUT DATA	
Channels	1
Range	4..20 mA (2 wires)
Resolution	12 bit
STANDARD	
Approvals	CE, UL-UR, european patent
Norms	EN61000-6-4 EN61000-6-2 EN61010-1

APPLICATION EXAMPLE

DC Current Transducers with 4-20 mA output, powered by measurement loop



DIMENSION



ORDER CODES

Code	Description
T201DC	DC current transducer to DC current (4..20 mA -loop powered)
A-DIN-T201	DIN railplasticclip for T201

Technical data, diagrams and drawings in this catalog are indicative only and not binding

T201DC100

PASSIVE CURRENT TRANSDUCER 100 ADC FOR 4..20 mA CURRENT LOOP

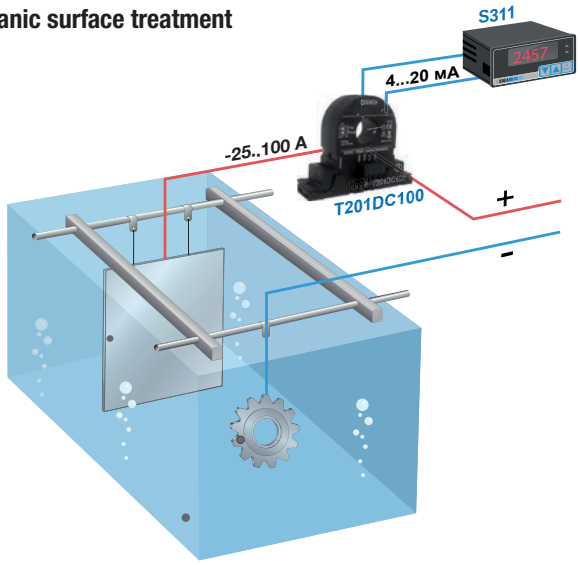
Patented technology

TECHNICAL DATA

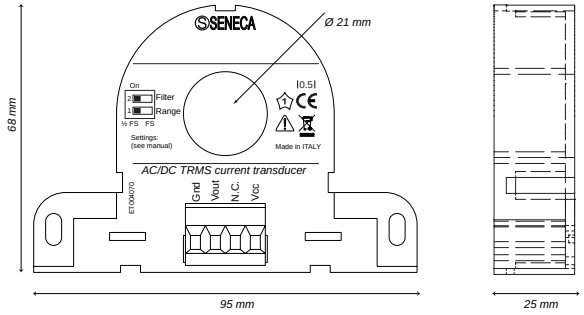
GENERAL DATA	
Power supply	(6..100 V - 6..28 for UL use)
Power consumption	< 21 mA
Isolation / protection	3 kVdc (on bare conductors)
Installation category	300 V CAT III (bare conductor); 600 V CAT III (bare conductor)
Measurement polarity	Positive (incoming current on label side)
Protection degree	IP20
Response time	100 ms (without filter) 600 ms (with filter)
Accuracy class	DC: 0,2% f.s.
Thermal drift	< 150 ppm/K
Settings	DIP switch
Operating temperature	-10..+65°C
Storage temperature	-40..+85°C
Humidity	10..90%RH non condensing
Connections	Removable terminals
Max diameter conductor	17 mm
Dimension	68 x 97 x 26 mm
Mounting	35 mm DIN rail with adapter
Weight	100 g
INPUT DATA	
Channels	1
Range	Monopolar 0..10, 0..25, 0..50, 0..100 A Bipolar -10..10, -25..25, -10..50, -25..100 A
Measurement type	Magnetic balance
Bipolar measurement	Yes
Max instantaneous overcurrent	2000 A (impulsive)
Bandwidth / frequency	n.d.
Crest factor	1,2
OUTPUT DATA	
Channels	1
Range	4..20 mA (2 wires)
Resolution	12 bit
STANDARD	
Approvals	CE, UL-UR, european patent
Norms	EN61000-6-4 EN61000-6-2 EN61010-1

APPLICATION EXAMPLE

Galvanic surface treatment



DIMENSION



ORDER CODES

Code	Description
T201DC1oo	Passive current transducer 100 Adc for 4..20 mA current loop
A-DIN-T201	DIN railplasticclip for T201

AC/DC HALL EFFECT CURRENT TRANSDUCERS

	T201DCH	T201DCH100	T201DCH300
	HALL EFFECT 	HALL EFFECT 	HALL EFFECT 
	AC/DC contactless TRMS direct and alternate current transducer	**AC/DC contactless TRMS direct and alternate current (± 100 A) transducer, Hall Effect**	**AC/DC contactless TRMS direct and alternate current (± 300 A) transducer, Hall Effect**
GENERAL DATA			
Power supply	10..28 Vdc	12..28 Vdc	12..28 Vdc
Power consumption	< 25 mA	< 25 mA	< 25 mA
Isolation / protection	3 kVdc (on bare conductors)	3 kVdc (on bare conductors)	3 kVdc (on bare conductors)
Installation category	300 V CAT III (bare conductor); 600 V CAT III (bare conductor)	300 V CAT III (bare conductor); 600 V CAT III (bare conductor)	300 V CAT III (bare conductor); 600 V CAT III (bare conductor)
Measurement polarity	Positive (incoming current on label side)	Positive (incoming current on label side)	Positive (incoming current on label side)
Protection degree	IP20	IP20	IP20
Response time	Fast filter: 800 ms - Slow filter: 2 s	Fast filter: 800 ms - Slow filetr: 2 s	Fast filter: 800 ms - Slow filetr: 2 s
Accuracy class	AC: 0,5% f.s DC: 1% f.s.	AC: 0,5% f.s. DC: 1% f.s.	AC: 0,5% f.s, DC: 1% f.s.
Thermal drift	< 200 ppm/K	< 200 ppm/K	< 200 ppm/K
Settings	DIP switch	DIP switch	DIP switch
Operating temperature	-10..+65°C	-20..+70°C	-20..+70°C
Storage temperature	-40..+85°C	-40..+85°C	-40..+85°C
Humidity	10..90%RH non condensing	10..90%RH non condensing	10..90%RH non condensing
Connections	Removable terminals	Removable terminals	Removable terminals
Max diameter conductor	20,5 mm	20,5 mm	20,5 mm
Dimension	54 x 41 x 30 mm	68 x 97 x 26 mm	68 x 97 x 26 mm
Mounting	35 mm DIN rail with adapter	35 mm DIN rail with adapter	35 mm DIN rail with 2 adapters / screws
Weight	50 g	100 g	100 g
INPUT DATA			
Channels	1	1	1
Range	0..25, 0..50 Aac/dc TRMS	0-50 A, 0-100 Aac/dc TRMS; ±50 A, ±100 A Bipolar	0-150 A, 0-300 Aac/dc TRMS; ±150 A, ±300 A Bipolar
Measurement type	TRMS	AC/DC TRMS or DC Bipolar	AC/DC TRMS or DC Bipolar
Bipolar measurement	No	Yes	Yes
Hysteresis	0,1 % f.s.	0,1 % f.s.	0,1 % f.s.
Max instantaneous overcurrent	2000 A (impulsive)	2000 A (impulsive)	2000 A (impulsive)
Bandwidth / frequency	1 kHz	1 kHz	1 kHz
Crest factor	1,2	2	2
OUTPUT DATA			
Channels	1	1	1
Range	0..10 V	0..10 V	0..10 V
Resolution	12 bit	12 bit	12 bit
Max load	> 2 kOhm	> 2 kOhm	> 2 kOhm
STANDARD			
Approvals	CE, UL-UR	CE, UL-UR	CE, UL-UR
Norms	EN61000-6-4 EN61000-6-2 EN61010-1	EN61000-6-4 EN61000-6-2 EN61010-1	EN61000-6-4 EN61000-6-2 EN61010-1

ORDER CODES

Model	T201DCH AC/DC contactless TRMS direct and alternate current transducer	T201DCH100 AC/DC contactless TRMS direct and alternate current (± 100 A) transducer, Hall Effect	T201DCH100 AC/DC contactless TRMS direct and alternate current (± 300 A) transducer, Hall Effect
SPARE PARTS			
A-DIN-T201	DIN rail Plastic clip for T201		

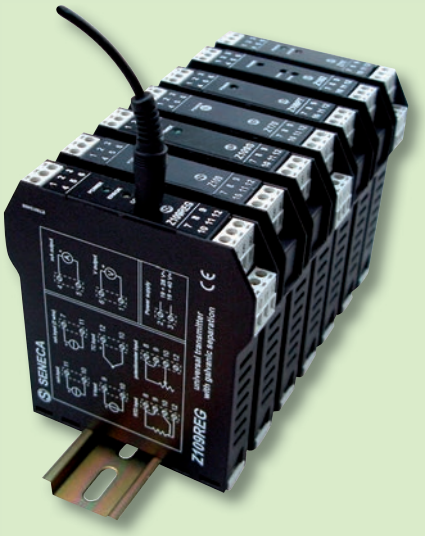
Technical data, diagrams and drawings in this catalog are indicative only and not binding

AC/DC HALL EFFECT CURRENT TRANSDUCERS WITH 4-20 mA OUTPUT

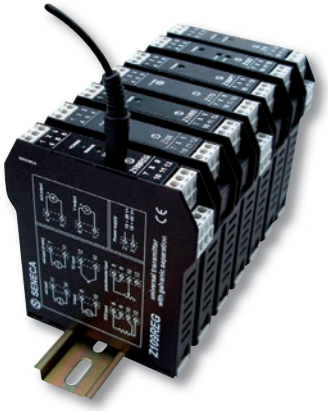
	T201DCH50-LP	T201DCH100-LP	T201DCH300-LP
	HALL EFFECT 	HALL EFFECT 	HALL EFFECT 
	AC/DC current transducer (± 50 A), Hall Effect, Loop Powered, 4-20 mA output	**AC/DC current transducer (± 100 A), Hall Effect, Loop Powered, 4-20 mA output**	**AC/DC current transducer (± 300 A), Hall Effect, Loop Powered, 4-20 mA output**
GENERAL DATA			
Power supply	Loop powered (9..28 Vdc)	Loop powered (9..28 Vdc)	Loop powered (9..28 Vdc)
Power consumption	< 22 mA	< 22 mA	< 22 mA
Isolation / protection	3 kVdc (on bare conductors)	3 kVdc (on bare conductors)	3 kVdc (on bare conductors)
Installation category	300 V CAT III (bare conductor); 600 V CAT III (bare conductor)	300 V CAT III (bare conductor); 600 V CAT III (bare conductor)	300 V CAT III (bare conductor); 600 V CAT III (bare conductor)
Measurement polarity	Positive (incoming current on label side)	Positive (incoming current on label side)	Positive (incoming current on label side)
Protection degree	IP20	IP20	IP20
Response time	Fast filter: 500 ms - Slow filter: 1 s	Fast filter: 500 ms - Slow filter: 1 s	Fast filter: 500 ms - Slow filter: 1 s
Accuracy class	AC: 0,5% f.s, DC: 1% f.s.	AC: 0,5% f.s, DC: 1% f.s.	AC: 0,5% f.s, DC: 1% f.s.
EMI error	< 1%	< 1%	< 1%
Thermal drift	< 200 ppm/K	< 200 ppm/K	< 200 ppm/K
Settings	DIP switch	DIP switch	DIP switch
Operating temperature	-20..+70°C	-20..+70°C	-20..+70°C
Storage temperature	-40..+85°C	-40..+85°C	-40..+85°C
Humidity	10..90%RH non condensing	10..90%RH non condensing	10..90%RH non condensing
Connections	Removable terminals	Removable terminals	Removable terminals
Max diameter conductor	12,5 mm	20,5 mm	20,5 mm
Dimension	54 x 41 x 30 mm	68 x 97 x 26 mm	68 x 97 x 26 mm
Mounting	35 mm DIN rail with adapter	35 mm DIN rail with 2 adapters / screws	35 mm DIN rail with 2 adapters / screws
Weight	50 g	100 g	100 g
INPUT DATA			
Channels	1	1	1
Range	0..50 Aac/dc TRMS; ±50 Adc Bipolar	0-50 A, 0-100 Aac/dc TRMS; ±50 A, ±100 A Bipolar	0-150 A, 0-300 Aac/dc TRMS; ±150 A, ±300 A Bipolar
Measurement type	AC/DC TRMS or DC Bipolar	AC/DC TRMS or DC Bipolar	AC/DC TRMS or DC Bipolar
Bipolar measurement	Yes	Yes	Yes
Hysteresis	0,25% f.s.	0,25% f.s.	0,25% f.s.
Max instantaneous overcurrent	300 A direct; 2.000 A (impulsive)	500 A direct; 2.000 A (impulsive)	500 A direct; 2.000 A (impulsive)
Bandwidth / frequency	1 kHz	1 kHz	1 kHz
Crest factor	1,3	1,3	1,5
OUTPUT DATA			
Channels	1	1	1
Range	4..20 mA rated value; 3,6 mA (fault); 22 mA (max)	4..20 mA rated value; 3,6 mA (fault); 22 mA (max)	4..20 mA rated value; 3,6 mA (fault); 22 mA (max)
Resolution	12 bit	12 bit	12 bit
Max load	< 1.000 Ohm @ 28 Vdc	< 1.000 Ohm @ 28 Vdc	< 1.000 Ohm @ 28 Vdc
STANDARD			
Approvals	CE, UL-UR	CE, UL-UR	CE, UL-UR
Norms	EN 61326, EN 61010-1	EN 61326, EN 61010-1	EN 61326, EN 61010-1
ORDER CODES			
Model	**T201DCH50-LP** AC/DC current transducer (± 50 A), Hall Effect, Loop Powered, 4-20 mA output	**T201DCH100-LP** AC/DC current transducer (± 100 A), Hall Effect, Loop Powered, 4-20 mA output	**T201DCH300-LP** AC/DC current transducer (± 300 A), Hall Effect, Loop Powered, 4-20 mA output
SPARE PARTS			
A-DIN-T201	DIN rail Plastic clip for T201		

Technical data, diagrams and drawings in this catalog are indicative only and not binding

ENERGY MEASUREMENT CONVERTERS 3.7



3



Modular energy measurement converters

Signal converters for electrical power measurements measure the values of voltage and current (alternate / direct) transducing them into into a current or voltage normalized signal to the output terminals, proportional to the input value.
The scaling input and output parameters are selectable via software or DIP switch.
The modules ensure high accuracy class (from 0.1 to 0.5%) and a high level galvanic isolation, up to 4.000 V..
Besides power / error status indicators, ModBUS interface modules offer also the indication RS485 LED on the front panel.

CURRENT / VOLTAGE WIDE RANGE
- Alternate
- Direct
- TRMS

EASY CONNECTION
Screw terminals 2,5 mm²

FLEXIBLE CONFIGURATION
- DIP-switch
- Software

POWER SUPPLY
Vac/dc
Loop / Self powered

COMPACT SIZE
17,5 / 35 mm width

INTERNATIONAL APPROVALS
CE, UL

HIGH LEVEL ISOLATION
Up to 4.000 Vac

BUS & SIGNAL INTERFACES
Analog Output
RS485 ModBUS RTU

HIGH ACCURACY CLASS
0,1%-0,5%

DIAGNOSTIC AND STATUS INDICATORS

ENERGY MEASUREMENT CONVERTERS

	Z201	Z201-H	Z202	Z202-H	Z202-LP
					
	AC current to DC isolator / converter (10..40 Vdc; 19..28 Vac)	**AC current to DC isolator / converter (85..265 Vac)**	**AC voltage to DC isolator converter (10..40 Vdc; 19..28 Vac)**	**AC voltage to DC isolator converter (85..265 Vac)**	**AC / DC voltage to DC isolator / converter (loop powered)**
GENERAL DATA					
Power Supply	10..40 Vdc; 19..28 Vac	85..265 Vac/dc	10..40 Vdc; 19..28 Vac	85..265 Vac/dc	5..28 Vdc (dal loop)
Max consumption	< 2,5 W	< 2,5 W	< 1,5 W	< 1,5 W	<1 mA (for each voltage input)
Isolation	3.750 Vac (input/output/power supply) 1.500 Vac (output/power supply)	4.000 Vac (input/output/power supply)	3.750 Vac (input/output; input/power supply) 1.500 Vac (output/power supply)	3.750 Vac (input/output; input/power supply) 1.500 Vac (output/power supply)	4.000 Vac (input/output)
Protection degree	IP20	IP20	IP20	IP20	IP20
LED status indicators	Power Supply	Power Supply	Power Supply	Power Supply	Power Supply
Response time	< 200 ms	< 100 ms	< 30 ms	< 100 ms	< 100 ms
Interfaces					RS232 (programming front connector): baud rate, address, parity, data/stop bit RS485 (backplane), alternative to analog output, data rate up to 115.200 bps, ModBUS RTU protocol
Accuracy class	0,3%	0,3%	0,25%	0,3%	0,3%
Thermal drift	<200 ppm/K	<200 ppm/K	<150 ppm/K	<150 ppm/K	<150 ppm/K
Settings	DIP switch	DIP switch	DIP switch	DIP switch	DIP switch
Operating temperature	0..+55°C	-10..+65°C	0..+60°C	-10..+65°C	-20..+65°C
Dimension	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm
Connection	Removable screw fit	Removable screw fit	Removable screw fit	Removable screw fit	Removable screw fit
Case	Nylon 6, 30% Glass Fiber Filled	Nylon 6, 30% Glass Fiber Filled	Nylon 6, 30% Glass Fiber Filled	Nylon 6, 30% Glass Fiber Filled	Nylon 6, 30% Glass Fiber Filled
Mounting	35 mm DIN rail (IEC/EN 60715)	35 mm DIN rail (IEC/EN 60715)	35 mm DIN rail (IEC/EN 60715)	35 mm DIN rail (IEC/EN 60715)	35 mm DIN rail (IEC/EN 60715)
Weight	200 g	200 g	200 g	200 g	200 g
Approvals	CE	CE	CE	CE	CE
Norms	EN 61000-6-4, EN 61000-6-2, EN 61010-1	EN 61000-6-4, EN 61000-6-2, EN 61010-1	EN 61000-6-4, EN 61000-6-2, EN 61010-1	EN 61000-6-4, EN 61000-6-2, EN 61010-1	EN 61000-6-4, EN 61000-6-2, EN 61010-1
INPUT DATA					
Channels	1	1	1	1	1
Type	ALTERNATING CURRENT 0..5 / 0..10 Aac	ALTERNATING CURRENT 0..5 / 0..10 Aac	ALTERNATING CURRENT 0..500 Vac (41 scales), Input impedance 2.000 Ω/V Frequency 10 Hz..1 kHz	ALTERNATING CURRENT 0..500 Vac (41 scales), Input impedance 2.000 Ω/V Frequency 10 Hz..1 kHz	ALTERNATING CURRENT 500 Vac DIRECT VOLTAGE 0..540 Vdc, max volatage 710 Vpk Frequency DC / 20 Hz..20 kHz
OUTPUT DATA					
Channels	1	1	1	1	1
Type	CURRENT 0..20 / 4..20 mA, max load 600 Ω, active / passive connection VOLTAGE 0..5 / 0..10 / 1..5 / 2..10 Vdc, min load 2.500 Ω	CURRENT 0..20 / 4..20 mA, max load 600 Ω, active / passive connection VOLTAGE 0..5 / 0..10 / 1..5 / 2..10 Vdc, min load 2.500 Ω	CURRENT 0..20 / 4..20 mA, max load 600 Ω, active / passive connection VOLTAGE 0..5 / 0..10 / 1..5 / 2..10 Vdc, min load 2.500 Ω	CURRENT 0..20 / 4..20 mA, cmax load 600 Ω, active / passive connection VOLTAGE 0..5 / 0..10 / 1..5 / 2..10 Vdc, min load 2.500 Ω	CURRENT 0..20 / 4..20 mA, max load 600 Ω, active / passive connection VOLTAGE 0..5 / 0..10 / 1..5 / 2..10 Vdc, min load 2.500 Ω

ORDER CODE

Code	Description
Z201	AC current to DC isolator / converter (10..40 Vdc; 19..28 Vac)
Z201-H	AC current to DC isolator / converter (85..265 Vac)
Z202	AC voltage to DC isolator converter (10..40 Vdc; 19..28 Vac)
Z202-H	AC voltage to DC isolator converter (85..265 Vac)
Z202-LP	AC / DC voltage to DC isolator / converter (loop powered)
ACCESSORIES	
Z-POWER-115-15VA	19 Vac transformer, 115 / 15 VA
Z-POWER-230-15VA	19 Vac transformer, 230 / 15 VA
Z-POWER-230-25VA	19 Vac transformer, 230 / 25 VA
Z-SUPPLY	Single-phase switching power supply 24V @ 1.5A
S117P1	RS232/USB, TTL/USB, RS485/USB asynchronous serial converter
CS-JACK-DB9F	Serial programming cable (Jack / DB9F)
SOFTWARE	
EASY SETUP	Plug&Play software suite for SENECA programmable instruments(downloadable by www.seneca.it)

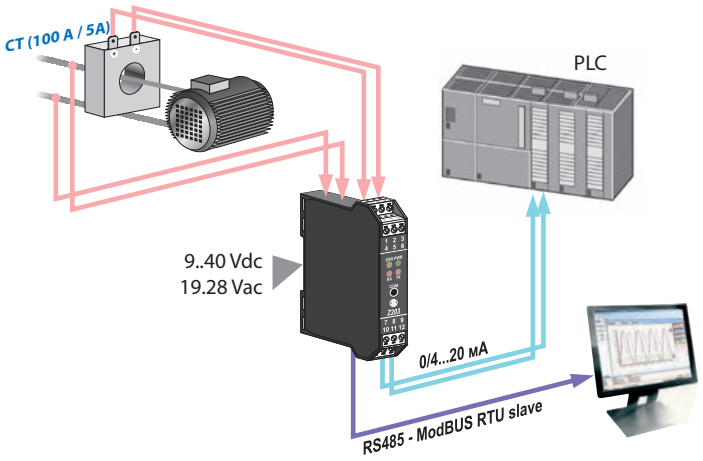
Z203-1

AC SINGLE PHASE
ADVANCED NETWORK ANALYZER

TECHNICAL DATA

GENERAL DATA	
Power Supply	10..40 Vdc; 19..28 Vac
Max consumption	< 2,5 W
Isolation	3.750 Vac (input/output; input/power supply)
Protection degree	IP20
LED status indicators	Power Supply Error - RS485 Communication
Response time	< 10 ms
Interfaces	RS232 (programming front connector): baud rate, address, parity, data/stop bit RS485 (backplane), alternative to analog output, data rate up to 115.200 bps, ModBUS RTU protocol
Accuracy class	0,5%
Thermal drift	<150 ppm/K
Settings	DIP switch - Software (EASY SETUP)
Operating temperature	-10..+65°C
Dimension	17,5 x 100 x 112 mm
Connection	Removable screw fit
Case	Nylon 6, 30% Glass Fiber Filled
Mounting	35 mm DIN rail (IEC/EN 60715)
Weight	200 g
Approvals	CE, UL
Norms	EN 61000-6-4, EN 61000-6-2, EN 61010-1
INPUT DATA	
Channels	1 (7 measurements)
Type	ALTERNATING VOLTAGE Max rated value 500 Vac, frequency 50-60 Hz ALTERNATING CURRENT Rated valure 5 A rms, crest factor 3, max current 15 A, frequency 50 – 60 Hz
OUTPUT DATA	
Channels	1 analog, 1 digital
Type	CURRENT 0-20, 4-20 mA VOLTAGE 0-5, 0-10, 1-5, 2-10 V Analog retransmission: Vrms, Irms, Watt, Var, frequency, cosϕ, energy DIGITAL TBD counter

APPLICATION EXAMPLE



ORDER CODES

Code	Description
Z203-1	AC single phaseadvancednetwork analyzer

Technical data, diagrams and drawings in this catalog are indicative only and not binding

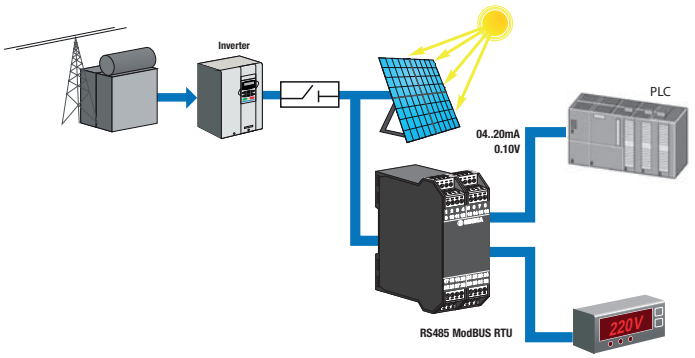
Z204-1

AC/DC VOLTAGE TO DC CURRENT/VOLTAGE CONVERTER WITH MODBUS INTERFACE

TECHNICAL DATA

GENERAL DATA	
Power Supply	10..40 Vdc; 19..28 Vac
Max consumption	< 1 W
Isolation	4.000 Vac (input/output; input/power supply)
Protection degree	IP20
LED status indicators	Power Supply Error - RS485 Communication
Response time	Step Response: 1 s from 10 to 90 %
Accuracy class	0,5% input; 0,1% output
Thermal drift	<100 ppm/K
Settings	DIP switch - Software (EASY SETUP)
Operating temperature	-20..+65°C
Dimension	35 x 100 x 112 mm
Connection	Removable screw fit
Case	Nylon 6, 30% Glass Fiber Filled
Mounting	35 mm DIN rail (IEC/EN 60715)
Weight	200 g
Approvals	CE
Norms	EN 61000-6-4, EN 61000-6-2, EN 61010-1
INPUT DATA	
Channels	1
Type	DIRECT VOLTAGE: 0..1.200 Vdc; ALTERNATING VOLTAGE 0..850 Vac Input impedance: 800 kΩ Frequency: 30..300 Hz
OUTPUT DATA	
Channels	1
Type	CURRENT Range: 0..20 mA; Max impedance: 500 Ω VOLTAGE Range: 0..10 V; Min impedance: 1 k Ω

APPLICATION EXAMPLE



ORDER CODES

Code	Description
Z204-1	AC/DC voltage to DC current/voltageconverterwith ModBUSinterface

S201RC-LP

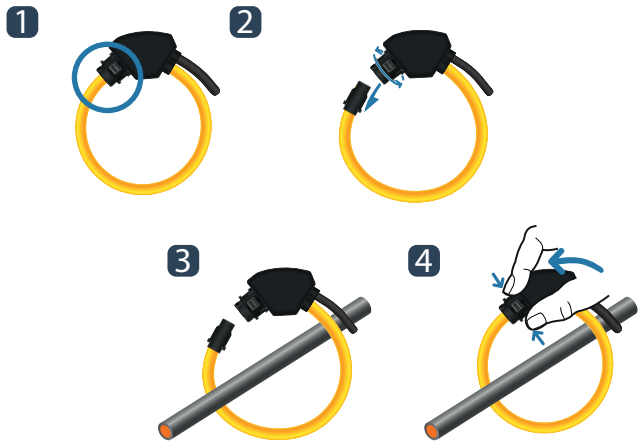
ROGOWSKI CURRENT TRANSDUCER (LOOP POWERED)

COMING SOON

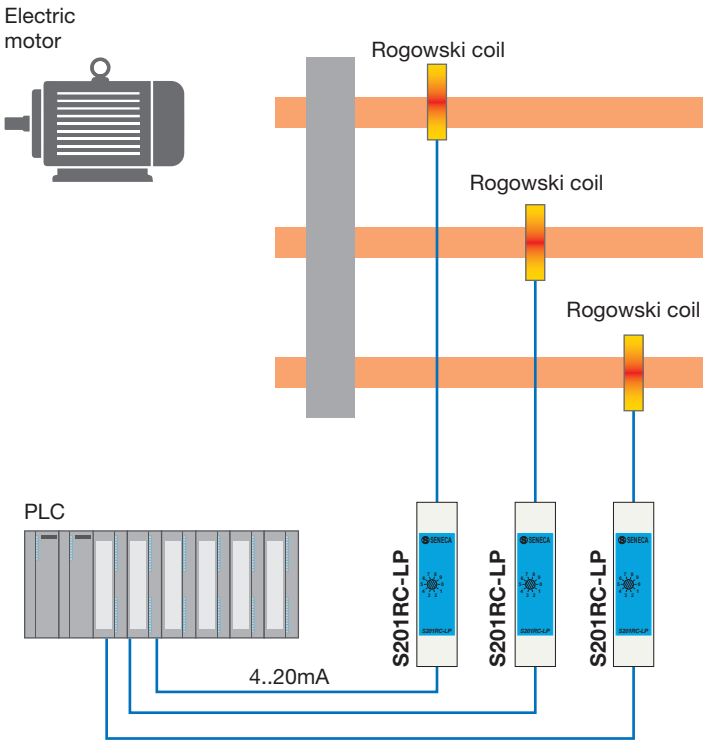
TECHNICAL DATA

GENERAL DATA	
Power Supply	By 4..20 mA output loop
Max consumption	< 0,6 W
Isolation	-
Protection degree	IP20
LED status indicators	Out of range alarm
Response time	500 ms
Accuracy class	0.5 % f.s.
Thermal drift	<200 ppm/°C
Settings	Front selector (scale, filter)
Operating temperature	- 25 … 70°C
Dimension	110x18x62 mm includin terminals
Connection	Removable terminals with 5mm pitch for cable section up to 2.5 mm2
Case	PC/ABS self-extinguish, grey color
Mounting	35 mm DIN rail (IEC/EN 60715)
Approvals	CE
Norms	EN61326 (EMC), EN61010-1 (Safety)
INPUT DATA	
Channels	1
Type	ROGOWSKI COILS 100mV/kA Measure type: TRMS Scales: 250-500-1000-2000-4000 A 50-60 Hz Bandwidth: 3 kHz Overload: 10kA (1 Vrms); Protection: Overvoltage and polarity inversion; Damping filter: FAST = 0.5 s, SLOW = 1 s
OUTPUT DATA	
Channels	1
Type	CURRENT Power Supply / Output 4..20 mA Max output: 22 mA Supply Voltage: 9 - 28 Vdc Max load: 600 Ohm

ROGOWSKICOILS – INSTALLATION SEQUENCE



APPLICATION EXAMPLE



ORDER CODES

Code	Description
S201RC-LP	Loop-powered converter for ac current with Rogowski sensors
RC150-025-100-3M	Rogowski coil L=25cm Øint. 8cm,100mV/1kA-50Hz,cable L=3mt.
RC150-035-100-3M	Rogowski coil L=35cm Øint.11cm,100mV/1kA-50Hz,cable L=3mt.
RC150-040-100-3M	Rogowski coil L=40cm Øint.12cm,100mV/1kA-50Hz,cable L=3mt.
RC150-060-100-3M	Rogowski coil L=60cm Øint.19cm,100mV/1kA-50Hz,cable L=3mt.
RC150-090-100-3M	Rogowski coil L=90cm Øint.28cm,100mV/1kA-50Hz,cable L=3mt.
RC150-120-100-3M	Rogowski coil L=120cm Øint.38cm,100mV/1kA-50Hz,cable L=3mt.
RC150-180-100-3M	Rogowski coil L=180cm Øint.57cm,100mV/1kA-50Hz,cable L=3mt.
RC150-CAVEX-ROG1	Extending beyond the 3 mt. Standard cable connecting the Rogowski coil L.1
RC150-CAVEX-ROG2	Extending beyond the 3 mt. Standard cable connecting the Rogowski coil L.2
RC150-CAVEX-ROG3	Extending beyond the 3 mt.Standard cable connecting the Rogowskicoil L.3

ENERGY MANAGEMENT CONTROLLERS 3.8

3

RTUs CONTROLLERS FOR ENERGY MANAGEMENT

For Energy Management applications SENECA introduces different CPU such Z-TWS4-E, Z-PASS2-S-E and S6001RTU-E supporting IEC 60870-5-101, IEC 60870-5-104, IEC 61850 protocols.
These units allows a redundant connection in plant automation applications, power generation control, renewable energy management (biomass, solar, wind, etc.) and smart grid systems. They are configurable as a web server and TCP-IP node, this device can easily be integrated into SCADA, EMS and monitoring web platforms.

