100% Made & Designed in Italy

Z-PC Line

DATA ACQUISITION AND AUTOMATION SYSTEMS

SENECA

www.seneca.it

Z-PC LINE

DATA ACQUISITION, DISTRIBUTED AUTOMATION AND TELECONTROL SYSTEMS

Z-PC Line is a modular automation system for managing from a single signal to thousands of I/Os. Z-PC series includes the maximum variety of I/O modules: digital inputs, fast counters, digital relay and mosfet outputs, analog channels (mA, V, Ohm, mV), strain gauge, resistance thermometers, thermocouples, electrical signals, galvanically isolated and with ModBUS, CANopen, Ethernet, M-BUS communication protocols. The I/O modules support RS485 serial communication with ModBUS RTU protocol, up to 64 nodes without repeater and speeds up to 115 kbps. The wiring of the power supply and the serial connection is facilitated by means of a bus housed in the IEC EN 60715 DIN rail. Maximum data concentration is also guaranteed.

For example, up to 24 digital and 8 analog signals can be acquired with just one module. The DIN rail modular bus support is available in 1, 2, 4, 8 slots. The modules are hot-swappable, i.e. they are hot-swappable without power and communication interruption. The system is completed by a wide range of interfaces and network interconnections to expand the configuration. Thanks to its flexibility and modularity, the Z-PC Line is a distributed system for multi-sector applications: data acquisition, building automation, telecontrol, energy monitoring, manufacturing control, ship automation, laboratory tests, environmental analysis, water treatment etc.

MULTIFUNCTION CONTROL UNITS

I/O MODULES

straton
SoftPLC IEC 61131

OPEN TO SCADA / OPC / WEB CLIENT

I/O MANAGEMENT Built-in on board External up to 1.000 I/O

IEC 81850 IEC 60870-5-101/104 ENERGY PROTOCOLS

DATA STORAGE

ADVANCED ALARM MANAGEMENT

INTEGRATION WITH THIRD-PARTY DEVICES

SPECIAL APPLICATIONS AND LIBRARIES

OPC UA
DATA EXCHANGE WITH OPC UA STANDARD

Reed, PNP, NPN, Proximity, Contact
DIGITAL INPUTS

BUILT-IN CONTROL FUNCTIONS

ModBUS
CANopen
Ethernet
M-BUS
SUPPORTED PROTOCOLS

SPST Relay or Mosfet
DIGITAL OUTPUTS

power
OUT
IN
MULTIWAYS ISOLATION @1,5 kVac

32 BIT COUNTERS @10kHz

-20..+70°C
WIDE OPERATING TEMPERATURE RANGE

2,5 mm² REMOVABLE TERMINALS

Micro USB jack 3,5mm RS232
FRONT COMMUNICATION PORT

GENERAL FEATURES

WIDE RANGE

UNIVERSAL APPLICATIONS

FLEXIBLE CONFIGURATION (EASY SETUP, Z-NET4, DIP switch)

TOOLS AND SERVICES FOR SYSTEM INTEGRATORS

DATA ACQUISITION TOOLS
(Data Recorder, OPC UA, NI LabVIEW Drivers, ModBUS Visual Studio Libraries)

AC/DC SWITCHING POWER SUPPLY

POWER TRANSDUCERS

BUS SYSTEM
(power supply/communication) on DIN rail

COMMUNICATION INTERFACES

HOT SWAPPING MODULES

DATA RECORDER DAQ SOFTWARE

ANALOG INPUT

3G+/4G/GPS/GLONASS GATEWAYS / ROUTERS

SERIAL / USB CONVERTERS

INDUSTRIAL MODEMS

RESOLUTION UP TO 16 BITS

CE / UL APPROVALS

LOAD CELL INPUT

FIBER OPTICS CONVERTERS

MULTI-CHANNEL RADIO MODEMS

IT PROTOCOLS

TEMPERATURE SENSORS INPUT

ELECTRICAL MEASUREMENT

PID REGULATION

TELECONTROL / REMOTE ASSISTANCE SOLUTIONS

VPN SUPPORT

IoT / Cloud SOLUTIONS

MODBUS RTU DIGITAL I/O MODULES

	Z-D-IN	Z-D-OUT	Z-10-D-IN	Z-10-D-OUT
Modbus				
	5-CH digital input module / RS485 ModBUS RTU	**5-CH digital output module / RS485 ModBUS RTU**	**10-CH digital input module / RS485 ModBUS RTU**	**10-CH digital output module / RS485 ModBUS RTU**
GENERAL DATA				
Power Supply	10..40 Vdc / 19..28 Vac	10..40 Vdc / 19..28 Vac	10..40 Vdc / 19..28 Vac	10..40 Vdc / 19..28 Vac / 50-60 Hz
Max Power Consumtion	2,5 W	2,5 W	3,5 W	2,5 W
Isolation	1.500 Vac (3-ways)	1.500 Vac (3-ways)	1.500 Vac (3-ways)	1.500 Vac (3-ways)
Power Transducers	Yes, 17Vdc/20mA, max 5 sensors	-	Yes, 17Vdc/40mA, max 10 sensors	-
LED status indicators	Power Supply Error Data transmission Data receiving Input status	Power Supply Error Data transmission Data receiving Output status	Power Supply Error Data transmission Data receiving Input status	Power Supply Error Data transmission Data receiving Output status Diagnostic
Protection degree	IP20	IP20	IP20	IP20
Operating temperature	-10..+65°C	-10..+65°C	-10..+65°C	-10..+65°C
Dimension	17.5 x 100 x 112 mm	17.5 x 100 x 112 mm	17.5 x 100 x 112 mm	17.5 x 100 x 112 mm
Weght	140 g approx	140 g approx	140 g approx	140 g approx
Case	Nylon 6, 30% fiberglass filled, self extinguishing class V0	Nylon 6, 30% fiberglass filled, self extinguishing class V0	Nylon 6, 30% fiberglass filled, self extinguishing class V0	Nylon 6, 30% fiberglass filled, self extinguishing class V0
Connections	Removable terminals with section of 2,5 mm^2	Removable terminals with section of 2,5 mm^2	Removable terminals with section of 2,5 mm^2	Removable terminals with section of 2,5 mm^2
Mounting	DIN 46277 35 mm rail	DIN 46277 35 mm rail	DIN 46277 35 mm rail	DIN 46277 35 mm rail
Programming	Z-NET4 (system software) EASY SETUP (plug&play software) DIP switch	Z-NET4 (system software) EASY SETUP (plug&play software) DIP switch	Z-NET4 (system software) EASY SETUP (plug&play software) DIP switch	Z-NET4 (system software) EASY SETUP (plug&play software) DIP switch
Memory (data)	EEPROM for setting parameters, retention time 10 years, Nr.5 registers @16 bits, Nr.5 overflow bits, FeRAM for counters saving	EEPROM for setting parameters, retention time 10 years	EEPROM for setting parameters, retention time 10 years, FeRAM for counters saving	EEPROM for setting parameters, retention time 10 years
COMMUNICATION				
Interfaces	RS485 2 wires	RS485 2 wires	RS485 2 wires	RS485 2 wires
Speed	Up to 115.200 bps	Up to 115.200 bps	Up to 115.200 bps	Up to 115.200 bps
Protocols	ModBUS RTU slave	ModBUS RTU slave	ModBUS RTU slave	ModBUS RTU slave
Communication time	< 10 ms (@ 38400 bps)	< 10 ms (@ 38400 bps)	< 10 ms (@ 38400 bps)	< 10 ms (@ 38400 bps)
Max 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
INPUT / OUTPUT DATA				
Nr. Channels	5 inputs	5 outputs	10 inputs	10 outputs
Tipo	Nr.5 optoisolated input Reed, Proximity, PNP, NPN, contact etc. Nr.5 counters @16 bit, max freq. 100 Hz; Nr.1 counter @32 bit, max freq. 10 kHz Anti-rebound filter 5..250 ms Overflow indication of each totalizer	Nr.5 SPST relay output (NO in common) max relay capacity 5A 250 Vac with resistive load; 2A with inductive load Max current 12 A on common terminal Relay safety status in case of communication failure Adjustable safety time from 0,5 to 25 ms	Nr.10 optoisolated channels (reed, proximity, pnp, npn, contact) with common negative self-powered 24 Vdc, protected from transients up to 600 W/ms Nr.10 inputs with 32 bits max freq. 2,5 kHz totalizers Inputs protected by fast transient suppressors TVS 600 W/ms Frequency measurement for 10 kHz inputs Measurement of period, frequency, Ton, Toff for 100 Hz inputs Total count forward or backward Overflow indication of each totalizer	Nr.10 MOSFET outputs protected from short circuit with negative in common, supplied from 6 to 40 Vdc, flow rate 0,5 A, resistive or inductive load Adjustable safety time 33 ms..2184 s Load supply voltage measurement Diagnostic signal on the front panel for each channel: ON / OFF / Overload / Open circuit Programmable fail-safe function (output status)
STANDARD				
Approvals	CE	CE	UL-UR CSA, CE	UL-UR CSA, CE
Norms	EN 50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4; EN 50140/141; EN 61010-1	EN 50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4; EN 50140/141; EN 61010-1	EN 50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4; EN 50140/141; EN 61010-1	EN 50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4; EN 50140/141; EN 61010-1

