www.seneca.it

PRODUCT CATALOG

SENECA

COMPANY

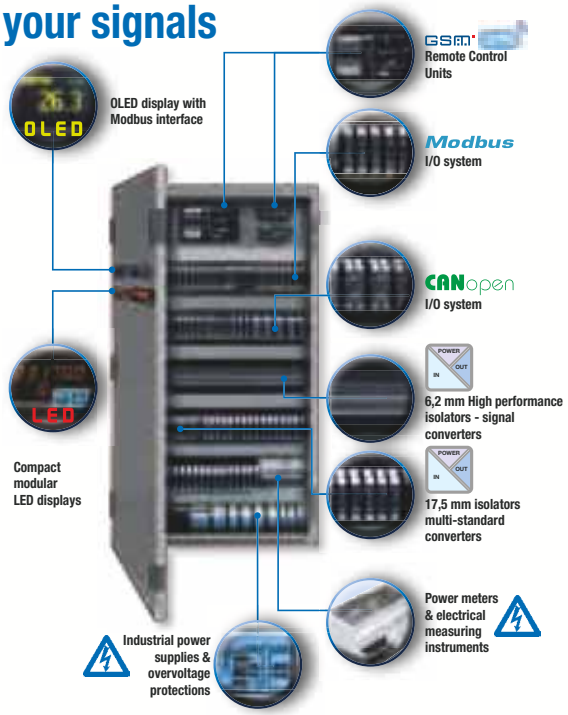
With over 20 years manufacturing in the industrial automation field, SENECA has grown to be a major force in the signal interfacing

Our products lines, designed and developed in house, are compatible and open towards the more widespread technological standard.

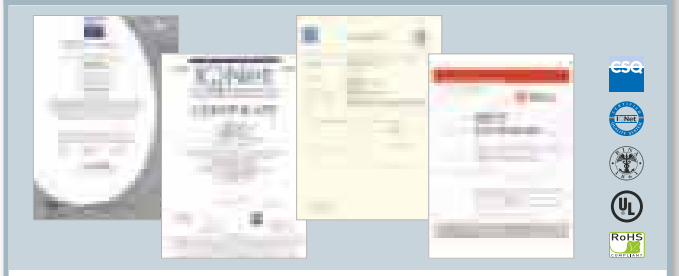
Our innovative product lines, professional approach and worldwide network of trained distributors guarantee the most elegant solutions to all your process interfacing and data acquisition challenges.

PRODUCT

SENECA takes care of your signals



QUALITY



SENECA supplies own products according to the total quality criterias.

Our company system is ISO 9001 certified since 1997.

The products are UL UR CSA approved for North American market and satisfies RINA requirements for naval applications, and ATEX directive.

The safety standard, electromagnetic compatibility and electric protection complies with CE, IEC, EN norms.

The communication software interfaces are developed according the international recognized standard (i.e IEC 61131, ModBUS RTU / TCP, IEC 870, CanOPEN, PPP, SMTP, HTML, OPC Server).

TECNOLOGIES

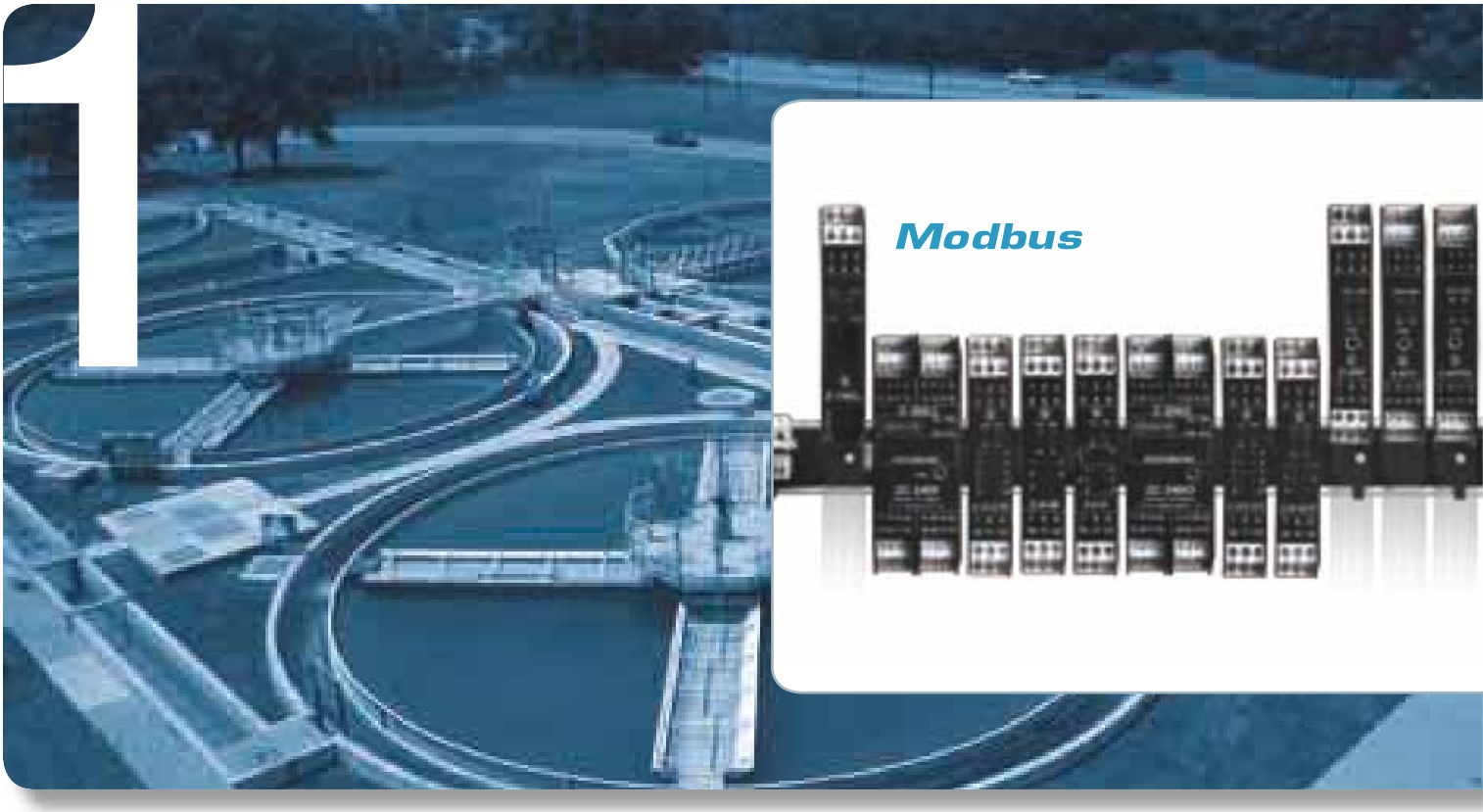
The production cycles and internal control have processed through the best modern SMT (Surface Mounting Technology) & PTH (Pin Through Hole) lines.

The production capacity is thousands components/ hours and this allows to combine high speed, flexibility, reduced MTBF and time-to-market.

The productive process is fully complies to the environmental and eco-compatible directives: RAEE, ROHS and REACH. At the end of the cycle all products are strictly tested through automatic systems generating finally single testing reports.

INDEX

I/O ModBUS System



Z-PC LINE Remote I/O System, open, modular, multiple-field applications

Z-PC LINE MODBUS

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

ISOLATION

Z-PC Modules have a 3-way electrical 1.5 KVac isolation among power supply // input // output.
This will avoid potential differences arising from long reference cables and common points. Electrical isolation also protects against damage caused by overvoltages and inductive and capacitive interferences.

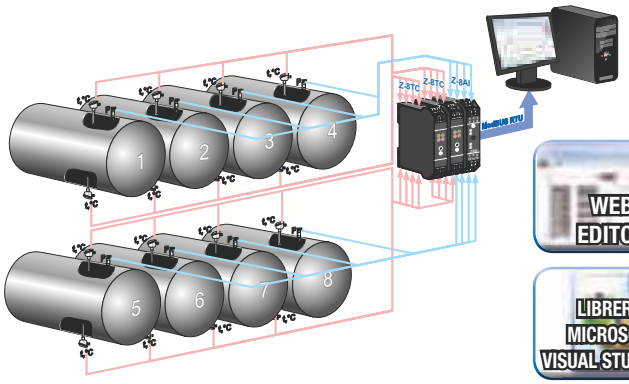
MODBUS RTU PROTOCOL

Modbus RTU protcol is one of the most popular industry standard.
The simplicity of installation, configuration and integration, combined the excellent performance make it the most popular fieldbus in world.
The open specs do not require hardware constraints. Physical access is based on a half duplex serial transmission. The electrical interface allows point to point or multipoint connections. The RS485 serial interface, which is the physical support for the Modbus communication, is based on a communication line balanced differential characteristic impedance of 120 ohms. The maximum length of the connection depends on the baud rate, electrical noise from environment, the type and quality of cable. It is usually guaranteed to work up to 1.2 km, without using the repeaters.

STANDARD & APPROVALS

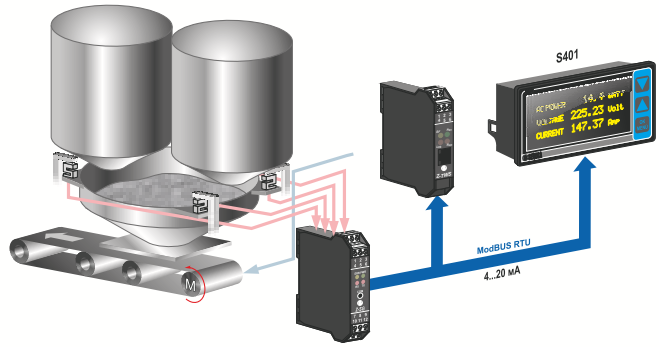
CANopen Modbus ISaGRAF OPC

DATA ACQUISITION



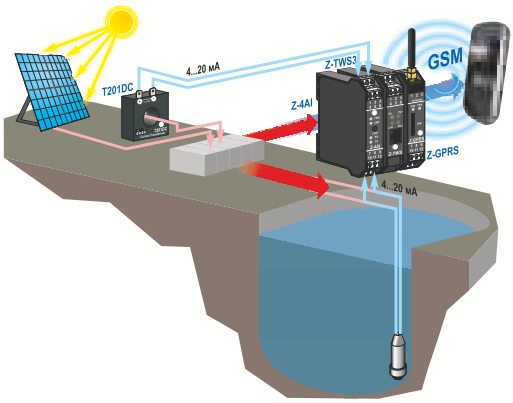
It is a perfect solution for laboratory applications, end of line test, process measurement.
Z-PC offers simple tools suitable for data acquisition, recording and displaying data in combination with I/O modules: Data Recorder from 6 to 64 channels data exchange via OPC, LabVIEW ™ drivers and Visual Studio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

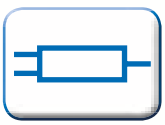
AUTOMATION and softPLC



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

REMOTE CONTROL





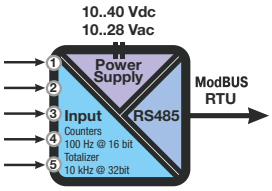
Remote control with Z-PC means having an integrated system based on a broad spectrum of RTUs (all-in-one, battery powered, small systems and cathodic protection), standard protocol and libraries of specific functions dedicated to the remote control applications.

APPLICATIONS

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

Z-D-IN

5-CH DIGITAL INPUT MODULE / RS485 MODBUS RTU

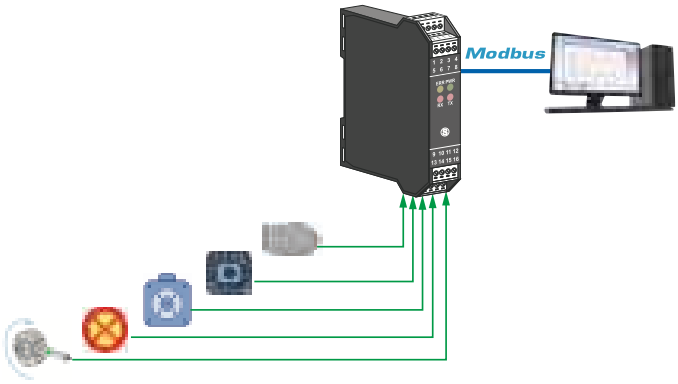


Z-D-IN is 5 digital inputs with self-powered 16 Vdc shared negative pole. The module has removable terminals with section of 2.5 mm2. Input channel are protected by 600 W/ms TVS transient current suppressers. Z-D-IN input channels have 100 Hz 16 bit counters, with settable filter. It's also possible to set the input as fast totalizer with 32 bit, max frequency 10 kHz. RS485 serial communication supports Modbus-Rtu protocol, maximum 32 nodes. Max 3-way isolation module is 1.500Vac.

TECHNICAL SPECIFICATIONS

Electrical Specifications	
Power supply	10..40 Vdc / 19..28 Vac / 50-60 Hz
Power consumption	2,5 W
Isolation	1.500 Vac (3 way)
Power transducers	Yes
Status Indicators	Power supply, error, data transmission, data reception, input status
Protection Degree	IP20
Operating Temperature	0..+55 °C
Dimension (W x H x D)	17.5 x 100 x 112 mm
Weight	About 140 g
Enclosure	Nylon 6 with 30% glass-fiber, V0 self-extinguished class
Connections	-Removable terminals block, plug in connectors, max wire size 2,5 mm^2 -Rear IDC10 connector for Z-PC backplane
Mounting	35 mm DIN rail guide
Communication, Elaboration, Memory	
Interface	2 wire RS485
Speed	Up to 57.600 bps
Protocol	ModBUS RTU slave
Communication Time	< 10 ms (38400 baud)
Distance	Up to 1.200 m
Connectivity	Max 32 nodes
Data Memory	EEPROM for the configuration parameters, retention time 10 years, N° 5 registers 16 bit, N° 5 bit overflow
Signals	
Channel Numbers	5
Type	Opto-isolated for REED, PROXIMITY, PNP, NPN, contact, etc. Nr 4 input with countering function 16 bit, frequency max 100 Hz Nr 1 input with countering function 16 bit, frequency max 10 kHz Bounce Filter 5..250 ms
Configuration	
DIP switches	Baud rate, node, parity, serial port, bit stop, termination line
Software	Z-NET3 (Iec 61131) EASY Z-D-IN (plug&play)
Standard	
Approval	CE, RINA
Norms	EN 50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4; EN 50140/141; EN 61010-1

APPLICATION NOTE



ORDER CODES

Code	Description
Z-D-IN	5-CH Digital input module / RS485 ModBUS RTU, 10..40 Vdc / 19..28 Vac

ACCESSORIES & SOFTWARE

Z-PC-DIN
Backplane for power & bus communication
pg. 36

Z-SUPPLY
Switching power supply
pg. 36

Z-NET
IEC 61331 programming software
pg. 36

EASY SETUP
Plug&Play configuration software
pg. 36

SIMILAR PRODUCTS

Z-10-D-IN
10-CH Digital Input module / RS485
pg. 12

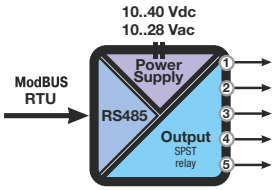
Z-D-IO
8-CH, 6 digital input - 2 digital outputs control module
pg. 14

ZC-24-DI
24 CH digital input CANopen / ModBUS
pg. 28

ZC-16DI-8DO
16 CH digital input - 8 CH digital output CANopen / ModBUS
pg. 30

Z-D-OUT

5-CH DIGITAL OUTPUT MODULE / RS485 MODBUS RTU

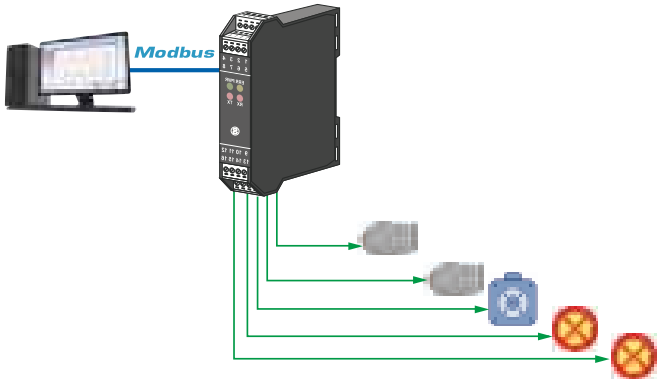


Z-D-OUT is 5 SPST relay output module with common line, capacity 5 A – 250 Vac resistive, 2 A inductive. The module has removable terminals with section of 2.5 mm2. Z-D-OUT offers possibility of setting relay safety status at start-up or without communication. Also the module allows safety time setting from 0,5 to 2,5 s. RS485 serial communication supports Modbus-Rtu protocol, maximum 32 nodes. Max 3-way isolation module is 1.500Vac.