ENERGY MANAGEMENT APPLICATIONS

STRATON SOFT PLC IEC 61131-3

IEC 60870-101-104 MASTER / SLAVE

IEC 61850 CLIENT / SERVER

VPN SUPPORT

MODBUS RTU / TCP-IP CONNECTIVITY

SMART GRID

SCADA / WEB BASED

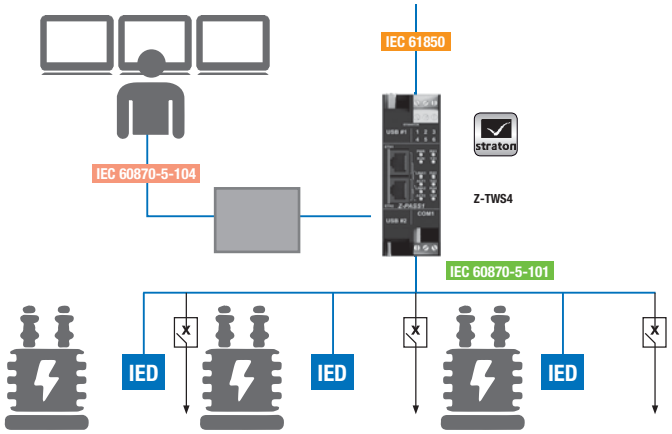
Z-TWS4-E

IEC 61131 ADVANCED MULTI-FUNCTION CONTROLLLER, INCLUDING ENERGY PROTOCOLS (IEC 60870-5-101, IEC 60870-5-104, IEC 61850) STRATON ADVANCED CONTROL UNIT WITH 3G+ ROUTER

TECHNICAL DATA

GENERAL DATA	
Power Supply	11..40 Vdc; 19..28 Vac
Power Consumption	Max 6 W
Isolation	Max 1.500 V
LED Status indicators	Power Supply Ethernet Communication Ethernet Data Transmission Serial Data Transmission
Protection Degree	IP20
Operating Temperature	-20..+55°C
Dimension	100 x 112 x 35 mm
Weight	250 g
Enclosure	Nylon 6, 30% fiberglass filled, self extinguishing class V0
Hot swapping	Yes
Connection	Removable 3-way screw terminals, 5.08 mm pitch Rear IDC10 connector for DIN rail RJ45 - 4/54, RJ45, USB, Micro USB Plug-in Micro SD Card
Mounting	35 mm DIN rail (IEC EN 60715)
COMMUNICATION	
Ethernet	Nr. 2 Ethernet 10/100 Mbps (RJ45) ports
Serial ports	Nr. 1 RS232/RS485 Nr.2 RS485
USB	Nr. 1 Micro USB Nr 1 USB host
Industrial protocols	ModBUS TCP-IP, ModBUS RTU, custom protocols
Network protocols	PPP, HTTP, FTP client/server, ModBUS TCP-IP Cient/Server, OpenVPN
Energy protocols	IEC 60870-101/104, IEC 61850
CPU / MEMORY	
SofPLC	IEC 61131-3 Straton
Processor	ARM9 32-bit @ 400 Mhz
Flash Memory (data)	1 GB
RAM	64 MB
FeRAM	4 kB
Slot Micro SD	SD card up to 32GB
SETTING	
System Software	Z-NET4 / StratON / OPC Server
Build-in Web Editor	Yes
Build-in datalogger	Yes
PLC programming	IEC 61131 (Straton) with specifiic libraries
STANDARD	
Approvals	CE
Norms	EN 61000-6-4, EN 61000-6-2, EN 60950, IEC 61131

APPLICATION EXAMPLE



ORDER CODES

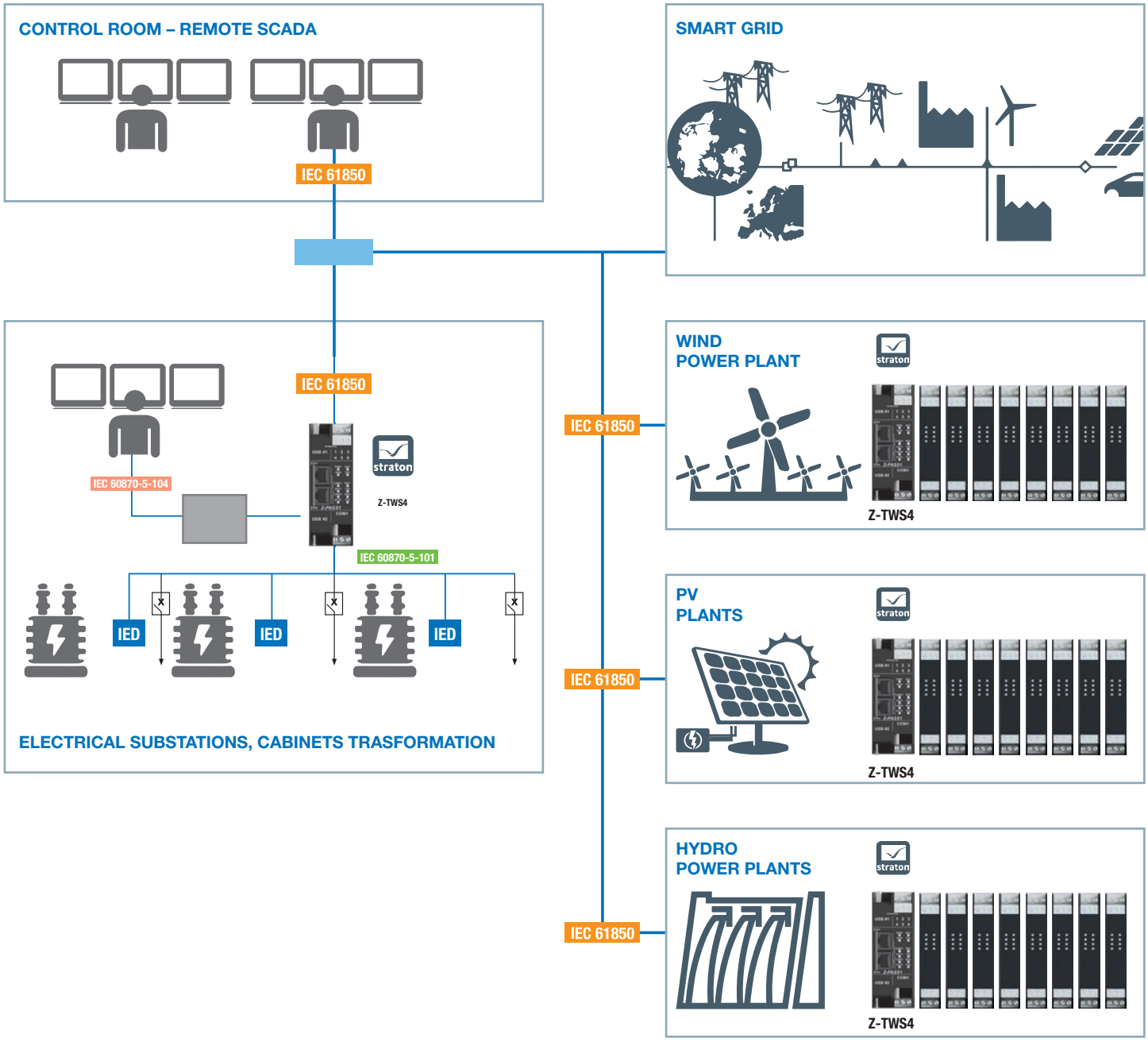
Code	Description
CONTROLLERS	
Z-TWS4-E-0	IEC 61131 advanced multi-function controlller, including energy protocols (IEC 60870-5-101, IEC 60870-5-104, IEC 61850) support, Straton workbench, OEM version
Z-TWS4-E-K	IEC 61131 advanced multi-function controlller, including energy protocols (IEC 60870-5-101, IEC 60870-5-104, IEC 61850) support, Straton workbench, CS-DB9M-MEF-PH cable, USB-SW-KEY
SOFTWARE	
OPC-SERVER-IO-1	OPC Server I/O 100 tags
OPC-SERVER-IO-2	OPC Server I/O 500 tags
OPC-SERVER-IO-3	OPC Server I/O unlimited tags
OPC-SERVER-MB-1	OPC Server ModBUS Slave 100 tags
OPC-SERVER-MB-2	OPC Server ModBUS Slave 500 tags
OPC-SERVER-MB-3	OPC Server ModBUS Slave unlimited tags
STRATON-D-USB	Straton activation key for IEC 61131 controllers
STRATON-IDE256	Straton development environment, 256 tags, USB activation key
STRATON-IDE512	Straton development environment, 512 tags, USB activation key
STRATON-IDEUN	Straton development environment, unlimtited tags, USB activation key
STRATON-IEC-E1	IEC 60870-5-101/104 Slave activation license
STRATON-IEC-E2	IEC 61850 Server activation license
STRATON-IEC-E3	IEC 60870-5-101/104 slave + IEC 61850 Server activation license
STRATON-IEC-E4	IEC 60870-5-101/104 Master / Slave activation license
STRATON-IEC-E5	IEC 61850 Client / Server activation license
STRATON-IEC-EF	IEC 60870-5-101/104 Master / Slave + IEC 61850 Client / Server activation license
STRATON-SP	Straton SENECA Package - CPU Seneca Installer suite
STRATON-WB	Straton workbench IEC 61131 free editor
Z-NET4	IEC 61131 controllers and I/O system SENECA configurator
ACCESSORIES	
MSD	Micro SD memory card with adapter
USB-SW-KEY	USB-key with software, libraries, platforms and development environments, manuals for Multifunction controllers
Z-PC-DIN1-35	DIN rail bus system 1 slot 35 mm
Z-PC-DINAL1-35	DIN rail bus system head terminal + 1 slot 35 mm
Z-POWER-115-15VA	19 Vac transformer, 115 / 15 VA
Z-POWER-230-15VA	19 Vac transformer, 230 / 15 VA
Z-POWER-230-25VA	19 Vac transformer, 230 / 25 VA
Z-SUPPLY	Single-phase switching power supply 24V @ 1.5A

MULTIFUNCTION CONTROL UNITS WITH ENERGY PROTOCOLS

	Z-PASS2-S-E	S6001-RTU-E
	NEW 	NEW 
	StratON Advanced Control Unit with 3G+ router, RS485 serial interfaces, including energy protocols	**Remote Control Unit with built-in IO, 3G+ modem, energy protocols**
GENERAL DATA		
Power Supply	10..40 Vdc; 19..28 Vac	10..40 Vdc; 19..28 Vac
Max consumption	6 W	6 W
Isolation	1.500 V	1.500 V
LED status indicators	Power supply; Serial communication; Ethernet; PLC status	Power supply; Serial communication; Ethernet; PLC status
Pollution degree	2	2
Protection degree	IP20	IP20
Operating temperature	-20..+55°C	-20..+50°C
Dimension	100 x 52.5 x 112 mm	105 x 190 x 60 mm
Weight	450 g	600 g
Case	Nylon 6 with 30% fiber glass, V0 self-extinguish class	Nylon 6 with 30% fiber glass, V0 self-extinguish class
Connection	Removable screw terminals 5,08 mm pitch IDC10 backplane connector for DIN rail 4 pin removable connector Nr 2 RJ45 connectors Nr 2 SMA (Main, Diversity) antenna connectors	Removable terminals, max conductor section 2,5 mm^2 Removable connectors DB9 connector Nr 2 RJ45 connectors Nr 2 USB connectors (type A, mini USB) Nr 2 SMA (Main, Diversity) antenna connectors Plug in Micro SD card
Mounting	35 mm DIN rail (IEC EN 60715)	35 mm DIN rail (IEC EN 60715)
COMMUNICATION		
Ethernet	Nr 2 Fast Ethernet 10/100 Mbps ports (RJ45)	Nr 1 Fast Ethernet 10/100 Mbps ports (RJ45)
Serial ports	Nr. 1 RS232 Nr. 1 RS485 Nr. 1 RS485 ModBUS	Nr 2 RS485 Nr 1 RS232
USB	Nr 1 USB host type A Nr. 1 micro USB Virtual COM	Nr 1 USB host type A N1 1 mini USB type B
Modem / Router	3G/HSPA; Standard GSM (GSM 850 MHz, EGSM 900 MHz, DCS 1800 MHz, PCS 1900 MHz), WCDMA (850/900/1900/2100 MHz), HSPA (HSDPA, HSUPAm HSPA+), DRX; 14.4 Mbps in downlink, 5.76 Mbps in uplink; Slot 3V Mini SIM	3G/HSPA; Standard GSM (GSM 850 MHz, EGSM 900 MHz, DCS 1800 MHz, PCS 1900 MHz), WCDMA (850/900/1900/2100 MHz), HSPA (HSDPA, HSUPAm HSPA+), DRX; 14.4 Mbps in downlink, 5.76 Mbps in uplink; Slot 3V Mini SIM
Industrial protocols	ModBUS TCP-IP, ModBUS RTU, custom protocols	ModBUS TCP-IP, ModBUS RTU, custom protocols
IT protocols	PPP, HTTP, FTP, SMTP, OpenVPN	PPP, HTTP, FTP, SMTP, OpenVPN
Energy managament protocols	IEC 60870-101/104, IEC 61850	IEC 60870-101/104, IEC 61850
Operating modes	ModbUS Bridge/Gateway*, Telecontrollo Single LAN, Serial Tunnelling, 3G/ETH Modem/Router, Ridondanza 3G/ETH, VPN, Teleassistenza point-to-point (* funzioni programmabili)	
INPUT DATA		
Channels / Type		Nr 15 PNP, NPN digital input (max voltage 24 Vdc) Nr 2 digital input (level switch) Nr 4 analog input 0..20 mA
OUTPUT DATA		
Channels / Type		Nr 8 SDPT relay output, 5A - 250 Vac Nr 1 analog output 0..10 V Nr 1 analog output 0..20 mA
PROCESSOR / MEMORY		
CPU	ARM9 32-bit @ 400 Mhz	ARM9 32-bit @ 400 Mhz
Flash Memory (data)	1 GB	1 GB
RAM / FeRAM	64 MB / 4kB	64 MB / 4kB
Slot Micro SD	SD Card up to 32 GB	SD Card up to 32 GB
SETTINGS / STANDARDS		
System software	Z-NET4 / Straton	Z-NET4 / Straton
Web Editor	Yes, built-in	Yes, built-in
Web Configurator	Yes, built-in	Yes, built-in
Datalogger	Yes, built-in	Yes, built-in
PLC programming	IEC 61131-3 (Straton) with SENECA libraries	IEC 61131-3 (Straton) with SENECA libraries
Approvals	CE	CE
Norms	EN 61000-6-4, EN 61000-6-2, EN 60950	EN 61000-6-4, EN 61000-6-2, EN 60950, EN 301511, EN 301489-1, EN 301489-7

ENERGY MANAGEMENT

Through to the integration with IDE Straton environment, SENECA CPUs supports specific communication protocols in the energy applications such as IEC 60870, IEC 61850.
About remote management applications, Straton can be integrated with IEC 60870-5-101 and IEC 60870-5-104 Master and Slave.
More over with Straton, Z-SENECA CPUs can be an IEC 61850 Server as well as Client so it's able to support functions as RTU /Gateway, ModBUS RTU - ModBUS TCP conversion, virtual network creation via internet and point-to-point tunnelling.
Z-TWS4 can be used also with redundant controller for plant automation, energy production control, plants management of renewable energies (biomass, photovoltaic, windetc.), smart grid developments.
Configurable as web server and as TCP-IP node, Z-TWS4 is open to be integrated in a SCADA/EMS/ WEB-based plataform.



ORDER CODE	
Code	**Description**
Z-TWS4-E-0	IEC 61131 advanced multi-function controlller, including energy protocols (IEC 60870-5-101, IEC 60870-5-104, IEC 61850) support, Straton workbench, OEM version
Z-TWS4-E-K	IEC 61131 advanced multi-function controlller, including energy protocols (IEC 60870-5-101, IEC 60870-5-104, IEC 61850) support, Straton workbench, CS-DB9M-MEF-PH cable, USB-SW-KEY
Z-PASS2-S-A-E	StratON Advanced Control Unit with 3G+ router, RS485 serial interfaces, including energy protocols (IEC 60870-5-101, IEC 60870-5-104, IEC 61850)
Z-PASS2-S-B-E	StratON Advanced Control Unit with 3G+ router, RS485 serial interfaces, including energy protocols (IEC 60870-5-101, IEC 60870-5-104, IEC 61850)
S6001-RTU-E	Remote Control Unit with built-in IO, 3G+ modem, Energy Management protocols
SOFTWARE IEC 61131 / ENERGY MANAGEMENT	
STRATON-D-USB	Straton activation key for IEC 61131 controllers
STRATON-IDE256	Straton development environment, 256 tags, USB activation key
STRATON-IDE512	Straton development environment, 512 tags, USB activation key
STRATON-IDEUN	Straton development environment, unlimtited tags, USB activation key
STRATON-IEC-E1	IEC 60870-5-101/104 Slave activation license
STRATON-IEC-E2	IEC 61850 Server activation license
STRATON-IEC-E3	IEC 60870-5-101/104 slave + IEC 61850 Server activation license
STRATON-IEC-E4	IEC 60870-5-101/104 Master / Slave activation license
STRATON-IEC-E5	IEC 61850 Client / Server activation license
STRATON-IEC-EF	IEC 60870-5-101/104 Master / Slave + IEC 61850 Client / Server activation license
STRATON-WB	Straton workbench IEC 61131 free editor
Z-NET4	Z-PC system configurator, Web Editor included
ACCESSORIES	
MSD	Micro SD memory card with adapter
Z-SUPPLY	Single-phase switching power supply 24V @ 1.5A
USB-SW-KEY	USB-key with software, libraries, platforms and development environments, manuals for Multifunction controllers
Z-PC-DIN1-35	DIN rail bus system 1 slot 35 mm
Z-PC-DINAL1-35	DIN rail bus system head terminal + 1 slot 35 mm
Z-PC-DINAL2-52.5	DIN rail bus system head terminal + 2 slots 52.5 mm
VPN PLATFORM	
VPN BOX	VPN Server & Connectivity module for remote control and remote assistance
VPN BOX VM	VPN Server - Virtual Machine for remote control and remote assistance
VPN BOX MANAGER	Configuration software for VPN BOX, Server, sign-in credentials
VPN CC	VPN Client Communicator. Software tool for VPN network connection to install on client PCs
ANTENNAS	
A-GSM	Dual band swing GSM external antenna, cable 3,2 m, SMA
A-GSM-QUAD	GSM quadband antenna

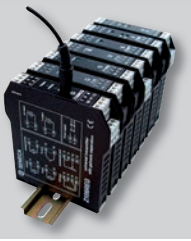
MEASUREMENT AND CONTROL PANEL INSTRUMENTATION

4

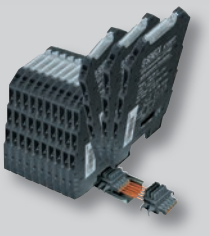
Measurement and Control Panel Instrumentation

Measurement and control panel instrumentation product line includes signal converters, digital indicators, totalizers, Pre-settings, power surge protections, power supplies, temperature and humidity sensors.
With a wide dedicated proposal for industrial monitoring equipment, SENECA offers the most advanced optical, capacitive and inductive technologies for signals field normalization given by sensors and actuators, the galvanic isolation, electrical protection, free loops measurement and electrical and environmental parameters control.
The products for signals conditioning can be also used in universal applications combining different SENECA products. Their electrical or mechanical structure are designed to minimize wiring and maintenance activities.

4.1 Mulitstandard Signal Converters



4.2 Compact Signal Converters



4.3 High Voltage Interfaces

4.4 Temperature Transmitters

4.5 Surge Protection Devices

4.6 Digital Indicators

4.7 Batch Controllers

4.8 Handheld Probes

4.9 Handheld Multimeters

MEASUREMENT AND CONTROL PANEL INSTRUMENTATION

4

TOP PRODUCT PREVIEW

Z109REG2-1

HIGH PERFORMANCE UNIVERSAL CONVERTER, PROGRAMMABLE VIA MICROUSB/APP

TOP PRODUCT

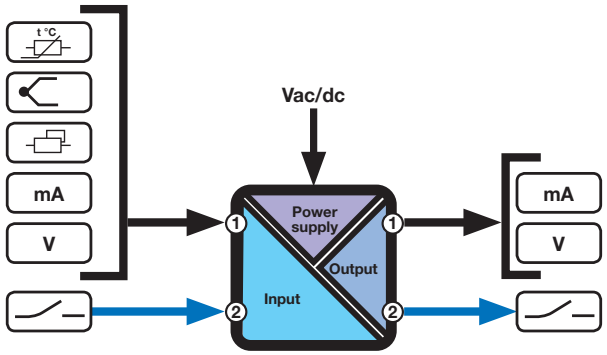
TECHNICAL DATA

GENERAL DATA	
Power Supply	10..40 Vdc; 19..28 Vac
Power Transducers	Active input @ 2 wires (min 20 Vdc)
Power Consumption	2,5 W (max) - 1,6 W (24 Vdc, 20 mA)
Isolation	3.750 Vac (power supply / input / output)
Protection	Against pulse overvoltages: 400 W /ms
Protection degree	IP20
LED status indicators	Power Supply - Error - Alarm
Response time	35 ms (11 bit)..140 ms (16 bit) 35
Interfaces	Micro USB
Accuracy class	0,10%
Thermal drift	0.01%/K
Linearity	0,05% / 0.4%
Setting	DIP switch - Software (EASY SETUP) - App (EASY SETUP)
Operating temperature	-20..+60°C
Dimension	17,5 x 100 x 112 mm
Connessioni	Screw removable terminals 2,5 mm2
Enclosure	Nylon 6 with 30% fiber glass
Mounting	Guida DIN 35 mm (IEC/EN 60175)
Weight	200 g
Approvals	CE, UL
Norms	EN 61000-6-4, EN 61000-6-2, EN 61010-1
INPUT DATA	
Channels	1 analogico, 1 strobe
Type	• VOLTAGE (mV, V): Bipolar from 75 mV to 20 V, resolution 15 bit + sign • CURRENT (mA): Bipolar up to 20 mA, resolution 1 µA • RTD: Pt100, Pt500, Pt1000, Ni100, KTY81, KTY84, NTC; 3-4 wires measure; scalw: -200..600 °C, resolution 0,1°C • THERMOCOUPLE: Type J, K, R, S, T, E, B, N, Resolution 2,5 µV • POTENTIOMETER: 500 Ω ..10 kΩ • RHEOSTAT: 500 Ω..25 kΩ • STROBE: Alternative to output relay
OUTPUT DATA	
Channels	1 analog, 1 relay output
Type	• VOLTAGE (V): 4 scales: 0/1..5V, 0/2..10V, Min load resistance: 2 kΩ • CURRENT (mA): 2 scales: 0/4..20 mA, Max load resistance: 600 Ω • RELAY: alternative to strobe input NC / NO in case alarm

ORDER CODES

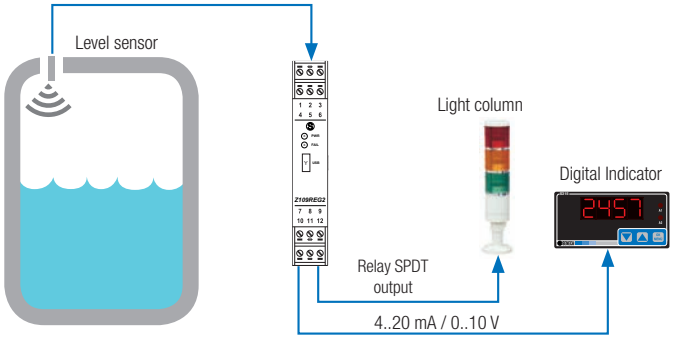
Code	Description
Z109REG2-1	High performance universal converter, programmable via MicroUSB/App, 9..40 Vdc/19..28 Vac
CU-A-MICROB	USB-A Micro USB-B 5 P plug cable
CU-A-MICRO-OTG	Micro USB OTG to USB Type A (female) Adapter Cable
EASY SETUP	Plug&Play software suite for SENECA programmable instruments
EASY SETUP APP	App ioS / Android EASY SETUP suite
Z-POWER-115-15VA	DIN rail 19 Vac transformer, 115 / 15 VA with thermofuse
Z-POWER-230-15VA	DIN rail 19 Vac transformer, 230 / 15 VA with thermofuse
Z-POWER-230-25VA	DIN rail 19 Vac transformer, 230 / 25 VA with thermofuse
Z-SUPPLY	Single-phase switching power supply 24V @ 1.5A
Z-SUPPLY	Alimentatore switching monofase 24V @ 1,5 A

SIGNAL / ISOLATION DIAGRAM

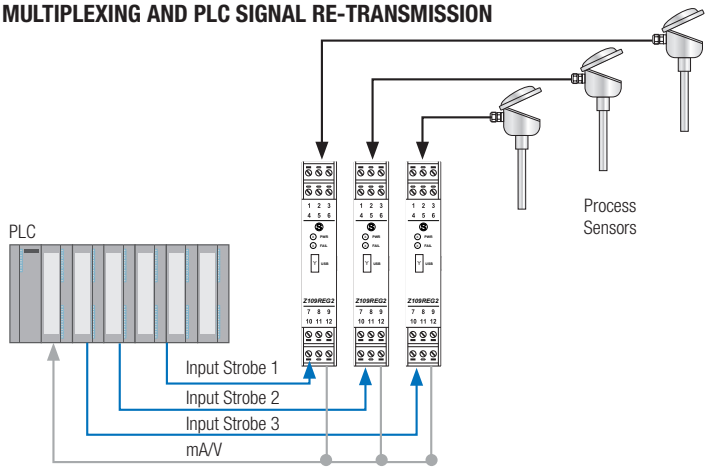


APPLICATION EXAMPLE

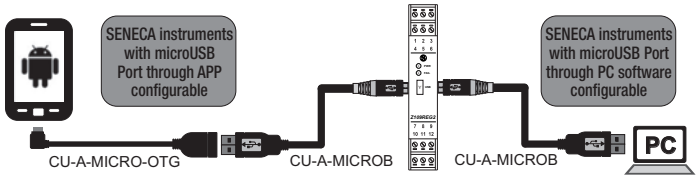
ANALOG SIGNAL CONVERSION AND RE-TRANSMISSION WITH RELAY OUTPUT



MULTIPLEXING AND PLC SIGNAL RE-TRANSMISSION



SETTING BY USB INTERFACE



Technical data, diagrams and drawings in this catalog are indicative only and not binding

