Short Catalogue

DISTRIBUTED I/O MODULES AND REMOTE CONTROL SYSTEMS

CONVERTERS AND INTERFACES

PANEL MOUNTING UNITS

MEASUREMENT INSTRUMENTATION

SENECA

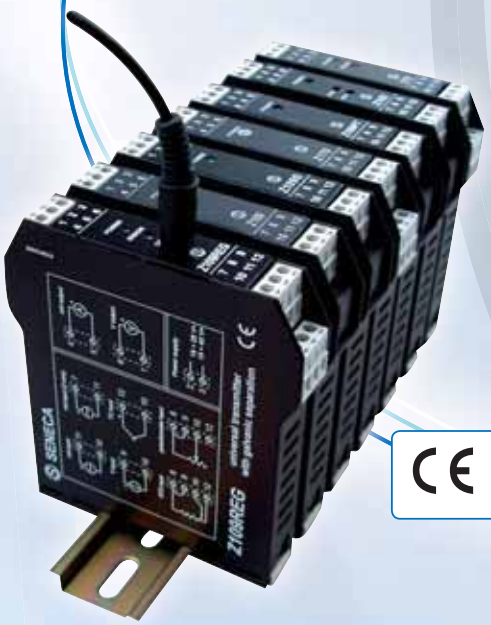
High technology for Industrial Automation

Established since nearly 20 years in industrial automation, SENECA has achieved a leading position in control instrumentation and industrial process. The Seneca strengthness are nonstop innovation, reliability and technical quality. Our product lines for the automation, entirely and internally designed and produced, are compatible with open and more widespread technological standards. SENECA proposes a wide range of products and systems with high value added, from the instrumentation field up to the products for monitoring and control, a basket that includes interfaces, conditioners, acquisition and control systems and display for data visualization.

SENECA

SENECA takes care of your signals...

Compact Isolators and Converters

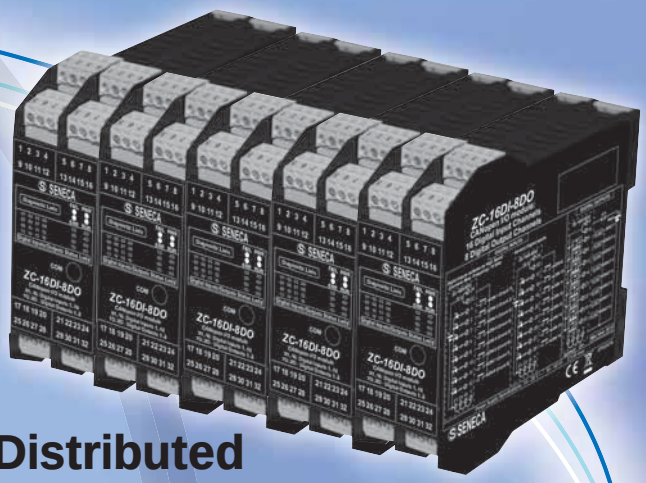


Modular Isolators and Converters

Ethernet Gateway and Telecontrol Units

Distributed
I/O System

CANopen



Distributed
I/O System

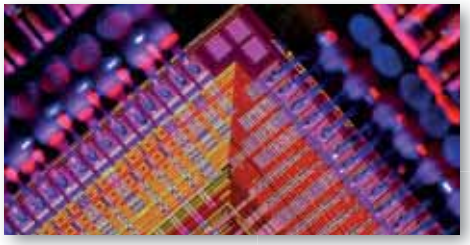
Displays,
Totalizers, Batch
Controllers

LED
OLED

Full Control of the Product Life Cycle

DESIGN

SENECA has an advanced internal structure of electronic design that follows all the steps of the product development, analysis and feasibility studies, applied research, PCB and SMT design activities with the best software for simulation and industrialization prototyping electronics and mechatronics, documentation and operating manuals. This structure also carries on consultancies and achievements of electronics contract basis. The SENECA design reserves its full attention for finding components and normative adjustment. Testing, analyzing interference, electromagnetic compatibility test, signals security and integrity - EMI are conducted by internal and external (qualified) laboratories for comparison tests. The SENECA design is in step with the more advanced microelectronic technologies (FPGA, PSoC, CPLD, ASIC, DSP, MEMS, LVDS, VHDL),adopting a systematic approach of quality control (ISO 9001:2000, DoE methods, FTA, FMEA) and statistical analysis.



PRODUCTION

The production cycles and the internal tests are executed through the most modern SMT lines (Surface Mounting Technology) and PTH (Pin Through Hole). The capacity of our factories is thousands of components per hour, which allows to combine high production speed, accuracy, flexibility, reduced MTBF and time-to-market. The production process is fully conform to the environmental directives and eco-conform to the TAEE, ROHS and REACH certifications. On all products shall be carried out stringent test systems with automatic generation of individuals Test report. In order to handle the increasing complexity of SMT technology on electronic cards SENECA adopts Convention forced to recast that process control systems for welding up to the management of fluxing through a precise and accurate control of heat transfer. All products comply with CE for electromagnetic compatibility, the safety requirements and regulations RINA, UL - UR - CSA for naval applications and for the North American market.

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DISTRIBUTED I/O MODULES AND REMOTE CONTROL SYSTEMS

SENECA

Z-PC line, open system, configurable and standard

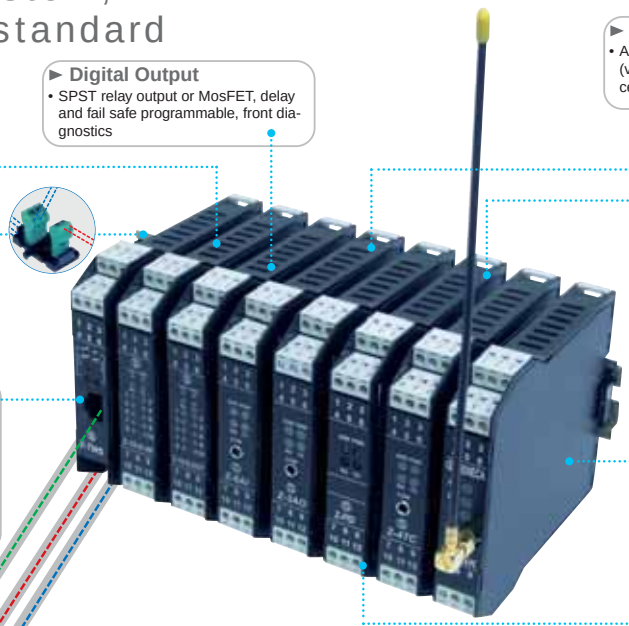
► Digital Input
- Isolated input for reed sensors, proximity, pnp, npn, contact, inputs with fast counters up to 32 bit and 10 KHz

► Digital Output
- SPST relay output or MosFET, delay and fail safe programmable, front diagnostics

► Analogue Input and Output
- Acquisition and control standard analog signals (voltage, current, ohm), power supply, transducers, resolution up to 15 bit + sign

► Connection System and power-supply
- Supports in nylon loaded PA6 with fiber glass at 30%
- Hot swapping
- Power-supply terminal /data line
- Mounting on guide-DIN 46277 in vertical position

► Special Modules: temperature control, load cells, electric network analyzer
- Direct input from RTD 2, 3 or 4 wires
- Thermocouples acquisition J, K, R, S, T, B, E, N
- Electrical measurements acquisition from net analyzer
- Load cell (strain gauge) acquisition



► Modular CPU and multi-functions
- PLC, Web Server, RTU, datalogger, Ethernet bridge
- ModBUS Master / Slave on RS232/RS485
- RS232 interfaces (user free/programming)
- Ethernet Port 10Base T opened to supervision networks and remote connection
- RISC / MISC Microprocessor at 32/64 bit
- Memories: up to 32 MB RAM, 64 MB flash memory (data)
- Backup battery for retentive variables

► Communication Interfaces
- Radio modules with short range 100 kbps, 10 mW, 434-869 MHz
- RS232-USB/RS485 serial Conversion Modules

► Regulators
- Analogue: Z-PID, universal input, proportional, integral, derivative action settings
- Digital: Z-D-IO, module 6 DI, 2 DO, I/O slave or automatic functioning for pneumatic valves, motorized and alarms management

Ethernet

Serial Connection

Fieldbus

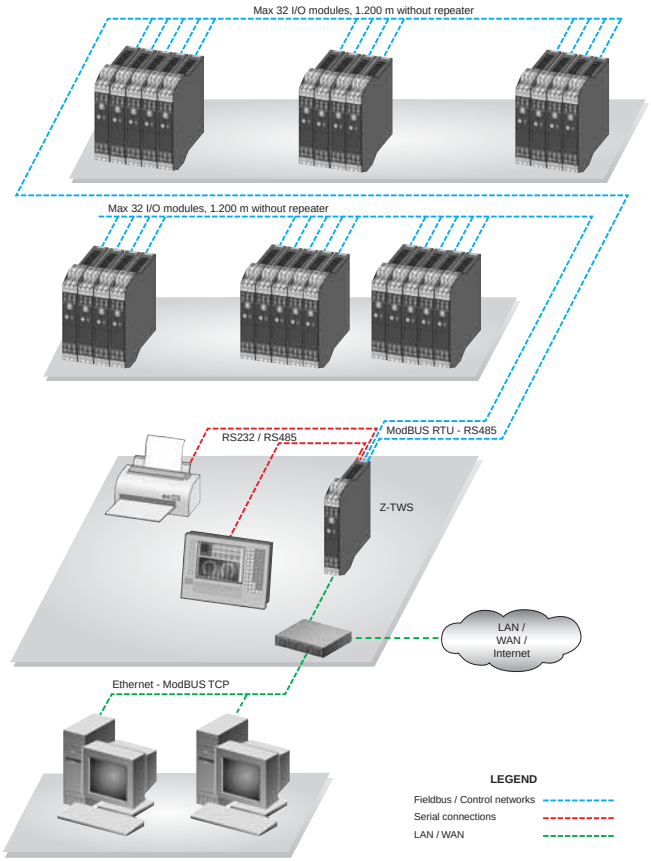
- Html/Java Web Client
- LAN-Ethernet / ModBUS TCP
- Architetture Client/Server e VPN

- Communication System for GSM/GPRS, DSL PSTN, WiLAN, UHF ...
- Printer, operator panels, identification systems

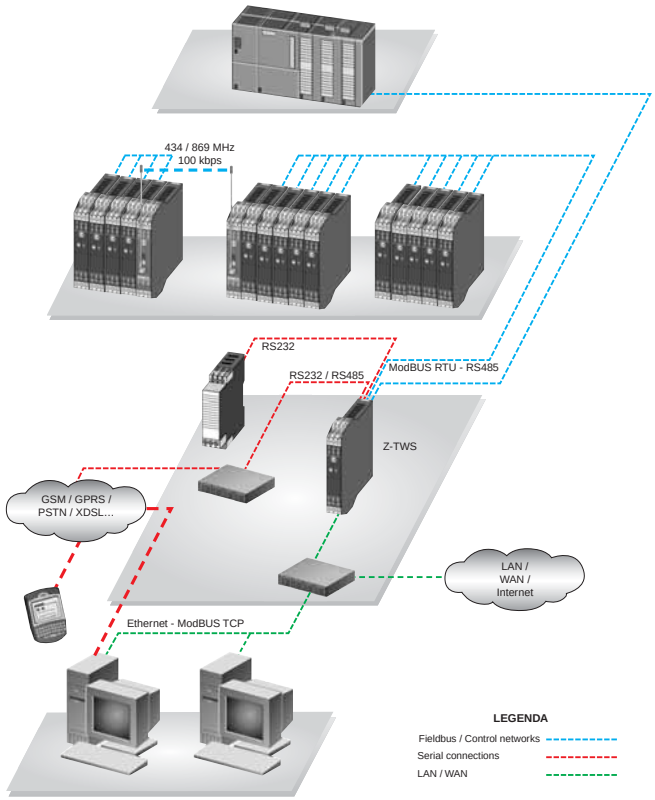
- I/O expansion
- PLC, regulators and field devices

ModBUS RTU Master/Slave
Profibus DP (Slave)
CanOPEN (Master)

Distributed system, supervisory and control integration

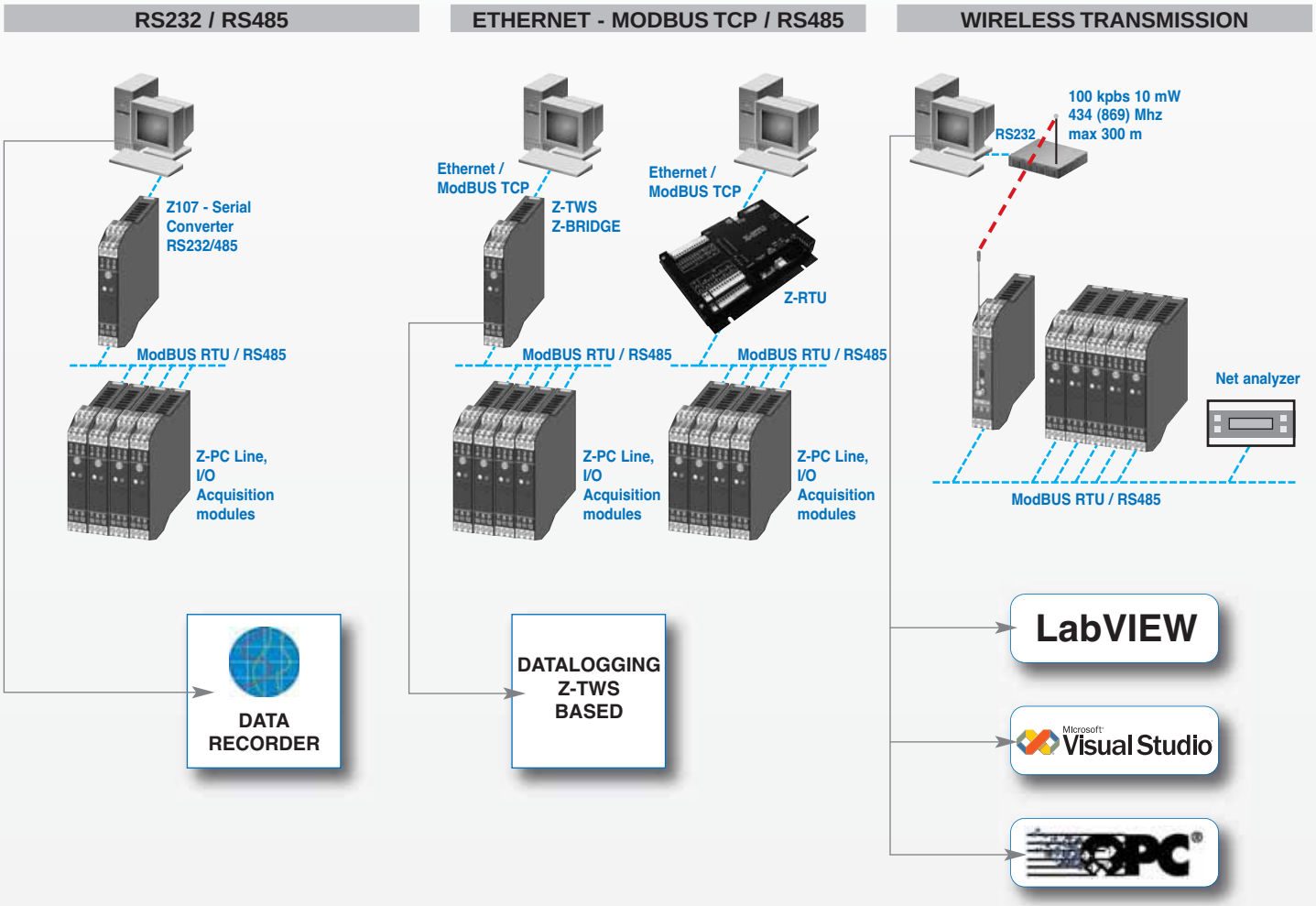


Data transmission and remote control system



Z-PC LINE • DATA ACQUISITION

Z-PC LINE for data acquisition allows the implementation of systems able to collect, process and store analog or digital measures from industry and T&M with simple Plug&Play technology on the monitoring side and the distributed I/O ModBUS on the field side. Moreover Data Recorder (data acquisition software) Z-PC Line can be a data acquisition platform joined to more popular tools and standard.

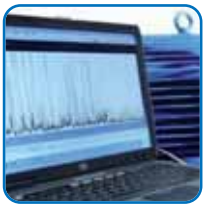


APPLICATIONS

END OF LINE TEST

CALIBRATION AND LABORATORY TEST

ELECTRIC CONSUMPTION ANALISYS



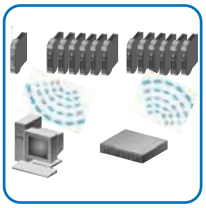
TEMPERATURE MONITORING

DATA ACQUISITION PORTABLE KIT

TESTING ROOM

CAPACITY TEST

DATA ACQUISITION AND RECORDING

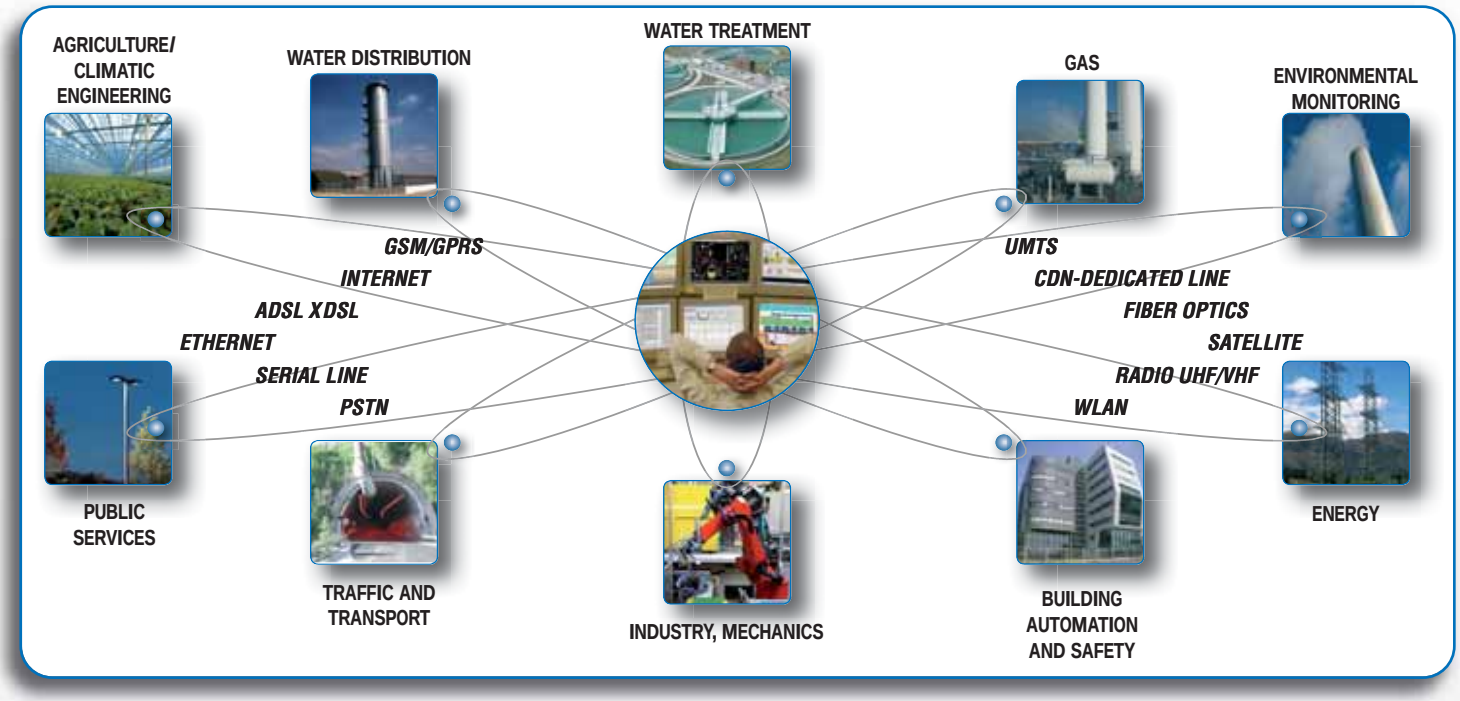


PROCESS ENVIRONMENT MONITORING

WATER TREATMENT CONTROL

Z-PC LINE • TELECONTROL

Z-PC line is designed to support the systems integrators, design and engineering companies, automation, instrumentation and specialists, electrical engineers. It ensures open technology, high connectivity in the data transmission toward and from the remote centre. The configuration software (Z-NET3) offers a wide range of “ready-to-use” functions for remote control (alarms, files, events management via SMS, e-mail, voice etc.) and automation (pumps rotation, counter, pulses totalizer, flow metering etc.).



TELECONTROL INTEGRATED FUNCTIONS

ALARMS MANAGEMENT

- Automatic alarms sending via SMS up to 8 phone numbers
- Call from devices to the supervision centre according to an alarm/event

READY-TO-USE FUNCTIONS

- Users Automatic Management
- Hours Counting Functioning
- Counters and Totalizers
- Offset and Flow Counting

LOG FILE

- Data log data transfer via FTP, SMTP (email), pre-setted trip alarms

GSM

- Point-to-Point connection via GSM data channel
- Status Request (analog/digital measures) via SMS
- Commands sending via SMS

GPRS

- “Always On” Connections Management
- Connection to SENECA Rtu via public server FTP (on internet)
- Connection to Master remote stations with public & dynamic IP and blocked ports in input

OPENVPN

- Virtual Network Creation via internet
- Connection via Ethernet or GPRS router
- Point-to-Point Tunnel Creation for sure and reliable data transmission

Z-PC LINE • RENAWABLE ENERGIES AND ENERGETIC EFFICIENCY

Concerning the renewable sources and quality control of energy, SENECA proposes several solutions and products. The Z-PC line modules are galvanically isolated from network voltage and protected from overvoltages and overcurrents. They can also be locally and remotely configured for switching/switching off, automatic data sending, reducing consumptions of electric energy and optimization of maintenance costs.

NETWORK ANALYSIS

REMOTE MANAGEMENT AND MONITORING

ISOLATION AND PROTECTION

REGULATION SYSTEMS

Z-PC LINE • AUTOMATION AND PRODUCTION CONTROL

Z-PC LINE is a general-purpose system for the management of process and batch automations. The ModBUS, CANopen and Profibus interfaces allow an easy integration with other devices and existing systems. The IEC 61131-3 programming (with Isagraf or CoDeSys platforms) gives the maximum flexibility in the implementing of control logics, regulations, metering, alarms and trend management of automatic machines and systems.

IEC ISaGRAF

PROGRAMMING

PROFI BUS CANopen Modbus ETHERNET

COMMUNICATION

OPC HMI-SCADA

SUPERVISION

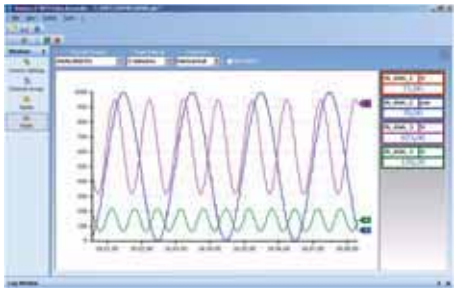
AUTOMATION FUNCTIONS

Z-PC Line software architecture

Scada, windows runtime software, database...

► Trend Viewer

► DATA RECORDER



Data acquisition and recording software

►IEC 870-101 / 104 integrated protocols

Communication standard for electricity industry (serial and Ethernet)

► Z-NET3

System configurator (IEC61131)

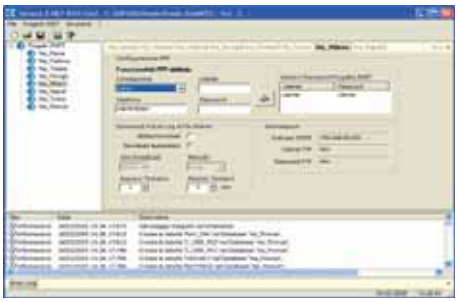
► WEB EDITOR

Development Environment for supervision html/java page

CPU and I/O configuration

Database generation and update

► Z-NET RTU



Remote data acquisition and communication scheduling for Telecontrol systems

►Z DATA STORE

Data management, files and Micro RTU communication

► OPC Server

OPC Server standard
Ethernet

OPC Server I/O
(GPRS-IP connections with dynamic IP, driver ModBUS)

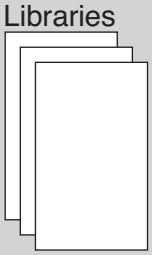
OPC Server MB Slave
(high security GPRS connections, “ready to use” system for IP static nodes)

► PLC PROGRAMMING [IEC 61131]

Isagraf

Codesys

SENECA Libraries



Telecontrol Integrated Functions

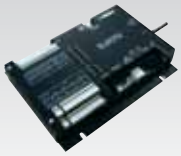
ModBUS Integrated Functions

Power consumption, working hours counting, motors rotation etc.

Communication Network Configuration

RS232 / RS485, TCP/IP, PPP

Z-PC LINE • RTU

	Z-RTU	M-RTU-GP	M-RTU-PC	Z-GPRS
CE	 Remote Terminal Unit 16 (8) DI, 8 (4) DO, 4 (2) AI, 2 (1) AO with GSM/GPRS or PSTN modem	 Micro RTU for general purpose	 Micro RTU for cathodic protection	 GSM/GPRS – RTU with ModBUS interface
ELECTRIC FEATURES				
Power supply	10-30 Vdc	Range 8..30 Vdc Internal batteries 14,4 V lithium batteries (optional)	Range 8..30 Vdc Internal batteries 14,4 V lithium batteries (optional)	12..40 Vdc or 12..28 Vac (50-60Hz)
Battery Life-Time		3 years	3 years	
Power Consumption	7 W min, 15 W max, 11 W (GSM idle)	6..50 mW, 1,5 W (GSM transmission)	6..50 mW, 1,5 W (GSM transmission)	1,2 W
Protection Degree	IP20	External Case IP44 Internal Case IP65 Connection IP40	External Case IP44 Internal Case IP65 Connection IP40	IP20
THERMOMECANIC FEATURES				
Operating Temperature	-10..+55 °C (suggested)	-20..+70 °C (max stability 0..35°C)	-20..+70 °C (max stability 0..35°C)	-20..+70 °C (max stability 0..35°C)
Dimension (w x h x d)	185 x 242 x 36,90 mm	65 x 130 x 55 mm	263 x 143 x 89 mm	110 x 112 x 17,5 mm
Weight	875 g	350 g	2 Kg (batteries included)	140 g
Enclosure	Aluminium	ABS UL 94V0	ABS UL 94V0	Nylon 6 with 30% glass-fibre, V0 self-extinguished class
Connections	Removable Terminal Block, max wire size 2.5 mm^2	DB9F, V4 RS232 interface SMA socket (antenna connector) I/O connectors: M6/ Cage	DB9F, V4 RS232 interface SMA socket (antenna connector) I/O connectors: M6/ Cage	DB9F Frontal Connection IDC10 Back Connector
COMMUNICATION, PROCESSING, MEMORY				
Communication Ports	1 Ethernet: 1 RS232/RS485 programmable 1 RS485 Modbus for serial expansion 1 RS232 Debug/User	1 port with UART GSM 1 serial port V24-RS232, half-duplex, local connection, selectable speed: 1.200.. 115.200 baud	1 port with UART GSM 1 serial port V24-RS232, half-duplex, local connection, selectable speed: 1.200.. 115.200 baud	RS232 – GSM max speed 115 Kbit/s RS485 GSM integrated, max speed 115 Kbit/s, isolated RS485 ModBUS Slave, selectable speed
Modem	Dual band GSM 900/1800 MHz (optional tri-band), full type approval, GPRS class 8 PSTN, ITU-T V.90/ 56 k, ITU-T V.34	GSM Dual band full type approval	GSM Dual band full type approval	GSM/GPRS Quad-Band Module Frequency: 850/900/1800/1900 MHz Voice, Data, SMS
CPU	RISC 32 bit – 20 MIPS	32 bit, core ARM7, 2 UARTS, low power	32 bit, core ARM7, 2 UARTS, low power	
Memory	RAM: 8MB, 64 ritentive variables Flash memory (data): 16 MB	EEPROM: 64 kB Flash: 2 MB	EEPROM: 64 kB Flash: 2 MB	RAM: 1MB Flash: 4MB
SOFTWARE, SIGNALS, MEASUREMENT				
System Protocols	ModBUS RTU Master (on RS485)/ Master Slave (on RS485/RS232), PPP, HTTP, FTP, SMTP, (ModBUS) TCP/IP	ModBUS RTU RS232 (CCITT V.24), transmission parameters: 1 bit start, 8 bit data, 1 bit stop, no parity Dedicated protocol via SMS	ModBUS RTU RS232 (CCITT V.24), transmission parameters : 1 bit start, 8 bit data, 1 bit stop, no parity Dedicated protocol via SMS	ModBUS RTU
Digital Input	Nr 16 (8) channel (internal/external power supply), power transducers, isolated channels (1500Vac)	Nr 4 isolated channels, sampling frequency 10 Hz, power transducers	Nr 2 isolated channels, sampling frequency 10 Hz, power transducers	N° 2 isolated channels, power transducers
Analog Input	Nr 4 (2) isolated channels (14 bits resolution, loop power), voltage (0..5/ 0..10 / 1..5 / 2..10 V), current (0..20 / 4..20 mA), power transducers, isolated channels (1500Vac)	Nr 2 isolated channels power transducers Range: ±2 V, ±20 V, ±50 V, ±20 mA Resolution: 15 bit + sign	Nr2 isolated channels power transducers Range 1: ±2, ±20, ±50 V, ±20 mA Range 2: ±2, ±20, ±50 V Resolution: 15 bit + sign	N° 2 isolated channels power transducers
Digital Output	Nr 8 (4) channels (SPDT relay, capacity 5A 250 Vac), LED signalling	Nr 2 relay; Contact rating: 30 Vdc – max 1 A (resistive load)		
Analog Output	Nr 2 (1) channels (12 bits resolution), voltage (0..10 / 2..10 V), current (0..20 / 4..20 mA)			
FUNCTIONS & SETTINGS				
Programming / Mode	Z-NET configurator PLC (IEC 61131 - Isagraf) Z-NET RTU (telecontrol) OPC Server (data exchange) Web Server (html / java monitoring) Datalogger / trend	I/O Acquisition & Datalogging SMS free transmission Data / SMS connections from supervisor Dedicated Functions Automatic daily log sending	I/O Acquisition & Processing SMS free transmission Data / SMS connections from supervisor Dedicated Functions Automatic daily log sending	Development environment Python GSM/GPRS functions, telecontrol, SMS routine management, data log, e-mail, DIP-switch
Norms	EN 50081-2, EN 55011, EN 50082-2, EN 61000-2-2/4, EN 50140/141, EN 61010-1, EN 60742, EN 61000-6-2	EN 61000-6-4/2002, EN 61000-6-2/2005, EN 61010-1/2001	CEI 110-24, CEI EN 61293, CEI EN 60529, UNI EN 12954, UNI 10950, UNI EN 11094	CE, EN 61000-6-4/2002, EN 61000-6-2/2005, EN 61010-1/2001, en 60742

