

Z-PC Line

DATA ACQUISITION AND AUTOMATION SYSTEMS



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.

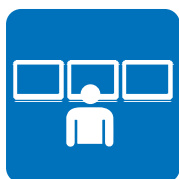
MULTIFUNCTION CONTROL UNITS



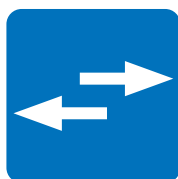
I/O MODULES



SoftPLC
IEC 61131



OPEN TO SCADA
/ OPC / WEB
CLIENT

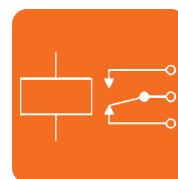


I/O MANAGEMENT
Built-in on board
External up to 1.000 I/O

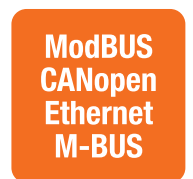


Read, PNP, NPN,
Proximity, Contact

DIGITAL
INPUTS



BUILT-IN CONTROL
FUNCTIONS



SUPPORTED
PROTOCOLS



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



DATA
STORAGE

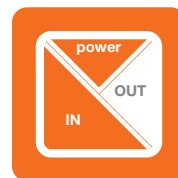


ADVANCED
ALARM
MANAGEMENT

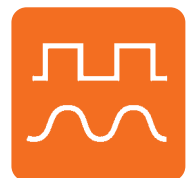


SPST Relay
or Mosfet

DIGITAL
OUTPUTS



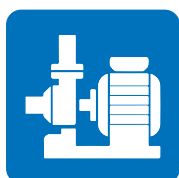
MULTIWAYS
ISOLATION @1,5 kVac



32 BIT COUNTERS
@10kHz



INTEGRATION WITH
THIRD-PARTY
DEVICES



SPECIAL
APPLICATIONS
AND LIBRARIES



DATA EXCHANGE
WITH OPC UA
STANDARD



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)



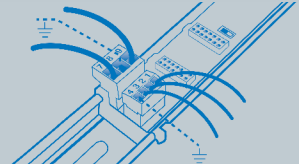
AC/DC SWITCHING
POWER SUPPLY



POWER
TRANSDUCERS



BUS SYSTEM
(power supply/communication)
on DIN rail



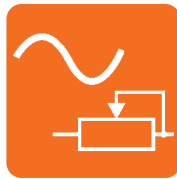
COMMUNICATION INTERFACES



HOT SWAPPING
MODULES



DATA RECORDER
DAQ SOFTWARE



ANALOG
INPUT



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



SERIAL / USB
CONVERTERS



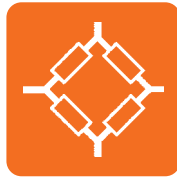
INDUSTRIAL
MODEMS



RESOLUTION UP
TO 16 BITS



CE / UL
APPROVALS



LOAD CELL
INPUT



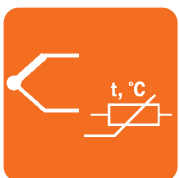
FIBER OPTICS
CONVERTERS



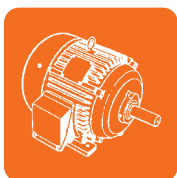
MULTI-CHANNEL
RADIO MODEMS



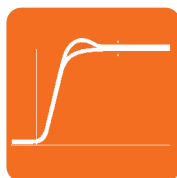
IT PROTOCOLS



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
				
	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 Consumption	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
Weight	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
					
	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 temperature	-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 k Ω ... 100 k Ω 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 k Ω Bipolar direct current ± 20 mA, impedance 100 Ω	Bipolar programmable voltage (± 2.5 Vdc, ± 10 Vdc, impedance >100 k Ω) 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
	 				
	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 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 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 (ohmmeter 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	Thermocouple 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	Thermocouple 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 inputs - 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 supply Error Data transmission Data reception Input status Output status	Power supply 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
 	 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 mm ² IDC10 rear connector for DIN rail Mini USB	Removable screw terminals for conductors up to 2.5 mm ² 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
 	 24-CH digital input module ModBUS/ CANopen	 24-CH digital output module ModBUS/ CANopen	 16 CH digital input - 8 CH digital output module ModBUS/CANopen
GENERAL DATA			
Power supply	10..40 Vdc / 19..28 Vac	10..40 Vdc / 19..28 Vac	10..40 Vdc / 19..28 Vac
Power consumption	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 mm ² 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 mm ² 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.

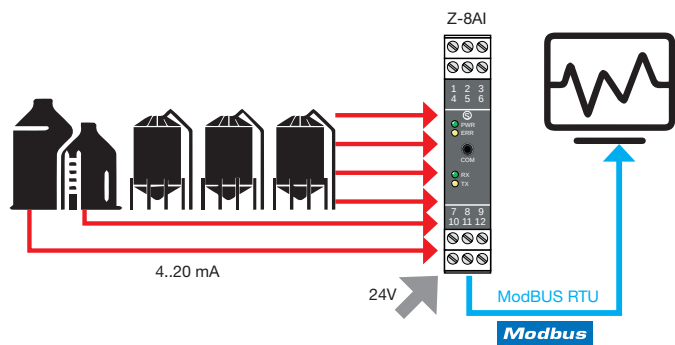
CANopen Z-PC Line modules can be integrated with configurators and master controllers / network managers of third parties, even on existing machines and installations. The advantage of not needing an end-of-line coupler significantly reduces the cost factor for small to medium installations CANopen.

CANOPEN ANALOG I/O MODULES

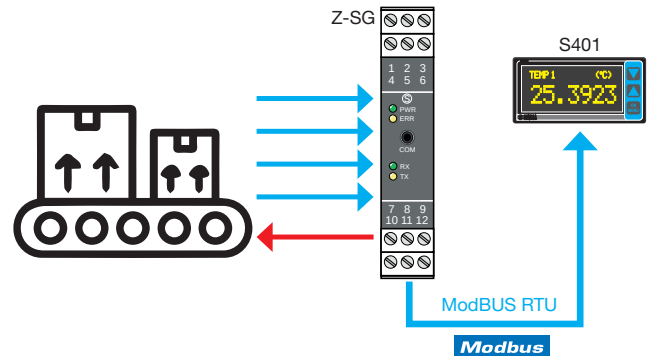
	ZC-8AI	ZC-3AO	ZC-4RTD	ZC-8TC	ZC-SG
					
	8-CH analog (mA, V) input module CANopen	3-CH analog (mA, V) output module CANopen	4-CH thermoresistance CANopen module	8-CH thermocouple CANopen module	1-CH load cell CANopen module
GENERAL DATA					
Power supply	10..40 Vdc / 19..28 Vac	10..40 Vdc / 19..28 Vac	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 M Ω	"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 ± 1 mV/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

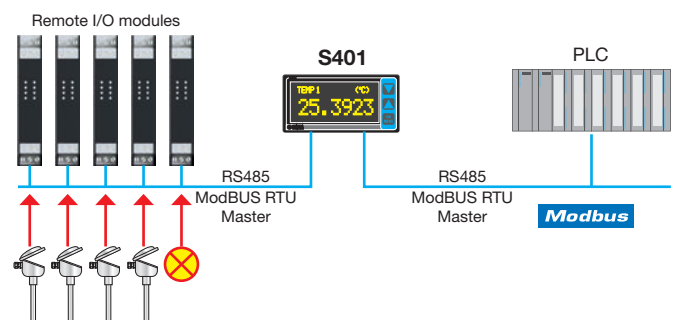
Process measurement and data retransmission via ModBUS RTU



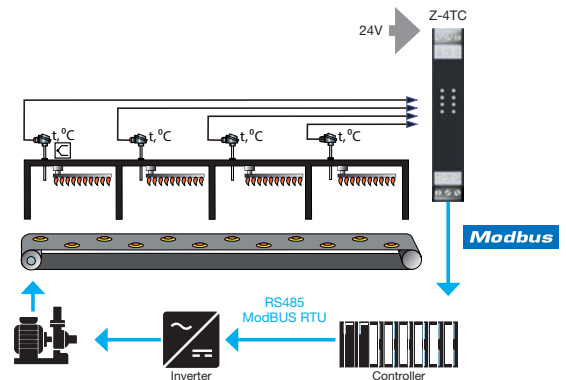
ModBUS acquisition and display for weighing systems



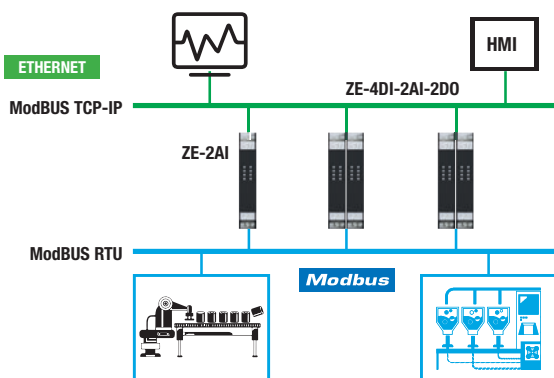
Local control via PLC and remote I/O



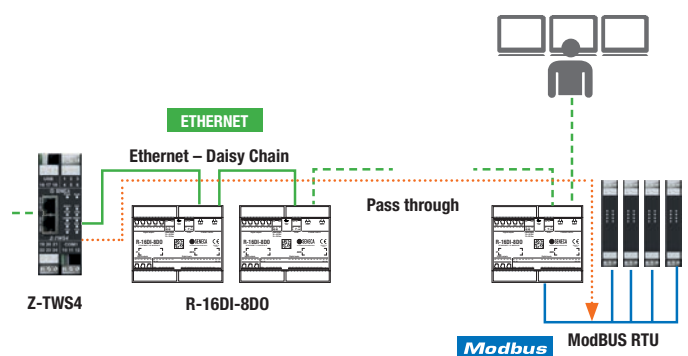
Acquisition and transmission of temperatures to a closed loop control system



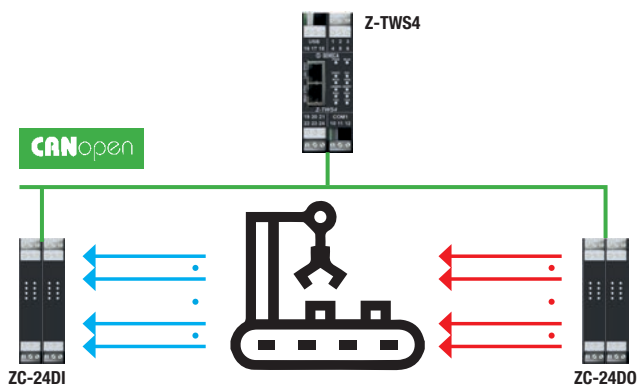
Data acquisition over Ethernet



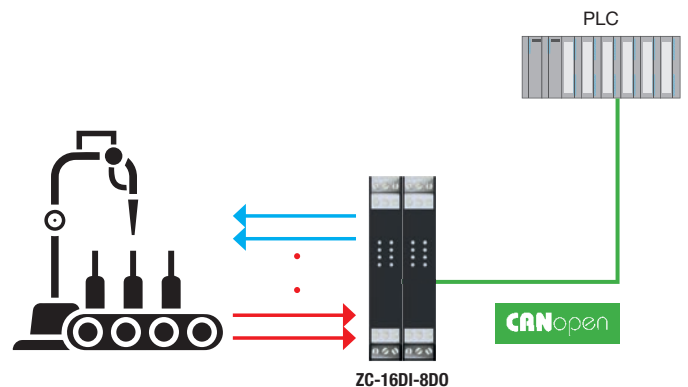
Ethernet Daisy Chain and ModBUS Pass-Through connection



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

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

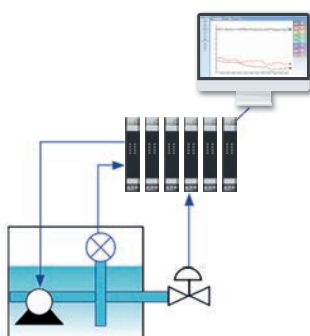


Advanced calibration for temperature sensors

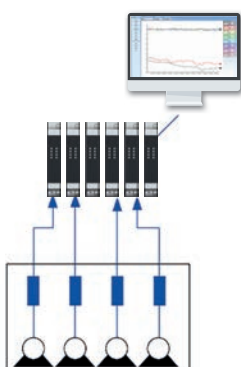


APPLICATION SCHEMES

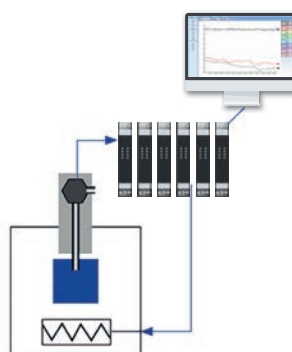
MONITORING OF WATER QUALITY PARAMETERS



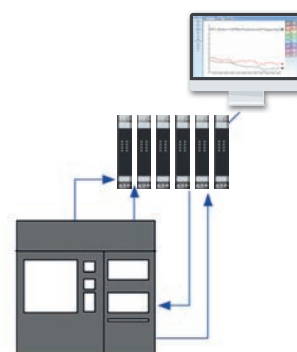
TEST AND DATA ACQUISITION FOR ELECTRIC MOTORS



TEMPERATURE AND HUMIDITY MONITORING



MONITORING OF CLIMATIC CHAMBERS





Z-LINE

MULTISTANDARD SIGNAL CONVERTERS



Z-Line

Multistandard Signal Converters & Isolators

Z-Line Series offers a full range of signal conditioners including analog/digital/serial converters, temperature transmitters, galvanic isolators, splitters, trip amplifiers and math modules. They work at 10-40 Vdc/ 19-28 Vac, 85-265 Vac/dc or are supplied by the loop.