Z170REG-1

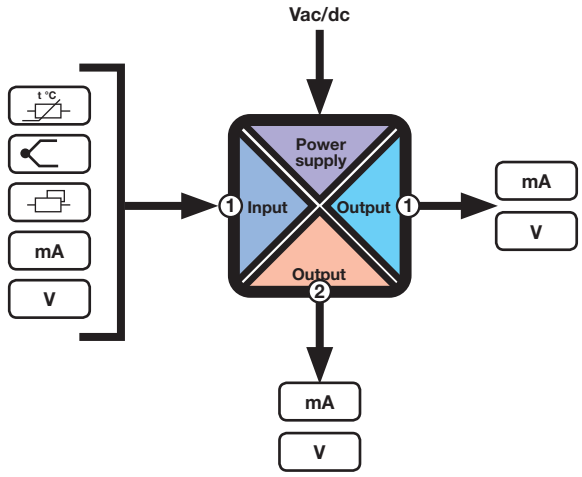
DC DUPLICATOR / ISOLATOR WITH UNIVERSAL INPUT AND 2 OUTPUT

TOP PRODUCT

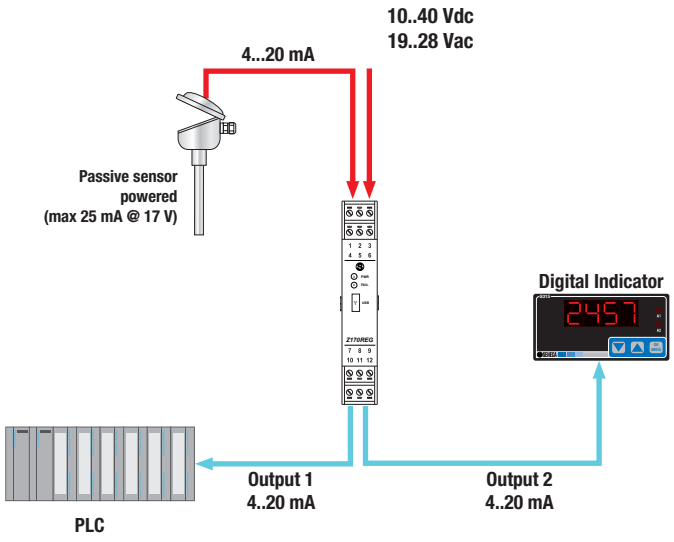
TECHNICAL DATA

GENERAL DATA	
Power Supply	10..40 Vdc; 19..28 Vac
Power transducers	Yes max 25 mA, 17 Vdc
Max consumption	0.5..2 W
Isolation	1.500 Vac at 4 ways between input// power supply // output 1 // output 2
Protection degree	IP20
LED status indicators	Power Supply Alarm
Response time	< 25 ms
Interfaces	Micro USB (front side)
Accuracy class	0,10%
Thermal drift	0,01% /K
Linearity	<1% (input), 0.01% (output)
Setting	DIP switch Software (EASY SETUP) App (EASY SETUP)
Operating temperature	-10..+65°C
Dimension	17,5 x 100 x 112 mm
Connection	Removable screw terminals
Case	Nylon 6 30% glass fiber
Mounting	On 35 mm DIN rail (IEC/EN 60715)
Weight	200 g
Approvals	CE, UL
Norms	EN 61000-6-4, EN 61000-6-2, EN 61010-1
INPUT DATA	
Channels	1
Type	VOLTAGE: configurable range 0..10 V CURRENT: configurable range 0..20 mA (active / passive module) Potentiometer: configurable range1 kΩ ..100 kΩ Thermocouple: J,K,R,S,T,B,E,N RTD: Pt100, Pt500, Pt1000, Ni100 Resolution @14 bit Sampling time configurable from 5 to 20 ms
OUPUT DATA	
Channels	2
Type	VOLTAGE: Configurable range 0..10 V CURRENT: Configurable range 0..20 mA (active / passive) Resolution @14 bit

SIGNAL / ISOLATION DIAGRAM

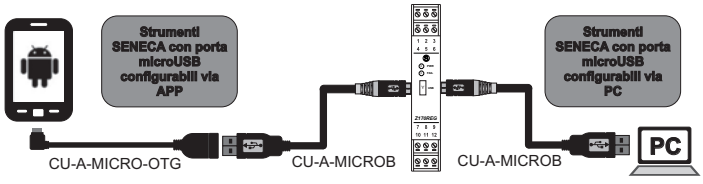


APPLICATION EXAMPLE



ORDER CODES	
Code	**Description**
Z170REG-1	DC duplicator / isolator with universal input and 2 output, Micro UBS port, configurable by App
CU-A-MICROB	USB-A Micro USB-B 5 P plug cable
CU-A-MICRO-OTG	Micro USB OTG to USB Type A (female) Adapter Cable
EASY SETUP	Plug&Play software suite for SENECA programmable instruments
EASY SETUP APP	App ioS / Android EASY SETUP suite
Z-POWER-115-15VA	DIN rail 19 Vac transformer, 115 / 15 VA with thermofuse
Z-POWER-230-15VA	DIN rail 19 Vac transformer, 230 / 15 VA with thermofuse
Z-POWER-230-25VA	DIN rail 19 Vac transformer, 230 / 25 VA with thermofuse
Z-SUPPLY	Single-phase switching power supply 24V @ 1.5A

SETTING BY USB INTERFACE



Technical data, diagrams and drawings in this catalog are indicative only and not binding

K121

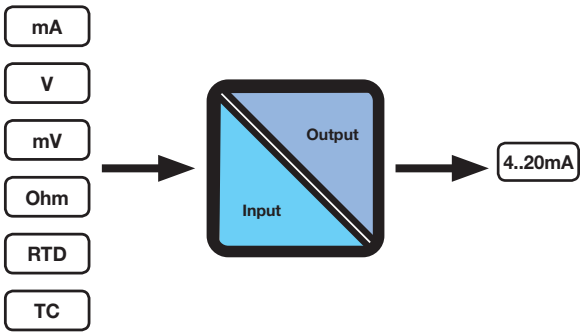
UNIVERSAL CONVERTER (MA, V, OHM, RTD, TC) ISOLATED, LOOP POWERED

TOP PRODUCT

TECHNICAL DATA

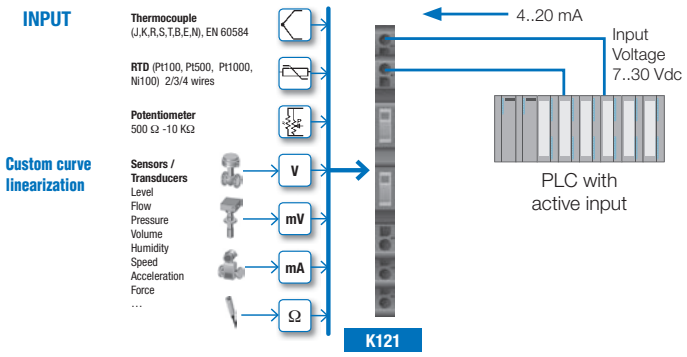
GENERAL DATA	
Power supply	7..30 Vdc (from loop 4..20mA)
Side Power	
Hot swapping	Yes
Current consumption	24 mA
Power consumption	<660 mW
A/D Conversion	16 bit
Rejection	50 / 60 Hz
Settings	Software (EASY SETUP)
Filter	Added for stable reading
Dimensions (w x h x d)	6,2 x 93,1 x 102,5 mm
Isolation	1,5 KVac (3-way)
Isolation technique	Digital (optocoupler)
Data processing	32 bit floating point
Colour	Black
Enclosure	PBT
Weght	45 g
Operating temperature	-20..+65 °C
Connections	8 Clamp terminals
Protection degree	IP 20
Precision class	0,1%
Thermal drift	< 120 ppm/K
Status indicators	Fault, alarm
Special functions	Cold junction compensation Filter Reversed output
Approvals	CE
Norms	EN 61000-6-4, EN 61010-6-2, EN 61010-1
INPUT DATA	
Channels	1
Type	THERMOCOUPLE J, K, R, S, T, E, B, N (EN 60584) RTD (PT100, PT500, PT1000, NI100) connection 2,3,4 wires Voltage (V) ± 30V, impedance 200 kΩ Voltage (mV) ±150 mV, impedance 10 MΩ Current: ±24 mA, impedance 40 Ω Potentiometer: 500 Ω..10 KΩ Resistance: up to 1760 Ω
Absolute value	
OUTPUT DATA	
Channels	1
Type	CURRENT 4..20mA
Response time (10-90%)	140..620ms

SIGNAL / ISOLATION DIAGRAM



APPLICATION EXAMPLE

UNIVERSAL ANALOG SIGNAL CONVERTION



ORDER CODES	
Code	**Description**
K121	Universal converter (mA, V, Ohm, RTD, TC) isolated, loop powered

Technical data, diagrams and drawings in this catalog are indicative only and not binding

T121

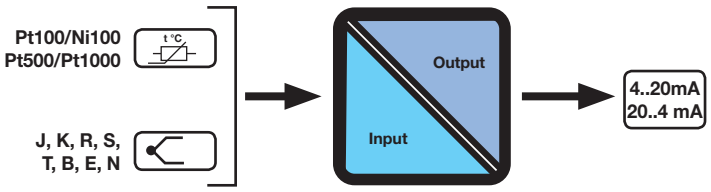
UNIVERSAL INPUT TO DC CURRENT TRANSMITTER (4..20 MA OUTPUT LOOP POWERED) ISOLATED

TOP PRODUCT

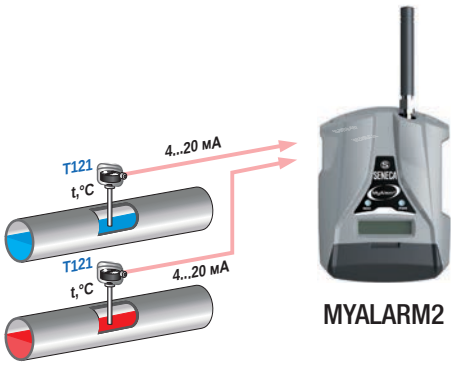
TECHNICAL DATA

GENERAL DATA	
Power supply	7..30 Vdc (loop powered)
Galvanic Isolation & Protection	1,5 kVac
Response time	< 1 s
Accuracy class	0,1% (min 0,1°C for RTD and 1°C for TC)
Thermal drift	
Settings	EASY-USB (programming toolkit: start / full scale, connection and RTD type, rejection, measure filter, cable resistance, fault output / over-range
Operating Temperature	-40..+85°C
Connections	Clamp connection
Dimension	Ø 43,7 x 20 mm
Approvals	CE
Norms	EN 61000-6-4, EN 61000-6-2
INPUT DATA	
Number	1
Type	Pt100 (EN 60751/A2, -200..+650°C, min span 20°C) Ni100 (-60..+250°C, min span 20°C) Pt500 2,3,4 wires, range -200… 650 °C Pt1000 2,3,4 wires, range -200… +200°C TC J , K, R, S, T, B, E, N Potentiometer: 450..1.800 ohm Voltage: -150..+150 mV
OUTPUT DATA	
Number	1
Type	CURRENT (mA) 4..20, 20..4 mA (2 wire)

SIGNAL / ISOLATION DIAGRAM



APPLICATION EXAMPLE



MYALARM2

ORDER CODES	
Code	**Description**
T121	Isolated loop powered temperature transmitter
T121-C	Isolated loop powered temperature transmitter, calibrated version
ACCESSORIES AND SOFTWARE	
EASY-USB	USB to TTL serial isolator converter
EASY-SETUP / EASY-LP	Configuration software, free available from www.seneca.it
FLEX-DIN	Adapter for din-rail mounting
S117P1	USB to RS232/RS485/TTL serial isolator converter

S315

4 DIGIT LOOP POWERED DISPLAY WITH 4-20 MA INPUT SIGNAL

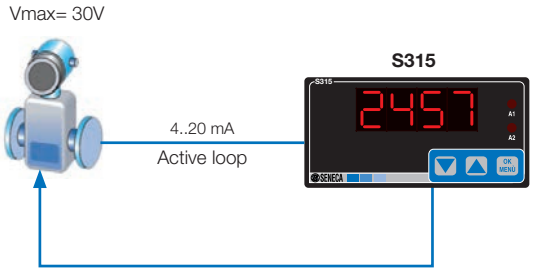
TOP PRODUCT

TECHNICAL DATA

GENERAL DATA	
Power supply	By loop (max 30 V)
Drop voltage	Max 7 V
Power transducers	-
Power consumption	-
Isolation	-
Memory	EEPROM, 10 years
VISUALIZATION AND MEASURE	
Display	4 digit, red LEDs
Status indicators	
Front buttons	3 (down, up, menù)
Display errors	
Accuracy	0,05%
Stability	0,005%/°K
Linearity error	0,05%
A/D resolution	16 bit
EMI	< 1%
INPUT DATA	
Channels	1
Type	4-20 mA
OUTPUT DATA	
Channels	-
Type	-
THEMOMECHANICS DATA	
Operating temperature	-10..+65°C
Enclosure	PPO self-extinguish, DIN 43700
Protection degree	IP65 (frontal)
Terminal block	Removable 2-way screw terminals, 5,08mm pitch, 3 way screw terminals, 5,08 mm pitch
Dimension (W x H x D)	96 x 48 x 40 mm
Panel cut-out	91x45 mm
Weight	200 g
SETTINGS, NORMS	
Programming	Front keys (enabling password, input type, electric start / full scale, display start / full scale, decimal point, filter)
Calibration	Yes, factory made
Norms	EN 61000-6-4, EN 64000-6, EN 61010-1, EN 60742

APPLICATION EXAMPLE

VISUALIZATION OF ANALOG SIGNAL OUTGOING FROM A TRANSDUCER WITH ACTIVE LOOP

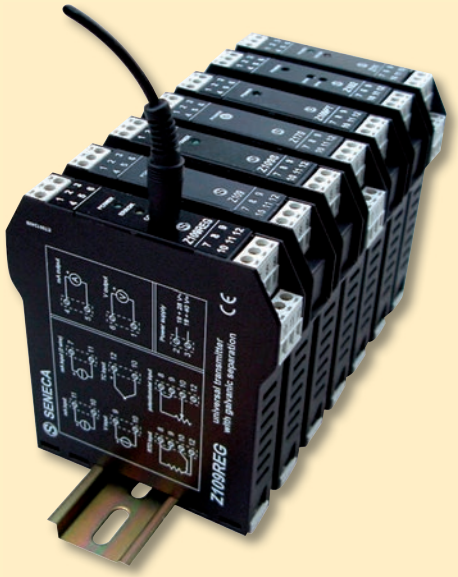


Available also in IP66 protection degree version

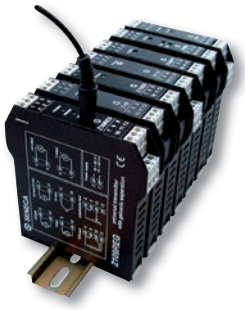
ORDER CODES	
Code	**Description**
S315	4 digit loop powered display with 4 20 mA input signal
K121	4 digit loop powered display with 4 20 mA input signal, IP66 case

Technical data, diagrams and drawings in this catalog are indicative only and not binding

MULTISTANDARD SIGNAL CONVERTERS - Z-LINE 4.1



4



Z-LINE

MULTI-STANDARD SIGNAL CONVERTERS & ISOLATOR

Z-Line Series offers a full range of signal conditioners including analog/digital/serial converters, temperature transmitters, galvanic isolators, splitters, trip amplifiers and math modules. They works at 10-40 Vdc/ 19-28 Vac, 85-265 Vac/dc or are supplied by the loop. Z-Line modules ensure from 1.500 Vrms to 4.000 Vrms isolation voltage for 1 minute at three points. They also supply the transducer, they can have active/passive input/output and they are designed to be mounted on DIN 46277 rail.

CONNECTIONS

Screw terminals
2,5 mm²

SETTING

DIP-switches
Software / App

POWER SUPPLY

Vac/dc switching

POWER TRANSDUCERS

Min 20 Vdc

ISOLATION

From 1,5 kVac
to 4 kV

UNIVERSAL INPUT

Analog, Power, Pulse,
Frequency, Sensors

WIDTH

17,5 / 35 mm

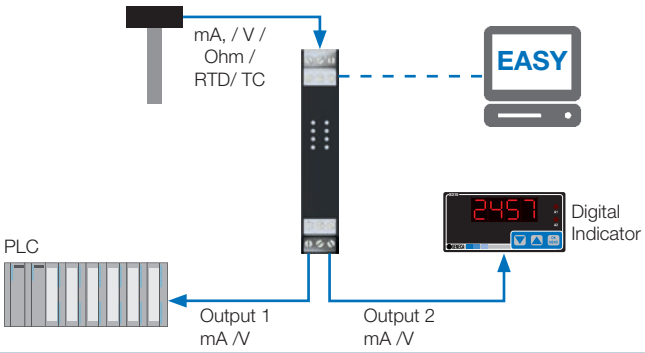
APPROVALS

CE, UL, CSA

APPLICATION EXAMPLES

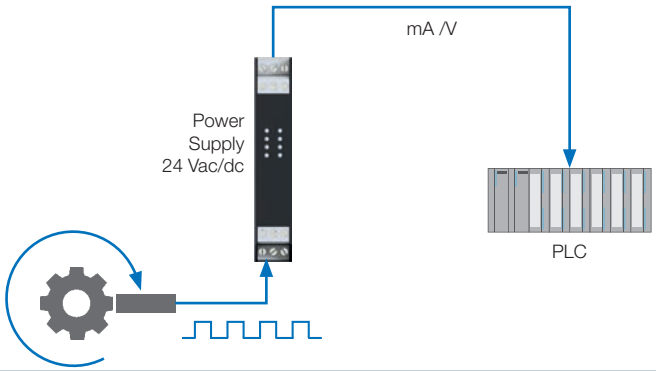
Z170REG-1

Analog Signal Duplication and Retransmission



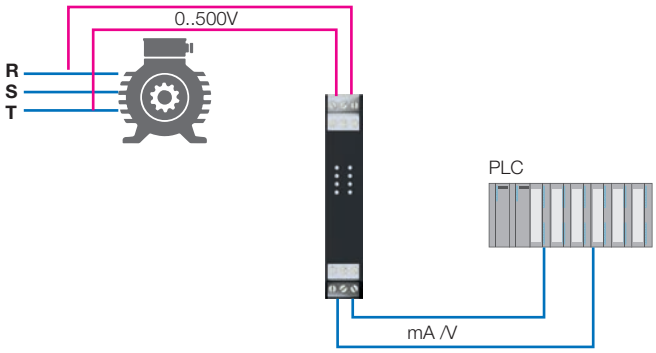
Z111

Pulses counter with analog output



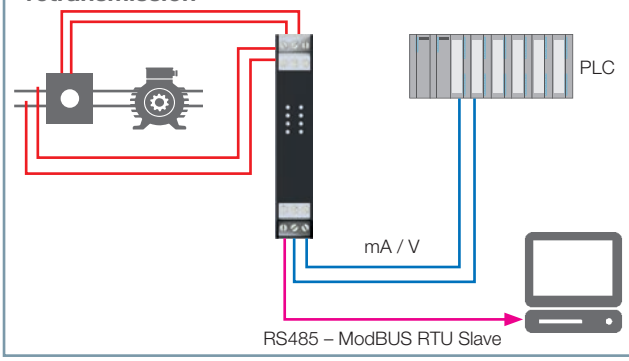
Z202

AC Voltage conversion into a normalized mA/V signal

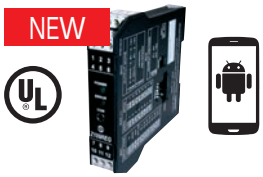


Z203-1

One phase network analyzer with signal output retransmission



ANALOG CONVERTERS

	Z109REG	Z109REG2-1	Z109REG2-H	Z109UI2-1
		NEW 	NEW 	NEW 
	Universal isolator/converter	**Universal isolator/converter with advanced functions**	**High performance universal converter, 85-265 V**	**DC Current/Voltage to DC Current/ Voltage isolator/converter**
GENERAL DATA				
Power Supply	10..40 Vdc; 19..28 Vac; (50..60 Hz)	9..40 Vdc; 19..28 Vac; (50..60 Hz)	85..265 Vac/dc	10..40 Vdc 19..28 Vac (50..60 Hz)
Power transducers	Active input 2 wire (min 18 Vdc)	Active input 2 wire (min 20 Vdc)	Active input 2 wire (min 20 Vdc)	Active input 2 wire (min 20 Vdc)
Power Consumption	2.5 W	2,5 W (max) 1,6 W (24 Vdc, 20 mA)	2,5 W (max) 1,6 W (24 Vdc, 20 mA)	2.5 W
Isolation	1.500 Vac, 3 way Against surge pulses 400W/ms	1.500 Vac, 3 way 3.750 Vac (power supply / input -output) Against surge pulses 400W/ms	1.500 Vac, 3 way 3.750 Vac (power supply / input -output) Against surge pulses 400W/ms	1.500 Vac, 3 way Against surge pulses 400W/ms
Status indicators	Power supply Error	Power supply Error Alarm	Power supply Error Alarm	Power supply
Response time	35 ms	35 ms (11 bit)..140 ms (16 bit)	35 ms (11 bit)..140 ms (16 bit)	35 ms (11 bit)..140 ms (16 bit)
Interface	3,5mm front jack RS232 (COM)	Micro USB	3,5 mm front jack RS232 – COM	3,5mm front jack RS232 (COM) Micro USB
Accuracy	0,1%	0,1%	0,1%	0,1%
Thermal drift	0.01%/°K	0.01%/°K	0.01%/°K	0.01%/°K
Linearity	0,05% (V,I), 0,2% (RTD),1°C (TC)	0,05% / 0.4%	0,05% / 0.4%	0,05 % (V,I), 0,01% (Vout)
Settings	Dip-switches Software (EASY SETUP)	Dip-switches Software / App (EASY SETUP)	DIP-switches Software (EASY SETUP)	Dip-switches Jumper Software / App (EASY SETUP)
Operating Temperature	-20..+60°C	-20..+60 °C	-20..+60 °C	-10..+60 °C
Dimensions (w x h x d)	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm
Connections	Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm²	Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm²	Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm²	Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm²
Weight	200 g	200 g	200 g	200 g
Approvals	CE	CE- UL-UR CSA	CE- UL-UR CSA	CE- UL-UR CSA
Norms	EN 50081-1, EN 50082-2, EN 61010-1	EN 61000-6-4 / 2002, EN 61000-2-2/2005 / EN 61010-1, EN 60742	EN 61000-6-4 / 2002, EN 61000-2-2/2005 / EN 61010-1, EN 60742	EN 55011, EN 61000-4-2, EN 61000-4-4, EN 50140 / 141
INPUT DATA				
Channels	1	1 analog 1 strobe	1 analog 1 strobe	1
Type	VOLTAGE Bipolar 0..2, 0..5, 0..10 V CURRENT Bipolar 0..20 mA RTD Pt100 (-200..+600°C) THERMOCOUPLE Tipo J, K, R, S, T, E, B, N POTENTIOMETER 0,5..15 kΩ	VOLTAGE Bipolar from 75 mV to 20 V Resolution 15 bit + sign CURRENT Bipolar up to 20 mA Resolution 1 µA RTD Pt100, Pt500, Pt1000, Ni100, KTY81,KTY84, NTC Measure 2, 3, 4 wires Range: -200..600 °C Resolution 0,1°C THERMOCOUPLE Type J, K, R, S, T, E, B, N Resolution 2,5 µV POTENTIOMETER: 500 Ω ..100 kΩ RHEOSTAT: 500 Ω..25 kΩ STROBE: alternative to the relay output	VOLTAGE Bipolar from 75 mV to 20 V Resolution 15 bit + sign CURRENT Bipolar up to 20 mA Resolution 1 µA RTD Pt100, Pt500, Pt1000, Ni100, KTY81,KTY84, NTC Measure 2, 3, 4 wires Range: -200..600 °C Resolution 0,1°C THERMOCOUPLE Type J, K, R, S, T, E, B, N Resolution 2,5 µV POTENTIOMETER: 500 Ω ..100 kΩ RHEOSTAT: 500 Ω..25 kΩ STROBE: alternative to the relay output	VOLTAGE Bipolar da 75 mV a 20 V Resolution 15 bit + sign CURRENT Bipolar up to 20 mA Resolution 1 µA
OUTPUT DATA				
Channels	1	1 analog, 1 relay	1 analog, 1 relay	1
Type	VOLTAGE 4 scales: 0..1, 0..5, 0..10, 2..10 V CURRENT 2 scales: 0/4..20 mA	VOLTAGE 4 scales: 0..1, 0..5, 0..10, 2..10 V Min load resistance: 2.000 Ω CURRENT 2 scales: 0/4..20 mA (active/passive) Max load resistance: 600 Ω RELAY Alternative to the strobe NC / NA in case of alarm	VOLTAGE 4 scales: 0..1, 0..5, 0..10, 2..10 V Min load resistance: 2.000 Ω CURRENT 2 scales: 0/4..20 mA (active/passive) Max load resistance: 600 Ω RELAY Alternative to the strobe NC / NA in case of alarm	VOLTAGE 4 scales: 0..1, 0..5, 0..10, 2..10 V Min load resistance: 2.000 Ω CURRENT 2 scales: 0/4..20 mA (active/passive) Max load resistance: 600 Ω
ORDER CODES				
Code	Z109REG -ER (square root extraction)	Z109REG2-1 (9..40 Vdc/19..28 Vac) -ER (square root extraction)	Z109REG2-H Z109REG2-H-ER (with square root extraction)	Z109UI2-1
Programming & Accessories	Page 130	Page 130	Page 130	Page 130

ANALOG CONVERTERS

	Z109REG-BP	Z109S-DI	Z109S	Z102
	NEW FEATURES 			
	Universal converter with isolated bipolar output	**Wide range Current Loop Isolator**	**DC Current isolator**	**Potentiometer to DC Current/Voltage isolator/ converter**
GENERAL DATA				
Power Supply	10..40 Vdc 19..28 Vac (50..60 Hz)	10..40 Vdc 19..28 Vac (50..60 Hz)	9..40 Vdc 19..28 Vac; (50..60 Hz)	9..30 (opt.) - 19..40 Vdc 19..28 Vac (50..60 Hz)
Power transducers	Active input 2 wire (17 Vdc)	Active input 2 wire (17 Vdc)	Active input 2 wire (min 20 Vdc)	
Power Consumption	2.5 W	2.5 W	2,5W	2,5 W
Isolation	1.500 Vac, 3 way	3.500 Vac, 3 way	1.500 Vac, 3 way	1.500 Vac, 3 way
Status indicators	Power supply Error Alarm	Power supply	Power supply	Power supply
Response time	35 ms (11 bit)..140 ms (16 bit)	< 200 us	< 60 ms	40ms
Interface	Micro USB	-		
Accuracy	0,1%	0,2% or 10 uA	0,20%	0,20%
Thermal drift	0.01%/°K	0.02%/°K	0,02 % f.s. / °C	0,02 % f.s. / °C
Linearity			0,05%	0,05%
Settings	Dip-switches Software / App (EASY SETUP) Jumper			Dip switch (0, span)
Operating Temperature	-20..+65°C	-20..+60°C	-20..+60°C	0..+50 °C
Dimensions (w x h x d)	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm
Connections	Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm²	Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm²	Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm²	Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm²
Weight	200 g	200 g	200 g	200 g
Approvals	CE	CE	CE - UL	CE
Norms	EN 61000-6-2; EN 61000-6-4; EN 61010-1	EN 61000-6-2; EN 61000-6-4; EN 61010-1	EN 55011, EN 61000-4-2, EN 61000-4-4, EN 50140 / 141	EN 55011, EN 61000-4-2, EN61000-4-4, EN 50140 / 141
INPUT DATA				
Channels	1	1	1	1
Type	VOLTAGE Bipolar from 75 mV to 20 V CURRENT Bipolar up to 20 mA RTD Pt100, Pt500, Pt1000, Ni100, KTY81,KTY84, NTC Measure 2,3, 4 wires THERMOCOUPLE Type J, K, R, S, T, E, B, N POTENTIOMETER: 500 Ω ..100 kΩ RHEOSTAT: 500 Ω..25 kΩ	CURRENT 0 - 20 mA or 4 - 20 mA	CURRENT 2 scales: 0/4..20 mA	RHEOSTAT 2 wires: 0..300 Ω (I=6mA); 0..500 Ω (I=3,6 mA); 0..1 K Ω (I=1,8 mA) POTENTIOMETER 3 wires: Vref=1,8 Vcc, from 200 Ω to 1M Ω
OUTPUT DATA				
Channels	1	1	1	1
Type	CURRENT -20 – +20 mA Maxium load resistance 500W VOLTAGE -10 – +10 V Minimum load resistance 1 kW	CURRENT 0 - 20 mA or 4 - 20 mA Max load 600 Ω	2 scales: 0/4..20 mA Max resistance load: 600 Ω	4 scales: 0..1, 0..5, 0..10, 2..10 V load impedence > 2.500 Ω CURRENT 2 scales: 0/4..20 mA (active/passive) loop impedance <600ohm
ORDER CODES				
Code	Z109REG-BP	Z109S-DI	Z109S	Z102
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Technical data, diagrams and drawings in this catalog are indicative only and not binding