ORDER CODES

Code		Description
Model	Z-RTU-1	Full I/O (16 DI, 8 DO, 4 AI, 2 AO)
	Z-RTU-2	Half I/O (8 DI, 4 DO, 2 AI, 1 AO)
Modem	-GSM	GSM/GPRS Modem integrated full type approval
	-PSTN	PSTN Modem
Options / Extensions	-SMART-SPEECH	Smart speech Board, vocal alarms
	-PROFIBUS-DP	Profibus DP Slave Board
	-CanOPEN	CANopen Master Board
	-IEC 870	IEC 870 protocols
Software		Pg. 25
Accessories		Pg 26

ORDER CODES

Code		Description
Model	M-RTU	Micro RTU, basic version for general applications
	M-RTU GP	Version for general applications + GSM antenna and batteries
	M-RTU-PC	Version for cathodic protection + GSM antenna and batteries
Software	Z-NET3	IEC 61131 system configurator
	Z-DS	Z Data Store. Software for SMS management, data/control, files
	OPC Server I/O	OPCServer with functionality for file log download
Accessories	BATTHP	HP Batteries, lithium batteries, 14.4V, 18500 Ah
	CASS01	Case for external application (type shell)
	CASS02	Case for external application
	CASS03	Case for external application with IP65 protection
	A-STIL	Antenna
	A-GSM	GSM External Antenna, dual band swing cable 3,2 m
	PM002490	Programming Serial Cable RS232 M/F
	PM002500	RS232 null modem serial cable (firmware update)
	S-DIN	DIN rail mounting support

Z-PC LINE • CONTROL UNITS

	Z-TWS-2	Z-TWS-3	Z-TWS-64	Z-LWS
				
	Muti-function Control Unit	Muti-function Control Unit Isagraf / CoDeSys	Muti-function Control Unit 64 bit	Micro PLC

GENERAL FEATURES

	Z-TWS-2	Z-TWS-3	Z-TWS-64	Z-LWS
DC Power supply	10..40 Vdc	10..40 Vdc	10..40 Vdc	10..40 Vdc
AC Power supply	19..28 Vac / 50-60 Hz	19..28 Vac / 50-60 Hz	19..28 Vac / 50-60 Hz	19..28 Vac / 50-60 Hz
Max power consumption	3.5 W	3.5 W	3.5 W	3.5 W
Isolation	1.500 Vac	1.500 Vac	1.500 Vac	1.500 Vac
Status Indicators	Ethernet Connection Power Supply PLC On Ethernet link	Ethernet Connection Power Supply PLC On Ethernet link	Ethernet Connection Power Supply PLC On Ethernet link	Ethernet Connection Power Supply PLC On Ethernet link
Installation Category	II	II	II	II
Pollution Degree	2	2	2	2
Protection Degree	IP20	IP20	IP20	IP20
Operating Temperature	0..+55 °C	0..+55 °C	0..+55 °C	0..+55 °C
Storage Temperature	-20..+70 °C	-20..+70 °C	-20..+70 °C	-20..+70 °C
Humidity	30..90% a +40 °C (non condensing)	30..90% a +40 °C (non condensing)	30..90% a +40 °C (non condensing)	30..90% a +40 °C (non condensing)
Dimension (W x H x D)	17.5 x 100 x 112 mm	17.5 x 100 x 112 mm	35 x 100 x 112 mm	17.5 x 100 x 112 mm
Weight	250 g	250 g	250 g	250 g
Enclosure	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
Hot Swapping	Yes	Yes	Yes	Yes
Connection	Removable terminal block, max wire size 2,5 mm^2	Removable terminal block, max wire size 2,5 mm^2	Removable terminal block, max wire size 2,5 mm^2	Removable terminal block, max wire size 2,5 mm^2
Mounting	35 mm DIN rail guide	35 mm DIN rail guide	35 mm DIN rail guide	35 mm DIN rail guide

COMMUNICATION PORTS

	Z-TWS-2	Z-TWS-3	Z-TWS-64	Z-LWS
Ethernet 10BaseT (RJ45)	1	1	1 (Ethernet 10/100BaseT)	1
Serial 0 (RS232 via RJ10-4/4)	1	1	1	1
Serial 1 (RS485 – ModBUS / CAN)	1	1	1	1
Serial 2 (RS232/RS485 via RJ10-4/4)	1	1	1	-
Seriale 3 RS485	1	1	1	-
CAN-BUS 2.0	-	1	1	-
Tp-Wire	1	1	1	1

ETHERNET/REMOTE COMMUNICATION

	Z-TWS-2	Z-TWS-3	Z-TWS-64	Z-LWS
Ethernet TCP/IP – ModBUS TCP/IP (Client /Server))	Yes (10 Mbps)	Yes (10 Mbps)	Yes (10/100 Mbps)	Yes (10 Mbps)
Max task ModBUS Master	4	4	4	4
Max task ModBUS slave RTU or TCP	3	3	3	3
ModBUS RTU on RS232/RS485	Master / Slave	Master / Slave	Master / Slave	Master / Slave
Serial Speed	1.200 ..115.000 bps	1.200 ..115.000 bps	1.200 ..115.000 bps	1.200 ..115.000 bps
Parity	None, even, odd	None, even, odd	None, even, odd	None, even, odd
Max Connection Distance	1200 m	1200 m	1200 m	1200 m
System Protocols	PPP, http, FTP, SMTP	PPP, http, FTP, SMTP	PPP, http, FTP, SMTP	http, FTP

PROCESSING & MEMORIES

	Z-TWS-2	Z-TWS-3	Z-TWS-64	Z-LWS
Cycle Time	2.5 ms/K instruction	2.5 ms/K instruction	n.d.	2.5 ms/K instruction
Data Processing	CPU µP RISC 32 bit – 20 MIPS	CPU µP RISC 32 bit – 20 MIPS	CPU µP MISC 64 bit – 70 MIPS	CPU µP RISC 32 bit – 20 MIPS
Flash Memory (Data)	16 MB	16 MB (of which 14 for datalogging)	128 MB (of which 120 for datalogging)	-
RAM Memory	8 MB	8 MB	64 MB	256 KB
Retentative Variables	236 bytes	2046 bytes	2046 bytes	236 bytes
Backup Memory	Yes	Yes	Yes	Yes
Max Analog Variables	32.000	32.000	32.000	32.000
Max Timers	16.000	16.000	16.000	16.000
Max Counters	16.000	16.000	16.000	16.000

CONFIGURATION, SOFTWARE, NORMS

	Z-TWS-2	Z-TWS-3	Z-TWS-64	Z-LWS
Z-NET3 (free configuration software)	Yes	Yes	Yes	Yes
OPC SERVER	Yes	Yes	Yes	-
Web Server	Yes	Yes	Yes	-
Datalogger	Yes	Yes	Yes	-
RTU/Z-NET RTU (remote control appl.)	Yes	Yes	Yes	-
PLC/ISAGRAF	Yes	Yes	Yes	Yes (limited functions)
Norms and Approvals	EN50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4, EN 50140/141; EN 61010-1; EN 60742	EN50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4, EN 50140/141; EN 61010-1; EN 60742	EN50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4, EN 50140/141; EN 61010-1; EN 60742	EN50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4, EN 50140/141 ; EN 61010-1; EN 60742

ORDER CODES

Code	Description
Z-TWS3	Multifunction Control Unit – Standard Isagraf
Z-TWS3-C	Multifunction Control Unit – Standard CoDeSys
Z-TWS2	Multifunction Control Unit – Standard Isagraf
Z-TWS-64	Multifunction Control Unit – 64 bit Standard Isagraf

Code	Description
Z-TWS-64-C	Multifunction Control Unit – 64 bit Standard CoDeSys
Z-LWS	Micro PLC
Software	pag.25
Accessories	pag.26

Z-PC-LINE • DIGITAL I/O MODULES WITH MODBUS COMMUNICATION

	Z-D-IN	Z-D-OUT	Z-10-D-IN	Z-10-D-OUT	Z-D-IO
	 5-CH Digital Input module // RS485	 5-CH Digital Output module // RS485	 10-CH Digital Input module // RS485	 10-CH Digital Output module // RS485	 8-CH 6 Digital Input / 2 Digital Output control module
ORDER CODES					
Model	Z-D-IN	Z-D-OUT	Z-10-D-IN	Z-10-D-OUT	Z-D-IO
Software	Page 25	Page 25	Page 25	Page 25	Page 25
Accessories	Page 26	Page 26	Page 26	Page 26	Page 26
ELECTRIC FEATURES					
Power supply	19..40 Vdc / 19..28 Vac / 50-60 Hz (9..28 Vdc on demand)	19..40 Vdc / 19..28 Vac / 50-60 Hz (9..28 Vdc on demand)	19..40 Vdc / 19..28 Vac / 50-60 Hz (9..28 Vdc on demand)	10..40 Vdc / 19..28 Vac / 50-60 Hz	10..40 Vdc, 19..28 Vac 50..60Hz
Max consumption	2,5 W	2,5 W	3,5 W	2,5 W	2 W
Galvanic isolation	1.500 Vac (3 way)	1.500 Vac (3 way)	1.500 Vac (3 way)	1.500 Vac (3 way)	1.500 Vac vs (input) 3.750 Vac (output)
Transducer power supply	Max 20 mA	-	-	-	-
Status Indicators	Power supply, error, data transmission, data reception, input	Power supply, error, data transmission, data reception, output	Power supply, error, data transmission, data reception, input	Power supply, error, data transmission, data reception, output , diagnostic	Power supply, error, data transmission, date reception, input and output
Protection Degree	IP20	IP20	IP20	IP20	IP20
THERMOMECHANIC FEATURES					
Operating Temperature	0..+55 °C	0..+55 °C	0..+55 °C	0..+55 °C	0..+55 °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
Weight	About 140 g	About 140 g	About 140 g	About 140 g	About 150 g
Enclosure	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	Screw terminals, plug in connectors, 2.5 mm²	Screw terminals, plug in connectors, 2.5 mm²	Screw terminals, plug in connectors, 2.5 mm²	Screw terminals, plug in connectors, 2.5 mm²	Screw terminals, plug in connectors, 2.5 mm²
Mounting	35 mm symmetrical DIN rail 46277	35 mm symmetrical DIN rail 46277	35 mm symmetrical DIN rail 46277	35 mm symmetrical DIN rail 46277	35 mm symmetrical DIN rail 46277
COMMUNICATION, MEMORY PROCESS					
Interface	RS485 2 wires	RS485 2 wires	RS485 2 wires	RS485 2 wires	RS485 2 wires
Speed	Up to 57.600 bps	Up to 57.600 bps	Up to 57.600 bps	Up to 57.600 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)
Distance	Up to 1.200 m	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	Max 32 nodes
Data Memory	EEPROM for the configuration parameters, retention time 10 years, N° 5 registers 16 bit, N° 5 bit overflow	EEPROM for the configuration parameters, retention time 10 years	EEPROM for the configuration parameters, retention time 10 years	EEPROM for the configuration parametres, retention time 10 years	
SIGNALS, MEASUREMENT, CONFIGURATIONS, NORMS					
Channel Numbers	5	5	10	10	6 input, 2 output
Type	Opto-isolated for REED, PROXIMITY, PNP, NPN, contact, etc. Nr 4 input with countering function 16 bit, max frequency 100 Hz Nr 1 input with countering function 16 bit, max frequency 10 kHz Bounce Filter 5..250 ms	SPST N/O relay output module, 5 A @ 250 Vac with resistive load, 2 A @ 250 Vac with inductive load Max total current on terminal: 12 A	Input protection by 600W/ms TVS transient current suppressers 8 inputs with 16 bit contactor with 100 Hz max. frequency. 2 inputs with 32 bit contactor with 10 kHz max. frequency.	MOSFET outputs protected against short circuit with shared negative pole 6 - 40 Vdc power supply, current carrying capacity 0.5A, resistive load 0.5A inductive load Safety time: from 10 ms to 2000 s. Measurement of the load supply voltage	Nr 6 opto-isolated digital inputs: REED, proximity, PNP, NPN, contact, etc. Internal / external input power supply, min pulse width 20 ms Nr 2 SPST relay output with common contact, capacity 5A 250Vac, contact NA / NC
Measure & Diagnostic			Frequency measurement for 10 kHz inputs Period, frequency and Ton, Toff measurement for 100 Hz inputs Forward or backward counting Overflow indication for each total counter	Diagnostics on/off, overload, short-circuit Fail-safe programmable functions	
Programming	• Z-NET3 (free software) • DIP switches	• Z-NET3 (free software) • DIP switches	• Z-NET3 (free software) • DIP switches	• Z-NET3 (free software) • DIP switches	•Z-NET3 (free software) •DIP switches •Local/Remote Functioning Mode •Internal Logic IEC1131.2 type 1 for motor, valves and alarms command
Norms & Approvals	RINA, CE, EN 50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4; EN 50140/141; EN 61010-1	RINA, CE, EN 50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4; EN 50140/141; EN 61010-1	UL-UR, RINA, CE, EN 50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4; EN 50140/141; EN 61010-1	UL-UR, RINA, CE, EN 50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4; EN 50140/141; EN 61010-1	RINA, CE, EN61000-6-4/2002; EN61000-6-2/2002; EN61010-1

Z-PC-LINE • ANALOG I/O MODULES WITH MODBUS COMMUNICATION

	Z-DAQ	Z-PID	Z-4AI	Z-8AI	Z-3AO
	 1-CH Universal Input module // RS485	 2-CH Analog I/O module + PID control // RS485	 4-CH Analog Input module // RS485	 8-CH Analog Input module // RS485	 3-CH Analog Output module // RS485
ORDER CODES					
Model	Z-DAQ	Z-PID	Z-4AI	Z-8AI	Z-3AO
Software	Pag. 25	Pag. 25	Pag. 25	Pag. 25	Pag. 25
Accessories	Pag. 26	Pag. 26	Pag. 26	Pag. 26	Pag. 26
ELECTRIC FEATURES					
Power supply	19..40 Vdc / 19..28 Vac / 50-60 Hz (9..28 Vdc on request)	19..40 Vdc / 19..28 Vac / 50-60 Hz (9..28 Vdc on request)	19..40 Vdc / 19..28 Vac / 50-60 Hz (9..28 Vdc on request)	19..40 Vdc / 19..28 Vac / 50-60 Hz	19..40 Vdc / 19..28 Vac / 50-60 Hz
Power Consumption	2,5 W	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 (3 way)	1.500 Vac (3 way)	1.500 Vac (3 way)
Transducer Power Supply	Min 18 Vdc, 20 mA	Min 18 Vdc, 20 mA	20 Vdc, 40 mA (up to 2 sensors)	-	-
Status Indicator	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	Power supply, error, data transmission, data reception
Protection Degree	IP20	IP20	IP20	IP20	IP20
THERMOMECANIC FEATURES					
Operating Temperature	0..+55 °C	0..+55 °C	0..+55 °C	0..+60 °C	0..+55 °C
Dimension (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
Weight	About 140 g	About 140 g	About 140 g	About 140 g	About 140 g
Enclosure	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 terminal block, max wire size 2,5 mm² Rear IDC10 connector for Z-PC backplane	Removable terminal block, max wire size 2,5 mm² Rear IDC10 connector for Z-PC backplane	Removable terminal block, max wire size 2,5 mm² Rear IDC10 connector for Z-PC backplane	Removable terminal block, max wire size 2,5 mm² Rear IDC10 connector for Z-PC backplane	Removable terminal block, max wire size 2,5 mm² Rear IDC10 connector for Z-PC backplane
Mounting	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	2 wire RS485	2 wire RS485	2 wire RS485	2 wire RS485 RS232 (DB9 Jack stereo 3.5 mm)	2 wire RS485 RS232 (DB9 Jack stereo 3.5 mm)
Speed	Up to 57.600 bps	Up to 57.600 bps	Up to 57.600 bps	Up to 57.600 bps (RS485) 2.400 bps (RS232)	Up to 57.600 bps (RS485) 2.400 bps (RS232)
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)	< 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	Up to 1.200 m
Connectivity	Max 32 nodes	Max 32 nodes	Max 32 nodes	Max 32 nodes	Max 32 nodes
Data Memory	EEPROM configuration parameters, retention time 10 years	EEPROM configuration parameters, retention time 10 years	EEPROM configuration parameters, retention time 10 years	EEPROM configuration parameters, retention time 10 years	EEPROM configuration parameters, retention time 10 years
SIGNALS, MEASUREMENT, CONFIGURATIONS, NORMS					
Channel Numbers	1 (programmable)	1 input, 1 output	4 (2 with power transducers)	Up to 8	3
Type	Thermocouple: J (-200..+1000 °C), K (-200..+1300 °C), R (-50..+1750 °C), S (-50..+1750 °C), T (-200..+400 °C), E (-150..+800 °C), B (0..+1800 °C), N (-200..+1300 °C) Thermoresistance: Pt100: -200..+600 °C; Ni100: -60..+180 °C Potentiometer: 0..3.5 kΩ; 0..8.7 kΩ; 0..15 kΩ Voltage (bipolar): 0..50 mV; 0..200 mV; 0..2 V; 0..5 V; 0..10 V Current (bipolar): 0..20 mA	Input: Thermocouple: J (-200..+1000 °C), K (-200..+1300 °C), R (-50..+1750 °C), S (-50..+1750 °C), T (-200..+400 °C), E (-150..+800 °C), B (0..+1800 °C), N (-200..+1300 °C) Thermoresistance: Pt100: -200..+600 °C; Ni100: -60..+180 °C Potentiometer: 0..3.5 kΩ; 0..8.7 kΩ; 0..15 kΩ Voltage (bipolar): 0..50 mV; 0..200 mV; 0..2 V; 0..5 V; 0..10 V Current (bipolar): 0..20 mA Output Current 0/4..20 mA	Voltage(bipolar): ±2, ±10 Vdc, impedance 100 Ω Current: (bipolar): ± 20 mA, impedance 100 Ω	Nr 4 differential mode input, max input voltage 20 Vdc, impedance 200 KΩ Nr 8 'single-ended' mode input, impedance 100 KΩ Range: ± 2.5 Vdc, ± 5 Vdc, ± 10 Vdc	Nr 3 output in current 0..20 / 4..20 mA (driven impedance < 500 Ω), 1 output convertible in voltage: 0..10 / 2..10 Vdc (driven impedance > 500 Ω)
Resolution	13 bit + sign	13 bit + sign	Selectable from 11 to 15 bit + sign	Selectable from 11 to 15 bit + sign	12 bit
Accuracy	< 0,2% o.r.	< 0,2% o.r.	0,1% (voltage) 0,2% (current)	0.1% full scale	<0.2% (current) <0.3% (voltage)
Thermal drift	< 0,02%/°C	< 0,02%/°C	0,02%/°C		0,01%/°C
Programming	Z-NET3 (free software) DIP switches	Z-NET3 (free software) DIP switches	Z-NET3 (free software) DIP switches	Z-NET3 (free software), DIP switches	Z-NET3 (free software) DIP switches
Norms & Approvals	RINA, CE, EN 50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4; EN 50140/141; EN 61010-1	RINA, CE, EN 50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4; EN 50140/141; EN 61010-1	RINA, CE, EN 50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4; EN 50140/141; EN 61010-1	UL-UR, RINA, CE, EN 50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4; EN 50140/141; EN 61010-1	UL-UR, RINA, CE, EN 50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4; EN 50140/141; EN 61010-1

Z-PC LINE – TEMPERATURE CONTROL MODULES WITH MODBUS COMMUNICATION

	Z-4RTD-2	Z-4TC	Z-8TC
			
Modbus	4-CH RTD Input module // RS485	4-CH Thermocouple input module // RS485	8-CH Thermocouple Input module // RS485

ORDER CODES

Model	Z-4RTD-2	Z-4TC	Z-8TC
Software	Pag. 25	Pag. 25	Pag. 25
Accessories	Pag. 26	Pag. 26	Pag. 26

ELECTRIC FEATURES

Power supply	19..40 Vdc / 19..28 Vac / 50-60 Hz	19..40 Vdc / 19..28 Vac / 50-60 Hz	19..40 Vdc / 19..28 Vac / 50-60 Hz
Power Consumption	0,7 W	Max 2.5 W; 1.6 W @ 24 Vdc	0,6 W
Isolation	1.500 Vac (3 way)	1.500 Vac (3 way)	1.500 Vac (6 way)
Status Indicator	Power supply, Error, Data transmission, Data receiving	Power supply, Error, Data transmission, Data Receiving	Power supply, Error, RS485 communication
Protection Degree	IP20	IP20	IP20

THERMOMECHANIC FEATURES

Operating Temperature	-10..+65 °C	0..+55 °C	-10..+65 °C
Dimension (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
Weight	About 140 g	About 140 g	About 140 g
Enclosure	Nylon 6 with 30% glass-fibre, V0 self-extinguished class	Nylon 6 with 30% glass-fibre, V0 self-extinguished class	Nylon 6 with 30% glass-fibre, V0 self-extinguished class
Connections	Screw clamp, plug in connectors, max wire size 2,5 mm^2 Rear IDC10 connector for Z-PC backplane stereophonic front jack for RS232 (COM) connection	Screw clamp, plug in connectors, max wire size 2,5 mm^2 Rear IDC10 connector for Z-PC backplane	Screw clamp, plug in connectors, max wire size 2,5 mm^2 Rear IDC10 connector for Z-PC backplane stereophonic front jack for RS232 (COM) connection
Mounting	35 mm DIN rail guide	35 mm DIN rail guide	35 mm DIN rail guide

COMMUNICATION, MEMORY, PROCESS

Interface	2 wire RS485 RS232, front jack, speed 2400 Baud, data bits 8, Parity: NO, Stop bits:1	2 wire RS485	2 wire RS485 RS232, front jack, speed 2400 Baud, data bits 8, Parity: NO, Stop bits:1
Speed	Up to 115 kbps	Up to 57.600 bps	Reading every 25 ms
Protocol	ModBUS RTU slave	ModBUS RTU slave	ModBUS RTU slave
Communication Time	-	< 20 ms (38400 baud)	-
Distance	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
Data storage	EEPROM configuration parameters, retention time 40 years	EEPROM configuration parameters, retention time 10 years	EEPROM configuration parameters, retention time 10 years

SIGNALS, MEASUREMENT, CONFIGURATIONS, NORMS

Channel Numbers	4	4	8
Type	4 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)	Bipolar Voltage ± 80 mVdc, impedance 10 MΩ Thermocouple J, K, R, S, T. B, E, N	Thermocouple J, K, R, S, T. B, E, N (EN 60584-1, ITS-90) Range: -210..1820 °C Span mV: -10,1..81,4 mV Shunt up to 70 mW
Resolution	16 bit	13 bit + sign	16 bit
Accuracy	0,05%	0,1%	0,05%
Thermal drift	25 ppm/K	0,01%/°C	< 100 ppm/K
Programming	Z-NET3 (free software): online settings parameters via serial (RS485-bus and/or RS 232-jack) or Ethernet DIP switches	Z-NET3 (free software): online settings parameters via serial (RS485-bus and/or RS 232-jack) or Ethernet DIP switches	Z-NET3 (free software): online settings parameters via serial (RS485-bus and/or RS 232-jack) or Ethernet DIP switches
Norms & Approvals	UL-UR, RINA, CE, EN 61000-6-4/2002, EN 61000-6-2/2002, EN 61010, EN 60742	RINA, CE, EN50081-2, EN 55011, EN 50082-2, EN 61000-2-2/4, EN 50140/141, EN 61010-1, EN 60742	CE, EN 61000-6-4/2002, EN 61000-6-2/2002, EN 61010, EN 60742

Z-PC LINE • MODULES FOR PROCESS AND ELECTRIC MEASUREMENT

	Z-SG	Z203	S203T	S203TA
Modbus				
	Strain gauge input module // RS485	Single phase network analyzer // RS485	Advanced 3-phase network analyzer // RS485 (input from special CT)	Advanced 3-phase network analyzer // RS485 (input up to 5 Arms)

ORDER CODES

Model	Z-SG	Z203	S203T (ingressi fino a 100 mA)	S203TA
Software	Page 25	Page 25	Page 25	Page 25
Accessories	Page 26	Page 26	Page 26 TA15 (per S203T f.s. 15 A, prec. 0,1%) TA25 (per S203T f.s. 25 A, prec. 0,1%) TA100 (per S203T f.s. 100 A, prec. 0,1%)	Page 26

ELECTRIC FEATURES

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 W	2,5 W	2,5 W
Isolation	1.500 Vac (3 way)	3.750 Vac (from/to power) 1500 Vac (other circuits)	3.750 Vac (from/to power) 1500 Vac (other circuits)	3.750 Vac (from/to power) 1500 Vac (other circuits)
Status Indicator	Power supply Error Data transmission Data reception	Power supply Error Data transmission Data reception	Power supply Error RS485 communication	Power supply Error RS485 communication
Protection Degree	IP20	IP20	IP20	IP20

THERMOMECANIC FEATURES

Operating Temperature	-10..+65 °C	-10..+65 °C	-10..+65 °C	-10..+65 °C
Dimension (W x H x D)	17.5 x 100 x 112 mm	17.5 x 100 x 112 mm	105 x 89 x 60 mm	105 x 89 x 60 mm
Weight	About 140 g	About 140 g	About 160 g	About 160 g
Enclosure	Nylon 6 with 30% glass-fiber, V0 self-extinguished class	Nylon 6 with 30% glass-fiber, V0 self-extinguished class	Plastic Material UL V0	Plastic Material UL V0
Connections	Removable terminal block, max wire size 2,5 mm² Rear IDC10 connector for Z-PC backplane	Removable terminal block, max wire size 2,5 mm² Rear IDC10 connector for Z-PC backplane		
Mounting	35 mm DIN rail guide	35 mm DIN rail guide	35 mm DIN rail guide	35 mm DIN rail guide

COMMUNICATION, MEMORY PROCESS

Interface	2 wires RS485 RS232, front jack, speed 2400 Baud, data bits 8, Parity: NO, Stop bits:1	2 wire RS485 RS232, front jack, speed 2400 Baud, data bits 8, Parity: NO, Stop bits:1	2 wire RS485 RS232, front jack, speed 2400 Baud, data bits 8, Parity: NO, Stop bits:1	2 wire RS485 RS232, front jack, speed 2400 Baud, data bits 8, Parity: NO, Stop bits:1
Speed	Up to 115 kbps	Up to 115 kbps	Reading every 25 ms	Reading every 25 ms
Protocol	ModBUS RTU slave	ModBUS RTU slave	ModBUS RTU slave	ModBUS RTU slave
Communication Time	< 10 ms (38400 baud)	< 10 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 configuration parameters, retention time 40 years	EEPROM configuration parameters, retention time 10 years	EEPROM configuration parameters, retention time 10 years	EEPROM configuration parameters, retention time 10 years

SIGNALS, MEASUREMENT, CONFIGURATIONS, NORMS

Channel Numbers	2 input, 2 output	1 input, 1 output	1 input, 1 output	1 input, 1 output
Type	**Input**: 1 analog channel for load cell (and Power supply) up to 4 (350 Ω) or 8 (1.000 Ω) 6-wires or 4-wires differential measurement input, impedance equal to 87 Ω **Output**: 1 analog retransmission channel of the net weight in current (0..20, 4..20 mA) Or in voltage (0..5, 0..10 V) **Digital Input or Output:** 1 contact for calibration tare or weight limit **Sensibility**: from 1 to 64 mV/V	**Voltage**: up to 500 Vac (50 or 60 Hz) **Current**: 5 Arms, Max peak factor: 3, Max Current 15A, (50 or 60 Hz) **Analog retransmission**: Vrms, Irms, P, Q, cosΦ	**Voltage input**: Max=600 Vac, frequency 50 or 60Hz **Current Input**: up to 100 mA (from CT) **Measures values** (single phase or three phases): Vrms, Irms, Watt (bidirectional), Var, VA, Frequency, Cosϕ, Energy (bidirectional) **Analog retransmission**: voltage / current	**Voltage input**: Max=600 Vac, frequency 50 or 60Hz **Current Input**: up to 5 Aac **Measures values** (single phase or three phases): Vrms, Irms, Watt (bidirectional), Var, VA, Frequency, Cosϕ, Energy (bidirectional) **Output retransmission**: voltage / current
A/D Resolution	Up to 24 bit	-	-	-
Accuracy	0,01%	0,5%	0,2%	0,2%
Stability	25 ppm/K	-	-	-
Programming	Z-NET3 (free software): online parameters settings via serial (RS485-bus and/or RS 232-jack) or Ethernet DIP switches	Z-NET3 (free software): online parameters settings via serial or Ethernet DIP switches	Z-NET3 (free software): online parameters settings via serial or Ethernet DIP switches	Z-NET3 (free software): online parameters settings via serial or Ethernet DIP switches
Norms & Approvals	CE, EN 61000-6-4/2002, EN 61000-6-2/2002, EN 61010, EN 60742, IEC 61131	UL-UR, CE, EN50081-2, EN 55011, EN 50082-2, EN 61000-2-2/4, EN 50140/141, EN 61010-1, EN 60742	CE, EN 61000-6-4/2002, EN 61000-6-2/2002, EN 61010, EN 60742	CE, EN 61000-6-4, EN 61000-6-2, EN 61010-1, EN 60742