TECHNICAL SPECIFICATIONS

Electrical Specifications	
Power supply	10..40 Vdc / 19..28 Vac / 50-60 Hz
Power consumption	1,5 W
Isolation	1.500 Vac (3 way)
Power transducers	Yes
Status Indicators	Power Fail Rx / Tx Active output
Protection Degree	IP20
Thermomechanical Specifications	
Operating Temperature	-10..+65 °C
Dimension (W x H x D)	17.5 x 100 x 112 mm
Weight	About 140 g
Enclosure	Nylon 6 with 30% glass-fiber, V0 self-extinguished class
Connections	-Removable terminals block, plug in connectors, max wire size 2,5 mm^2 -Rear IDC10 connector for Z-PC backplane
Mounting	35 mm DIN rail guide
Communication, Memory process	
Interface	2 wire RS485
Speed	Up to 57.600 bps
Protocol	ModBUS RTU slave
Communication Time	< 10 ms (38400 baud)
Distance	Up to 1.200 m
Connectivity	Max 32 nodes
Data Memory	EEPROM for the configuration parameters, retention time 10 years, N° 5 registers 16 bit, N° 5 bit overflow
Signals	
Channel Numbers	5
Type	SPST N.O. relay output with common line Max rated current: 5 A Max switching voltage: 250 Vac Relay working voltage: 24 Vdc Relay absorbed current: 9 mA Release time delay: 5 / 2 ms
Configuration	
DIP switches	Baud rate, node, parity, serial port, bit stop, termination line
Software	Z-NET3 (Iec 61131) EASY Z-D-IN (plug&play)
Standard	
Approval	CE, RINA
Norms	EN 50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4; EN 50140/141; EN 61010-1

APPLICATION NOTE



ORDER CODES

Code	Description
Z-D-OUT	5-CH Digital output module / RS485 ModBUS RTU, 10..40 Vdc / 19..28 Vac

ACCESSORIES & SOFTWARE

Z-PC-DIN
Backplane for power & bus communication
pg. 36

Z-SUPPLY
Switching power supply
pg. 36

Z-NET
IEC 61331 programming software
pg. 36

EASY SETUP
Plug&Play configuration software
pg. 36

SIMILAR PRODUCTS

Z-10-D-OUT
10-CH Digital Output module / RS485
pg. 13

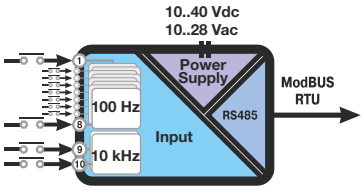
Z-D-IO
8-CH, 6 digital input - 2 digital outputs control module
pg. 14

ZC-24-DO
24 CH digital output CANopen / ModBUS
pg. 29

ZC-16DI-8DO
16 CH digital input - 8 CH digital output CANopen / ModBUS
pg. 30

Z-10-D-IN

10-CH DIGITAL INPUT MODULE / RS485 MODBUS RTU

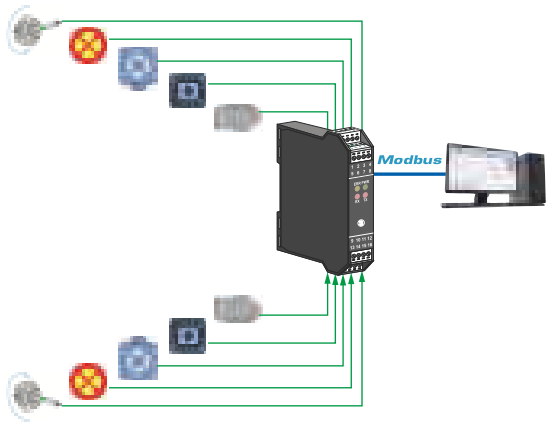


Z-10-D-IN is a 10 digital inputs with self-powered 16V DC shared negative pole. Z-10-D-IN has 8 built-in inputs with 16 bit contactor with 100 Hz max. frequency and 2 inputs with 32 bit contactor with 10 kHz max. frequency. At 10 kHz Z-10-D-IN assures frequency measurement. For 100 Hz input the module measures period, frequency and TON, TOFF. The module offers possibility to set total counters for forward or backward counting. Z-10-D-IN gives also overflow indication for each total counter.

TECHNICAL SPECIFICATIONS

Electrical Specifications	
Power supply	10..40 Vdc / 19..28 Vac / 50-60 Hz
Power consumption	1,5 W
Isolation	1.500 Vac (3 way)
Status Indicators	Power supply, Fail, RX, TX
Protection Degree	IP20
Input protection	600 W/ms transient current suppressors
Thermomechanical Specifications	
Operating Temperature	-10..+65 °C
Dimension (W x H x D)	17.5 x 100 x 112 mm
Weight	About 140 g
Enclosure	PBT, black
Connections	Removable 3-way crew terminals, 3.5 pitch Rear IDC10 connector for Z-PC backplane
Mounting	35 mm DIN rail guide
Communication	
Interface	2 wire RS485
Speed	Up to 57.600 bps
Protocol	ModBUS RTU slave
Distance	Up to 1.200 m
Connectivity	Max 32 nodes
Signals	
Channel Numbers	10, self powered 16 Vdc shared negative pole
Type	Reed, contact sensors, proximity, pnp, npn Nr 2 inputs - 32 bit counters @ 10 kHz Nr 8 inputs - 16 bit counters @ 100 Hz Absorbed current: 3 mA (per input) Min pulse width: 4 ms..50 µs
Configuration	
DIP switches	Baud rate, address, inversion scale, digital filter, totalizers, Modbus latency time
Software	Z-NET3 (lec 61131) EASY Z-10-D-IN (plug&play)
Standard	
Approval	CE, RINA, UL UR CSA
Norms	EN 61000-6-4; EN 61000-6-2; EN 61010

APPLICATION NOTE



ORDER CODES

Code	Description
Z-10-D-IN	5-CH Digital input module / RS485 ModBUS RTU, 10..40 Vdc / 19..28 Vac

ACCESSORIES & SOFTWARE

Z-PC-DIN
Backplane for power & bus communication
pg. 36

Z-SUPPLY
Switching power supply
pg. 36

Z-NET
IEC 61331 programming software
pg. 36

EASY SETUP
Plug&Play configuration software
pg. 36

SIMILAR PRODUCTS

Z-D-IN
5-CH Digital Input module / RS485
pg. 10

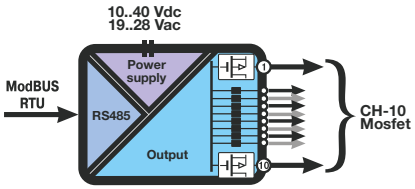
Z-D-IO
8-CH, 6 digital input - 2 digital outputs control module
pg. 14

ZC-24-DI
24 CH digital input CANopen / ModBUS
pg. 28

ZC-16DI-8DO
16 CH digital input - 8 CH digital output CANopen / ModBUS
pg. 30

Z-10-D-OUT

10-CH DIGITAL OUTPUT MODULE / RS485 MODBUS RTU

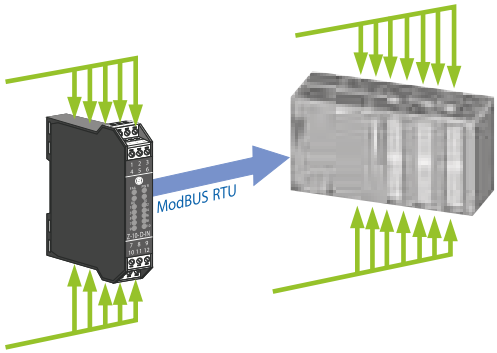


Z-10-D-OUT is used to drive N.10 MOSFETS from all of the control systems which are able to communicate with the transmission protocol MODBUS RTU through the RS485 serial interface. The digital output max load is 0,5 A (inductive) and 0,5 A (resistive) with maximum switch-on / switch-off cycle frequency of 2 cycles/ second. The module is ModBUS Slave and can be coupled with any ModBUS Master device. A 3-way galvanic isolation among Power supply // output // RS485 circuits assures the integrity of your datas.

TECHNICAL SPECIFICATIONS

General Data	
Power supply	10..40 Vdc / 19..28 Vac / 50-60 Hz
Power consumption	1,5 W
Isolation	1.500 Vac (3 way)
Status Indicators	Power supply, error, data transmission, data reception, output status
Protection Degree	IP20
Operating Temperature	-10..+65 °C
Dimension (W x H x D)	17.5 x 100 x 112 mm
Connection	Removable 3-way screw terminal 5,08 pitch Rear IDC10 connector for DIN 46277 rail
Mounting	35 mm DIN rail guide
Communication, Memory Process	
Interface	2 wire RS485
Speed	Up to 115.200 bps
Protocol	ModBUS RTU slave
Communication Time	< 10 ms (38400 baud)
Distance	Up to 1.200 m
Connectivity	Max 32 nodes
Signals	
Channel Numbers	10-CH optoisolated
Output type	Mosfet semiconductor with shared negative pole, overall connection by external supply (max 30 Vdc, min 6 Vdc)
Carrying capacity	0,5 A inductive load and 0,5 A resistive load with maximum switch-on / switch-off cycle frequency of 2 cycles/second
Safe time	From 33 ms to 2184
Outputs protection	From short circuit and overvoltage with 6..40 Vdc range
Diagnostic	Channel status, programmable
Programming	
DIP switches	Baud rate, node, parity, serial port, bit stop, termination line
Software	Z-NET3 (lec 61131) EASY Z-10-D-OUT (plug&play)
Standard	
Approval	CE, RINA, UL-UR CSA
Norms	EN 50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4; EN 50140/141; EN 61010-1

APPLICATION NOTE



ORDER CODES

Code	Description
Z-10-D-OUT	10-CH digital output control module / RS485 ModBUS RTU, 10..40 Vdc / 19..28 Vac

ACCESSORIES & SOFTWARE

Z-PC-DIN
Backplane for power & bus communication
pg. 36

Z-SUPPLY
Switching power supply
pg. 36

Z-NET
IEC 61331 programming software
pg. 36

EASY SETUP
Plug&Play configuration software
pg. 36

SIMILAR PRODUCTS

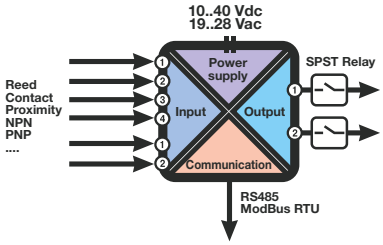
Z-D-OUT
10-CH Digital Input module / RS485
pg. 11

ZC-24DO
24 CH digital output CANopen / ModBUS
pg. 29

ZC-16DI-8DO
16 CH digital input - 8 CH digital output CANopen / ModBUS
pg. 30

Z-D-IO

8-CH, 6 DIGITAL INPUT - 2 DIGITAL OUTPUTS CONTROL MODULE / RS485

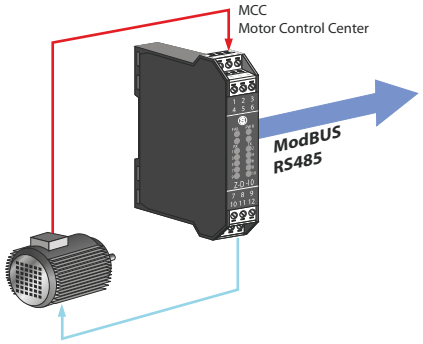


Z-D-IO has N.6 digital inputs, N.2 SPST relays, capacity of 2Aac, 250 Vac. It can be used as simple Input/Output module or, through dip-switches, is possible to acticate special functions to drive motors, pneumatic and motorised valves.The module is ModBUS Slave and can be coupled with any ModBUS Master device. A 3-way galvanic isolation among Power supply // output // RS485 circuits assures the integrity of your datas.

TECHNICAL SPECIFICATIONS

General Data	
Power supply	10..40 Vdc / 19..28 Vac / 50-60 Hz
Power consumption	2,5 W
Isolation	1.500 Vac (3 way)
Power transducers	Yes
Status Indicators	Power supply, error, data transmission, data reception, input status
Protection Degree	IP20
Operating Temperature	-10..+65 °C
Dimension (W x H x D)	17.5 x 100 x 112 mm
Mounting	35 mm DIN rail guide
Communication, Memory Process	
Interface	2 wire RS485
Speed	Up to 115.200 bps
Protocol	ModBUS RTU slave
Communication Time	< 10 ms (38400 baud)
Distance	Up to 1.200 m
Connectivity	Max 32 nodes
Data Memory	EEPROM for the configuration parameters, retention time 10 years, N° 5 registers 16 bit, N° 5 bit overflow
Signals	
Channel Numbers	8
Input	N.6 Opto-isolated for REED, PROXIMITY, PNP, NPN, contact, etc.
Output	N.2 SPST relay outputs with common contact, capacity 5A 250Vac. Internal jumpers for selecting an NO or NC contact for each relay.
Programming	
DIP switches	Baud rate, node, parity, serial port, bit stop, termination line
Software	Z-NET3 (lec 61131) EASY Z-D-IO (plug&play)
Standard	
Approval	CE, RINA
Norms	EN 50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4; EN 50140/141; EN 61010-1

APPLICATION NOTE



ORDER CODES

Code	Description
Z-D-IO	8-CH, 6 digital input - 2 digital outputs control module / RS485, 10..40 Vdc / 19..28 Vac

ACCESSORIES & SOFTWARE

Z-PC-DIN
Backplane for power & bus communication
pg. 36

Z-SUPPLY
Switching power supply
pg. 36

Z-NET
IEC 61331 programming software
pg. 36

EASY SETUP
Plug&Play configuration software
pg. 36

SIMILAR PRODUCTS

Z-10-D-IN
10-CH Digital Input module / RS485
pg. 12

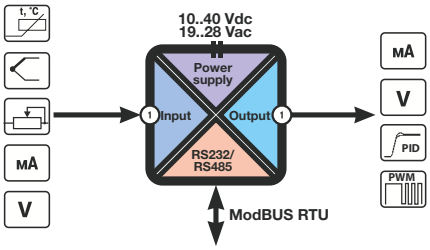
Z-D-IN
5-CH Digital input module / RS485
pg. 10

ZC-24-DI
24 CH digital input CANopen / ModBUS
pg. 28

ZC-16DI-8DO
16 CH digital input - 8 CH digital output CANopen / ModBUS
pg. 30

Z-DAQ-PID

2-CH UNIVERSAL ANALOG I/O MODULE WITH PID CONTROL

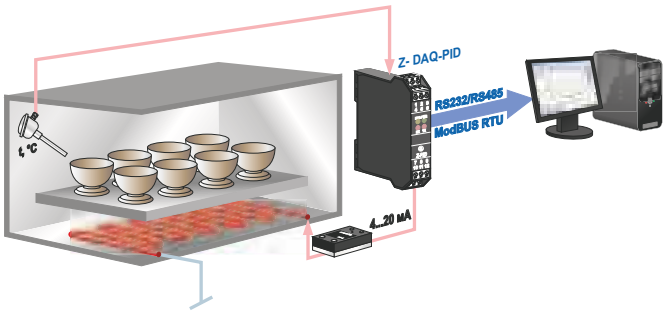


Z-DAQ-PID has a universal analog input (mA, V, PT100, TC, Ohm) and an active output 4..20 mA or 0..20 mA for continuos or PWM (pulse-width modulation) loop control. This functionality can be disabled and the unit can be used as analog input and analog output indipendent from each other. The module is ModBUS Slave and can be coupled with any ModBUS Master device. A 3-way galvanic isolation among Power supply // input // RS485 circuits assures the integrity of your datas.