ANALOG CONVERTERS

	Z110S	Z110D	Z170REG-1	Z190	Z-SG
			NEW 		
	DC current isolator (selfpowered) single channel	**DC current isolator (selfpowered) double channel**	**DC duplicator / isolator with universal input and 2 output**	**DC Current/Voltage adder/ subtracter**	**Strain gauge to DC Current/Voltage isolator/converter**
GENERAL DATA					
Power Supply	Self Powered from the input (primary) loop.	Self Powered from the input (primary) loop.	10..40 Vdc 19..28 Vac; (50..60 Hz)	19..40 (9..30 opt.) Vdc 19..28 Vac; (50..60 Hz)	10..40 Vdc 19..28 Vac
Power transducers			Yes max 25 mA to max 17 V, short-circuit protected	Active input 2 wire (min 20 Vdc)	
Power Consumption			0.5..2 W	2,5 W	2,0 W
Isolation	1.500 Vac, 2 way	1.500 Vac, 2 way	1.500 Vac, 4 way	1.500 Vac, 3 way	1.500 Vac, 3 way
Status indicators			Power Supply, Alarm	Power Supply	Power supply Error Data Transmission Data reception
Interface			Micro USB		RS485 ModBUS RTU 2 wires, speed 1200..115.200 k bps RS232, front jack, speed 2400 Baud, data bits 8, Parity: NO, Stop bits:1
Response time	100 ms	100 ms	Max 25 ms		< 10 ms
Accuracy	0,10%	0,10%	0,10%	0,20%	0,01%
Thermal drift	0,02 % f.s. / °C	0,02 % f.s. / °C	0,01% /K	0,02% f.s./°C	0,0025 % f.s. / °C
Linearity	0,1 % f.s.	0,1 % f.s.	<1% (input), 0.01% (output)	0,05%	0,01%
Configuration			DIP-switches Software / App (EASY SETUP)	Dip switch: I/O type and electrical connections	DIP-switches Software (EASY SETUP)
Operating Temperature	0..+50 °C	0..+50 °C	-10..+60°C	0..50°C	-10..+65 °C
Dimensions (w x h x d)	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm
Connections	Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm²	Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm²	Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm²	Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm²	Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm²
Weight	200 g	200 g	200 g	200 g	200 g
Approvals	CE	CE	CE- UL-UR CSA	CE	CE
Norms	EN 55011, EN 61000-4-2, EN61000-4-4, EN 50140 / 141	EN 55011, EN 61000-4-2, EN61000-4-4, EN 50140 / 141	EN 61000-6-4, EN 61000-6-2, EN 61010-1	EN 50081-1, EN 50081-2, EN 61010-1	EN 61000-6-4, EN 61000-6-2, EN 61010-1, EN 60742, IEC 61131
INPUT DATA					
Channels	1	2	1	2	1 analog, 1 digital
Type	CURRENT 4..20 mA	CURRENT 4..20 mA	VOLTAGE Scale span configurable: from 0 to 10V. Input impedance:120 kΩ CURRENT Scale span configurable: from 0 mA to 20 mA (active/passive) Internal shunt: 50 Ω POTENTIOMETER Input value from 1 kΩ to 100 kΩ THERMOCOUPLE Type J, K, R, S, T, E; B, N THERMORESISTENCE RTD type: PT100, PT500, PT1000, NI100 (2,3,4 wires connection) Resolution 14 bit	VOLTAGE 4 scales: 0..1, 0..5, 0..10, 2..10 V Input impedance 500 KΩ CURRENT 2 scales: 0/4..20 mA Active Input: 20 Vdc (not stabilized) Passive Input: impedance 100 Ω	ANALOG Load Cell (Strain Gauge), 4 or 6 wires connections, min 87 Ω for 1..4 load cells(350 Ω) or 1..8 Load cells (1.000 Ω); Sensibility: 1..64 mV/V DIGITAL Tare calibration
OUTPUT DATA					
Channels	1	2	2	1	1 analog, 1 digital
Type	4..20 mA	4..20 mA	Configurable between: 0 - 10 V (minimum resistence that can be connected: 20 kΩ) CURRENT Configurable between: 0 – 20 mA active/passive (maximum resistence that can be connected: 600 Ω, max13 V) Resolution 14 bit	4 scales: 0..1, 0..5, 0..10, 2..10 V Input impedance 2.000 Ω CURRENT 2 scales: 0/4..20 mA (active/ passive) Max loop impedence: 600 Ω	0..20, 4..20 mA VOLTAGE (V) 0..10, 0..5 Vdc DIGITAL Weight limit threshold
ORDER CODES					
Code	Z110S	Z110D	Z170REG-1	Z190	Z-SG
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Technical data, diagrams and drawings in this catalog are indicative only and not binding

ELECTRIC METER CONVERTERS

	Z201	Z201-H	Z202	Z202-H	Z202-LP
					
	AC Current isolator converter, 10..40 Vdc;19..28Vac	**AC Current isolator converter, 85..265 V**	**AC Voltage isolator converter, 10..40 Vdc;19..28Vac**	**AC Voltage isolator converter, 85..265 V**	**AC/DC Voltage isolator converter, loop powered**
GENERAL DATA					
Power Supply	10..20 Vdc; 19..28 Vac	85..265 Vac/dc	10..20 Vdc; 19..28 Vac	85..265 Vac/dc	Self-powered from the input loop
Power Consumption	< 2,5 W	< 2,5 W	< 1,5 W	< 1,5 W	< 1mA
Isolation	3750 Vac input/output and input/power supply; 1500 Vac output/power supply.	4000 Vac input/power supply; 4000 Vac output/power supply.	3750 Vac input/output and input/power supply; 1500 Vac output/power supply.	4.000 Vac input/power supply 4.000 Vac output/power supply	4000 Vac input/output
Status indicators	Power supply	Power supply	Power supply	Power supply	Power supply
Interface					
Response time	<200ms	<100ms.	30ms.	<100ms.	< 100 ms
Accuracy	0,3%	0,3%	0,25%	0,3%	0,3%
Thermal drift	+200 ppm/K	+200 ppm/K	+150 ppm/K	+150 ppm/K	+150 ppm/K
Operating Temperature	0..+55°C	-10..+65°C	0..+60°C	-10..+65°C	-20..+65°C
Dimensions (w x h x d)	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm
Connections	Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm²	Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm²	Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm²	Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm²	Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm²
Weight	200 g	200 g	200 g	200 g	140 g
Settings	Dip-switch Jumper (Output range)	Dip-switch Jumper (Output range)	Dip-switch Jumper (Output range)	Dip-switch Jumper (Output range)	Dip-switch (Input range)
Approvals	CE	CE	CE	CE	CE
Norms	EN 61000-6-4, EN 61000-6-2, EN 61010-1, EN 60742, IEC 61131	EN 61000-6-4, EN 61000-6-2, EN 61010-1, EN 60742, IEC 61131	EN 60688+A1+A2, EN 61000-6-4, EN 61000-6-2, EN 61010-1, EN 60742, IEC 61131	EN 60688+A1+A2, EN 61000-6-4, EN 61000-6-2, EN 61010-1, EN 60742, IEC 61131	EN 61000-6-4, EN 61000-6-2, EN 61010-1, EN 60742, IEC 61131
INPUT DATA					
Nr	1	1	1	1	1
Type	AC CURRENT 0..5 / 0..10 A ac	AC CURRENT 0..5 / 0..10 A ac	AC VOLTAGE 0..500 Vac Input impedance: 2000 Ω /V Frequency: 10 Hz..1 kHz	AC VOLTAGE 0..500 Vac Input impedance: 2000 Ω /V Frequency: 10 Hz..1 kHz	AC VOLTAGE 0..500 Vac DC VOLTAGE 0..540 Vdc Maximum Voltage 710 Vpk Frequency DC / 20 Hz..400 Hz
OUTPUT DATA					
Channels	1	1	1	1	1
Type	CURRENT Active or passive: 0..20 mA or 4..20 mA * Maximum load resistance 600 Ohm VOLTAGE 0..5 V, 1..5 V, 0..10 V, 2..10 V Minimum load resistance: 2500 Ohm	CURRENT Active or passive: 0..20 mA or 4..20 mA * Maximum load resistance 600 Ohm VOLTAGE 0..5 V, 1..5 V, 0..10 V, 2..10 V Minimum load resistance: 2500 Ohm	CURRENT Active or passive: 0..20 mA or 4..20 mA Maximum load resistance 600 Ohm VOLTAGE 0..5 V, 1..5 V, 0..10 V, 2..10 V Minimum load resistance: 2500 Ohm	CURRENT Active or passive: 0..20 mA or 4..20 mA Maximum load resistance 600 Ohm VOLTAGE 0..5 V, 1..5 V, 0..10 V, 2..10 V Minimum load resistance: 2500 Ohm	CURRENT Passive, 4..20 mA
ORDER CODES					
Code	Z201	Z201-H	Z202	Z202-H	Z202-LP
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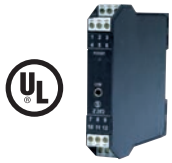
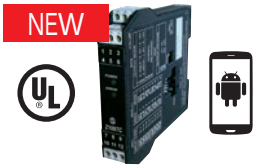
ELECTRIC METER AND TEMPERATURE CONVERTERS

	Z203-1	Z204-1	Z109PT2-1	Z109TC2-1
			NEW 	NEW 
	One phase power meter	**AC/DC Voltage isolator converter TMRS**	**RTD to DC Current/Voltage isolator/converter**	**TC to DC Current/Voltage isolator/converter**
GENERAL DATA				
Power Supply	10..40 Vdc 19..28 Vac (50..60 Hz)	10..40 Vdc 19..28 Vac (50..60 Hz)	9..40 Vdc 19..28 Vac; (50..60 Hz)	9..40 Vdc 19..28 Vac; (50..60 Hz)
Power Consumption	< 2,5 W	1 W	2.5 W	2 W
Isolation	3750 Vac input/output/power supply	4000 Vac input/power supply and input/output 1500 Vac output/power supply	1.500 Vac, 3 way	1.500 Vac, 3 way
Status indicators	Power Supply, Error, RS485 communication	Power Supply, Error, RS485 communication	Power supply, Out of range, Setting error	Power supply, Out of range, Setting error
Interface	RS485 (backplane), 1200..115200 Baud bps, ModBUS RTU protocol RS232 (jack stereo 3.5 mm front connector for configuration): baud rate, address, parity, data/stop bit	RS485 (backplane), 1200..115200 Baud bps, ModBUS RTU protocol RS232 (jack stereo 3.5 mm front connector for configuration): baud rate, address, parity, data/stop bit	Micro USB	Micro USB
Response time	< 10 ms	For a step variation: 1s from 10 to 90 %.	140 ms Sampling frequency: 15 bits + sign resolution.	35 ms with 11 bit resolution, 140 ms with 16 bit resolution.
Accuracy	0,5%	0,5% input; 0,1% outputs.	0,1% (RTD) – 0.3% (voltage output)	0,1% (TC) – 0.3% (voltage output)
Thermal drift	+150 ppm/K	+100 ppm/K	0.01%/°K	0.01%/°K
Operating Temperature	-10..+65°C	-20..+65°C	-10..+60°C	-10..+60°C
Dimensions (w x h x d)	17,5 x 100 x 112 mm	35 x 100 x 112 mm	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm
Connections	Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm² RS485 bus connection	Removable 3-way screw terminals, 5 mm pitch. Standard 4 mm banana sockets RS485 bus connection Frontal jack 3.5 mm for module configuration	Removable 3-way screw terminals, 5 mm pitch, cable section's 0.25-2.5 mm²	Removable 3-way screw terminals, 5 mm pitch, cable section's 0.25-2.5 mm²
Weight	140 g	140 g	200 g	200 g
Settings	Dip-switch (address, baud rate, line terminator, input range) EASY-SETUP (Plug&Play software)	Dip-switch (address, baud rate, line terminator, input range) EASY-SETUP (Plug&Play software)	Dip-switches: range and input type; output selecting Software / App (EASY SETUP)	Dip-switches: range and input type; output selecting Software / App (EASY SETUP)
Approvals	CE - UL	CE	CE- UL-UR CSA	CE- UL-UR CSA
Norms	EN 61000-6-4, EN 61000-6-2, EN 61010-1, EN 60742, IEC 61131	EN 61000-6-4, EN61000-6-2, EN61010-1	EN 55011, EN 61000-4-2, EN 61000-4-4, EN 50140 / 141	EN61000-6-4, EN61000-6-2, EN61010-1
Linearity			0,10%	TC J,K,E,T,N input: 0.2 °C TC R,S input: 0.5 °C TC B input: 1.5 °C Voltage output: 0.01%
INPUT DATA				
Nr	1 (single phase load)	1	1	1
Type	AC VOLTAGE Up to 500 Vac, frequency 35 to 75 Hz. AC CURRENT Input range: 5 Arms, Max peak factor 3, Max Current 15 A, Frequency 35 to 75 Hz.	DC VOLTAGE 0..1200 Vdc Input impedance 4 MΩ AC VOLTAGE 0..850 Vac nput impedance 4 MΩ Frequency 30Hz – 60Hz	RTD PT100, PT500,PT1000, NI100 2, 3 or 4 wires measurement, energising current 1 mA,resolution 0.1 °C	TC Type J, K, R, S, T, B, E, N; resolution 2.5 µV, automatic TC burn out detection, input impedance > 5MΩ
OUTPUT DATA				
Channels	1 analog, 1 digital	1	1	1
Type	CURRENT 0..20 mA, 4..20 mA, maximum load resistance 500 Ohm VOLTAGE 0..10 Vdc, 0..5 Vdc, minimum load resistance 2000 Ohm DIGITAL Passive digital Output for pulses (energy counter)	CURRENT 0..20 mA, 4..20 mA, maximum load resistance 500 Ohm VOLTAGE 0..10 Vdc, 0..5 Vdc, minimum load resistance 2000 Ohm DIGITAL Passive digital Output for pulses (energy counter)	VOLTAGE: 0..5 V / 0..10 V / 1..5 V / 2..10 V, min load resistance 2 kΩ Resolution: 2.5 µA/ 1.25mV. CURRENT: 0..20 / 4..20 mA, max load resistance 600 Ω Resolution: 2.5 µA/ 1.25mV.	VOLTAGE: 0..5 V / 0..10 V / 1..5 V / 2..10 V, min load resistance 2 kΩ Resolution: 2.5 µA/ 1.25mV. CURRENT :0..20 / 4..20 mA, max load resistance 600 Ω
ORDER CODES				
Code	Z203-1	Z204-1	Z109PT2-1	Z109TC2-1
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TEMPERATURE AND PULSE CONVERTERS

	Z104	Z111	Z112A	Z112D
				
	DC Current/Voltage to frequency isolator/converter	**Frequency to DC Current/Voltage isolator/converter**	**On/Off sensors digital amplifier, single channel**	**On/Off sensors digital amplifier, double channel**
GENERAL DATA				
Power Supply	19 - 40 Vdc, 19 - 28 Vac (50 - 60 Hz)	19 - 40 Vdc, 19 - 28 Vac (50 - 60 Hz)	19..40 (9..30 opt.) Vdc; 19..28 Vac; (50..60 Hz)	19..40 (9..30 opt.) Vdc; 19..28 Vac; (50..60 Hz)
Power transducers	supply of the sensor with 2-wire method: 20VDC stabilized		Yes, active input 2 wire (min 20 Vdc)	Yes, active input 2 wire (min 20 Vdc)
Power Consumption	2.5 W	2.5 W	2.5 W	2.5 W
Isolation	1.500 Vac, 3 way	1.500 Vac, 3 way	1.500 Vac (power supply/input) 4.000 Vac (input/power supply/ output)	1.500 Vac
Status indicators	Power supply Output (relay)	Power Supply Error	Power Supply Relay	Power Supply Relay
Inteface	-	-		
Response time	350 ms	250 ms		
Accuracy	0,20%	0,30%	±0,01% /°C	±0,01% /°C
Thermal drift	0,02 % f.s. / °C	0,01 % f.s. / °C		
Linearity	0,05%			
Settings	Dip-switches: input type, output, end scale Trimmer: end scale settings, integration constant	Dip-switches: input type, filter, pulses average, output Trimmer: end scale settings (1 Hz..10KHz)	Dip-switches: input type, output retransmission, divider circuit settable from 1 to 256 Trimmer: pulse duration (100..500ms)	Dip-switches: input type, output retransmission, divider circuit settable from 1 to 256 Trimmer: pulse duration (100..500ms)
Operating Temperature	0..+50 °C	0..+50 °C	0..+50 °C	0..+50 °C
Dimensions (w x h x d)	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm
Connections	Removable 3-way screw terminals, 5 mm pitch, cable section's 0.25-2.5 mm²	Removable 3-way screw terminals, 5 mm pitch, cable section's 0.25-2.5 mm²	Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm²	Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm²
Weight	200 g	200 g	200 g	200 g
Approvals	CE	CE- UL-UR CSA	CE	CE
Norms	EN50081-2, EN50082-2, EN61010-1	EN50081-2, EN50082-2 EN61010-1	EN 50081-1, EN 50082-2, EN 61010-1	EN 50081-1, EN 50082-2, EN 61010-1
INPUT DATA				
Channels	1	1	1	1
Type	VOLTAGE: 0 - 5 Vdc, 1 - 5 Vdc, 0 - 10 Vdc and 2 - 10 Vdc Input impedance 1 MΩ CURRENT:0 - 20 mA or 4 - 20 mA, both active and passive connection. Active connection : loop supply voltage approx. 15 Vdc Passive connection : input impedance 100 Ω	PULSES Mechanical contact, reed, npn with 2 and 3 wires , pnp with 3 wires and 24V DC power supply, Namur, photoelectric, "HALL" sensor, and variable reluctance.Maximum frequency 10 KHz	PULSES Contact optoisolated Reed npn 2/3 wires- 12..24 Vdc, pnp 3 wires, power supply 24 Vdc NAMUR Pulses 24 Vdc Photoelectric sensor Hall effect sensor Max frequency 400 Hz	PULSES Contact optoisolated Reed npn 2/3 wires- 12..24 Vdc, pnp 3 wires, power supply 24 Vdc NAMUR Pulses 24 Vdc Photoelectric sensor Hall effect sensor Max frequency 400 Hz
OUTPUT DATA				
Channels	1	1	1	2
Type	PULSE Npn open-collector transistor 30 Vdc 300 mA Max frequency: 10 kHz Reed-relay 30 Vdc-ac 100 mA. Frequency below 40 Hz	Voltage: 0..5 V / 0..10 V / 1..5 V / 2..10 V , Min. load resistance: 25 kΩ CURRENT: 0/4..20 mA (active/ passive) Max load resistance: 600 Ω	RELAY SPDT 1A – 30Vdc; 5A – 250Vac (resistive load)	RELAY SPST max load 0,5A – 100Vac/dc (10VA resistive load)
ORDER CODES				
Code	Z104	Z111	Z112A	Z112A
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RELAY CONDITIONERS

	Z113S	Z113D	Z113T	Z113-1
				
	DC Current / Voltage alarm trip module, 1 relay output	**DC Current / Voltage alarm trip module, 2 relay output**	**DC Current / Voltage alarm trip module, 3 relay output**	**Double threshold with universal analog input**
GENERAL DATA				
Power Supply	19..40 (9..30 opt.) Vdc 19..28 Vac; (50..60 Hz)	19..40 (9..30 opt.) Vdc 19..28 Vac; (50..60 Hz)	19..40 (9..30 opt.) Vdc 19..28 Vac; (50..60 Hz)	10 - 40 Vdc, 19 - 28 Vac (50 - 60 Hz)
Power transducers	Yes, active input 2 wire (min 20 Vdc)	Yes, active input 2 wire (min 20 Vdc)	Yes, active input 2 wire (min 20 Vdc)	Yes, active input 2 wire
Power Consumption	2.5 W	2.5 W	2.5 W	2.5 W
Isolation	1.500 Vac (power supply/input) 4.000 Vac (input/power supply/output)	1.500 Vac	1.500 Vac	1.500 Vac, 3 way
Status indicators	Power Supply Overtaking limit	Power Supply Overtaking limit	Power Supply Overtaking limit	Power supply Alarm
Interface				Micro USB frontal plug
Response time				
Thermal drift	±0,01% /°C	±0,01% /°C	±0,01% /°C	0.01%/°K
Accuracy				
Linearity	0,05%	0,05%	0,05%	
Settings	DIP switches: input type, functions (relays activation, min/max value alarm) Trimmer: Setpoint alarms (1..100% signal control) Delay (0,3..30 s) Hysteresis (2..15% of full-scale)	DIP switches: input type, functions (relays activation, min/max value alarm) Trimmer: Setpoint alarms (1..100% signal control) Delay (0,3..30 s) Hysteresis (2..15% of full-scale)	DIP switches: input type, functions (relays activation, min/max value alarm) Trimmer: Setpoint alarms (1..100% signal control) Delay (0,3..30 s) Hysteresis (2..15% of full-scale)	Dip-switches: input type, output, start scale, end scale. By EASY SETUP software (all the parameter)
Operating Temperature	0..+50 °C	0..+50 °C	0..+50 °C	-10...+65°C
Dimensions (w x h x d)	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm
Connections	Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm²	Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm²	Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm²	Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm²
Weight	200 g	200 g	200 g	200 g
Approvals	CE	CE	CE	CE
Norms	EN 50081-1, EN 50082-2, EN 61010-1	EN 50081-1, EN 50082-2, EN 61010-1	EN 50081-1, EN 50082-2, EN 61010-1	EN61000-6-4; EN61000-6-2, EN 61010-1
INPUT DATA				
Channels	1	1	1	1
Type	CURRENT: 0..20, 4..20 mA active/passive Input impedance 100 Ω VOLTAGE: 0..5, 1..5, 0..10, 2..10 Vdc Input impedance : 500 KΩ	CURRENT: 0..20, 4..20 mA active/passive Input impedance 100 Ω VOLTAGE: 0..5, 1..5, 0..10, 2..10 Vdc Input impedance : 500 KΩ	CURRENT: 0..20, 4..20 mA active/passive Input impedance 100 Ω VOLTAGE: 0..5, 1..5, 0..10, 2..10 Vdc Input impedance : 500 KΩ	TC type: J, K, R, S, T, B, E, N. input impedance: > 5 MΩ Automatic burn-out detection RTD type: PT100, PT500, PT1000,NI100. (2, 3 or 4 wires measurement). POTENTIOMETER input value from 1kΩ to 100kΩ. Energising current:1mA. Input impedance: >5MΩ. Automatic out of range detection. VOLTAGE input from 0V to 10V. Input impedance 120kΩ. Automatic out of range detection. CURRENT input mode(active / passive module) from 0mA to 20mA.
OUTPUT DATA				
Channels	1	2	3	2 digitali
Type	Relay SPDT, 1A - 30Vdc; 5A - 250Vac (resistive load)	Relay SPST, max load 0,1A - 30Vac/dc (10VA resistive load)	Relay SPST, max load 0,1A - 30Vac/dc (10VA resistive load)	RELAYS SPST N.O. position with common Max RELAY current 3 A@ 250V; 3 A@ 30V Max RELAY voltage 250 V CAT. II
ORDER CODES				
Code	Z113S	Z113D	Z113T	Z113-1
Programming & Accessories	Page 130	Page 130	Page 130	Page 130

Z SERIES • SOFTWARE & ACCESSORIES

EASY SETUP

Plug&Play Software for SENECA programmable Instruments

Minimum hardware requirements:
CPU Frequency 1 GHz, 256 Mbyte available in Hard Disk, Graphic board minimum resolution 1024x768 pixel

Mobile Phone with USB OTG support
Google play

- **Free download on www.seneca.it**

S117P1

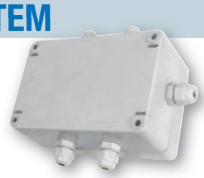
RS232/USB, TTL/USB and RS485/USB Asyncronous Serial Converter

- USB standard 1.0, 1.1 e 2.0 compatible.
- 12 Vdc @ 100 mA available from screw terminals to supply a Seneca module.
- Power supply through USB.
- Serial RS485 Communication, max 32 nodes.
- More S117P1 can be connected on the the same PC.
- Accessories: CD with drivers, USB cable, TTL cable + EASYLP (programming Software for loop powered device)

ORDER CODES

Code	Description
S117P1	RS232/USB, TTL/USB, RS485/USB asynchronous serial converter

LOAD CELL CONNECTION AND EQUALIZATION SYSTEM



- 4-wire / 6-wire load cells
- 4-wire load cells trimming
- In combination with Z-SG and ZC-SG modules

ORDER CODES

Code	Description
SG-EQ4	Equalization and connection circuit up to 4 load cell in parallel
SG-EQ4-BOXPG7	Equalization and connection circuit up to 4 load cell in parallel + IP66 box including mm diameter cable glands 7 and 2 hole covers
SG-EQ4-BOXPG7-05C	Equalization and connection circuit up to 4 load cell in parallel + IP66 box including mm diameter cable glands 7 and 2 hole covers + 5 meter shielded cable
SG-EQ4-BOXPG7-15C	Equalization and connection circuit up to 4 load cell in parallel + IP66 box including mm diameter cable glands 7 and 2 hole covers + 15 meter shielded cable

Z-POWER

DIN RAIL 19 VAC TRANSFORMERS

- **Primary voltage:** 230 (115) Vac ±10%
- **Secondary voltage:** 19 Vac
- **Case:** Self-extinguish (V0 class) thermo-plastic material
- **Electric protection:** By fuse
- **Dimensions:** 3 DIN modules (15VA), 5 moduli DIN (25VA)
- **Mounting:** 35 mm DIN guide
- **Protection degree:** IP40

ORDER CODES

Code	Description
Z-POWER 230-15VA	DIN rail 19 Vac transformers, 230-15 VA
Z-POWER 230-25VA	DIN rail 19 Vac transformers, 230-25 VA
Z-POWER 115-15VA	DIN rail 19 Vac transformers, 115-15 VA

Z-SUPPLY

Single-Phase Switching Power Supply 24V @ 1.5A

- **Input voltage range:** 110..230 Vac @ 47-63 Hz 0,7 A; 110..315 Vdc, 0,7 A
- **Output voltage:** 24 Vdc ± 2%
- **Redundancy:** Parallel connection of 2 Z-SUPPLY by IDC10 connector
- **Output current:** 1,5 A
- **Control output:** "Power Good" relay output
- **Internal fuse:** 1,25 A type T
- **Mounting:** On DIN 46277 rail
- **Isolation:** Up to 3 KV input

ORDER CODES

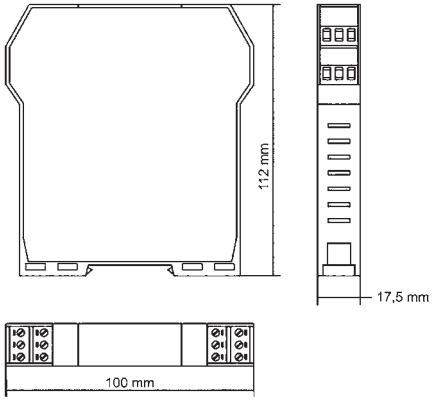
Code	Description
Z-SUPPLY	Single-phase switching power supply 24V @ 1.5A

CABLE

ORDER CODES

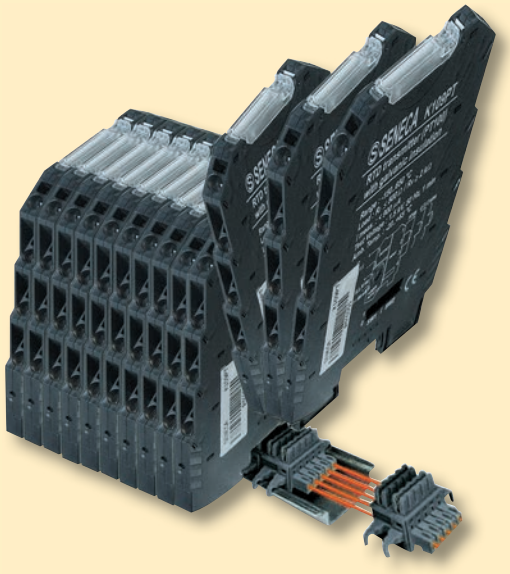
Code	Description
CS-JACK-DB9F	Programming serial cable (Z109REG, Z-4AI-D, Z-4TC-D,Z203-1, Z204-1, Z-D-IO, Z-4AI, Z-8AI, Z-3AO, Z-4TC, Z-8TC, Z-4RTD2, Z-SG, Z-DAQ-PID, ZC-24DI, ZC-24DO, ZC-16DI-8DO, ZC-8AI, ZC-3AO, ZC-4RTD, ZC-8TC, ZC-SG). Terminals: Jack / DB9F.
CS-DB9F-TIP-K	Serial cable RS232 (K107B) (Probes/DB9F)

Z-LINE MODULE DIMENSION



Technical data, diagrams and drawings in this catalog are indicative only and not binding

COMPACT SIGNAL CONVERTERS - K-LINE 4.2



4

K-LINE

COMPACT CONVERTERS AND ISOLATORS

The K-Line compact converters from Seneca have a 6,2 mm ultra slim case. These three point galvanic isolators convert temperature, analogue, digital and serial signals. The module's main features are its compact size, installation on 35 mm DIN rails, a bus-connector power supply option, top level accuracy class, quick connection possibility thanks to the usage of spring terminals and an easy configuration in the field by means of a DIP-switch.