Z-PC LINE – COMMUNICATION MODULES

	S117P	S107USB	K107USB	K107A	K107B
					
	USB⇔RS232 and USB⇔TTL serial converter / isolator	USB⇔RS485 serial converter / isolator (desk version)	USB⇔RS485 serial converter / isolator (din version)	RS485⇔RS485 serial repeater / isolator	RS232⇔RS485 serial converter / isolator

ORDER CODES

Model	S117P	S107USB	K107USB	K107A	K107B
Software and Accessories	Free Driver in CD	Free Driver in CD	K-BUS (pag. 35) K-SUPPLY (pag 35)	K-BUS (pag. 35) K-SUPPLY (pag 35)	K-BUS (pag. 35) K-SUPPLY (pag 35)

ELECTRIC FEATURES

Power supply	Via USB port	Via USB port	Via USB port	19,2..30Vdc	19,2..30Vdc
Power Consumption	50 mA	60 mA	60 mA	22 mA (24 Vdc)	22 mA (24 Vdc)
Isolation	1.500 Vac	1.500 Vac	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	Data, inverted connection, Power Supply	Data, inverted connection, Power Supply
Protection Degree	IP20	IP20	IP20	IP20	IP20

THERMOMECANIC FEATURES

Operating Temperature	-20..+65°C	0..+55 °C	-20..+65°C	-20..+65°C	20..+65°C
Dimension (w x h x d)	90 x 50 x 25 mm	40 x 48 x 20,17 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
Weight	50 g	24 g	45 g	45 g	45 g
Enclosure	ABS	ABS	PBT, black	PBT, black	PBT, black
Connections	DB9 (RS232) RJ10 (TTL)	5 poles connector	Spring clamp	Spring clamp	Spring clamp
Mounting			35 mm DIN rail 46277 guide	35 mm DIN rail 46277 guide	35 mm DIN rail guide

COMMUNICATION, MEMORY PROCESS

Interface	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	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	RS485 half duplex, 31 nodes, line termiantion, protection up to 30 Vdc RS485 half duplex, 31 nodes, line termination, protection up to 30 Vdc	RS232, protection up to 30 Vdc RS485 half duplex, 31 nodes, line termination, protection up to 30 Vdc
Direction change	300 ...250000 Kbps	Automatic timing	Automatic timing	Automatic timing	Automatic timing
Speed		1200...115200 bps	1200...115200 bps	1200...115200 bps	1200...115200 bps
Protocol		ModBUS RTU slave	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	Up to 1.200 m

CONFIGURATIONS, NORMS

Programming	CD driver for 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 driver for 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 driver for Windows (XP, Vista, XP Embedded, CE .net 4.2 e 5.0); Mac OS 8, 9, OS-X; Linux (2.4.20 and next)	DIP switches	DIP switches
Norms & Approvals	CE, EN 61000-6-4, EN 61000-6-2, EN 61010-1	CE, EN 50081-2, EN 55011, EN 50082-2, EN 61000-2-2/4, EN 50140/141, EN 61010-1, EN 60742	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	UL-UR, CE, EN 61010-1, EN 60742, EN 61000-6-2, EN 61000-6-4

Z-PC LINE • COMMUNICATION MODULES

	Z107 / S107P	Z-LINK / S-LINK	Z-BRIDGE	Z-PROFIBUS	Z-CANBUS
	 RS232⇔RS485/422 serial isolator/ converter	 Radio transceiver module (portable/desk)	 ModBUS RTU/TCP-IP Bridge	 Profibus DP Slave interface	 CAN Master Interface, isolated repeater
ORDER CODES					
Model	Z107 (panel version) S107P (desk version)	Z-LINK-434MHz (panel version) Z-LINK-869MHz (panel version) S-LINK-434MHz (desk version) S-LINK-869MHz (desk version)	Z-BRIDGE	Z-PROFIBUS	Z-CANBUS
Software and Accessories	Page 25 Page 26	A-LINK-434 MHz (external antenna) A-LINK-869MHz (external antenna) A-DIR-434MHz (directional antenna) A-DIR-869MHz (directional antenna)	Page 25 Page 26	Page 25 Page 26	Page 25 Page 26
ELECTRIC FEATURES					
Power supply	Z107: 19..40 Vdc, 19..28 Vac 50..60 Hz S107P: 9..12 Vdc (with feeder 220 Vac)	Z-LINK: 10..18 / 21,5..28 Vdc; 8,5..14 / 17..20 Vac (50-60 Hz) S-LINK: from network feeder (230 Vac)	10..40 Vdc / 19..28 Vac	10..40 Vdc, 19..28 Vac 50..60 Hz (from screw on IDC10 bus)	10..40 Vdc, 19..28 Vac (by clamp or IDC10 backplane)
Power Consumption	Z107: 2,5 W S107P: 1 W	Z-LINK: 1,5 W S-LINK: 2,5 W	3,5 W	4 W	4 W
Isolation	1.500 Vac (3 way)	1.500 Vac	1.500 Vac (3 way)	1.500 Vac (per 1 minute 250 Vac)	1.500 Vac (per 1 minute 250 Vac)
Status Indicator	Power supply, RST signal status, data transmission, data reception	Power supply, error, data transmission, data reception	Ethernet transmission Power Supply Ethernet connection	Power supply, error	Power supply, error
Protection Degree	IP20	IP20	IP20	IP20	IP20
THERMOMECCANIC FEATURES					
Operating Temperature	0..+55 °C	0..+55 °C	0..+55 °C	0..+55 °C	0..+55 °C
Dimension (W x H x D)	17.5 x 100 x 112 mm	Z-LINK: 17,5 x 100 x 112 mm S-LINK: 25 x 68 x 125 mm	17,5 x 100 x 112 mm	17.5 x 100 x 112 mm	17.5 x 100 x 112 mm
Weight	200 g	200 g	250 g	140 g	140 g
Enclosure	Z107: PBT S107P: ABS	Z-LINK: PBT S-LINK: ABS	PBT	PBT	PBT
Connections	Z107: Removable terminal block, max wire size 2,5 mm²	Z-LINK: Removable terminal block, max wire size 2,5 mm² Antenna: SMA standard frontal connector S-LINK: Cable 2.5 mm2 / DB9-F connector, antenna on side	Removable terminal block, max wire size 2,5 mm²	Profibus DB9-F TP-Wire IDC10 Back Connector for back-plane	DB9-F TP-Wire IDC10 Back Connector for back-plane
Mounting	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 RJ45 frontal connector RS485/RS422, removable termian blockwith screw type connection S107P RS232, DB9 connector RS485/RA422, extractable clamps 5 poles Screw connection	RS232 RS485	N° 1 RS232 port N° 2 RS485 port N° 1 RS232/RS485 port N°1 Ethernet port (server, 10 Mbps, http, ftp)	Profibus DP-Slave, speed from 9.600 bps to 12.000 kbps TP-Wire master, daisy chain con-nection, line drive max 485	CANbus 2.0
Operating ways	2 wires Half Duplex, point to point, multidrop	Half Duplex			
Direction change	Automatic timing, command from RTS on RS232 interface	Automatic timing			
Speed	Up to 115 kbps	100 Kbps (data interface) / 9.600 bps (radio)			Up to 1 Mbps
Frequency		434 (869) MHz			
Emitted Power		10 mW			
Protocol	ModBUS RTU slave	ModBUS RTU	ModBUS RTU master ModBUS TCP	Profibus DP Slave	CANbus 2.0
Distance	Up to 1.200 m	100 m (suggested) up to 1 km (in open field without obstacles with directive antenna)			
Memory			CPU 32 bit, 512 kB flash, 256 kB RAM, backup battery		
CONFIGURATIONS, NORMS					
Programming	DIP switches (speed, communica-tion,change of direction)	DIP switches (communication parameters) Programmable Flash for other pro-tocols	Z-NET3 (free software)	Isagraf block data exchange	
Norms & Approvals	RINA, CE, EN 50081-2, EN 55011, EN 50082-2, EN 61000-2-2/4, EN 50140/141, EN 61010-1, EN 60742	CE; EN50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4; EN 50140/141; EN 61010-1; EN 60742; ETSI 300-328	EN50081-2; EN 55011; EN 50082-2; EN 61000-2-2; EN 50140/141; EN 61010-1; EN 60742;	CE, EN 61000-6-4, EN 61000-6-2, EN 61010-1, EN 60742	CE, EN 61000-6-4, EN 61000-6-2, EN 61010-1, EN 60742

Z-PC LINE • COMMUNICATION MODULES

	Z-GW-MB	Z107E	Z107FO	ZC-107FO
CE	 Gateway ModBUS RTU Master ⇔ ModBUS Server (Slave) TCP	 RS232 Serial Converter ⇔ Ethernet 10-100 MB	 RS232-RS485 optical fiber repeater	 CAN-bus optical fiber repeater

ORDER CODES

Model	Z-GW-MB	Z107E	Z107FO	ZC-107FO
Software and Accessories	Free Configuration software in CD	Free Driver in CD	Z-PC-FO (cable in multimodal optical fiber with connections ST/ST, L=2m)	Z-PC-FO (cable in multimodal optical fiber with connections ST/ST, L=2m)

ELECTRIC FEATURES

Power supply	12,4 Vdc, 12..28 Vac (50..60 Hz)	12,4 Vdc, 12..28 Vac (50..60 Hz)	12,4 Vdc, 12..28 Vac (50..60 Hz)	12,4 Vdc, 12..28 Vac (50..60 Hz)
Power Consumption	1,2 W	1,2 W	1,2 W	1,2 W
Status Indicator	Serial Communication and optical fiber status	Serial Communication and optical fiber status	Serial Communication and optical fiber status	Serial Communication, Functioning
Operating Temperature	-30..+60 °C	-30..+60 °C	-30..+60 °C	-30..+60 °C
Storage Temperature	-30..+85 °C	-30..+85 °C	-30..+85 °C	-30..+85 °C
Humidity	30..90% non condensing	30..90% non condensing	30..90% non condensing	30..90% non condensing
Dimension (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
Weight	140 g	140 g	140 g	140 g
Enclosure	PBT, black	PBT, black	PBT, black	PBT, black
Mounting	35 mm DIN rail guide	35 mm DIN rail guide	35 mm DIN rail guide	35 mm DIN rail guide
Settings	DIP-switch (baud rate, parity, serial port, bit stop, termination)	DIP-switch (baud rate, parity, serial port, bit stop, termination)	DIP-switch (baud rate, parity, serial port, bit stop, termination)	DIP-switch (baud rate, parity, serial port, bit stop, termination)
Conformity	CE, EN 61000-6-4, EN 64000-6-2, EN 61010-1, EN 60742	CE, EN 61000-6-4, EN 64000-6-2, EN 61010-1, EN 60742	CE, EN 61000-6-4, EN 64000-6-2, EN 61010-1, EN 60742	CE, EN 61000-6-4, EN 64000-6-2, EN 61010-1, EN 60742

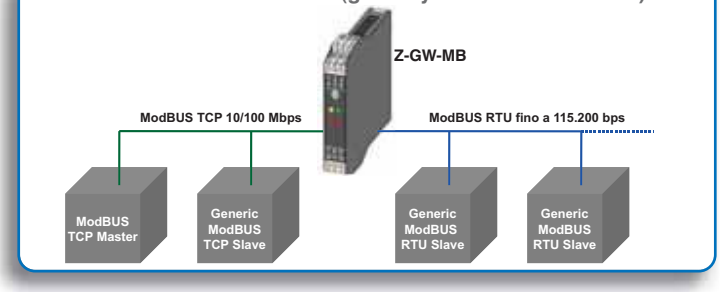
COMMUNICATION PORTS

RS232		Yes	DB9F connector (COM)	
RS485 / CAN	Yes, optoisolated		Removable terminal block IDC10 back connector for Z-PC DIN back-plane DB9F (COM)	Removable terminal block IDC10 back connector for Z-PC DIN back-plane DB9F (COM)
Ethernet	RJ45 connector	RJ45 connector		
Optical Fiber			Multimodal mode (62,5/125 or 50/125 μm) Frontal connector ST/ST	Multimodal mode (62,5/125 or 50/125 μm) Frontal connector ST/ST Delay in Sending Message 300 μs Max distance 2 km

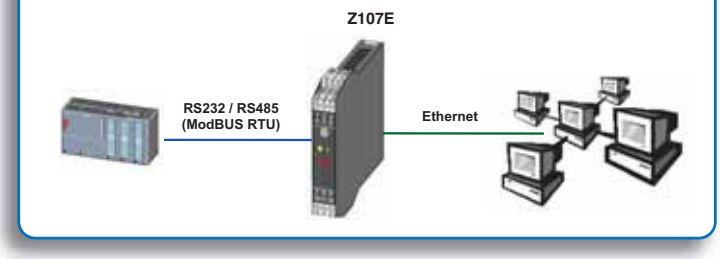
PROTOCOLS

Ethernet TCP/IP	Yes	Yes		
ModBUS RTU	Yes			
ModBUS TCP	Yes	Yes		
CAN				CANBUS 2.0
Speed	(10/100 Mbps)	(10/100 Mbps)	From 1.200 to 115.200 bps	Up to 1 Mbps
Delay Time			160 – 240 ms (9.600 bps) 145 – 155 ms (115.200 bps)	

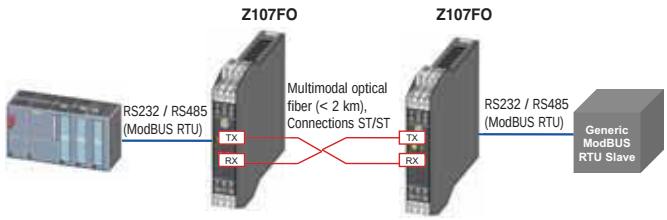
Z-GW-MB Connection scheme (gateway ModBUS RTU / TCP)



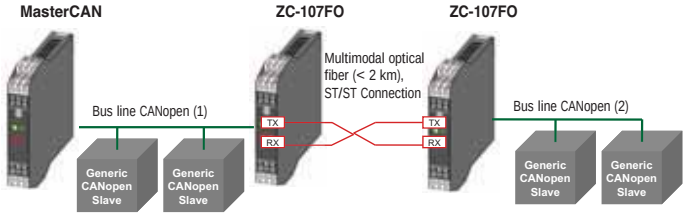
Z107E Connection scheme (RS32/RS485/Ethernet converter)



Z107FO Connection scheme (optical converter – serial ModBUS)



ZC-107FO Connection scheme (optical converter - serial CANopen)



Z-PC-LINE • DIGITAL I/O MODULES WITH CANOPEN COMMUNICATION

	ZC-24-DI	ZC-24-DO	ZC-16DI-8DO
			
CE CANopen	24-CH digital input // CANopen module	24-CH digital output // CANopen module	24-CH, 16 digital input / 8 digital output // CANopen module

ORDERS CODES

Model	ZC-24-DI	ZC-24-DO	ZC-16DI-8DO
Software	Pg.25	Pg.25	Pg.25
Accessories	Pg.26	Pg.26	Pg.26

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
Status indicator	Digital inputs, communication	Digital outputs, communication	Digital inputs, fault outputs, communication
Galvanic isolation	1,5 kVac (3 way)	1,5 kVac (3 way)	1,5 kVac (3 way)
Response time	~ 1 ms	~ 1 ms	~ 1 ms
Operating temperature	-10..+65 °C	-10..+65 °C	-10..+65 °C
Dimensions (w x h x d)	35 x 100 x 112 mm	35 x 100 x 112 mm	35 x 100 x 112 mm
Enclosure, weight, colour	PBT, 170 g, black	PBT, 170 g, black	PBT, 170 g, black
Connections	Removable screw terminals IDC10 connector for Z-PC-DIN backplane RS232, front jack, speed 2400 Baud	Removable screw terminals IDC10 connector for Z-PC-DIN backplane RS232, front jack, speed 2400 Baud	Removable screw terminals IDC10 connector for Z-PC-DIN backplane RS232, front jack, speed 2400 Baud
Protection degree	IP20	IP20	IP20
Configuration	Dip Switches (baud rate, Node ID) EDS file	Dip Switches (baud rate, Node ID) EDS file	Dip Switches (baud rate, Node ID) EDS file
Protocols supported	CAN bus standard (2.0A, 2.0B) CANopen (profile CiA 401 v.2.01) ModBUS RTU (through RS232)	CAN bus standard (2.0A, 2.0B) CANopen (profile CiA 401 v.2.01) ModBUS RTU (through RS232)	CAN bus standard (2.0A, 2.0B) CANopen (profile CiA 401 v.2.01) ModBUS RTU (through RS232)
CANopen max speed	1 Mbps	1 Mbps	1 Mbps
Special functions	CANopen/ModBUS protocol switching	CANopen/ModBUS protocol switching	CANopen/ModBUS protocol switching
Conformity	CE, EN 61000-6-4, EN 64000-6-2, EN 61010-1 CAN 2.0A, 2.0B CiA 401 v.2.01	CE, EN 61000-6-4, EN 64000-6-2, EN 61010-1 CAN 2.0A, 2.0B CiA 401 v.2.01	CE, EN 61000-6-4, EN 64000-6-2, EN 61010-1 CAN 2.0A, 2.0B CiA 401 v.2.01

INPUT DATA

Nr channels	24		16
Polarity	EN 61131-2 type 2, synq (pnp)		EN 61131-2 type 2, synq (pnp)
Counters	N.8 @ 32 bit, Max freq. 10 KHz Increment individual configurable, reset, preset Overflow indication		N.8 @ 32 bit, Max freq. 10 KHz Increment individual configurable, reset, preset Overflow indication
Vmax	30V		30 V
Minimun pulse width	250 µs		250 µs
ON/OFF delay	< 3ms		< 3ms
TPDO	< 1ms		< 1ms

OUTPUT DATA

Nr channels		24	8
Type		Mosfet (open source) with shared common	Mosfet (open source) with shared common
Power supply Voltage		5..30Vdc	5..30Vdc
Maximum Current		0.5 A (connection from terminals) 25 mA (connection from connectors)	0.5 A (connection from terminals) 25 mA (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
Supported application layer	CiA 301 v4.02	CiA 301 v4.02	CiA 301 v4.02
Supported profile	CiA 401 v2.01	CiA 401 v2.01	CiA 401 v2.01

Z-PC-LINE • DIGITAL I/O MODULES WITH CANOPEN COMMUNICATION

	ZC-8AI	**ZC-3AO**	**ZC-4RTD**	**ZC-8TC**	**ZC-SG**
					
CE 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**

ORDERS CODES

	ZC-8AI	ZC-3AO	ZC-4RTD	ZC-8TC	ZC-SG
Model	ZC-8AI	ZC-3AO	ZC-4RTD	ZC-8TC	ZC-SG
Software	Pg.25	Pg.25	Pg.25	Pg.25	Pg.25
Accessories	Pg.26	Pg.26	Pg.26	Pg.26	Pg.26

GENERAL DATA

	ZC-8AI	ZC-3AO	ZC-4RTD	ZC-8TC	ZC-SG
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
Power Consumption	5 W	2,5 W	1 W	1 W	2 W
Power transducers	22 mA, 8 sensors	-	-	-	5 Vdc, up to 4 / 8 load cells
Galvanic isolation	1,5 kVac (6 way)	1,5 kVac (5 way)	1,5 kVac (6 way)	1,5 kVac (6 way)	1,5 kVac (3 way)
Input protection	Against ESD discharge up to 4 KV	Against ESD discharge up to 4 KV	Against ESD discharge up to 4 KV	Against ESD discharge up to 4 KV	Against ESD discharge up to 4 KV
Status indicators	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	< 28 ms	< 28 ms	< 7 ms
Accuracy	0,05%	0,01%	0,05%	0,1%	0,01%
A/D Resolution	14 or 15 bit	14 bit	13 or 14 bit	15 bit	24 bit
Thermal drift	< 100 ppm/°C	< 100 ppm/°C	< 50 ppm/°C	< 100 ppm/°C	< 25 ppm/°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
Enclosure, weight, colour	PBT, 140 g., black	PBT, 140 g., black	PBT, 140 g., black	PBT, 140 g., black	PBT, 140 g., black
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 RS232, front jack, speed 2400 Baud	Removable screw terminals IDC10 connector for Z-PC-DIN backplane RS232, front jack, speed 2400 Baud	Removable screw terminals IDC10 connector for Z-PC-DIN backplane RS232, front jack, speed 2400 Baud	Removable screw terminals IDC10 connector for Z-PC-DIN backplane RS232, front jack, speed 2400 Baud	Removable screw terminals IDC10 connector for Z-PC-DIN backplane RS232, front jack, speed 2400 Baud
Protection degree	IP20	IP20	IP20	IP20	IP20
Configuration	Dip Switches (baud rate, Node ID) EDS file	Dip Switches (baud rate, Node ID) EDS file	Dip Switches (baud rate, Node ID) EDS file	Dip Switches (baud rate, Node ID) EDS file	Dip Switches (baud rate, Node ID) EDS file
Protocols supported	CAN bus standard (2.0A, 2.0B) CANopen (profile CiA 401 v.2.01) ModBUS RTU (through RS232)	CAN bus standard (2.0A, 2.0B) CANopen (profile CiA 401 v.2.01) ModBUS RTU (through RS232)	CAN bus standard (2.0A, 2.0B) CANopen (profile CiA 401 v.2.01) ModBUS RTU (through RS232)	CAN bus standard (2.0A, 2.0B) CANopen (profile CiA 401 v.2.01) ModBUS RTU (through RS232)	CAN bus standard (2.0A, 2.0B) CANopen (profile CiA 401 v.2.01) ModBUS RTU (through RS232)
CANopen max speed	1 Mbps	1 Mbps	1 Mbps	1 Mbps	1 Mbps
Conformity	CE, EN 61000-6-4, EN 64000-6-2, EN 61010-1 CAN 2.0A, 2.0B CiA 401 v.2.01	CE, EN 61000-6-4, EN 64000-6-2, EN 61010-1 CAN 2.0A, 2.0B CiA 401 v.2.01	CE, EN 61000-6-4, EN 64000-6-2, EN 61010-1 CAN 2.0A, 2.0B CiA 401 v.2.01	CE, EN 61000-6-4, EN 64000-6-2, EN 61010-1 CAN 2.0A, 2.0B CiA 401 v.2.01	CE, EN 61000-6-4, EN 64000-6-2, EN 61010-1 CAN 2.0A, 2.0B CiA 401 v.2.01

INPUT DATA

	ZC-8AI	ZC-3AO	ZC-4RTD	ZC-8TC	ZC-SG
Nr channels	8 (4 isolation zones)		4, RTD with 2,3,4 wires, fully isolation	8 (thermocouples or mV)	2
Type	Voltage range: ±10 V Current range: 0..20, 4..20 mA 2,3 wires sensor connection Configurable fault		PT100 (EN 60751/A2-ITS90) Range: -200..+650°C PT500 (EN 60751/A2-ITS90) Range: -200..+750°C PT1000 (EN 60751/A2-ITS90) Range: -200..+210°C Ni100 (EN 60751/A2-ITS90) Range: -60..+250°C Configurable fault	THERMOCOUPLE Type: J, K, E, N, S, R, B, T Tables EN 60584-1 (ITS 90) Span: -10,1..81,4 mV Impedance 10 MΩ Configurable fault	ANALOG Load cells (strain gauge), Voltage supply 5 Vdc Min impedance 87 Ω 4 or 6 –wire bridge connections Sensitivity from 1 to 64 mV Full scale: 5..320 mV DIGITAL Tare calibration and span (max 30 V)

OUTPUT DATA

	ZC-8AI	ZC-3AO	ZC-4RTD	ZC-8TC	ZC-SG
Nr channels		3			1
Type		Voltage range: ±10 V Current range: 0..20, 4..20 mA Bipolar output signals Configurable fault			DIGITAL Nr 1 channel for stable weight or threshold (max 30 V, 50 mA)

CANOPEN FEATURES

	ZC-8AI	ZC-3AO	ZC-4RTD	ZC-8TC	ZC-SG
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
Supported application layer	CiA 301 v4.02	CiA 301 v4.02	CiA 301 v4.02	CiA 301 v4.02	CiA 301 v4.02
Supported profile	CiA 401 v2.01	CiA 401 v2.01	CiA 401 v2.01	CiA 401 v2.01	CiA 401 v2.01

Z-PC LINE • SOFTWARE

Z-PROG

I/O modules software configuration

Configuration and test: I/O slave modules and A/D converters (Z-4AI-D, Z-4TC-D)
Communication via PC: Through serial interface
Operating system: Windows 95, 98, ME, 2000, XP, Vista
Settings: COM Port, baud rate, address, filter, burn-out, measurement scale, root extraction etc.
Special Functions: thermocouple calibration, automatic detecting of connected devices, warning

ORDER CODES

Z-PROG	I/O modules software configuration

Z-NET³

EC 61131 Z-PC system configurator

Configuration: Project, CPU, I/O modules, variables, communication network
Automation Functions: Pumps rotation, operating hours meter, counter, flow calculation
Telecontrol Functions: Alarms management / events via SMS, status request via SMS, SMS commands, log file management via e-mail, log file management via ftp, call on alarm
Additional Tools: Web Editor, Data

CODICI D'ORDINE

Code		Description
Tool	Z-NET2	Software of Z-PC Systems Configuration for CPU 2005-2006
Versions	Z-NET3	Software of Z-PC Systems Configuration for CPU producted since 2007
	Z-NETIO	Software of I/O slave modules Configuration, ModBUS Master S401 project Data Recorder
Extensions	Z-NET2-RTU	Telecontrol tool
	OPC	OPC - OPC stand alone
	Isagraf	Isagraf – PLC programming toolkit.
	Data Recorder	Data acquisition tool.

Web Editor

Development Environment for Hmtl / Java web pages editing

- Supported Versions Z-TWS 64, ZTWS-02, Z-RTU light and full version
- Basic object insertion (text and images)
- SENECA Tools, integrated with I/O modules
- Basic (label, images) and advanced (trend, plot, led etc.) graph control

ORDER CODES

WEB EDITOR	Development Environment for Hmtl / Java web pages editing

Z DATA STORE

M-RTU communication software manager

- SMS receiving
- Local / remote data download
- Automatic calls management
- Management, creation and files updating

ORDER CODES

Z-SMS DATA STORE	Software of data and M-RTU Communication management

Z-NET2 RTU

Data manager software for telecontrol systems

Configurator Module: RTU Connection Parameters
Runtime Module: Periodical Scheduling for the data download and RAS connections management through OPC server activation
Viewer Module: Alarms and trend Visualization e trend through OCX technology

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Code		Description
Tool	Z-NET2-RTU	Data management and telecontrol software
Versions	-0	Basic Functions
	-1	Basic Functions + exportable OCX
	-2	Basic Functions + exportable OCX + automatic download up to 5 RTU
	-3	Basic Functions + exportable OCX + automatic download from 6 to 10 RTU
	-4	Basic Functions + exportable OCX + automatic download more than 10 RTU
Option	OCX	OCX Class objects exportable ActiveX for visualizations

OPC SERVER

Data exchange software client / server

OPC-SERVER-D: OPC Server demo (functioning for 30')
OPC-SERVER: OPC Server Z-TWS. standard version for remote units connections and data download. Data Exchange through web service / cgi
OPC-SERVER I/O: Support for ModBUS RTU slave or ModBUS TCP protocols supported, PC ModBUS Master, GPRS TIM and WIND connections, versions from 100, 500 and illimited tag
OPC-SERVER MB: ModBUS RTU slave or ModBUS TCP protocols supported, slave instrumentations simulation, GPRS Vodafone connections, versions from 100, 500 and illimited tag

ORDER CODES

Code		Description
Versions	OPC-SERVER-D	OPC Server demo (30')
	OPC-SERVER	OPC Server Z-TWS (standard)
	OPC-SERVER I/O-1	OPC Server I/O 100 tag
	OPC-SERVER I/O-2	OPC Server I/O 500 tag
	OPC-SERVER I/O-3	OPC Server I/O tag illimited
	OPC-SERVER MB-1	OPC Server ModBUS Slave 100 tag
	OPC-SERVER MB-2	OPC Server ModBUS Slave 500 tag
	OPC-SERVER MB-3	OPC Server ModBUS Slave tag illimited

DATA RECORDER

Data acquisition, visualization and recording software

ORDER CODES

Code		Description
Tool	DR	Data acquisition software integrated in Z-NET3
Version	-2	2 recordable channels (video tracks)
	-4	4 recordable channels (video tracks)
	-8	8 recordable channels (video tracks)
	-16	16 recordable channels (video tracks)
	-32	32 recordable channels (video tracks)
	-64	64 recordable channels (video tracks)
Options	-M	Math (calculated channels) tool
	-A	Alarm (output activation) tool
	-R	Report tool
	-MC	Multi-client tool

Z-CALCULUS

OPC client-based power consumption software

- Detailed Analysis of relevated and calculated data
- Power costs calculation
- Energy management planning
- Industrial consumptions detection and accounting

ORDER CODES

Z-CALCULUS	OPC client-based power consumption software

Z-PC LINE • SOFTWARE AND ACCESSORIES

ISAGRAF

IEC 61131-3 Programming tool

Standard: IEC 61131-3
Programming languages: SFC, FBD,LD, ST, IL, FC, text
Communication functions: ftp client management, outgoing e-mail , remote connections, incoming and outgoing SMS
Tag licence: 64, 256

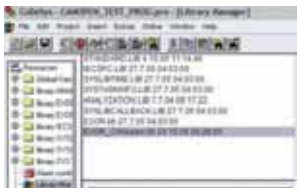
ORDER CODES

Code		Descriptions
Versions	UNICONTROL01	Toolkit Isagraf, licence 64 tag
	UNICONTROL02	Toolkit Isagraf, licence 256 tag

CODESYS

IEC 61131-3 Programming tool

- CANopen Master configuration
- Language compliant with IEC 61131-3 standard
- PLC soft with real-time
- Communication Network Configuration
- Data Exchange with CANopen slave modules



EDS (Electronic Data Sheet)

Configuration Files for CANopen I/O modules, compliant to CiA DS-301, free on www.seneca.it.