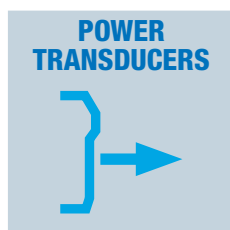
Z-Line modules ensure from 1.500 Vrms to 4.000 Vrms isolation voltage for 1 minute at three points.

They also supply the transducer and can have active/passive input/output and they are designed to be mounted on DIN 46277 rail.



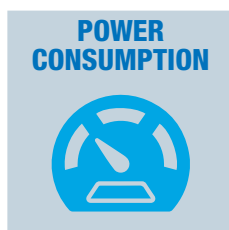
**UNIVERSAL
POWER SUPPLY**

Vac/dc switching;
loop powered



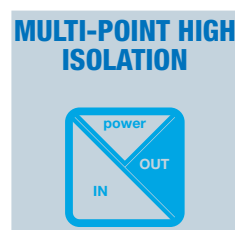
**POWER
TRANSDUCERS**

Min 20 Vdc



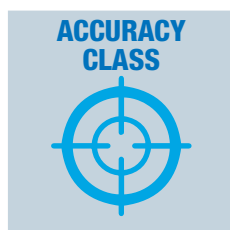
**POWER
CONSUMPTION**

< 2,5 W



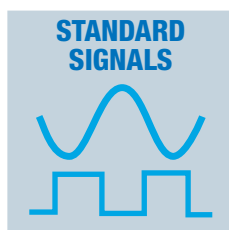
**MULTI-POINT HIGH
ISOLATION**

From 1,5 kVac
up to 4kVac



**ACCURACY
CLASS**

up to 0,1%



**STANDARD
SIGNALS**

mA, mV, A, V, Ohm, RTD,
TC, load cell, Reed, Pnp,
Npn, Hall effect sensor,
Photoelectric sensor,
pulse 24V



STRENGTH

Operating temperature
up to -20...+65%, RH
90%

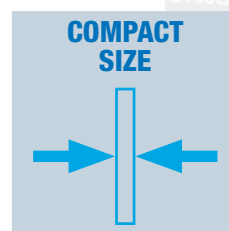


RELIABILITY

MTBF>500.000 h



APPROVALS



**COMPACT
SIZE**

Width 17.5 mm /35 mm

SENECA Z-Line offers three setting options. Almost all of the existing models allows configuration of standard parameters using the dip switches on board. In addition to the standard configuration some models can be configured for wider functionalities by using the PC software "EASY SETUP". Moreover, certain models are equipped with a frontal Micro USB port for an easier configuration through "EASY SETUP APP", a specific App for Android.

FLEXIBLE CONFIGURATION

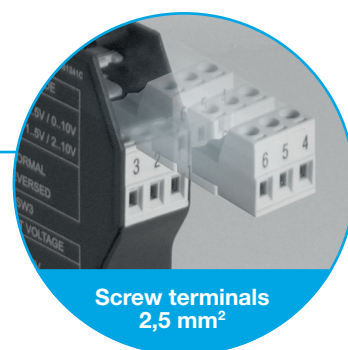
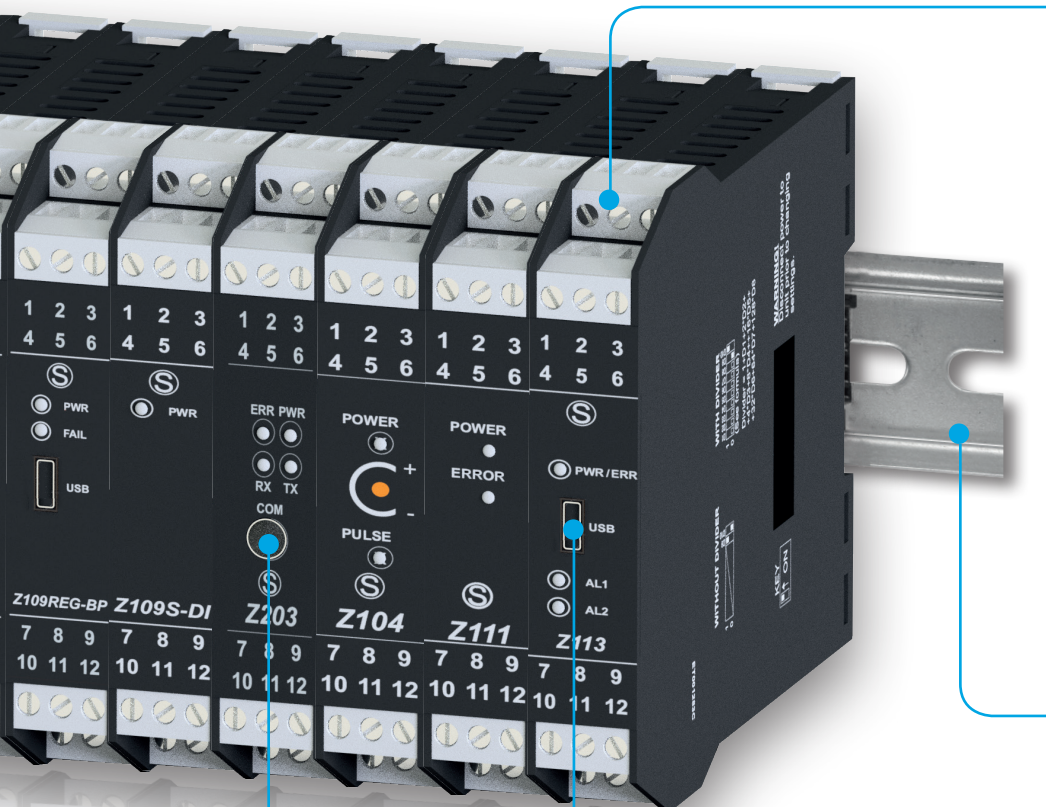
DIP Switch



Software EASY SETUP



EASY SETUP APP



ANALOG CONVERTERS

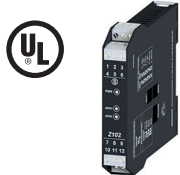
	Z109REG	Z109REG2-1	Z109REG2-H
	  Universal isolator/converter	   Universal isolator/converter with advanced functions	  High performance universal converter, 85-265 V
GENERAL DATA			
Power Supply	10..40 Vdc; 19..28 Vac; (50..60 Hz)	9..40 Vdc; 19..28 Vac; (50..60 Hz)	85..265 Vac/dc
Power transducers	Active input 2 wire (min 18 Vdc)	Active input 2 wire (min 20 Vdc)	Active input 2 wire (min 20 Vdc)
Power Consumption	2.5 W	2.5 W (max) 1.6 W (24 Vdc, 20 mA)	2.5 W (max) 1.6 W (24 Vdc, 20 mA)
Isolation	1.500 Vac, 3 way Against surge pulses 400W/ms	1.500 Vac, 3 way 3.750 Vac (power supply / input -output) Against surge pulses 400W/ms	1.500 Vac, 3 way 3.750 Vac (power supply / input -output) Against surge pulses 400W/ms
Status indicators	Power supply Error	Power supply Error Alarm	Power supply Error Alarm
Response time	35 ms	35 ms (11 bit)..140 ms (16 bit)	35 ms (11 bit)..140 ms (16 bit)
Interface	3,5mm front jack RS232 (COM)	Micro USB	3,5 mm front jack RS232 – COM
Accuracy	0,1%	0,1%	0,1%
Thermal drift	0.01%/°K	0.01%/°K	0.01%/°K
Linearity	0,05% (V,I), 0,2% (RTD), 1°C (TC)	0,05% / 0.4%	0,05% / 0.4%
Settings	Dip-switches Software (EASY SETUP)	Dip-switches Software / App (EASY SETUP)	DIP-switches Software (EASY SETUP)
Operating Temperature	-20..+60°C	-20..+60 °C	-20..+60 °C
Dimensions (w x h x d)	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm
Connections	Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm²	Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm²	Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm²
Weight	200 g	200 g	200 g
Approvals	CE	CE- UL-UR CSA	CE- UL-UR CSA
Norms	EN 50081-1, EN 50082-2, EN 61010-1	EN 61000-6-4 / 2002, EN 61000-2-2/2005 / EN 61010-1, EN 60742	EN 61000-6-4 / 2002, EN 61000-2-2/2005 / EN 61010-1, EN 60742
INPUT DATA			
Channels	1	1 analog 1 strobe	1 analog 1 strobe
Type	VOLTAGE Bipolar 0..2, 0..5, 0..10 V CURRENT Bipolar 0..20 mA RTD Pt100 (-200..+600°C) THERMOCOUPLE Tipo J, K, R, S, T, E, B, N POTENTIOMETER 0,5..15 kΩ	VOLTAGE Bipolar from 75 mV to 20 V Resolution 15 bit + sign CURRENT Bipolar up to 20 mA Resolution 1 µA RTD Pt100, Pt500, Pt1000, Ni100, KTY81, KTY84, NTC Measure 2, 3, 4 wires Range: -200..600 °C Resolution 0,1°C THERMOCOUPLE Type J, K, R, S, T, E, B, N Resolution 2,5 µV POTENTIOMETER: 500 Ω ..100 kΩ RHEOSTAT: 500 Ω..25 kΩ STROBE: alternative to the relay output	VOLTAGE Bipolar from 75 mV to 20 V Resolution 15 bit + sign CURRENT Bipolar up to 20 mA Resolution 1 µA RTD Pt100, Pt500, Pt1000, Ni100, KTY81, KTY84, NTC Measure 2, 3, 4 wires Range: -200..600 °C Resolution 0,1°C THERMOCOUPLE Type J, K, R, S, T, E, B, N Resolution 2,5 µV POTENTIOMETER: 500 Ω ..100 kΩ RHEOSTAT: 500 Ω..25 kΩ STROBE: alternative to the relay output
OUTPUT DATA			
Channels	1	1 analog, 1 relay	1 analog, 1 relay
Type	VOLTAGE 4 scales: 0..1, 0..5, 0..10, 2..10 V CURRENT 2 scales: 0/4..20 mA	VOLTAGE 4 scales: 0..1, 0..5, 0..10, 2..10 V Min load resistance: 2.000 Ω CURRENT 2 scales: 0/4..20 mA (active/passive) Max load resistance: 600 Ω RELAY Alternative to the strobe NC / NA in case of alarm	VOLTAGE 4 scales: 0..1, 0..5, 0..10, 2..10 V Min load resistance: 2.000 Ω CURRENT 2 scales: 0/4..20 mA (active/passive) Max load resistance: 600 Ω RELAY Alternative to the strobe NC / NA in case of alarm
ORDER CODES	Z109REG	Z109REG2-1	Z109REG2-H