MODBUS RTU ANALOG I/O MODULES

	Z-DAQ-PID	Z-4AI	Z-8AI	Z-3AO	Z-SG
Modbus					
	I/O universal module with PID regulation / RS485 ModBUS RRTU	**4-CH current/voltage input module / RS485 ModBUS RTU**	**8-CH current/voltage input module / RS485 ModBUS RTU**	**3-CH current/voltage output module / RS485 ModBUS RTU**	**Strain gauge input module / RS485 ModBUS RTU**
GENERAL DATA					
Power Supply	10..40 Vdc / 19..28 Vac	10..40 Vdc / 19..28 Vac	10..40 Vdc / 19..28 Vac	10..40 Vdc / 19..28 Vac	10..40 Vdc / 19..28 Vac
Max power consumption	2 W	3,5 W	3,5 W	3,2 W	2 W
Isolation	1,5 kVac (3-way)	1,5 kVac (3-way)	1,5 kVac (3-way)	1,5 kVac (3-way)	1,5 kVac (3-way)
Power transducers	Yes, 17Vdc/25mA, max 1 channel	Yes, 20Vdc/40mA, max 4 channels	Yes, 13Vdc/90+90mA, max 8 channels		Yes, 5Vdc/60mA, max 1 sensor
Protection degree	IP20	IP20	IP20	IP20	IP20
Operating temperarure	-10..+65°C	-10..+65°C	-10..+65°C	-10..+65°C	-10..+65°C
Dimension	17.5x100x112 mm	17.5x100x112 mm	17.5x100x112 mm	17.5x100x112 mm	17.5x100x112 mm
Weight	Approx 140 g	Approx 140 g	Approx 140 g	Approx 140 g	Approx 140 g
Case	Nylon 6, 30% fiberglass filled, self extinguishing class V0	Nylon 6, 30% fiberglass filled, self extinguishing class V0	Nylon 6, 30% fiberglass filled, self extinguishing class V0	Nylon 6, 30% fiberglass filled, self extinguishing class V0	Nylon 6, 30% fiberglass filled, self extinguishing class V0
Connections	Removable screw terminals for conductors up to 2.5 mm^2 IDC10 rear connector for DIN rail RS232 communication front jack (COM)	Removable screw terminals for conductors up to 2.5 mm^2 DC10 rear connector for DIN rail RS232 communication front jack (COM)	Removable screw terminals for conductors up to 2.5 mm^2 Nr.1 Micro USB 2.0	Removable screw terminals for conductors up to 2.5 mm^2 IDC10 rear connector for DIN rail RS232 communication front jack (COM)	Removable screw terminals for conductors up to 2.5 mm^2 IDC10 rear connector for DIN rail Nr.1 Micro USB 2.0
Mounting	DIN 46277 35 mm rail	DIN 46277 35 mm rail	DIN 46277 35 mm rail	DIN 46277 35 mm rail	DIN 46277 35 mm rail
Programming	Z-NET4 (system software) EASY SETUP (plug&play software) DIP switch	Z-NET4 (system software) EASY SETUP (plug&play software) DIP switch	Z-NET4 (system software) EASY SETUP (plug&play software) DIP switch	Z-NET4 (system software) EASY SETUP (plug&play software) DIP switch	Z-NET4 (system software) EASY SETUP (plug&play software) DIP switch
Memory (data)	EEPROM for configuration parameters, retention time 10 years	EEPROM for configuration parameters, retention time 10 years	EEPROM for configuration parameters, retention time 10 years	EEPROM for configuration parameters, retention time 10 years	EEPROM for configuration parameters, retention time 40 years
COMMUNICATION					
Interfaces	RS485 2 wires RS232 (jack stereo 3.5 mm)	RS485 2 wires RS232 (jack stereo 3.5 mm)	RS485 2 wires RS232 (jack stereo 3.5 mm)	RS485 2 wires RS232 (jack stereo 3.5 mm)	RS485 2 wires
Speed	Up to 115.200 bps	Up to 115.200 bps	Up to 115.200 bps	Up to 115.200 bps	Up to 115.200 bps
Protocols	MosBUS RTU slave	MosBUS RTU slave	MosBUS RTU slave	MosBUS RTU slave	MosBUS RTU slave
Communication time	< 10 ms (@38.400 bps)	< 10 ms (@38.400 bps)	< 10 ms (@38.400 bps)	< 10 ms (@38.400 bps)	< 10 ms (@38.400 bps)
Max 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
INPUT / OUTPUT DATA					
Nr.channels	1 input, 1 output	4 inputs	8 inputs	3 outputs (active)	1 input, 1 output
Type	INPUT Millivolt: configurable from -10 to +80 mV Voltage: configurable from 0 to 10 V Current: configurable from 0 to 20 mA Potentiometer: 1 kΩ... 100 kΩ Thermocouple J,K,E,T,N,B,R,S RTD: Pt100, Pt500, Pt1000, Ni100 OUTPUT Configurable voltage between 0-10 V Active / passive current configurable between 0-20 mA	Bipolar voltage ±10 Vdc or ±2 Vdc, impedance 100 KΩ Bipolar direct current ±20 mA, impedance 100 Ω	Bipolar programmable voltage (±2.5 Vdc, ±10 Vdc, impedance >100 kΩ) or current (±20 mA)	Voltage (±10 V, 0/2...10 V, controllable impedance > 600 Ω) or current (0/4..20 mA, controllable impedance < 600 Ω)	INPUT 1 analog channel for reading (and power supply) up to 4 (350 Ω) or 8 (1,000 Ω) strain gauge load cells, 4-wire or 6-wire connection, equivalent impedance 87 Ω 1 DI/1DO tare calibration or weight threshold Sensitivity from 1 to 64 mV/V OUTPUT 1 analog retransmission channel of the net weight in current (0..20, 4..20 mA) or voltage (0..5/10 V)
Resolution	14 bit + sign	16 bit	16 bit	13 bit	24 bit (ADC)
Accuracy class	0,1%	0,1%	0,1%	0,1%	0,01%
Stability	0,01%/°C	0,01%/°C	0,01%/°C	0,01%/°C	25 ppm/K
STANDARD					
Approvals	CE	C E	CE, UL-UR	CE, UL-UR	CE
Norms	EN 61000-6-4, EN 61000-6-2, EN 61010-1	EN 50081-2, EN 55011, EN 50082-2, EN 61000-2-2/4, EN 50140/141, EN 61010-1	EN 50081-2, EN 55011, EN 50082-2, EN 61000-2-2/4, EN 50140/141, EN 61010-1	EN 50081-2, EN 55011, EN 50082-2, EN 61000-2-2/4, EN 50140/141, EN 61010-1	EN 61000-6-4/2002, EN 61000-6-2/2002, EN 61010, EN 60742, IEC 61131