TECHNICAL SPECIFICATIONS

General Data	
Power supply	10..40 Vdc / 19..28 Vac / 50-60 Hz
Power consumption	2,0 W
Isolation	1.500 Vac (4 way)
Power transducers	Yes
Status Indicators	Power supply, error, data transmission, data reception, input status
Protection Degree	IP20
Operating Temperature	-10..+65 °C
Dimension (W x H x D)	17.5 x 100 x 112 mm
Mounting	35 mm DIN rail guide
Communication, Memory Process	
Interface	2 wire RS485
Speed	Up to 115.200 bps
Protocol	ModBUS RTU slave
Communication Time	< 10 ms (38400 baud)
Distance	Up to 1.200 m
Connectivity	Max 32 nodes
Data Memory	EEPROM for the configuration parameters, retention time 10 years
Signals	
Channel Numbers	2
Input	N.1 Voltage (0..10V) Current (0/4..20mA) Potentiometer (1KΩ..100KΩ) Thermocouple (J,K,R,S,T,B,E,N) RTD (PT100,PT500,PT1000,NI100)
Output	N.1 Voltage (0..5V, 0..10V) Current (0..20mA,4..20mA)
Programming	
DIP switches	Baud rate, node, parity, serial port, bit stop, termination line
Software	EASY Z-DAQ-PID (plug&play)
Operating Modality	Conversion with PID Conversion without PID Analogue output without PID Special PWM (pulse-width modulation
Standard	
Approval	CE
Norms	EN 50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4; EN 50140/141; EN 61010-1

APPLICATION NOTE



ORDER CODES

Code	Description
Z-DAQ-PID	2-CH universal analog I/O module with PID control/ RS485, 10..40 Vdc / 19..28 Vac

ACCESSORIES & SOFTWARE

Z-PC-DIN
Backplane for power & bus communication
pg. 36

Z-SUPPLY
Switching power supply
pg. 36

EASY SETUP
Plug&Play configuration software
pg. 36

SIMILAR PRODUCTS

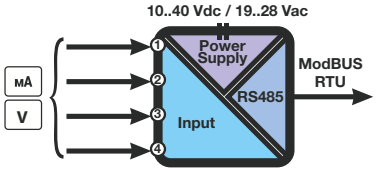
Z-4RTD2
4-CH RTD input module / RS485
pg. 19

Z-4TC
4-CH thermocouple/mV input module / RS485
pg. 20

Z-4AI
4-CH analog input module / RS485
pg. 16

Z-4AI

4-CH ANALOG INPUT MODULE / RS485 MODBUS RTU

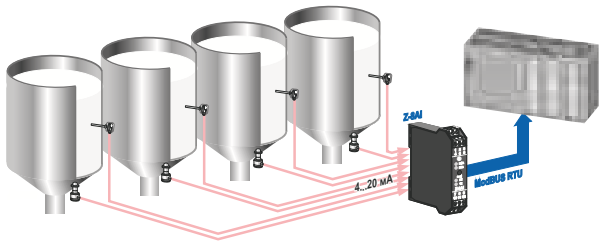


Z-4AI is used to interface analog inputs (Voltage or current, also with bipolar range) with Modbus system.
The modules is able to supply all 4 current loops at the same time, this is very useful for 2-wire sensors because the wiring does not need an external power supply.
It's a ModBUS Slave and can be coupled with any ModBUS Master device. A 3-way galvanic isolation among Power supply // input // RS485 circuits assures the integrity of your datas.

TECHNICAL SPECIFICATIONS

General Data	
Power supply	10..40 Vdc / 19..28 Vac / 50-60 Hz
Power consumption	2,5 W
Isolation	1.500 Vac (3 way)
Power transducers	Yes
Status Indicators	Power supply, error, data transmission, data reception, input status
Protection Degree	IP20
Operating Temperature	-10..+65 °C
Dimension (W x H x D)	17.5 x 100 x 112 mm
Mounting	35 mm DIN rail guide
Communication, Memory Process	
Interface	2 wire RS485
Speed	Up to 115.200 bps
Protocol	ModBUS RTU slave
Communication Time	< 10 ms (38400 baud)
Distance	Up to 1.200 m
Connectivity	Max 32 nodes
Data Memory	EEPROM for the configuration parameters, retention time 10 years
Signals	
Channel Numbers	4
Input	VOLTAGE Bipolar with programmable FS at ±2 Vdc, or ±10 Vdc; input impedance: >100 kΩ CURRENT Bipolar with programmable FS at ± 20 mA.
Programming	
DIP switches	Baud rate, address, input type
Software	EASY Z-4AI (plug&play)
Standard	
Approval	CE
Norms	EN 50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4; EN 50140/141; EN 61010-1

APPLICATION NOTE



ORDER CODES

Code	Description
Z-4AI	4-CH analog input module / RS485 ModBUS RTU, 10..40 Vdc / 19..28 Vac

ACCESSORIES & SOFTWARE

Z-PC-DIN
Backplane for power & bus communication
pg. 36

Z-SUPPLY
Switching power supply
pg. 36

EASY SETUP
Plug&Play configuration software
pg. 36

SIMILAR PRODUCTS

Z-4RTD2
4-CH RTD input module / RS485
pg. 19

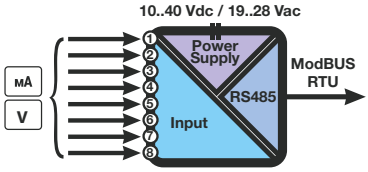
Z-4TC
4-CH thermocouple/ mV input module / RS485
pg. 20

Z-8AI
8-CH analog input module / RS485
pg. 17

Z-DAQ-PID
2-CH universal analog I/O module with PID control
pg. 15

Z-8AI

8-CH ANALOG INPUT MODULE / RS485 MODBUS RTU

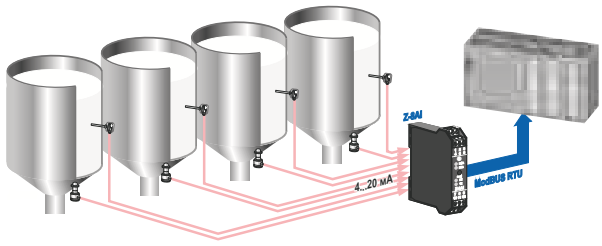


The Z-8AI is used to interface analog inputs (Voltage or current, also with bipolar range) with Modbus system. The modules is able to supply all 8 current loops at the sameb time, this is very useful for 2-wire sensors because the wiring does not need an external power supply. It's a ModBUS Slave and can be coupled with any ModBUS Master device. A 3-way galvanic isolation among Power supply // input // RS485 circuits assures the integrity of your datas.

TECHNICAL SPECIFICATIONS

General Data	
Power supply	10..40 Vdc / 19..28 Vac / 50-60 Hz
Power consumption	3,5 W
Isolation	1.500 Vac (3 way)
Power transducers	Yes
Status Indicators	Power supply, error, data transmission, data reception, input status
Protection Degree	IP20
Operating Temperature	-10..+65 °C
Dimension (W x H x D)	17.5 x 100 x 112 mm
Mounting	35 mm DIN rail guide
Communication, Memory Process	
Interface	2 wire RS485
Speed	Up to 115.200 bps
Protocol	ModBUS RTU slave
Communication Time	< 10 ms (38400 baud)
Distance	Up to 1.200 m
Connectivity	Max 32 nodes
Data Memory	EEPROM for the configuration parameters, retention time 10 years
Signals	
Channel Numbers	8
Input	VOLTAGE Bipolar with programmable FS at ±2 Vdc, or ±10 Vdc; input impedance: >100 kΩ CURRENT Bipolar with programmable FS at ± 20 mA.
Programming	
DIP switches	Baud rate, address, input type
Software	EASY Z-8AI (plug&play)
Standard	
Approval	CE
Norms	EN 50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4; EN 50140/141; EN 61010-1

APPLICATION NOTE



ORDER CODES

Code	Description
Z-8AI	8-CH analog input module / RS485 ModBUS RTU, 10..40 Vdc / 19..28 Vac

ACCESSORIES & SOFTWARE

Z-PC-DIN
Backplane for power & bus communication
pg. 36

Z-SUPPLY
Switching power supply
pg. 36

EASY SETUP
Plug&Play configuration software
pg. 36

SIMILAR PRODUCTS

Z-4RTD2
4-CH RTD input module / RS485
pg. 19

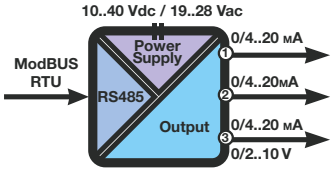
Z-4TC
4-CH thermocouple/ mV input module / RS485
pg. 20

Z-4AI
4-CH analog input module / RS485
pg. 16

Z-DAQ-PID
2-CH universal analog I/O module with PID control
pg. 15

Z-3AO

3-CH ANALOG OUTPUT MODULE / RS485 MODBUS RTU



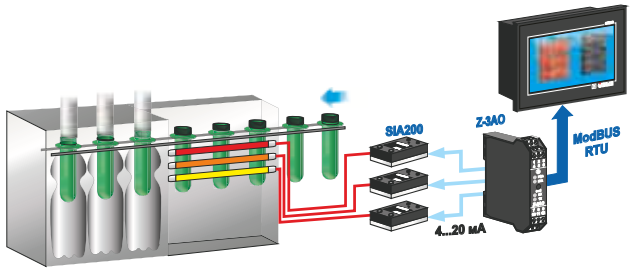
Z-3AO is used to get N.3 analogue outputs (mA or V) from a ModBUS system. The standard can be either mA (0..20mA / 4..20mA) or V (-10..10 V, 0..10 V or 2..10 V).

A 3-way galvanic isolation among Power supply // input // RS485 circuits assures the integrity of your datas.

TECHNICAL SPECIFICATIONS

General Data	
Power supply	10..40 Vdc / 19..28 Vac / 50-60 Hz
Power consumption	2,5 W
Isolation	1.500 Vac (3 way)
Power transducers	-
Status Indicators	Power supply, error, data transmission, data reception
Protection Degree	IP20
Operating Temperature	-10..+65 °C
Dimension (W x H x D)	17.5 x 100 x 112 mm
Mounting	35 mm DIN rail guide
Communication, Memory Process	
Interface	2 wire RS485
Speed	Up to 57.600 bps (RS485) 2.400 bps (RS232)
Protocol	ModBUS RTU slave
Communication Time	< 20 ms (@ 38400 baud)
Distance	Up to 1.200 m
Connectivity	Max 32 nodes
Data Memory	EEPROM for the configuration parameters, retention time 10 years
Signals	
Channel Numbers	3
Input	VOLTAGE Bipolar with settable full scale and start scale at -10 ..10 V, 0 ..10 V or 2 ..10 V. CURRENT with settable full scale and start scale at 0 ..20mA or 4 ..20 mA.
Programming	
DIP switches	Baud rate, address, output type
Software	EASY Z-3AO (plug&play free software)
Standard	
Approval	CE
Norms	EN 50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4; EN 50140/141; EN 61010-1

APPLICATION NOTE



ORDER CODES

Code	Description
Z-3AO	3-CH analog output module / RS485 ModBUS RTU, 10..40 Vdc / 19..28 Vac

ACCESSORIES & SOFTWARE

Z-PC-DIN
Backplane for power & bus communication
pg. 36

Z-SUPPLY
Switching power supply
pg. 36

EASY SETUP
Plug&Play configuration software
pg. 36

SIMILAR PRODUCTS

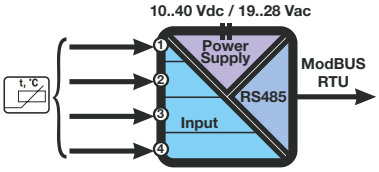
Z-DAQ-PID
2-CH universal analog I/O module with PID control
pg. 15

Z-8AI
8-CH analog input module / RS485
pg. 17

Z-4-AI
4-CH analog input module / RS485
pg. 16

Z-4RTD-2

4-CH RTD INPUT MODULE / RS485 MODBUS RTU

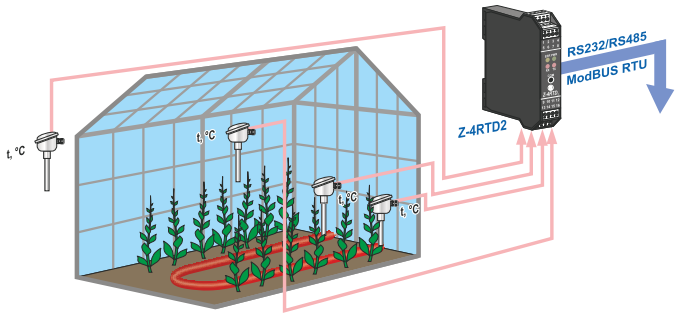


Z-4RTD2 is an interface for RTD sensors (PT100, PT1000, PT500, Ni100) with 2,3 or 4 wires. The number of input is 4 and the each input is independent from each other.
It's a ModBUS Slave and can be coupled with any ModBUS Master device. A 6-way galvanic isolation among Power supply // input // RS485 circuits assures the integrity of your datas (each input channel is isolated from the other circuits).