Z109UI2-1	Z109REG-BP	Z109S-DI	Z109S
   	  		 
DC Current/Voltage to DC Current/ Voltage isolator/converter	Universal converter with isolated bipolar output	Wide range Current Loop Isolator	DC Current isolator
10..40 Vdc 19..28 Vac (50..60 Hz) Active input 2 wire (min 20 Vdc) 2.5 W 1.500 Vac, 3 way Against surge pulses 400W/ms Power supply 35 ms (11 bit)..140 ms (16 bit) 3,5mm front jack RS232 (COM) Micro USB 0,1% 0.01%/°K 0,05 % (V _I), 0,01% (V _{out}) Dip-switches Jumper Software / App (EASY SETUP) -10..+60 °C 17,5 x 100 x 112 mm Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm ² 200 g CE- UL-UR CSA EN 55011, EN 61000-4-2, EN 61000-4-4, EN 50140 / 141	10..40 Vdc 19..28 Vac (50..60 Hz) Active input 2 wire (17 Vdc) 2.5 W 1.500 Vac, 3 way Power supply Error Alarm 35 ms (11 bit)..140 ms (16 bit) Micro USB 0,1% 0.01%/°K Dip-switches Software / App (EASY SETUP) Jumper -20..+65°C 17,5 x 100 x 112 mm Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm ² 200 g CE EN 61000-6-2; EN 61000-6-4; EN 61010-1	10..40 Vdc 19..28 Vac (50..60 Hz) Active input 2 wire (17 Vdc) 2.5 W 3.500 Vac, 3 way Power supply < 200 us - 0,2% or 10 uA 0.02%/°K -20..+60°C 17,5 x 100 x 112 mm Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm ² 200 g CE EN 61000-6-2; EN 61000-6-4; EN 61010-1	9..40 Vdc 19..28 Vac; (50..60 Hz) Active input 2 wire (min 20 Vdc) 2,5W 1.500 Vac, 3 way Power supply < 60 ms 0,20% 0,02 % f.s. / °C 0,05% -20..+60°C 17,5 x 100 x 112 mm Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm ² 200 g CE - UL EN 55011, EN 61000-4-2, EN 61000-4-4, EN 50140 / 141
1 VOLTAGE Bipolar da 75 mV a 20 V Resolution 15 bit + sign CURRENT Bipolar up to 20 mA Resolution 1 µA	1 VOLTAGE Bipolar from 75 mV to 20 V CURRENT Bipolar up to 20 mA RTD Pt100, Pt500, Pt1000, Ni100, KTY81,KTY84, NTC Measure 2,3, 4 wires THERMOCOUPLE Type J, K, R, S, T, E, B, N POTENTIOMETER: 500 Ω ..100 kΩ RHEOSTAT: 500 Ω..25 kΩ	1 CURRENT 0 - 20 mA or 4 - 20 mA	1 CURRENT 2 scales: 0/4..20 mA
1 VOLTAGE 4 scales: 0..1, 0..5, 0..10, 2..10 V Min load resistance: 2.000 Ω CURRENT 2 scales: 0/4..20 mA (active/passive) Max load resistance: 600 Ω	1 CURRENT -20 – +20 mA Maximum load resistance 500Ω VOLTAGE -10 – +10 V Minimum load resistance 1 k Ω	1 CURRENT 0 - 20 mA or 4 - 20 mA Max load 600 Ω	1 CURRENT 2 scales: 0/4..20 mA Max resistance load: 600 Ω
Z109UI2-1	Z109REG-BP	Z109S-DI	Z109S

ANALOG CONVERTERS

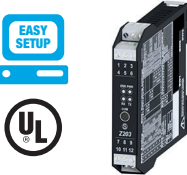
	Z102	Z110S	Z110D	Z170REG-1
				
	Potentiometer to DC current / voltage isolator / converter	DC current isolator (self-powered) single channel	DC current isolator (self-powered) double channel	DC duplicator isolator with universal input, 2-CH output, micro USB
GENERAL DATA				
Power Supply	9..30 (option) - 19..40 Vdc; 19..28 Vac	Self-powered by input loop	Self-powered by input loop	10..40 Vdc; 19..28 Vac
Power transducers				Yes, max 25 mA, 17 Vdc
Power consumption (max)	2,5 W			0,5..2 W
Isolation	1.500 Vac (3 ways)	1.500 Vac	1.500 Vac	1.500 Vac (4 vie)
Protection degree	IP20	IP20	IP20	IP20
LED status indicators	Power Supply			Power Supply Alarm
Response time	< 40 ms	< 100 ms	< 100 ms	< 25 ms
Interface				Micro USB
PLC communication				
Accuracy class	0,2%	0,1%	0,1%	0,1%
Thermal Drift	0,02 % f.s. / °C	0,02 % f.s. / °C	0,02 % f.s. / °C	0,01% /K
Linearity	0,05%	0,1 % f.s.	0,1 % f.s.	<1% (input), 0,01% (output)
Settings	DIP switch			DIP switch Software (EASY SETUP) App (EASY SETUP)
Operating temperature	0..+50°C	0..+50°C	0..+50°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
Connection	Removable 3-way screw terminals, 5 mm pitch, cable section 0,25-2,5 mm ²	Removable 3-way screw terminals, 5 mm pitch, cable section 0,25-2,5 mm ²	Removable 3-way screw terminals, 5 mm pitch, cable section 0,25-2,5 mm ²	Removable 3-way screw terminals, 5 mm pitch, cable section 0,25-2,5 mm ²
Case	Nylon 6 30% glass fiber	Nylon 6 30% glass fiber	Nylon 6 30% glass fiber	Nylon 6 30% glass fiber
Mounting	35 mm DIN rail (IEC/EN 60715)	35 mm DIN rail (IEC/EN 60715)	35 mm DIN rail (IEC/EN 60715)	35 mm DIN rail (IEC/EN 60715)
Weight	200 g	200 g	200 g	200 g
Approvals	CE	CE	CE	CE, UL
Norms	EN 61000-6-4, EN 61000-6-2, EN 61010-1	EN 61000-6-4, EN 61000-6-2, EN 61010-1	EN 61000-6-4, EN 61000-6-2, EN 61010-1	EN 61000-6-4, EN 61000-6-2, EN 61010-1
INPUT DATA				
Channels	1	1	2	1
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, from 200 Ω to 1 M Ω	• CURRENT (mA) 4..20 mA	• CURRENT (mA) 4..20 mA	• VOLTAGE (V) settable scale: 0..10 V • CORRENT (mA): settable scale: 0..20 mA (active/passive module) • POTENTIOMETER settable scale: 1 kΩ ..100 kΩ • THERMOCOUPLE: J,K,R,S,T,B,E,N • THERMORESISTANCE: Pt100, Pt500, Pt1000, Ni100 - Resolution 14 bit - Settable sampling time from 5 to 20 ms
OUTPUT DATA				
Channels	1	1	2	2
Type	• VOLTAGE (V) 4 scale: 0..5, 1..5, 0..10, 0..10 V Load impedance > 2,5 K Ω • CURRENT (mA) 2 scales: 0..20, 4..20 mA Loop impedance < 600 Ω	• CURRENT (mA) 4..20 mA	• CURRENT (mA) 4..20 mA	• VOLTAGE (V) settable scale: 0..10 V • CURRENT (mA) settable scale: 0..20 mA (active/passive) - Resoluion 14 bit
ORDER CODES	Z102	Z110S	Z110D	Z170REG-1

A/D CONVERTERS

Z190	Z-SG	Z-4AI-D	Z-4TC-D
			
DC current / voltage adder subtracter	Strain gauge DC current / voltage isolator / converter	4-CH DC current / voltage A/D converter	4-CH DC thermocouple A/D converter
9..30 (option) - 19..40 Vdc; 19..28 Vac Yes, active input 2 wires (min 20 vdc) 2,5 W 1.500 Vac (3 vie) IP20	10..40 Vdc; 19..28 Vac 2 W 1.500 Vac (3 vie) IP20	9..30 (option) - 19..40 Vdc; 19..28 Vac 2,5 W 1.500 Vac (3 ways) IP20	9..30 (option) - 19..40 Vdc; 19..28 Vac 2 W 1.500 Vac (3 ways) IP20
Power Supply	Power Supply Error Data transmission Data receiving < 10 ms	Power Supply RST Signal status Data transmission Data receiving	Power Supply RST Signal status Data transmission Data receiving
	Front panel 3,5 mm jack, S232 (COM) IDC10 ModBUS RTU RS485	Front panel 3,5 mm jack, RS232 (COM)	Front panel 3,5 mm jack, RS232 (COM)
0,2% 0,02% f.s./°C 0,05% DIP switch	0,01% 0,0025 % f.s. / °C 0,01% DIP switch Software (EASY SETUP)		
0..+50°C 17,5 x 100 x 112 mm Removable 3-way screw terminals, 5 mm pitch, cable section 0,25-2,5 mm² Nylon 6 30% glass fiber 35 mm DIN rail (IEC/EN 60715) 200 g CE	-10..+65°C 17,5 x 100 x 112 mm Removable 3-way screw terminals, 5 mm pitch, cable section 0,25-2,5 mm² Nylon 6 30% glass fiber 35 mm DIN rail (IEC/EN 60715) 200 g CE	0..+50°C 17,5 x 100 x 112 mm Removable 3-way screw terminals, 5 mm pitch, cable section 0,25-2,5 mm² Nylon 6 30% glass fiber 35 mm DIN rail (IEC/EN 60715) 200 g CE, UL	0..+50°C 17,5 x 100 x 112 mm Removable 3-way screw terminals, 5 mm pitch, cable section 0,25-2,5 mm² Nylon 6 30% glass fiber 35 mm DIN rail (IEC/EN 60715) 200 g CE, UL
EN 61000-6-4, EN 61000-6-2, EN 61010-1	EN 61000-6-4, EN 61000-6-2, EN 61010-1	EN 61010-1, EN 50081-2, EN 50082-2, EN 60742, IEC 61131	EN 61010-1, EN 50081-2, EN 50082-2, EN 60742, IEC 61131
2 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 connection: loop powered 20 Vdc non stabilized Passive connection: input impedance 100 Ω	1 analog, 1 digital • ANALOG Load cell (strain gauge), 4 / 6 wires connection, min 87 Ω for 1..4 load cells (350 Ω) or 1..8 load cells (1.000 Ω); Sensitivity: 1..64 mV/V • DIGITAL Tare calibration	4 • VOLTAGE (V) 2..10 V f.s. Resolution 16.000 points Impedance: 100 kΩ • CURRENT (mA) ±20 mA (bipolar) Resolution 16.000 points Impedance: 100 kΩ	4 • VOLTAGE (V) ±80mV Impedance: 10 MΩ • THERMOCOUPLE Type J,K,R,S,T,E,B,N
1 • VOLTAGE (V) 4 scales: 0..5, 0..10, 1..5, 2..10 V, min load resistance 2 kΩ • CURRENT (mA) 2 scales: 0/4..20 mA Active / passive connection (max loop impedance 600 Ω)	1 analogico, 1 digitale • CURRENT (mA) 0..20, 4..20 mA • VOLTAGE (V) 0..10, 0..5 Vdc • DIGITAL Weight limit threshold		
Z190	Z-SG	Z-4AI-D	Z-4TC-D