MODBUS RTU TEMPERATURE MODULES

	Z-4RTD2	Z-4TC	Z-8TC-1	Z-8TC-LAB	Z-8NTC
Modbus					
	4-CH RTD input module / RS485 ModBUS RTU	**4-CH Thermocouple input module / RS485 ModBUS RTU**	**8-CH Thermocouple and mV input module / RS485 ModBUS RTU**	**8-CH Thermocouple and mV input module / RS485 ModBUS RTU, interchangeable clamps**	**8-CH NTC thermistors input module / RS485 ModBUS RTU**
GENERAL DATA					
Power Supply	10..40 Vdc, 19..28 Vac 50..60 Hz	10..40 Vdc, 19..28 Vac 50..60 Hz	10..40 Vdc, 19..28 Vac 50..60 Hz, bus powered	10..40 Vdc, 19..28 Vac 50..60 Hz, bus powered	10..40 Vdc, 19..28 Vac 50..60 Hz
Max Power Consumption	0,7 W	1 W	0,6 W	0,6 W	TBD
Isolation	1.500 Vac	1.500 Vac	1.500 Vac	1.500 Vac	1.500 Vac
Status indicators	Power supply Error Data transmission Data reception	Power supply Error Data transmission Data reception	Power supply Error RS485	Power supply Error RS485	Power supply Error Data transmission Data reception
Protection degree	IP20	IP20	IP20	IP20	IP20
Operating temperature	-10..+65°C	-10..+65°C	-10..+65°C	-10..+65°C	-20..+70°C
Dimension	17,5x100x112 mm	17,5x100x112 mm	17,5x100x112 mm	17,5x100x112 mm	17,5x100x112 mm
Weight	Approx 140 g	Approx 140 g	Approx 140 g	Approx 140 g	Approx 140 g
Case	Nylon 6 preloaded 30% glass fibre, self-extinguishing class V0	Nylon 6 preloaded 30% glass fibre, self-extinguishing class V0	Nylon 6 preloaded 30% glass fibre, self-extinguishing class V0	Nylon 6 preloaded 30% glass fibre, self-extinguishing class V0	Nylon 6 preloaded 30% glass fibre, self-extinguishing class V0
Connections	Removable screw terminals for conductors up to 2.5 mm^2 IDC10 rear connector for DIN rail Nr.1 Micro USB 2.0	Removable screw terminals for conductors up to 2.5 mm2 IDC10 rear connector for DIN rail RS232 communication front jack (COM)	Removable screw terminals for conductors up to 2.5 mm^2 IDC10 rear connector for DIN rail RS232 communication front jack (COM)	Removable screw terminals for conductors up to 2.5 mm^2 IDC10 rear connector for DIN rail Nr.1 micro USB 2.0	Removable screw terminals for conductors up to 2.5 mm^2 IDC10 rear connector for DIN rail Nr.1 micro USB 2.0
Mounting	For 35 mm rail DIN 46277	For 35 mm rail DIN 46277	For 35 mm rail DIN 46277	For 35 mm rail DIN 46277	For 35 mm rail DIN 46277
Programming	System software (Z-NET4) Plug & Play Configurator (EASY SETUP) DIP switch	System software (Z-NET4) Plug & Play Configurator (EASY SETUP) DIP switch	System software (Z-NET4) Plug & Play Configurator (EASY SETUP) DIP switch	System software (Z-NET4) Plug & Play Configurator (EASY SETUP) DIP switch	System software (Z-NET4) Plug & Play Configurator (EASY SETUP) DIP switch
Memory (data)	EEPROM for configuration parameters, retention time 10 years	EEPROM for configuration parameters, retention time 10 years	EEPROM for configuration parameters, retention time 10 years	EEPROM for configuration parameters, retention time 10 years	EEPROM for configuration parameters, retention time 10 years
COMMUNICATION					
Interfaces	Nr.1 RS485 2 wires Nr.1 Micro USB 2.0	Nr.1 RS485 2 wires	Nr.1 RS485 2 wires	Nr.1 RS485 2 wires Nr.1 Micro USB 2.0	Nr.1 RS485 2 wires; Nr.1 Micro USB 2.0
Speed	Up to 115.200 bps	Up to 115.200 bps	Up to 115.200 bps	Up to 115.200 bps	Up to 115.200 bps
Protocols	ModBUS RTU slave	ModBUS RTU slave	ModBUS RTU slave	ModBUS RTU slave	ModBUS RTU slave
Communication time	45..179 ms	< 20 ms (@38.400 bps)	45..179 ms	45..179 ms	< 10 ms (@38.400 ms)
Max 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
INPUT / OUTPUT DATA					
Nr.channels	4 inputs	4 inputs	8 inputs	8 inputs	8 inputs
Type	4 terminals (ohmeter at 2,3,4 wires) 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	Thermocule type 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 mΩ	Thermocule type 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 mΩ	Generic NTC, user defined curve. Rated values 1K, 10K, 50K @25°C; Resistance from 100 Ohm to 10 kOhm; 1 kOhm to 100 kOhm; 5 kOhm to 500 kOhm
Resolution	16 bits	13 bits + sign	16 bits	16 bits	16 bits
Accuracy class	0,1%	0,1%	0,1%	0,1%	0,5%
Thermal drift	25 ppm/K	0,01%/°C c.d.m.	< 100 ppm/K	< 100 ppm/K	< 100 ppm/K
STANDARD					
Approvals	CE, UL-UR	CE	CE	CE	CE
Norms	EN 61000-6-4/2002, EN 61000-6-2/2002, EN 61010, EN 60742	EN 50081-2, EN 55011, EN 50082-2, EN 61000-6-4/2002, EN 61000-6-2/2002, EN 61010, EN 60742	EN 61000-6-4/2002, EN 61000-6-2/2002, EN 61010, EN 60742	EN 61000-6-4/2002, EN 61000-6-2/2002, EN 61010, EN 60742	EN 61000-6-4, EN 61000-6-2, EN 61010, EN 60742

MODBUS RTU MIXED I/O MODULES

	Z-D-IO	Z-5DI-2DO	Z-4DI-2AI-2DO
Modbus			
	8-CH, 6 digital input - 2 digital outputs control module, RS485 ModBUS RTU	**7-CH, 5 digital input - 2 digital outputs module, RS485 ModBUS RTU**	**8-CH, 5 digital input - 2 analog iinputs - 2 digital outputs - 2 module, RS485 ModBUS RTU**
GENERAL DATA			
Power supply	10..40 Vdc / 19..28 Vac / 50-60 Hz	10..40 Vdc / 19..28 Vac	11.40 Vdc; 19..28 Vac
Max consumption	2,5 W	3,5 W	4 W
Isolation	1.500 Vac vs inputs 3.750 Vac vs outputs	1.500 Vac vs inputs 3.000 Vac vs outputs	1.500 Vac
Power transducers	-	-	Yes, 12V/(20)40mA, max 8 sensors
LED status indicators	Power suppy Error Data transmission Data reception Input status Output status	Power suppy Error Data transmission Data reception Input status Output status	RX/TX RS485 Error
Protection degree	IP20	IP20	IP20
Operating temperature	-10..+65°C	-20..+65°C	-20..+70°C
Dimension	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm	35x100x112 mm
Weight	Approx 200 g	Approx 140 g	Approx 170 g
Case	Nylon 6 reinforced 30% glass fibre class self-extinguishing V0	Nylon 6 reinforced 30% glass fibre class self-extinguishing V0	Black plastic PA6 glass filled
Connections	Removable screw terminals for conductors up to 2.5 mm^2	Removable screw terminals for conductors up to 2.5 mm^2 Micro USB (programming)	Removable screw terminals for conductors up to 2.5 mm^2
Mounting	35 mm rail DIN 46277	35 mm rail DIN 46277	35 mm rail DIN 46277
Programming	Z-NET4 (system software) EASY SETUP (plug&play software) DIP switches IEC 1131-2 type 1 logic for motors, valves and alarm controls	EASY SETUP (plug&play software) DIP switches	EASY SETUP (plug&play software) DIP switches Web Server
Data memory	EEPROM for configuration parameters, retention time 10 years	EEPROM for configuration parameters, retention time 10 years, Nr.5 registers 32 bit, Nr.5 overflow bits, FeRAM for saving counters	Flash 512 kB, FeRAM 64 kB (counters)
COMMUNICATION			
RS485	Nr.1 RS485 2 wires, up to 115,200 bps, ModBUS RTU slave, communication time < 10 ms (@38,400 bps), max distance 1.200, max 32 nodes	Nr.1 RS485 2 wires, up to 115,200 bps, ModBUS RTU slave, communication time < 10 ms (@38,400 bps), max distance 1.200, max 32 nodes	Nr.2 RS485 2 wires, up to 115,200 bps, ModBUS RTU slave, communication time from 1 to 300 ms, max distance 1,200, max 32 nodes
USB		Nr.1 Micro USB	Nr.1 Micro USB
INPUT / OUTPUT DATA			
Nr.channels	6 digital inputs, 2 digital outputs	5 digital inputs, 2 digital outputs	4 digital inputs, 2 analogue inputs, 2 digital outputs
Type	Nr. 6 digital inputs, 2 digital outputs Nr. 6 optoisolated inputs with common type Reed Proximity, PNP, NPN, contact etc.; internal/external inputs power supply; min pulse length 20 ms Nr. 2 SPST relay outputs with common, capacity 5A 250Vac, NO/NC contact	Nr. 5 optoisolated inputs Reed, Proximity, PNP, NPN, contact etc. Nr. 5 counters @32 bit, freq. max 5 kHz" Nr. 2 SPST relay outputs with common, fail-safe, capacity 2A - 250Vac, NO/NC contact, selectable by jumper Freq. period measurement Ton/Toff on all inputs"	Nr. 4 optoisolated inputs Reed, Proximity, PNP, NPN, contact etc. Nr.4 counters @32 bit, freq. max 5 kHz Nr. 2 SPST relay outputs with common, fail-safe, capacity 2A - 250Vac, NO/NC contact, selectable by jumper Nr.2 configurable analog inputs mA/V, 0..30Vdc / 0..20mA, accuracy 0,1%, resolution 16bit, sampling time 1-300 ms
STANDARD			
Approvals	CE	CE	CE
Norms	EN61000-6-4; EN61000-6-2; EN61010-1	EN61000-6-4; EN61000-6-2; EN61010-1	EN 61000-6-4, EN 61000-6-2, EN 61010-1, EN 60950