DIMENSIONS
6,2 mm

ACCURACY
0,1 %

CONNECTIONS
Cage clamp - Expandable bus connector on 35 mm guide (EN 60175)

ISOLATION
power / OUT / IN

1,5 kv

OPERATING TEMPERATURE
-25..+65°C

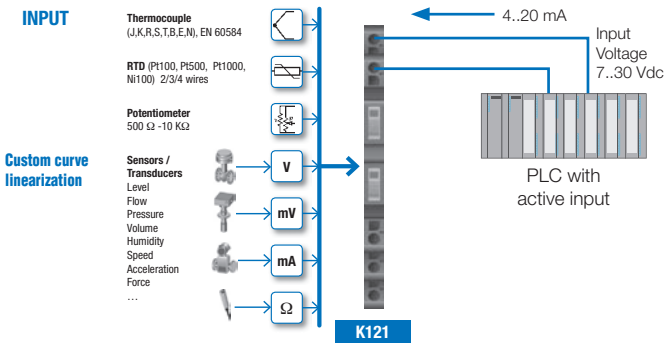
POWER CONSUMPTION
<25 mA

APPROVALS
CE, UL, CSA

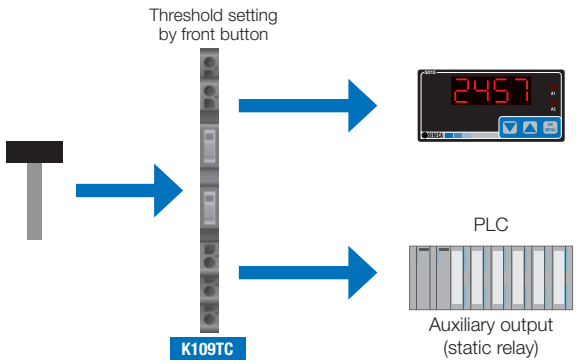
RELIABILITY
>500.000 h

APPLICATION EXAMPLES

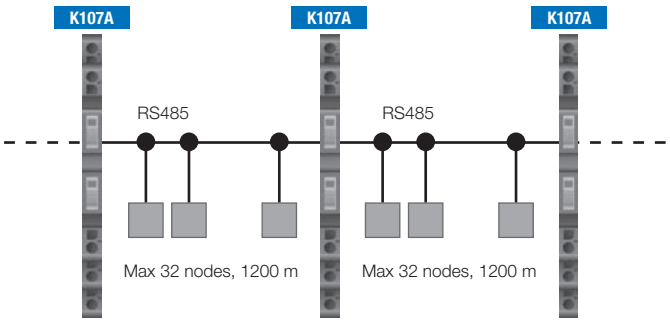
UNIVERSAL ANALOG SIGNAL CONVERTION



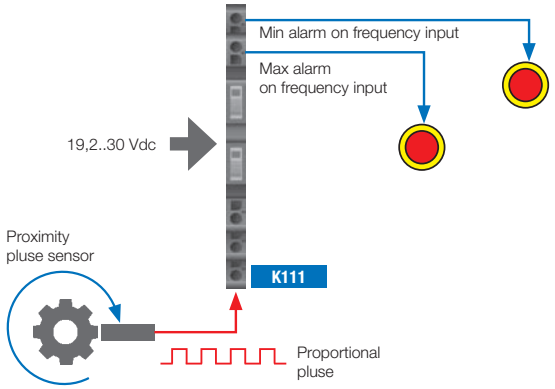
CONVERTION AND RETRANSMISSION OF A TEMPERATURE VALUE FROM THERMOCOUPLE



SERIAL RS485 REPETITION WITH GALVANIC ISOLATION



FREQUENCY CONVERSION WITH ALARM



ANALOG & DIGITAL CONVERTERS

	K121	K109UI	K109S	K109LV	K111	K112
						
	Universal converter (mA, V, Ohm, RTD, TC) isolated, loop powered	**DC current/voltage to current/voltage isolator converter**	**DC current/voltage to current/voltage isolator converter (2 wire power transducer)**	**DC low voltage to current/ voltage isolator converter**	**Frequency threshold with 2 outputs**	**Digital sensor amplifier with 2 outputs**
GENERAL DATA						
Power supply	7..30 Vdc (from loop 4..20mA)	19,2.. 30 Vdc	19,2.. 30 Vdc	19,2.. 30 Vdc	19,2.. 30 Vdc	19,2.. 30 Vdc
Side Power		Yes	Yes	Yes	Yes	Yes
Hot swapping	Yes	Yes	Yes	Yes	Yes	Yes
Current consumption	24 mA	22 mA (24 Vdc)	23 mA (24 Vdc); 45 mA (with aux power)	22 mA (24 Vdc)	< 25 mA	< 25 mA
Power consumption	<660 mW	500 mW	500 mW	500 mW	500 mW	500 mW
A/D Conversion	16 bit	14 bit	14 bit	14 bit	14 bit	14 bit
Rejection	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz
Settings	Software (EASY SETUP)	DIP Switches	DIP Switches	DIP Switches	DIP Switches, software	DIP Switches
Filter	Added for stable reading	Added for stable reading	Added for stable reading	Added for stable reading	Configurable	
Dimensions (w x h x d)	6,2 x 93,1 x 102,5 mm	6,2 x 93,1 x 102,5 mm	6,2 x 93,1 x 102,5 mm	6,2 x 93,1 x 102,5 mm	6,2 x 93,1 x 102,5 mm	6,2 x 93,1 x 102,5 mm
Isolation	1,5 KVac (3-way)	1,5 KVac (3-way)	1,5 KVac (3-way)	1,5 KVac (3-way)	-	1,5 KVac (3-way)
Isolation technique	Digital (optocoupler)	Digital (optocoupler)	Digital (optocoupler)	Digital (optocoupler)	-	Digital (optocoupler)
Data processing	32 bit floating point	32 bit floating point	32 bit floating point	32 bit floating point	32 bit floating point	32 bit floating point
Colour	Black	Black	Black	Black	Black	Black
Enclosure	PBT	PBT	PBT	PBT	PBT	PBT
Weght	45 g	45 g	45 g	45 g	45 g	45 g
Operating temperature	-20..+65 °C	-20..+65 °C	-20..+65 °C	-20..+65 °C	-20..+65 °C	-20..+65 °C
Connections	8 Clamp terminals	Clamp terminals / bus	Clamp terminals / bus	Clamp terminals / bus	Clamp terminals / bus	Clamp terminals / bus
Protection degree	IP 20	IP 20	IP 20	IP 20	IP 20	IP 20
Precision class	0,1%	0,1%	0,1%	0,1%		
Thermal drift	< 120 ppm/K	< 120 ppm/K	< 120 ppm/K	< 120 ppm/K		
Status indicators	Fault, alarm	Fault, alarm	Fault, alarm	Fault, alarm	Power, threshold, error	Power, output state
Special functions	Cold junction compensation Filter Reversed output	Root extraction Signal inversion Scale settable Linearization	Root extraction Signal inversion Scale settable Linearization	Fault configuration Filter	Frequency divider Medium value of N pulses (N <= 256)	
Approvals	CE	CE, UL-UR CSA	CE, UL-UR CSA	CE	CE	CE
Norms	EN 61000-6-4, EN 61010-6-2, EN 61010-1	EN 61000-6-4, EN 61010-6-2, EN 61010-1	EN 61000-6-4, EN 61010-6-2, EN 61010-1	EN 61000-6-4, EN 61010-6-2, EN 61010-1	EN 61000-6-4, EN 61010-6-2, EN 61010-1	EN 61000-6-4, EN 61010-6-2, EN 61010-1
INPUT DATA						
Channels	1	1	1	1	1	1
Type	THERMOCOUPLE J, K, R, S, T, E, B, N (EN 60584) RTD (PT100, PT500, PT1000, NI100) connection 2,3,4 wires Voltage (V) ± 30V, impedance 200 kΩ Voltage (mV) ±150 mV, impedance 10 MΩ Current: ±24 mA, impedance 40 Ω Potentiometer: 500 Ω..10 KΩ Resistance: up to 1760 Ω	VOLTAGE Range: 0..10 / 10..0 / 0..5 / 1..5/ 0..15 / 0..30 V (inversion as well) Impedance: 110 kΩ - 325 kΩ CURRENT Range: 4..20 / 20..4 / 0..20 / 20..0 mA Impedance: 35 Ω	VOLTAGE Range: 0..10 / 10..0 / 0..5 / 1..5 V Impedance: 110 kΩ CURRENT Range: 4..20 / 20..4 / 0..20 / 20..0 mA Impedance: 35 Ω	SHUNT Range: ±25, 50, 60, 75, 80, 100, 120, 150, 200, 250, 300, 400, 500, 1000, 2000 mV (via Dip switches)	Contact IEC 1131.2 (type 1) Namur (DIN 19234, EN 60947-5-6) NPN / PNP (12 o 22 V) 2/3 wires Reed Photocell Max voltage: ±28 Vdc Frequency: Max 20 kHz, min 1 pulse every 116 minutes	Contact IEC 1131.2 (type1) Namur (DIN 19234, EN 60947-5-6) NPN / PNP (12 o 22 V) 2/3 wires Reed Photocell Max frequency: 400 Hz
Absolute value		± 32 V (400 mW limitation)	± 30 V (limitation 400 mW)	± 50 V		
OUTPUT DATA						
Channels	1	1	1	1	2	2
Type	CURRENT 4..20mA	VOLTAGE Range: 0..10 / 10..0 / 0..5 / 1..5 V Min load resistance: 2 kΩ CURRENT Range: 4..20 / 20..4 / 0..20 / 20..0 mA Max load resistance: 500 Ω Protection: 25 mA	VOLTAGE Range: 0..10 / 10..0 / 0..5 / 1..5 V Min load resistance: 2 kΩ CURRENT Range: 4..20 / 20..4 / 0..20 / 20..0 mA Max load resistance: 500 Ω Protection: 25 mA	VOLTAGE Range: 0..10 / 10..0 / 0..5 / 1..5 V Min load resistance: 2 kΩ CURRENT Range: 4..20 / 20..4 / 0..20 / 20..0 mA Max load resistance: 500 Ω Protection: 25 mA	N.2 threshold channels, PNP, BJT, Mosfet; Max load: 60 mA / 24 Vdc	PNP e NPN simultaneous channels Max current 200 mA Max voltage 30 V (continuous), 50V (pulse)
Response time (10-90%)	140..620ms	< 40 ms (without filter) < 88 ms (with filter)	< 40 ms (without filtro) < 88 ms (with filter)	< 25 ms (without filter) < 55 ms (with filter)		
ORDER CODES						
Code	K121	K109UI	K109S	K109LV	K111	K112
Accessories / Software	Page 136	Page 136	Page 136	Page 136	Page 136	Page 136

Technical data, diagrams and drawings in this catalog are indicative only and not binding

TEMPERATURE CONVERTERS

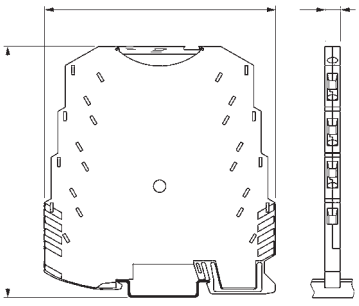
	K109PT	K109PT-HPC	K109PT1000	K120RTD	K109TC
	 Pt100 to DC current/voltage isolator converter	 Pt100 to DC current/voltage isolator converter (high precision)	 Pt1000 to DC current/voltage isolator converter	 Pt100, Ni100 to DC current converter -Loop powered (non isolated)	 TC to DC current/voltage isolator converter (with alarm)
GENERAL DATA					
Power supply	19,2..30 Vdc	19,2..30 Vdc	19,2..30 Vdc	Loop powered (5..30 Vdc)	19,2..30 Vdc
Side Power	Yes	Yes	Yes	-	Yes
Hot swapping	Yes	Yes	Yes	-	Yes
Max current consumption	21..25 mA (24 Vdc)	21..25 mA (24 Vdc)	21..25 mA (24 Vdc)	21..25 mA (24 Vdc)	21..25 mA (24 Vdc)
Max power consumption	500 mW	500 mW	500 mW	500 mW	500 mW
A/D conversion	14 bit	14 bit	14 bit	14 bit	14 bit
Transmission	Optical - digital	Optical - digital	Optical - digital	Optical - digital	Optical – digital
Rejection	50 – 60 Hz (configurable)	50 – 60 Hz (configurable)	50 – 60 Hz (configurable)	50 – 60 Hz (configurable)	50 – 60 Hz (configurable)
Settings	DIP switches	DIP switches	DIP switches	DIP switches	DIP switches
Filter	Added for stable reading	Added for stable reading	Added for stable reading	Added for stable reading	Added for stable reading
Dimensions (W x H x D)	6,2 x 93,1 x 102,5 mm	6,2 x 93,1 x 102,5 mm	6,2 x 93,1 x 102,5 mm	6,2 x 93,1 x 102,5 mm	6,2 x 93,1 x 102,5 mm
Isolation	1,5 KVac (3-way)	1,5 KVac (3-way)	1,5 KVac (3-way)	-	1,5 KVac (3-way)
Isolation technique	Digital (optocoupler)	Digital (optocoupler)	Digital (optocoupler)	-	Digital (optocoupler)
Data processing	32 bit floating point	32 bit floating point	32 bit floating point	32 bit floating point	32 bit floating point
Colour	Black	Black	Black	Black	Black
Enclosure	PBT	PBT	PBT	PBT	PBT
Weight	45 g	45 g	45 g	45 g	45 g
Operating temperature	-20..+65 °C	-20..+65 °C	-20..+65 °C	-20..+65 °C	-20..+65 °C
Connections	Clamp terminals / bus	Clamp terminals / bus	Clamp terminals / bus	Clamp terminals / bus	Clamp terminals / bus
Protection degree	IP20	IP20	IP20	IP20	IP20
Channels	1 input, 1 output	1 input, 1 output	1 input, 1 output	1 input, 1 output	1 input, 2 outputs
Accuracy	0,1% (max range)	0,1% (max range)	0,1%	0,1%	0,1%
Thermal drift	< 100 ppm/K	< 100 ppm/K	< 100 ppm/K	< 100 ppm/K	< 100 ppm/K
Status indicator	Fault Alarm	Fault Alarm	Fault Alarm	Fault Alarm	Fault Alarm
Embedded functions	fault and cut-off configuration, filter	fault and cut-off configuration, filter	fault and cut-off configuration, filter	RTD type / connection, filter, measure range, error, output inversion, over-range	fault and cut-off configuration, filter
Approvals	CE, UL-UR CSA	CE	CE	CE	CE, UL-UR CSA
Norms	EN 61000-6-4, EN 61000-6-2, EN 61010-1	EN 61000-6-4, EN 61000-6-2, EN 61010-1	EN 61000-6-4, EN 61000-6-2, EN 61010-1	EN 61000-6-4, EN 61000-6-2, EN 61010-1	EN 61000-6-4, EN 61000-6-2, EN 61010-1
INPUT DATA					
Type	Pt100 IEC 751 standard / EN 60751 – ITS90 Range: -150..+650 °C Min span: 50 °C Current on transmitter: 900 µA Connection: 2,3,4 wires Max cable resistance: 20 Ω	Pt100 IEC 751 standard / EN 60751 – ITS90 Range: -200..+160 °C Min span: 20 °C Current on transmitter: 900 µA Connection: 2,3,4 wires Max cable resistance: 20 Ω	Pt1000 EN 60751/A2 – ITS90 Range: -200..+210 °C Min span: 30 °C Current on transmitter: < 350 µA Connection: 2,3,4 wires Max cable resistance: 50 Ω	Pt100 EN 60751/A2 – ITS90 Range: -200..+650 °C Min span: 20 °C Connection: 2,3,4 wire Ni100 Range: -60..+250°C Min span: 20 °C Connection: 2,3,4 wires	Thermocouple Type: J,K,E,N,S,R,B,T (ITS90) Min span: 100 °C Impedance: 10 MΩ Semiconductor sold joint ADC 13 bit Precision: 0,15 °C Update: 10 s Max voltage: ±32 V
OUTPUT DATA					
Type	VOLTAGE Range: 0..10 / 10..0 / 0..5 / 1..5 V Min load resistance: 2 kΩ CURRENT Range: 4..20 / 20..4 / 0..20 / 20..0 mA Max load resistance: 500 Ω Protection: 25 mA	VOLTAGE Range: 0..10 / 10..0 / 0..5 / 1..5 V Min load resistance: 2 kΩ CURRENT Range: 4..20 / 20..4 / 0..20 / 20..0 mA Max load resistance: 500 Ω Protection: 25 mA	VOLTAGE Range: 0..10 / 10..0 / 0..5 / 1..5 V Min load resistance: 2 kΩ CURRENT Range: 4..20 / 20..4 / 0..20 / 20..0 mA Max load resistance: 500 Ω Protection: 25 mA	CURRENT Range: 4..20 / 20..4 mA (2 wire) Load resistance: 1 kΩ Resolution: 0,5 µA (15 bit+sign) Protection: 30 mA	VOLTAGE Range: 0..10 / 10..0 / 0..5 / 1..5 V Min load resistance: 2 kΩ CURRENT Range: 4..20 / 20..4 / 0..20 / 20..0 mA Max load resistance: 500 Ω
Static relay					Nominal voltage: 24 Vac/dc Current: 60 mA Overvoltage protection: 50 V Settable hysteresis / alarm trip
Response time (10-90%)	< 50 ms (without filter) < 200 ms (with filter)	< 50 ms (without filter) < 200 ms (with filter)	< 50 ms (without filter) < 200 ms (with filter)	< 220 ms (without filter) < 620 ms (with filter)	< 40 ms (without filter) < 88 ms (with filter)
A/D conversion, resolution	1 mV, 2 µA	1 mV, 2 µA	1 mV, 2 µA	1 mV, 2 µA	1 mV, 2 µA
ORDER CODES					
Code	K109PT	K109PT-HPC	K109PT1000	K120RTD	K109TC
Accessories / Software	Page 136	Page 136	Page 136	Page 136	Page 136

Technical data, diagrams and drawings in this catalog are indicative only and not binding

SERIAL CONVERTERS

	K107A	K107B	K107USB
			
	RS485↔RS485 serial isolator/repeater	**RS232↔RS485 serial isolator/converter**	**USB↔RS485 serial isolator/converter**
GENERAL DATA			
Power supply	19,2..30 Vdc	19,2..30 Vdc	via USB port
Side Power	Yes	Yes	-
Hot swapping	Yes	Yes	Yes
Max current consumption	22 mA (24 Vdc)	22 mA (24 Vdc)	60 mA
Max power consumption	500 mW	500 mW	-
Rejection	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz
Settings	DIP switches	DIP switches	DIP switches
Filter	Added for stable reading	Added for stable reading	Added for stable reading
Dimensions (w x h x d)	6,2 x 93,1 x 102,5 mm	6,2 x 93,1 x 102,5 mm	6,2 x 93,1 x 102,5 mm
Isolation	1,5 kVac (3-way)	1,5 kVac (3-way)	1,5 kVac (USB // RS485)
Isolation technique	Digital (optocoupler)	Digital (optocoupler)	Digital (optocoupler)
Data processing	32 bit floating point	32 bit floating point	32 bit floating point
Colour	Black	Black	Black
Enclosure	PBT	PBT	PBT
Weight	45 g	45 g	45 g
Operating temperature	-20..+65 °C	-20..+65 °C	-20..+65 °C
Connections	Clamp terminals / bus	Clamp terminals / bus	Clamp terminals / bus
Protection degree	IP20	IP20	IP20
Channels	1 input, 1 output	1 input, 1 output	1 input, 1 output
Status indicators	Power ON Data Inverted connection	Power ON Data Inverted connection	Power ON Data Inverted connection
Communication	Automatic handshake Baud rate: 1.200..115.200 bps	Automatic handshake Baud rate: 1.200..115.200 bps	
Embedded functions			Compliance to USB 1.1 and 2.0 Plug&play for WIN 98, 2000 and XP Multiple connection on the same PC
Approvals	CE, UL-UR CSA	CE, UL-UR CSA	CE, UL-UR CSA
Norms	EN 61000-6-4, EN 61000-6-2, EN 61010-1	EN 61000-6-4, EN 61000-6-2, EN 61010-1	EN 61000-6-4, EN 61000-6-2, EN 61010-1
DATA X SIDE			
Type	SERIAL RS485 Half duplex, 31 nodes, line termination, protection up to 30 Vdc	SERIAL RS232, protection up to 30 Vdc	SERIAL USB interface, standard USB 1.0/ 2.0 compliance, USB A and MINI USB B connection
DATA Y SIDE			
Type	SERIAL RS485 half duplex, 31 nodes, terminal, protection up to 30 Vdc	SERIAL RS485 half duplex, 31 nodes, terminal, protection up to 30 Vdc	SERIAL RS485, max 31 nodes, spring cage terminal block
ORDER CODES			
Code	K107A	K107B	K107USB (programming cable and CD rom included)
Accessories / Software	Page 136	Page 136	Page 136

K-LINE MODULE DIMENSION

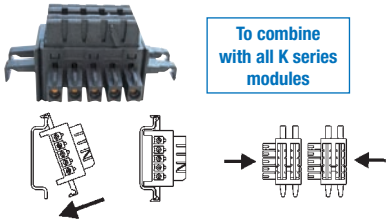


Technical data, diagrams and drawings in this catalog are indicative only and not binding

SOFTWARE & ACCESSORIES

K-BUS

Expandable power supply connector (EN 60175)



To combine with all K series modules

ORDER CODES	
K-BUS	2 slot expandable power supply connector

K-SUPPLY

Redundant power supply module

To combine with all K series modules

ORDER CODES	
K-SUPPLY	Power supply module with electronic protections

EASY SETUP / EASY LP

Complete collection of plug&play configurators

To combine with K111 - K121 K120RTD

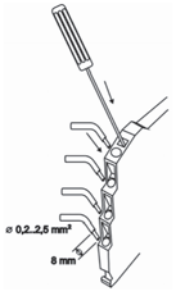
Mobile Phone with USB OTG support

Google play

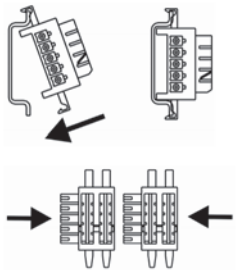
- **Free download on www.seneca.it**

CONNECTION AND INSTALLATION

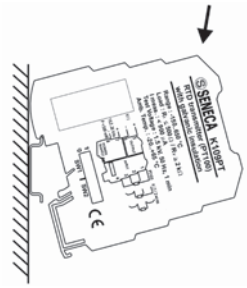
CAGE CLAMP CONNECTION



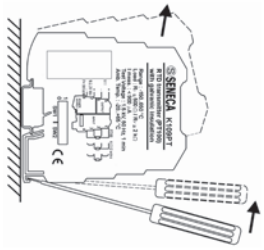
K-BUS CONNECTOR



INSERTING MODULE ON DIN GUIDE



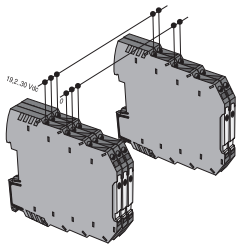
EXTRACTING MODULE FROM DIN GUIDE



POWER SUPPLY TECHNIQUE

SUPPLY SYSTEM. Except from loop powered instruments which aren't bus powered, K Line signal conditioners can be powered in 3 different ways: by the springcage terminal block (24 Vdc direct from power supply) or by SMART SUPPLY system. SMART SUPPLY system is based on expandable K-BUS connector. Up to 16 devices, the distribution of power supply is possible connecting a single device at voltage source, as whole consumption doesn't exceed 400 mA. Over 16 and up to 75 devices, with maximum current consumption of 1,6 A (approx 21 mA per module), it's necessary K-SUPPLY module that gets overvoltages protections on-board.