ELECTRIC METER CONVERTERS

	Z201	Z201-H	Z202
			
	AC Current isolator converter, 10..40 Vdc;19..28Vac	AC Current isolator converter, 85..265 V	AC Voltage isolator converter, 10..40 Vdc;19..28Vac
GENERAL DATA			
Power Supply	10..40 Vdc; 19..28 Vac	85..265 Vac/dc	10..40 Vdc; 19..28 Vac
Power Consumption	< 2,5 W	< 2,5 W	< 1,5 W
Isolation	3750 Vac input/output and input/power supply; 1500 Vac output/power supply.	4000 Vac input/power supply; 4000 Vac output/power supply.	3750 Vac input/output and input/power supply; 1500 Vac output/power supply.
Status indicators	Power supply	Power supply	Power supply
Interface			
Response time	<200ms	<100ms.	30ms.
Accuracy	0,3%	0,3%	0,25%
Thermal drift	+200 ppm/K	+200 ppm/K	+150 ppm/K
Operating Temperature	0..+55°C	-10..+65°C	0..+60°C
Dimensions (w x h x d)	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm
Connections	Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm ²	Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm ²	Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm ²
Weight	200 g	200 g	200 g
Settings	Dip-switch Jumper (Output range)	Dip-switch Jumper (Output range)	Dip-switch Jumper (Output range)
Approvals	CE	CE	CE
Norms	EN 61000-6-4, EN 61000-6-2, EN 61010-1, EN 60742, IEC 61131	EN 61000-6-4, EN 61000-6-2, EN 61010-1, EN 60742, IEC 61131	EN 60688+A1+A2, EN 61000-6-4, EN 61000-6-2, EN 61010-1, EN 60742, IEC 61131
INPUT DATA			
Nr	1	1	1
Type	AC CURRENT 0..5 / 0..10 A ac	AC CURRENT 0..5 / 0..10 A ac	AC VOLTAGE 0..500 Vac Input impedance: 2000 Ω /V Frequency: 10 Hz..1 kHz
OUTPUT DATA			
Channels	1	1	1
Type	CURRENT Active or passive: 0..20 mA or 4..20 mA * Maximum load resistance 600 Ohm VOLTAGE 0..5 V, 1..5 V, 0..10 V, 2..10 V Minimum load resistance: 2500 Ohm	CURRENT Active or passive: 0..20 mA or 4..20 mA * Maximum load resistance 600 Ohm VOLTAGE 0..5 V, 1..5 V, 0..10 V, 2..10 V Minimum load resistance: 2500 Ohm	CURRENT Active or passive: 0..20 mA or 4..20 mA Maximum load resistance 600 Ohm VOLTAGE 0..5 V, 1..5 V, 0..10 V, 2..10 V Minimum load resistance: 2500 Ohm
ORDER CODES	201	Z201-H	Z202

Z202-H	Z202-LP	Z203-1	Z204-1
 AC Voltage isolator converter, 85..265 V	 AC/DC Voltage isolator converter, loop powered	 Single phase power meter	 AC/DC voltage isolator converter TMRS
85..265 Vac/dc	Self-powered from the input loop	10..40 Vdc 19..28 Vac (50..60 Hz) < 2,5 W	10..40 Vdc 19..28 Vac (50..60 Hz) 1 W
< 1,5 W	< 1mA		
4.000 Vac input/power supply 4.000 Vac output/power supply Power supply	4000 Vac input/output Power supply	3750 Vac input/output/power supply Power Supply, Error, RS485 communication	4000 Vac input/power supply and input/output 1500 Vac output/power supply Power Supply, Error, RS485 communication
		RS485 (backplane), 1200..115200 Baud bps, ModBUS RTU protocol RS232 (jack stereo 3.5 mm front connector for configuration): baud rate, address, parity, data/stop bit	RS485 (backplane), 1200..115200 Baud bps, ModBUS RTU protocol RS232 (jack stereo 3.5 mm front connector for configuration): baud rate, address, parity, data/stop bit
<100ms.	< 100 ms	< 10 ms	For a step variation: 1s from 10 to 90 %.
0,3%	0,3%	0,5%	0,5% input; 0,1% outputs.
+150 ppm/K	+150 ppm/K	+150 ppm/K	+100 ppm/K
-10..+65°C	-20..+65°C	-10..+65°C	-20..+65°C
17,5 x 100 x 112 mm	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm	35 x 100 x 112 mm
Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm ²	Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm ²	Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm ² RS485 bus connection	Removable 3-way screw terminals, 5 mm pitch. Standard 4 mm banana sockets RS485 bus connection Frontal jack 3.5 mm for module configuration
200 g	140 g	140 g	140 g
Dip-switch Jumper (Output range)	Dip-switch (Input range)	Dip-switch (address, baud rate, line terminator, input range) EASY-SETUP (Plug&Play software)	Dip-switch (address, baud rate, line terminator, input range) EASY-SETUP (Plug&Play software)
CE	CE	CE - UL	CE
EN 60688+A1+A2, EN 61000-6-4, EN 61000-6-2, EN 61010-1, EN 60742, IEC 61131	EN 61000-6-4, EN 61000-6-2, EN 61010-1, EN 60742, IEC 61131	EN 61000-6-4, EN 61000-6-2, EN 61010-1, EN 60742, IEC 61131	EN 61000-6-4, EN61000-6-2, EN61010-1
1	1	1 (single phase load)	1
AC VOLTAGE 0..500 Vac Input impedance: 2000 Ω /V Frequency: 10 Hz..1 kHz	AC VOLTAGE 0..500 Vac DC VOLTAGE 0..540 Vdc Maximum Voltage 710 Vpk Frequency DC / 20 Hz..400 Hz	AC VOLTAGE Up to 500 Vac, frequency 35 to 75 Hz. AC CURRENT Input range: 5 Arms, Max peak factor 3, Max Current 15 A, Frequency 35 to 75 Hz.	DC VOLTAGE 0..1200 Vdc Input impedance 4 MΩ AC VOLTAGE 0..850 Vac Input impedance 4 MΩ Frequency 30Hz – 60Hz
1	1	1 analog, 1 digital	1
CURRENT Active or passive: 0..20 mA or 4..20 mA Maximum load resistance 600 Ohm VOLTAGE 0..5 V, 1..5 V, 0..10 V, 2..10 V Minimum load resistance: 2500 Ohm	CURRENT Passive, 4..20 mA	CURRENT 0..20 mA, 4..20 mA, maximum load resistance 500 Ohm VOLTAGE 0..10 Vdc, 0..5 Vdc, minimum load resistance 2000 Ohm DIGITAL Passive digital Output for pulses (energy counter)	CURRENT 0..20 mA, 4..20 mA, maximum load resistance 500 Ohm VOLTAGE 0..10 Vdc, 0..5 Vdc, minimum load resistance 2000 Ohm DIGITAL Passive digital Output for pulses (energy counter)
Z202-H	Z202-LP	Z203-1	Z204-1

RELAYS CONDITIONERS

	Z112A	Z112D	Z113S	Z113D	Z113T	Z113-1
						
	On/Off sensors digital amplifier, single channel	On/Off sensors digital amplifier, double channel	DC Current / Voltage alarm trip module, 1 relay output	DC Current / Voltage alarm trip module, 2 relay output	DC Current / Voltage alarm trip module, 3 relay output	Double threshold with universal analog input
GENERAL DATA						
Power Supply	19..40 (9..30 opt.) Vdc; 19..28 Vac; (50..60 Hz)	19..40 (9..30 opt.) Vdc; 19..28 Vac; (50..60 Hz)	19..40 (9..30 opt.) Vdc; 19..28 Vac; (50..60 Hz)	19..40 (9..30 opt.) Vdc; 19..28 Vac; (50..60 Hz)	19..40 (9..30 opt.) Vdc; 19..28 Vac; (50..60 Hz)	10-40 Vdc, 19-28 Vac (50 - 60 Hz)
Power transducers	Yes, active input 2 wire (min 20 Vdc)	Yes, active input 2 wire (min 20 Vdc)	Yes, active input 2 wire (min 20 Vdc)	Yes, active input 2 wire (min 20 Vdc)	Yes, active input 2 wire (min 20 Vdc)	Yes, active input 2 wire
Power Consumption	2.5 W	2.5 W	2.5 W	2.5 W	2.5 W	2.5 W
Isolation	1.500 Vac (power supply/input) 4.000 Vac (input/power supply/output)	1.500 Vac	1.500 Vac (power supply/input) 4.000 Vac (input/power supply/output)	1.500 Vac	1.500 Vac	1.500 Vac, 3 way
Status indicators	Power Supply Relay	Power Supply Relay	Power Supply Overtaking limit	Power Supply Overtaking limit	Power Supply Overtaking limit	Power supply Alarm Micro USB frontal plug
Interface						
Response time						
Accuracy	±0,01% /°C	±0,01% /°C	±0,01% /°C	±0,01% /°C	±0,01% /°C	0.01%/°K
Thermal drift						
Linearity			0,05%	0,05%	0,05%	
Settings	Dip-switches: input type, output retransmission, divider circuit settable from 1 to 256 Trimmer: pulse duration (100..500ms)	Dip-switches: input type, output retransmission, divider circuit settable from 1 to 256 Trimmer: pulse duration (100..500ms)	DIP switches: input type, functions (relays activation, min/max value alarm) Trimmer: Setpoint alarms (1..100% signal control) Delay (0,3..30 s) Hysteresis (2..15% of full-scale)	DIP switches: input type, functions (relays activation, min/max value alarm) Trimmer: Setpoint alarms (1..100% signal control) Delay (0,3..30 s) Hysteresis (2..15% of full-scale)	DIP switches: input type, functions (relays activation, min/max value alarm) Trimmer: Setpoint alarms (1..100% signal control) Delay (0,3..30 s) Hysteresis (2..15% of full-scale)	Dip-switches: input type, output, start scale, end scale. EASY SETUP software (all parameters))
Operating Temperature	0..+50 °C	0..+50 °C	0..+50 °C	0..+50 °C	0..+50 °C	-10...+65°C
Dimensions (w x h x d)	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm
Connections	Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm²	Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm²	Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm²	Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm²	Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm²	Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm²
Weight	200 g	200 g	200 g	200 g	200 g	200 g
Approvals	CE	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	EN61000-6-4; EN61000-6-2, EN 61010-1
INPUT DATA						
Channels	1	2	1	1	1	1
Type	PULSES Contact optoisolated Reed npn 2/3 wires- 12..24 Vdc, pnp 3 wires, power supply 24 Vdc Naur Pulses 24 Vdc Photoelectric sensor Hall effect sensor Max frequency 400 Hz	PULSES Contact optoisolated Reed npn 2/3 wires- 12..24 Vdc, pnp 3 wires, power supply 24 Vdc Naur Pulses 24 Vdc Photoelectric sensor Hall effect sensor Max frequency 10 Hz	CURRENT: 0..20, 4..20 mA active/passive Input impedance 100 Ω VOLTAGE: 0.5, 1..5, 0..10, 2..10 Vdc Input impedance : 500 KΩ	CURRENT: 0..20, 4..20 mA active/passive Input impedance 100 Ω VOLTAGE: 0.5, 1..5, 0..10, 2..10 Vdc Input impedance : 500 KΩ	CURRENT: 0..20, 4..20 mA active/passive Input impedance 100 Ω VOLTAGE: 0.5, 1..5, 0..10, 2..10 Vdc Input impedance : 500 KΩ	VOLTAGE up to 10 V Bipolar current up to 20 mA THERMORESISTANCE: Pt100, Pt500, Pt1000, Ni100 THERMOCOUPLE type: J,K,R,S,T,B,E,N POTENTIOMETER up to 100 kΩ
OUTPUT DATA						
Channels	1	2	1	2	3	2
Type	RELAY SPDT 1A - 30Vdc; 5A - 250Vac (resistive load)	RELAY SPST max load 5A - 250V (resistive load)	Relay SPDT, 1A - 30Vdc; 5A - 250Vac (resistive load)	Relay SPST, max load 0,1A - 30Vac/dc (10VA resistive load)	Relay SPST, max load 0,1A - 30Vac/dc (10VA resistive load)	RELAYS SPST N.O. position with common Max RELAY current 3 A@ 250V; 3 A@ 30V Max RELAY voltage 250 V CAT. II
ORDER CODES	Z112A	Z112D	Z113S	Z113D	Z113T	Z113-1