TECHNICAL SPECIFICATIONS

General Data	
Power supply	10..40 Vdc / 19..28 Vac / 50-60 Hz
Power consumption	0,7 W
Isolation	1.500 Vac (6 way)
Power transducers	-
Status Indicators	Power supply, error, data transmission, data reception
Protection Degree	IP20
Operating Temperature	-10..+65 °C
Dimension (W x H x D)	17.5 x 100 x 112 mm
Mounting	35 mm DIN rail guide
Communication, Memory Process	
Interface	2 wire RS485
Speed	Up to 57.600 bps (RS485) 2.400 bps (RS232)
Protocol	ModBUS RTU slave
Communication Time	< 20 ms (@ 38400 baud)
Distance	Up to 1.200 m
Connectivity	Max 32 nodes
Data Memory	EEPROM for the configuration parameters
Signals	
Channel Numbers	4
Input	4 clamps (ohmmeter 2,3,4 wire) Pt100: -200..+650°C (f.s. 330 Ω) Pt500: -200..+750°C (f.s 1.800 Ω) Pt1000: -200..+210°C (f.s. 1.800 Ω) Ni100: -60..+250°C (f.s. 330 Ω)
Programming	
DIP switches	Baud rate, address,
Software	EASY Z-4RTD2 (plug&play free software)
Standard	
Approval	CE, RINA
Norms	EN 61000-6-4/2002, EN 61000-6-2/2002, EN 61010, EN 60742

APPLICATION NOTE



ORDER CODES

Code	Description
Z-4RTD-2	4-CH RTD input module / RS485 ModBUS RTU, 10..40 Vdc / 19..28 Vac

ACCESSORIES & SOFTWARE

Z-PC-DIN
Backplane for power & bus communication
pg. 36

Z-SUPPLY
Switching power supply
pg. 36

EASY SETUP
Plug&Play configuration software
pg. 36

SIMILAR PRODUCTS

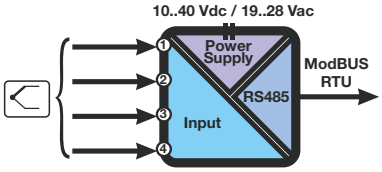
Z-DAQ-PID
2-CH universal analog I/O module with PID control
pg. 15

Z-4TC
4-CH thermocouple input module / RS485
pg. 20

Z-8TC
8-CH thermocouple input module / RS485
pg. 21

Z-4TC

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

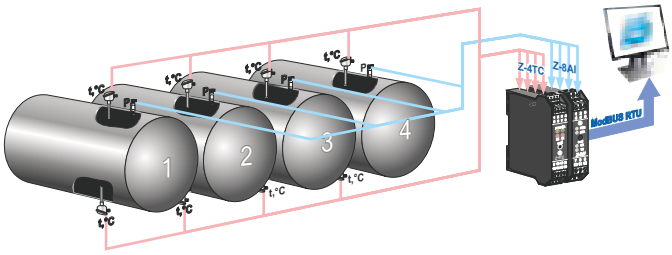


Z-4TC is an interface for Thermocouple sensors (J, K, E, N, S, R, B ,T) and generic sensor with mV as standard output signal. The number of input is 4 and each input is independent from each other.
It's a ModBUS Slave and can be coupled with any ModBUS Master device. A 3-way galvanic isolation among Power supply // input // RS485 circuits assures the integrity of your datas.

TECHNICAL SPECIFICATIONS

General Data	
Power supply	10..40 Vdc / 19..28 Vac / 50-60 Hz
Power consumption	2,5 W
Isolation	1.500 Vac (3 way)
Power transducers	-
Status Indicators	Power supply, error, data transmission, data reception
Protection Degree	IP20
Operating Temperature	-10..+65 °C
Dimension (W x H x D)	17.5 x 100 x 112 mm
Mounting	35 mm DIN rail guide
Communication, Memory Process	
Interface	2 wire RS485
Speed	Up to 57.600 bps (RS485) 2.400 bps (RS232)
Protocol	ModBUS RTU slave
Communication Time	< 20 ms (@ 38400 baud)
Distance	Up to 1.200 m
Connectivity	Max 32 nodes
Data Memory	EEPROM for the configuration parameters
Signals	
Channel Numbers	4
Input	TERMOCOUPLE Type J, K, E, N, S, R, B, T VOLTAGE Bipolar with ± 160 mV range
Programming	
DIP switches	Baud rate, address
Software	EASY Z-4TC (plug&play free software)
Standard	
Approval	CE, RINA
Norms	EN 61000-6-4/2002, EN 61000-6-2/2002, EN 61010, EN 60742

APPLICATION NOTE



ORDER CODES

Code	Description
Z-4TC	4-CH TC input module / RS485 ModBUS RTU, 10..40 Vdc / 19..28 Vac

ACCESSORIES & SOFTWARE

Z-PC-DIN
Backplane for power & bus communication
pg. 36

Z-SUPPLY
Switching power supply
pg. 36

EASY SETUP
Plug&Play configuration software
pg. 36

SIMILAR PRODUCTS

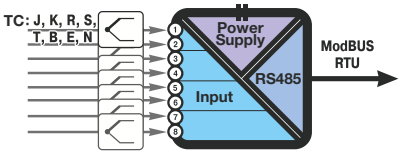
Z-DAQ-PID
2-CH universal analog I/O module with PID control
pg. 15

Z-4RTD2
4-CH RTD input module / RS485
pg. 19

Z-8TC
8-CH thermocouple input module / RS485
pg. 21

Z-8TC

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

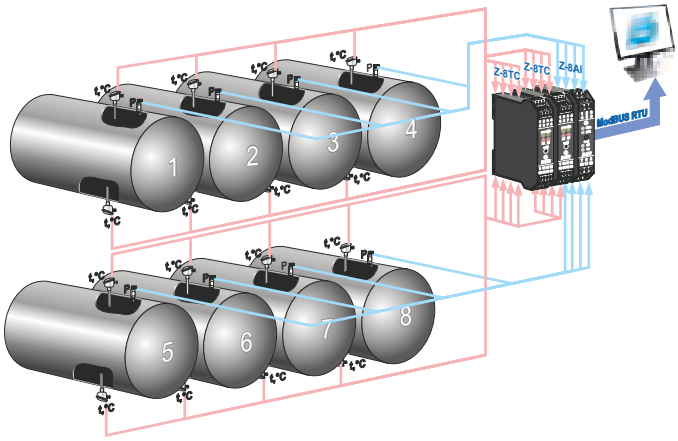


Z-8TC is an interface for Thermocouple sensors (J, K, E, N, S, R, B ,T) and generic sensor with mV as standard output signal. The number of input is 8 and each input is independent from each other.
It's a ModBUS Slave and can be coupled with any ModBUS Master device. A 6-way galvanic isolation among Power supply // input // RS485 circuits assures the integrity of your datas (each couple of channels is isolated from the other circuits).

TECHNICAL SPECIFICATIONS

General Data	
Power supply	10..40 Vdc / 19..28 Vac / 50-60 Hz
Power consumption	0,6 W
Isolation	1.500 Vac (6 way)
Power transducers	-
Status Indicators	Power supply, error, data transmission, data reception
Protection Degree	IP20
Operating Temperature	-10..+65 °C
Dimension (W x H x D)	17.5 x 100 x 112 mm
Mounting	35 mm DIN rail guide
Communication, Memory Process	
Interface	2 wire RS485
Speed	Up to 57.600 bps (RS485) 2.400 bps (RS232)
Protocol	ModBUS RTU slave
Communication Time	< 20 ms (@ 38400 baud)
Distance	Up to 1.200 m
Connectivity	Max 32 nodes
Data Memory	EEPROM for the configuration parameters
Signals	
Channel Numbers	8
Input	TERMOCOUPLE Type J, K, E, N, S, R, B, T VOLTAGE -10,1...81,4 mV
Programming	
DIP switches	Baud rate, address
Software	EASY Z-8TC (plug&play free software)
Standard	
Approval	CE, RINA
Norms	EN 61000-6-4/2002, EN 61000-6-2/2002, EN 61010, EN 60742

APPLICATION NOTE



ORDER CODES

Code	Description
Z-8TC	8-CH thermocouple/mV input module / RS485 ModBUS RTU, 10..40 Vdc / 19..28 Vac

ACCESSORIES & SOFTWARE

Z-PC-DIN
Backplane for power & bus communication
pg. 36

Z-SUPPLY
Switching power supply
pg. 36

EASY SETUP
Plug&Play configuration software
pg. 36

SIMILAR PRODUCTS

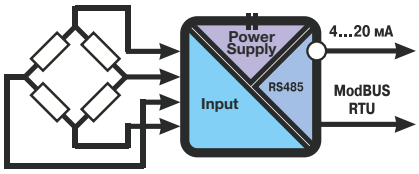
Z-DAQ-PID
2-CH universal analog I/O module with PID control
pg. 15

Z-4RTD2
4-CH RTD input module / RS485
pg. 19

Z-4TC
4-CH thermocouple/mV input module / RS485
pg. 20

Z-SG

STRAIN GAUGE INPUT MODULE/ RS485 MODBUS RTU

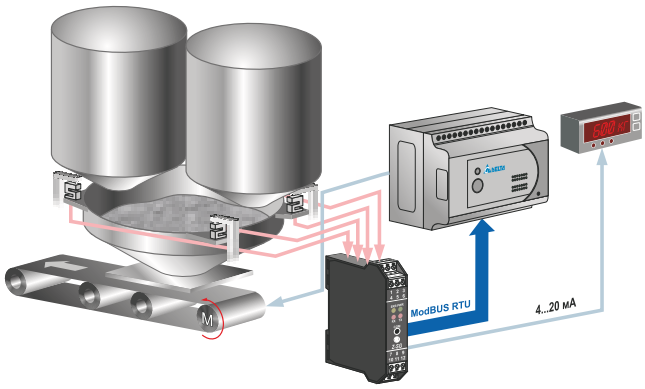


Z-SG is a strain gauge signal converter. Measurements taken using the 6-wires or 4-wires technique are available through Modbus-RTU serial protocol or the analog output.
Sensitivity from 1 to 64mV/V, settable by DIP-switch for integer values, via software for real/integer values. Stable weight indication via Modbus register/digital output. Remote writing of the tare in volatile and/or non-volatile memory by digital input/Modbus register/Modbus commands.

TECHNICAL SPECIFICATIONS

General Data	
Power supply	10..40 Vdc / 19..28 Vac / 50-60 Hz
Power consumption	2,0 W
Isolation	1.500 Vac (4 way)
Power transducers	-
Status Indicators	Power supply, error, data transmission, data reception
Protection Degree	IP20
Operating Temperature	-10..+65 °C
Dimension (W x H x D)	17.5 x 100 x 112 mm
Mounting	35 mm DIN rail guide
Communication, Memory Process	
Interface	2 wire RS485
Speed	Up to 57.600 bps (RS485) 2.400 bps (RS232)
Protocol	ModBUS RTU slave
Communication Time	< 20 ms (@ 38400 baud)
Distance	Up to 1.200 m
Connectivity	Max 32 nodes
Data Memory	EEPROM for the configuration parameters
Signals	
Channel Numbers	1
Input	6-wire bridge connections, lowest value 87 Ω suitable for 1..4 loadcells (350 Ω) or 1..8 loadcells (1000 Ω)
Programming	
DIP switches	Baud rate, address, sensitivity, output
Software	EASY Z-SG (plug&play free software)
Standard	
Approval	CE, RINA
Norms	EN 61000-6-4/2002, EN 61000-6-2/2002, EN 61010, EN 60742

APPLICATION NOTE



ORDER CODES

Code	Description
Z-SG	Strain gauge input module/ RS485 ModBUS RTU , 10..40 Vdc / 19..28 Vac

ACCESSORIES & SOFTWARE

Z-PC-DIN
Backplane for power & bus communication
pg. 36

Z-SUPPLY
Switching power supply
pg. 36

EASY SETUP
Plug&Play configuration software
pg. 36

SG-EQ4
Load cell connection and equalization system
-

SIMILAR PRODUCTS

ZC-SG
Strain gauge input module/ CANopen
pg. 35

	Z203-1	Z204	S203T	S203TA
				
	Single phase network analyzer // RS485 ModBUS RTU	AC/DC Voltage converter (1000 Vac/Vdc) to DC current/voltage isolator/converter - RS485 Modbus RTU	Advanced 3-phase network analyzer // RS485 (input from special CT)	Advanced 3-phase network analyzer // RS485 (input up to 5 Arms)

TECHNICAL SPECIFICATIONS

ORDER CODES				
Model	Z203-1	Z204	S203T	S203TA
Accessories	Page 36	Page 36	TA15 (Curr. Transformer f.s. 15 A, prec. 0,1%) TA25 (Curr. Transformer f.s. 25 A, prec. 0,1%) TA100 (Curr. Transformer f.s. 100 A, prec. 0,1%)	
General Data				
Power supply	10..40 Vdc, 19..28 Vac 50..60 Hz	10..40 Vdc / 19..28 Vac	10..40 Vdc, 19..28 Vac 50..60 Hz	10..40 Vdc, 19..28 Vac 50..60 Hz
Power Consumption	2 W	1,0 W	2 W	2 W
Isolation	3.750 Vac (from/to power) 1500 Vac (other circuits)	4000 Vac between input and power supply/output ports.	3.750 Vac (from/to power) 1500 Vac (other circuits)	3.750 Vac (from/to power) 1500 Vac (other circuits)
Status Indicator	Power supply, error, data transmission, data reception	Power supply, fail, RS485 communication	Power supply, error, data transmission, data reception	Power supply, error, data transmission, data reception
Protection Degree	IP20	IP20	IP20	IP20
Operating Temperature	-10..+65 °C	- 20..+65 °C	-10..+65 °C	-10..+65 °C
Dimension (W x H x D)	17.5 x 100 x 112 mm	17.5 x 100 x 112 mm	105 x 89 x 60 mm	105 x 89 x 60 mm
Weight	About 140 g	About 140 g	About 160 g	About 160 g
Enclosure	Nylon 6 with 30% glass-fiber, V0 self-extinguished class	Nylon 6 with 30% glass-fiber, V0 self-extinguished class	Plastic Material UL V0	Plastic Material UL V0
Connections	Removable terminal block, max wire size 2,5 mm^2 Rear IDC10 connector for Z-PC backplane	Removable terminal block, max wire size 2,5 mm^2 Rear IDC10 connector for Z-PC backplane		
Mounting	35 mm DIN rail guide	35 mm DIN rail guide	35 mm DIN rail guide	35 mm DIN rail guide
Communication				
Interface	2 wire RS485 RS232, front jack, speed 2400 Baud, data bits 8, Parity: NO, Stop bits:1	2 wire RS485 RS232, front jack, speed 2400 Baud, data bits 8, Parity: NO, Stop bits:1	2 wire RS485 RS232, front jack, speed 2400 Baud, data bits 8, Parity: NO, Stop bits:1	2 wire RS485 RS232, front jack, speed 2400 Baud, data bits 8, Parity: NO, Stop bits:1
Speed	Up to 115 kbps	Up to 115 kbps	Reading every 25 ms	Reading every 25 ms
Protocol	ModBUS RTU slave	ModBUS RTU slave	ModBUS RTU slave	ModBUS RTU slave
Communication Time	< 10 ms (38400 baud)	< 10 ms (38400 baud)		
Distance	Up to 1.200 m	Up to 1.200 m	Up to 1.200 m	Up to 1.200 m
Connectivity	Max 32 nodes	Max 32 nodes	Max 32 nodes	Max 32 nodes
Signals				
Channel Numbers	1 input, 1 output	1 input, 1 output	1 input, 1 output	1 input, 1 output
Type	Voltage: up to 500 Vac (50 or 60 Hz) Current: 5 Arms, Max peak factor: 3, Max Current : 15A, (50 or 60 Hz) Analog retransmission of : Vrms, Irms, P, Q, cosΦ	Voltage Input: 0..300, 0..600, 0…1000 Vac/Vdc Voltage Output 0..10V, Min load resistance: 2.500 Ω Current Output 2 scales: 0/4..20 mA (active/passive) Max load resistance: 600 Ω	Voltage input: Max=600 Vac, frequency 50 or 60Hz Current Input: up to 100 mA (from CT) Measures values (single phase or three phases): Vrms, Irms, Watt (bidirectional), Var, VA, Frequency, cosΦ, Energy (bidirectional) Analog retransmission (voltage / current)	Voltage input: Max=600 Vac, frequency 50 or 60Hz Current Input: up to 5 Aac Measures values (single phase or three phases): Vrms, Irms, Watt (bidirectional), Var, VA, Frequency, cosΦ, Energy (bidirectional) Output retransmission (voltage / current
Accuracy	0,5%	0,5%	0,2%	0,2%
Programming				
DIP switches	Dip- switches (address, baud rate, line termination and input range)	Dip- switches (address, baud rate, line termination and input range)	Dip- switches (address, baud rate, line termination and input range)	Dip- switches (address, baud rate, line termination and input range)
Software	Easy Suite	Easy Suite	Easy Suite	Easy Suite
Standard				
Approvals	UL-UR, CE	CE	CE	CE
Norms	EN50081-2, EN 55011, EN 50082-2, EN 61000-2-2/4, EN 50140/141, EN 61010-1, EN 60742	EN 61000-6-4 (2007) EN 61000-6-2 (2006) EN 61010-1 (11-2001)	EN 61000-6-4/2002, EN 61000-6-2/2002, EN 61010, EN 60742	EN 61000-6-4, EN 61000-6-2, EN 61010-1, EN 60742