MODBUS RTU / TCP-IP I/O MODULES

	ZE-4DI-2AI-2DO	ZE-2AI	R-16DI-8DO
Modbus ETHERNET			 R-LINE
	8-CH Mixed 4 digital inputs, 2 analog inputs, 2 digital outputs, ModBUS RTU / ModBUS TCP-IP module	**2-CH analog inputs ModBUS RTU / ModBUS TCP-IP module**	**24-CH 16 digital inputs / 8 digital relay outputs Modbus TCP-IP / Modbus RTU module**
GENERAL DATA			
Power supply	11.40 Vdc; 19..28 Vac	10..40 Vdc / 19..28 Vac	11.40 Vdc; 19..28 Vac
Isolation	1,5 kVac	1,5 kVac	1,5 kVac
Protection degree	IP20	IP20	IP20
Operating temperature	-20..+70°C	-20..+70°C	-20..+65°C
Dimension	35x100x112 mm	17.5x100x112 mm	106x90x32 mm
Weight	Approx 170 g	Approx 140 g	Approx 170 g
Connections	Removable screw terminals for conductors up to 2.5 mm² IDC10 rear connector for DIN rail Mini USB	Removable screw terminals for conductors up to 2.5 mm² IDC10 rear connector for DIN rail Mini USB	Clamps pitch 3.5 mm Double RJ45 connector Micro USB (programming)
Mounting	For 35 mm rail DIN 46277	For 35 mm rail DIN 46277	For 35 mm rail DIN 46277 / wall-mount
Programming	Plug & Play Configurator (EASY SETUP) DIP switch Web Server	Plug & Play Configurator (EASY SETUP) DIP switch Web Server	SENECA Studio Web Server Dual Ethernet Connection Daisy Chain
Special functions	LAN ModBUS TCP Server	LAN ModBUS TCP Server	LAN fault bypass (active connection between the two Ethernet ports of the device in case of power failure) Max 32 Peer to Peer Rules (I/O Mirror) No need master mode Counters with frequency measurement, TON, TOFF, Period Modbus Passthrough (TCP-IP to RS485) Identification and configuration IP, MAC, firmware update via SDD tool
Data memory	Flash 512 kB, FeRAM 64 kB (counters)	Flash 512 kB, FeRAM 64 kB (counters)	FeRAM for counter backups
COMMUNICATION			
Interfaces	Nr.1 Ethernet 10/100 Mbps Nr.2 RS485 Nr.1 mini USB 2.0	Nr.1 Ethernet 10/100 Mbps Nr. 2 RS485 Nr.1 mini USB 2.0	Nr.2 Ethernet 10/100 Mbps Nr. 1 RS485 Nr.1 Micro USB
Speed	Up to 115.200 bps (RS485) / 100 Mbps (TCP-IP)	Up to 115.200 bps (RS485) / 100 Mbps (TCP-IP)	Up to 115.200 bps (RS485) / 100 Mbps (TCP-IP)
Protocols	ModBUS RTU, ModBUS TCP-IP, http	ModBUS RTU, ModBUS TCP-IP, http	ModBUS RTU, ModBUS TCP-IP, http
INPUT DATA			
Nr.Channels	4 digital inputs, 2 analog inputs	2 analog inputs	16 digital inputs
Type	Nr.2 Analog Inputs 0-20 mA / 0-30 V Nr.4 PNP / NPN Digital Inputs (also configurable as totalizers or counters@32 bit max 7 kHz)	0-20 mA / 0-30 V; 16 bit resolution (1-300 ms); sampling 0,1% f.s.	PNP with internal/external power supply, NPN with internal power supply; Voltage Threshold OFF / ON: <8 V; > 9 V; Max frequency 5 kHz, 32 bit holding counters; Current consumption 2.25 mA; IEC 6113-2 Type 1 & 3 compliance; Response time P2P 20ms
OUTPUT DATA			
Nr.Channels	2 digital outputs		8 digital outputs
Type	Relay NO / NC max 5A		SPST relay Voltage/Current max 30V / 1A
STANDARD			
Approvals	CE	CE	CE
Norms	EN 61000-6-4, EN 61000-6-2, EN 61010-1, EN 60950	EN 61000-6-4, EN 61000-6-2, EN 61010-1	EN61000-6-4, EN61000-6-2, EN61010-1

ETHERNET I/O

Z-PC Line mixed I/O modules for high-performance analog and digital signals support communication protocols ModBUS TCP-IP and ModBUS RTU on bus / terminal and an extended range for voltage input up to 30 V. These modules can benefit from a 16-bit ADC converter with configurable acquisition speed from 5 to 300 ms. They also offer complete configurability from a web server compatible with browsers that support Html5.
The R-Series I/O modules are designed for flexible cabling, reduced installation space, applications high-density I/O and embedded Ethernet networking. They can be connected in Ethernet daisy chain mode with fault-bypass to ensure Ethernet connection even in the event of failure of a module in the chain and ensure the function “ModBUS Passthrough”, thanks to the which the module can divert to RS485 the requests coming from Modbus TCP-IP behaving, in fact, like a gateway.