TEMPERATURE CONVERTERS

FREQUENCY CONVERTERS

	Z109PT2-1	Z109TC2-1	Z104	Z111
	    RTD to DC Current/Voltage isolator/converter	    TC to DC Current/Voltage isolator/converter	 DC current / voltage to frequency isolator / converter	  Frequency to DC current / voltage isolator / converter
GENERAL DATA				
Power Supply	9..40 Vdc 19..28 Vac; (50..60 Hz)	9..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 transducers			supply of the sensor with 2-wire method: 20VDC stabilized	
Power Consumption	2.5 W	2 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
Status indicators	Power supply, Out of range, Setting error	Power supply, Out of range, Setting error	Power supply Output (relay)	Power Supply Error
Interface	Micro USB	Micro USB	-	-
Response time	140 ms Sampling frequency: 15 bits + sign resolution.	35 ms with 11 bit resolution, 140 ms with 16 bit resolution.	350 ms	250 ms
Accuracy	0,1% (RTD) – 0.3% (voltage output)	0,1% (TC) – 0.3% (voltage output)	0,20%	0,30%
Thermal drift	0.01%/°K	0.01%/°K	0,02 % f.s. / °C	0,01 % f.s. / °C
Settings	Dip-switches: range and input type; output selecting Software / App (EASY SETUP)	Dip-switches: range and input type; output selecting Software / App (EASY SETUP)	Dip-switches: input type, output, end scale Trimmer: end scale settings, integration constant	Dip-switches: input type, filter, pulses average, output Trimmer: end scale settings (1 Hz..10KHz)
Operating Temperature	-10..+60°C	-10..+60°C	0..+50 °C	0..+50 °C
Dimensions (w x h x d)	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm
Connections	Removable 3-way screw terminals, 5 mm pitch, cable section's 0.25-2.5 mm ²	Removable 3-way screw terminals, 5 mm pitch, cable section's 0.25-2.5 mm ²	Removable 3-way screw terminals, 5 mm pitch, cable section's 0.25-2.5 mm ²	Removable 3-way screw terminals, 5 mm pitch, cable section's 0.25-2.5 mm ²
Weight	200 g	200 g	200 g	200 g
Approvals	CE- UL-UR CSA	CE- UL-UR CSA	CE	CE- UL-UR CSA
Norms	EN 55011, EN 61000-4-2, EN 61000-4-4, EN 50140 / 141	EN61000-6-4, EN61000-6-2, EN61010-1	EN50081-2, EN50082-2, EN61010-1	EN50081-2, EN50082-2 EN61010-1
INPUT DATA				
Nr	1	1	1	1
Type	RTD PT100, PT500, PT1000, NI100 2, 3 or 4 wires measurement, energising current 1 mA, resolution 0.1 °C	TC Type J, K, R, S, T, B, E, N; resolution 2.5 µV, automatic TC burn out detection, input impedance > 5MΩ	VOLTAGE: 0 - 5 Vdc, 1 - 5 Vdc, 0 - 10 Vdc and 2 - 10 Vdc Input impedance 1 MΩ CURRENT: 0 - 20 mA or 4 - 20 mA, both active and passive connection. Active connection : loop supply voltage approx. 15 Vdc Passive connection : input impedance 100 Ω	PULSES Mechanical contact, reed, npn with 2 and 3 wires , pnp with 3 wires and 24V DC power supply, Namur, photoelectric, "HALL" sensor, and variable reluctance. Maximum frequency 10 KHz
OUTPUT DATA				
Channels	1	1	1	1
Type	VOLTAGE: 0..5 V / 0..10 V / 1..5 V / 2..10 V, min load resistance 2 kΩ Resolution: 2.5 µA/ 1.25mV. CURRENT: 0..20 / 4..20 mA, max load resistance 600 Ω Resolution: 2.5 µA/ 1.25mV.	VOLTAGE: 0..5 V / 0..10 V / 1..5 V / 2..10 V, min load resistance 2 kΩ Resolution: 2.5 µA/ 1.25mV. CURRENT: 0..20 / 4..20 mA, max load resistance 600 Ω	PULSE Npn open-collector transistor 30 Vdc 300 mA Max frequency: 10 kHz Reed-relay 30 Vdc-ac 100 mA. Frequency below 40 Hz	VOLTAGE: 0..5 V / 0..10 V / 1..5 V / 2..10 V , Min. load resistance: 25 kΩ CURRENT: 0/4..20 mA (active/passive) Max load resistance: 600 Ω
ORDER CODES	Z109PT2-1	Z109TC2-1	Z104	Z111

SOFTWARE & ACCESSORIES

EASY SETUP

Plug&Play Software



Programmable modules:
Z109REG, Z109REG2-1, Z109UI-2, Z109REG-BP,
Z170REG-1, Z-SG, Z203-1, Z204-1, Z113-1,
Z109PT2-1, Z109TC2-1
Minimum hardware requirements:
CPU 1GHz, 256 MB available, graphic video
resolution 1024x769pixel
Free download: www.seneca.it

- Automatic connection to the module
- Operating and communication parameters setting
- Parameters monitoring
- Modules automatic configuration
- Configuration test and duplication

EASY SETUP APP

Configuration App for Android terminals



Programmable modules:
Z109REG2-1, Z109UI2-1,
Z109REG-BP, Z170REG-1, Z109PT2-1, Z109TC2-1
Android version: 4.0 or later
Supported terminals: Android Smartphone/with
OTG functions
Download: Google Play Store



Mobile Phone with
USB OTG support
Google play

- Automatic connection to the module
- Operating and communication parameters setting
- Parameters monitoring
- Modules automatic configuration
- Configuration test and duplication

S117P1

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

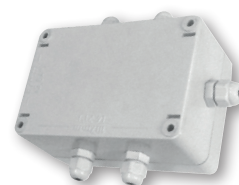


- USB standard 1.0, 1.1 e 2.0 compatible.
- 12 Vdc @ 100 mA available from screw terminals to supply a Seneca module.
- Power supply through USB.
- Serial RS485 Communication, max 32 nodes.
- More S117P1 can be connected on the the same PC.
- Accessories: CD with drivers, USB cable, TTL cable + EASYLP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

ORDER CODES

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

LOAD CELL CONNECTION AND EQUALIZATION SYSTEM



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

Z-POWER

DIN RAIL 19 VAC TRANSFORMERS



Primary Voltage: 230 (115) Vac $\pm$ 10%
Case: Self-extinguish thermoplastic material (V-0 class)
Protection method: With thermofuse
Dimension: 3 DIN modules (15 VA version), 5 DIN modules (25 VA)
Protection degree: IP 40

ORDER CODES

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

Z-SUPPLY

Single-Phase Switching Power Supply 24V @ 1.5A

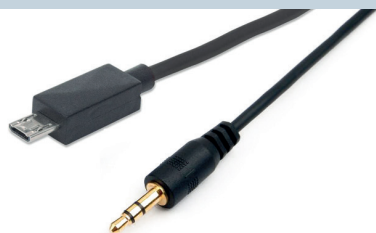


- **Input voltage range:** 110..230 Vac @ 47-63 Hz 0,7 A; 110..315 Vdc, 0,7 A
- **Output voltage:** 24 Vdc $\pm$ 2%
- **Redundancy:** Parallel connection of 2 Z-SUPPLY by IDC10 connector
- **Output current:** 1,5 A
- **Control output:** "Power Good" relay output
- **Internal fuse:** 1,25 A type T
- **Mounting:**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

ORDER CODES

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

CABLES



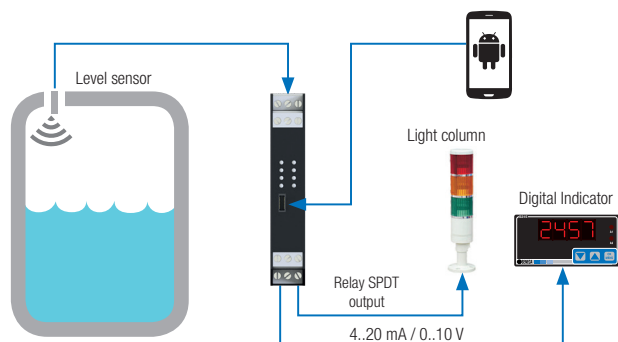
ORDER CODES

Code	Description
CS-JACK-DB9F	Programming serial cable (Jack / DB9F)
CU-A-MICROB	USB A – Micro USB-B 5P plug cable
CU-A-MICRO-OTG	Micro USB OTG – USB Type A F adapter cable

APPLICATION NOTE

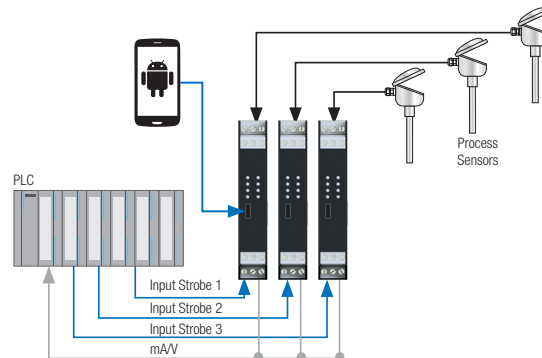
Z109REG2-1

Analog signal conversion and retransmission with relay output



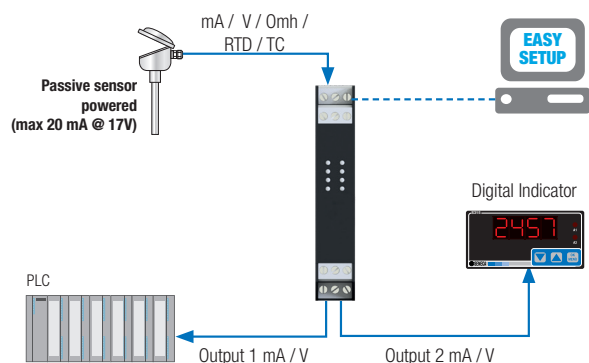
Z109REG2-1

Multiplexing and PLC signal retransmission



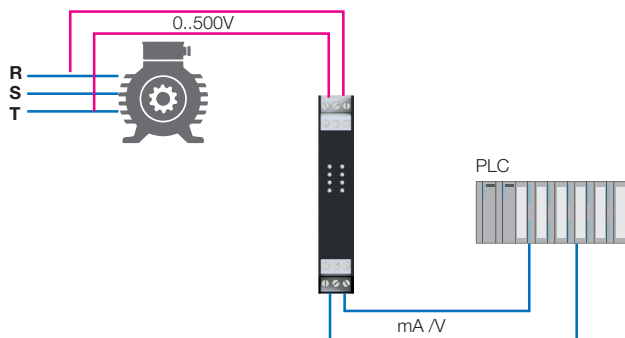
Z170REG-1

Analog signal Duplication and retransmission



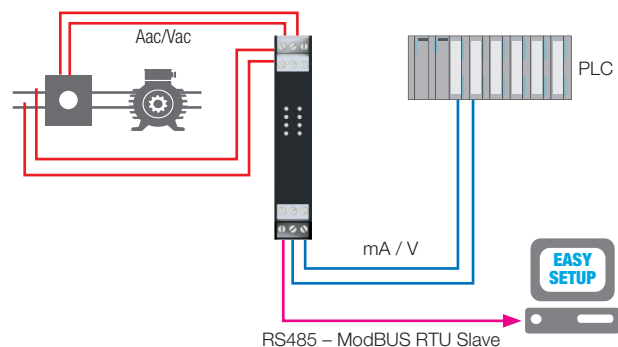
Z202

AC voltage conversion into a normalized signal mA / V



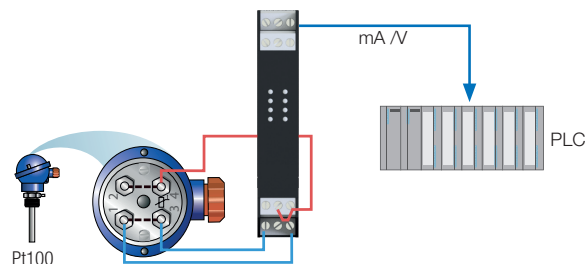
Z203-1

One phase power meter with signal output retransmission



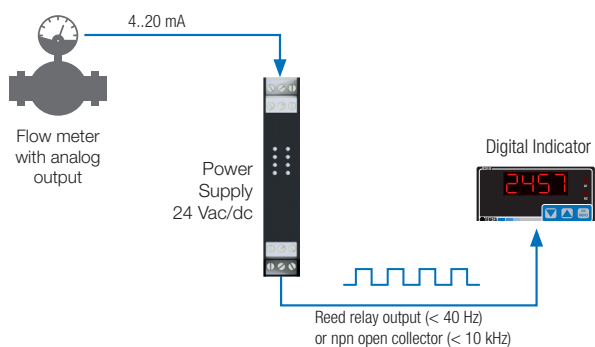
Z109PT2-1

RTD to mA/V standard output Signal temperature converter



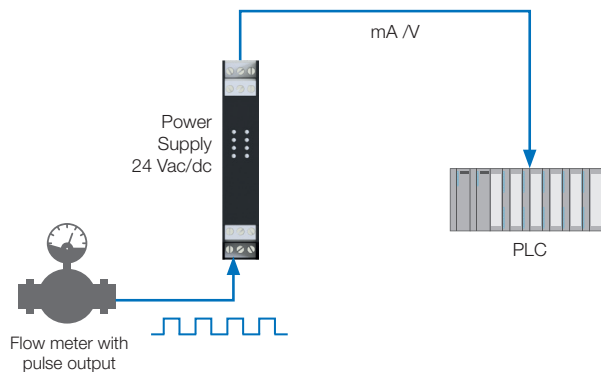
Z104

Flow meter pulse counter



Z111

Acquisition of instantaneous flow (frequency signal)