ACCESSORIES

Z-POWER

Voltage transformer with output at 19 Vac (DIN rail mounting)

- Primary Voltage 230 (115) Vac ± 10%
- Box in fiberglass self-extinguish (V-0)
- Protection by thermo-fuse
- Dimensions 3 DIN modules(15 VA), 5 DIN modules (25 VA)
- IP 40

ORDER CODES

Code		Descriptions
Versioni	Z-POWER 230-15VA	Voltage Transformer 19 Vac, 230-15 VA
	Z-POWER 230-25VA	Voltage Transformer 19 Vac, 230-25 VA
	Z-POWER 115-15VA	Voltage Transformer 19 Vac, 115-15 VA

S117P

RS232/TTL/USB serial converter/isolator

- Compliant with Windows (Xp, Vista, Xp Embedded, CE .Net), Mac OS (8, 9, X), Linux (2.24.0 or next)
- Compliant with USB 1.0, 1.1, 2.0
- Isolation USB / RS232: 1.500 V
- Power Supply: loop powered from PC USB port
- RS232 connection: DB9
- TTL connection: RJ-10
- Dimensions: 90 x 50 x 25 mm
- Accessories: CD with driver

ORDER CODES

Code	Descriptions
S117P	Asynchronous RS232-TTL/USB serial converter

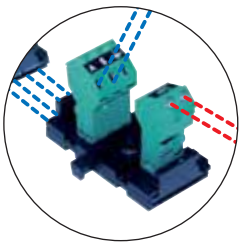
CONNECTION CABLE

Code	Description	Terminals
PM001420	RS232 Serial cable (Z-TWS, Z-RTU, Z107, Z-LINK)	RJ10 / DB9F
PM001430	Modem communication cable (Z-TWS)	RJ10 / DB25M
PM001440	Modem and HMI communication cable (ZTWS,Z-RTU)	RJ10 / DB25M
PM001450	Right Ethernet cable (Z-TWS – network device)	RJ45 / RJ45
PM001460	Crossing Ethernet cable (Z-TWS - PC)	RJ45 / RJ45
PM001530	Modem serial cable (Z-TWS, Z-RTU)	RJ10 / DB9M
PM001601	Programming serial cable (Z109REG, Z109REG2, Z-4AI-D, Z-4TC-D, Z3AO, Z8AI, Z-8TC, Z-4RTD2, Z-SG, Z203)	Jack / DB9F
PM001810	Z-TOP / PC Programming cable	DB15F / DB9F
PM001820	Z-TOP / Z-TWS-02 Communication cable	DB15F / RJ10
PM001830	Z-TOP / Z-RTU Communication cable	DB15F / DB9M
PM001840	Communication cable Z-TOP / RS485	DB15F / Bolt heads
PM001850	DB15F / DB15M adapter for ZTOP05, ZTOP11	

Code	Description	Terminals
PM001970	RS232 Serial Cable (K107B) Bolt heads / DB9F Bolt heads / DB9F	
PM002240	Z109REG2 Programming cable / Test-3	Jack / Jack
PM002340	Tp-Wire cable for Z-PROFIBUS	Tp-wire / Tp-wire
PM002350	RS485 serial cable for Radiomodem	DB9M / Bolt Heads
PM002460	RS485 serial cable Tp-wire (Z-TWS)	Tp-wire / Bolt Heads
PM002470	Serial cable (Z-TWS, Z-RTU, Z107)	RJ10 / RJ10
PM002480	RS485 Serial cable (Z-TWS)	RJ10 / Bolt Heads
PM002490	RS232 Serial cable – programming (ZRTU, M-RTU, radiomodem)	DB9M / DB9F
PM002500	RS232 modem for firmware updating (ZRTU, M-RTU, radiomodem)	DB9M / DB9F
PM002510	RS485 serial cable for radiomodem	DB9F / Bolt Heads
PM002520	RS232 Serial cable	DB9M / DB9M
PM002530	RS232 Serial cable	DB9F / DB9F

Z-PC DIN

Power supply and bus connection for Z-PC system



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

CODE	VERSIONS / OPTIONS	DESCRIPTION
Z-PC-DINAL	Head	Backplane for an easy wiring on DIN guide (old size)
Z-PC-DIN2	2 slots	
Z-PC-DIN4	4 slots	
Z-PC-DIN8	8 slots	
Z-PC-DINAL2-17.5	Head + 2 slots 17,5 mm step	Backplane for an easy wiring on DIN guide (new single size)
Z-PC-DIN2-17.5	2 slots - 17,5 mm step	
Z-PC-DIN8-17.5	8 slots - 17,5 mm step	
Z-PC-DINAL1-35	Head + 1 slot - 35 mm step	Backplane for an easy wiring on DIN guide (new double size)
Z-PC-DIN1-35	1 slot - 35 mm step	
Z-PC-DIN4-35	4 slot - 35 mm step	

New Z-PC DIN – single size
(17,5 mm step)

Z-PC-DINAL2-17.5 Z-PC-DIN2-17.5 Z-PC-DIN8-17.5

New Z-PC DIN – double size
(35 mm step)

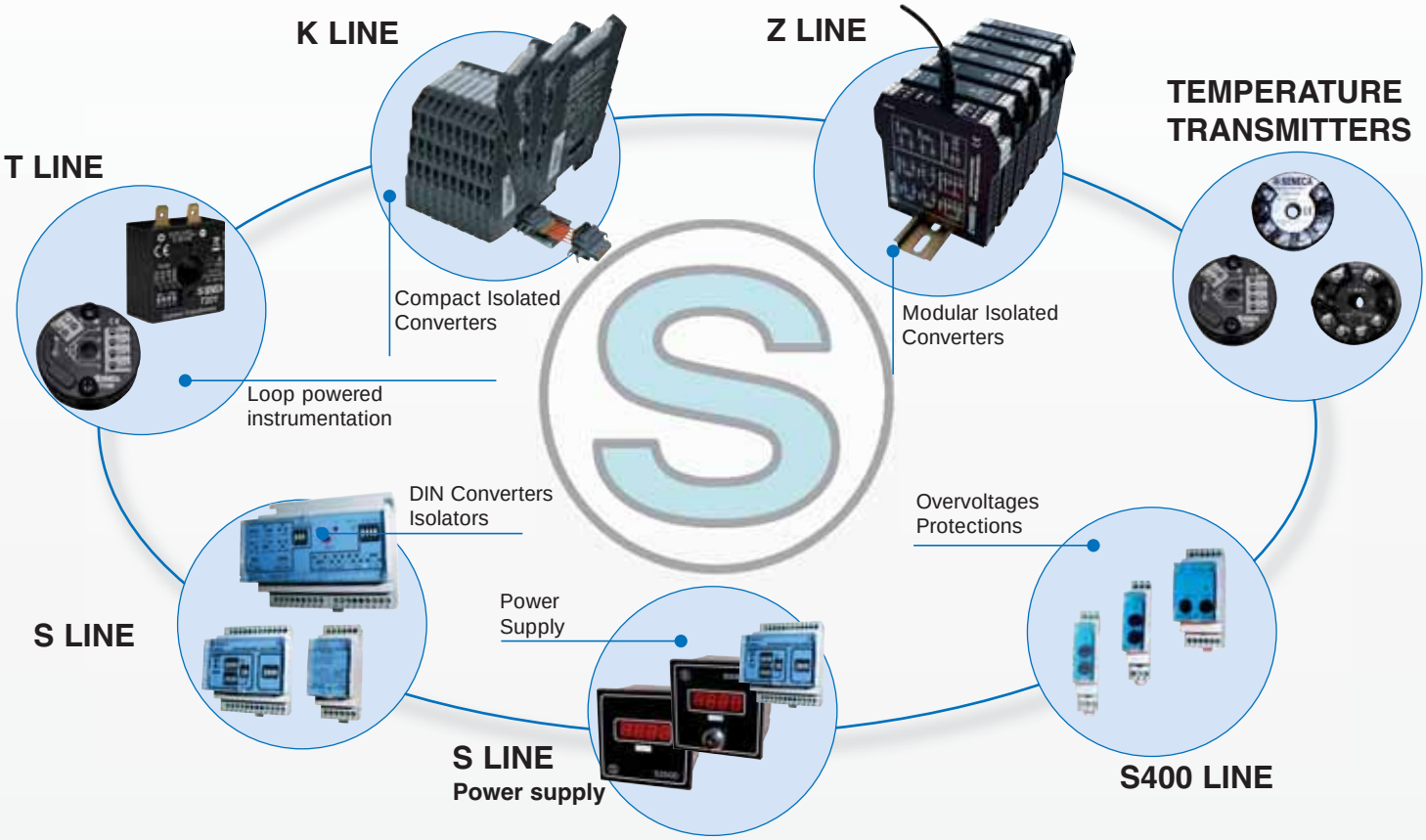
Z-PC-DINAL1-35 Z-PC-DIN1-35 Z-PC-DIN4-35

2

CONVERTERS AND INTERFACES

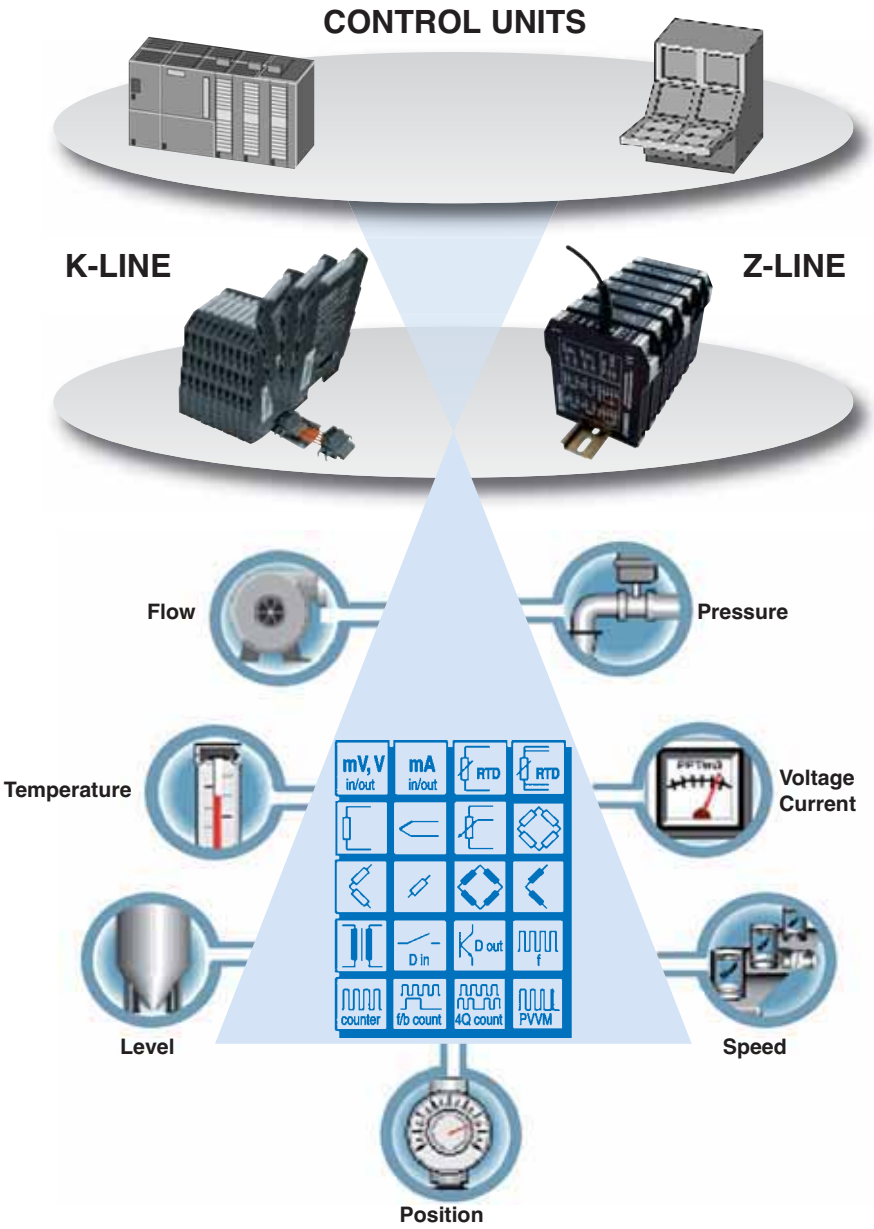
SENECA

CONVERTERS AND INTERFACES FOR ANY NEED



CONVERSION TYPE	Universal	Analog	Serial	A/D PLC	With Relay Output	From / to frequecy	Temperature	Electrical Measurement
DIMENSION	17,5 mm	6,2 mm						
POWER SUPPLY	19,2..30 Vdc	19..40 (9..30) Vdc	10..40 Vdc	12 / 24 Vac/Vdc	115 / 230 Vac	Self / loop powered	BUS powered	Power for transducers
CONNECTIONS	Cage Clamp	Screw Terminal						
INPUT	UNIVERSAL (mA, A, mV, V, RTD, TC)	ANALOG Elettric mA, A, mV, V, Ohm	PULSE Mechanical contact, reed, npn, pnp, 24 Vdc, Namur, photoelectric, hall sensor, variable reluctance		SERIAL RS232, RS485 (ModBUS), USB	CONTACT	RTD SENSOR RTD (Pt100, Pt500,Pt1000, Ni100, KTY81, KTY84, NTC), TC (J,K,R,S,T,B,C,E,N), Load cell	
OUTPUT	ANALOG mA, V	CONTACT	PULSE Reed relè, npn open collector	RELAY SPDT, SPST, static for 1, 2, 3, 5 alarm control	Serial RS485, ModBUS			
PROGRAMMING	DIP Switch	Software	Test-3					
ACCURACY CLASS	0,01%	0,1%	0,2%	0,25%	0,3%	0,5%		
OPERATING TEMPERATURE	0..50°C	0..55°C	0..60°C	-10..60°C	-20..65°C			
ISOLATION	1,5 kVac	3,75 kVac	4 kVac	4,5 kVac				

SIGNAL CONDITIONING BENEFITS



- TOTAL ISOLATION BETWEEN SIGNAL AND POWER SUPPLY CIRCUITS
- SEPARATION OF SEVERAL GROUNDS POTENTIAL
- RELIABILITY AND SECURITY IN DATA TRANSMISSION
- ISOLATION SUPPORTED TRANSMISSION SECURITY
- WIRING REDUCTION
- ELECTROMAGNETIC IMMUNITY
- PROTECTION AGAINST HIGH GROUND POTENTIALS

TYPICAL APPLICATION AREAS

PAPER INDUSTRY

METAL INDUSTRY

OIL & GAS

FOOD & BEVERAGE

PHARMACEUTICAL SECTOR

BUILDING CONSTRUCTIONS

HEAT ENGINEERING, THERMOTECHNICS

NON-METAL WORKINGS

ENERGY

WATER INDUSTRY

K-LINE

ACCURACY
0,1%

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

RELIABILITY
> 500.000 h

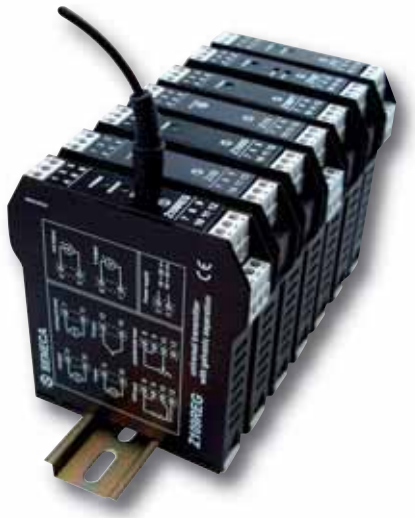
OPERATING TEMPERATURE
-25..+65°C

ISOLATION
1,5 kVac

POWER CONSUMPTION
< 25 mA

DIMENSIONS
6,2 mm

APPROVALS
CE, UL CSA



Z-LINE

CONNECTION
Removable terminal blocks

SETTINGS
- DIP-switches
- Software
- Hand-held device

POWER SUPPLY
Vac / Vdc switching

POWER TRANSDUCERS
Min 20 Vdc

ISOLATION
1,5..4 kVac

UNIVERSAL INPUTS
- Analog (mA, A, mV, V, Ohm)
- Sensors (TC, RDT, load cell)
- Pulse / Frequency

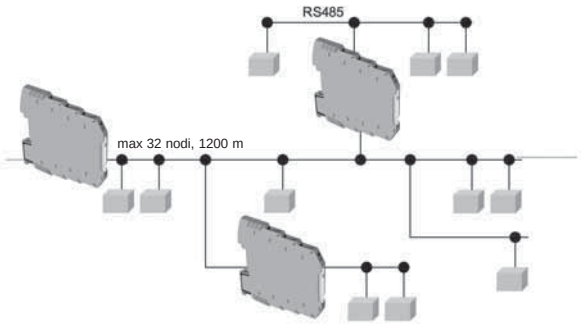
DIMENSIONS
17,5 mm

APPROVALS
CE, UL CSA

APPLICATION EXAMPLES

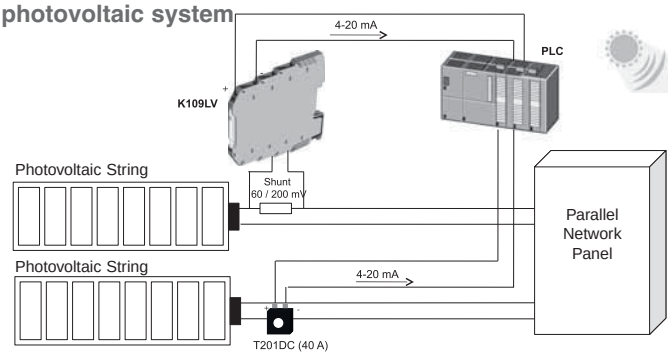
K107A

RS485 (Modbus) multiple serial lines connection with galvanic isolation



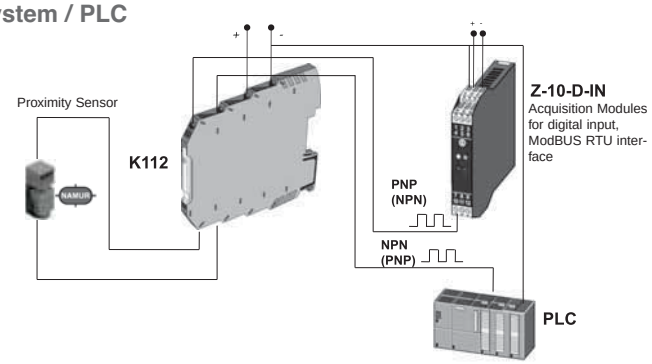
K109LV + T201DC

Measurement and string current transmission in photovoltaic system



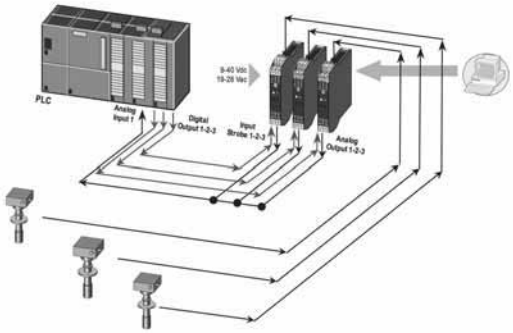
K112

Isolated Digital coupler (Namur sensor) – acquisition system / PLC



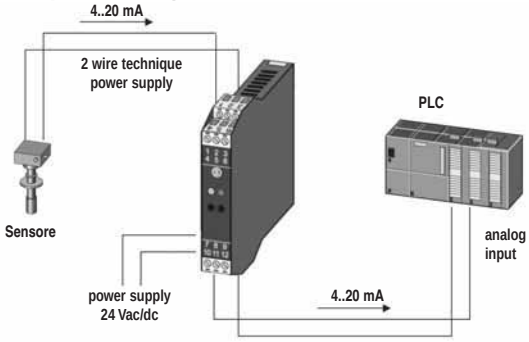
Z109REG2

Isolation and analog conversion with multiplexing function on re-transmitted output



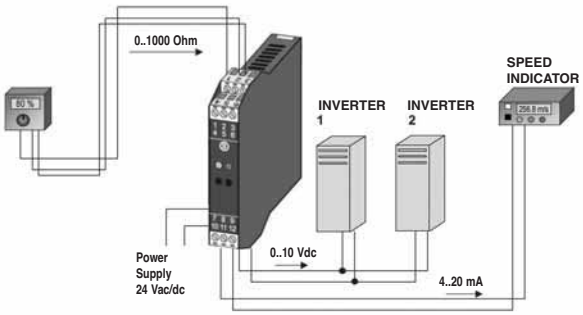
Z109S

Isolation and re-transmission of 4..20 mA signal from a 2 wire sensor (powered by Z109S)



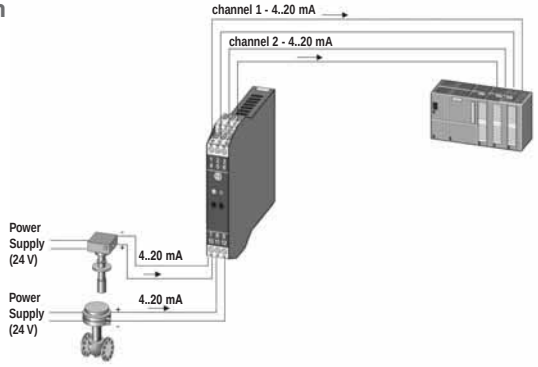
Z102

Inverters serial control through a potentiometer



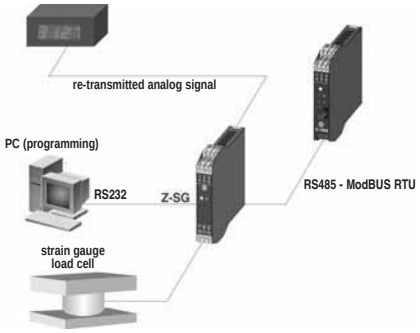
Z110

Signals isolation between transducers and acquisition system



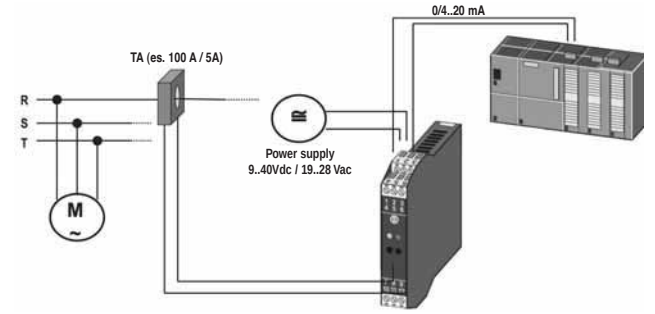
Z-SG

Load cell weight measure and analog re-transmission as mA/V signal

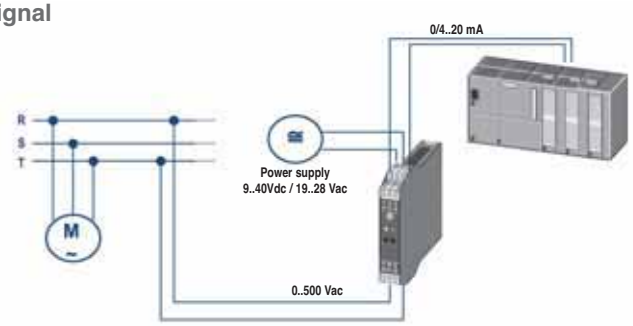


APPLICATION EXAMPLES

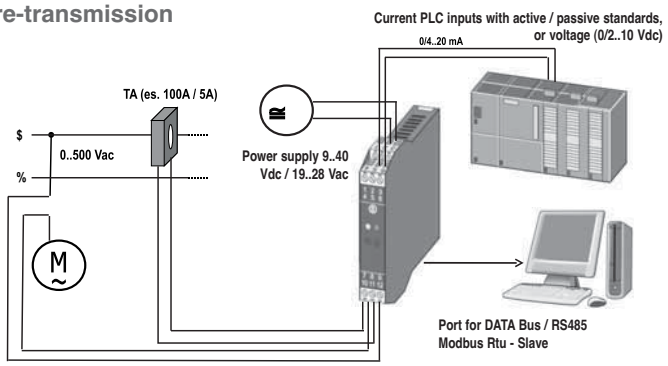
Z201
Alternate current conversion/isolation into mA/V standard signal



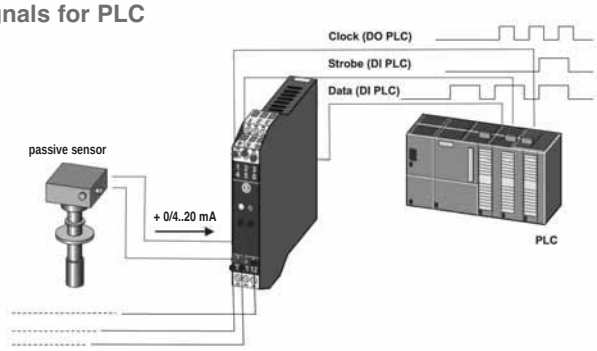
Z202
Alternate voltage conversion/isolation into mA/V standard signal



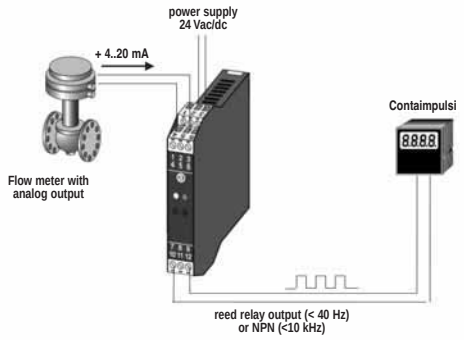
Z203
Single phase network analyzer with output signal re-transmission



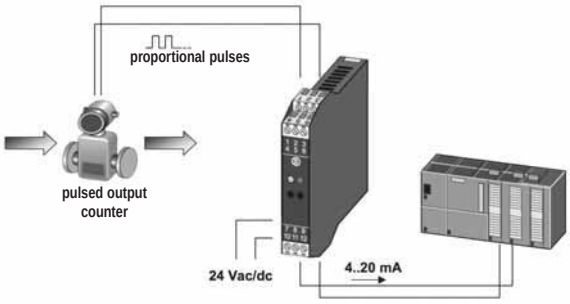
Z-4AI-D
Acquisition of analog signals and conversion into digital signals for PLC



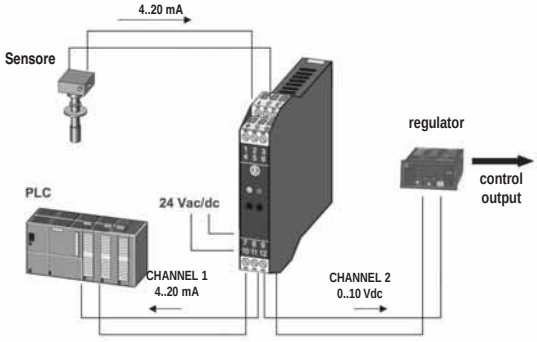
Z104
Flow meter pulses counting with analog output



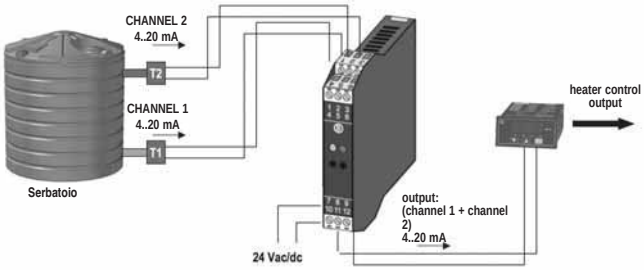
Z111
Real-time flow acquisition with pulses output



Z170
Real-time flow acquisition with pulses output



Z190
Differential temperature control with 4.20 mA signals



K-LINE • ISOLATORS - TEMPERATURE CONVERTERS

	K109PT	**K109PT-HPC**	**K109PT1000**	**K120RTD**	**K109TC**
					
LISTED	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)	TC to DC current / voltage isolator converter with settable threshold

ORDER CODES

Model	K109PT	K109PT-HPC	K109PT1000	K120RTD	K109TC
Accessories / Software	K-BUS (Page 34) K-SUPPLY (Page 34)	K-BUS (Page 34) K-SUPPLY (Page 34)	K-BUS (Page 34) K-SUPPLY (Page 34)	K-BUS (Page 34) K-SUPPLY (Page 34) S117P (Page 34-41)	K-BUS (Page 34) K-SUPPLY (Page 34)

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
Power on side terminals	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 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 (settable)	50 – 60 Hz (settable)	50 – 60 Hz (settable)	50 – 60 Hz (settable)	50 – 60 Hz (settable)
Programming	DIP switch, I2C	DIP switch, I2C	DIP switch, I2C	DIP switch, I2C	DIP switch, I2C
Filter	Insertable	Insertable	Insertable	Insertable	Insertable
Dimension (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
Galvanic isolation	1,5 kVac @ 3-way (50 Hz, 1 min)	1,5 kVac @ 3-way (50 Hz, 1 min)	1,5 kVac @ 3-way (50 Hz, 1 min)	-	1,5 kVac @ 3-way (50 Hz, 1 min)
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
Color	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 drif	< 100 ppm/K	< 100 ppm/K	< 100 ppm/K	< 100 ppm/K	< 100 ppm/K
LED	Fault Alarm	Fault Alarm	Fault, alarm DIP switch error	Fault Alarm	
Embedded functions	Programmable fault and cut-off Insertable filter	Programmable fault and cut-off Insertable filter	Programmable fault and cut-off Insertable filter	RTD type / connection, filter, measure range, error, output inversion, over-range	Programmable fault and cut-off Insertable filter
Approvals	CE, UL-UR CSA	CE	CE	CE	CE, UL-UR CSA
Norms	EN 50081-2, EN 50082-2, EN 61010-1, EN 60742	EN 50081-2, EN 50082-2, EN 61010-1, EN 60742	EN 50081-2, EN 50082-2, EN 61010-1, EN 60742	EN 50081-2, EN 50082-2, EN 61010-1, EN 60742	EN 50081-2, EN 50082-2, EN 61010-1, EN 60742