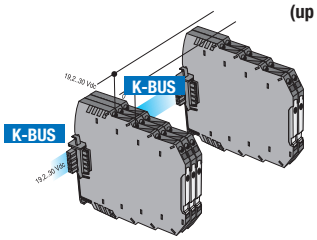
POWER SUPPLY ON SPRING-CAGE TERMINAL



1

SMART SUPPLY SYSTEM

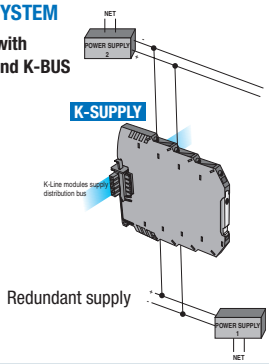
Distributed supply with 2 slot connector K-BUS (up to 16 modules)



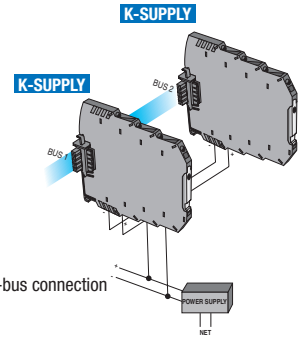
2

SMART SUPPLY SYSTEM

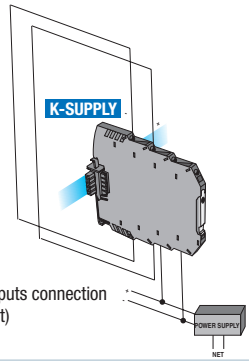
Distributed supply with K-SUPPLY module and K-BUS (up to 75 modules)



Redundant supply



Multi-bus connection



Parallel inputs connection (2 A output)

3

EASY USB — USB - UART TTL Converter

Power supply	Da PC 5V @100mA
Protection degree	IP20
Serial UART TTL	RJ11 connector, baud rate from 300 bps up to 250 Kbps
Serial USB	USB type A standard 1.0, 1.1 and 2.0
Dimensions	84x21x17 mm
Operative systems	Windows, Mac OS, OS-X, Linux

ORDER CODES	
EASY-USB	USB - UART TTL Converter

S117P1 — Serial converter RS232-USB, TTL-USB, RS485-USB

- Asynchronous serial RS232, RS485 and TTL conversion
- Multiply connections of more S117P1 on the same computer
- Standard compatibility USB 1.0, 1.1, 2.0
- RS485 communication, max 32 nodes
- Power for external modules (100mA, 12 Vdc)
- Accessories included: USB cable, TTL cable, CD driver + EASYLP (configuration software for K120RTD, K121, T120 and T121)

ORDER CODES	
S117P1	Asynchronous serial converter RS232<-> USB, RS485<->USB and TTL<->USB complete of USB cable, TTL cable, Cd driver + EASYLP (configuration software)


12 11 10 9 8 7
SENECA S109
SEPARAZIONE GALVANICA
0 110 220V
12 11 10
1 2 3 4 5 6
INGRESSO
0/4–20mA
USCITA
0/4–20mA
1 2 3 4 5 6

4

HIGH VOLTAGE INTERFACES / POWER SUPPLIES - S-LINE

ANALOG CONVERTERS

S109REG


S109S


S102


S109PT


S170


S2000


PULSES CONVERTERS

S104


S111


RELAY CONDITIONERS

S112


S113


S105


STABILIZED INDUSTRIAL SUPPLIES

S50


S100S


S200


S200REG


S200G

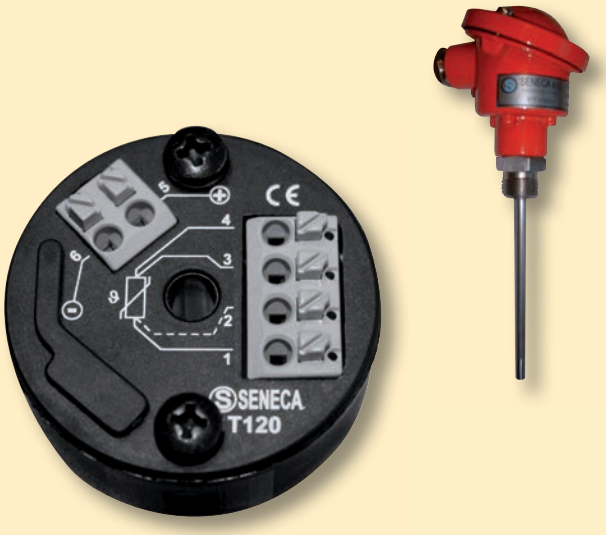

S200D


S200DP


GENERAL FEATURES	
Power Supply	115/230 V
Power transducers	20Vdc
Isolation	Up to 4,5 KVac
Conversion type	Analog signals, Pt100, pulses
Output signal	mA, V, pulses, SPDT/SPST relays
Mounting	35 mm DIN rail guide

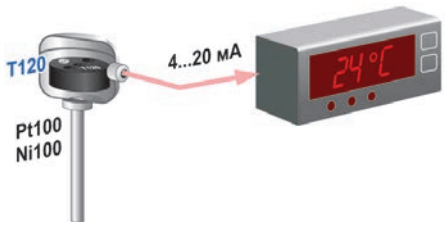
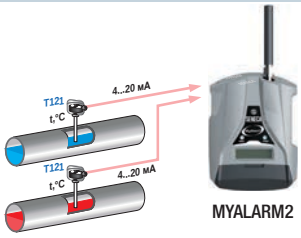
ORDER CODES	
S-LINE – ANALOG CONVERTERS	
S109REG	DC current - voltage converter / isolator
S109REG-x7	DC current - voltage converter / isolator with input up to 200 Vdc
S109S	DC current loop isolator
S102	Potentiometer to DC isolator / converter
S109PT	Pt100 to DC current - voltage converter / isolator
S-LINE – PULSES CONVERTERS	
S104	DC current - voltage to frequency isolator - converter
S111	Frequency to DC current - voltage isolator - converter
S-LINE – ANALOG PROCESSOR	
S170	DC current - voltage duplicator - isolator
S2000-1-ST	Flow computer, power supply 115/230V
S2000-23-ST	Flow computer, power supply 24 Vac/Vdc
S-tool	Configuration toolkit for Z-Line and S2000
S-LINE – RELAY CONDITIONERS	
S112A	On/Off sensor digital amplifier, 1 relay output
S112D	On/off sensor amplifier, 2 relay output
S112M	On-Off sensor amplifier, 5 SPST relay output power supply 115/230V
S113S	On-Off sensor amplifier, 5 SPST relay output power supply 24 Vac/Vdc
S113S	DC current / voltage single alarm trip module
S113T	DC current / voltage triple alarm trip module
S105CS1-b	AC triple phase voltage control relay
S105CS1-c	AC single phase voltage control relay
S105TCS-1	AC 3-phase voltage (380V) control relay
S105TCS-2	AC 3-phase voltage (230V) control relay
S105TCS-3	AC 3-phase voltage (400V) control relay
S-LINE – RELAY CONDITIONERS	
S50-1-ST	Current loop power supply, input 230V
S50-3-ST	Current loop power supply, input 24 Vac
S100-1-ST	Current loop dual power supply, input 230V
S100-3-ST	Current loop dual power supply, input 24Vac
S109S	DC current loop isolator
S109REG	DC current - voltage converter / isolator
S109REG-x7	DC current - voltage converter / isolator with input up to 200 Vdc
S200	Dual stabilized power supply
S200REG/16	Adjustable stabilized power supply, 14..18Vdc Imax 500 mA
S200REG/24	Adjustable stabilized power supply, 22..26Vdc Imax 350 mA
S200G	Power supply signal generator
S200D	Digital indicator 3 1/2 digit, 115 / 230 Vac
S200DP	Power supply with 3 1/2 digit indicator and settable setpoint

TEMPERATURE TRANSMITTERS 4.4



4

TEMPERATURE TRANSMITTERS

	T120	T121
		
	PT100 and NI100 to DC current transmitter (4..20mA output loop powered) non-isolated	**Universal input to DC current transmitter (4..20mA output loop powered) isolated**
GENERAL DATA		
Power supply	5..30 Vdc (loop powered)	7..30 Vdc (loop powered)
Galvanic Isolation & Protection	-	1,5 kVac
Response time	<220 ms (without filter) <620 ms (with filter)	< 1 s
Accuracy class	0,1%	0,1% (min 0,1°C for RTD and 1°C for TC)
Thermal drift	< 100 ppm (30 ppm typical)	
Settings	EASY-USB (programming toolkit: start / full scale, connection and RTD type, rejection, measure filter, cable resistance, fault output / over-range	EASY-USB (programming toolkit: start / full scale, connection and RTD type, rejection, measure filter, cable resistance, fault output / over-range
Operating Temperature	-40..+85°C	-40..+85°C
Connections	Clamp connection	Clamp connection
Dimension	Ø 43,7 x 20 mm	Ø 43,7 x 20 mm
Approvals	CE	CE
Norms	EN 61000-6-4, EN 61000-6-2	EN 61000-6-4, EN 61000-6-2
INPUT DATA		
Number	1	1
Type	Pt100 Standard: EN 60751/A2 (ITS-90) Range: -200..+650°C Min span: 20°C Sensors with 2, 3, 4 wires Ni100 Range: -60..+650°C Min span: 20°C Sensors with 2, 3, 4 wires	Pt100 (EN 60751/A2, -200..+650°C, min span 20°C) Ni100 (-60..+250°C, min span 20°C) Pt500 2,3,4 wires, range -200… 650 °C Pt1000 2,3,4 wires, range -200… +200°C TC J , K, R, S, T, B, E, N Potentiometer: 450..1.800 ohm Voltage: -150..+150 mV
OUTPUT DATA		
Number	1	1
Type	CURRENT (mA) 4..20, 20..4 mA (2 wire)	CURRENT (mA) 4..20, 20..4 mA (2 wire)
APPLICATION EXAMPLE		
		 MYALARM2
ORDER CODES		
Model	**T120** (standard) **T120-C** (configured)	**T121** (standard) **T121-C** (configured)

ACCESSORIES AND SOFTWARE

Code	Description
EASY-USB	USB to TTL serial isolator converter
EASY-SETUP / EASY-LP	Configuration software, free available from www.seneca.it
FLEX-DIN	Adapter for din-rail mounting
S117P1	USB to RS232/RS485/TTL serial isolator converter

PT100 THERMOPROBES

Code	Description
PT100-100	Pt100 std length 100 mm
PT100-100-MA	Pt100 std length 100 mm, 4-20 mA output
PT100-150	Pt100 std length 150 mm
PT100-150-MA	Pt100 std length 150 mm, 4-20 mA output
PT100-200	Pt100 std length 200 mm
PT100-200-MA	Pt100 std length 200 mm, 4-20 mA output
PT100-250	Pt100 std length 250 mm
PT100-250-MA	Pt100 std length 250 mm, 4-20 mA output
PT100-300	Pt100 std length 300 mm
PT100-300-MA	Pt100 std length 300 mm, 4-20 mA output
PT100-50	Pt100 std length 50 mm
PT100-50-MA	Pt100 std length 50 mm, 4-20 mA output
PT100-A	Atmosphere PT100
PT100-A-MA	Atmosphere PT100, 4-20 mA output
PT100-SOLAR	Single element 3 wires Pt100 for photovoltaic modules
PT100-SOLAR -MA	Single element 3 wires Pt100 for photovoltaic modules, 4-20 mA output

SURGE PROTECTIONS - S400 SERIES 4.5

4

S400 SERIES

Smart, high efficiency surge protections

A constant energy supply and secure data links are especially important for the operational reliability of electrical systems, installations, and devices. SENECA meets all of these requirements with the S400 Series. Coordinated solutions consisting of surge protection, monitoring, device circuit breakers, and EMC products offer consistently high power and signal quality for maximum availability.

The protective devices work discreetly in the background, providing consistent safeguarding for the entire system. S400 family can be found as part of the extensive product range and includes type 2, and type 3 protective devices for all applications.

The protective devices in the S400 range for measurement and control technology also impress thanks to their practical functions. The plug-in capability of the arresters enables function checks to be performed easily and replacements made quickly – even during system operation.

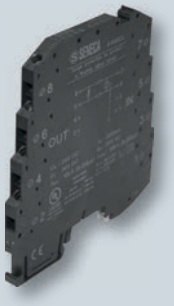
The Ethernet / fieldbus models represent effective surge protection for highspeed data transmission. DT-LAN-CAT.6+ offers universal protection without affecting the signal at network speeds of up to RJ45 patch cable, length: 0.5m 10Gbps.

S400HV-2

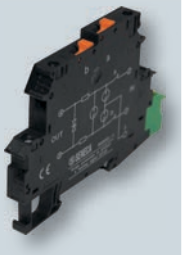
S400LV-1

S400NET

K400CL



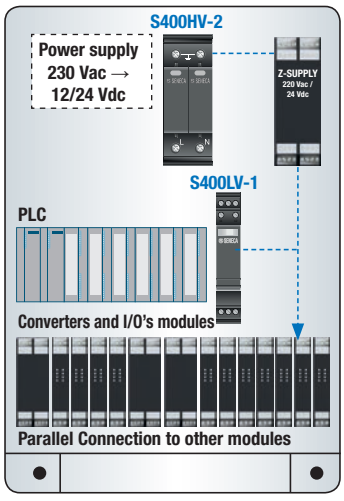
S400CL-1



S400ETH-DSK

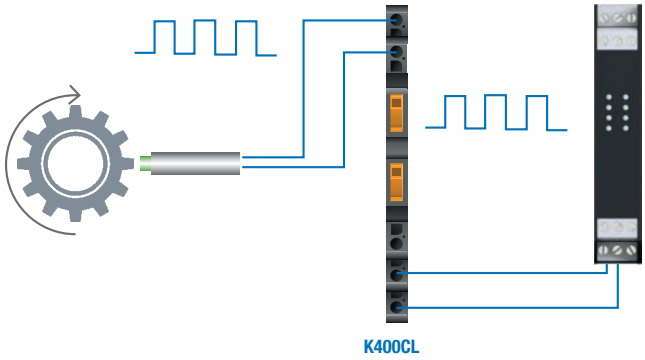
APPLICATION EXAMPLES

PROTECTION AND ISOLATION FOR POWER SUPPLY TYPE 2 AND 3

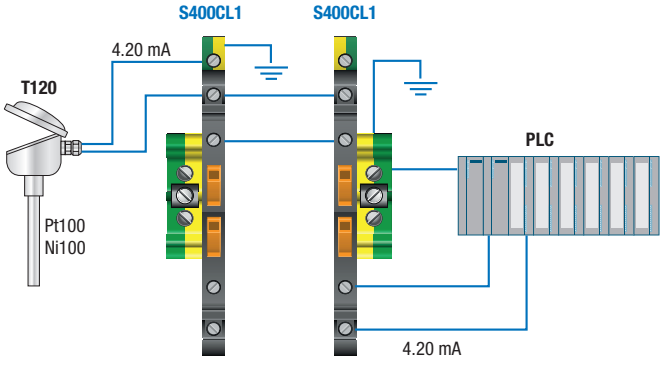


Automation Panels, Marshalling Panels, Panel of PLC & DCS command and machines control, Distribution Panels, Electrical Panels Power Center, MCC Panels

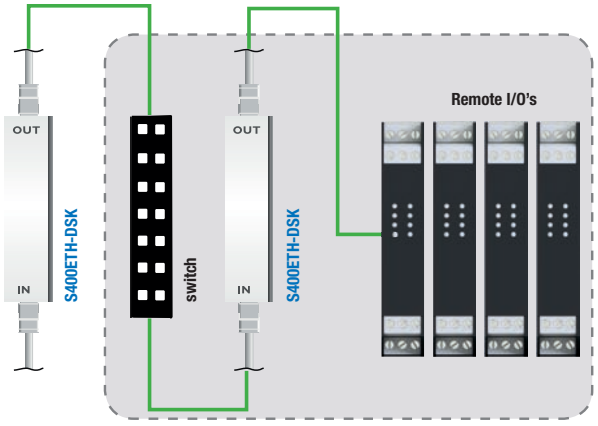
PROTECTION OF A PULSE MEASUREMENT DEVICE (REED, NAMUR, PNP, NPN, HALL EFFECT, ETC)



PROTECTION OF AN ANALOGUE MEASUREMENT DEVICE



PROTECTION OF IT SIGNALS



Ethernet Connection with switch placed on Electrical Panel in local

OVERVOLTAGE PROTECTIONS

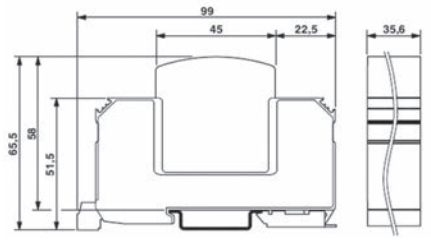
	TYPE 2 / 3 SURGE PROTECTIONS FOR POWER SUPPLIES		SURGE PROTECTION FOR MEASUREMENT AND CONTROL DEVICES		SURGE PROTECTIONS FOR ICT NETWORKS AND EQUIPMENTS	
	S400HV-2	S400LV-1	K400CL	S400CL-1	S400ETH-DSK	S400NET
						
	Type 2 230 Vac Surge Protection at 3 conductors (L, N, PE)	Type 3 24 Vac/dc Surge Protection with FM contact at 3 conductors (L, N, PE)	Analog and Digital Signals Surge Protection, 6,2 slim	Analog and Digital Signals Surge Protection with knife disconnector	Ethernet Networks Surge Protections, Class.D/Cat.5, 1Gbit/s, PoE	Ethernet, serial, fieldbus networks Surge Protections, 5 wires
PROTECTION DATA (L-N / N-PE / L-PEN)						
IEC Category / EN Type	II / T2	III / T3	C1 / C2 / C3 / D1	C1 / C2 / C3 / D1	B2 / C1	C1 / C2 / C3 / D1
Nominal Voltage UN	240 Vac	24 Vac/dc	24 Vdc	24 Vdc		5 Vdc
Rated surge arrester voltage UC	L-N 335 Vac / N-PE 260 Vac	34 Vac/dc	36 Vdc / 25 Vac	30 Vdc / 21 Vac	±5 Vdc (±57 Vdc / PoE+)	5,2 Vdc / 3,6 Vac
Nominal discharge current In (8/20) µs	L-N 20 kA / L-PE 20 kA / N-PE 20 kA	1 kA	(core-core) 5 kA / (core-ground) 5 kA	(core-core) 5 kA / (core-ground) 5 kA	(core-core) 350 A / (core-ground) 350 A	(core-core) 10 kA / (core-ground) 10 kA
Max discharge current Imax (8/20) µs	L-N 40 kA / L-PE 40 kA / N-PE 40 kA	1 kA	(core-core) 10 kA / (core-ground) 10 kA			(core-core) 10 kA / (core-ground) 10 kA
Lightning test current I.imp (10/350) µs per conductor			500 A	500 A		
Nominal Current In			350 mA (40°C)	300 mA (40°C)	≤1,5 A (25°C)	450 mA (45°C)
Total current (8/20) µs			20 kA	10 kA		20 kA
Protection Level Up	L-N ≤ 1,5 kV / L-PE ≤ 1,5 kV / N-PE ≤ 1,5 kV	L-N ≤ 180 V / L-PE ≤ 550 / N-PE ≤ 550	(core-core) ≤50 V(C3-10A) / (core-ground) ≤650 V (C1-500 V /250A)	(core-core) ≤ 45 V / (core-ground) ≤ 650 V	(core-core) ≤90 V (B2-1kV/25A) ≤ (core-ground) 700 V (B2-1kV/25A)	(core-core) ≤ 45 V (C3-25A) / (core-ground) ≤ 45 V (C3- 25A)
Residual voltage @ 5 kA	L-N ≤ 1,2 kV / L-PE ≤ 1,2 kV / N-PE ≤ 150 V					
Combination wave Uoc		2 kV				
Response time tA	L-N ≤ 25 ns / N-PE ≤ 100 ns	L-N ≤ 25 ns / L-PE ≤ 100 ns / N-PE ≤ 100 ns	(core-core) ≤1 ns / (core-ground) ≤100 ns	(core-core) ≤1 ns / (core-ground) ≤100 ns	(core-core) ≤1 ns / (core-ground) ≤100 ns	(filo-filo) ≤500 ns / (filo-terra) ≤500 ns
GENERAL DATA						
Max. required backup fuse according IEC	125 A (gG) - 80 A (gG) passing through wiring	16 Aac - 10 Adc	315 mA	315 mA		500 mA
Resistance against short circuit (with max backup fuse) Ip	25 kA					
Cut-off frequency fg (3dB) @ 50 Ohm			tip.6 MHz	tip.6 MHz	> 100 MHz	tip. 60 MHz
Resistance per path			3,3 Ohm	3,3 Ohm		2,2 Ohm
Output voltage limitation @ 1 kV/µs, static Core-Core / Core-Ground					(core-core) ≤ 35V / (core-ground) ≤ 700V	(core-core) ≤ 15V / (core-ground) ≤ 15 V
Connection data solid / stranded / AWG	1,5..35 mm² / 1,5..25 mm²	0,2..4 mm² / 0,2..2,5 mm²	0,14..2,5 mm² / 0,2..2,5 mm²	0,2..2,5 mm² / 0,2..2,5 mm²		0,2..4 mm² / 0,2..2,5 mm²
Dimension (lxhxw)	35,6 x 90 x 58 mm	17,7 x 90 x 65,5 mm	6,2 x 93 x 102,5 mm	6,2 x 94,8 x 69,1 mm	28 x 110 x 60 (76 with connection) mm	17,7 x 90 x 65,5 mm
Operating temperature	-40°C.. +80°C	-40°C.. +80°C	-40°C.. +80°C	-40°C.. +80°C	-40°C.. +80°C	-40°C.. +80°C
Protection Degree	IP20	IP20	IP20	IP20	IP20	IP20
Inflammability class according UL 94	V0	V0	V0	V0	V0	V0
Case	PA 6.6	PA 6.6	PBT	PA 6.6	ABS	PA
Connection Interface	Screw connection	Screw connection	Screw connection	Screw connection	RJ45	Screw connection
Test Norms	IEC 61643-11 / EN 61643-11	EN 61643-11	IEC 61643-21 / DIN EN 61643-21 / IEC 60664-1 / EN 60079-11		IEC 61643-21 / EN 50173-1 / ISO/IEC 11801-Am.1	IEC 61643-21/A1 / EN 61643.-21/A1
Certifications	CE, UL/cUL/cULus Recognized	CE, GL, EAC	CE, UL Listed	CE	CE, UL Listed	CE, UL Listed
FM CONTACT						
Connection data solid / stranded / AWG		0,2..4 mm² / 0,2..2,5 mm²				
Max operating voltage		250 Vac / 30 Vdc				
Max operating current		1,5 Aac (250 Vac) / 1 Adc (30 Vdc)				

Technical data, diagrams and drawings in this catalog are indicative only and not binding

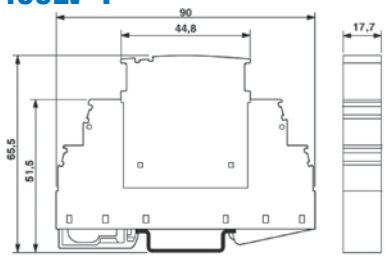
S400 SERIES

Dimension

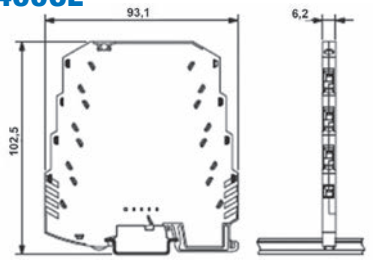
S400HV-2



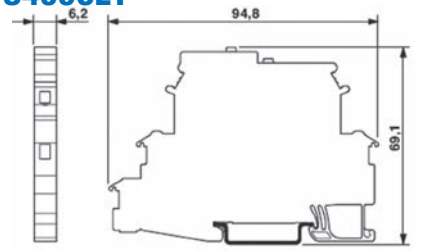
S400LV-1



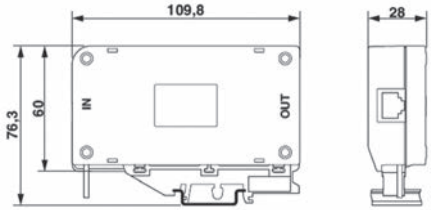
K400CL



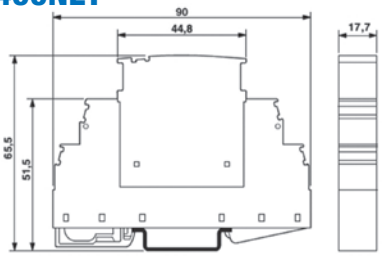
S400CL1



S400ETH-DSK



S400NET



Accessories

S400HV-2-RIC-SL

S400HV-2-RIC-SN

S400LV-1-RIC-SL

S400LV-1-RIC-SL

ORDER CODE

Code	Description
K400CL	Analog and Digital Signals Surge Protection, 6,2 slim
K400CL-10	K400CL-1 10 pieces kit
S400HV-2	Type 2 230 Vac Surge Protection at 3 conductors (L, N, PE)
S400HV-2-RIC-SL	S400HV2 plug spare 1L-NPE, no FM contact
S400HV-2-RIC-SN	S400HV2 plug spare N/PE
S400LV-1	Type 3 24 Vac/dc Surge Protection with FM contact at 3 conductors (L, N, PE)
S400LV-1-RIC-SL	S400LV-1 plug spare, with contact FM
S400CL-1	Analog and Digital Signals Surge Protection with knife disconnector
S400CL-1-15	S400CL-1 10 pieces kit
S400CL-1-P5	S400CL-1 closing side (5 pieces)
S400NET	Ethernet, serial, fieldbus networks Surge Protections, 5 wires
S400NET-RIC-SL	S400NET plug spare
S400ETH-DSK	Ethernet Networks Surge Protections, Class.D/Cat.5, 1Gbit/s, PoE

4

S-LINE

COMPACT / MODULAR DIGITAL INDICATORS / TOTALIZERS

S-Line Series is a high performance compact/modular indicators / totalizers family. This series offers scalable display with 4, 6, 8, 4+7 digits in multiple visualization mode (real-time, integrated, totalized measured values). S-Line indicators support universal input (analog, digital, by sensor) and restransmitted output mA, V standard. Concerning power supply they ensure an extended option range options: 80-265 Vac; 10-40 Vdc / 19-28 Vac; power transducers. Accuracy class reach 0,1% with 14-16 bit A/D conversion. Optionally S-Line indicators can provide ModBUS interface alarm relay (hysteresys and threshold control) and IP66 case.

SCALABLE DISPLAY

4,6,8,4+7 digits

UNIVERSAL INPUT

Analog, Digital (Pulses), Temperature (sensor)

RETRANSMISSION (OUTPUT)

Analog or Digital (Pulses)

POWER SUPPLY

85-265 Vac; 10-40 Vdc, 19-28 Vac, Power Supply for transducers

HIGH ACCURACY

0,1% CLASS; A/D converter at 14-16 bit

RELAY OUTPUT

Threshold management and hysteresis

MULTIPLE VISUALIZATION

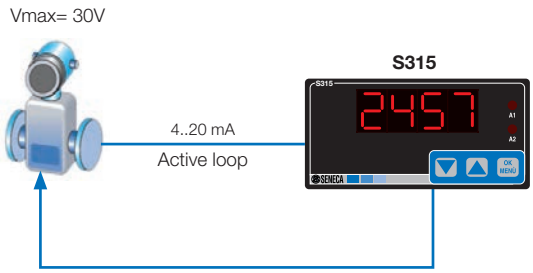
Instantaneous & integrated values, increase/ decrease counters

EASY SETUP

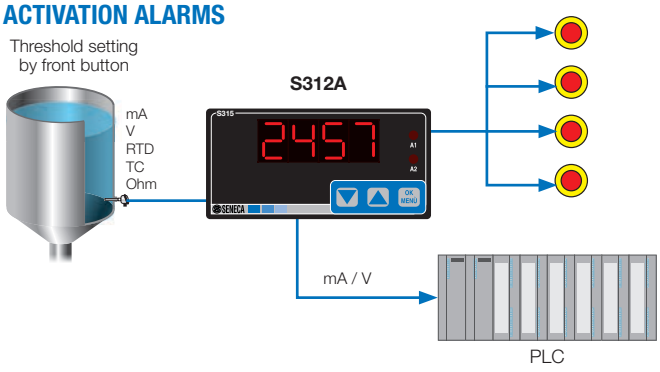
Plug&Play configurator software

APPLICATION EXAMPLES

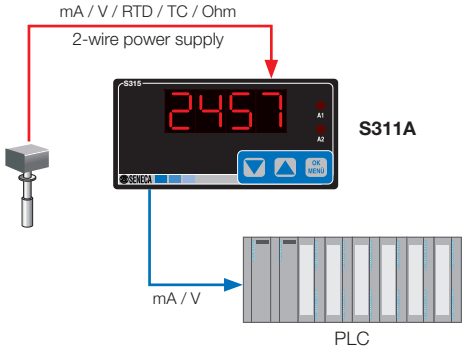
VISUALIZATION OF ANALOG SIGNAL OUTGOING FROM A TRANSDUCER WITH ACTIVE LOOP



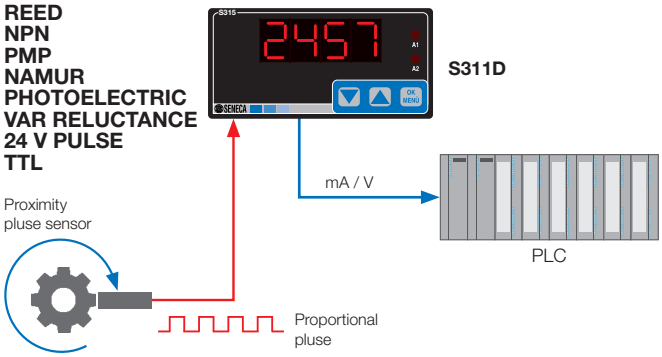
VISUALIZATION AND SIGNAL RETRANSMISSION WITH ACTIVATION ALARMS



ANALOG SIGNAL VISUALIZATION



VISUALIZATION AND TOTALIZING OF PULSE SIGNAL



ANALOG INPUT MODULAR INDICATORS / TOTALIZERS

	S311A-4	S311A-6	S311A-8	S311A-11
	 4 digit universal analog input indicator - totalizer	 6 digit universal analog input indicator - totalizer	 8 digit universal analog input indicator - totalizer	 11 digit universal analog input indicator - totalizer
GENERAL DATA				
Power supply	80-265 Vac (H version) 10-40 Vdc / 19-28 Vac (L version)	80-265 Vac (H version) 10-40 Vdc / 19-28 Vac (L version)	80-265 Vac (H version) 10-40 Vdc / 19-28 Vac (L version)	80-265 Vac (H version) 10-40 Vdc / 19-28 Vac (L version)
Power transducers	Max 18 V, 25 mA	Max 18 V, 25 mA	Max 18 V, 25 mA	Max 18 V, 25 mA
Power consumption	Max 3 W	Max 3 W	Max 3 W	Max 3 W
Isolation	1.500 Vac	1.500 Vac	1.500 Vac	1.500 Vac
Communication interface	ModBUS RTU slave (optional board)	ModBUS RTU slave (optional board)	ModBUS RTU slave (optional board)	ModBUS RTU slave (optional board)
Memory	EEPROM 10 years, storage memory	EEPROM 10 years, storage memory	EEPROM 10 years, storage memory	EEPROM 10 years, storage memory
VISUALIZATION AND MEASURE				
Display	LED, 4 digit	LED, 6 digit	LED, 8 digit	LED, 11 (4+7) digit
Status indicators	2 alarm leds (enabled threshold trips)	2 alarm leds (enabled threshold trips)	2 alarm leds (enabled threshold trips)	2 alarm leds (enabled threshold trips)
Front Buttons	3 navigation keys	3 navigation keys	3 navigation keys	3 navigation keys
Display errors	Over range, fault sensor	Over range, fault sensor	Over range, fault sensor	Over range, fault sensor
Accuracy	0,10%	0,10%	0,10%	0,10%
Stability	0,01%/K	0,01%/K	0,01%/K	0,01%/K
Linearity error	0,2°C (Pt100) 0,5° (TC J,K,E,N,T) 1°C (TC R,S) 2°C (TC B) 0,05% (0-10 V, 0-20 mA)	0,2°C (Pt100) 0,5° (TC J,K,E,N,T) 1°C (TC R,S) 2°C (TC B) 0,05% (0-10 V, 0-20 mA)	0,2°C (Pt100) 0,5° (TC J,K,E,N,T) 1°C (TC R,S) 2°C (TC B) 0,05% (0-10 V, 0-20 mA)	0,2°C (Pt100) 0,5° (TC J,K,E,N,T) 1°C (TC R,S) 2°C (TC B) 0,05% (0-10 V, 0-20 mA)
Cold joint	±1,5°C	±1,5°C	±1,5°C	±1,5°C
INPUT DATA				
CH	1	1	1	1
Type	Voltage: 0-10 V Active / passive current: 0-20 / 4..20 mA Potentiometer: 1..100 kΩ Pt100 2,3,4 wire (IEC 751 / EN 60751 – ITS90) Thermocouple J,K,R,S,T,B,E,N	Voltage: 0-10 V Active / passive current: 0-20 / 4..20 mA Potentiometer: 1..100 kΩ Pt100 2,3,4 wire (IEC 751 / EN 60751 – ITS90) Thermocouple J,K,R,S,T,B,E,N	Voltage: 0-10 V Active / passive current: 0-20 / 4..20 mA Potentiometer: 1..100 kΩ Pt100 2,3,4 wire (IEC 751 / EN 60751 – ITS90) Thermocouple J,K,R,S,T,B,E,N	Voltage: 0-10 V Active / passive current: 0-20 / 4..20 mA Potentiometer: 1..100 kΩ Pt100 2,3,4 wire (IEC 751 / EN 60751 – ITS90) Thermocouple J,K,R,S,T,B,E,N
Resolution	14 bit	14 bit	14 bit	14 bit
Sampling time	20 ms	20 ms	20 ms	20 ms
Reset (totalizer)	Yes: by digital input and front keys	Yes: by digital input and front keys	Yes: by digital input and front keys	Yes: by digital input and front keys
OUTPUT DATA				
CH	1	1	1	1
Type	0-10 V (min 1K) 0-20 / 4-20 mA (max 500 ohm)	0-10 V (min 1K) 0-20 / 4-20 mA (max 500 ohm)	0-10 V (min 1K) 0-20 / 4-20 mA (max 500 ohm)	0-10 V (min 1K) 0-20 / 4-20 mA (max 500 ohm)
A/D Resolution	10.000 points	10.000 points	10.000 points	10.000 points
Optional board	Nr 2 SPDT 220 Vac (5A resistive, 2 A inductive) relay alarms + Nr 1 RS485ModBUS RTU slave port + nr 1 reset digital input	Nr 2 SPDT 220 Vac (5A resistive, 2 A inductive) relay alarms + Nr 1 RS485ModBUS RTU slave port + nr 1 reset digital input	Nr 2 SPDT 220 Vac (5A resistive, 2 A inductive) relay alarms + Nr 1 RS485ModBUS RTU slave port + nr 1 reset digital input	Nr 2 SPDT 220 Vac (5A resistive, 2 A inductive) relay alarms + Nr 1 RS485ModBUS RTU slave port + nr 1 reset digital input
THEMOMECHANICS DATA				
Operating temperature	-10..+60 °C	-10..+60 °C	-10..+60 °C	-10..+60 °C
Enclosure	PPO self-extinguish DIN 43700	PPO self-extinguish DIN 43700	PPO self-extinguish DIN 43700	PPO self-extinguish DIN 43700
Protection degree	IP65 (frontal)	IP65 (frontal)	IP65 (frontal)	IP65 (frontal)
Terminal blocks	Removable, step 3,5 – 5,08 mm	Removable, step 3,5 – 5,08 mm	Removable, step 3,5 – 5,08 mm	Removable, step 3,5 – 5,08 mm
Dimension (W x H x D)	96x48x98 mm	96x48x98 mm	96x48x98 mm	96x48x98 mm
Panel cut -out	91x45 mm	91x45 mm	91x45 mm	91x45 mm
Weight	200 g	200 g	200 g	200 g
SETTINGS, NORMS				
Programming	Display parameters, alarms, signals, timeout, reset, trips	Display parameters, alarms, signals, timeout, reset, trips	Display parameters, alarms, signals, timeout, reset, trips	Display parameters, alarms, signals, timeout, reset, trips
Calibration	Yes, factory-made	Yes, factory-made	Yes, factory-made	Yes, factory-made
Norms	EN 61000-6-4/2002, EN 61000-6-2/2005, EN 61010-1/2001	EN 61000-6-4/2002, EN 61000-6-2/2005, EN 61010-1/2001	EN 61000-6-4/2002, EN 61000-6-2/2005, EN 61010-1/2001	EN 61000-6-4/2002, EN 61000-6-2/2005, EN 61010-1/2001