SELECTION GUIDE

INSTRUMENT CODE	CONVERSION				POWER SUPPLY					OTHER FEATURES	
	IN	OUT	NR. INPUT	NR. OUTPUT	19..40 Vdc (9..30 Vdc opz.); 19..28 Vac	10..40 Vdc; 19..28 Vac	85..265 Vac/dc	EXTERNAL / BY MEASURE LOOP	POWER TRANSDUCER (ACTIVE INPUT)	MAX ISOLATION	ACCURACY CLASS
ANALOG CONVERTERS											
Z102	Ohm	mA, V	1	1	x					1,5 kVac	0,2%
Z109REG	mA, mV, V, Ohm, TC (J,K,R,S,T,B,E,N), Pt100	mA, V	1	1	x				18 Vdc	1,5 kVac	0,2%
Z109REG2-1	mA, mV, V, Ohm, TC (J,K,R,S,T,B,E,N), Pt100, Pt500, Pt1000, Ni100, KTY81, KTY84, NTC, (Strobe)	mA, V, (Relay SPST)	2	2		x			20 Vdc	1,5 kVac	0,1%
Z109REG2-H	mA, mV, V, Ohm, TC (J,K,R,S,T,B,E,N), Pt100, Pt500, Pt1000, Ni100, KTY81, KTY84, NTC, (Strobe)	mA, V, (Relay SPST)	2	2			x		20 Vdc	1,5 kVac	0,1%
Z109REG-BP	mA, mV, V, Ohm, TC (J,K,R,S,T,B,E,N), Pt100, Pt500, Pt1000, Ni100, KTY81, KTY84, NTC	mA, V	1	1		x			17 Vdc	1,5 kVac	0,1%
Z109S	mA	mA	1	1	x				20 Vdc	1,5 kVac	0,2%
Z109S-DI	mA	mA	1	1		x			17 Vdc	3,5 kVac	0,2%
Z109UI2-1	mA, V, mV	mA, V	1	1		x				1,5 kVac	0,1%
Z110D	mA	mA	2	2				x		1,5 kVac	0,1%
Z110S	mA	mA	1	1				x		1,5 kVac	0,1%
Z170REG-1	mA, mV, V, Ohm, TC (J,K,R,S,T,B,E,N), Pt100, Ni100, Pt500, Pt1000, (Strobe)	mA, V, (Relay SPST)	1	2		x				1,5 kVac	0,1%
Z190	mA, V	mA, V	2	1	x				20 Vdc	1,5 kVac	0,2%
Z-SG	mV, Load cell	mA, V, RS485 ModBUS	1	1		x				1,5 kVac	0,01%
A/D CONVERTERS											
Z-4AI-D	mA, V	Serial / Signals 24V PNP (Clock, Data, Strobe)	4	3	x					1,5 kVac	0,1%
Z-4TC-D	TC, mV	Serial / Signals 24V PNP (Clock, Data, Strobe)	4	3	x					1,5 kVac	0,1%
ELECTRIC METER CONVERTERS											
Z201	Aac	mA, V	1	1	x					1,5 kVac	0,3%
Z201-H	Aac	mA, V	1	1			x			4 kVac	0,3%
Z202	Vac	mA, V	1	1		x				3,75 kVac	0,25%
Z202-H	Vac	mA, V	1	1			x			4 kVac	0,25%
Z202LP	Vac/dc	mA, V	1	1				x		4 kVac	0,25%
Z203-1	A, V	mA, V, RS485 ModBUS	1	1		x				3,75 kVac	0,5%
Z204-1	Vac/dc	mA, V, RS485 ModBUS	1	1		x				4 kVac	0,5%
RELAYS CONDITIONERS											
Z112A	Free contact, Reed, NPN, PNP, Namur, Photoelectric, Hall, Variable reluctance, 24V pulse, TTL, Volumetric meter	Relay SPDT	1	1	x				20 Vdc	1,5 kVac	
Z112D	Free contact, Reed, NPN, PNP, Namur, Photoelectric, Hall, Variable reluctance, 24V pulse, TTL, Volumetric meter	Relay SPST	2	2	x				20 Vdc	1,5 kVac	
Z113D	mA, V	Relay SPST	1	2	x				20 Vdc	1,5 kVac	
Z113S	mA, V	Relay SPDT	1	1	x				20 Vdc	1,5 kVac	
Z113T	mA, V	Relay SPST	1	3	x				20 Vdc	1,5 kVac	
Z113-1	mA, V, Ohm, RTD, TC	Relay SPST	1	2		x				1,5 kVac	
TEMPERATURE CONVERTERS											
Z109PT2-1	Pt100, Ni100, Pt500, Pt1000	mA, V	1	1		x				1,5 kVac	0,1%
Z109TC2-1	TC (J,K,R,S,T,B,E,N)	mA, V	1	1		x				1,5 kVac	0,2%
PULSE CONVERTERS											
Z104	mA, V	NPN Open Collector, Reed Relay	1	1	x				20 Vdc	1,5 kVac	0,2%
Z111	Free contact, Reed, NPN, Namur, Photoelectric, Hall, Variable reluctance, 24V pulse, TTL, Volumetric meter	mA, V	1	1	x				20 Vdc	1,5 kVac	0,2%

INSTANT SETTING THROUGH MOBILE APP FOR ANDROID



EASY Setup APP provides the same functionality of EASY Setup available for Windows PC with an intuitive and user friendly interface for: operating parameters and communication setting and changing, individual modules automatic configuration, real-time test configuration and fast replication of the settings for multiple installations.

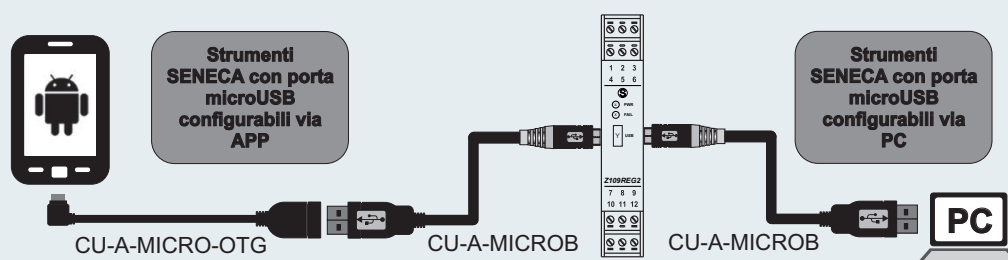
Easy to download and provided with simple and intuitive interface, EASY Setup app allows direct connection to SENECA programmable device for immediate monitoring, programming and testing operations of single devices.

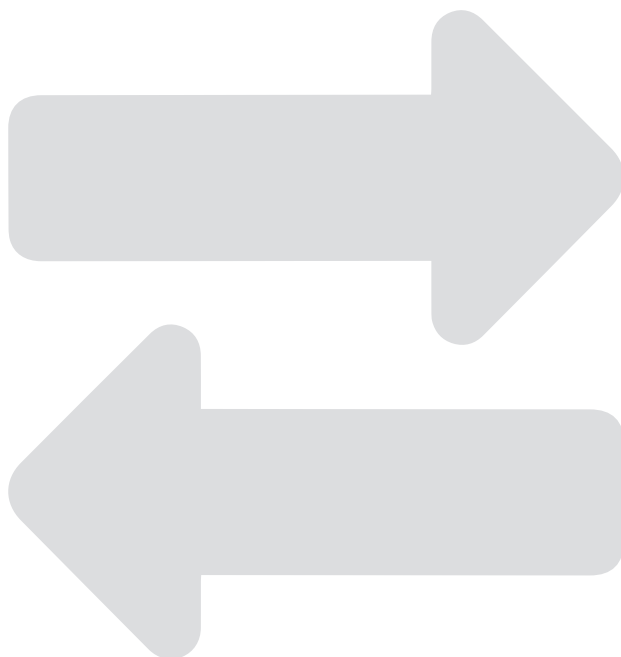
Supported modules: Z109REG2-1, Z109UI2-1, Z109REG-BP, Z170REG-1, Z109PT2-1, Z109TC2-1

Language: Italian, English

Android versions: 4.0 and later

Mobile terminals: Android Smartphone/Tablet with OTG function





K-LINE

**COMPACT SIGNAL
CONVERTERS
AND ISOLATORS**



K-Line

Compact Signal Converters and Isolators

SENECA **K-Line** compact signal converters have a 6,2 mm ultra slim case. These multi-point galvanic isolators convert temperature, analog, digital and serial signals.

The module's main features are its compact size, installation on 35 mm DIN rails, a bus-connector power supply option, top level accuracy class, quick connection possibility by using clamp terminals and an easy configuration in the field by means of a DIP switches.

HARSH INDUSTRIAL DESIGN

HIGH LEVEL RELIABILITY



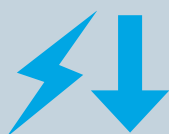
>500.000 h

WIDE OPERATING TEMPERATURE RANGE



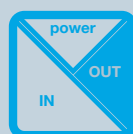
-20..+65°C

LOW POWER CONSUMPTION



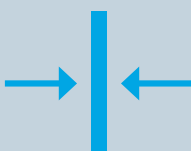
<25mA

ISOLATION 3-WAYS



1,5 kV

COMPACT SIZE



6,2 mm

BEST ACCURACY



0,1%

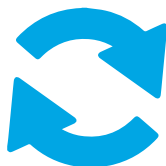


SPECIAL FUNCTIONS

**READING
STABILIZATION
FILTER**



**I/O SCALES
INVERSION**



**LINEARIZATION FOR
HORIZONTAL
CYLINDRICAL**



**SQRT
FUNCTIONS**



SETTINGS

**FLEXIBLE
CONFIGURATION VIA
DIP-SWITCHES**



PC PROGRAMMING



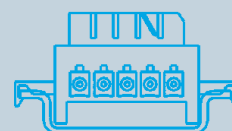
POWER SUPPLY

**DISTRIBUTED / ON
TERMINAL
POWER SUPPLY**



19.2..30 Vdc

**EXPANDABLE POWER
SUPPLY CONNECTOR**



APPROVALS

**INTERNATIONAL
STANDARD**



CE, UL, CSA

**ATEX COMPLIANT
(K121)**



II 3G Ex nA IIC T4 Gc X (gas)
II 3D Ex tc IIC T135°C Dc X (dust)
EN 60079-0:2012
EN 60079-15:2010