EASY SETUP

PLUG&PLAY SOFTWARE FOR PROGRAMMABLE DEVICES

Plug & Play Easy tools for: Z-D-IN, Z-D-OUT, Z-D-IO, Z-10-D-IN, Z-10-D-OUT, Z-PID, Z-DAQ, Z-4AI, Z-8AI, Z-3AO, Z-4TC, Z-8TC, Z-4RTD-2, Z-SG, Z203, ZC-24DI, ZC-24DO, ZC-16DI-8DO, ZC-4RTD, ZC-SG, S203T, S203TA, K111, S311A, S311D, S401, K120RTD, K121, T120, T121

- **Automatic updating from the web**
- **Real time testing**
- **Fast copying of the same configuration**

AVAILABLE ON
www.seneca.it/download

Z-NET PLATFORM

I/O SYSTEM CONFIGURATOR

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

ORDER CODES	
Code	**Description**
Z-NET-3	Z-PC I/O System Configurator
Z-NET-3-RTU	Telecontrol Tool

DATA RECORDER

DATA ACQUISITION, VISUALIZATION AND RECORDING SOFTWARE

Acquisition and recording software for Z-PC system
Remote connection (LAN, internet, intranet)
Simultaneous visualization up to 8 channels per page
Standard exporting of datas
Example of application: reading from Z-PC I/O's (e.g. Z-4RTD, Z-4AI etc) or generic Modbus Slaves (it's a Modbus recorder software)

ORDER CODES		
Code		**Description**
Tool	DR	Data acquisition software in Z-NET-3
Version	-2	2 recordable channels (video tracks)
	-4	4 recordable channels (video tracks)
	-8	8 recordable channels (video tracks)
	-16	16 recordable channels (video tracks)
	-32	32 recordable channels (video tracks)
	-64	64 recordable channels (video tracks)
Options	-M	Math (calculated channels) tool
	-A	Alarm (output activation) tool
	-R	Report tool
	-MC	Multi-client tool

IEC 61131

PROGRAMMING TOOLKIT

FOR MORE INFORMATION PLEASE CONTACT:
support@seneca.it

DRIVERS & UTILITIES

- **Driver USB installation CD (S107USB, K107USB, S117P, S117P1)**
- **LabVIEW Driver VI**
- **Z-CALCULUS**
- **M-RTU Workbench**
- **ModBUS MicroWin Block (SIMATIC S200)**

AVAILABLES ON
www.seneca.it/download
(or on demand)

POWER SUPPLIES

ORDER CODES	
Code	**Description**
Z-POWER 230-15VA	19 Vac voltage transformer
Z-POWER 230-25VA	19 Vac voltage transformer
Z-POWER 115-15VA	19 Vac voltage transformer
Z-SUPPLY	24 Vac/dc redundant 1.5 A, power supply

Z-PC DIN

DIN RAIL BUS SYSTEM

Hot swapping: Yes
Material: Nylon PA6 charged with 30% glass fiber
Mounting: on 35 mm din rail guide
Terminal: Power / data line

ORDER CODES	
Code	**Description**
Z PC DINAL2 17 5	Head terminal + 2 slots - 17,5 mm step
Z-PC-DIN2-17.5	2 slots - 17,5 mm step
Z-PC-DIN8-17.5	8 slots - 17,5 mm step
Z PC DINAL1 35	Head terminal + 1 slot - 35 mm step
Z-PC-DIN1-35	1 slot - 35 mm step
Z-PC-DIN4-35	4 slot - 35 mm step

PROGRAMMING CABLES

Serial & Ethernet communication and programming cables

ORDER CODES			
Code	**Terminals**	**Code**	**Terminals**
PM001420	RJ10 / DB9F	PM001970	DB9F / Bolt heads
PM001430	RJ10 / DB25M	PM002240	Jack / Jack
PM001440	RJ10 / DB25M	PM002340	Tp-wire / Tp-wire
PM001450	RJ45 / RJ45	PM002350	DB9M / Bolt heads
PM001460	RJ45 / RJ45	PM002460	Tp-wire / Bolt heads
PM001530	RJ10 / DB9M	PM002470	RJ10 / RJ10
PM001601	Jack / DB9F	PM002480	RJ10 / Bolt heads
PM001810	DB15F / DB9F	PM002490	DB9M / DB9F
PM001820	DB15F / RJ10	PM002500	DB9M / DB9F
PM001830	DB15F / DB9M	PM002510	DB9F / Bolt heads
PM001840	DB15F / Bolt heads	PM002520	DB9M / DB9M
PM001850	DB15F / DB15M	PM002530	DB9F / DB9F

CANOpen I/O System

2

High performance distributed I/O system

PROGRAMMING & CONFIGURATION

- IEC 61131 programming system (CoDeSys)
- I/O modules EDS
- EASY suite (plug & play software) by RS32
- DIP switches (address, baud rate)

I/O DIGITAL MODULES

- ZC-24DI: 24 CH digital input / CANopen
- ZC-24DO: 24 CH digital output / CANopen
- ZC-16DI-8DO: 16 CH digital input / 8 CH digital output / CANopen

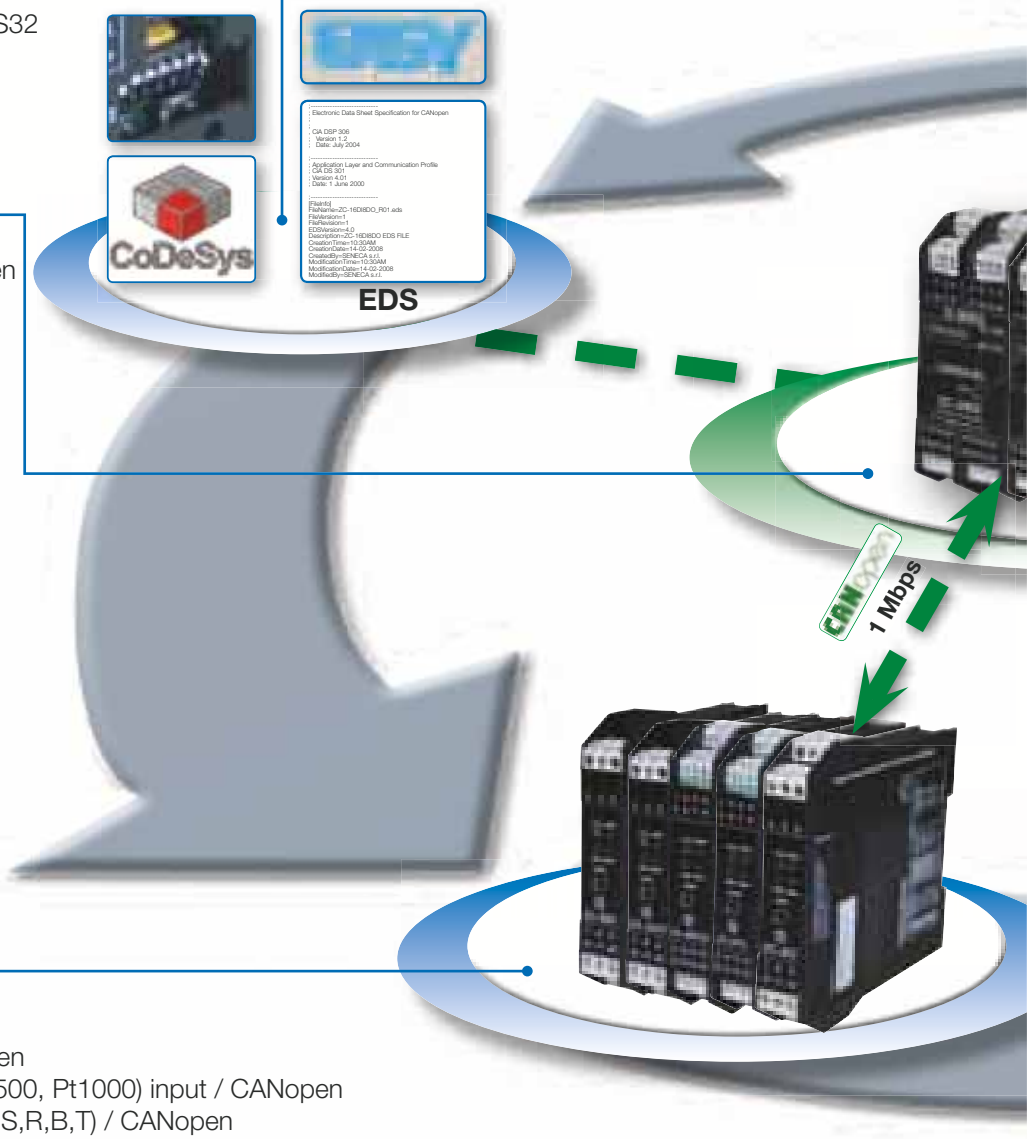
MODBUS / CANOPEN protocol switch

DIGITAL INPUT: IEC EN 61131-2 COMPLIANCE

COUNTERS: 32 bit, max 10 kHz

RESPONSE TIME ~ 1 ms

DIGITAL OUTPUT: MOSFET, MAX 500 mA per CHANNEL



I/O ANALOG MODULES

- ZC-8AI: 8 CH analog input / CANopen
- ZC-3AO: 3 CH analog output / CANopen
- ZC-4RTD: 4 CH RTD (P100, Ni100, Pt500, Pt1000) input / CANopen
- ZC-8TC: 8 CH Thermocouple (J,K,E,N,S,R,B,T) / CANopen
- ZC-SG: strain gauge input / CANopen

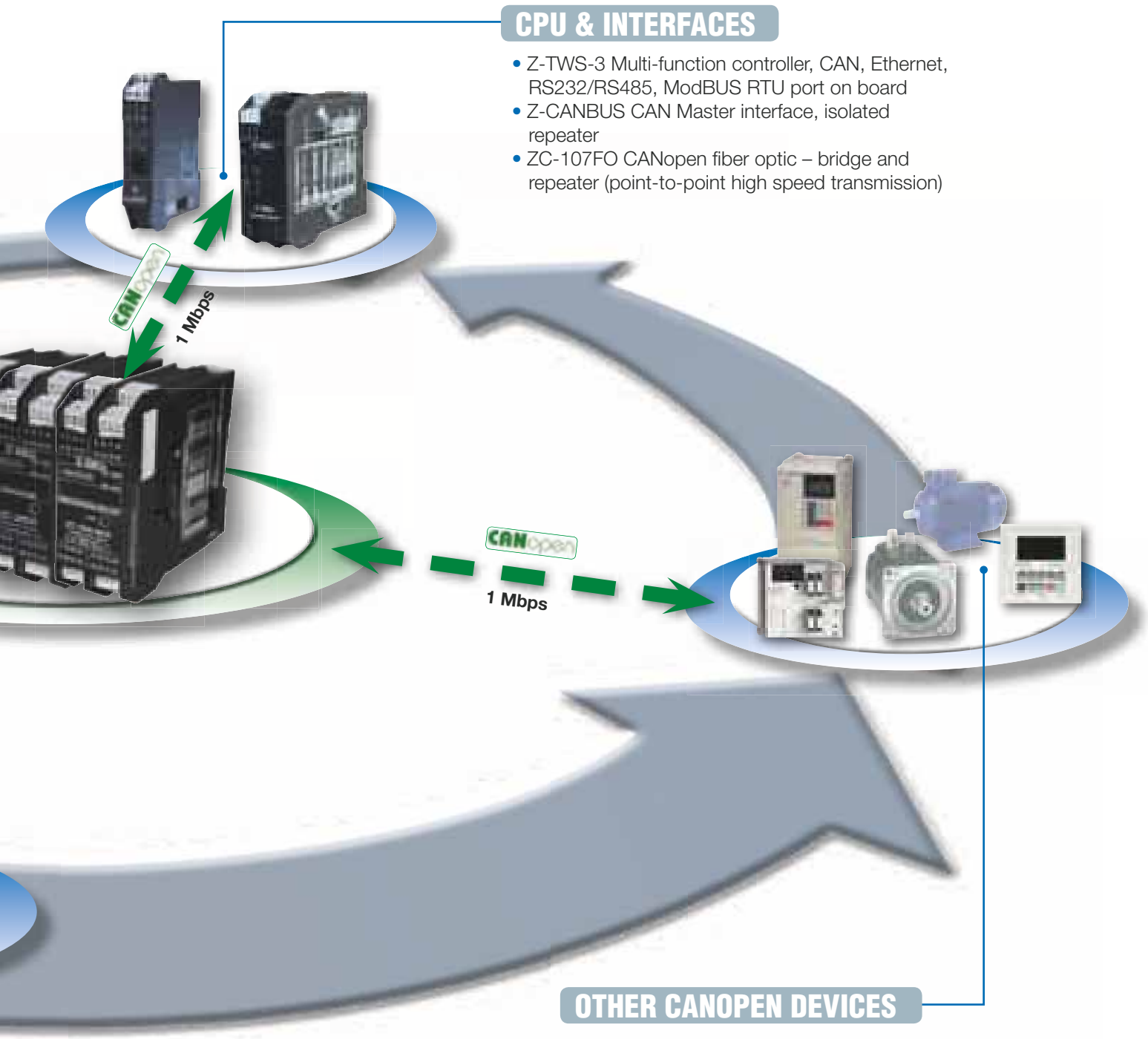
ACCURACY: UP TO 0,01%

POWER TRANSDUCERS

RESPONSE TIME ~20 ms

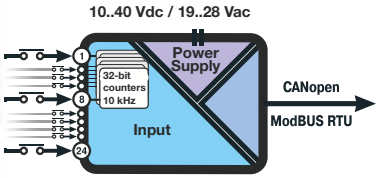
TEMPERATURE RANGE:
Pt100: -200..+650°C • Pt500: -200..+750°C
Pt1000: -200..+210°C • Ni100: -60..+250°C
TC: J,K,E,N,S,R,B,T (EN 60584-1)

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



ZC-24DI

24 CH DIGITAL INPUT / CANOPEN - MODBUS MODULE



ZC-24DI is used to interface N.24 digital signals (PUSH BUTTON, LIMIT SWITCH, REMOTE, CONTROL SWITCH, RELAIS etc.) with all of control systems which are able to communicate by the protocols CANopen or ModBUS RTU (protocol selectable through dip-switch). It disposes of 32 bit counters (N.8), maximum frequency input is 10 KHz. A 3-way galvanic isolation among Power supply // input // RS485 circuits assures the integrity of your datas.