ORDER CODES

Code					Description
Model	S311A				Universal analog input indicator - totalizer
Display		-4 -6 / -8 / -11			4 / 6 / 8 / 4+7 digit
Power Supply			-H / -L		80-265 Vac / 10-40 Vdc; 19-28 Vac
Options				-O -T	Optional board: nr 2 SPDT relay alarms, ModBUS RTU interface, reset input Calibration service

EASY SETUP

Plug&Play software suite Accessibe via serial RS485/USB converter (i.e. S107USB)

Technical data, diagrams and drawings in this catalog are indicative only and not binding

DIGITAL / FREQUENCY INPUT MODULAR INDICATORS / TOTALIZERS

	S311D-4	S311D-6	S311D-8	S311D-11
				
	4 digit frequency / digital input indicator - totalizer	**6 digit frequency / digital input indicator - totalizer**	**8 digit frequency / digital input indicator - totalizer**	**11 digit frequency / digital input indicator - totalizer**
GENERAL DATA				
Power supply	80-265 Vac (H version) 10-40 Vdc / 19-28 Vac (L version)	80-265 Vac (H version) 10-40 Vdc / 19-28 Vac (L version)	80-265 Vac (H version) 10-40 Vdc / 19-28 Vac (L version)	80-265 Vac (H version) 10-40 Vdc / 19-28 Vac (L version)
Power transducers	Max 18 V, 25 mA	Max 18 V, 25 mA	Max 18 V, 25 mA	Max 18 V, 25 mA
Power consumption	Max 3 W	Max 3 W	Max 3 W	Max 3 W
Isolation	1.500 Vac	1.500 Vac	1.500 Vac	1.500 Vac
Communication interface	ModBUS RTU slave (optional board)	ModBUS RTU slave (optional board))	ModBUS RTU slave (optional board)	ModBUS RTU slave (optional board)
Memory	EEPROM 10 years storage memory	EEPROM 10 years storage memory	EEPROM 10 years storage memory	EEPROM 10 years storage memory
VISUALIZATION AND MEASURE				
Display	LED, 4 digit	LED, 6 digit	LED, 8 digit	LED, 11 (4+7) digit
Status indicators	2 alarm leds (enabled threshold trips)	2 alarm leds (enabled threshold trips)	2 alarm leds (enabled threshold trips)	2 alarm leds (enabled threshold trips)
Front Buttons	3 navigation keys	3 navigation keys	3 navigation keys	3 navigation keys
Display errors	Over range, fault sensor	Over range, fault sensor	Over range, fault sensor	Over range, fault sensor
INPUT DATA				
CH	1	1	1	1
Type	Contact, Reed, Npn 2 / 3 wire, Pnp 3 wire with 24 Vdc power supply, Namur, photoelectric, variable reluctance, 24V pulse, TTL	Contact, Reed, Npn 2 / 3 wire, Pnp 3 wire with 24 Vdc power supply, Namur, photoelectric, variable reluctance, 24V pulse, TTL	Contact, Reed, Npn 2 / 3 wire, Pnp 3 wire with 24 Vdc power supply, Namur, photoelectric, variable reluctance, 24V pulse, TTL	Contact, Reed, Npn 2 / 3 wire, Pnp 3 wire with 24 Vdc power supply, Namur, photoelectric, variable reluctance, 24V pulse, TTL
Frequency	0.00015 Hz .. 10 kHz	0.00015 Hz .. 10 kHz	0.00015 Hz .. 10 kHz	0.00015 Hz .. 10 kHz
Reset (totalizer)	Yes: by digital input and front keys	Yes: by digital input and front keys	Yes: by digital input and front keys	Yes: by digital input and front keys
OUTPUT DATA				
CH	1	1	1	1
Type	0-10 V (min 1K) 0-20 / 4-20 mA (max 500 ohm)	0-10 V (min 1K) 0-20 / 4-20 mA (max 500 ohm)	0-10 V (min 1K) 0-20 / 4-20 mA (max 500 ohm)	0-10 V (min 1K) 0-20 / 4-20 mA (max 500 ohm)
Resolution	10.000 points	10.000 points	10.000 points	10.000 points
Optional board	Nr 2 SPDT 220 Vac (5A resistive, 2 A inductive) relay alarms + Nr 1 RS485ModBUS RTU slave port + nr 1 reset digital input	Nr 2 SPDT 220 Vac (5A resistive, 2 A inductive) relay alarms + Nr 1 RS485ModBUS RTU slave port + nr 1 reset digital input	Nr 2 SPDT 220 Vac (5A resistive, 2 A inductive) relay alarms + Nr 1 RS485ModBUS RTU slave port + nr 1 reset digital input	Nr 2 SPDT 220 Vac (5A resistive, 2 A inductive) relay alarms + Nr 1 RS485ModBUS RTU slave port + nr 1 reset digital input
THEMOMECHANICS DATA				
Operating temperature	10..+60 °C	10..+60 °C	10..+60 °C	10..+60 °C
Case	PPO self-extinguish DIN 43700	PPO self-extinguish DIN 43700	PPO self-extinguish DIN 43700	PPO self-extinguish DIN 43700
Protection degree	IP65 (frontal)	IP65 (frontal)	IP65 (frontal)	IP65 (frontal)
Terminal blocks	Removable, step 3,5 – 5,08 mm	Removable, step 3,5 – 5,08 mm	Removable, step 3,5 – 5,08 mm	Removable, step 3,5 – 5,08 mm
Dimension (W x H x D)	96x48x98 mm	96x48x98 mm	96x48x98 mm	96x48x98 mm
Panel dimension	91x45 mm	91x45 mm	91x45 mm	91x45 mm
Weight	200 g	200 g	200 g	200 g
SETTINGS, NORMS				
Programming	Display parameters, alarms, signals, timeout, reset, trips	Display parameters, alarms, signals, timeout, reset, trips	Display parameters, alarms, signals, timeout, reset, trips	Display parameters, alarms, signals, timeout, reset, trips
Calibration	Yes, factory-made	Yes, factory-made	Yes, factory-made	Yes, factory-made
Norms	EN 61000-6-4/2002, EN 61000-6-2/2005, EN 61010-1/2001	EN 61000-6-4/2002, EN 61000-6-2/2005, EN 61010-1/2001	EN 61000-6-4/2002, EN 61000-6-2/2005, EN 61010-1/2001	EN 61000-6-4/2002, EN 61000-6-2/2005, EN 61010-1/2001

ORDER CODES

Code			Description
Model	S311D		Frequency / digital input indicator - totalizer
Display		-4 -6 / -8 / -11	4 / 6 / 8 / 4+7 digit
Power Supply		-H / -L	80-265 Vac / 10-40 Vdc; 19-28 Vac
Options		-0	Optional board: nr 2 SPDT relay alarms, ModBUS RTU interface, reset input
		-T	Calibration service

EASY SETUP

Plug&Play software suite Accessibe via serial RS485/USB converter (i.e. S107USB)

Technical data, diagrams and drawings in this catalog are indicative only and not binding

ANALOG INPUT COMPACT INDICATORS / TOTALIZERS / SIGNAL GENERATOR

	S315*	S311AK*	S312A*	S311G
				
	4 digit loop powered display with 4-20 mA input signal	**4 digit display with mA/V analog input**	**4 digit display with universal analog input, 4 relay outputs / RS485 ModBUS**	**4 Digit display with universal analog Input / Signal Generator**
GENERAL DATA				
Power supply	By loop (max 30 V)	10-40 Vdc, 19-28 Vac	10-40 Vdc, 19-28 Vac (S312A-4-L-4R) 85-265 Vac (S312A-4-H-4R)	80-265 Vac (S311G-H) 10-40 Vdc / 19-28 Vac (S311G-L)
Drop voltage	Max 7 V			
Power transducers		Max 16 V, 25 mA	Max 16 V, 25 mA	Max 18 V, 25 mA
Power consumption		Max 0,9 W	Max 3 W	Max 3 W
Isolation		1.500 Vac between measure port and power supply	1.500 Vac between measure port and power supply	1.500 Vac
Memory	EEPROM, 10 years	EEPROM, 10 years	EEPROM, 10 years	EEPROM 10 years (data)
VISUALIZATION AND MEASURE				
Display	4 digit, red LEDs	4 digit, red LEDs	4 digit, red LEDs	4 digit, red LEDs
Status indicators			Alarms visualization	2 (Automatic / Manual)
Front buttons	3 (down, up, menù)	3 (down, up, menù)	3 (down, up, menù)	3 (down, up, menu)
Display errors			0,10%	-
Accuracy	0,05%	0,05%	0,05%	0,1%
Stability	0,005%/°K	0,005%/°K	0,005%/°K	0,01%/K
Linearity error	0,05%	0,05% (0-10 V, 0-20 mA)	0,05% (0-10 V, 0-20 mA)	<2°C; 0,05% (mA-V)
A/D resolution	16 bit	16 bit	16 bit	-
EMI	< 1%	-	-	-
INPUT DATA				
Channels	1	1	1	1
Type	4-20 mA	Voltage: 0-10 V (protection ±30 Vdc), impedance ~25 kΩ, ADC 16 bit, settable scales: 0-10, 1-5 V etc. Current: 0-20 / 4-20 mA (protection ±25 mA), impedance ~20 Ω, ADC 16 bit, settable scales 0-20	Voltage: 0-10 V Active / passive current: 0-20 / 4..20 mA Potentiometer: 1-100 kΩ Pt100 2,3,4 wire (IEC 751 / EN 60751 – ITS90) Thermocouple J,K,R,S,T,B,E,N	Voltage: 0-10 V; Active / Passive Current 0-20 mA; Potentiometer: 1..100 kΩ; Resolution 14 bit; Sample time 20ms
OUTPUT DATA				
Channels	-	1	1	1
Type	-	-	0-10 V (min 1K) 0-20 / 4-20 mA (max 500 ohm) Nr 4 SPDT 220 Vac (5A resistive, 2 A inductive) relay alarms + Nr 1 RS485ModBUS RTU slave port + nr 1 reset digital input	Voltage: 0-10 V (min 1K); Current: 0-20 / 4-20 mA (max 500 ohm); Resolution 10.000 point
THEMOMECHANICS DATA				
Operating temperature	-10..+65°C	-10..+65°C	-10..+60°C	-10..+60 °C
Enclosure	PPO self-extinguish, DIN 43700	PPO self-extinguish, DIN 43700	ABS RAL 7035	PPO self-extinguish DIN 43700
Protection degree	IP65 (frontal)	IP65 (frontal)	IP65 (frontal)	IP65
Terminal block	Removable 2-way screw terminals, 5,08mm pitch, 3 way screw terminals, 5,08 mm pitch	Removable 2-way screw terminals, 5,08mm pitch, 3 way screw terminals, 5,08 mm pitch	Removable 2-way screw terminals, 5,08mm pitch, 3 way screw terminals, 5,08 mm pitch	Removable 2 way screw terminals, 3,5 – 5,08 mm pitch
Dimension (W x H x D)	96 x 48 x 40 mm	96 x 48 x 40 mm	96 x 48 x 40 mm	96x48x98 mm
Panel cut-out	91x45 mm	91x45 mm	91x45 mm	91x45 mm
Weight	200 g	200 g	200 g	200 g
SETTINGS, NORMS				
Programming	Front keys (enabling password, input type, electric start / full scale, display start / full scale, decimal point, filter)	Front keys (enabling password, input type, electric start / full scale, display start / full scale, decimal point, filter)	Front keys, jumper, software (EASY SETUP)	Front keys
Calibration	Yes, factory made	Yes, factory made	Yes, factory made	By password
Norms	EN 61000-6-4, EN 64000-6, EN 61010-1, EN 60742	61000-6-4, EN 64000-6, EN 61010-1, EN 60742	EN 61000-6-4, EN 64000-6, EN 61010-1, EN 60742	EN 61000-6-4, EN 61000-6-2, EN 61010

ORDER CODES

Code		Description
Model	S315	4 digit loop powered indicator, 4-20 mA input
	S311AK-4-L	4 digit display with mA/V analog input, power 10-40 Vdc, 19-28 Vac
	S312A-4-L	4 digit display with universal analog input, 4 relay outputs, power 10-40 Vdc, 19-28 Vac
	S312A-4-H	4 digit display with universal analog input, 4 relay outputs, power 85-265 Vac
	S311G-L	4 Digit display with mA, / V /Ω/ Signal Generator, 10-40 Vdc / 19-28 Vac
	S311G-H	4 Digit display with mA, / V /Ω / Signal Generator, 80-265 Vac

Technical data, diagrams and drawings in this catalog are indicative only and not binding

***Available also in IP66 protection degree version**

HIGH BRIGHTNESS LED DISPLAY DIGITAL INDICATORS / TOTALIZERS

	S200 / S201	S301 / S301 B	S310 / S320A
			
	3 1/2 Digital Indicators	4 Digit indicators with universal analog input and re-transmitted output	3 1/2 Digit indicators with analog input (V,I) nd SPDT relay alarms
GENERAL DATA			
Power Supply	115 - 230 Vac ± 10% 50 - 60 Hz	115 - 230 Vac ± 10% 50 - 60 Hz	115 - 230 Vac ± 10% 50 - 60 Hz
Power Transducers	+15 Vdc 350 mA e -15 Vdc 75 mA; 24 Vdc, 500 mA		
Max consumption	11 VA	4 VA	3,5 VA
Rejection	40 dB		
Communication Interfaces		RS232 / RS485, 9.600 pbs, up to 1.000 mt and 31 devices	
Memory		EEPROM, 10 years	
VISUALIZATION AND MEASURE			
Display	3 ½ digit 14 mm red LED	4 digit 20 elements (50 mm) bargraph 14 mm red LED	3 ½ digit 14 mm red LED
Accuracy	0,3%	0,1% (voltage/current input, re-transmitted output) 0,2% (thermoresistance, potentiometer)	0,3%
Stability	0,01%/°C	0,01%/°C	0,01%/°C
Linearity		From 0,01 to 0,5%	
Cold Joint		1°C (20-40°C)	
INPUT DATA			
Channels	1	1	1
Type	Current: 0 – 20, 4 - 20 mA Voltage: 0 – 5/ 1-5/ 0 –10/ 2 -10 Vdc	Voltage from 200 mV to 10 V (4 scales) Current up to 20 mA Potentiometer up to 15 kOhm Pt100 (-200..+650°C) TC J,K,R,S,T,B	Current: 0-20, 4-20 mA Voltage: 0-2/0,4-2/0-5/1-5 (0-10, 2-10 on demand) Vdc Pt100 (option) TC K,J (option)
Frequency		3 readings per second	
OUTPUT DATA (ANALOG)			
Channel	1	1	1
Type	Accuracy potentiometer setpoint (0/1-5 Vdc; 4-20 mA active)	Impressed current: 0..20/4..20 mA Voltage: 0..5 / 0..10 / 1..5 / 2..10 V	Optoisolated active/passive re-transmitted output: 0..20 / 4..20 mA
Resolution		From 0,025% to 0,032%	
OUTPUT DATA (ALARMS)			
Contact		3, 4	1, 2
Type		SPDT Relay 5A – 250 Vac Open collector 35 Vdc – 200 mA	SPDT Relay 5A – 250 Vac (resistive load)
THERMOMECHANICS DATA			
Operating temperature	-10..+60°C	-10..+55°C	0..50°C
Case	Noryl self-extinguish "V0"	Noryl self-extinguish "V0"	Noryl self-extinguish "V0"
Front protection	IP41	IP41	IP41
Terminals	Removable	Removable	Removable
Dimension (lxhxw)	96x96x117 mm	96x48x148 mm (S301); 96x96x148 mm (S301B)	96x48x148 mm (S310); 96x96x148 mm (S320A)
Panel cut out dimension	91x91 mm		
Weight	750 g	500 g (S301); 600 g (S301B)	
SETTINGS NORMS			
Software		Request / Writing Data	
Front Keys		Diagnostic and programing	
Trimmer	Zero, visualization span (from -999 to 1.999)		Zero, visualization span (from -999 to 1.999)
Shunt / Jumpers	Decimal point		Full scale, alarms, input type, decimal point, re-transmitted output
Conformity	CE	CE	CE

ORDER CODES

Code			Description
Models	S200D / S200DP		3 1/2 Digit indicator, 115/230 Vac, power transducers ±15 Vdc / 3 1/2 Digit indicator, 115/230 Vac, power transducers ±15 Vdc, adjustable setpoint
	S201D / S201DP		3 1/2 Digit indicator, 115/230 Vac, power transducers 24 Vdc / 3 1/2 Digit indicator, 115/230 Vac, power transducers 24 Vdc, adjustable setpoint
	S301		4 digit indicator, universal analog input, re-transmitted output
	S301B		4 digit indicator, universal analog input, re-transmitted output, bargraph
Power Supply		-1-R	115 / 230 Vac
		-23-R	24 Vac/dc
Option		-AOC-S	4 open collector alarms, serial output
		-AR-S	4 SPDT relay alarms, serial output
Models	S310 / S310 A		3 1/2 Digit indicator, V/I analog input / 3 1/2 Digit indicator, V/I analog input, 1 SPDT relay alarm
	S310AA / S320A		3 1/2 Digit indicator, V/I analog input, 2 SPDT relay alarms / 3 1/2 Digit indicator, V/I analog input, 2 relay alarms, 96x96 mm
Power Supply		-1-ST	115 / 230 Vac
		-23-ST	24 Vac/dc
Option		-PT	Pt100 input
		-TC (J,K)	TC (J, K) input
		-R	Re-transmitted output

Technical data, diagrams and drawings in this catalog are indicative only and not binding

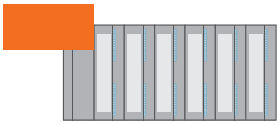
BATCH CONTROLLERS - S-LINE 4.7

4

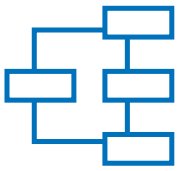
S20N1 / S21N1

BATCH CONTROLLERS WITH PULSE INPUT, LED DISPLAY AND MODBUS INTERFACE

BATCH MODES «STAND ALONE» OR «AUTO-MANUAL» STATION FOR PLC COMBINED USE

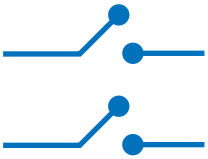


FLEXIBLE RECIPE MANAGEMENT



N.1 CONFIGURABLE PULSE INPUT (MAX FREQ. 2,2 kHZ)

N.2 SPDT RELAY OUTPUT (5A, 250 V, RESISTIVE LOAD)



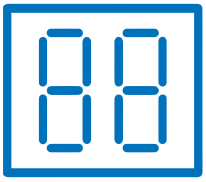
CONFIGURABLE RS485 MODBUS SERIAL PORT

RS485 ModBUS

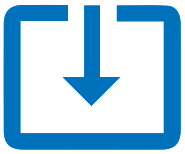
IMPACT PRINTER RS232 SERIAL CONNECTION

S20N1KIT CONNECTION BOARD FOR EXTERNAL BUTTONS AND LAMPS

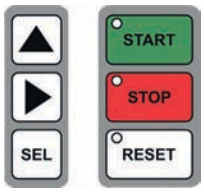
N.2 HIGH BRIGHTNESS LED NUMERICAL DISPLAY @5 DIGIT (SET+BATCH OPERATIONS)



MICRO USB CONNECTOR FOR SW/FW UPDATE



N.6 FRONT PANEL PROGRAMMING BUTTONS



EX / IP65 SPECIAL VERSIONS

SELF-POWERED INPUT ADAPTER BOARD

APPLICATION AREAS

WATER TREATMENT

WASTE WATER

WINE, BEER, ALCOHOL PRODUCTION

PULP & PAPER

FOOD & BEVERAGE

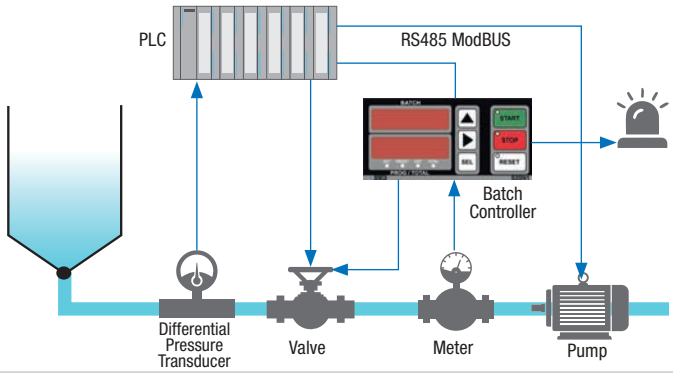
PHARMA & BIOTECHNOLOGY

OIL & GAS

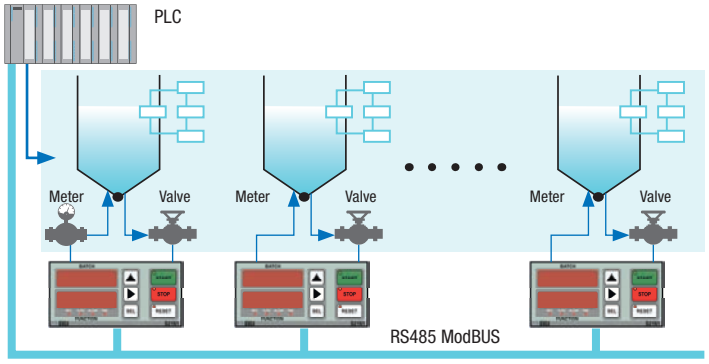
PAINT THINNER & ADDITIVES PRODUCTION

APPLICATION EXAMPLES

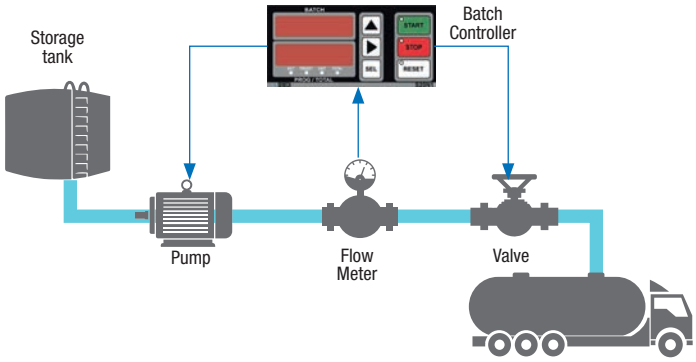
BATCH PROCESS CONTROL WITH PLC



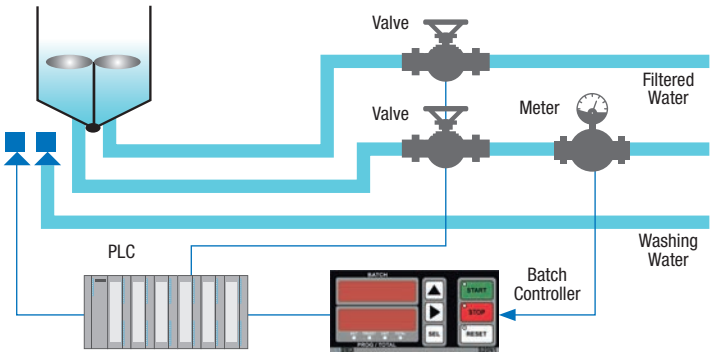
MULTIPLE RECIPES FROM REMOTE COMMAND (PLC) OR LOCAL (AUTO-MAN STATION)