COMPACT SIGNAL CONVERTERS AND ISOLATORS

UNIVERSAL

ANALOG

	K121	K109UI	K109S	K109LV
	   Universal converter (mA, V, Ohm, RTD, TC) isolated, loop powered	  DC current/voltage to current/voltage isolator converter	  DC current/voltage to current/voltage isolator converter (2 wire power transducer)	 DC low voltage to current/voltage isolator converter
GENERAL DATA				
Power supply	7..30 Vdc (from loop 4..20mA)	19,2.. 30 Vdc	19,2.. 30 Vdc	19,2.. 30 Vdc
Side Power		Yes	Yes	Yes
Hot swapping	Yes	Yes	Yes	Yes
Current consumption	24 mA	22 mA (24 Vdc)	23 mA (24 Vdc); 45 mA (with aux power)	22 mA (24 Vdc)
Power consumption	<660 mW	500 mW	500 mW	500 mW
A/D Conversion	16 bit	14 bit	14 bit	14 bit
Transmission				
Rejection	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz
Settings	Software (EASY SETUP)	DIP Switches	DIP Switches	DIP Switches
Filter	Yes, stable reading	Yes, stable reading	Yes, stable reading	Yes, stable reading
Dimensions (w x h x d)	6,2 x 93,1 x 102,5 mm	6,2 x 93,1 x 102,5 mm	6,2 x 93,1 x 102,5 mm	6,2 x 93,1 x 102,5 mm
Isolation	1,5 kVdc (3-way)	1,5 kVdc (3-way)	1,5 kVdc (3-way)	1,5 kVdc (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
Colour	Black	Black	Black	Black
Enclosure	PBT	PBT	PBT	PBT
Weght	45 g	45 g	45 g	45 g
Operating temperature	-20..+65 °C	-20..+65 °C	-20..+65 °C	-20..+65 °C
Connections	8 Clamp terminals	Clamp terminals / bus	Clamp terminals / bus	Clamp terminals / bus
Protection degree	IP 20	IP 20	IP 20	IP 20
Precision class	0,1%	0,1%	0,1%	0,1%
Thermal drift	< 120 ppm/K	< 120 ppm/K	< 120 ppm/K	< 120 ppm/K
Status indicators	Fault, alarm	Fault, alarm	Fault, alarm	Fault, alarm
Special functions	Cold junction compensation Filter Reversed output	Root extraction Signal inversion Scale settable Linearization	Root extraction Signal inversion Scale settable Linearization	Fault configuration Filter
Approvals	CE, II 3G Ex nA IIC T4 Gc X, II 3D Ex tc IIIC T135°C Dc X	CE, UL-UR CSA	CE, UL-UR CSA	CE
Norms	Safety (EN 61010-1), EMC (EN 61000-6-2, EN 61000-6-4, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-11), Atex (EN 60079-0, EN 60079-15)	EN 61000-6-4, EN 61010-6-2, EN 61010-1	EN 61000-6-4, EN 61010-6-2, EN 61010-1	EN 61000-6-4, EN 61010-6-2, EN 61010-1
INPUT DATA				
Channels	1	1	1	1
Type	THERMOCOUPLE J, K, R, S, T, E, B, N (EN 60584) RTD (PT100, PT500, PT1000, NI100) connection 2,3,4 wires Voltage (V) $\pm$ 30V, impedance 200 k Ω Voltage (mV) $\pm$ 150 mV, impedance 10 M Ω Current: $\pm$ 24 mA, impedance 40 Ω Potentiometer: 500 Ω ..10 K Ω Resistance: up to 1760 Ω	VOLTAGE Range: 0..10 / 10..0 / 0..5 / 1..5 / 0..15 / 0..30 V (inversion as well) Impedance: 110 k Ω - 325 k Ω 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 k Ω CURRENT Range: 4..20 / 20..4 / 0..20 / 20..0 mA Impedance: 35 Ω	SHUNT Range: $\pm$ 25, 50, 60, 75, 80, 100, 120, 150, 200, 250, 300, 400, 500, 1000, 2000 mV (via Dip switches)
Absolute value		$\pm$ 32 V (400 mW limitation)	$\pm$ 30 V (limitation 400 mW)	$\pm$ 50 V
OUTPUT DATA				
Channels	1	1	1	1
Type	CURRENT 4..20mA	VOLTAGE Range: 0..10 / 10..0 / 0..5 / 1..5 V Min load resistance: 2 k Ω 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 k Ω 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 k Ω CURRENT Range: 4..20 / 20..4 / 0..20 / 20..0 mA Max load resistance: 500 Ω Protection: 25 mA
Static relay				
Response time (10-90%)	140..620ms	< 40 ms (without filter) < 88 ms (with filter)	< 40 ms (without filter) < 88 ms (with filter)	< 25 ms (without filter) < 55 ms (with filter)
A/D conversion, resolution				
ORDER CODES				
Code	K121	K109UI	K109S	K109LV

TEMPERATURE

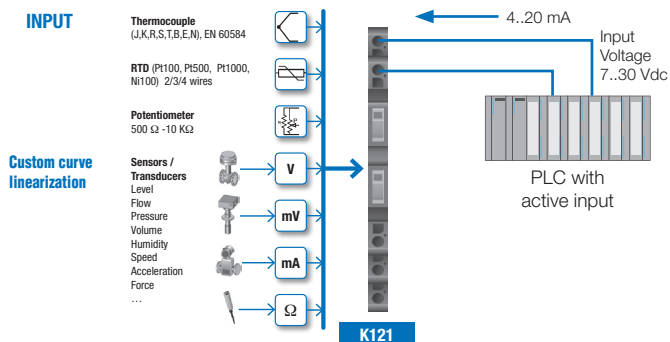
K109PT	K109PT-HPC	K109PT1000	K120RTD	K109TC
 			 	 
Pt100 to DC current/voltage isolator converter	Pt100 to DC current/voltage isolator converter (high precision)	Pt1000 to DC current/voltage isolator converter	Pt100, Ni100 to DC current converter -Loop powered (non isolated)	TC to DC current/voltage isolator converter (with alarm)
19,2...30 Vdc	19,2...30 Vdc	19,2...30 Vdc	Loop powered (5...30 Vdc)	19,2...30 Vdc
Yes	Yes	Yes	-	Yes
Yes	Yes	Yes	-	Yes
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)
500 mW	500 mW	500 mW	500 mW	500 mW
14 bit	14 bit	14 bit	14 bit	14 bit
Optical - digital	Optical - digital	Optical - digital	Optical - digital	Optical - digital
50 – 60 Hz (configurable)	50 – 60 Hz (configurable)	50 – 60 Hz (configurable)	50 – 60 Hz (configurable)	50 – 60 Hz (configurable)
DIP switches	DIP switches	DIP switches	DIP switches, Software (EASY Setup)	DIP switches
Yes, stable reading	Yes, stable reading	Yes, stable reading	Yes, stable reading	Yes, stable reading
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
1,5 kVac (3-way)	1,5 kVac (3-way)	1,5 kVac (3-way)	-	1,5 kVac (3-way)
Digital (optocoupler)	Digital (optocoupler)	Digital (optocoupler)	-	Digital (optocoupler)
32 bit floating point	32 bit floating point	32 bit floating point	32 bit floating point	32 bit floating point
Black	Black	Black	Black	Black
PBT	PBT	PBT	PBT	PBT
45 g	45 g	45 g	45 g	45 g
-20...+65 °C	-20...+65 °C	-20...+65 °C	-20...+65 °C	-20...+65 °C
Clamp terminals / bus	Clamp terminals / bus	Clamp terminals / bus	Clamp terminals / bus	Clamp terminals / bus
IP20	IP20	IP20	IP20	IP20
0,1% (max range)	0,1% (max range)	0,1%	0,1%	0,1%
< 100 ppm/K	< 100 ppm/K	< 100 ppm/K	< 100 ppm/K	< 100 ppm/K
Fault Alarm fault and cut-off configuration, filter	Fault Alarm fault and cut-off configuration, filter	Fault Alarm fault and cut-off configuration, filter	Fault Alarm RTD type / connection, filter, measure range, error, output inversion, over-range	Fault Alarm fault and cut-off configuration, filter
CE, UL-UR CSA	CE	CE	CE	CE, UL-UR CSA
EN 61000-6-4, EN 61000-6-2, EN 61010-1	EN 61000-6-4, EN 61000-6-2, EN 61010-1	EN 61000-6-4, EN 61000-6-2, EN 61010-1	EN 61000-6-4, EN 61000-6-2, EN 61010-1	EN 61000-6-4, EN 61000-6-2, EN 61010-1
1	1	1	1	1
Pt100 IEC 751 standard / EN 60751 – ITS90 Range: -150...+650 °C Min span: 50 °C Current on transmitter: 900 µA Connection: 2,3,4 wires Max cable resistance: 20 Ω	Pt100 IEC 751 standard / EN 60751 – ITS90 Range: -200...+160 °C Min span: 20 °C Current on transmitter: 900 µA Connection: 2,3,4 wires Max cable resistance: 20 Ω	Pt1000 EN 60751/A2 – ITS90 Range: -200...+210 °C Min span: 30 °C Current on transmitter: < 350 µA Connection: 2,3,4 wires Max cable resistance: 50 Ω	Pt100 EN 60751/A2 – ITS90 Range: -200...+650 °C Min span: 20 °C Connection: 2,3,4 wire Ni100 Range: -60...+250 °C Min span: 20 °C Connection: 2,3,4 wires	Thermocouple Type: J,K,E,N,S,R,B,T (ITS90) Min span: 100 °C Impedance: 10 MΩ Semiconductor sold joint ADC 13 bit Precision: 0,15 °C Update: 10 s Max voltage: ±32 V
1	1	1	1	1
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 Nominal voltage: 24 Vac/dc Current: 60 mA Overvoltage protection: 50 V Settable hysteresis / alarm trip < 40 ms (without filter) < 88 ms (with filter) 1 mV, 2 µA
< 50 ms (without filter) < 200 ms (with filter) 1 mV, 2 µA	< 50 ms (without filter) < 200 ms (with filter) 1 mV, 2 µA	< 50 ms (without filter) < 200 ms (with filter) 1 mV, 2 µA	< 220 ms (without filter) < 620 ms (with filter) 1 mV, 2 µA	
K109PT	K109PT-HPC	K109PT1000	K120RTD	K109TC

COMPACT SIGNAL CONVERTERS AND ISOLATORS

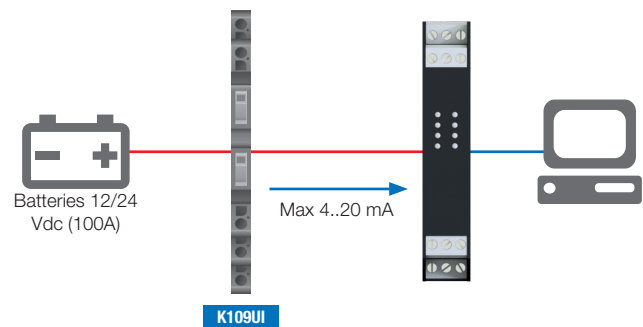
	FREQUENCY			SERIAL		
	K111	K111D	K112	K107A	K107B	K107USB
	 	 		 	 	 