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 wire 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 wire 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 wire 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 wire	Thermocouple Type: J,K,E,N,S,R,B,T (ITS90) Min span: 100 °C Impedance: 10 MΩ Semiconductor sold joint ADC: 13 bit Accuracy: 0,15 °C
Absolute value					Max voltage ± 32V

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 hysteresys / 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)
D/A conversion, resolution	1 mV, 2 μA	1 mV, 2 μA	1 mV, 2 μA	1 mV, 2 μA	1 mV, 2 μA

K LINE • ISOLATORS – DIGITAL AND ANALOG CONVERTERS

	K109UI	K109S	K109LV	K111	K112
					
	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

ORDER CODES

	K109UI	K109S	K109LV	K111	K112
Model	K109UI	K109S	K109LV	K111	K112
Accessories / Software	K-BUS (Pag. 35) K-SUPPLY (Pag. 35)	K-BUS (Pag. 35) K-SUPPLY (Pag. 35)	K-BUS (Pag. 35) K-SUPPLY (Pag. 35)	K-BUS (Pag. 35) K-SUPPLY (Pag. 35)	K-BUS (Pag. 35) K-SUPPLY (Pag. 35)

GENERAL DATA

	K109UI	K109S	K109LV	K111	K112
Power supply	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
Current consumption	22 mA (24 Vdc)	23 mA (24 Vdc); 45 mA (with aux power)	22 mA (24 Vdc)	< 25 mA	< 25 mA
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
Rejection	50 o 60 Hz (configurable)	50 o 60 Hz (configurable)	50 o 60 Hz (configurable)	50 o 60 Hz (configurable)	50 o 60 Hz (configurable)
Settings	DIP Switches	DIP Switches	DIP Switches	DIP Switches, software	DIP Switches
Filter	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
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	Nero	Nero	Nero	Nero	Nero
Enclosure	PBT	PBT	PBT	PBT	PBT
Weght	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	IP 20	IP 20	IP 20	IP 20	IP 20
Precision class	0,1%	0,1%	0,1%		
Thermal drift	< 120 ppm/K	< 120 ppm/K	< 120 ppm/K		
Status indicators	Fault, alarm	Fault, alarm	Fault, alarm	Power, threshold, error	Power, output state
Special functions	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, UL-UR CSA	CE, UL-UR CSA	CE	CE	CE
Norms	EN 50081-2, EN 50082-2, EN 61010-1, EN 60742	EN 50081-2, EN 50082-2, EN 61010-1, EN 60742	EN 50081-2, EN 50082-2, EN 61010-1, EN 60742	EN 50081-2, EN 50082-2, EN 61010-1, EN 60742	EN 50081-2, EN 50082-2, EN 61010-1, EN 60742

INPUT DATA

	K109UI	K109S	K109LV	K111	K112
Channels	1	1	1	1	1
Type	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

	K109UI	K109S	K109LV	K111	K112
Channels	1	1	1	2	2
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	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), 50 V (pulse)
Response time (10-90%)	< 40 ms (without filter) < 88 ms (with filter)	< 40 ms (without filter < 88 ms (with filter)	< 25 ms (without filter) < 55 ms (with filter)		

K-LINE • ISOLATORS – SERIAL CONVERTERS AND ACCESSORIES

	K107A	K107B	K107USB	K-SUPPLY
	 RS485 ⇔ RS485 serial isolator repeater	 RS232 ⇔ RS485 serial isolator converter	 RS485 ⇔ USB serial isolator converter	 Redundant power supply module

ORDER CODES

Model	K107A	K107B	K107USB	K-SUPPLY
Accessories / Software	K-BUS (Page 34) K-SUPPLY (Page 34)	K-BUS (Page 34) K-SUPPLY (Page 34)	K-BUS (Page 34) K-SUPPLY (Page 34)	

GENERAL DATA

Power supply	19,2.. 30 Vdc	19,2.. 30 Vdc	Via USB port	19,2.. 30 Vdc
Power on side terminals	Yes	Yes	-	Yes
Hot swapping	Yes	Yes	Yes	Yes
Max current consumption	22 mA (24 Vdc)	22 mA (24 Vdc)	60 mA	
Max consumption	500 mW	500 mW		
Rejection	50 – 60 Hz (programamble)	50 – 60 Hz (programamble)	50 – 60 Hz (programamble)	50 – 60 Hz (programamble)
Programming	DIP switch, I2C	DIP switch, I2C	DIP switch, I2C	DIP switch, I2C
Filter	Insertable	Insertable	Insertable	Insertable
Dimension (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
Galvanic isolation	1,5 kVac @ 3-way (50 Hz, 1 min)	1,5 kVac @ 3-way (50 Hz, 1 min)	1,5 kVac (USB (RS485)	1,5 kVac
Isolation technique	Digital (optocoupler)	Digital (optocoupler)	Digital (optocoupler)	-
Data processing	32 bit floating point	32 bit floating point	32 bit floating point	32 bit floating point
Color	Black	Black	Black	Black
Enclosure	PBT	PBT	PBT	PBT
Weight	45 g	45 g	45 g	45 g
Operating temperature	-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
Protection degree	IP20	IP20	IP20	IP20
Channels	1 input, 1 output	1 input, 1 output	1 input, 1 output	2 inputs, 1 output
LED	Power ON Data ok Inverted connection	Power ON Data ok Inverted connection	Power ON Data ok Inverted connection	Input switch on threshold Alternate input polarity
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	Differential mode filter Overvoltages protection Power supply redundant connection
Approvals	CE, UL-UR CSA	CE, UL-UR CSA	CE	CE
Norms	EN 61010-1, EN 60742, EN 61000-2, EN 61000-4	EN 61010-1, EN 60742, EN 61000-2, EN 61000-4	EN 61010-1, EN 60742, EN 61000-2, EN 61000-4	EN 50081-2, EN 50082-2, EN 61010-1, EN 60742, EN 61000-6-4, EN 61000-6-2

SIDE A

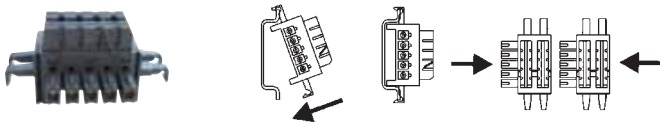
Type	SERIAL Half duplex, 31 nodes, terminal, protection up to 30 Vdc	SERIAL RS232B, protection up to 30 Vdc	SERIAL USB interface, standard USB 1.0/ 2.0 compliance, USB A and MINI USB B connection	POWER SUPPLY 2 inputs with shared negative terminal Pass-through each input can be accessed by 2 pairs of terminals Max current per terminal: 4 A Positive inputs protected by an external fuse of recommended sizing

SIDE B

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	POWER SUPPLY Max voltage drop: 300 mV

K-BUS

Expandable power supply connector (EN 60175)



Each expandable connector K-BUS allows inserting two modules. K-BUS are inserted on guide settings them to the top and round them at the bottom.

POWER SUPPLY TECHNIQUE

K Line signal conditioners can be powered in 3 different ways: by the spring cage terminal block (24 Vdc direct from power supply) or by SMART SUPPLY system. SMART SUPPLY system is based on expandable KBUS connector..

ORDER CODES

Code	Description
K-BUS	2 slot expandable power supply connector

S117P

T120, T121 and K120RTD configuration toolkit

T120, T121 and K120RTD configuration toolkit including S117P (USB – RS232/TTL converter), PM002411 (S117P connecting cable), EASY-LP (programming software)

ORDER CODES

Code	Description
S117P	T120, T121 and K120RTD configuration toolkit

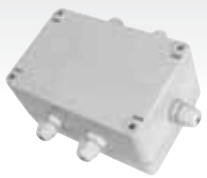
Z-LINE • ISOLATORS – ANALOG CONVERTERS

	Z109REG	Z109REG2•Z109REG2-H	Z109UI2	Z109S
	 Universal isolator/converter	 Universal isolator/converter with advanced functions	 DC Current/Voltage to DC Current/Voltage isolator/converter	 DC Current isolator
ORDER CODES				
Models	Z109REG -ER (square root extraction)	Z109REG2 (9..40 Vdc/19..28 Vac) Z109REG2-H (85..265 Vac/dc) -ER (square root extraction)	Z109UI2	Z109S
Programming & Accessories	Page 41	Page 41	Page 41	Page 41
GENERAL DATA				
Power Supply	9..30 (option) - 19..40 Vdc 19..28 Vac; (50..60 Hz)	Z109REG2: 9..40 Vdc; 19..28 Vac; (50..60 Hz) Z109REG2-H: 85..265 Vac/dc	10..40 Vdc 19..28 Vac; (50..60 Hz)	9..40 Vdc 19..28 Vac; (50..60 Hz)
Power transducers	18 Vdc, not regulated	20 Vdc, not regulated	20 Vdc, not regulated	20 Vdc, not regulated
Max Consumption	2,5 W (max)	2,5 W (max) 1,6 W (24 Vdc, 20 mA)	2,5 W	2,5 W
Galvanic Isolation & Protection	1.500 Vac, 3 way Against pulse overvoltages 400W/ms	1.500 Vac; 3.750 Vac (power supply / input -output) Against pulse overvoltages 400W/ms	1.500 Vac, 3 way Against pulse overvoltages 400W/ms	1.500 Vac, 3 way Against pulse overvoltages 400W/ms
Status indicators	Power supply Error	Power supply Error Alarm	Power supply	Power supply
Response time	300 ms	35 ms (11 bit)..140 ms (16 bit)	35 ms (11 bit)..140 ms (16 bit)	< 60 ms
Accuracy class	0,2%	0,1%	0,1%	0,2 %
Thermal stability	0,02 % f.s. / °C	0,01%/°K	0,01%/°K	0,02 % f.s. / °C
Linearity	0,05% (V,I), 0,2% (RTD),1°C (TC)	0,05% / 0.4%	0,05 % (V,I), 0,01% (Vout)	0,05 %
Setting	DIP switch Z-SETUP (PC software)	DIP switch Z-SETUP2 (PC software) Test-3 (hand held calibrator)	DIP switch Jumper	
Operating Temperature	0..+55°C	-10..+60°C	-10..+60°C	0..+50°C
Dimension (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
Electrical Connections	Screw-fit removable terminals for wires up to 2.5 mm^2	Screw-fit removable terminals for wires up to 2.5 mm^2	Screw-fit removable terminals for wires up to 2.5 mm^2	Screw-fit removable terminals for wires up to 2.5 mm^2
Weight	200 g	200 g	200 g	200 g
Approvals	CE	CE, UL-UR CSA	CE	CE
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 55011, EN 61000-4-2, EN 61000-4-4, EN 50140 / 141	EN 55011, EN 61000-4-2, EN 61000-4-4, EN 50140 / 141
INPUT DATA				
Nr	1	1 analog, 1 strobe	1	1
Type	VOLTAGE (mV, V) Bipolar 0..2, 0..5, 0..10 V • CURRENT (mA) 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 (mV, V) Bipolar da 75 mV a 20 V Resolution 15 bit + sign • CURRENT (mA) Bipolar up to 20 mA Resolution 1 µA • RTD Pt100, Pt500, Pt1000, Ni100, KTY81,KTY84, NTC Measure 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 ..10 kΩ • RHEOSTAT: 500 Ω..25 kΩ • STROBE: alternative to the relay output	• VOLTAGE (mV, V) Bipolar da 75 mV a 20 V Resolution 15 bit + sign • CURRENT (mA) Bipolar up to 20 mA Resolution 1 µA	CURRENT (mA) 2 scales: 0/4..20 mA Max resistance load: 600 Ω
OUTPUT DATA				
Nr	1	1 analog, 1 relay	1	1
Type	VOLTAGE (V) 4 scales: 0..1, 0..5, 0..10, 2..10 V CURRENT (mA) 2 scales: 0/4..20 mA	VOLTAGE (V) 4 scales: 0..1, 0..5, 0..10, 2..10 V Min load resistance: 2.000 Ω • CURRENT (mA) 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 (V) 4 scales: 0..1, 0..5, 0..10, 2..10 V Min load resistance: 2.000 Ω • CURRENT (mA) 2 scales: 0/4..20 mA (active/passive) Max load resistance: 600 Ω	CURRENT (mA) 2 scales: 0/4..20 mA Max resistance load: 600 Ω

Z-LINE • ISOLATORS – ANALOG CONVERTERS & A/D CONVERTERS FOR PLC

	Z102	Z110	Z-4AI-D	Z-4TC-D	Z-SG
					
	Potentiometer to DC Current/Voltage isolator/converter	DC Current isolator (self powered by the input) single & double channel	4 Analogue Signals A/D Converter	4 Thermocouple A/D Converter	Strain gauge to DC Current/Voltage isolator/converter
ORDER CODES					
Models	Z102	Z110S (single channel) Z110D (double canne)	Z-4AI-D	Z-4TC-D	Z-SG
Programming & Accessories	Page 41	Page 41	Page 41	Page 41	Page 41
GENERAL DATA					
Power Supply	9..30 (option) - 19..40 Vdc 19..28 Vac (50..60 Hz)	Self powered by the input current	9..30 (opt.) - 19..40 Vdc 19..28 Vac (50..60 Hz)	9..30 (opt.) - 19..40 Vdc 19..28 Vac (50..60 Hz)	10..40 Vdc 19..28 Vac
Max consumption	2,5 W				2 W
Galvanic Isolation & Protection	1.500 Vac, 3 way Against pulse overvoltages 400W/ms	1.500 Vac, 2 way	1.500 Vac, 3 way	1.500 Vac, 3 way	1.500 Vac, 3 way
Status indicators	Power supply		Power supply Error Data Transmission Data reception	Power supply Error Data Transmission Data reception	Power supply Error Data Transmission Data reception
Response time	40 ms	100 ms	< 400 ms	< 400 ms	< 10 ms
Communication Interface					2 wire RS485 RS232, front jack, speed 2400 Baud, data bits 8, Parity: NO, Stop bits:1
Accuracy class	0,2%	0,1%			0,01%
Thermal stability	0,02 % f.s. / °C	0,02 % f. / °C			0,0025% / °C
Linearity	0,05 %	0,1 % f.s			0,01%
Setting	Dip-switch (zero and span)		IEC 61131 PLC libraries DIP switch (filter time,input time, scale, serial interface) Z-PROG (PC software)	PLC IEC 61131 libraries DIP switch (filter time,input time, scale, serial interface) Z-PROG (PC software)	Dip-switch Software (Z-NET)
Operating Temperature	0..+50°C	0..+50°C	0..+50°C	0..+50°C	-10..+65°C
Dimension (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
Electrical Connections	Screw-fit removable terminals	Screw-fit removable terminals	Screw-fit removable terminals	Screw-fit removable terminals	Screw-fit removable terminals
Weight	200 g	200 g	200 g	200 g	200 g
Approvals	CE	CE	CE, UL-UR CSA	CE, UL-UR CSA	CE
Norms	EN 55011, EN 61000-4-2, EN 61000-4-4, EN 50140 / 141	EN 55011, EN 61000-4-2, EN 61000-4-4, EN 50140 / 141	EN 55011, EN 61000-4-2, EN 61000-4-4, EN 50140 / 141	EN 55011, EN 61000-4-2, EN 61000-4-4, EN 50140 / 141	EN 61000-6-4, EN 61000-6-2, EN 61010-1, EN 60742, IEC 61131
INPUT DATA					
Nr	1	1,2	4	4	1 analog, 1 digital
Type	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, da 200 Ω a 1M Ω	• CURRENT (mA) 4..20 mA	VOLTAGE (V) 2..10 V f.s (bipolar) Resolution: 16.000 points Impedance: 100 K Ω • CURRENT (mA) ± 20 mA (bipolar) Resolution: 16.000 points Impedance: 100 Ω	VOLTAGE ± 80 mV f.s (bipolar) Impedance 10 M Ω • THERMOCOUPLE Type J, K, R, S, T, E; B, N	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					
Nr	1	1,2	2	2	1analog, 1 digital
Type	VOLTAGE (V) 4 scales: 0..1, 0..5, 0..10, 2..10 V Min load resistance: 2.500 Ω • CURRENT (mA) 2 scales: 0/4..20 mA (acti-ve/passive) Max load resistance: 600 Ω	• CURRENT (mA) 4..20 mA	DIGITAL Channel from/to control unit (1 set-table as clock or reset input)	DIGITAL Channel from/to control unit (1 set-table as clock or reset input)	• CURRENT (mA) 0..20, 4..20 mA • VOLTAGE (V) 0..10, 0..5 Vdc • DIGITAL weight limit

Load cells junction box



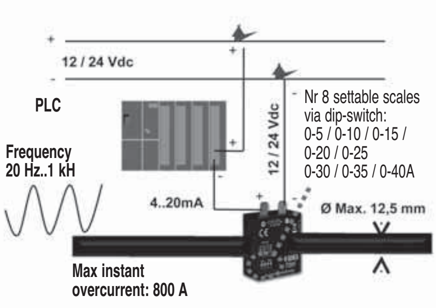
ORDER CODES

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

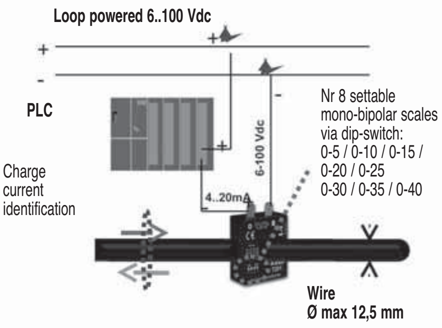
ISOLATORS • ELECTRIC PARAMETERS CONVERTERS

	T201	T201DC	Z201	Z201-H	Z202
		 PATENT PENDING			
C€ c UL us LISTED c RU us	AC Current Transformer with 4..20mA output	DC Current Transformer with 4..20mA output (loop powered)	AC current to DC Current / Voltage isolator / converter (low voltage power supply)	AC current to DC Current /Voltage isolator/converter (high voltage power supply)	AC Voltage to DC Current / Voltage isolator / converter (low voltage power supply)
ORDER CODES					
Models	T201	T201DC	Z201	Z201-H	Z202
GENERAL FEATURES					
Power Supply	Loop powered (5..28 Vdc)	Loop powered (5..28 Vdc)	19..40 Vdc / 19..28 Vac	85..265 Vac/dc	19..40 Vdc / 19..28 Vac
Power consumption			2,5 W	2,5 W	1,5 W
Galvanic Isolation & Protection	CAT III 300 Vac	1 kVdc	3.750 Vac (output / power supply) 1.500 Vac (other circuits)	4.000 Vac	3.750 Vac (from / to input) 1.500 Vac (other circuits)
Status indicators			Power supply	Power supply	Power supply
Response time	< 100ms	100ms (without filter) 600ms (with filter)	< 200 ms	<100 ms	30 ms
Accuracy class	0,2%	0,2%	0,3%	0,2%	0,2%
Thermal stability	115 ppm/°K	<150 ppm/°K	0,02 % f.s. / °C	0,02 % f.s. / °C	100 ppm/K
Linearity			0,1 %	0,1 %	0,05%
Settings	Dip-switches	Dip-switches	Dip-switches	Dip-switches	Dip-switches, jumper, trimmer
Operating Temperature	-20..+65°C	-10..+65°C	0..+55 °C	-10..+ 65 °C	0..+60°C
Connections	Faston terminals (6,3 x 0,8 mm)	Faston terminals (6,3 x 0,8 mm)	Removable terminal block, wire size up to 2.5 mm^2	Removable terminal block, wire size up to 2.5 mm^2	Removable terminal block, wire size up to 2.5 mm^2
Dimension (w x h x d)	38 x 40 x 20 mm	38 x 40 x 20 mm	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm
Weight	50 g	50 g	200 g	200 g	140 g
Approvals	CE	CE	CE	CE	CE
Norms	EN 60668+A1+A2, EN 61000-6-4, EN 61000-6-2, EN 61010-1	EN 60668+A1+A2, EN 61000-6-4, EN 61000-6-2, EN 61010-1	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 60688+A1+A2, EN500812, EN50082-2, EN61010-1, EN60742
INPUT DATA					
Nr	1	1	1	1	1
Type	CURRENT alternate (A) 5, 10, 15, 20, 25, 30, 35, 40 A Max overcurrent : 800 A Frequency: 20..1.000 Hz Crest factor: 2	CURRENT direct (A) 5, 10, 15, 20, 25, 30, 35, 40 A	CURRENT alternate (A) 0..5, 0..10 A	CURRENT alternate (A) 0..5, 0..10 A	VOLTAGE alternate (V) Range 0..500 Vac, 41 scales Input impedance 2.000 Ω/V Frequency 10 Hz..1kHz
OUTPUT DATA					
Nr	1	1	1	1	1
Type	CURRENT (mA) 4..20 mA (loop powered)	CURRENT (mA) 4..20 mA (loop powered)	VOLTAGE (V) 4 scales: 0..1, 0..5, 0..10, 2..10 V Min load resistance: 2.500 Ω • CURRENT (mA) 2 scales: 0/4..20 mA (active/passive) Max load resistance: 600 Ω	VOLTAGE (V) 4 scales: 0..1, 0..5, 0..10, 2..10 V Min load resistance: 2.500 Ω • CURRENT (mA) 2 scales: 0/4..20 mA (active/passive) Max load resistance: 600 Ω	VOLTAGE (V) 4 scales: 0..1, 0..5, 0..10, 2..10 V Min load resistance: 2.500 Ω • CURRENT (mA) 2 scales: 0/4..20 mA (active/passive) Max load resistance: 600 Ω 4..20 mA (Z202-LP)

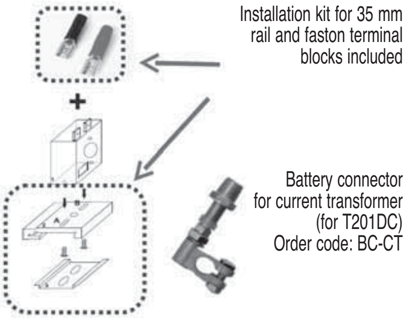
T201 – connection scheme



T201DC – Connection scheme



Configuration and accessories



ISOLATORS • ELECTRIC PARAMETERS CONVERTERS

	Z202-H	Z202-LP	Z203	S203T	S203TA
					
	AC Voltage to DC Current/Voltage isolator/converter	AC Voltage to DC current isolator/converter (4..20mA loop powered)	Single Phase Network Analyzer	Advanced 3-phase network analyzer // RS485 (input from special CT)	Advanced 3-phase network analyzer // RS485 (input up to 5 Arms)
ORDER CODES					
Models	Z202-H	Z202-LP	Z203	S203T	S203TA
Programming & Accessories				TA15 (f.s. 15 A, 0,1%) TA25 (f.s. 25 A, 0,1%) TA100 (f.s. 100 A, 0,1%)	
GENERAL FEATURES					
Power Supply	85..265 Vac/dc	Loop powered (5..28 Vdc)	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	<1,5 W	<1 W	2,5 W	2,5 W	2,5 W
Galvanic Isolation & Protection	4.000 Vac	4.000 Vac	3.750 Vac (from / to input) 1.500 Vac (other circuits)	3.750 Vac from/to measure input 1.500 Vac other circuits 4 kV (ESD)	3.750 Vac from/to measure input 1.500 Vac other circuits 4 kV (ESD)
Status indicators	Power supply	Power supply	Power supply Fail Data Transmission Data reception	Power, fail, RS485 communication	Power, fail, RS485 communication
Response time	< 100 ms	< 100 ms	< 10 ms	400 ms	400 ms
Communication Interface			RS485, 2 wires, 1.200..115.000 bps RS232, 2.400 bps ModBUS RTU protocol	RS485, 2 wires, 1.200..115.000 bps ModBUS RTU protocol	RS485, 2 wires, 1.200..115.000 bps ModBUS RTU protocol
Accuracy class	0,2%	0,3%	0,5%	0,2%	0,2%
Thermal drift	150 ppm/K	150 ppm/K			
Linearity	0,05%				
Settings	Dip-switches, jumper, trimmer	Dip-switches, jumper, trimmer	Dip-switches Software (Z-NET)	Dip-switches Software (Z-NET)	Dip-switches Software (Z-NET)
Operating Temperature	-10..+ 65 °C	-20..+ 65 °C	-10..+65 °C	-10..+65 °C	-10..+65 °C
Connections	Removable terminal block, max wire size 2.5 mm²	Removable terminal block, max wire size 2.5 mm²	Removable terminal block, max wire size 2.5 mm² Rear IDC10 connector for Z-PC backplane RS232 frontal Jack (ModBUS)	Removable terminal block, max wire size 5,08 mm²	Removable terminal block, max wire size 5,08 mm²
Dimension (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	105 x 89 x 60 mm	105 x 89 x 60 mm
Weight	140 gr	140 gr	140 gr	200 g	200 g
Approvals	CE	CE	CE, UL-UR CSA	CE	CE
Norms	EN 60688+A1+A2, EN500812, EN50082-2, EN61010-1, EN60742	EN 60688+A1+A2, EN500812, EN50082-2, EN61010-1, EN60742	EN 61000-6-4/2002, EN 61000-6-2/2002, EN 61010-1	EN 61000-6-4/2002, EN 61000-6-2/2002, EN 61010-1, EN 60742	EN 61000-6-4/2002, EN 61000-6-2/2002, EN 61010-1, EN 60742
INPUT DATA					
Nr	1	1	1 (6 measures)	1	1
Type	• VOLTAGE alternate (V) Range 0..500 Vac, 41 scales Input impedance 2.000 Ω/V Frequency 10 Hz..1kHz	• VOLTAGE alternate (V) Range 0..500 Vac, 41 scales Input impedance 2.000 Ω/V Frequency 10 Hz..1kHz	• VOLTAGE alternate (V) 0..500 Vac max (50-60 Hz) • CURRENT alternate (A) 0..5 A (rms)	• VOLTAGE alternate (V) Up to 600 Vac • CURRENT alternate (A) 15, 25, 100 mA(rms) By special CT (TA15, TA25, TA100)	• VOLTAGE alternate (V) Up to 600 Vac • CURRENT alternate (A) Up to 5A
OUTPUT DATA					
Nr	1	1	1 (6 measures)	1	1
Type	• VOLTAGE (V) 4 scales: 0..1, 0..5, 0..10, 2..10 V Min load resistance: 2.500 Ω • CURRENT (mA) 2 scales: 0/4..20 mA (active/passive) Max load resistance: 600 Ω	4..20 mA (loop powered)	• VOLTAGE (V) 4 scales: 0..1, 0..5, 0..10, 2..10 V Min load resistance: 2.500 Ω • CURRENT (mA) 2 scales: 0/4..20 mA Analog retransmission of : Vrms, Irms, P, Q, cosΦ	• VOLTAGE (V) 4 scales: 0..5, 0..10 Min • CURRENT (mA) 2 scales: 0/4..20 mA (active/passive) Analog retransmission of: Vrms, Irms, P, Q, S, f, cosΦ, Energy	VOLTAGE (V) 4 scales: 0..5, 0..10 Min • CURRENT (mA) 2 scales: 0/4..20 mA (active/passive) Analog retransmission of: Vrms, Irms, P, Q, S, f, cosΦ, Energy