TECHNICAL SPECIFICATIONS

General Data	
Power supply	10..40 Vdc / 19..28 Vac / 50-60 Hz
Power consumption	2,5 W
Isolation	1.500 Vac (3 way)
Power transducers	Yes
Status Indicators	Power Supply, Digital Inputs State, CANopen/MODBUS Communication, MODBUS-RTU Communication
Protection Degree	IP20
Operating Temperature	-10..+65 °C
Dimension (W x H x D)	35 x 100 x 112 mm
Mounting	35 mm DIN rail guide
Communication, Memory Process	
Interface	CANopen / ModBUS RTU
Speed	Up to 1 Mbps (CANopen) Up to 115 Kbps (ModBUS)
Communication Time	~ 1 ms (CANopen)
Distance	Up to 2.500 m (CANopen) Up to 1.200 m (ModBUS)
Connectivity	Max 120 nodes (CANopen) Max 247 nodes (ModBUS)
Data Memory	EEPROM for the configuration parameters, retention time 10 years
Signals	
Channel Numbers	24
Input	Twenty-four 16 V self-powered digital inputs with shared negative pole. Eight digital inputs settable as 32-bit counters with 10 kHz maximum frequency.
Programming	
DIP switches	Baud rate, address, protocol type (CANopen, ModBUS), termination line
Software	EASY ZC-24DI (plug&play)
Standard	
Approval	CE
Norms	EN 50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4; EN 50140/141; EN 61010-1

ORDER CODES

Code	Description
ZC-24DI	24 CH digital input CANopen / ModBUS module, 10..40 Vdc / 19..28 Vac

ACCESSORIES & SOFTWARE

Z-PC-DIN
Backplane for power & bus communication
pg. 36

Z-SUPPLY
Switching power supply
pg. 36

Z-8R-10A
8-CH Relay interface, 10A
pg. 36

EASY SETUP
Plug&Play configuration software
pg. 36

SIMILAR PRODUCTS

ZC-16DI-8DO
16 CH digital input - 8 CH digital output CANopen / ModBUS
pg. 30

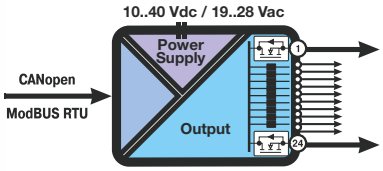
ZC-24DO
24 CH digital output CANopen / ModBUS
pg. 29

Z-10-D-IN
10-CH Digital Input module / ModBUS
pg. 12

Z-D-IN
5-CH Digital input module / ModBUS
pg. 10

ZC-24DO

24CH DIGITAL OUTPUT / CANOPEN - MODBUS MODULE

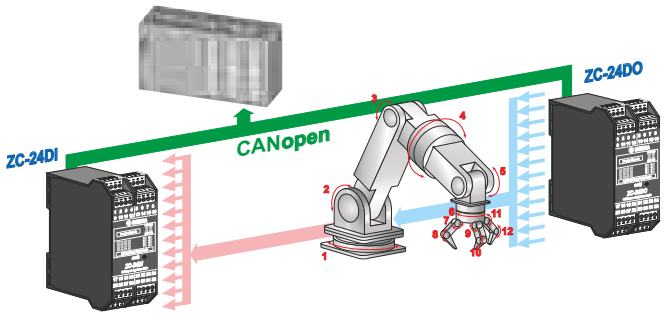


ZC-24DO is used to drive N.24 MOSFETS from all of the control systems which are able to communicate by the protocols CANopen or ModBUS RTU (protocol selectable through dip-switch). The digital output max load is 0,5 Awith ON/OFF delay of 1ms.
A 3-way galvanic isolation among Power supply // output // RS485 circuits assures the integrity of your datas.

TECHNICAL SPECIFICATIONS

General Data	
Power supply	10..40 Vdc; 19..28 Vac
Power consumption	2,5 W
Status indicator	Digital outputs, communication
Galvanic isolation	1,5 kVac (3 way)
Response time	~ 1 ms
Operating temperature	-10..+65 °C
Dimensions (w x h x d)	35 x 100 x 112 mm
Enclosure, weight, colour	PBT, 170 g, black
Connections	Removable screw terminals IDC10 connector for Z-PC-DIN backplane RS232, front jack, speed 2400 Baud
Protection degree	IP20
Configuration	Dip Switches (baud rate, Node ID) EDS file
Protocols supported	CAN bus standard (2.0A, 2.0B) CANopen (profile CiA 401 v.2.01) ModBUS RTU (through RS232)
CANopen max speed	1 Mbps
Special functions	CANopen/ModBUS protocol switching
Conformity	CE, EN 61000-6-4, EN 64000-6-2, EN 61010-1 CAN 2.0A, 2.0B CiA 401 v.2.01
Output Data	
Nr channels	24
Type	Mosfet (open source) with shared common
Power supply Voltage	5..30Vdc
Maximum Current	0.5 A (connection from terminals) 25 mA (connection from connectors)
ON/OFF delay	< 1ms
RPDO	< 1,25ms
CANOpen features	
NMT	Slave
Error control	Node guarding
Node ID	Software, DIP switches
Nr PDO	RX 5
PDO modes	Event triggered, Synq (cyclic), Synq (acyclic)
PDO linking	yes
PDO mapping	variable
Nr SDO server	1
Emergency message	yes
Supported application layer	CiA 301 v4.02
Supported profile	CiA 401 v2.01

APPLICATION NOTE



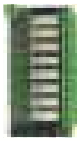
ORDER CODES

Code	Description
ZC-24DO	24 CH digital input CANopen / ModBUS module, 10..40 Vdc / 19..28 Vac

ACCESSORIES & SOFTWARE

Z-PC-DIN
Backplane for power & bus communication
pg. 36

Z-SUPPLY
Switching power supply
pg. 36



Z-8R-10A
8-CH Relay interface, 10A
pg. 36

EASY SETUP
Plug&Play configuration software
pg. 36

SIMILAR PRODUCTS

ZC-16DI-8DO
16 CH digital input - 8 CH digital output CANopen / ModBUS
pg. 30

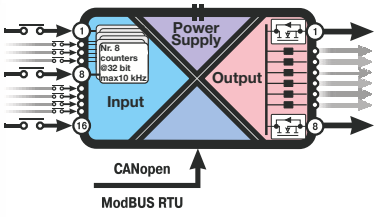
Z-10-D-OUT
10-CH digital output module / ModBUS
pg. 13

Z-D-IO
8-CH, 6 digital input - 2 digital outputs control module
pg. 14

Z-D-OUT
5-CH Digital output module / Modbus
pg. 11

ZC-16DI-8DO

16 CH DIGITAL INPUT - 8 CH DIGITAL OUTPUT / CANOPEN - MODBUS MODULE

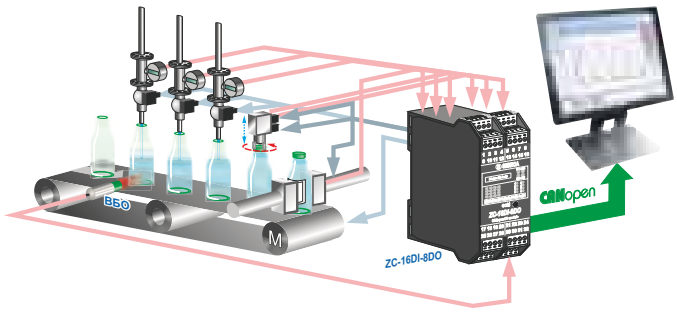


ZC-16DI-8DO is an 16 CH input / 8 CH output mixed module. The inputs have 32-bit counters / 10 kHz max frequency, mosfet Outputs with shared negative pole. The communication protocols are CANopen or ModBUS RTU (protocol selectable through dip-switch). A 3-way galvanic isolation among Power supply // input // RS485 circuits assures the integrity of your datas

TECHNICAL SPECIFICATIONS

General Data	
Power supply	10..40 Vdc; 19..28 Vac
Power consumption	2,5 W
Status indicator	Digital outputs, communication
Galvanic isolation	1,5 kVac (3 way)
Response time	~ 1 ms
Operating temperature	-10..+65 °C
Dimensions (w x h x d)	35 x 100 x 112 mm
Enclosure, weight, colour	PBT, 170 g, black
Connections	Removable screw terminals IDC10 connector for Z-PC-DIN backplane RS232, front jack, speed 2400 Baud
Protection degree	IP20
Configuration	Dip Switches (baud rate, Node ID) EDS file
Protocols supported	CAN bus standard (2.0A, 2.0B) CANopen (profile CiA 401 v.2.01) ModBUS RTU (through RS232)
CANopen max speed	1 Mbps
Special functions	CANopen/ModBUS protocol switching
Conformity	CE, EN 61000-6-4, EN 64000-6-2, EN 61010-1 CAN 2.0A, 2.0B CiA 401 v.2.01
Input Data	
Nr channels	16
Polarity	EN 61131-2 type 2, synq (pnp)
Counters	N.8 @ 32 bit, Max freq. 10 KHz Increment individual configurable, reset, preset Overflow indication
Vmax	30 V
Minimun pulse width	250 µs
ON/OFF delay	< 3ms
TPDO	< 1ms
Output Data	
Nr channels	8
Type	Mosfet (open source) with shared common
Power supply Voltage	5..30Vdc
Maximum Current	0.5 A (connection from terminals) 25 mA (connection from connectors)
ON/OFF delay	< 1ms
RPDO	< 1,25ms

APPLICATION NOTE



ORDER CODES

Code	Description
ZC-16DI-8DO	16 CH digital input - 8 CH digital output CANopen / ModBUS module, 10..40 Vdc / 19..28 Vac

ACCESSORIES & SOFTWARE

Z-PC-DIN
Backplane for power & bus communication
pg. 36

Z-SUPPLY
Switching power supply
pg. 36

Z-8R-10A
8-CH Relay interface, 10A
pg. 36

EASY SETUP
Plug&Play configuration software
pg. 36

SIMILAR PRODUCTS

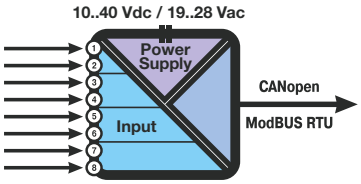
ZC-24DI
24 CH digital input CANopen / ModBUS
pg. 28

ZC-24DO
24 CH digital output CANopen / ModBUS
pg. 29

Z-D-IO
8-CH, 6 digital input - 2 digital outputs control module
pg. 14

ZC-8AI

8 CH ANALOG INPUT (MA,V) / CANOPEN MODULE

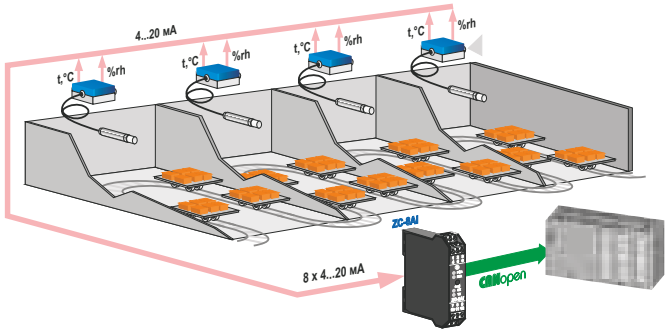


ZC-8AI is used to interface analog inputs (Voltage or current, also with bipolar range) with CANopen system. The modules is able to supply all 8 current loops at the same
time, this is very useful for 2-wire sensors because the wiring does not need an external power supply. A 6-way galvanic isolation among Power supply // input (couples) // RS485 circuits assures the integrity of your datas.

TECHNICAL SPECIFICATIONS

General Data	
Power supply	10..40 Vdc; 19..28 Vac
Power Consumption	5 W
Power transducers	22 mA, 8 sensors
Galvanic isolation	1,5 kVac (6 way)
Input protection	Against ESD discharge up to 4 KV
Status indicators	Power, communication, fault input
Response time	< 28 ms
Accuracy	0,05%
A/D Resolution	14 or 15 bit
Thermal drift	< 100 ppm/°C
Dimensions (W x H x D)	17,5 x 100 x 112 mm
Enclosure, weight, colour	PBT, 140 g., black
Operating temperature	-10..+65 °C
Connections	Removable screw terminals IDC10 connector for Z-PC-DIN backplane RS232, front jack, speed 2400 Baud
Protection degree	IP20
Configuration	Dip Switches (baud rate, Node ID) EDS file
Protocols supported	CAN bus standard (2.0A, 2.0B) CANopen (profile CiA 401 v.2.01) ModBUS RTU (through RS232)
CANopen max speed	1 Mbps
Conformity	CE, EN 61000-6-4, EN 64000-6-2, EN 61010-1 CAN 2.0A, 2.0B - CiA 401 v.2.01
Input Data	
Nr channels	8 (4 isolation zones)
Type	Voltage range: ±10 V Current range: 0..20, 4..20 mA 2,3 wires sensor connection Configurable fault
Canopen Features	
NMT	Slave
Error control	Node guarding
Node ID	Software, DIP switch
Nr PDO	RX 5
PDO modes	Event triggered, Synq (cyclic), Synq (acyclic)
PDO linking	yes
PDO mapping	variable
Nr SDO server	1
Emergency message	yes
Supported application layer	CiA 301 v4.02
Supported profile	CiA 401 v2.01

APPLICATION NOTE



ORDER CODES

Code	Description
ZC-8AI	8 CH analog input (mA,V) / CANopen module, 10..40 Vdc / 19..28 Vac

ACCESSORIES & SOFTWARE

Z-PC-DIN
Backplane for power & bus communication
pg. 36

Z-SUPPLY
Switching power supply
pg. 36

Z-8R-10A
8-CH Relay interface, 10A
pg. 36

EASY SETUP
Plug&Play configuration software
pg. 36

SIMILAR PRODUCTS

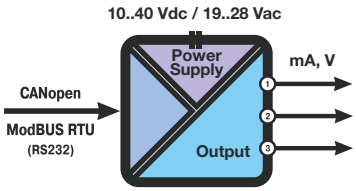
ZC-8TC
8 CH thermocouple / CANopen
pg. 34

ZC-4RTD
4 CH RTD input / CANopen
pg. 33

Z-8AI
8 CH analog input (mA, V) / ModBUS
pg. 17

ZC-3AO

3 CH ANALOG OUTPUT (MA,V) / CANOPEN MODULE

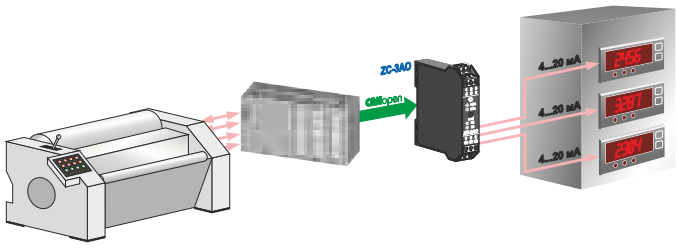


ZC-3AO is used to get N.3 analogue outputs (mA or V) from a CANopen system. The standard can be either mA (0..20mA / 4..20mA) or V (-10..10 V, 0..10 V or 2..10 V).
A 3-way galvanic isolation among Power supply // input // RS485 circuits assures the integrity of your datas.