MODBUS RTU / CANOPEN DIGITAL I/O MODULES

	ZC-24DI	ZC-24DO	ZC-16DI-8DO
Modbus CANopen			
	24-CH digital input module ModBUS/ CANopen	**24-CH digital output module ModBUS/ CANopen**	**16 CH digital input - 8 CH digital output module ModBUS/CANpen**
GENERAL DATA			
Power supply	10..40 Vdc / 19..28 Vac	10..40 Vdc / 19..28 Vac	10..40 Vdc / 19..28 Vac
Power cosumption	1,5 W (typical), 2,5 W (max)	2,5 W	2,5 W
Isolation	1,5 kVac (@ 3 ways)	1,5 kVac (@ 3 ways)	1,5 kVac (@ 3 ways)
Power transducers	Yes, 16V/70mA, max 24 sensors	-	Yes, 16V/70mA, max 16+8 sensors
LED status indicators	Power supply Input status Communication	Power supply Output status Communication	Power supply Input / Output status Communication
Protection degree	IP20	IP20	IP20
Operating temperature	-10..-65°C	-10..-65°C	-10..-65°C
Dimension	35 x 100 x 112 mm	35 x 100 x 112 mm	35 x 100 x 112 mm
Weight	Approx 200 g	Approx 200 g	Approx 200 g
Case	Nylon 6 reinforced 30% glass fibre, self-extinguishing class V0	Nylon 6 reinforced 30% glass fibre, self-extinguishing class V0	Nylon 6 reinforced 30% glass fibre, self-extinguishing class V0
Connections	Removable 4-way screw terminals pitch 3.5 mm, section 2.5 mm^2 Nr.1 Micro USB 2.0 (front panel) Nr.1 IDC10 rear connector for DIN rail	Removable 4-way screw terminals pitch 3.5 mm, section 2.5 mm2 Nr.1 Micro USB 2.0 (front panel) Nr.1 IDC10 rear connector for DIN rail Nr.1 IDC10 side connector Nr.1 IDC20 side connector	Removable 4-way screw terminals pitch 3.5 mm, section 2.5 mm2 Nr.1 Micro USB 2.0 (front panel) Nr.1 IDC10 rear connector for DIN rail Nr.1 IDC10 side connector
Mounting	35 mm DIN rail IEC EN 60715	35 mm DIN rail IEC EN 60715	35 mm DIN rail IEC EN 60715
Programming	DIP switch, Z-NET4, EASY SETUP, EDS, Codesys (IEC 61131)	DIP switch, Z-NET4, EASY SETUP, EDS, Codesys (IEC 61131)	DIP switch, Z-NET4, EASY SETUP, EDS, Codesys (IEC 61131)
Approvals / Norms	CE, EN 61000-6-4, EN 64000-6-2, EN 61010-1, CAN 2.0A, 2.0B CiA 401 v.2.01 IEC EN 61131-2	CE, EN 61000-6-4, EN 64000-6-2, EN 61010-1, CAN 2.0A, 2.0B CiA 401 v.2.01 IEC EN 61131-2	CE, EN 61000-6-4, EN 64000-6-2, EN 61010-1, CAN 2.0A, 2.0B CiA 401 v.2.01 IEC EN 61131-2
COMMUNICATION			
Interfaces	RS485, RS232	RS485, RS232	RS485, RS232
Data rate	1 Mbps (CANopen); 115.200 bps (ModBUS)	1 Mbps (CANopen); 115.200 bps (ModBUS)	1 Mbps (CANopen); 115.200 bps (ModBUS)
Protocols	CAN bus standard (2.0A, 2.0B); CANopen (profile CiA 401 v.2.01); ModBUS RTU (via RS485)	CAN bus standard (2.0A, 2.0B); CANopen (profile CiA 401 v.2.01); ModBUS RTU (via RS485)	CAN bus standard (2.0A, 2.0B); CANopen (profile CiA 401 v.2.01); ModBUS RTU (via RS485)
Communication time	2,5 ms	1,2 ms	1,2..2,5 ms
Special function	CANopen/ModBUS protocol switching	CANopen/ModBUS protocol switching	CANopen/ModBUS protocol switching
INPUT / OUTPUT DATA			
Nr. Channels	24 inputs (with common negative self-powered at 16 Vdc)	24 outputs	16 inputs, 8 outputs
Type	Nr. 24 digital inputs with polarity EN 61131-2 type 2, synq (pnp); Nr 8 @ 32 bit, freq. max 10 kHz; configuration increment, reset, preset; Overflow indication; Vmax=30V; pulse width 250µs; on/off delay < 3ms; TPDO < 1msa	Nr.24 Mosfet outputs (open source with common negative); supply voltage 5..30 Vc; Imax=0,5A (from terminals) / 25 mA (from connectors); on/off delay < 1ms; RPDO < 1,25 ms	Nr.16 digital inputs with polarity EN 61131-2 type 2, synq (pnp); Nr 8 @ 32 bit, freq. max 10 kHz; configuration increment, reset, preset; Overflow indication; Vmax=30V; pulse width 250µs; on/off delay < 3ms; TPDO < 1ms Nr.8 Mosfet outputs (open source with common negative); supply voltage 5..30 Vc; Imax=0,5A (from terminals) / 25 mA (from connectors); on/off delay < 1ms; RPDO < 1,25 ms

CANopen I/O

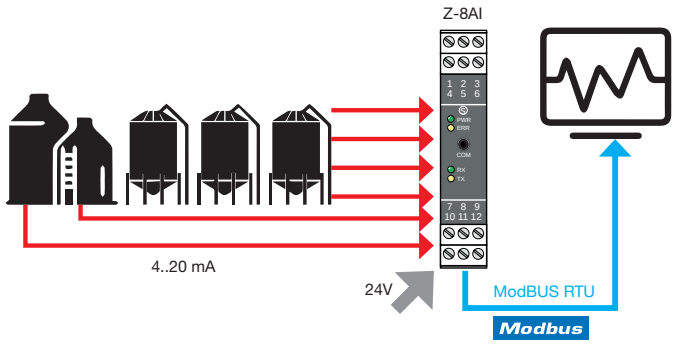
CANopen Z-PC Line is a truly distributed I/O system based on IEC 61131 programming that does not require the use of couplers, controllers or repeaters for each communication line. All modules have an interface CAN communication with speeds up to 1 Mbps and are therefore ideal for acquiring and controlling system signals on plants and machines where the distance between the signals plays a fundamental role.
CANopen Z-PC Line modules can be integrated with configurators and master controllers / network managers of third parties, even on existing machines and installations. The advantage of not needing an end-of-line coupler significantly reduces the cost factor for small to medium installations CANopen.