ISOLATORS • CONVERTERS - TEMPERATURE TRANSMITTERS

	Z109PT2	Z109TC	T120	T121	FlexTop / FlexTop ISO (EX)
CE	 RTD to DC Current/Voltage isolator/converter	 TC to DC Current/Voltage isolator/converter	 PT100 and NI100 to DC current transmitter (4..20mA output loop powered) non-isolated	 TC/RTD to DC Current transmitter (4..20mA output loop powered)	 Temperature transmitters, EExIIA to DC current transmitter (4..20mA output loop powered)
ORDER CODES					
Model	Z109PT2	Z109TC	T120	T121	FLEXTOP-EX (standard) FLEXTOP ISO-EX (universal) -C (configured version)
Programming & Accessories	Pag. 43	Pag. 43	S117P (programming toolkit)	S117P (programming toolkit)	FlexTop (programming toolkit
GENERAL FEATURES					
Power supply	9..40 Vdc, 19..28 Vac (50..60 Hz)	9..30 (opt.) - 19..40 Vdc 19..28 Vac (50..60 Hz)	5..30 Vdc (loop powered)	7..30 Vdc (loop powered)	Standard: 8..35 Vdc (loop powered) Iso: 6,5..35 Vdc (loop powered)
Power Consumption	2,5 W	2,5 W			
Galvanic Isolation & Protection	1.500 Vac, 3 way Against pulse overvoltages 400W/ms.	1.500 Vac, 3 way Against pulse overvoltages 400W/ms.	No	1,5 kVac	Isolation: 3,75 KVac;
Status indicators	Power Supply Fail Out of range	Power Supply Fail			Fault sensor
Response time	35..140 ms	330 ms	<220 ms (without filter) <620 ms (with filter)	< 1 s	0,7 s
A/D resolution	11..15 bit + sign		16 bit	16 bit	12 bit
Accuracy class	0,1% (RTD) 0,3% (voltage output)	0,2 % - input 0,1 % - output	0,1%	0,1% (min 0,1°C for RTD and 1°C for TC)	0,1%
Thermal drift	0,02 % f.s. / °C	0,02 % f.s. / °C -input 0,01% f.s / °C - output	< 100 ppm (30 ppm typical)		Max 0,01% f.s / °C, typical 0,003% f.s/°C
Linearity	0,1 %	1°C, 3 °C over 600 °C 0,1 % - output			Max 0,01% f.s / °C, typical 0,003% f.s/°C
Settings	DIP Switches: range (f.s input f.s selection); output (range)	DIP switches (type, zero and span of input thermocouples, output scale and polarity) TC emulator	S117P (programming toolkit: start / full scale, connection and RTD type, rejection, measure filter, cable resistance, fault output / over-range	S117P (programming toolkit: start / full scale, connection and RTD type, rejection, measure filter, cable resistance, fault output / over-range	SOFT-FLEX (programming toolkit) Programmable Damping Technical units selection Settable tag up to 15 characters
Operating Temperature	-10..+60°C	0..+50°C	-40..+85°C	-40..+85°C	-40..+85 °C
Connections	Removable terminal block, max wire size 2.5 mm²	Removable terminal block, max wire size 2.5 mm²	Clamp connection	Clamp connection	Spring loaded system
Dimensions	17,5 x 100 x 112 mm (w x hx d)	17,5 x 100 x 112 mm (w x hx d)	Ø 43,7 x 20 mm	Ø 43,7 x 20 mm	Ø 44 x 19 mm (FlexTop-EX) Ø 44 x 26,3 mm (FlexTop ISO-EX)
Weight	200 g	200 g			
Approvals	CE	CE	CE	CE	CE, Namur NE 21, Demko EEx ia IIC T5/T6 ATEX II 1G (EEx versions)
Norms	EN 55011, EN 61000-4-2, EN 61000-4-4, EN 50140 / 141	EN 55011, EN 61000-4-2, EN 61000-4-4, EN 50140 / 141	EN 61000-6-4, EN 61000-6-2	EN 61000-6-4, EN 61000-6-2	EN50081-1, EN50081-2 EN50014, EN50020, EN 61326
DATA INPUT					
Channels	1	1	1	1	1
Type	RTD Pt100, Pt500, Pt1000, Ni100, KTY81, KTY84, NTC Sensors with 2, 3, 4 wires Excitation: 1 mA Resolution 0,1°C	Thermocouples Type: J, K, R, S, T, E, B, N Resolution 5 µV Fault automatic detection	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	**FlexTop-Ex** Pt100 Sensors with 2, 3, 4 wires Standard IEC/DIN/EN 60 751-2 Range: -200/+850 °C Min span: 25 °C Input protection ± 35 Vdc **FlexTop ISO-Ex** RTD Pt25..Pt1000, Ni25..Ni1000, Cu25..Cu1000 Sensors with 2, 3, 4 wires Thermocouple B,E,J,K,L,T,U,IEC 584, ASTM 988 Voltage(mV, V) Range: -10..70 mV, -0,1..1,1 V Ohm Range: 0..390 Ω, 0..2.200 Ω Input protection ± 35 Vdc
DATA OUTPUT					
Channels	1	1	1	1	1
Type	• VOLTAGE (V) 4 scales: 0..1, 0..5, 0..10, 2..10 V Min load resistance: 2.000 Ω • CURRENT (mA) 2 scales: 0/4..20 mA (active/passive) Max load resistance: 600 Ω	• VOLTAGE (V) 4 scales: 0..1, 0..5, 0..10, 2..10 V Min load resistance: 2.000 Ω • CURRENT (mA) 2 scales: 0/4..20 mA (active/passive) Max load resistance: 600 Ω	• CURRENT (mA) 4..20, 20..4 mA (2 wire) Resolution: 1µA, max 16 bit Load resistance: 1 kΩ @ 26 Vdc, 21 mA Input protection: 30 mA	• CURRENT (mA) 4..20, 20..4 mA (2 wire) Resolution 2µA = 13 bit = 0.0125%	• CURRENT (mA) 4..20, 20..4 mA (2 wire) Resolution 12 bit Burn out positive / negative Damping 0..30 s

Z-LINE • ISOLATORS – PULSE CONVERTERS AND SIGNAL PROCESSORS

	Z104	Z111	Z170	Z190
				
	DC Current/Voltage to frequency isolator/converter	Frequency to DC Current/Voltage isolator/converter	DC Current/Voltage duplicator/isolator	DC Current/Voltage adder/subtractor

ORDER CODES

Models	Z104	Z111	Z170	Z190
Programming & Accessories	Page 41	Page 41	Page 41	Page 41

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 Vdc; 19..28 Vac (50..60 Hz)	19..40 (9..30 opt.) Vdc; 19..28 Vac (50..60 Hz)
Power transducers	Yes, min 20 Vdc	Yes, min 20 Vdc	Yes, min 20 Vdc	Yes, min 20 Vdc
Max consumption	2,5 W	2,5 W	2,5 W	2,5 W
Galvanic Isolation	1.500 Vac, 3 way	1.500 Vac, 3 way	1.500 Vac, 3 way	1.500 Vac, 3 way
Protections Input/Power Supply	Input: 100mA Against pulse overvoltages 400W/ms	Against pulse overvoltages 400W/ms	Against pulse overvoltages 400W/ms	Against pulse overvoltages 400W/ms.
Status indicators	Power Supply Output (Relay attracted)	Power Supply Error	Power Supply	Power Supply
Response time	350 ms	250 ms		
Accuracy class	0,2 %	0,3%	0,2 %	0,2 %
Thermal stability	0,02 % f.s. / °C	0,01 % f.s. / °C	0,02 % f.s. / °C	0,02 % f.s. / °C
Linearity	0,05 %		0,05 %	0,05 %
Setting	Dip-switch: input type, output, end scale Trimmer: end scale setting, integration constant	Dip-switch: input type, filter, pulses average, output Trimmer: end scale setting (1 Hz..10KHz)	DIP switch I/O type and electrical connections	DIP switch I/O type and electrical connections
Operating Temperature	0..+50°C	0..+50°C	0..+50°C	0..+50°C
Electrical Connections	Screw-fit removable terminals	Screw-fit removable terminals	Screw-fit removable terminals	Screw-fit removable terminals
Dimension (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
Weight	200 g	200 g	200 g	200 g
Certification	CE	CE, UL-UR CSA	CE, UL-UR CSA	CE
Norms	EN50081-1, EN50081-2, EN61010-1	EN50081-1, EN50081-2, EN61010-1	EN50081-1, EN50081-2, EN61010-1	EN50081-1, EN50081-2, EN61010-1

INPUT DATA

Nr	1	1	1	2
Type	VOLTAGE (V) 4 scales: 0..1, 0..5, 0..10, 2..10 V Input impedance 1 MΩ • CURRENT (mA) 2 scales: 0/4..20 mA Active Input: 15 Vdc (not regulated) Passive Input: impedance 100 Ω	PULSE Contact / reed; npn 2/3 wires; pnp 3 wires with 24 Vdc power; namur; photoelectric; hall effect sensor, variable reluctance, 24V; TTL Max frequency: 10 kHz	VOLTAGE (V) 4 scales: 0..1, 0..5, 0..10, 2..10 V Input impedance 500 KΩ CURRENT (mA) 2 scales: 0/4..20 mA Active Input: 20 Vdc (not regulated) Passive Input: impedance 100 Ω	VOLTAGE (V) 4 scales: 0..1, 0..5, 0..10, 2..10 V Input impedance 500 KΩ CURRENT (mA) 2 scales: 0/4..20 mA Active Input: 20 Vdc (not regulated) Passive Input: impedance 100 Ω

OUTPUT DATA

Nr	1	1	2	1
Type	PULSE Transistor npn open collector, 30 Vcc, 300 mA, reed relè, 30 Vdc-ac, 100 mA Max frequency: 10 kHz	VOLTAGE (V) 4 scales: 0..1, 0..5, 0..10, 2..10 V Min load resistance: 2.500 Ω CURRENT (mA) 2 scales: 0/4..20 mA (active/passive) Max load resistance: 600 Ω	VOLTAGE (V) 4 scales: 0..1, 0..5, 0..10, 2..10 V Input impedance 2.500 Ω • CURRENT (mA) 2 scales: 0/4..20 mA (active/passive) Max load resistance: 600 Ω	VOLTAGE (V) 4 scales: 0..1, 0..5, 0..10, 2..10 V Input impedance 2.500 Ω CURRENT (mA) 2 scales: 0/4..20 mA (active/passive) Max load resistance: 600 Ω

Z-LINE • ISOLATORS – RELAY CONDITIONERS

	Z112A •Z112D	Z113S • Z113D • Z113T	* Z-TIMER • Z-TIMER-D
			
CE	ON / OFF Sensors amplifier	DC Current / Voltage alarm trip module	Electronic timer

ORDER CODES

Models	Z112A (single channel) Z112D (double channel)	Z113S (1 relay output) Z113D (2 relay outputs) Z113T (3 relay outputs)	Z-TIMER Z-TIMER-D (with 2 independent times)
Programming & Accessories	Page 41	Page 41	Page 41

GENERAL FEATURES

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)	12..40 Vdc ± 10 % 12..40 Vac / 115..230 Vac ± 10 % 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)
Max consumption	2,5 W	2,5 W	2 W
Galvanic Isolation	Z112A: 1.500 Vac (power supply/input) 4.000 Vac (input/power supply/output) Z112D:1.500 Vac	1.500 Vac, 3 way	1.500 Vac (power supply/input) 4.000 Vac (input/power supply/output)
Protections Input/Power Supply		Against pulse overvoltages 400W/ms.	
Status indicators	Power Supply Relay attracted	Power Supply Overtaking limit	Power Supply Pause (relay attracted) Timer
Thermal stability	±0,01% /°C	±0,01% /°C	±0,01% /°C
Linearity		0,05 %	
Setting	Dip-switches: input type, output retransmission, divider circuit settable from 1 to 256 Trimmer: pulse duration (100..500ms)	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% for full-scale)	DIP switches N. 8 timer functions / relay excitation N. 8 time scale (50 ms..10 h) Trimmer Time regulation
Operating Temperature	0..+50°C	0..+50°C	-10..+60°C
Electrical Connections	Screw-fit removable terminals for wires up to 2.5 mm²	Screw-fit removable terminals for wires up to 2.5 mm²	Screw-fit removable terminals for wires up to 2.5 mm²
Dimension (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
Weight	200 g	200 g	200 g
Certification	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

INPUT FEATURES

Nr	1 / 2	1	1
Type	PULSE 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	CURRENT: 0..20, 4..20 mA active/passive VOLTAGE: 0..5, 1..5, 0..10, 2..10 Vdc Impendance: Current 100 Ω, Voltage: 500 KΩ	CONTACTS START Timer PAUSA Timer SELECTION (Z-TIMER-D)

OUTPUT FEATURES

Nr	1 / 2	1 / 2 / 3	1
Type	RELAYS Z112A: relay SPDT 1 A - 30 Vdc o 5 A – 250 Vac (resistive load) Z112D: reed relay SPST, max load0,5 A – 100 Vdc-ac (10 VA resistive load)	Z-113A: relay SPDT, 1A – 30 Vdc load or 5 A – 250 Vac (resistive load) Z-113D/T: relay SPST, max load 0,1 A – 30 Vdc-ac (10VA resistive load)	RELAY SPDT 8 A – 250 Vac (resistive load)

***Available until stocks last**

Z-LINE • PROGRAMMING & ACCESSORIES

Z-SETUP

Z109REG Configuration Software

- Help on line for DIP-switches configuration
- Download / Upload / module configuration
- Scale inversion
- Burn-out settings (positive or negative)
- Digital filter insertion
- Square root exctraction
- Scale conversion

ORDER CODES

Z-SETUP	Programming software Z109REG (free on the website www.seneca.it)

Z-SETUP2

Z109REG2 Configuration Software

- Start / end scale, digital filter
- Square root extraction
- Burn-out settings (positive or negative)
- Rejection Network Frequency 50/60 Hz
- Sampling time settings / Resolution
- 3 / 4 wires resistance measure

ORDER CODES

Z-SETUP2	Programming software Z109REG2 (free on the website www.seneca.it)

S-TOOL

Configuration KIT

- Configuration Software on CD
- Programming cable

ORDER CODES

S-TOOL	Programming Kit includes Z-PROG, Z-SETUP, Z-SETUP2, libraries Z-4AI-D, Z-4TC-D, Soft2000DOS/WIN, cable PM001601

TEST-3

Handheld multimeter – Z109REG2 Configuration with OLED display

. Accuracy: 0,1%

- Input/Output Setting parameters, range, Z109REG2 alarms
- Signal Generation / Measuring of Voltage (0-10 V) and Current (0-20 mA) Signals
- OLED Display 128 x 64 points
- Batteries NiMh, type AA 2.650 mAh (20 h)

ORDER CODES

TEST-3	Multimeter – Z109REG2 Configuration with OLED display
/T	Calibration Service (SIT referred)
TEST-3-PK	Precision kit with Z109REG2 programming cable and precision probes set

S117P

T120, T121 and K120RTD programming toolkit

Programming toolkit for T120, T121 e K120RTD inclusive of S117P (USB ⇔ RS232/TTL isolator/converter), PM002411 (connection cable for S117P), EasyLP (free software configuration)

ORDER CODES

S117P	T120, T121 and K120RTD programming toolkit

EasyLP • EasyK111

Plug&play configurator

- Automatic or manual research of connected devices
- Use with Z107/K107USB/S107USB or other RS485 converter
- Reading / Writing / Test / Setting
- Input parameters configuration, output and communication
- File saving
- Device data uploading
- Report (creation and printing)

ORDER CODES

EasyLP	Configurator for loop powered devices (K120RTD, T120, T121) available on www.seneca.it
EasyK111	Configurator for K111 available on www.seneca.it

Z-POWER

Voltage transformer with output at 19 Vac (DIN rail mounting)

- Primary Voltage 230 (115) Vac ± 10%
- Box in fiberglass auto-estinguish (V-0)
- Protection by thermo-fuse
- Dimensions 3 DIN modules(15 VA), 5 DIN modules (25 VA)
- IP 40

ORDER CODES

Z-POWER 230-15VA	Voltage Transformer 19 Vac, 230-15 VA
Z-POWER 230-25VA	Voltage Transformer 19 Vac, 230-25 VA
Z-POWER 115-15VA	Voltage Transformer 19 Vac, 115-15 VA

PROGRAMMING CABLES

Programming cables

ORDER CODES

PM001601	Programming serial Cables (Z109REG, Z109REG2, Z203, Z-4AI-D, Z-SG, Z-4TC-D, Z-3AO, Z-8AI, Z-8TC) (jack / DB9F)
PM001970	Serial cable RS232 (K107B) (free wires / DB9F)
PM002240	Programming Z109REG/ Z109REG2 / TEST-3 (jack / jack)

S-LINE • ISOLATORS – ANALOG CONVERTERS

	S109REG	S109S	S102 *	S109PT *
				
CE	DC Current/Voltag isolator/converter	DC Current isolator	Ohm to DC Current/Voltage isolator/converter	PT100 to DC Current/Voltage isolator/converter
ORDER CODES				
Models	S109REG-1-ST (power supply 115/230 Vac) S109REG-1-X7 (with input for tacho generator 0..100 / 200 Vdc)	S109S-1-ST (power supply 115/230 Vac)	S102-1-ST (power supply 115/230 Vac)	S109PT-1-ST (power supply 115/230 Vac)
GENERAL FEATURES				
Power Supply	115 / 230 Vac ±10%, 50-60 Hz	115 / 230 Vac ±10%, 50-60 Hz	115 / 230 Vac ±10%, 50-60 Hz	115 / 230 Vac ±10%, 50-60 Hz
Power transducers	20 Vdc (not regulated)	20 Vdc (not regulated)	20 Vdc (not regulated)	20 Vdc (not regulated)
Power consumption	3,5 VA	1,5 VA	1,5 VA	3,5 VA
Galvanic Isolation	4.500 Vac	4500 Vac (from/to power supply) 2000Vac (input/output)	4.500 Vac	4.500 Vac
Status indicators	Power Supply	Power Supply	Power Supply	Power Supply
Protection degree	IP20	IP20	IP20	IP20
Electrical Connections	Screw-fit removable terminals for wires up to 2,5 mm²	Screw-fit removable terminals for wires up to 2,5 mm²	Screw-fit removable terminals for wires up to 2,5 mm²	Screw-fit removable terminals for wires up to 2,5 mm²
Accuracy	±0,25%	±0,25%	±0,25%	±0,25%
Linearity	±0,05%	±0,05%	±0,05%	±0,05%
Thermal stability	±0,01% /°C	±0,01% /°C	±0,01% /°C	±0,01% /°C
Operating Temperature	-10..+60 °C	-10..+60 °C	0..+50 °C	-10..+60 °C
Dimension (w x h x d)	70 x 95 x 72 mm	35 x 95 x 72 mm	52,5 x 95 x 72 mm	70 x 95 x 72 mm
Weight	300 g	200 g	300 g	400 g
Enclosure	Type DIN 4 self-extinguishing Noryl V0	Type DIN 2 self-extinguishing Noryl V0	Type DIN 3 self-extinguishing Noryl V0	Type DIN 4 self-extinguishing Noryl V0
Mounting	On 35 mm mounting rail (DIN 46277)	On 35 mm mounting rail (DIN 46277)	On 35 mm mounting rail (DIN 46277)	On 35 mm mounting rail (DIN 46277)
Dip-switch	Input range and Output type		Input range and Output type	Input range and Output type
Trimmer	Zero and Span Input		Zero and Span Input	
Certification	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	EN 50081-1, EN 50082-2, EN 61010-1
INPUT FEATURES				
Number	1	1	1	1
Type	CURRENT: 0..20, 4..20 mA not standard signals between ±14 mA and span between 2 and 20mA VOLTAGE: 0..5, 1..5, 0..10, 2..10 Vdc not standard signals between ±7 V and span between 1 and 10 V (0..100/200 Vdc, X7 version) Impendance: Current 100 Ω, Voltage 1 MΩ	CURRENT: 0..20mA and 4..20mA (active/passive) Input impedance 20 Ω	POTENTIOMETER: Measure Range: 0..300 / 0..500 / 0..1000 Ω	PT100 2,3 wires Measure Range: 0..100 / 0..200 / 0..400 °C
OUTPUT FEATURES				
Number	1	1	1	1
Type	CURRENT: 0..20, 4..20 mA active/passive VOLTAGE: 0..5, 1..5, 0..10, 2..10 Vdc Impedance: Current 800 Ω, Min.Voltage Load: 1 KΩ	CURRENT: 0..20mA and 4..20mA (active/passive) Max Current load: 900 Ω	CURRENT: 0..20, 4..20 mA active/passive VOLTAGE: 0..5, 1..5, 0..10, 2..10 Vdc Impedance: Current 800 Ω, Min.Voltage Load: 1 KΩ	CURRENT: 0..20, 4..20 mA active/passive VOLTAGE: 0..5, 1..5, 0..10, 2..10 Vdc Impedance: Current 800 Ω, Min.Voltage Load: 1 KΩ

***Available until stocks last**

S-LINE • ISOLATORS – PULSE CONVERTERS AND SIGNAL PROCESSORS

	S104 *	S111	S170 *	S190	S2000
					
CE	DC Current/Voltage to frequency isolator/converter	Frequency to DC Current/Voltage isolator/converter	DC Current/Voltage duplicator/isolator	DC Current/Voltage adder/subtractor	Microprocessor Calculation Module
ORDER CODES					
Models	S104-1-ST (115 / 230 Vac)	S111-1-ST (115 / 230 Vac)	S170-1-ST (115 / 230 Vac)	S190-1-ST (115 / 230 Vac)	S2000-1-ST (115 / 230 Vac) S2000-23-ST (24 Vac/dc)
Programming & Accessories					S-TOOL (Configuration Kit)
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	115 / 230 Vac ±10%, 50-60 Hz	115 / 230 Vac ±10%, 50-60 Hz
Power transducers	20 Vdc (not regulated)	20 Vdc (not regulated)	20 Vdc (not regulated)	20 Vdc (not regulated)	20 Vdc (not regulated)
Power consumption	1,5 VA	3,5 VA	3,5 VA	1,5 VA	3,5 VA
Galvanic Isolation	4.500 Vac	4500 Vac (from/to power supply) 200Vac (input/output)	4500 Vac (from/to power supply) 200Vac (input/output)	4500 Vac (from/to power supply) 200Vac (input/output)	4.500 Vac
Status indicators	Power Supply Pulses on output	Power Supply Input frequency <3% e.s. Input frequency< 90% e.s.			Power Supply Data reception Data transmission
Protection degree	IP20	IP20	IP20	IP20	IP20
Electrical Connections	Screw-fit removable terminals for wires up to 2,5 mm^2	Screw-fit removable terminals for wires up to 2,5 mm^2	Screw-fit removable terminals for wires up to 2,5 mm^2	Screw-fit removable terminals for wires up to 2,5 mm^2	Screw-fit removable terminals for wires up to 2,5 mm^2
Accuracy				±0,25%	±0,1%
Linearity	±0,1%		±0,5%	±0,05%	±0,05%
Thermal stability	±0,005% /°C	±0,005% /°C	±0,01% /°C	±0,01% /°C	±0,01% /°C
Operating Temperature	-10..+60 °C	-10..+60 °C	-10..+60 °C	-10..+60 °C	-10..+60 °C
Dimension (w x h x d)	52,5 x 95 x 72 mm	105 x 95 x 72 mm	70 x 95 x 72 mm	70 x 95 x 72 mm	157,5 x 95 x 72 mm
Weight	300 g	450 g	300 g	300 g	500 g
Enclosure	Type DIN 3 self-extinguishing Noryl V0	Type DIN 6 self-extinguishing Noryl V0	Type DIN 4 self-extinguishing Noryl V0	Type DIN 4 self-extinguishing Noryl V0	Type DIN 9 self-extinguishing Noryl V0
Mounting	On 35 mm mounting rail (DIN 46277)	On 35 mm mounting rail (DIN 46277)	On 35 mm mounting rail (DIN 46277)	On 35 mm mounting rail (DIN 46277)	On 35 mm mounting rail (DIN 46277)
DIP switch	Input type, integer coefficient	Input frequency, output type	Input - output type	Input - output type	
Trimmer		Full Scale		Span A / B (weight for adding/difference) inputs	
Software					SOFT-200 (programming software, instruction list)
Certification	CE	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	EN 50081-1, EN 50082-2, EN 61010-1	EN 50081-1, EN 50082-2, EN 61010-1
INPUT DATA					
Number	1	1	1	2	6
Type	CURRENT: 0..20, 4..20 mA active/passive VOLTAGE: 0..5, 1..5, 0..10, 2..10 Vdc Impedance: Current 250 Ω, Voltage 1 MΩ	Reed contact, 2 and 3 wires npn sensor, pnp sensor with 24 Vdc, NAMUR sensor,24 Vdc sensor, photoelectric sensor. Max frequency : 680 Hz	CURRENT: 0..20, 4..20 mA active/passive VOLTAGE: 0..5, 1..5, 0..10, 2..10 Vdc Impedance: Current 1000 Ω, Voltage 1 MΩ	CURRENT: 0..20, 4..20 mA active/passive VOLTAGE: 0..5, 1..5, 0..10, 2..10 Vdc Impedance: Current 1000 Ω, Voltage 1 MΩ	2 Digital (open contact voltage 5 V, close contact current 1 mA) • 4 Analogue (0..20, 4..20 mA), Max load resistance 100 Ω
OUTPUT DATA					
Number	1	1	2	1	6
Type	NPN open collector, 300 mA 30 Vdc (opt. relay), pulse duration 40 ms	CURRENT: 0..20, 4..20 mA active/passive VOLTAGE: 0..5, 1..5 (0..10, 2..10 opt.) Vdc Impendance: Current 800 Ω, Min.Voltage Load: 1 KΩ	CURRENT: 0..20, 4..20 mA active/passive VOLTAGE: 0..5, 1..5, 0..10, 2..10 Vdc Impendance: Current 800 Ω, Min.Voltage Load: 1 KΩ	CURRENT: 0..20, 4..20 mA active/passive VOLTAGE: 0..5, 1..5, 0..10, 2..10 Vdc Impendance: Current 800 Ω, Min.Voltage Load: 1 KΩ	• 4 digital (max 300 mA, 30 Vdc) • 2 analogue (0..20, 4..20 mA), max resistance load 300 Ω

***Available until stocks last**

S-LINE • ISOLATORS – RELAY CONDITIONERS

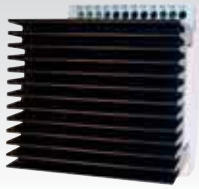
	S112A·S112D·S112M	S113S·S113D·S113T *	S105	S108
				
CE	Amplifiers for ON/OFF sensors	Trip alarm units for analofue signals	Control relay for single-phase voltage	Control for single-phase alternate current with threshold
ORDER CODES				
Models	S112A-1-ST (115/230 Vac, 1 input, 1 relay output) S112D-1-ST (115/230 Vac, 2 inputs, 2 relay outputs) S112M-1-ST (115/230 Vac, 1 input, 5 relay outputs) S112M-1-ST (115/230 Vac, 1 input, 5 relay outputs) S112M-23-ST (24 Vac/dc, 1 input,5 relay outputs)	S113S-1-ST (115/230 Vac, 1 relay output) S113D-1-ST (115/230 Vac, 2 relay outputs) S113T-1-ST (115/230 Vac, 3 relay outputs)	S105CS1-B (230 V single-phase, output powered) S105CS1-C (230 V, SPDT output) S105TCN-1 (380 V, three phase, SPDT 5A output) S105TCN-2 (230 V, three phase, SPDT 5 A output) S105TCS-1 (380 V, three phase, SPDT 10 A output) S105TCS-2 (230 V, three phase, SPDT 10 A output) S105TCS-3 (400 V, SPDT 10 A output)	S108
GENERAL DATA				
Power Supply	115/230 Vac ± 10%, 50/60 Hz; 24 Vac/dc (S112M-23-ST)	115/230 Vac ± 10%, 50/60 Hz; 24 Vac	230 Vac (single phase) 230 – 400 Vac 50 Hz (three phase)	115 / 230 Vac
Power transducers	20 Vdc (not regulated)	20 Vdc (not regulated)		
Power consumption	1,5 VA	1,5 VA (S113S) 3,5 VA (S113D, S113T)	2 VA	1,5 VA
Galvanic Isolation	4.500 Vac 2.000 vac (input/output S112M)	4.500 Vac	4.500 Vac	4.500 Vac
Status indicators	Power Supply input/pulses output	Power Supply Alarms	Network presence Delay in recovering Alarm	Power Supply Alarm relay
Protection degree	IP20	IP20	IP20	IP20
Electrical Connection	Screw-fit removable terminals for wires up to 2,5 mm²	Screw-fit removable terminals for wires up to 2,5 mm²	Screw-fit removable terminals for wires up to 2,5 mm²	Screw-fit removable terminals for wires up to 2,5 mm²
Linearity				±0,1%
Thermal stability				±0,005% /°C
Operating Temperature	-10..+60 °C	-10..+60 °C	-10..+60 °C	0..+60 °C
Dimension (w x h x d)	52,5 x 95 x 72 mm (S112A) 70 x 95 x 72 mm (S112D, S112M)	52,5 x 95 x 72 mm (S113S) 70 x 95 x 72 mm (S113D, S113T)	52,5 x 95 x 72 mm (S105CS, S105TCS) 70 x 95 x 72 mm (S105TCN)	52,5 x 95 x 72 mm
Weight	250 g (S112A) 270 g (S112D) 280 g (S112M)	290 g (S113S) 280 g (S113D) 350 g (S113T)	250 g	350 g
Enclosure	Type DIN 3 (S112A) – 4 (S112D, S112M) self-extinguishing Noryl V0	Type DIN 3 (S113S) – 4 (S113D, S113T) self-extinguishing Noryl V0	Type DIN 3 (S105CS, S105TCS) – 4 (S105TCN) self-extinguishing Noryl V0	Type DIN 3 self-extinguishing Noryl V0
Mounting	On 35 mm mounting rail (DIN46277).	On 35 mm mounting rail (DIN46277).	On 35 mm mounting rail (DIN46277).	On 35 mm mounting rail (DIN46277).
DIP switch	Divider circuit	Input and alarm type	Threshold, recovering time	Memory
Trimmer	Pulse length	Threshold, delay, hysteresis		Threshold, delay, hysteresis
Certification	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	EN 50081-1, EN 50082-2, EN 61010-1
INPUT DATA				
Number	1, 2	1	1	1
Type	Reed contact, 2 and 3 wires npn sensor with 12 and 24 Vdc power supply, 2 and 3 wires pnp sensor with 24 Vdc power supply, NAMUR sensor, 24 Vdc pulse, photoelectric sensor and Hall effect sensor. Input frequency: max. 400 Hz, minimum pulse duration 2 ms	CURRENT: 0..20, 4..20 mA VOLTAGE: 0..5, 1..5, 0..10, 2..10 Vdc Impedance: Current 250 Ω, Voltage 1 MΩ	Single phase Voltage 230 V (S105 TCS) Three phase Voltage 230 V Three phase Voltage 380 V Three phase Voltage 400 V	External CT for loads > 5 A
OUTPUT DATA				
Number	1, 2, 5	1, 2, 3	1	1
Type	S112A: 1 SPDT relay, 5 A 250 Vac (resistive load) S112D: 2 SPDT relays, 5 A 250 Vac (resistive load) S112M: 5 SPST reed relays, 100 Vdc/50 Vac (resistive load)	S113S: 1 SPDT relay, 5 A 250 Vac (resistive load) S113D: 2 SPDT relays, 5 A 250 Vac (resistive load) S113T: 5 SPDT relays, 5 A 250 Vac (resistive load)	S105CS: 1 SPST relay 10 A, 250 Vac (resistive load) S105TCN: 1 SPDT relay 5 A, 250 Vac (resistive load) S105TCS: 1 SPDT relay 10 A, 250 Vac (resistive load)	1 SPDT relay 5 A, 250 Vac (resistive load)

***Available until stocks last**

S-LINE • REGULATED POWER SUPPLY (FOR CURRENT LOOP)