TECHNICAL SPECIFICATIONS

General Data	
Power supply	10..40 Vdc / 19..28 Vac / 50-60 Hz
Power consumption	2,5 W
Isolation	1.500 Vac (3 way)
Power transducers	-
Status Indicators	Power supply, CAN communication, Output faults
Protection Degree	IP20
Operating Temperature	-10..+65 °C
Dimension (W x H x D)	17.5 x 100 x 112 mm
Mounting	35 mm DIN rail guide
Communication, Memory Process	
Interface	CANopen
Speed	Up to 1 Mbps (CANopen)
Response time	Max 20ms
Distance	Up to 2.500 m
Connectivity	Max 120 nodes
Data Memory	EEPROM for the configuration parameters, retention time 10 years
Signals	
Channel Numbers	N.3
OUTPUT	VOLTAGE Bidirectional -10,5V..+10,5V, Push-pull configuration CURRENT Unidirectional 0..20,5mA, current source configuration
Programming	
DIP switches	Baud rate, address
Software	EASY ZC-3AO (plug&play free software)
Standard	
Approval	CE
Norms	EN 50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4; EN 50140/141; EN 61010-1

APPLICATION NOTE



ORDER CODES

Code	Description
ZC-3AO	3 CH analog output (mA,V) / CANopen module, 10..40 Vdc / 19..28 Vac

ACCESSORIES & SOFTWARE

Z-PC-DIN
Backplane for power & bus communication
pg. 36

Z-SUPPLY
Switching power supply
pg. 36

Z-8R-10A
8-CH Relay interface, 10A
pg. 36

EASY SETUP
Plug&Play configuration software
pg. 36

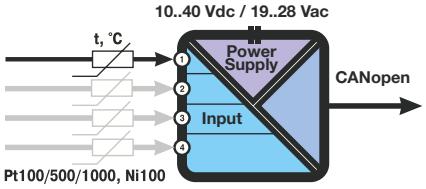
SIMILAR PRODUCTS

Z-3AO
3-CH analog output module / RS485
pg. 18

ZC-8AI
8 CH analog input (mA, V) / CANopen
pg. 31

ZC-4RTD

4 CH RTD INPUT CANOPEN MODULE



ZC-4RTD is an interface for RTD sensors (PT100, PT1000, PT500, Ni100) with 2,3 or 4 wires. The number of input is 4 and the each input is independent from each other.
It's a CANopen device and can be connected into a CANopen network. A 6-way galvanic isolation among Power supply // inputs // RS485 circuits assures the integrity of your datas (each input channel is isolated from the other circuits).

TECHNICAL SPECIFICATIONS

General Data	
Power supply	10..40 Vdc; 19..28 Vac
Power Consumption	1 W
Galvanic isolation	1,5 kVac (6 way)
Input protection	Against ESD discharge up to 4 KV
Status indicators	Power, communication, fault input
Response time	< 28 ms
Accuracy	0,05%
A/D Resolution	13 or 14 bit
Thermal drift	< 50 ppm/°C
Dimensions (W x H x D)	17,5 x 100 x 112 mm
Enclosure, weight, colour	PBT, 140 g., black
Operating temperature	-10..+65 °C
Connections	Removable screw terminals IDC10 connector for Z-PC-DIN backplane RS232, front jack, speed 2400 Baud
Protection degree	IP20
Configuration	Dip Switches (baud rate, Node ID) - EDS file
Protocols supported	CAN bus standard (2.0A, 2.0B) CANopen (profile CiA 401 v.2.01) ModBUS RTU (through RS232)
CANopen max speed	1 Mbps
Conformity	CE, EN 61000-6-4, EN 64000-6-2, EN 61010-1 CAN 2.0A, 2.0B - CiA 401 v.2.01
Input Data	
Nr channels	4, RTD with 2,3,4 wires, fully isolation
Type	PT100 (EN 60751/A2-ITS90) Range: -200..+650°C PT500 (EN 60751/A2-ITS90) Range: -200..+750°C PT1000 (EN 60751/A2-ITS90) Range: -200..+210°C Ni100 (EN 60751/A2-ITS90) Range: -60..+250°C Configurable fault
Canopen Features	
NMT	Slave
Error control	Node guarding
Node ID	Software, DIP switch
Nr PDO	RX 5
PDO modes	Event triggered, Synq (cyclic), Synq (acyclic)
PDO linking	yes
PDO mapping	variable
Nr SDO server	1
Emergency message	yes

ORDER CODES

Code	Description
ZC-4RTD	4 CH-RTD input CANopen module, 10..40 Vdc / 19..28 Vac

ACCESSORIES & SOFTWARE

Z-PC-DIN
Backplane for power & bus communication
pg. 36

Z-SUPPLY
Switching power supply
pg. 36

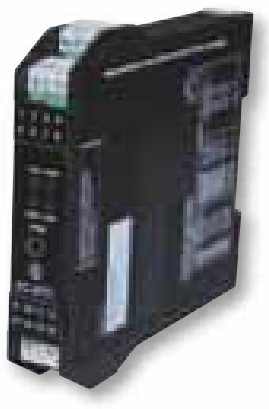
Z-8R-10A
8-CH Relay interface, 10A
pg. 36

EASY SETUP
Plug&Play configuration software
pg. 36

SIMILAR PRODUCTS

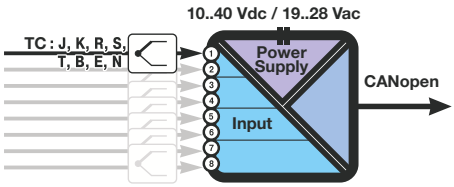
Z-4RTD2
4-CH RTD input module / ModBUS
pg. 19

ZC-8TC
8 CH thermocouple module / CANopen
pg. 34



ZC-8TC

8 CH THERMOCOUPLE (J,K,E,N,S,R,B,T) CANOPEN MODULE



ZC-8TC is an interface for Thermocouple sensors (J, K, E, N, S, R ,B ,T) and generic sensor with mV as standard output signal. The number of input is 8 and each input is independent from each other.
It's a CANopen deviced and can be connected into a CANopen network. A 6-way galvanic isolation among Power supply // input // RS485 circuits assures the integrity of your datas (each couple of channels is isolated from the other circuits).

TECHNICAL SPECIFICATIONS

General Data	
Power supply	10..40 Vdc; 19..28 Vac
Power Consumption	1 W
Galvanic isolation	1,5 kVac (6 way)
Input protection	Against ESD discharge up to 4 KV
Status indicators	Power, communication, fault input
Response time	< 28 ms
Accuracy	0,1%
A/D Resolution	15 bit
Thermal drift	< 100 ppm/°C
Dimensions (W x H x D)	17,5 x 100 x 112 mm
Enclosure, weight, colour	PBT, 140 g., black
Operating temperature	-10..+65 °C
Connections	Removable screw terminals IDC10 connector for Z-PC-DIN backplane RS232, front jack, speed 2400 Baud
Protection degree	IP20
Configuration	Dip Switches (baud rate, Node ID) - EDS file
Protocols supported	CAN bus standard (2.0A, 2.0B) CANopen (profile CiA 401 v.2.01) ModBUS RTU (through RS232)
CANopen max speed	1 Mbps
Conformity	CE, EN 61000-6-4, EN 64000-6-2, EN 61010-1 CAN 2.0A, 2.0B - CiA 401 v.2.01
Input Data	
Nr channels	8 (thermocouples or mV)
Type	THERMOCOUPLE Type: J, K, E, N, S, R, B, T Tables EN 60584-1 (ITS 90) Span: -10,1..81,4 mV Impedance 10 MΩ Configurable fault
Canopen Features	
NMT	Slave
Error control	Node guarding
Node ID	Software, DIP switch
Nr PDO	RX 5
PDO modes	Event triggered, Synq (cyclic), Synq (acyclic)
PDO linking	yes
PDO mapping	variable
Nr SDO server	1
Emergency message	yes

ORDER CODES

Code	Description
ZC-8TC	8 CH Thermocouple (J,K,E,N,S,R,B,T) CANopen module, 10..40 Vdc / 19..28 Vac

ACCESSORIES & SOFTWARE

Z-PC-DIN
Backplane for power & bus communication
pg. 36

Z-SUPPLY
Switching power supply
pg. 36

Z-8R-10A
8-CH Relay interface, 10A
pg. 36

EASY SETUP
Plug&Play configuration software
pg. 36

SIMILAR PRODUCTS

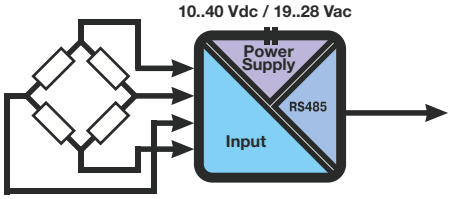
Z-8TC
8-CH thermocouple input module / RS485
pg. 21

ZC-4RTD
4-CH RTD (P100, Ni100, Pt500, Pt1000) input CANopen module
pg. 33

ZC-8AI
Plug&Play configuration software
pg. 31

ZC-SG

STRAIN GAUGE CANOPEN INPUT MODULE

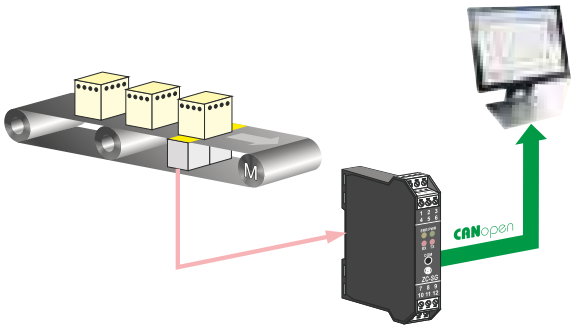


ZC-SG is a strain gauge signal converter. Measurements taken using the 6-wires or 4-wires technique are available through CANopen protocol. Sensitivity from 1 to 64mV/V, settable by DIP-switch for integer values, via software for real/integer values.
Stable weight indication via CANopen/digital output. Remote writing of the tare in volatile and/or non-volatile memory by digital input/CANopen.

TECHNICAL SPECIFICATIONS

General Data	
Power supply	10..40 Vdc; 19..28 Vac
Power Consumption	2 W
Power transducers	5 Vdc, up to 4 / 8 load cells
Galvanic isolation	1,5 kVac (3 way)
Input protection	Against ESD discharge up to 4 KV
Status indicators	Power, communication, fault input
Response time	< 7 ms
Accuracy	0,01%
A/D Resolution	24 bit
Thermal drift	< 25 ppm/°C
Dimensions (W x H x D)	17,5 x 100 x 112 mm
Enclosure, weight, colour	PBT, 140 g., black
Operating temperature	-10..+65 °C
Connections	Removable screw terminals IDC10 connector for Z-PC-DIN backplane RS232, front jack, speed 2400 Baud
Protection degree	IP20
Configuration	Dip Switches (baud rate, Node ID) - EDS file
Protocols supported	CAN bus standard (2.0A, 2.0B) CANopen (profile CiA 401 v.2.01) ModBUS RTU (through RS232)
CANopen max speed	1 Mbps
Conformity	CE, EN 61000-6-4, EN 64000-6-2, EN 61010-1 CAN 2.0A, 2.0B - CiA 401 v.2.01
Input Data	
Nr channels	2
Type	ANALOG Load cells (strain gauge), Voltage supply 5 Vdc Min impedance 87 Ω 4 or 6 –wire bridge connections Sensitivity from 1 to 64 mV Full scale: 5..320 mV DIGITAL Tare calibration and span (max 30 V)
Output Data	
Nr channels	2
Type	DIGITAL Nr 1 channel for stable weight or threshold (max 30 V, 50 mA)

APPLICATION NOTE



ORDER CODES

Code	Description
ZC-SG	Strain gauge input module/ CANopen module, 10..40 Vdc / 19..28 Vac

ACCESSORIES & SOFTWARE

Z-PC-DIN
Backplane for power & bus communication
pg. 36

Z-SUPPLY
Switching power supply
pg. 36

EASY SETUP
Plug&Play configuration software
pg. 36

SG-EQ4
Load cell connection and equalization system
-

SIMILAR PRODUCTS

Z-SG
Strain gauge input module/ Modbus + analog output
pg. 22

EASY SETUP

PLUG&PLAY SOFTWARE FOR PROGRAMMABLE DEVICES

Plug & Play Easy tools for: Z-D-IN, Z-D-OUT, Z-D-IO, Z-10-D-IN, Z-10-D-OUT, Z-PID, Z-DAQ, Z-4AI, Z-8AI, Z-3AO, Z-4TC, Z-8TC, Z-4RTD-2, Z-SG, Z203, ZC-24DI, ZC-24DO, ZC-16DI-8DO, ZC-4RTD, ZC-SG, S203T, S203TA, K111, S311A, S311D, S401, K120RTD, K121, T120. T121

- **Automatic updating from the web**
- **Real time testing**
- **Fast copying of the same configuration**

AVAILABLE ON
www.seneca.it/download

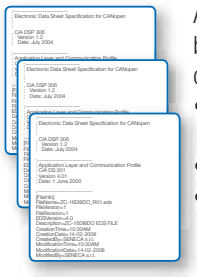
Z-NET PLATFORM

I/O SYSTEM CONFIGURATOR

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

ORDER CODES	
Code	**Description**
Z-NET-3	Z-PC I/O System Configurator
Z-NET-3-RTU	Telecontrol Tool

I/O MODULES EDS



An EDS is an ASCII file in WIN.INI format, which is used by CANopen
configuration tools to allow the user to configure devices.

- EDS configuration file (compliant to CiA DS-301) for each device, available on www.seneca.it
- Import / Export EDS file by CANopen manager
- EDS describes each object dictionary entry with address (main-/sub index), parameter name, data type, access type and default value.