CANOPEN ANALOG I/O MODULES

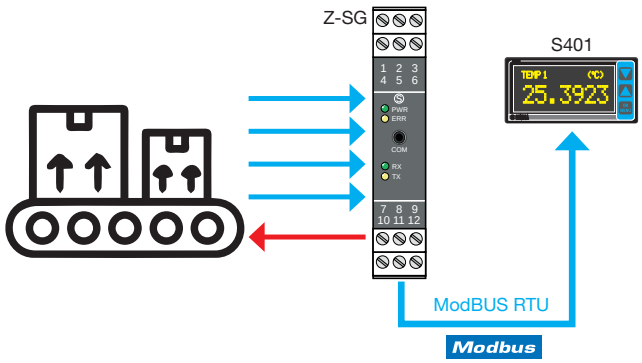
	ZC-8AI	ZC-3AO	ZC-4RTD	ZC-8TC	ZC-SG
					
	8-CH analog (mA, V) input module CANopen	3-CH analog (mA, V) output CANopen module	4-CH thermoresistance CANopen module	8-CH thermocouple CANopen module	1-CH load celle CANopen module
GENERAL DATA					
Power supply	10..40 Vdc / 19..28 Vac	10..40 Vdc / 19..28 Vac	10..40 Vdc / 19..28 Vac	10..40 Vdc / 19..28 Vac	10..40 Vdc / 19..28 Vac (strain gauge powered by the instrument)
Power consumption	5 W	2,5 W	1 W	1 W	2 W
Isolation	1.5 kVac	1.5 kVac	1.5 kVac	1.5 kVac	1.5 kVac
Input protection	Against ESD up to 4 kV	Against ESD up to 4 kV	Against ESD up to 4 kV	Against ESD up to 4 kV	Against ESD up to 4 kV
Power transducers	Yes, 16V/22mA, max 8 sensors	-	-	-	Yes, 5Vdc, max 8 sensors
LED status indicators	Power supply Communication Input error	Power supply Communication Input error	Power supply Communication Input error	Power supply Communication Input error	Power supply Communication Input error
Protection degree	IP20	IP20	IP20	IP20	IP20
Operating temperature	-10..-65°C	-10..-65°C	-10..-65°C	-10..-65°C	-10..-65°C
Dimension	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm
Weight	170 g	170 g	170 g	170 g	170 g
Case	Nylon 6 reinforced 30% glass fibre, self-extinguishing class V0	Nylon 6 reinforced 30% glass fibre, self-extinguishing class V0	Nylon 6 reinforced 30% glass fibre, self-extinguishing class V0	Nylon 6 reinforced 30% glass fibre, self-extinguishing class V0	Nylon 6 reinforced 30% glass fibre, self-extinguishing class V0
Connections	4-way removable screw terminals, pitch 3,5 mm IDC10 rear connector for DIN rail 3.5 mm stereo front jack for RS232 (COM)	4-way removable screw terminals, pitch 3,5 mm IDC10 rear connector for DIN rail 3.5 mm stereo front jack for RS232 (COM)	4-way removable screw terminals, pitch 3,5 mm IDC10 rear connector for DIN rail 3.5 mm stereo front jack for RS232 (COM)	4-way removable screw terminals, pitch 3,5 mm IDC10 rear connector for DIN rail 3.5 mm stereo front jack for RS232 (COM)	4-way removable screw terminals, pitch 3,5 mm IDC10 rear connector for DIN rail 3.5 mm stereo front jack for RS232 (COM)
Mounting	For 35 mm rail DIN 46277	For 35 mm rail DIN 46277	For 35 mm rail DIN 46277	For 35 mm rail DIN 46277	For 35 mm rail DIN 46277
Programming	DIP switch, Z-NET4, EASY SETUP, EDS, Codesys (IEC 61131)	DIP switch, Z-NET4, EASY SETUP, EDS, Codesys (IEC 61131)	DIP switch, Z-NET4, EASY SETUP, EDS, Codesys (IEC 61131)	DIP switch, Z-NET4, EASY SETUP, EDS, Codesys (IEC 61131)	DIP switch, Z-NET4, EASY SETUP, EDS, Codesys (IEC 61131)
Approvals / Norms	CE, EN 61000-6-4, EN 64000-6-2, EN 61010-1 CAN 2.0A, 2.0B CiA 401 v.2.01 IEC EN 61131-2	CE, EN 61000-6-4, EN 64000-6-2, EN 61010-1 CAN 2.0A, 2.0B CiA 401 v.2.01 IEC EN 61131-2	CE, EN 61000-6-4, EN 64000-6-2, EN 61010-1 CAN 2.0A, 2.0B CiA 401 v.2.01 IEC EN 61131-2	CE, EN 61000-6-4, EN 64000-6-2, EN 61010-1 CAN 2.0A, 2.0B CiA 401 v.2.01 IEC EN 61131-2	CE, EN 61000-6-4, EN 64000-6-2, EN 61010-1 CAN 2.0A, 2.0B CiA 401 v.2.01 IEC EN 61131-2
COMMUNICATION					
Interfaces	RS485, RS232	RS485, RS232	RS485, RS232	RS485, RS232	RS485, RS232
Data rate	1Mbps (CANopen)	1Mbps (CANopen)	1Mbps (CANopen)	1Mbps (CANopen)	1Mbps (CANopen)
Protocols	CAN bus standard (2.0A, 2.0B) CANopen (CiA 401 v.2.01 profile) ModBUS RTU (RS485)	CAN bus standard (2.0A, 2.0B) CANopen (CiA 401 v.2.01 profile) ModBUS RTU (RS485)	CAN bus standard (2.0A, 2.0B) CANopen (CiA 401 v.2.01 profile) ModBUS RTU (RS485)	CAN bus standard (2.0A, 2.0B) CANopen (CiA 401 v.2.01 profile) ModBUS RTU (RS485)	CAN bus standard (2.0A, 2.0B) CANopen (CiA 401 v.2.01 profile) ModBUS RTU (RS485)
Sampling time	< 28 ms	< 7 ms	< 28 ms	< 28 ms	< 7 ms
INPUT / OUTPUT DATA					
Nr.channels	8 inputs (isolated in pairs)	3 outputs	4 RTD-isolated inputs, 2,3,4-wire measurement	8 inputs (thermocouple or mV measurement)	1 analog input, 1 digital input/output
Type	Voltage (0-10 V); Current (0-20 mA)	Voltage (± 10 V); Current (0-20, 4-20 mA)	PT100 (EN 60751/A2-ITS90), -200..+650°C PT500 (EN 60751/A2-ITS90), -200..+750°C PT1000 (EN 60751/A2-ITS90), -200..+210°C Ni100 (EN 60751/A2-ITS90), -60..+250°C	Thermocouple: J,K,E,N,S,R,B,T; EN - 60584-1 (ITS-90) Span mV: -10,1 mV..+81,4 mV Input impedance: 10 MΩ	"ANALOG INPUT load cells (strain gauge); 4 / 6-wire differential measurement (±5 mV..±320 mV); power supply voltage 5 Vdc; impedance min 87 equivalent; sensitivity from ±1mV/V to ±64 mV/V DIGITAL INPUT Tare and span calibration (max 30 V)" 1 optoisolated digital output for stable or threshold weighing (max current 50 mA, max voltage 30 V)
Resolution	15 bit	14 bit	14 bit	15 bit	24 bit
Accuracy class	0,05%	0,01%	0,05%	0,1%	0,01%
Thermal drift	<100 ppm/°C	<100 ppm/°C	<50 ppm/°C	<100 ppm/°C	<25 ppm/°C

I/O MODULES - APPLICATION DIAGRAMS

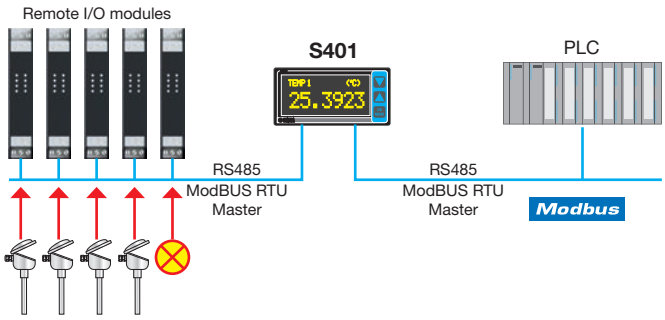
Process measurement and data retransmission via ModBUS RTU



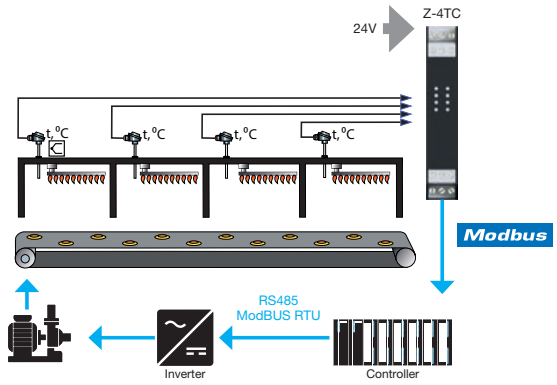
ModBUS acquisition and display for weighing systems



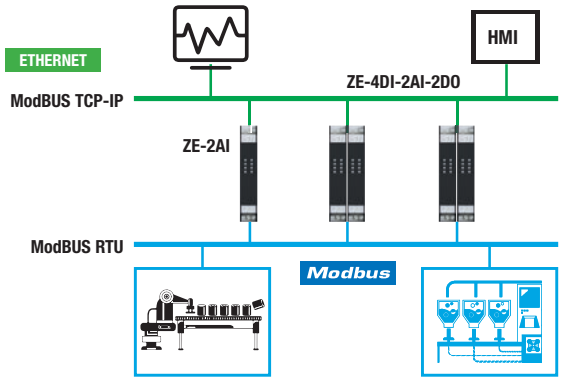
Local control via PLC and remote I/O



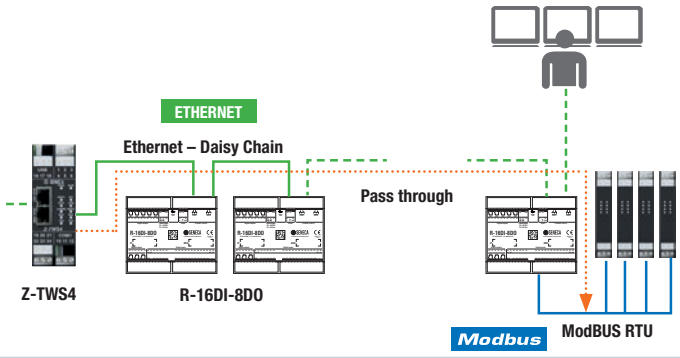
Acquisition and transmission of temperatures to a closed loop control system