	S50	S100S	S109S	S109REG
				
CE	Power Supply for current loop	Dual Power Supply for current loop	Galvanic Isolation for 0/4..20 mA current loop	V-I / V-I Converter with galvanic Isolation
ORDER CODES				
Models	S50-1-ST (115 / 230 Vac) S50-3-ST (24 Vac)	S100S-1-ST (115/ 230 Vac) S100S-3-ST (24 Vac)	S109S-1-ST (115/230 Vac)	S109REG-1-ST (115/230 Vac)
GENERAL DATA				
Power Supply	115/230 Vac ± 10%, 50/60 Hz; 24 Vac	115 / 230 Vac ± 10%, 50 / 60 Hz	115 / 230 Vac ± 10%, 50 / 60 Hz	115 / 230 Vac ± 10% 50 / 60 Hz
Power consumption	1,5 VA	3,5 VA	1,5 VA	3,5 VA
Isolation and protection	Input protected against line overvoltages by a varistor isolation input // output at 4.500 Vac. Output protected against short-circuit	Input protected against line overvoltages by a varistor isolation input // output at 4.500 Vac. Output protected against short-circuit	Galvanic isolation between power supply // input-output 4500 Vac, input//output 2000 Vac	Galvanic isolation between power supply // input //output 4500 Vac,
Input			Current loop: 0 - 20, 4 - 20 mA Input resistance: 20 ohm Input Power Supply: 20 Vdc (not regulated)	Settable by DIP-switch • CURRENT: 0 - 20, 4 - 20 mA; ZERO: -14..+14 mA SPAN: 2..20 mA • VOLTAGE: 0-5, 1-5, 0-10, 2-10 Vdc; ZERO: -7..+7 Vdc SPAN: 1..10 Vdc • Input impedance: 100 ohm (current), 1 Mohm (voltage)
Output	Nr1 Regulated 24 Vdc, 40mA	Nr 2 Regulated and galvanically isolated 24 Vdc 50 mA	Current loop: 0 - 20, 4 - 20 mA Max load: 900 ohm Power supply (output): 20 Vdc (not regulated)	Settable by DIP-switch of • CURRENT: 0 - 20, 4 - 20 mA; • VOLTAGE: 0-5, 1-5, 0-10, 2-10 Vdc • Max load: Current 0 – 800 Ohm, Voltage > 1 Kohm
Linearity			< ± 0,25%	< ± 0,25%
Temperature derivation			< 100 ppM/°C	< 100 ppM/°C
Operating Temperature	-10..+ 60°C	-10..+ 60°C	-10..+ 60°C	-10..+ 60°C
Humidity	90% at @ 40°C (non condensing)	90% @ 40°C (non condensing)	90% @ + 40°C (non condensing)	90% @ + 40°C (non condensing)
Enclosure	The self-extinguishing Noryl case is the width of 2 DIN modules and designed to fit on 35 mm mounting rail (DIN46277).	The self-extinguishing Noryl case is the width of 3 DIN modules and designed to fit on 35 mm mounting rail (DIN46277).	The self-extinguishing Noryl case is the width of 2 DIN modules and designed to fit on 35 mm mounting rail (DIN46277).	The self-extinguishing Noryl case is the width of 4 DIN modules and designed to fit on 35 mm mounting rail (DIN46277).
Dimension (w x h x d)	35 x 95 x 72 mm	52,5 x 95 x 72 mm	35 x 95 x 72 mm	70 x 95 x 72 mm
Weight	150 g	300 g	200 g	300 g

S-LINE • REGULATED INDUSTRIAL POWER SUPPLY

	S70E	S90 *	S200	S200REG
				
CE	DC /DC Converter	Switching Power Supply	Dual Regulated Power Supply	Switching Power Supply (adjustable)
ORDER CODES				
Models	S70E (110 Vdc)	S90-1-ST (115 / 230 Vac)	S200-1-ST (115 / 230 Vac)	S200REG/16 from 14 to 18 Vdc, max current 500 mA S200REG/24 from 22 to 26 Vdc, max current 350 mA
GENERAL DATA				
Power Supply	110 Vdc ± 10%	115 / 230 Vac ± 10% 50 / 60 Hz	115 / 230 Vac ± 10% 50 / 60 Hz	115 / 230 Vac ± 10% 50 / 60 Hz
Power consumption	30 W	35 VA	7,5 VA	10 VA
Isolation and protection	Galvanic isolation input//output @2.500 V	Input protected against line overvoltages by a varistor isolation input // output at 4.500 Vac. Output protected against short-circuit or overload	Input protected against line overvoltages by a varistor isolation input // output at 4.500 Vac. Output protected against short-circuit or overload	Input protected against line overvoltages by a varistor isolation input // output at 4.500 Vac. Output protected against short-circuit or overload
Output	Regulated 24 Vdc 1A	Regulated 24 Vdc 1,3A	+ 15 Vdc 350 mA - 15 Vdc 75 mA	S200REG/16 : 14 / 18 Vdc 500 mA S200REG/24 : 22 / 26 Vdc 350 mA
Operating Temperature	- 10..+ 60 °C	- 10..+ 60 °C	- 10..+ 60 °C	- 10..+ 60 °C
Humidity	90% @ 40 °C (non condensing)	90% @ 40 °C (non condensing)	90% @ 40 °C (non condensing)	90% @ 40 °C (non condensing)
Enclosure	The self-extinguishing Noryl case is the width of 4 DIN modules, with heatsink on the upper side, and is designed to fit on 35 mm mounting rail (DIN46277).	The self-extinguishing Noryl case can be mounted on the back of the panel by means of screws or on 35 mm mounting rail (DIN46277).	The self-extinguishing Noryl case is the width of 4 DIN modules, with heatsink on the upper side, and is designed to fit on 35 mm mounting rail (DIN 46277).	The self-extinguishing Noryl case is the width of 4 DIN modules, with heatsink on the upper side, and is designed to fit on 35 mm mounting rail (DIN 46277)
Dimension (w x h x d)	70 x 95 x 105 mm	90 x 120 x 113 mm	70 x 95 x 105 mm	70 x 95 x 105 mm
Weight	1 kg	1,5 Kg	0,7 Kg	0,7 Kg

***Available while stocks last**

S-LINE • REGULATED INDUSTRIAL POWER SUPPLY (PANEL MOUNTING)

	S200G	S200D	S200DP
			
CE	Signal Generator 0 – 20 mA	3 ½ Digits Display with Power Supply	3 ½ Digits Display with Power Supply and Setpoint adjustment

ORDER CODES

Models	S200G-1-ST (230 Vac) Signal Generator 0 – 20 mA	S200D (115 / 230 Vac) 3 ½ Digits Display with Power Supply	S200DP (115 / 230 Vac) 3 ½ Digits Display with Power Supply and Setpoint

GENERAL DATA

Power Supply	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	+15 Vdc 350 mA e -15 Vdc 75 mA
Power consumption	11 VA	11 VA	11 VA
Input		CURRENT: 0 - 20, 4 - 20 mA VOLTAGE: 0 - 5, 1 - 5 Vdc IMPEDANCE: 100 ohm for current input, 1 Mohm for voltage input	CURRENT: 0 - 20, 4 - 20 mA VOLTAGE: 0 - 5, 1 - 5 Vdc IMPEDANCE: 100 ohm for current input, 1 Mohm for voltage input
Output	0/4 - 20 mA, Voltage loop at 24 Vdc	Dual Regulated Power Supply +15 Vdc (350 mA), -15 Vdc 75 (mA)	Dual Regulated Power Supply +15 Vdc (350 mA), -15 Vdc 75 (mA) Set point 0/1 – 5 Vdc (potentiometer)
Display	3 1/2 digits display, high brightness red led, 14 mm high Zero and span display settable by multi turn trimmer Display range from -999 to 1999 Decimal point available through jumpers	3 1/2 digits display, high brightness red led, 14 mm high Zero and span display settable by multi turn trimmer Display range from -999 to 1999 Decimal point available through jumpers	3 1/2 digits display, high brightness red led, 14 mm high Zero and span display settable by multi turn trimmer Display range from -999 to 1999 Decimal point available through jumpers
Accuracy	< 0,3%	< 0,3%	< 0,3%
Stability on changes of power supply	0,01%/20%	0,01%/20%	0,01%/20%
Rejection of frequency Network	40 dB	40 dB	40 dB
Operating Temperature	-10..+ 60 °C	-10..+ 60 °C	-10..+ 60 °C
Storage temperature	-25..+ 60 °C	-25..+ 60 °C	-25..+ 60 °C
Humidity	90% @ 40 °C (non condensing)	90% @ 40 °C (non condensing)	90% @ 40 °C (non condensing)
Enclosure	"V0" self-extinguishing NORYL, shock-proof cabinet, suitable for front panel installation, dimension 96x96 mm	"V0" self-extinguishing NORYL, shock-proof cabinet, suitable for front panel installation, dimension 96x96 mm	"V0" self-extinguishing NORYL, shock-proof cabinet, suitable for front panel installation, dimension 96x96 mm
Dimension (w x h x d)	96 x 96 x 117 mm	96 x 96 x 117 mm	96 x 96 x 117 mm
Weight	1 Kg	0,8 Kg	1 Kg

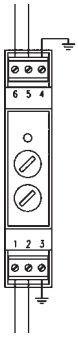
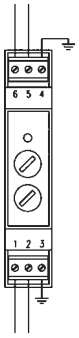
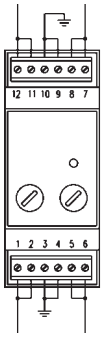
S400 • PROTECTIONS AGAINST OVERVOLTAGES

	S400CL	S400LV	S400HV
			
CE	Electronic protections for 4 - 20 mA current loop	Electronic protections for mains lines up to 35 vac/dc	Electronic protections for mains 220 vac lines

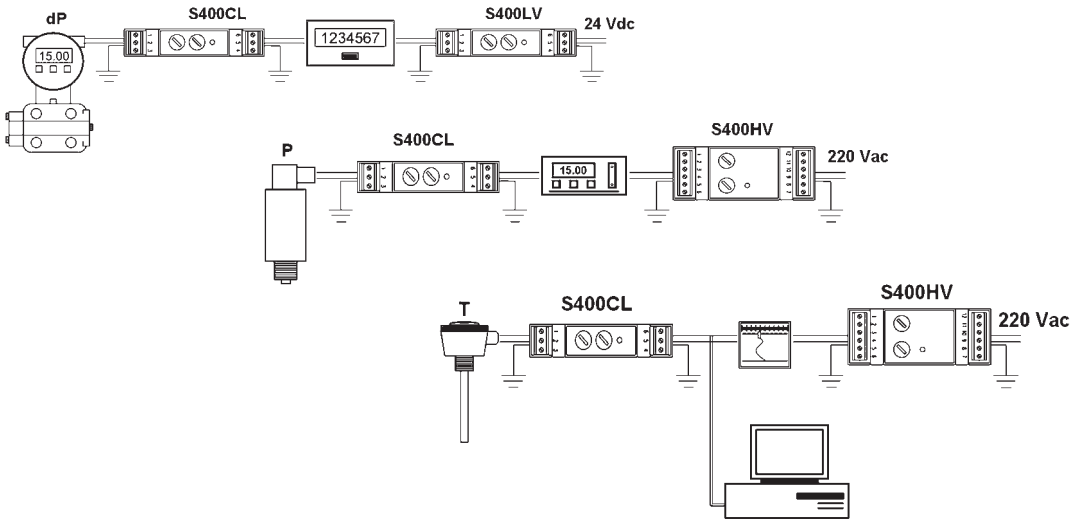
ORDER CODES

Models	S400CL	S400HV	S400LV

GENERAL DATA

Enclosure	1-module size box to be mounted into to 35mm bar, DIN 46277, in UL94 V0 plastic material, with transparent protection that can be plumbed.	1-module size box to be mounted into to 35mm bar, DIN 46277, in UL94 V0 plastic material, with transparent protection that can be plumbed.	2-module size box to be mounted into to 35mm bar, DIN 46277, in UL94 V0 plastic material, with transparent protection that can be plumbed.
Rated Voltage	< 35Vcc supply for 4-20mA current loop	low voltage lines up to 35Vdc or ac (+/-15%)	220Vac lines (+/-15%)
Operating voltage	47 V (rms) (wire to wire)	47 V (rms) (wire to wire)	275 V (rms) (wire to wire)
Discharge voltage	90 V (wire to wire and wire to ground)	90 V (wire to wire and wire to ground)	470 V (wire to wire and wire to ground)
Discharge current	> 5000 A	> 5000 A	> 5000 A
Breaking capability	1500 A	1500 A	1500 A
Max load		1 A	6,3 A
Loop voltage drop	approx. 2.2 Vdc		
Dimension (w x h x d)	90 x 18.5 x 73 mm	90 x 18.5 x 73 mm	90 x 36 x 73 mm
Weight	150 g	150 g	200 g
Electrical Connections / front view	Output Current Loop	Output 24 Vdc (max 800 mA)	Output 230 Vac (max 5 A)
			
	Input Current Loop	Input 24 Vdc	Input 230 Vac

Application schemes



3

PANEL MOUNTING UNITS

SENECA

Wide range of displays

- High brightness display
- Multi-standard input
- Easy programming

DIGITAL INDICATORS

S401

S401

- Display: 2,7” OLED, 128x64 pixel
- ModBUS RTU interface
- Dimension: 96x48x40 mm
- Power supply: 10-40 Vdc / 19-28 Vac

S311A

S311A

- Display: 4, 6, 8, 4+7 digit LED
- Analog input: mA, V, Ohm, Pt100, TC
- Re-transmitted analog output and open collector digital output
- Input measures totalization – integration
- Dimension: 96x48x98 mm
- Power supply: 80-265 Vac; 10-40 Vdc / 19-28 Vac
- Power transducers
- Optional board: nr 2 SPDT relay alarm, ModBUS RTU interface, reset digital input

S315

S315

- Display: 4 digit LED
- Analog input: mA
- Max error: 0,05%
- Dimension: 96 x 48 x 40 mm
- Power supply: by loop (max 30 V)
- Max drop voltage: 7 V
- Version: standard and IP66

S311AK

S311AK

- Display: 3 ½ digit LED
- Analog input: mA, V
- Max error: 0,05%
- Power supply: 10-40 Vdc / 19-28 Vac
- Power transducers: 17 V
- Dimension: 96 x 48 x 40 mm
- Version: standard and IP66

S311D

S311D

- Display: 4, 6, 8, 4+7 digit LED
- Digital input: contact, npn, pnp, namur, photoelectric, variable reluctance, 24 V pulse, TTL
- Re-transmitted analog output and open collector digital output
- Input measures totalization – integration
- Dimension: 96x48x98 mm
- Power supply: 80-265 Vac; 10-40 Vdc / 19-28 Vac
- Power transducers
- Optional board: nr 2 SPDT relay alarm, ModBUS RTU interface, reset digital input

S200 / S201

S200
S201

- Display: 3 ½ digit LED
- Input: mA, V
- Potentiometer setpoint (DP versions)
- Dimension: 96x48x117 mm
- Power supply: 115-230 Vac
- Power transducers

S301 / S301B

S301
S301B

- Display: 4 digit LED (+ bargraph, S301B)
- Analog input: V, mA, TC, Pt100, Ohm
- Analog output: mA, V (re-transmitted)
- Nr 3 SPDT relay alarms / Nr 4 open collector alarms (optional)
- Dimension: 96x48x148 mm (S301); 96x96x148 mm (S301B)
- Power supply: 115-230 Vac or 24 Vac/dc
- Power transducers

S310 / S320A

S310
S320A

- Display: 3 ½ digit LED
- Analog input: V, mA, TC, Pt100
- Analog output: mA (optional)
- Nr 1 or 2 SPDT relay alarms
- Dimension: 96x48x148 mm; 96x96x148 mm
- Power supply: 115-230 Vac or 24 Vac/dc
- Power transducers

- Vac / Vdc power supply
- Power transducers
- Calibration service

TOTALIZERS

S114 / S114B

S114
S114B

- Display: 6, 8 digit LED
- Input: 1-CH pulse sensor (reed, npn, pnp, namur, 24 Vdc pulse, photoelectric), max frequency 450 Hz
- Bidirectional counter (S144B)
- Dimension: 96x48x148 mm
- Power supply: 115-230 Vac; 24 Vac/dc
- Option: reset input

S144I

S144I

- Display: 6, 8 digit LED
- Input: 1-CH mA, V
- Re-transmitted output: 1-CH pulse (npn open collector)
- Dimension: 96x48x148 mm
- Power supply: 115-230 Vac; 24 Vac/dc
- Power transducers

S164

S164

- Display: 3 ½ digit (indicator) + 7 digit (totalizer)
- Input: 1-CH mA, V
- Dimension: 96x48x148 mm
- Power supply: 115-230 Vac; 24 Vac/dc

BATCH CONTROLLERS

S20N

S20N

- Display: 5 digit double LED
- Digital input: 3-CH (control: start, stop, reset) + 1-CH (sensor: reed, npn, namur, hall effect, photoelectric, max frequency 1 kHz)
- Digital output: 2-CH SPDT relay
- Dimension: 144x72x130 mm
- Power supply: 115-230 Vac; 24 Vac/dc
- Versions: standard, Ex, IP65

S21

S21

- Display: 5 digit double LED
- Digital input: 3-CH (control: start, stop, reset) + 1-CH (sensor: reed, npn, namur, hall effect, photoelectric, max frequency 1 kHz)
- Digital output: 2-CH SPDT relay
- Self-powered clock
- Dimension: 144x72x130 mm
- Power supply: 115-230 Vac; 24 Vac/dc
- Versions: standard, Ex, IP65

S30

S30

- Display: 5 digit double LED
- Digital input: 3-CH (control: start, stop, reset) + 1-CH (sensor: reed, npn, namur, hall effect, photoelectric, max frequency 1 kHz)
- Digital output: 2-CH SPDT relay
- Serial interface (option)
- Parallel interface for printer
- Dimension: 144x144x130 mm
- Power supply: 115-230 Vac; 24 Vac/dc
- Versions: standard, IP65

SEQUENCER

S6000

S6000

- LCD back-lightened display: 2 raws x 16 chars
- Input: 6-CH digital (contact), 2-CH analog (mA)
- Output: 6-CH SPST relay (actuators), 1-CH SPDT relay (signalling), 1-CH open collector (contact), 2-CH analog (mA, V)
- Interface: isolated RS232
- Instruction list programming
- Dimension: 144x72x121 mm
- Power supply: 115-230 Vac; 24 Vac/dc
- Sensor supply: 24 Vdc, 30 mA (isolated)

OPERATOR PANELS

ZTOP

ZTOP

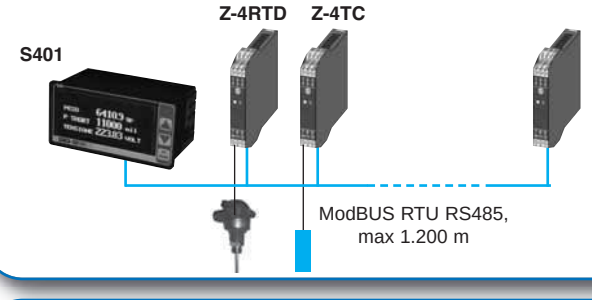
- Graphic display: LCD 3,8” / 5,6”, STN 5,6”
- Resistive touchscreen
- Resolution 320x240 pixel
- Alarms, events log control
- Dimension: 149x109x61 mm (ZTOP03); 187x147x79 mm (ZTOP05, ZTOP11)

S401

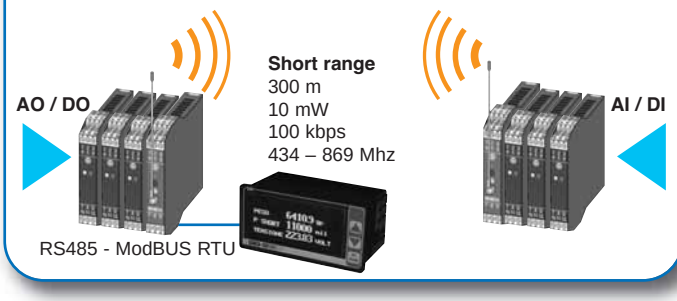
OLED display
with ModBUS interface

- HIGH BRIGHTNESS: 70 cd/m²
- HIGH DEFINITION: 128x64 pixel
- SPACE SAVING: 96x48x40 mm
- VISUALIZATION: up to 30 measurements (float, integer, boolean)
- PROGRAMMING: via software or front key menu
- MASTER FUNCTIONS: 27 math functions, 20 readings from slave modules, 10 writings on slave devices, alarms control on threshold
- REDUCED CABLING: Nr. 2 RS485 ModBUS interfaces (1 Master / 1 Slave)

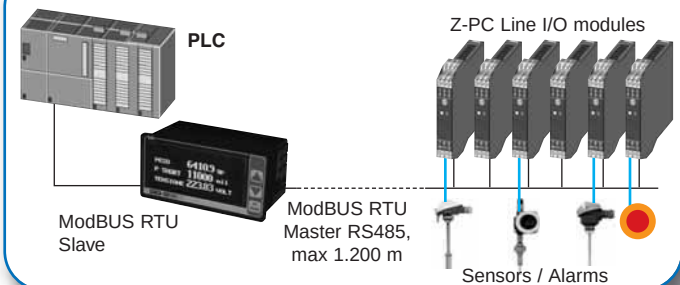
Temperature control



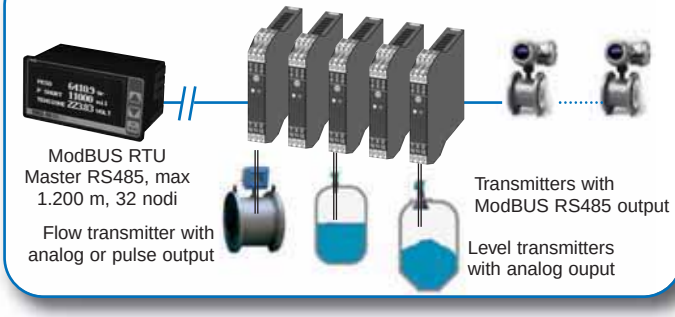
Signal wireless re-transmission



PLC local control



Process control



S-LINE – OLED INDICATOR

S401

ModBUS RTU indicator with OLED 2,7" display

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 Scratchpad: 128 byte

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, 20 x 4 byte

THERMOMECHANICS DATA

Operating temperature	-10..+60°C
Case	PPO self-exinguished, panel mount, DIN 43700
Front protection	IP65
Connections	Removable terminals
Dimension (w x h x d)	96x48x40 mm
Panel dimension	91x45 mm
Weight	200 g

SETTINGS, NORMS

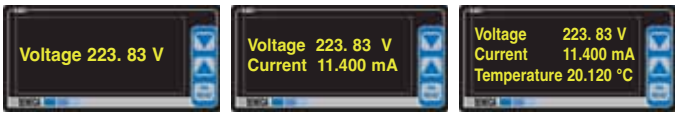
Software / query	Max free settings 20 query, data management via Z-NET3
Settings	Communication parameters, language, contrast, brightness, range, offset, measure type
Conformity	EN 61000-6-4/2002, EN 61000-6-2/2005, EN 61010-1/2001

ORDER CODES

Code		Description
Model	S401	ModBUS RTU indicator with OLED 2,7" display
Power supply	-L	10-40 Vdc; 19-28 Vac

OPERATING VIEW MODE

In view mode the indicator displays the values of the quantities defined on the display list; it may view 1, 2 or 3 data for screen.



S-LINE • LED INDICATORS

S315

4 DIGIT LOOP POWERED DISPLAYS

ANALOG INPUT: 4-20 mA
POWER SUPPLY: By loop

S311AK

4 DIGIT DISPLAYS AND I/V ANALOG INPUT

ANALOG INPUT: mA, V
POWER SUPPLY:
10-40 Vdc, 19-28 Vac

S311A

4, 6, 8, 11 DIGIT UNIVERSAL ANALOG INPUT DISPLAYS

ANALOG INPUT: mA, V, potentiometer, Pt100, TC (J,K,R,S,T,B,E,N)
POWER SUPPLY:
10-40 Vdc, 19-28 Vac;
80-265 Vac

S311D

4, 6, 8, 11 DIGIT FREQUENCY / DIGITAL INPUT DISPLAYS

DIGITAL INPUT: Reed, npn, pnp, namur, photoelectric, variable reluctance, 24 V pulse, TTL
POWER SUPPLY:
10-40 Vdc, 19-28 Vac;
80-265 Vac

MODULAR DISPLAY | UNIVERSAL INPUT | RE-TRANSMITTED OUTPUT | WIDE RANGE SUPPLY | HIGH ACCURACY 0,05% | RELAY ALARMS SPDT | INTEGRATION & TOTALIZATION | ADVANCED FUNCTIONS

S-LINE – S315 • S311AK – COMPACT INDICATORS

	S315	S315/IP66	S311AK	S311AK/IP66
				
CE	4 digit loop powered display with 4-20 mA input signal	4 digit loop powered display with 4-20 mA input signal and IP66 case	4 digit display with mA/V analog input	4 digit display with mA/V analog input, IP66 case

GENERAL DATA

Power supply	By loop (max 30 V)	By loop (max 30 V)	10-40 Vdc, 19-28 Vac	10-40 Vdc, 19-28 Vac
Drop voltage	Max 7 V	Max 7 V		
Power transducers			Max 16 V, 25 mA	Max 16 V, 25 mA
Power consumption			Max 0,9 W	Max 0,9 W
Isolation			1.500 Vac between measure port and power supply	1.500 Vac between measure port and power supply
Memory	EEPROM, 10 years	EEPROM, 10 years	EEPROM, 10 years	EEPROM, 10 years

VISUALIZATION AND MEASURE

Display	4 digit, red LEDs	4 digit, red LEDs	4 digit, red LEDs	4 digit, red LEDs
Status indicators				
Front buttons	3 (down, up, menù)	3 (down, up, menù)	3 (down, up, menù)	3 (down, up, menù)
Accuracy	0,05%	0,05%	0,05%	0,05%
Stability	0,005%/°K	0,005%/°K	0,005%/°K	0,005%/°K
Linearity error	0,05%	0,05%	0,05% (0-10 V, 0-20 mA)	0,05% (0-10 V, 0-20 mA)
A/D resolution	16 bit	16 bit	16 bit	16 bit
EMI	< 1%	< 1%		

INPUT DATA

Nr	1	1	1	1
Type	4-20 mA	4-20 mA	Voltage: 0-10 V (protection ±30 Vdc), impedance ~25 kΩ, ADC 16 bit, settable scales: 0-10, 1-5 V ecc. Current: 0-20 / 4-20 mA (protection ±25 mA), impedance ~20 Ω, ADC 16 bit, settable scales 0-20.	Voltage : 0-10 V (protection ±30 Vdc), impedance ~25 kΩ, ADC 16 bit, settable scales: 0-10, 1-5 V ecc. Current: 0-20 / 4-20 mA (protection ±25 mA), impedance ~20 Ω, ADC 16 bit, settable scales 0-20.