	Frequency threshold with 2 outputs	Frequency splitter / repeater with 2 isolated outputs	Digital sensor amplifier with 2 outputs	RS485↔RS485 serial isolator/repeater	RS232↔RS485 serial isolator/converter	USB↔RS485 serial isolator/converter
GENERAL DATA						
Power supply	19,2...30 Vdc	19,2...30 Vdc	19,2...30 Vdc	19,2...30 Vdc	19,2...30 Vdc	By USB port
Side Power	Yes	Yes	Yes	Yes	Yes	-
Hot swapping	Yes	Yes	Yes	Yes	Yes	Yes
Current consumption	< 25 mA	< 25 mA	< 25 mA	22 mA (24 Vdc)	22 mA (24 Vdc)	60 mA
Power consumption	500 mW	< 500 mW	500 mW	500 mW	500 mW	-
A/D Conversion	14 bit	14 bit	14 bit			
Rejection	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz
Settings	DIP switches, Software (EASY Setup)	DIP switches, Software (EASY SETUP)	DIP Switches	DIP switches	DIP switches	DIP switches
Filter	Configurable	With programmable cutoff frequency		Yes, stable reading	Yes, stable reading	Yes, stable reading
Dimensions (w x h x d)	6,2 x 93,1 x 102,5 mm	6,2x93,1x102,5 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 ways)	1,5 kVac (3 ways)	1,5 kVac (3-way)	1,5 kVac (3-way)	1,5 kVac (3-way)	1,5 kVac (USB // RS485)
Isolation technique	Digital / Optocoupler	Digital / Optocoupler	Digital (optocoupler)	Digital (optocoupler)	Digital (optocoupler)	Digital (optocoupler)
Data processing	32 bit floating point	32 bit floating point	32 bit floating point	32 bit floating point	32 bit floating point	32 bit floating point
Colour	Black	Black	Black	Black	Black	Black
Enclosure	PBT	PBT	PBT	PBT	PBT	PBT
Weght	45 g	45 g	45 g	45 g	45 g	45 g
Operating temperature	-20...+65 °C	-20...+65 °C	-20...+65 °C	-20...+65 °C	-20...+65 °C	-20...+65 °C
Connections	Clamp terminals / bus	Clamp terminals / bus	Clamp terminals / bus	Clamp terminals / bus	Clamp terminals / bus	Clamp terminals / bus
Protection degree	IP 20	IP20	IP 20	IP20	IP20	IP20
Status indicators	Power ON Threshold Error	Power ON Output status	Power ON Output status	Power ON Data Inverted connection	Power ON Data Inverted connection	Power ON Data Inverted connection
Special functions	Signal Splitter/Repeater Dual programmable Limit Alarm trip	Signal Splitter/Repeater Frequency divider (max f/2566)	-	-	-	Compliance to USB 1.1 and 2.0 Plug&play for Windows O.S. Multiple connection on the same PC
Communication	-	-	-	Automatic handshake Baud rate: 1.200..115.200 bps	Automatic handshake Baud rate: 1.200..115.200 bps	
Approvals	CE	CE	CE	CE, UL-UR CSA	CE, UL-UR CSA	CE, UL-UR CSA
Norms	EN 61000-6-4, EN 61010-6-2, EN 61010-1	EN 61000-6-4, EN 61010-6-2, EN 61010-1	EN 61000-6-4, EN 61010-6-2, EN 61010-1	EN 61000-6-4, EN 61000-6-2, EN 61010-1	EN 61000-6-4, EN 61000-6-2, EN 61010-1	EN 61000-6-4, EN 61000-6-2, EN 61010-1
INPUT DATA						
Channels	1	1	1	1	1	1
Type	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 Max frequency 20 kHz min 1 pulse every 116 minutes	IEC 1131.2 free contact (type 1) Namur (DIN 19234, EN 60947-5-6) NPN / PNP (12 or 22 V) 2/3 wires Reed Photocell Voltage: max ±28 Vdc Frequency: Max 20 kHz, min 1 pulse each 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	SERIAL RS485 Half duplex, 31 nodes, line termination, protection up to 30 Vdc	SERIAL RS232, protection up to 30 Vdc	SERIAL USB interface, standard USB 1.0/ 2.0 compliance, USB A and MINI USB B connection
OUTPUT DATA						
Channels	2	2	2	1	1	1
Type	N.2 threshold channels, PNP, BJT, Mosfet; Max load: 60 mA / 24 Vdc	2-CH trip amplifier, PNP, BJT, Mosfet; max rating > 60 mA / 24 Vdc	PNP e NPN simultaneous channels Max current 200 mA Max voltage 30 V (continuous), 50V (pulse)	SERIAL RS485 half duplex, 31 nodes, terminal, protection up to 30 Vdc	SERIAL RS485 half duplex, 31 nodes, terminal, protection up to 30 Vdc	SERIAL RS485, max 31 nodes, spring cage terminal block
ORDER CODES						
Code	K111	K111D	K112	K107A	K107B	K107USB

APPLICATION EXAMPLES

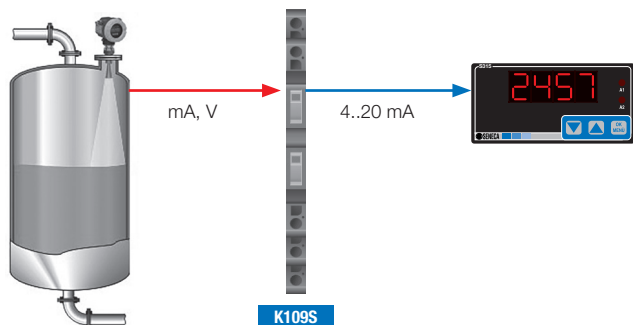
UNIVERSAL ANALOG SIGNAL CONVERSION



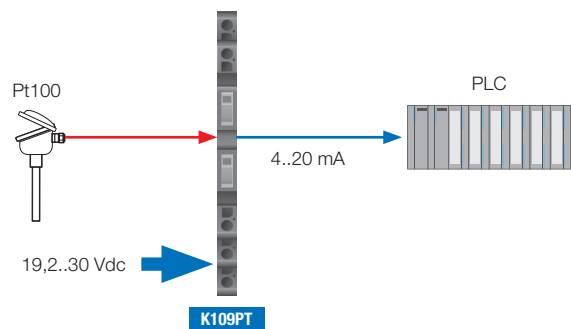
BATTERY VOLTAGE MONITORING



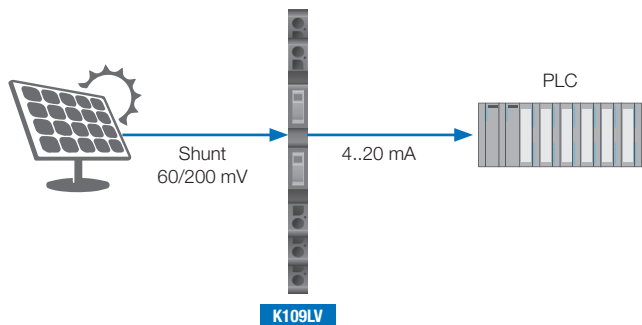
ANALOG SIGNAL ISOLATION, RETRANSMISSION, VISUALIZATION FROM 2-WIRE SENSOR



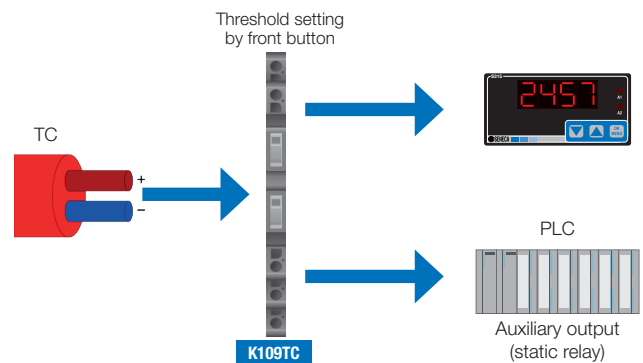
PT100 TEMPERATURE TO ANALOG SIGNAL CONVERSION



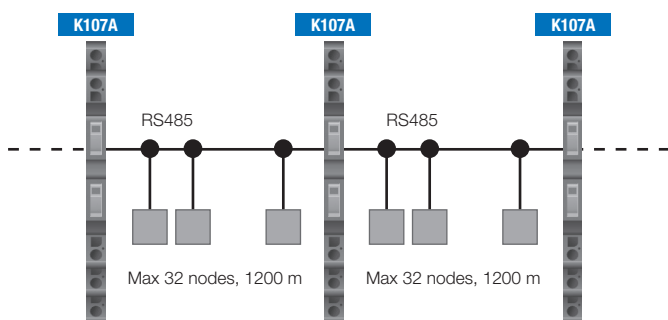
STRING CURRENT MEASUREMENT AND TRANSMISSION IN PHOTOVOLTAIC PLANT



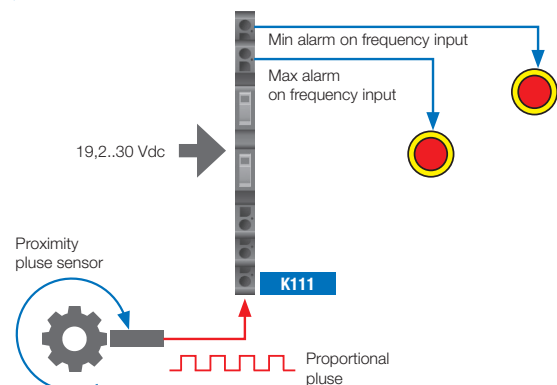
CONVERSION AND RETRANSMISSION OF A TEMPERATURE VALUE FROM THERMOCOUPLE



SERIAL RS485 REPETITION WITH GALVANIC ISOLATION



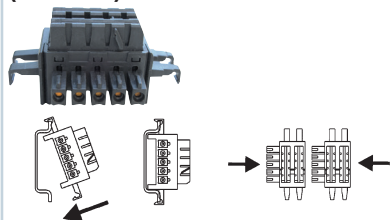
FREQUENCY CONVERSION WITH ALARM



SOFTWARE & ACCESSORIES

K-BUS

**Expandable power supply connector
(EN 60175)**



ORDER CODES

K-BUS 2 slot expandable power supply connector

K-SUPPLY

Redundant power supply module



- Power supply 19,2..30 Vdc
- Nr 2 inputs with shared negative terminal
- Max voltage drop 300 mV
- Max current per terminal 4 A
- Differential mode filter
- Built-in protection against overvoltages

ORDER CODES

K-SUPPLY Power supply module with electronic protections

EASY SETUP / EASY LP

Plug&Play software configuration

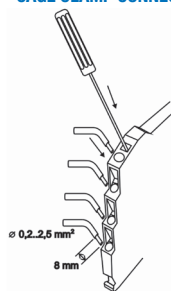


**K111
K121
K120RTD**

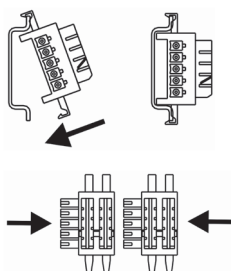
• Free download on www.seneca.it

CONNECTION AND INSTALLATION

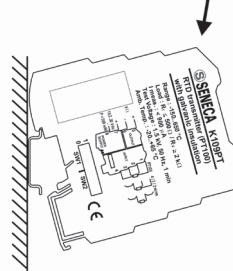
CAGE CLAMP CONNECTION



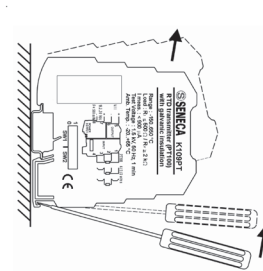
K-BUS CONNECTOR



INSERTING MODULE ON DIN GUIDE



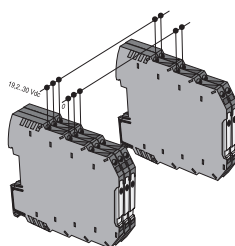
EXTRACTING MODULE FROM DIN GUIDE



POWER SUPPLY TECHNIQUE

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

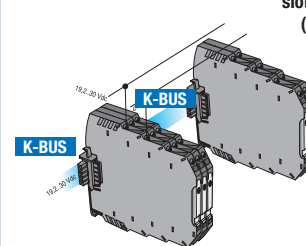
POWER SUPPLY ON CLAMP TERMINAL



1

SMART SUPPLY SYSTEM

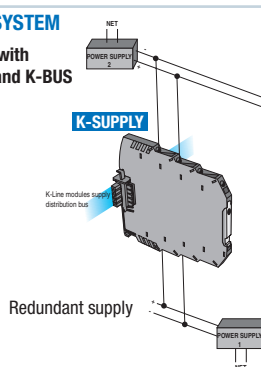
**Distributed supply with 2 slot connector K-BUS
(up to 16 modules)**



2

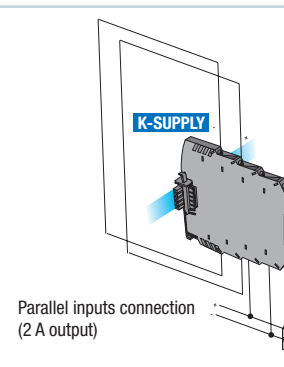
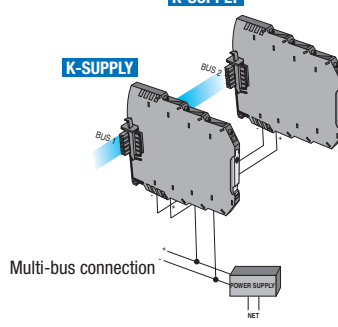
SMART SUPPLY SYSTEM

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



K-SUPPLY

K-SUPPLY



3

EASY USB USB - UART TTL Converter



Power supply 5V @100mA (by PC)
Protection degree IP20
Serial UART TTL RJ11 connector, baud rate from 300 bps up to 250 Kbps
Serial USB USB type A standard 1.0, 1.1 and 2.0
Dimension 84x21x17 mm
O.S. Windows, Mac OS, OS-X, Linux

ORDER CODES

EASY-USB USB - UART TTL Converter

S117P1

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



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

ORDER CODES

S117P1

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