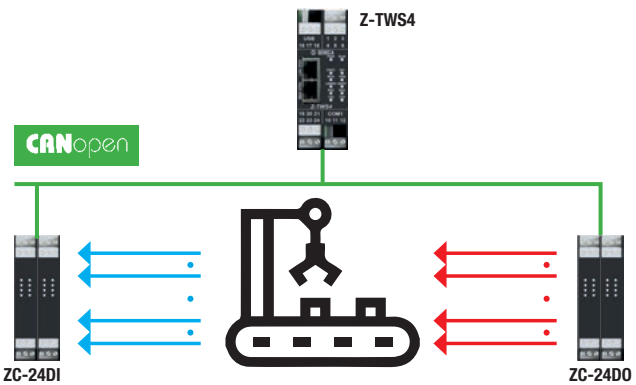
Data acquisition over Ethernet



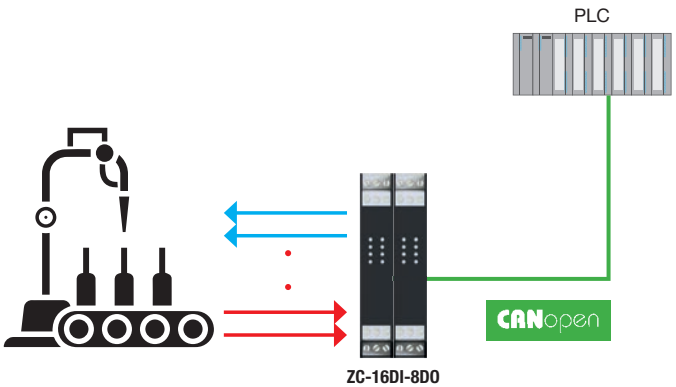
Ethernet Daisy Chain and ModBUS Pass-Through connection



Programmable handling system



Automatic bottling system



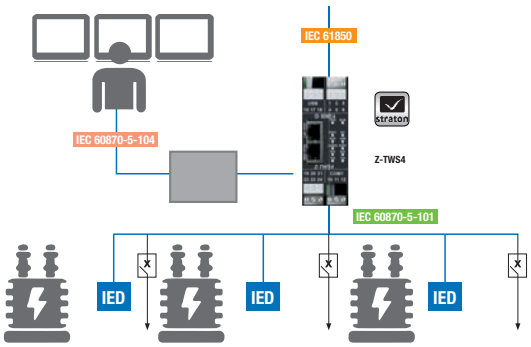
MULTIFUNCTION CONTROLLERS - OVERVIEW

SENECA high connectivity multifunction controllers and RTUs (Z-TWS11, Z-TWS4, Z-PASS2-S, S6001- RTU) combine PLC tasks based on Straton IEC 61131-1 softLPLC platform with web server, datalogger, remote control, remote assistance and energy management features (in compliance with IEC 60870-101/104, IEC 61850 protocols).
The controllers can be used with different architectures and configurations depending on the complexity of the system and the required hardware requirements. SENECA also provides process controllers and flow computers for predefined scenarios such as pump control and pressure boosting units (S6001-PC) and fluid control (Z-FLOWCOMPUTER).

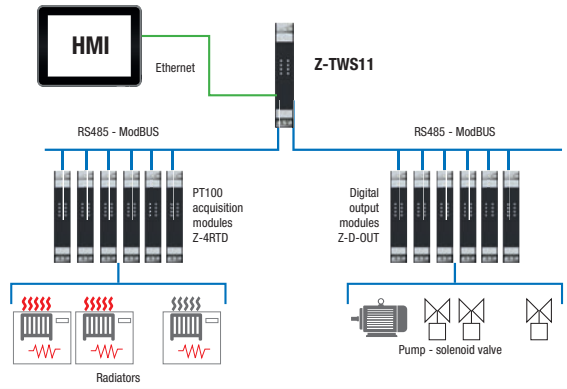
	Z-TWS11	Z-TWS4	Z-PASS2-S	S6001-RTU	S6001-PC	Z-FLOWCOMPUTER
						
MAIN FEATURES						
Built-in I/O	2AI	1DI, 2DO, 1DI/DO	2DI, 2DO, 2Di/DO	15DI+2DI, 8DO, 4AI, 2AO	15DI+2DI, 8DO, 4AI, 2AO	1DI, 3AI, 2DO, 1AO
CPU	ARM 32bit@120MHz	ARM9 32bit@400MHz	ARM9 32bit@400MHz	ARM9 32bit@400MHz	ARM9 32bit@400MHz	ARM 32bit@120MHz
Programming	Straton, Z-NET4	Straton, Z-NET4	Straton, Z-NET4	Straton, Z-NET4	HMI application	HMI application, EASY Setup
Flash	8 MB	1 GB	1 GB	1 GB	1 GB	8 MB
RAM	256 kB	64 MB	64 MB	64 MB	64 MB	256 kB
Programming dimension	246 kB	4 MB	4 MB	4 MB	-	-
PLC var. memory	38 kB	4 MB	4 MB	4 MB	-	-
CONNECTIVITY						
Modem/Router	-	-	3G+ / 4G	3G+	3G+	-
Protocols	ModBUS RTU/TCP, http, ftp, smtp	ModBUS RTU/TCP, CANopen, M-BUS, http, ftp, smtp	ModBUS RTU/TCP, CANopen, M-BUS, http, ftp, smtp, ppp	ModBUS RTU/TCP, CANopen, M-BUS, http, ftp, smtp, ppp	ModBUS RTU/TCP (Slave), http, ftp, smtp, ppp	ModBUS RTU/TCP (Slave), http, ftp,
Energy protocols (opt.)	-	Iec 60870-101/104, IEC 61850	Iec 60870-101/104, IEC 61850	Iec 60870-101/104, IEC 61850	-	-
VPN	-	VPN Box, OpenVPN	VPN Box, OpenVPN	VPN Box, OpenVPN	VPN Box, OpenVPN	-
APN	-	x	x	x	x	-
Ethernet ports	1	2	2	2	1	1
Serial ports	2	3	3	3	1	1
USB ports	1 (Micro)	1 (Host)	1 (Host)	1 (Host)	1 (Host)	1 (Micro)
APPLICATIONS						
Up to 200 I/O	x	-	-	-	-	-
Up to 1.000 I/O	-	x	x	x	-	-
Advanced Automation	-	-	x	x	-	-
Telecontrol / Remote Assistance	-	x	x	x	-	-
Microautomation	x	-	-	-	-	-
Energy Management	-	x	x	x	-	-
Pumps control	-	-	-	-	x	-
Gas / Steam applications	-	-	-	-	-	x