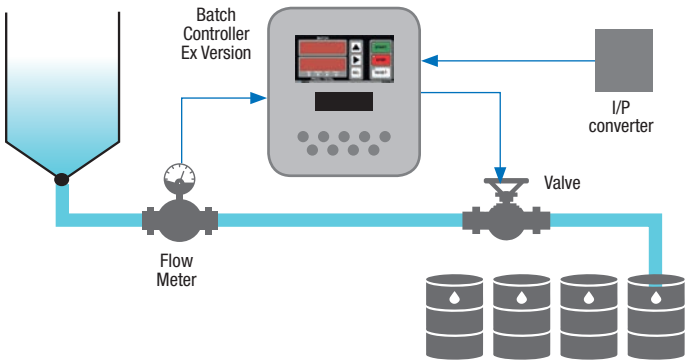
BATCHING APPLICATION TO FILL A TANK TRUCK



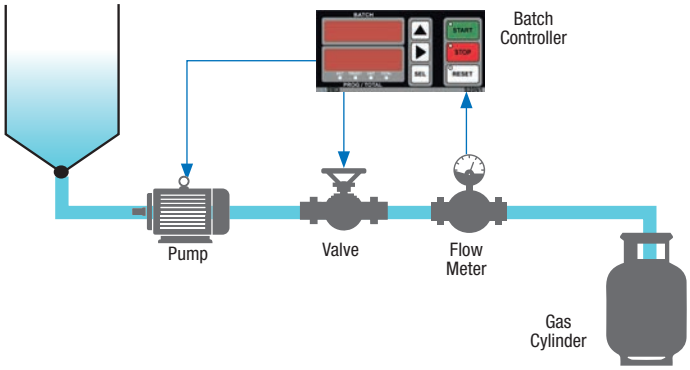
FILTER REGENERATION BATCHING FOR WATER TREATMENT



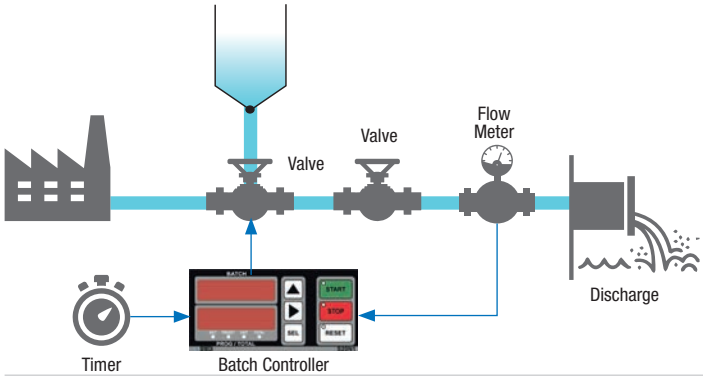
FILLING SYSTEM BATCHING IN HAZARDOUS AREA



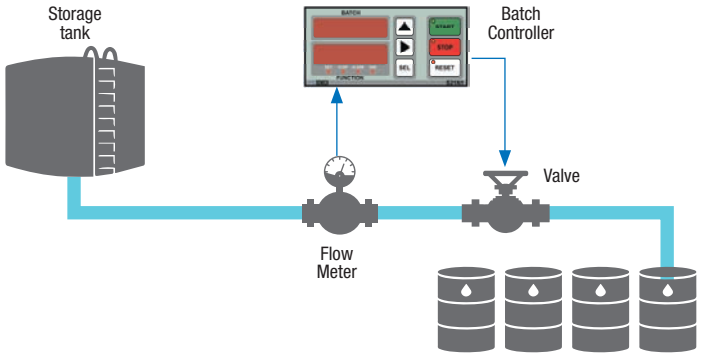
GAS REINJECTION SYSTEM IN WINEMAKING



DISCHARGE INDUSTRIAL WASTE CONTROL SYSTEM



FILLING SYSTEM WITH 2 SPEED VALVE CONTROL



BATCH CONTROLLERS - S-LINE

	S20N1	S21N1
	NEW FEATURES 	NEW FEATURES 
	Batch controller with pulse input, LED display and ModBUS interface	**Batch controller with pulse input, LED display, ModBUS interface and self-powered clock**
GENERAL DATA		
Power supply	115/230 Vac ± 50/60 Hz; 24 Vac/dc	115/230 Vac ± 50/60 Hz; 24 Vac/dc
Power transducer	12/24 Vdc, 30 mA (max)	12/24 Vdc, 30 mA (max)
Max consumption	10 VA	10 VA
Max isolation	1.500 V	1.500 V
Data storage	EEPROM, data	EEPROM, data
Clock	-	Clock with independente battery, data memory, automatic time correction
Interfacce	Nr.1 RS232 (printer command) Nr.1 RS485 / ModBUS (control and data monitoring) Nr.1 Micro USB (firmware update)	Nr.1 RS232 (printer command) Nr.1 RS485 / ModBUS (control and data monitoring) Nr.1 Micro USB (firmware update)
VISUALIZATION AND MEASUREMENT		
Display	Nr.2 5 digit LED display	Nr.2 5 digit LED display
LED status indicators	Nr.7 LED for operating mode signalling	Nr.7 LED for operating mode signalling
INPUT DATA		
Nr channels	Nr.1 (isolated)	Nr.1 (isolated)
Type	Reed, npn (2/3 wires), Namur, Hall effect, photoelectric sensor	Reed, npn (2/3 wires), Namur, Hall effect, photoelectric sensor
Max frequency	2,2 kHz	2,2 kHz
Control	Nr.3 input (start, stop, reset)	Nr.3 input (start, stop, reset)
OUTPUT DATA		
Nr channels	Nr.2	Nr.2
Type	SPDT relay, rated current 5 A 250 V (resistive load)	SPDT relay, rated current 5 A 250 V (resistive load)
THERMOMECHANICAL DATA		
Operating temperature	0..50°C	0..50°C
Storage temperature	-20..+85°C	-20..+85°C
Case	Noryl self-extinguish V0	Noryl self-extinguish V0
Front protection	Polycarbonate front panel	Polycarbonate front panel
Connection	Backside removable terminals	Backside removable terminals
Dimension (w x h x d)	144 x 72 x 130 mm	144 x 72 x 130 mm
Panel cut-out dimension	135 x 67 mm	135 x 67 mm
Weight	800 g	800 g
SETTINGS, NORMS		
Prorgamming / Dosing	With front buttons	With front buttons
Operating mode	Stand-alone or auto-man with remote PLC (RS485 - ModBUS)	Stand-alone or auto-man with remote PLC (RS485 - ModBUS)
Max batch operations	1	8
Approval	CE	CE

ORDER CODES	
Code	**Description**
Batch Controller - Standard Versions	
S20N1-1-ST	Batch controller with pulse input, LED display, ModBUS interface, 115 / 230 Vac
S20N1-23-ST	Batch controller with pulse input, LED display, ModBUS interface, 24 Vac/dc
S21N1-1-ST	Batch controller with pulse input, LED display, ModBUS interface, self-powered clock, 115 / 230 Vac
S21N1-23-ST	Batch controller with pulse input, LED display, ModBUS interface, self-powered clock, 24 Vac/dc
Batch Controller - EX Versions	
S20N1EX-1-ST	Batch controller with pulse input, LED display, ModBUS interface, flame retardant Eexd case, 115 / 230 Vac
S20N1EX-23-ST	Batch controller with pulse input, LED display, ModBUS interface, flame retardant Eexd case, 24 Vac/dc
S21N1EX-1-ST	Batch controller with pulse input, LED display, ModBUS interface, self-powered clock, flame retardant Eexd case, 115 / 230 Vac
S21N1EX-23-ST	Batch controller with pulse input, LED display, ModBUS interface, self-powered clock, flame retardant Eexd case, 24 Vac/dc

ORDER CODES	
Code	**Description**
Batch Controller - IP65 Versions	
S20N1IP65-1-ST	Batch controller with pulse input, LED display, ModBUS interface, IP65 case, 115 / 230 Vac
S20N1IP65-23-ST	Batch controller with pulse input, LED display, ModBUS interface, IP65 case, 24 Vac/dc
S21N1IP65-1-ST	Batch controller with pulse input, LED display, ModBUS interface, self-powered clock, IP65 case, 115 / 230 Vac
S21N1IP65-23-ST	Batch controller with pulse input, LED display, ModBUS interface, self-powered clock, IP65 case, 24 Vac/dc
Accessories	
FH190-24	Impact printer, 24 columns, 9-40 Vdc
S20ADP	Scheda di amplificazione ingresso standard
S20ADP-CM	Self-powered input adapter board for S20N1, S21N1, S30
S20ADP-IP65	IP65 self-powered input adapter board
S20N1-KIT-1-ST	S20N1 / S21N1 remote board, 115 / 230 Vac
S20N1-KIT-23-ST	S20N1 / S21N1 remote board, 24 Vac/dc

HANDHELD MEASUREMENT PROBES 4.8

4

MY Series

PROFESSIONAL HANDHELD TEMPERATURE AND HUMIDITY PROBES FOR ANDROID DEVICES

MY Series includes hand-held transmitters that turn your Android mobile devices such as smartphones or tablets into data acquisition systems. Easily configurable via dedicated Android app, MY Series allows the display of temperature (RTD, TC) and humidity values in analog or digital format, enabling sharing of instant measurement via SMS, email and other common data platforms. MY Series is the suitable solution for professional, certified and industrial measurements in several application (machinery, environmental chambers, food storage and transport, laboratories, HVAC systems etc...) both for diagnostic purposes and environmental parameters monitoring.

PIV - APP

Google play

VISUALIZING SENSOR DATA ON YOUR SMARTPHONE OR TABLET

FREE APP AVAILABLE FOR ANDROID DEVICES WITH MICROUSB OTG

INSTANT MEASUREMENT RECORDING & SHARING VIA EMAIL, SMS, WHATSAPP, FACEBOOK, TWITTER ETC

MY SERIES PROBES IS AVAILABLE IN 3 VERSIONS: RTD, THERMOCOUPLE, HUMIDITY AND TEMPERATURE

VISUALIZING SENSOR DATA IN DIGITAL OR ANALOG FORMAT

PAIR WITH MULTIPLE TRANSMITTERS FROM THE SAME APP

QUICK SELECTION OF SCALES AND ENGINEERING UNITS

M12M CONNECTOR FOR RELIABLE AND ACCURATE COUPLING WITH MEASURING ELEMENT

PT100 PROBES • MY-PT

	MY-PT-150-3	MY-PT-250-2	MY-PT-150-3R
	NEW 	NEW 	NEW 
	PT100 handheld probe, class B, d=3 mm, L= 150 mm, round tip, M12M connector	**PT100 handheld probe, class B, d=2 mm, L= 250 mm, round tip, M12M connector**	**PT100 handheld probe, class B, d=3 mm, L= 150 mm, sharpened tip, M12M connector**
GENERAL DATA			
Type of Measurement	Temperature	Temperature	Temperature
Power Supply	By USB port	By USB port	By USB port
Operating Temperature	-20..+50°C (handle)	-20..+50°C (handle)	-20..+50°C (handle)
Interface	Micro USB	Micro USB	Micro USB
Accuracy	Class B (sensor), conversion error (better than 1% measure / 0.5°C)	Class B (sensor), conversion error (better than 1% measure / 0.5°C)	Class B (sensor), conversion error (better than 1% measure / 0.5°C)
Measurement Range	-30..300°C	-30..300°C	-30..300°C
Response Time	15 s	15 s	15 s
Probe connector	M12	M12	M12
Configuration System	Android PIV APP by USB OTG Smartphone	Android PIV APP by USB OTG Smartphone	Android PIV APP by USB OTG Smartphone
Settings (by Android App)	Analog / Digital visualization Max / Min session recording Session reset Analog scale setting Engineering unit (K, °C, °F, °R) setting Instant measurement recording and sharing (su SMS, Email, Whatsapp)	Analog / Digital visualization Max / Min session recording Session reset Analog scale setting Engineering unit (K, °C, °F, °R) setting Instant measurement recording and sharing (su SMS, Email, Whatsapp)	Analog / Digital visualization Max / Min session recording Session reset Analog scale setting Engineering unit (K, °C, °F, °R) setting Instant measurement recording and sharing (su SMS, Email, Whatsapp)
Marking	CE	CE	CE
Norms	EN 61326, EN 61010-1	EN 61326, EN 61010-1	EN 61326, EN 61010-1
SENSOR			
Thermoelement	Pt100 ohm 0°C, accuarcy according to IEC 751	Pt100 ohm 0°C, accuarcy according to IEC 751	Pt100 ohm 0°C, accuarcy according to IEC 751
Isolation	100 MΩ at 100 Vdc	100 MWΩ at 100 Vdc	100 MΩ at 100 Vdc
Electrical connection	Compensated male connector, plug-in and screw-on type, with body in moulded Nylon and M12X1 metal thred (DIN-VDE0627)	Compensated male connector, plug-in and screw-on type, with body in moulded Nylon and M12X1 metal thred (DIN-VDE0627)	Compensated male connector, plug-in and screw-on type, with body in moulded Nylon and M12X1 metal thred (DIN-VDE0627)
Protection Degree	IP67	IP67	IP67
Material	With densely packed Magnesium Oxide (MgO) insulated cable, stainless steel AISI 316 sheath	With densely packed Magnesium Oxide (MgO) insulated cable, stainless steel AISI 316 sheath	With densely packed Magnesium Oxide (MgO) insulated cable, stainless steel AISI 316 sheath
Diameter	3 mm	2 mm	3 mm
Length	150 mm	250 mm	150 mm

ORDER CODES

PT100 MEASUREMENT SYSTEM

Code	Description
TRANSMITTER	
MY-PT-150-3	PT100 handheld transmitter with PT-150-3-M12 probe
MY-PT-250-2	PT100 handheld transmitter with PT-250-2-M12 probe
MY-PT-150-3R	PT100 handheld transmitter with PT-150-3R-M12 probe
ACCESSORIES/SPARE	
PT-150-3-M12	PT100 class B, d=3 mm, L= 150 mm, M12 connector
PT-250-2-M12	PT100 classe B, d=2 mm, L= 250 mm, M12 connector
PT-150-3R-M12	PT100 classe B, d=3 mm, L= 150 mm, tapered terminal, M12 connector
MEASUREMENT TOOL KIT	
MY-PT-KIT	PT100 handheld transmitter with PT-150-3-M12, PT-250-3-M12, PT-150-3R-M12 probes

Technical data, diagrams and drawings in this catalog are indicative only and not binding

THERMOCOUPLE TYPE K PROBES • MY-TC | RH/TEMP. PROBE

	MY-TC-250-3	MY-TC-250-1.5	MY-TC-AC	MY-UT
	NEW 	NEW 	NEW 	NEW 
	Thermocouple type K handheld probe, d=3 mm, L=250 mm, round tip, M12M connector	**Thermocouple type K handheld probe, d=1.5 mm, L=250 mm, round tip, M12M connector**	**Thermocouple type K handheld bow probe, M12M connector**	**Temperature / RH handheld probe, M12M connector**
GENERAL DATA				
Type of Measurement	Temperature	Temperature	Temperature	Temperature / Relative Humidity
Power Supply	By USB port	By USB port	By USB port	By USB port
Operating Temperature	-20..+50°C (handle)	-20..+50°C (handle)	-20..+50°C (handle)	-20..+50°C (handle)
Interface	Micro USB	Micro USB	Micro USB	Micro USB
Accuracy	Better than 1% measure / 2°C	Better than 1% measure / 2°C	Better than 1% measure / 2°C	±3% UR (20..80% UR) ±5% (<20%UR, >80%UR) ±0.5°C @ 25°C; 1.5°C @ -10..+60°C
Measurement Range	0..1.150 °C	0..1.150 °C	0..1.150 °C	-40..+120°C (Temp.) / 0..100% (UR)
Response Time	15 s	15 s	15 s	10 s
Probe connector	M12	M12	M12	M12
Configuration System	Android PIV APP by USB OTG Smartphone	Android PIV APP by USB OTG Smartphone	Android PIV APP by USB OTG Smartphone	Android PIV APP by USB OTG Smartphone
Settings (by Android App)	Analog / Digital visualization Max / Min session recording Session reset Analog scale setting Engineering unit (K, °C, °F, °R) setting Instant measurement recording and sharing (su SMS, Email, Whatsapp)	Analog / Digital visualization Max / Min session recording Session reset Analog scale setting Engineering unit (K, °C, °F, °R) setting Instant measurement recording and sharing (su SMS, Email, Whatsapp)	Analog / Digital visualization Max / Min session recording Session reset Analog scale setting Engineering unit (K, °C, °F, °R) setting Instant measurement recording and sharing (su SMS, Email, Whatsapp)	Analog / Digital visualization Max / Min session recording Session reset Analog scale setting Engineering unit (K, °C, °F, °R) setting Instant measurement recording and sharing (su SMS, Email, Whatsapp)
Marking	CE	CE	CE	CE
Norms	EN 61326, EN 61010-1	EN 61326, EN 61010-1	EN 61326, EN 61010-1	EN 61326, EN 61010-1
SENSOR				
Thermoelement	Single element thermocouple type K according to IEC 584 class 2 (ASTM E 230)	Single element thermocouple type K according to IEC 584 class 2 (ASTM E 230)	Bow thermocouple type K, compact version	Integrated capacitive temperature / relative humidity sensor
Isolation	100 MΩ at 500 Vdc	100 MΩ at 500 Vdc	100 MΩ at 500 Vdc	
Electrical connection	Compensated male connector, plug-in and screw-on type, with body in moulded Nylon and M12X1 metal thred (DIN-VDE0627)	Compensated male connector, plug-in and screw-on type, with body in moulded Nylon and M12X1 metal thred (DIN-VDE0627)	Compensated male connector, plug-in and screw-on type, with body in moulded Nylon and M12X1 metal thred (DIN-VDE0627)	Compensated male connector, plug-in and screw-on type, with body in moulded Nylon and M12X1 metal thred (DIN-VDE0627)
Protection Degree	IP67	IP67		
Material	With densely packed Magnesium Oxide (MgO) insulated cable, Inconel 600 sheath	With densely packed Magnesium Oxide (MgO) insulated cable, Inconel 600 sheath	With densely packed Magnesium Oxide (MgO) insulated cable and ungrounded hot junction	Stainless steel AISI 316 S.S. (d=6 mm)
Diameter	3 mm	1,5 mm	12 mm	6 mm
Length	250 mm	250 mm	82 mm	120 mm
Bundled equipment	Thermocouple type K, L=1000 mm, wire ANSI FEP flat cable, M12M connector	Thermocouple type K, L=1000 mm, wire ANSI FEP flat cable, M12M connector	Thermocouple type K, L=1000 mm, wire ANSI FEP flat cable, M12M connector	

ORDER CODES

THERMOCOUPLE TYPE K MEASUREMENT SYSTEM

Code	Description
TRANSMITTER	
MY-TC-250-3	Thermocouple handheld transmitter with TCK-250-3-M12 and TCK-W-1000-M12 probes
MY-TC-250-1.5	Thermocouple handheld transmitter with TCK-250-1,5-M12 and TCK-W-1000-M12 probes
MY-TC-AC	Thermocouple handheld transmitter with TCK-AC-M12 and TCK-W-1000-M12 probes
ACCESSORIES/SPARE	
TCK-250-3-M12	Thermocouple type K , d=3 mm, L=250 mm, M12 connector
TCK-250-1.5-M12	Thermocouple type K, d=1.5 mm, L=100 mm, M12 connector
TCK-W-1000-M12	Thermocouple type K, joint exposed, L=1000 mm, M12 connector
TCK-AC-M12	Thermocouple type K, bow type, M12 connector
MEASUREMENT TOOL KIT	
MY-TC-KIT	Thermocouple handheld transmitter with TCK-AC-M12, TCK-250-3-M12, TCK-250-1,5-M12 and TCK-W-1000-M12 probes

TEMPERATURE / RH MEASUREMENT SYSTEM

Code	Description
TRANSMITTER	
MY-UT	Temperature / Relative Humidity handheld transmitter with UT-M12 probe
ACCESSORIES/SPARE	
UT-M12	Temperature / Relative Humidity probe, M12 connector
CONFIGURATION APP	
PIV-APP	App Android for handheld probes configuration (MY-PT, MY-TC, MYUT). For MicroUSB OTG smartphone

Technical data, diagrams and drawings in this catalog are indicative only and not binding

HANDHELD MULTIMETER 4.9

4

Test-4 SIGNAL SIMULATOR & MULTIMETER HANDHELD FOR ANALOG SIGNALS

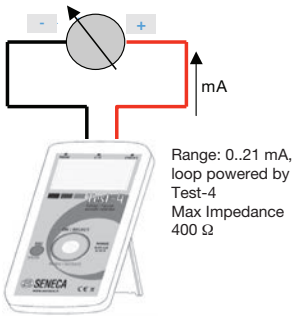
WITH NEW RAMP MODE

Test-4 is a valuable tool for calibration sessions, laboratory tests and simulation of analog measurements controlled by industrial devices (PLCs, controllers, data acquisition systems, etc…). With an overall accuracy of less than 0.1%, a resolution of one µA and one mV, Test-4 ensures the best calibration results. It allows simulation of ramps in both tension and current (active or passive).Test-4 can be powered with 220 Vac power supply or through 2-NiMH batteries that provide an average range of 20 hours.

CONNECTIONS

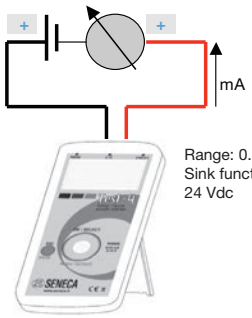
SIGNAL GENERATION

ACTIVE CURRENT



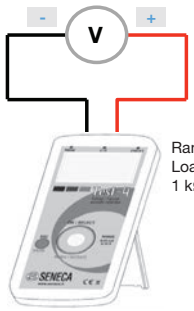
Range: 0..21 mA,
loop powered by
Test-4
Max Impedance
400 Ω

PASSIVE CURRENT



Range: 0..21 mA,
Sink function, max
24 Vdc

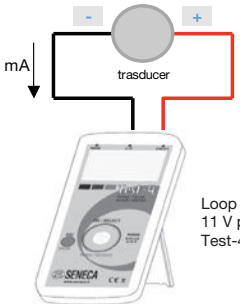
VOLTAGE



Range: 0..11 V
Load Impedance
1 kΩ

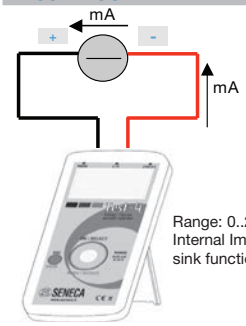
SIGNAL MEASUREMENT

ACTIVE CURRENT



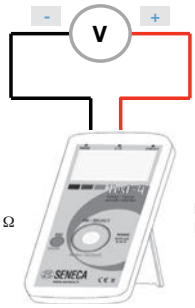
Loop 4..21 mA
11 V powered by
Test-4

PASSIVE CURRENT



Range: 0..21 mA
Internal Impedance 200 Ω
sink function

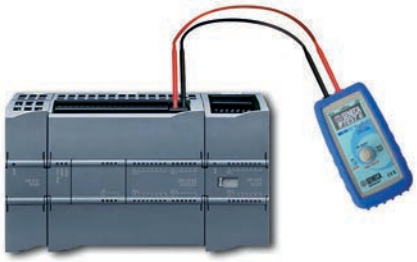
VOLTAGE



Range: 0..11 V
Internal Impedance
100 kΩ

APPLICATION NOTE

FIELD SIGNAL SIMULATION



CALIBRATION PROCESS FOR SENSORS, ACTUATORS, PLC, REGULATORS, ETC.

TECHNICAL FEATURES

GENERAL DATA

Power supply	2 NiMh AA type batteries, 2650 mAh Lifetime: 8 hours (min, max load), 20 hours (typical) 100-240 Vac with battery charger
Protection degree	IP 20
Operating temp.	0..50°C (recommended)
Humidity	30..90 % non-condensing
Dimensions	140 x 75 x 33 mm
Weight	250 g
Isolation	Battery powered, intrinsically isolated
Rejection	50-60 Hz
Frequency	10 Hz
Input / Output signals	Voltage measurement / generation: 0..11 V Current measurement / generation: 0..21 mA
Accuracy	0.1% for each type of input / output
Resolution	0.002 mA 0.001 V
Norms	EN61000-6-4; EN61000-6-2; EN61010-1

CONTROLS

Buttons	ESC / ON/OFF – general navigator SELECT (rotation) – current / voltage variation SELECT (pressure) – coefficient variation (value* 10N, N=0,1,2,3)
Language	italian, english, french, german, spanish
Contrast	15 levels
Screensaver	Display vertical scroll after 7 minutes inactivity Restart pressing ESC / ON / OFF button
Function menu	General setup (function mode selection, signal type, language, contrast, display, encoder sensitivity) Signal generator (voltage / current / passive current selection), Measure (voltage / current) Generation of currents and voltages in Ramp mode Setting
Errors display	Over voltage (V > 11 V) Under voltage (V < -0,2 V) Over current (> 21 mA) Under current (< -0,1 mA) Blinking value (signal generation fault)

ACCESSORIES SUPPLIED WITH DEVICE


Tips


Power supply


2 NiMh AA type
batteries, 2650 mAh


Trasport bag

RoHS COMPLIANT

CE

INTERFACES

Input / Output	2 mm diameter tips
Power supply	Battery charge connector, battery compartment on the back side, under the rubber cover
microUSB port	for next purposes

ORDER CODES

Codes		Description
Model	TEST-4	mV-V-mA generator & handheld meter
Opzions	/T	Certificated ISO 9001 calibration service
Accessories	TEST-4-PK	Precision probes set with adapters and crocodile terminals

Technical data, diagrams and drawings in this catalog are indicative only and not binding

SENECA APPS FOR ANDROID/IOS MOBILE DEVICES

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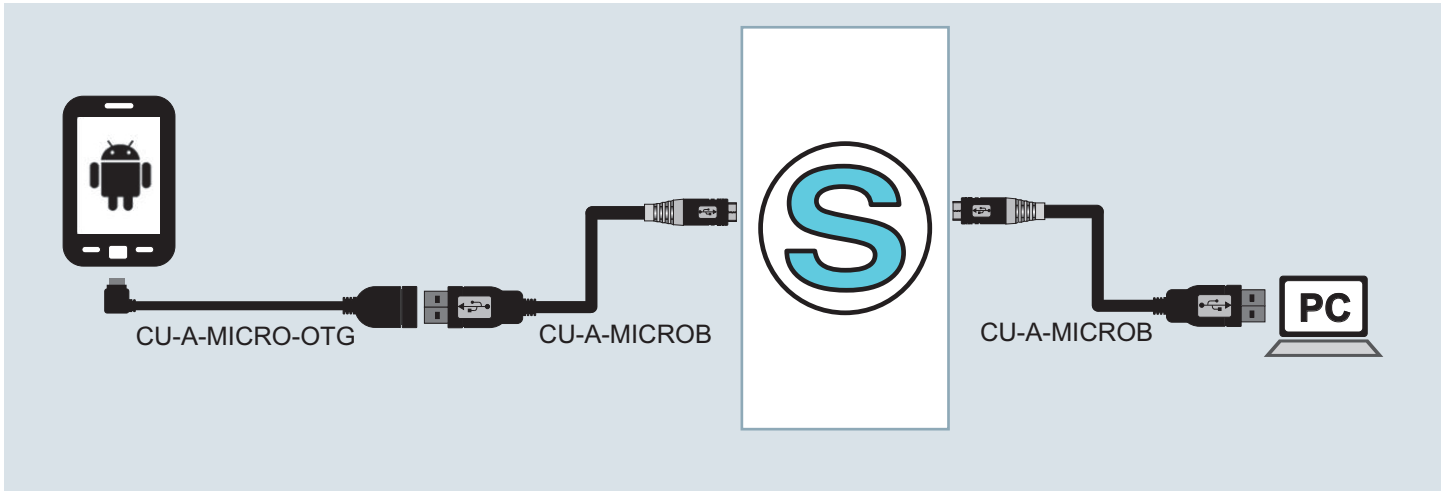
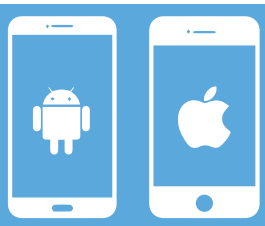
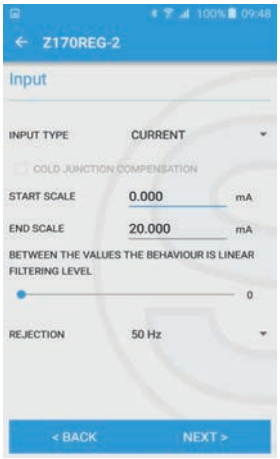


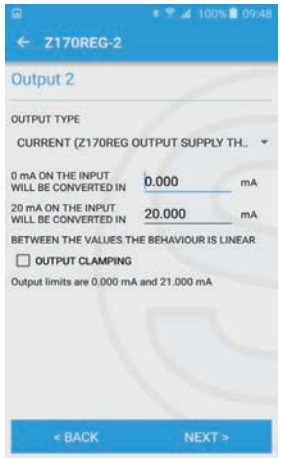


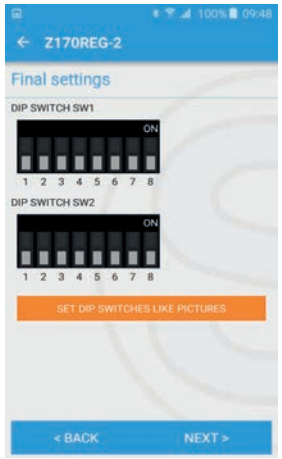
Mobile Phone with USB OTG support

Google play

- Direct access and setting with user friendly interface
- No specific skills required
- Fast configuration upload/download and replication
- Operating manuals available on your smartphone
- Your smartphone becomes the best configurator







APP		PROGRAMMABLE PRODUCTS	GOOGLE PLAY	APPLE STORE
	EASY SETUP APP	Z170REG-1, Z109REG2-1, Z1090REG-BP, Z109PT2-1, Z109UI2-1 Z109TC-1, Z-KEY, S203RC-D, S203TA-D	✔	-
PIV - APP	PIV APP	MY-PT, MY-UT, MY-TC	✔	-
SENECA SMS	SENECA SMS	MY2, Z-GPRS2-SEAL, Z-GPRS3	✔	✔
SENECA TEMP	SENECA TEMP	MY2, Z-GPRS2-SEAL, Z-GPRS3	✔	-

NOTES

Please visit our website for information about our products and services

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