THERMOMECHANICS DATA

Operating temperature	-10..+65°C	-10..+65°C	-10..+65°C	-10..+65°C
Enclosure	PPO self-extinguish, DIN 43700	ABS RAL 7035	PPO self-extinguish, DIN 43700	ABS RAL 7035
Protection degree	IP65 (frontal)	IP66	IP65 (frontal)	IP66
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	
Dimension (w x h x d	96 x 48 x 40 mm	130x89x60 mm	96 x 48 x 40 mm	130x89x60 mm
Panel cut-out	91x45 mm		91x45 mm	
Weight	200 g	280 g	200 g	280 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 (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)
Access protection	By password	By password	By password	By password
Approvals	CE	CE, UL, NEMA	EN	CE, UL, NEMA
Norms	EN 61000-6-4, EN 64000-6, EN 61010-1, EN 60742	EN 61000-6-4, EN 64000-6, EN 61010-1, EN 60742, EN 50298, En 60259, EN 62262, UL 94 HB, NEMA 1, 4, 4X, 6	61000-6-4, EN 64000-6, EN 61010-1, EN 60742	EN 61000-6-4, EN 64000-6, EN 61010-1, EN 60742, EN 50298, En 60259, EN 62262, UL 94 HB, NEMA 1, 4, 4X, 6

ORDER CODES

Codice			Description
Model	S315		4 digit loop powered indicator, 4-20 mA input
Accessories		IP66	ABS case fast mounting with IP66 protection degree, for field application, dimension 130 x 80 x 60 mm
		/IP66x2	ABS case fast mounting with IP66 protection degree, for field application, dimension 180 x 130 x 75 mm (double format)

Codice			Description
Model	S311AK-4-L		4 digit indicator, mA/V analog input, power supply 10-40 Vdc, 19-28 Vac
Accessories		IP66	ABS case fast mounting with IP66 protection degree, for field application, dimension 130 x 80 x 60 mm
		/IP66x2	ABS case fast mounting with IP66 protection degree, for field application, dimension 180 x 130 x 75 mm (double format)

S-LINE – S311A – MODULAR INDICATORS – TOTALIZERS WITH UNIVERSAL ANALOG INPUT

CE

	S311A-4	S311A-6	S311A-8	S311A-11
	 4 digit universal analog input indicator - totalizer and analog output	 6 digit universal analog input indicator - totalizer and analog output	 8 digit universal analog input indicator - totalizer and analog output	 11 digit universal analog input indicator - totalizer and analog output
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	3 W	3 W	3 W	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	0,1%	0,1%	0,1%	0,1%
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				
Nr	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				
Nr	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				
Software / settings	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 and analog output
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	Optional board: nr 2 SPDT relay alarms, ModBUS RTU interface, reset input
	/T	Calibration service
Software	EASYS311A	Plug&play software configurator via serial converter to RS485 (i.e. S107USB)

S-LINE – S311D – MODULAR INDICATORS – TOTALIZERS WITH DIGITAL / FREQUENCY INPUT

CE


S311D-4
4 digit frequency / digital input indicator - totalizer and analog output


S311D-6
6 digit frequency / digital input indicator - totalizer and analog output


S311D-8
8 digit frequency / digital input indicator - totalizer and analog output


S311D-11
11 digit frequency / digital input indicator - totalizer and analog output

GENERAL DATA

	S311D-4	S311D-6	S311D-8	S311D-11
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	3 W	3 W	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

	S311D-4	S311D-6	S311D-8	S311D-11
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

	S311D-4	S311D-6	S311D-8	S311D-11
Nr	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	0.001 – 9.9999 Hz	0.001 – 9.9999 Hz	0.001 – 9.9999 Hz	0.001 – 9.9999 Hz
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

	S311D-4	S311D-6	S311D-8	S311D-11
Nr	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 RS485 ModBUS RTU slave port Nr 1 reset digital input	Nr 2 SPDT 220 Vac (5A resistive, 2 A inductive) relay alarms Nr 1 RS485 ModBUS RTU slave port Nr 1 reset digital input	Nr 2 SPDT 220 Vac (5A resistive, 2 A inductive) relay alarms Nr 1 RS485 ModBUS RTU slave port Nr 1 reset digital input	Nr 2 SPDT 220 Vac (5A resistive, 2 A inductive) relay alarms Nr 1 RS485 ModBUS RTU slave port Nr 1 reset digital input

THERMOMECHANICS DATA

	S311D-4	S311D-6	S311D-8	S311D-11
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

	S311D-4	S311D-6	S311D-8	S311D-11
Software / settings	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		**Descrizione**
Model	S311D	Frequency / digital input indicator - totalizer and analog output
Display	-4 / -6 / -8 / -11	4 / 6 / 8 / 4+7 cifre
Power supply	-H / -L	80-265 Vac; 19-28 Vac
Options	-O	Optional board: nr 2 SPDT relay alarms, ModBUS RTU interface, reset input
	/T	Calibration service

S-LINE • DIGITAL INDICATORS

	S200D / S200DP / S201D / S201DP	S301 / S301B	S310 / S320A
			
CE	3 1/2 digit indicator with power supply and control signal	4 digit digital indicators	3½ digit digital indicators with relay alarms

GENERAL DATA

	S200D / S200DP / S201D / S201DP	S301 / S301B	S310 / S320A
Power supply	115-230 Vac ±10%, 50-60 Hz	115-230 Vac ±10%, 50-60 Hz; 24 Vac/dc±10%	115-230 Vac ±10%, 50-60 Hz; 24 Vac/dc±10%
Power transducers	+15 Vdc, 350 mA; -15 Vdc, 75 mA; 24 Vdc, 500 mA		20 Vdc, 20 mA
Max consumption	11 VA	4 VA	3,5 VA
Rejection	40 dB (50-60 Hz)		
Communication interfaces		RS232 / RS485, 9.600 bps, max 1.000 m, 31 devices	
Memory		EEPROM, 10 years	

VISUALIZATION AND MEASURE

	S200D / S200DP / S201D / S201DP	S301 / S301B	S310 / S320A
Display	3 ½ digit 14 mm LED	4 digit 20 elements bargraph (50 mm) 14 mm LED	3 ½ digit 14 mm LED
Accuracy	0,3%	0,1% (current / voltage) 0,2% (RTD, potentiometer)	0,3%
Thermal stability	0,01%/°C	0,01%/°C	0,01%/°C
Linearity		0,01%..0,5%	
Cold junction		1°C (20-40 °C)	

INPUT DATA

	S200D / S200DP / S201D / S201DP	S301 / S301B	S310 / S320A
Nr	1	1	1
Type	Current: 0-20, 4-20 mA Voltage: 0-5, 1-5, 0-10, 2-10 V	Voltage: from 200 mV up to 4 V (4 scales) Current: up to 20 mA Potentiometer: up to 15 kΩ 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 Vdc (0-10. 2-10 Vdc on demand) Pt100 (option) TC k,J (option)
Frequency		3 readings per second	

(ANALOG) OUTPUT DATA

	S200D / S200DP / S201D / S201DP	S301 / S301B	S310 / S320A
Nr	1	1	1
Type	Accurate potentiometer setpoint (0/1-5 Vdc; 4-20 mA active)	Current: 0-20, 4-20 mA Voltage: 0-5, 0-10, 1-5, 2-10 V	Current: 0-20, 4-20 mA (re-transmitted, isolated, active / passive)
Resolution		Da 0,025% a 0,032%	

(ALARMS) OUTPUT DATA

	S200D / S200DP / S201D / S201DP	S301 / S301B	S310 / S320A
Nr		3, 4	1, 2
Type		SPDT relay 5 A – 250 Vac Open collector 35 Vdc – 200 mA	SPDT relay 5 A – 250 Vac (resistive load)

THERMOMECHANICS DATA

	S200D / S200DP / S201D / S201DP	S301 / S301B	S310 / S320A
Operating temperature	-10..+60°C	-10..+55°C	0..50°C
Case	V0 Self-extinghuished Noryl shockproof		V0 Self-extinghuished Noryl shockproof
Front protection		IP41	
Connections	Removable terminals		Screw terminals
Dimension (w x h x d)	96 x96 x 117 mm	96 x 48 x 148 mm (S301); 96 x 96 x 148 mm (S301B)	96 x 48 x 148 mm (S310); 96 x 96 x 148 mm (S320A)
Panel dimension (w x h)	91 x 91 mm		
Weight	750 g	500 g (S301); 600 g (S301B)	

SETTINGS, NORMS

	S200D / S200DP / S201D / S201DP	S301 / S301B	S310 / S320A
Software		Data request and write	
Front keys		Diagnostic and programming	
Trimmer	Visualization zero and span (-999..+1.999)		Visualization zero and span (-999..+1.999), alarms
Jumper / shunt	Decimal point		Full scale, alarms, input type, decimal point, re-transmitted output
Conformity	CE	CE	CE

ORDER CODES

Codice		Description
Model	S200D	3 ½ digit indicator, 115 / 230 Vac, Power transducers ±15 Vdc
	S200DP	3 ½ digit indicator, 115 / 230 Vac, Power transducers ±15 Vdc, setpoint
	S201D	3 ½ digit indicator, 230 Vac, Power transducers 24 Vdc
	S201DP	3 ½ digit indicator, 230 Vac, Power transducers 24 Vdc, setpoint

Code			Description
Model	S301		4 digit digital indicator, universal analog input, re-transmitted output
	S301 B		4 digit + bargraph digital indicator, universal analog input, re-transmitted output
Power supply		-1-R / -23-R	115 / 230 Vac / 24 Vac/dc
Opzioni		-AOC-S	Nr 4 open collector alarms, serial output
		-AR-S	Nr 2 SPDT relay alarms, serial output

Code			Description
Model	S310 / S310A / S310AA S320A		3 ½ digit digital indicator, V,I input / + 1 SPDT alarm relay / + 2 SPDT alarm relay
Power supply		-1-ST / -23-ST	115 / 230 Vac / 24 Vac/dc
Options		-PT	Pt100 input
		-TC (J,K)	TC (J or K) input
		-R	Re-transmitted output

S-LINE • TOTALIZERS

	S114 / S114B *	S144I *	S164 *
			
	Totalizers with divider and universal input	Totalizer with integrator, analog input, pulse output	7 digit totalizer with 3 ½ digit indicator

GENERAL DATA

Power supply	115/230 Vac ±50/60 Hz; 24 Vac/dc	115/230 Vac ±50/60 Hz; 24 Vac/dc	115/230 Vac ±50/60 Hz; 24 Vac/dc
Power transducers		20 Vdc, 20 mA	
Max consumption	3,5 VA	3,5 VA	3,5 VA
Data storage	Rechargeable backup battery, 2 months lifetime without network supply	Rechargeable backup battery, 1 months lifetime without network supply	Rechargeable backup battery, 1 months lifetime without network supply

VISUALIZATION AND MEASURE

Display	6 digit (14 mm) red LED 8 digit (9 mm) red LED	6, 8 digit 14 mm LED	7 digit (totalizer) + 4 digit (indicator) 14 mm LED
Accuracy			< 0,5% (max conversion error)
Thermal stability		±0,005%/°C	
Linearity		±0,1%	

INPUT DATA

Nr	1 (isolated)	1	1
Type	Sensor reed (contact), npn 2-3 wire (12/24 Vdc sensor supply), pnp, namur (8 Vdc), 24 Vdc pulse, photoelectric	Current: 0-20 / 4-20 mA Voltage: 0-5 / 1-5 / 0-10 / 2-10 Vdc	Current: 0-20 / 4-20 mA Voltage: 0-5 / 1-5 / 0-10 / 2-10 Vdc
Frequency	Max 450 Hz, 1 ms (min pulse length)		
Reset	Isolated (terminal contact, front key option)	Isolated (terminal contact, front key option)	Isolated (terminal contact, front key option)

OUTPUT DATA

Nr		1	1
Type		Pulse repetition, transistor npn open collector 30 V, 300 mA; 40 ms (pulse length)	Pulse repetition, transistor npn open collector 30 V, 300 mA

THERMOMECHANICS DATA

Operating temperature	-10..+50°C	0..+50°C	0..+50°C
Case	Shockproof V0 self-extinguished ABS	Shockproof V0 self-extinguished ABS	Shockproof V0 self-extinguished Noryl
Connections	Removable terminals	Removable terminals	Removable terminals
Dimension (w x h x d)	96 x 48 x 148 mm (DIN 43700)	96 x 48 x 148 mm (DIN 43700)	96 x 48 x 148 mm (DIN 43700)
Panel dimension (w x h)	92 x 45 mm	92 x 45 mm	92 x 45 mm
Weight	380 g	420 g	420 g

SETTINGS, NORMS

DIP switch	Divisor circuit, programmable frequency 1..256	Input type	Input type
Trimmer		Integration scale	Zero, full scale
Jumper / shunt	Decimal point	Integration coefficient (1 pulse per 27', 20 pulse/s)	Integration coefficient (1 pulse per 27', 20 pulse/s), decimal point
Calibration		Via test or frequency meter	Via test or frequency meter
Conformity	CE	CE	CE
Norms	EN 50081-2, EN 50082-2	EN 50081-2, EN 50082-2	EN 50081-2, EN 50082-2

ORDER CODES

Code			Description
Model	S114		Totalizer with divider and universal input
	S114B		Bi-directional totalizers with divider and universal input
Display	-4 / -6 / -8		4 / 6 / 8 digit
Power supply		-1-ST	115 / 230 Vac
		-23-ST	24 Vac/dc

Code			Description
Model	S144I		Totalizer with integrator, analog input, pulse output
Display	-6 / -8		6 / 8 digit
Power supply		-1-ST	115 / 230 Vac
		-23-ST	24 Vac/dc

Code			Description
Model	S164		7 digit totalizer with 3 ½ digit indicator
Power supply		-1-ST	115 / 230 Vac
		-23-ST	24 Vac/dc

***Available until stocks last**

S-LINE BATCH CONTROLLERS AND CONTROL UNITS

	S20N	S21	S30	S6000
				
CE	Batch controller	Batch controller with clock	Advanced batch controller	Control unit pump controller
GENERAL DATA				
Power supply	115 / 230 Vac ± 50-60 Hz; 24 Vac/dc	115 / 230 Vac ± 50-60 Hz; 24 Vac/dc	115 / 230 Vac ± 50-60 Hz; 24 Vac/dc	115 / 230 Vac ± 50-60 Hz; 24 Vac/dc
Power transducers	12/ 24 Vdc, 30 mA (max)	12/ 24 Vdc, 30 mA (max)	12/ 24 Vdc, 30 mA (max)	24 Vdc, 30 mA
Max consumption	10 VA	10 VA	12 VA	10 VA
Data storage	EEPROM, data	EEPROM, data		
Clock		Clock with battery and data storage, hour automatic correction		
Interface			RS232 / RS485 serial interface (option) Parallel interface for S30 printer (option)	Isolated RS232 (programming, PC connection)
VISUALIZATION AND MEASURE				
Display	2 numeric display 5 digit LED	2 numeric display 5 digit LED	2 numeric display 5 digit LED	LCD back lightened display 2 raws x 16 chars
Status indicators	Start, stop, reset	7 operating status LED	7 operating status LED	18 LED: motor status, alarms
Thermal stability				±0,005% /°C
Linearity				±0,1%
INPUT DATA				
Nr	1 (isolated)	1 (isolated)	1 (isolated)	8 (isolated)
Type	From sensor: reed, npn (2-3 wire), namur, hall effect, photoelectric	Contact or sensor: reed, npn (2-3 wire), pnp, 12/24 V pulse, namur, hall effect, photoelectric	Contact or sensor: reed, npn (2-3 wire), pnp, 12/24 V pulse, namur, hall effect, photoelectric	Nr 6 digital contacts Nr 2 analog signals (0..20, 4..20 mA; input resistance 100 Ω, resolution 200 points)
Frequency	1.000 Hz, min pulse duration 0,1 ms			
Control	3 input (start, stop, reset)	3 input (start, stop, reset)	3 input (start, stop, reset)	
OUTPUT DATA				
Nr	2	2	2	10
Type	SPDT relay, 5 A 250 V (resistive load)	SPDT relay, 5 A 250 V (resistive load)	SPDT relay, 5 A 250 V (resistive load)	Nr 1 digital contacts open collector Nr1 SPDT relay 5 A 250 Vac (signalling) Nr 6 SPST relay, 5 A 250 Vac (actuators) Nr 2 analog signals (0..20, 4..20 mA; 0..10 V; resolution 4.000 points)
THERMOMECHANICS DATA				
Operating temperature	0..50 °C	0..50 °C	0..50 °C	0..50 °C
Case	Noryl self-extinguished V0	Noryl self-extinguished V0	Noryl self-extinguished V0	Noryl self-extinguished V0
Front protection	Polycarbonate membrane	Polycarbonate membrane	Polycarbonate membrane	Polycarbonate membrane
Connections	Back removable terminals	Back removable terminals	Back removable terminals	Back removable terminals, serial interface DB9 connector
Dimension (w x h x d)	144 x 72 x 130 mm	144 x 72 x 130 mm	144 x 72 x 130 mm	144 x 72 x 121 mm
Panel dimension	135 x 67 mm	135 x 67 mm	135 x 67 mm	135 x 67 mm
Weight	800 g	800 g	1,2 kg	800 g
SETTINGS, NORMS				
Software				SOF6000
Front keys	Programming, metering	Programming, metering	Programming, metering	Programming
Conformity	CE	CE	CE	CE

ORDER CODES

Code		Description
Model	S20N	Batch controller
	S20NIP65	Batch controller in IP65 protected case
	S20NEX	Batch controller in EExd flame retardant case
Accessories	S20NKIT	External kit
	S20ADP	Input adapter board (hall effect / photoelectric sensor)
	S20ADP-CM	IP20 DIN rail input adapter board (hall effect / photoelectric sensor)
	S20ADP-IP65	IP65 Input adapter board (hall effect / photoelectric sensor)
Code		**Description**
Model	S21	Batch controller with clock
	S21IP65	Batch controller with clock in IP65 protected case
	S21EX	Batch controller with clock in EExd flame retardant case
Accessories	S20ADP	Input adapter board (hall effect / photoelectric sensor)
	S20ADP-CM	IP20 DIN rail input adapter board (hall effect / photoelectric sensor)
	S20ADP-IP65	IP65 Input adapter board (hall effect / photoelectric sensor)
Code		**Description**
Model	S30	Advanced batch controller
	S30IP65	Advanced batch controller in IP65 protected case
Accessories	S30-STAMP	Printer interface
	S20ADP	Input adapter board (hall effect / photoelectric sensor)
	S20ADP-CM	IP20 DIN rail input adapter board (hall effect / photoelectric sensor)
	S20ADP-IP65	IP65 Input adapter board (hall effect / photoelectric sensor)
Code		**Description**
Model	S6000	Control unit, pump controller
Power supply	-1-ST / -23-ST	115 / 230 Vac / 24 Vac/dc

ZTOP – LCD TOUCHSCREEN OPERATOR PANEL

	ZTOP03	ZTOP05	ZTOP11
			
CE	Monochrome 3,8” LCD touch display	Monochrome 5,6” LCD touch display	STN colour 5,6” touch display
DISPLAY			
Format	Monochrome LCD	Monochrome LCD	STN 16colours
Backlight	LED, white	LED, white	CCFL
Lifetime	50.000 hrs	100.000 hrs	25.00 hrs
Resolution	320 x 240 pixel	320 x 240 pixel	320 x 240 pixel
Active area	77 x 58 mm (3,8")	121 x 91 mm (5,6")	77 x 58 mm (5,6")
Raws x columns	16 x 40	16 x 40	16 x 40
Scalable fonts	yes	yes	Yes
User fonts	256	256	256
Contrast setting	Software	Software, temperature compensation	Software, temperature compensation
MEMORY			
User memory	512 kB Flash	32 MB SSFDC memory card	32 MB SSFDC memory card
FRONT PANEL			
Touch screen	Resistive	Resistive (3 milion operations)	Resistive (3 milion operations)
System LEDs	-	5	5
CONNECTIONS			
PC / printer port	-	-	-
PLC port	RS232, RS422, RS485	RS232, RS422, RS485, 20 mA CL	RS232, RS422, RS485, 20 mA C
Aux (Fieldbus / Ethernet)	Yes, with optional module	Yes, with optional module	Yes, with optional module
Programming speed	9.600 – 38.400 bps	9.600 – 38.400 bps	9.600 – 38.400 bps
GENERAL DATA			
Nr variables / page	Unlimited	Unlimited	Unlimited
Recipes memory	32 kB	32 kB	32 kB
Alarms + Events	1.024 + 256	1.024 + 1.024	1.024 + 1.024
Alarms info page	Yes	Yes	Yes
Password	Yes, 8 levels	Yes	Yes, 8 levels
Battery	3 V, 270 mA, Lithium, non rechargeable	Yes, backup battery	Yes, backup battery
RTC hardware	yes	yes	yes
Screen saver	yes	yes	yes
Buzzer	-	yes	yes
LED indicators	Alarm, communication, battery, hardware fault	Alarm, communication, battery, hardware fault	Alarm, communication, battery, hardware fault
Power supply	18..30 Vdc	18..30 Vdc	18..30 Vdc
Max consumption	400 mA	600 mA @ 24 Vdc	600 mA @ 24 Vdc
Weight	1 kg	1,4 kg	1,4 kg
Operating temperature	0..50°C	0..45°C	0..45°C
Storage temperature	-20..+70 °C	-20..+70 °C	-20..+70 °C
Humidity	5..85% RH non condensing	5..85% RH non condensing	5..85% RH non condensing
Protection degree	IP65	IP65	IP65
Dimension (w x h x d)	149 x 109 mm (5,86 x 4,49 "); 136 x 96 mm (5,35 x 3,78")	187 x 147 mm (7,36 x 5,79 "); 176 x 136 mm (6,93 x5,35")	187 x 147 mm (7,36 x 5,79 "); 176 x 136 mm (6,93 x 5,35")
Depth	61 mm (2,4")	79 mm (3,12")	79 mm (3,12")
Max thickness	5 mm (0,2")	5 mm (0,2")	5 mm (0,2")

ORDER CODES

Code		Description
Models	ZTOP03	Monochrome LCD touchscreen graphical panel 3,8”
	ZTOP05	Monochrome LCD touchscreen graphical panel 5,6”
	ZTOP11	STN colour touchscreen graphical panel 5,6”
Programming	ZTOPKIT	Full programming toolkit: PM001810 + UniOP
	PM001810	Programming / download cable
	UniOP	Design software
Connections	PM001820	Communication cable ZTOP – ZRTU
	PM001830	Communication cable ZTOP – ZTWS
	PM001840	Communication cable ZTOP – RS485 bus
	PM001850	PM001810 adapter for ZTOP05 / ZTOP11

4

MEASUREMENT INSTRUMENTATION

SENECA

Handheld Multimeter and Signal Generator with OLED display

Test-3

Voltage (0-10 V) and current (0-20 mA) input

Battery-charger connector NiMh 2650 mAh, life-time 20 hrs

RS232 jack stereo connector for Z109REG2 (isolated universal converter) programming

Rubber boot

Accuracy: 0.1%

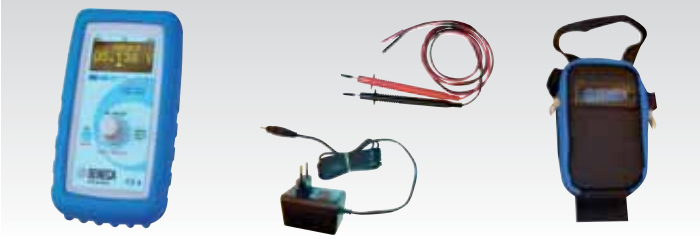
ESC – ON/OFF button

High definition OLED display, 15 contrast levels, 5 languages graphic menu

Multi-function encoder button (settings, generation, measure)

CE RoHS COMPLIANT

TECHNICAL DATA



ORDER CODE

Code			Description
Model	TEST-3		Voltage-current generator / meter and Z109REG2 configurator, rugged, non slip case, chargeable batteries, standard probes, battery charger, compact bag
Options		/T	Certificated ISO 9001 NIST traceable calibration service
Accessories	TEST-3-PK		Precision kit. Z109REG2 programming cable (3,5 mm stereo jack); precision probes set with adapters and crocodile terminals

CONNECTIONS

SIGNAL GENERATION

ACTIVE CURRENT
Range: 0..21 mA,
Loop powered by Test-3

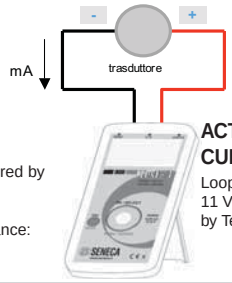
PASSIVE CURRENT
Range: 0..21 mA,
sink function
External loop power, max 24 Vdc

VOLTAGE
Range: 0..11 V
Load impedance: 1 kΩ

SIGNAL MEASUREMENT

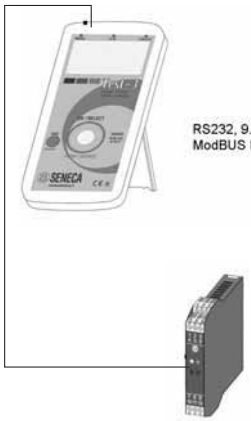
PASSIVE CURRENT
Range: 0..21 mA
sink function
Internal impedance: 20 Ω

VOLTAGE
Loop 4..21 mA
11 V loop powered by Test-3
Range: 0..11 V
Internal impedance: 100 kΩ



ACTIVE CURRENT
Loop 4..21 mA
11 V loop powered by Test-3

CONFIGURATION Z109REG2 PROGRAMMING



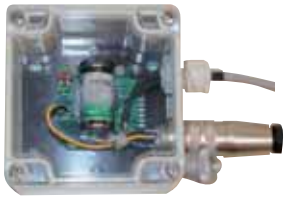
Parameters setting and acquisition (input, alarm, output), settings multiple choice and numeric values (input type, min, max) on ModBUS registers. Connection by serial cable with 3,5 mm stereo mini jack terminal.

TEST & MEASUREMENT

DL

Datalogger with IP65 case and multistandard signal input

- Input: mV, Volt, mA, pulses
- Output: RS232 serial connection
- A/D converter resolution: 8 bit
- Sampling time: from 1 minute-second to 10 days
- Alarms: 2 free settable
- Battery life-time from 2 to 5 years
- Dimensions: 80 x 82 x 55 mm
- Configuration software, recording and data download



ORDER CODE

Code		Descrizione
Version	DL-mA	mA Input Datalogger
	DL-mV	mV Input Datalogger
	DL-V	V Input Datalogger
	DL-COUNT	Pulses input
	SOFT-OTLM	Logger Manager, software standard
	SOFT-EDUC	Logger Manager software re-educator

PT100

Thermoprobes (RTD)

- Thermoresistance Pt100 3 wires with standard aluminum case
- Process connection 1/2" G.M., Sheat diam.: 6 mm
- Sensor wetted parts: AISI 316, Ohm output
- Atmosphere probe model (ABS, IP65), wall mounting

ORDER CODE

Code		Descrizione
Pt100		Pt100 thermoresistance, weatherproof head, 1/2"
Version	**-A**	Air version, IP65 case
	-MOLLA/CAVO	Stainless steel version, spring+cable (3 m)
	-DOPPIA	Double Pt100 version
	/EX	ADPE explosion proof case
	/IVG	1" GAS process connection
	ADPE	ADPE head
	HT	High temperature
	PVC	PVC head
	-T	Air connect
	-S	On demand
Length	**-L**	25, 50, 80, 100, 150, 200, 250, 300, 350, 400, 500, 700, 800 mm
Output signal	**-MA**	4-20 mA output
POZZ		Stainless steel shaft, 1/2" G.M. for Pt100
Length	**-L**	50, 75, 80, 100, 150, 200, 250, 300, 350, 400 mm

NETWORK ANALYZERS

S203T

Advanced Three-Phases Network Analyzer (input up to 100 mA)

- Power supply: 10–40 Vdc, 19–28 Vac 50-60 Hz
- Serial interface: RS485 isolated, ModBUS/RTU protocol
- Voltage input: capacity measure=600 Vac, freq. 50 or 60Hz
- Current input: up to 100 mA
- Re-transmitted output by voltage / current (error max 0,1%)
- Accuracy class: 0,2

ORDER CODE

Code		Description
Version	S203T	Three-Phase Network Analyzer (class. 0,2), suitable for CT (accuracy 0.1%) with secondary circuit max 100 mA
Accessories S203T	TA15	Current Transformer for S203T, f.s.15 A, accuracy 0,1% (1/1000)
	TA25	Curr. Transformer for S203T, f.s.25 A, accuracy 0,1% (1/1000)
	TA100	Curr. Transformer for S203T, f.s.100 A, accuracy 0,1% (1/1000)

S203TA

Three-Phase Advanced Network Analyzer Input up to 5 Arms

- Power supply: 10–40 Vdc, 19–28 Vac 50-60 Hz
- Serial interface: RS485 isolated,ModBUS/RTU protocol
- Voltage input: max=600 Vac, freq. 50 or 60Hz
- Current input: up to 5 Arms
- Re-transmission as analogue output voltage / current (error max 0,1%)
- Accuracy class: 0,2

ORDER CODE

Code		Description
Version	S203TA	Three-Phase Network Analyzer (class 0,2), suitable for common Current Transformer (Accuracy 0.5%) with output max 5 A

Z203

Single-Phase Network Analyzer

- Power supply: 9..40 Vdc; 8..28 Vac - 50-60 Hz
- Input: voltage 0..500 Vac, current 0..5 A
- Output: current 0..20 / 4..20 mA; voltage 0..5 / 0..10 / 1..5 / 2..10 V
- Accuracy: 0.5%
- Isolation: 3.750 Vac (from/to power); 1.500 Vac (other circuits)
- Dimension (w x h x d): 17,5 x 100 x 112 mm

ORDER CODE

Code	Description
Z203	Single Phase Network Analyzer, power 10..40 Vdc/ 19..28 Vac

E2002

Universal Network Analyzer

- Simultaneously data acquisition of RMS parameters voltage, current, cosΦ, power, energy, harmonic distortion...
- Class 0,5
- 2 pulse outputs for energy and alarms
- RS485 serial interface, 3 communication protocols
- Dimensions: 6 DIN modules

ORDER CODE

Code	Description
E2002-2-M	Universal Network Analyzer, 115 / 230 Vac
E2002-4-M	Universal Network Analyzer, 72x144 mm, 24 Vac
E2002-3-M	Universal Network Analyzer, 72x144 mm, 12/24/48/110 Vdc
-FL	Panel Mounting Tool

E92002

Universal Network Analyzer (panel mounting)

- Simultaneously RMS data acquisition of voltages, currents, CosΦ, power, energy, harmonic distortion…
- Class 0,5
- 2 pulse outputs / relays for energy and alarms
- RS485 serial interface, 3 communication protocols
- Panel mounting (96 x 96 mm)

ORDER CODE

Code	Description
E92002-2	Panel Mounting Network Analyzer, 96x96 mm, 115 / 230 Vac
E92002-4	Panel Mounting Network Analyzer, 96x96 mm, 24 Vac
E92002-3	Panel Mounting Network Analyzer, 96x96 mm, 12/24/48/110 Vdc

E742002

Universal Network Analyzer (Panel Mounting)

- Simultaneously data acquisition of RMS parameters voltage, current, cosΦ, power, Energy, harmonic distortion...
- Class 0,5
- 2 pulse outputs for energy and alarms
- RS485 serial interface, 3 communication protocols
- Panel mounting (72 x 144 mm)

ORDER CODE

Code	Description
E742002-2	Panel Mounting Network Analyzer, 72x144 mm, 115 / 230 Vac
E742002-4	Panel Mounting Network Analyzer, 72x144 mm, 24 Vac
E742002-3	Panel Mounting Network Analyzer, 72x144 mm, 12/24/48/110 Vdc

QUALITY SYSTEM AND INTERNATIONAL STANDARDS

SENECA operates according to quality standard, compliant to ISO 9001 since 1997 in “design and manufacturing of system and electronic instrumentation for control, data transmission and interface for automation”.

Our products are approved CE, UL and UR for the North American market and they offer RINA certification for applications in shipbuilding.

Our manufacturing process, undertaken by SMT technology automated lines, is compliant to RAEE and ROHS lead free international standards.

The safety standards, electromagnetic compatibility and protection Electric are compliant to CE, IEC, EN approvals.

Software and communication tools for our instruments are developed and updated according to international recognized standards (eg, IEC 61131, Modbus RTU / TCP, IEC 870, CANopen, PPP, SMTP, HTML, OPC Server).

SENECA ON THE WEB

SENECA offers an interactive website and a large database useful for every customer need: technical and sales info, catalogues, data sheets, operating manuals, software, online technical support, sales network, news, internal site search, quick product selector. Everything user-friendly, downloadable and continuously updated.

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