MULTIFUNCTION CONTROL UNITS - APPLICATION SCHEMES

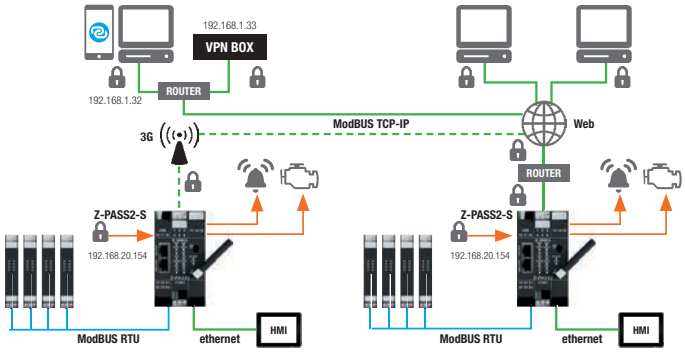
Electrical stations control



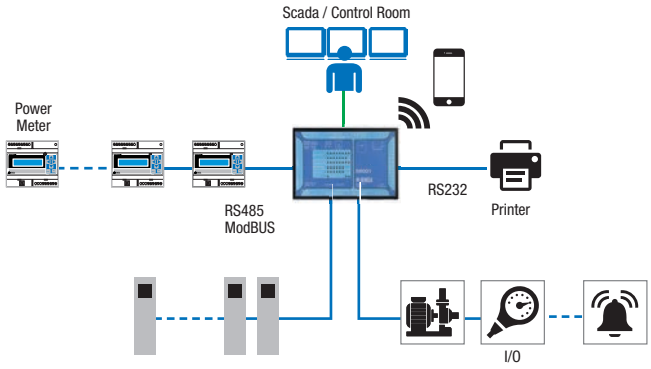
Temperature regulation system



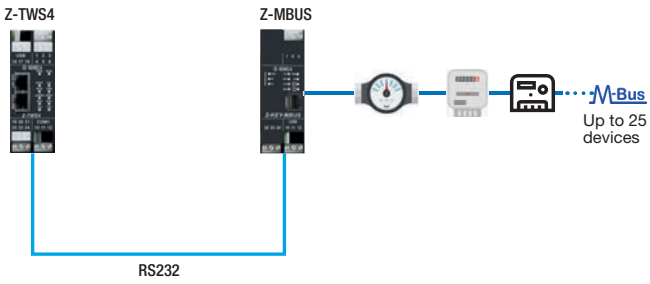
Plant control and remote maintenance



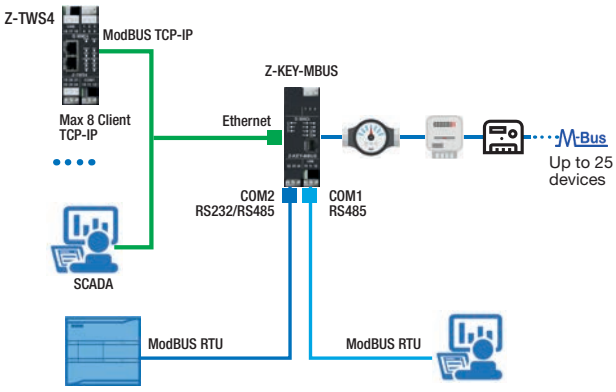
Metering and enegy consumption telecontrol



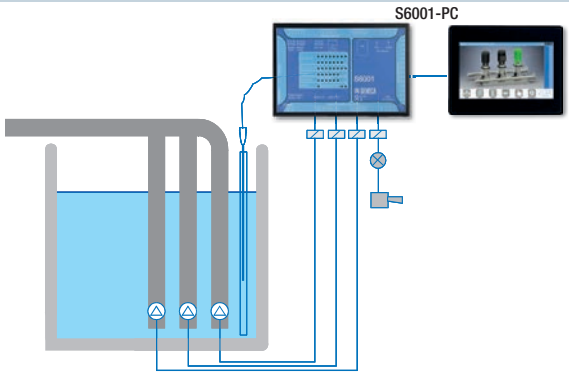
Seneca CPU – M-BUS sensors and meters connection



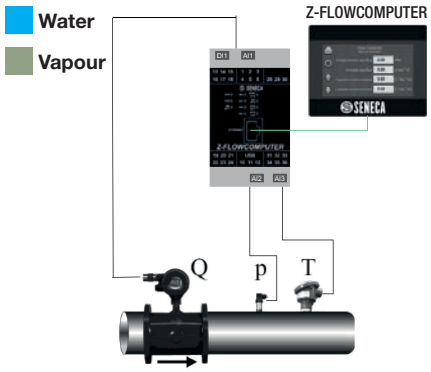
Distributed and multiuser connection with M-BUS sensors and meters



Pumps control



Mass and steam calculation



SOFTWARE PLATFORM

SENECA software suite includes powerful system configurators, programming environments including libraries, acquisition tools, data, events and alarms access and management. Z-NET-4, designed for the configuration of CPUs/controllers, I/O modules and ModBUS devices also enables the management and creation of databases of machine / plant variables (IEC 61131, OPC, trend, log). Alternatively, for quick configuration of the I/O modules is available the EASY SETUP plug&play software, also in Android app version.
The programming strategy of the SENECA controllers is based on the industry standard for IEC 61131 PLCs, in particular the Straton softPLC development environment which includes energy management libraries and protocols. Integrated in the Z-NET4 platform, Web Factory allows to develop html/web supervision pages loaded in the CPUs, to to start with the overall project. Data Recorder and Trend Viewer are flexible tools for data acquisition, trend visualization, events, variables, alarms and more. than managing logs and archives. With the OPC Server technology it is possible to exchange real-time data with Scada and other Client applications.

EASY SETUP
Plug&Play suite for SENECA programmable instruments

Z-NET4
Complete configuration environment for Z-PC Series systems

WEB FACTORY
HMI/Web editor integrato in Z-NET4

DATA RECORDER
HMI/Web Editor (Z-NET4 built-in)

TREND VIEWER
Trend visualization software (Z-NET4 built-in)

STRATON
IEC 61131 programming environment

OPC SERVER
Data exchange and real-time variables management software

	EASY SETUP	Z-NET4	WEB FACTORY	DATA RECORDER	TREND VIEWER	STRATON	OPC Server
License	free	free	free	USB key	free	USB key	USB key
Hardware and I/O configuration	✓	✓					
Full system configuration	✓	✓					
Communication settings	✓	✓		✓		✓	✓
Variables advanced settings		✓				✓	✓
Alarms management		✓		✓		✓	
Control logic		✓				✓	
Remote control functions		✓				✓	
Math functions				✓		✓	
Logs / events archive						✓	
Diagnostic		✓		✓		✓	✓
Data Acquisition	✓	✓	✓	✓		✓	✓
Real-time variables simulation / acquisition	✓	✓	✓	✓		✓	✓
Data visualization (graphics / trends)			✓	✓	✓		
Data import / export					✓		✓
Variables configuration import / export		✓			✓	✓	✓

DATA RECORDER

Data Recorder is an open, scalable and economical software recorder based on Windows PC, ideal for testing sessions, laboratories, rehearsal rooms, monitoring of process measurements. Physical data acquisitions is made through Z-PC Line distributed I/O modules (with or without CPU), and in general from any ModBUS RTU slave standard device.

Communication between hardware and PC can be serial (RS232/RS485/ModBUS RTU) or Ethernet / ModBUS TCP, on wired or wireless physical medium. The licensing is managed with USB key and covers a visualization range from 2 to unlimited channels. The normalized graphic representation can be set with nibs or display (digit). The real-time display offers multiple selection options: groups of channels, visualization range, screen scrolling direction.

TOOLS / OPTIONS

Minimum hardware requirements
O.S. Windows 8 or later
RAM 128 MB
HD 3G
SVGA 800x600

Physical data acquisition via SENECA Z-PC Line remote I/O system

Windows & OPC tested & supported

Hand-held DAQ system ready-to-use

HIGHLIGHTS

Software license from 2 to unlimited channels

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

Logging files (SQLite) displayed with Trend Viewer software tool

Data and project integration with Z-NET configuration suite

PLUS package with math, report, alarm, multiclient functions

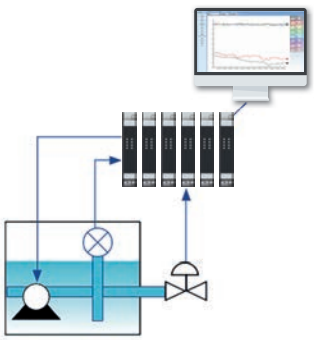
Scheduling recording

Serial, Ethernet, Wireless connection support

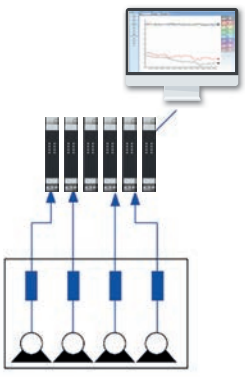
Advanced calibration for temperature sensors

APPLICATION SCHEMES

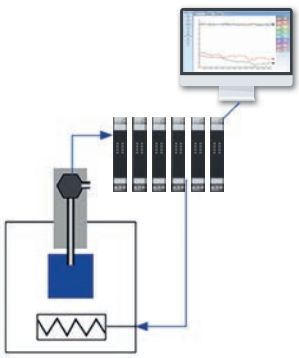
MONITORING OF WATER QUALITY PARAMETERS



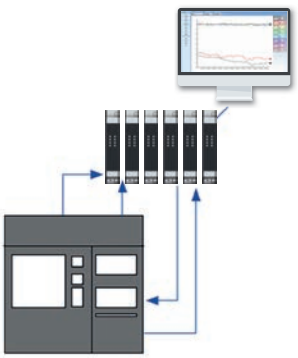
TEST AND DATA ACQUISITION FOR ELECTRIC MOTORS



TEMPERATURE AND HUMIDITY MONITORING



MONITORING OF CLIMATIC CHAMBERS



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