IEC 61131

PROGRAMMING TOOLKIT

FOR MORE INFORMATION PLEASE CONTACT:
support@seneca.it

Z-8R-10A

8-CH RELAY BOARD, 250 Vac - 10 A

Power Supply: 24 Vdc
Power Consumption: 0,5 W
Connectors: IDC from 10, 16(2), 20 poles for flat cables; removable terminals, step 3,5 mm
Relay contact rating: 250 Vac, 10 A
Channels: 8
Dimension (lxhxd): 160 mm x 80 mm x 46 mm
Supported modules: ZC-24DO, ZC-16DI8DO, Z-10-D-OUT

ORDER CODES	
Code	**Description**
Z-8R-10A	8-CH RELAY BOAD, 250 Vac - 10 A

POWER SUPPLIES

ORDER CODES	
Code	**Description**
Z-POWER 230-15VA	19 Vac voltage transformer
Z-POWER 230-25VA	19 Vac voltage transformer
Z-POWER 115-15VA	19 Vac voltage transformer
Z-SUPPLY	Redundant 24 Vdc, 1.5 A, power supply

Z-PC DIN

DIN RAIL BUS SYSTEM

Hot swapping: Yes
Material: Nylon PA6 charged with 30% glass fiber
Mounting: on 35 mm din rail guide
Terminal: Power / data line

ORDER CODES	
Code	**Description**
Z PC DINAL2 17 5	Head terminal + 2 slots - 17,5 mm step
Z-PC-DIN2-17.5	2 slots - 17,5 mm step
Z-PC-DIN8-17.5	8 slots - 17,5 mm step
Z PC DINAL1 35	Head terminal + 1 slot - 35 mm step
Z-PC-DIN1-35	1 slot - 35 mm step
Z-PC-DIN4-35	4 slot - 35 mm step

PROGRAMMING CABLES

Serial & Ethernet communication and programming cables

ORDER CODES			
Code	**Terminals**	**Code**	**Terminals**
PM001420	RJ10 / DB9F	PM001970	DB9F / Bolt heads
PM001430	RJ10 / DB25M	PM002240	Jack / Jack
PM001440	RJ10 / DB25M	PM002340	Tp-wire / Tp-wire
PM001450	RJ45 / RJ45	PM002350	DB9M / Bolt heads
PM001460	RJ45 / RJ45	PM002460	Tp-wire / Bolt heads
PM001530	RJ10 / DB9M	PM002470	RJ10 / RJ10
PM001601	Jack / DB9F	PM002480	RJ10 / Bolt heads
PM001810	DB15F / DB9F	PM002490	DB9M / DB9F
PM001820	DB15F / RJ10	PM002500	DB9M / DB9F
PM001830	DB15F / DB9M	PM002510	DB9F / Bolt heads
PM001840	DB15F / Bolt heads	PM002520	DB9M / DB9M
PM001850	DB15F / DB15M	PM002530	DB9F / DB9F

CPU, Multifunction Control Units

3

Z-TWS-3

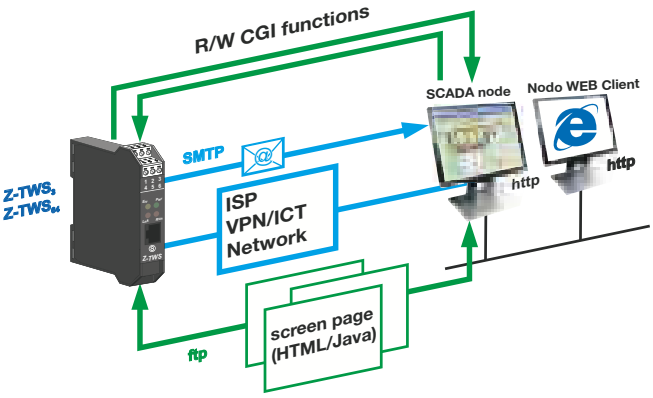
MULTI-FUNCTION CONTROL UNIT ISAGRAF / CODESYS

Z-TWS-3 has a powerful plc on board, webserver capability and Ethernet interface. All these functionalities in a compact size , only 17,5 mm width and suitable for din rail mouting. Both Modbus RTU and CANopen are the interfaces available, master or slave and a connection with external HMI is also possible trough the serial/ Ethernet interfaces.

TECHNICAL SPECIFICATIONS

General Data	
Dc Power supply	10..40 Vdc
Ac Power supply	19..28 Vac / 50-60 Hz
Max power consumption	3.5 W
Isolation	1.500 Vac
Status Indicators	Ethernet Connection - Power Supply - PLC On - Ethernet link
Installation Category	II
Pollution Degree	2
Protection Degree	IP20
Operating Temperature	0..+55 °C
Storage Temperature	-20..+70 °C
Dimension (W x H x D)	17.5 x 100 x 112 mm
Weight	250 g
Enclosure	Nylon 6 with 30% glass-fiber, V0 self-extinguished class
Hot Swapping	Yes
Connection	Removable terminal block, max wire size 2,5 mm²
Mounting	35 mm DIN rail guide
Communication	
Ethernet port	n.1 10BaseT (RJ45)
Serial Ports #0 (RS232 via RJ10-4/4)	n.1 RS232 via RJ10-4/4), n.1 RS485 - ModBUS, n.1 RS232/485 via RJ10-4/4
Ethernet protocols	Ethernet TCP/IP (10 Mbps) – ModBUS TCP/IP (Client /Server)
Fieldbus protocols	ModBUS RTU on RS232/RS485 Master / Slave
Serial Speed	1.200 ..115.000 bps
Parity	None, even, odd
Max Connection Distance	1200 m
System Protocols	PPP, http, FTP, SMTP
Processing & Memories	
Cycle Time	2.5 ms/K instruction
Data Processing	CPU RISC 32 bit – 20 MIPS
Flash Memory (Data)	16 MB (of which 14 for datalogging)
RAM Memory	8 MB
Retentative Variables	2046 bytes
Programming	
Basic configuration	Z-NET-3, Wed Editor, Data Recorder, Trend Viewer
Remote Controlo Application	Z-NET RTU, OPC Server, IEC 870
SoftPLC Iec 61131	Isagraf, CoDeSys, SENECA libraries
Standard	
Norms	EN50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4, EN 50140/141; EN 61010-1; EN 60742
Approval	CE, UL-UR CSA, RINA

APPLICATION NOTE



ORDER CODES

Code	Description
Z-TWS3-I	Multifunction Control Unit – Standard Isagraf
Z-TWS3-C	Multifunction Control Unit – Standard CoDeSys

ACCESSORIES & SOFTWARE

Z-NET-3
Z-PC system configurator, IEC 61131 based
pg. 36

OPC Server
Client / Server interexchange data software
pg. 36

Isagraf
IEC 61131 programming toolkit
pg. 36

CoDeSys
IEC 61131 programming toolkit
pg. 36

Z-PC DIN
DIN rail bus system - Z-PC line
pg. 36

Z-POWER
DIN rail 19 Vac transformers
pg. 36

Z-SUPPLY
Redundant power supply 24 Vdc
pg. 36

PM....
Connection cable
pg. 36

SIMILAR PRODUCTS

Z-TWS-64
Multi-function control unit @ 64 bit
pg. 39

Z-LWS
Micro PLC
pg. 40

Z-TWS-64

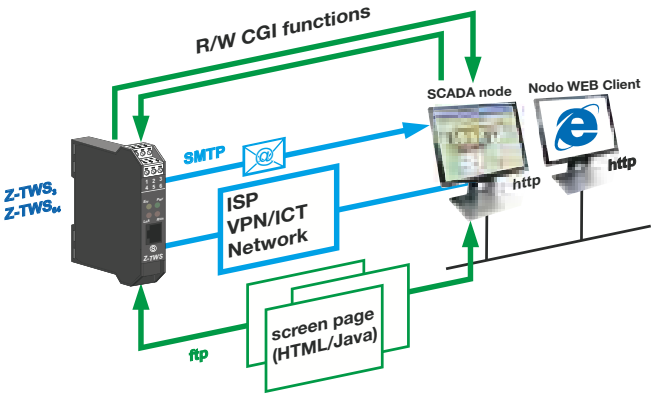
MULTI-FUNCTION CONTROL UNIT @ 64 BIT ISAGRAF / CODESYS

Z-TWS-64 has a powerful plc on board, webserver capability and Ethernet interface. All these functionalities in a compact size , only 35 mm width and suitable for din rail mouting. Both Modbus RTU and CANopen are the interfaces available, master or slave and a connection with external HMI is also possible trough the serial/ Ethernet ports.

TECHNICAL SPECIFICATIONS

General Data	
Dc Power supply	10..40 Vdc
Ac Power supply	19..28 Vac / 50-60 Hz
Max power consumption	3.5 W
Isolation	1.500 Vac
Status Indicators	Ethernet Connection - Power Supply - PLC On - Ethernet link
Protection Degree	IP20
Operating Temperature	0..+55 °C
Storage Temperature	-20..+70 °C
Dimension (W x H x D)	17.5 x 100 x 112 mm
Weight	250 g
Enclosure	Nylon 6 with 30% glass-fiber, V0 self-extinguished class
Hot Swapping	Yes
Connection	Removable terminal block, max wire size 2,5 mm^2
Mounting	35 mm DIN rail guide
Communication	
Ethernet 10BaseT (RJ45)	1
Serial Port #0 (RS232 via RJ10-4/4)	1
Serial Port #2 (RS232/485 via RJ10-4/4)	1
Serial Port #3 (RS485)	1
Ethernet TCP/IP – ModBUS TCP/IP	Yes (10 Mbps)
ModBUS RTU on RS232/RS485	Master / Slave
Serial Speed	1.200 ..115.000 bps
Parity	None, even, odd
Max Connection Distance	1200 m
System Protocols	PPP, http, FTP, SMTP
Processing & Memories	
Data Processing	CPU RISC 64 bit – 70 MIPS
Flash Memory (Data)	128 MB
RAM Memory	64 MB
Retentative Variables	2046 bytes
Backup Memory	Yes
Max Analog Variables	32.000
Max Timers	16.000
Max Counters	16.000
Programming	
Z-NET3 (free configuration software)	Yes
OPC SERVER	Yes
RTU/Z-NET RTU (remote control application)	Yes
PLC/ISAGRAF	Yes
Standard	
Norms	EN50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4, EN 50140/141; EN 61010-1; EN 60742
Approval	CE, UL-UR, RINA

APPLICATION NOTE



ORDER CODES

Code	Description
Z-TWS64-I	Multifunction Control Unit – Standard Isagraf
Z-TWS64-C	Multifunction Control Unit – Standard CoDeSys

ACCESSORIES & SOFTWARE

Z-NET-3
Z-PC system configurator, IEC 61131 based
pg. 36

OPC Server
Client / Server interexchange data software
pg. 36

Isagraf
IEC 61131 programming toolkit
pg. 36

CoDeSys
IEC 61131 programming toolkit
pg. 36

Z-PC DIN
DIN rail bus system - Z-PC line
pg. 36

Z-POWER
DIN rail 19 Vac transformers
pg. 36

Z-SUPPLY
Redundant power supply 24 Vdc
pg. 36

PM....
Connection cable
pg. 36

SIMILAR PRODUCTS

Z-TWS-3
Multi-function control unit
pg. 38

Z-LWS
Micro PLC
pg. 40

Z-LWS

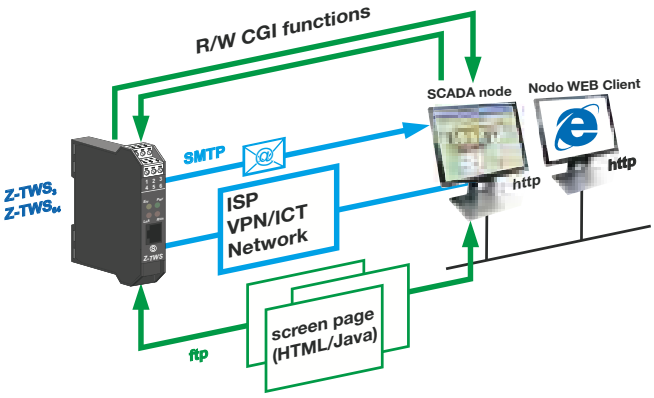
MICRO PLC ISAGRAF / CODESYS

Z-LWS has a powerful plc on board, webserver capability and Ethernet interface. All these functionalities in a compact size , only 17,5 mm width and suitable for din rail mouting. Both Modbus RTU and CANopen are the interfaces available, master or slave and a connection with external HMI is also possible trough the serial/ Ethernet interfaces.

TECHNICAL SPECIFICATIONS

General Data	
Dc Power supply	10..40 Vdc
Ac Power supply	19..28 Vac / 50-60 Hz
Max power consumption	3.5 W
Isolation	1.500 Vac
Status Indicators	Ethernet Connection - Power Supply - PLC On - Ethernet link
Protection Degree	IP20
Operating Temperature	0..+55 °C
Dimension (W x H x D)	17.5 x 100 x 112 mm
Weight	250 g
Enclosure	Nylon 6 with 30% glass-fiber, V0 self-extinguished class
Hot Swapping	Yes
Connection	Removable terminal block, max wire size 2,5 mm^2
Mounting	35 mm DIN rail guide
Communication	
Ethernet 10BaseT	1 (RJ45)
Serial Port #0	1 RS232 via RJ10-4/4)
Serial Port #1	1(RS485 - ModBUS)
Tp-wire	1
Ethernet – ModBUS TCP/IP	Yes (10 Mbps)
ModBUS RTU on RS232/RS485	Master / Slave
Serial Speed	1.200 ..115.000 bps
Parity	None, even, odd
Max Connection Distance	1200 m
System Protocols	http, FTP
Processing & Memories	
Cycle Time	2.5 ms/K instruction
Data Processing	CPU RISC 32 bit – 20 MIPS
RAM Memory	256 kB
Retentative Variables	236 bytes
Backup Memory	Yes
Max Analog Variables	32.000
Max Timers	16.000
Max Counters	16.000
Programming	
Z-NET3 (IEC 61131)	Yes
PLC/ISAGRAF/CODESYS	Yes
Standard	
Norms	EN50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4, EN 50140/141; EN 61010-1; EN 60742
Approval	CE, UL-UR, RINA

APPLICATION NOTE



ORDER CODES

Code	Description
Z-LWS-I	Micro PLC – Standard Isagraf
Z-LWS-C	Micro PLC – Standard CoDeSys

ACCESSORIES & SOFTWARE

Z-NET-3

Z-PC system configurator, IEC 61131 based

pg. 36

Isagraf

IEC 61131 programming toolkit

pg. 36

CoDeSys

IEC 61131 programming toolkit

pg. 36

Z-PC DIN

DIN rail bus system - Z-PC line

pg. 36

Z-POWER

DIN rail 19 Vac transformers

pg. 36

Z-SUPPLY

Redundant power supply 24 Vdc

pg. 36

PM....

Connection cable

pg. 36

SIMILAR PRODUCTS

Z-TWS-3

Multi-function control unit

pg. 38

Z-TWS-64

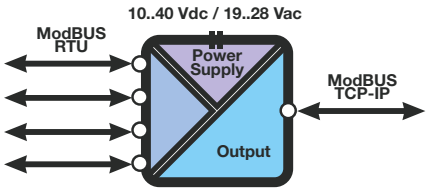
Multi-function control unit @ 64 bit

pg. 39

Communication Interfaces

Z-BRIDGE

MODBUS RTU / MODBUS TCP-IP BRIDGE (MULTIPLE SERIAL PORT)



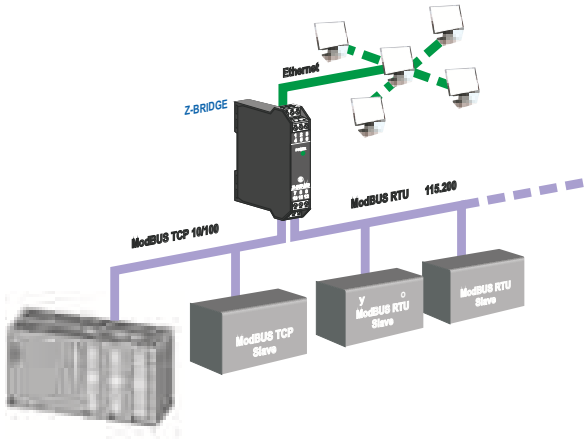
Z-BRIDGE is a transparent ModBUS TCP/IP bridge for any ModBUS RTU serial device. It disposes of N.4 serial ports, either RS485 and RS232, master or slave.
On Ethernet side is available a 10 Base-t port. The communication through Ethernet is protected by a galvanic isolation at 1500 V.

CE Modbus MODBUS TCP -IP

TECHNICAL SPECIFICATIONS

General Data	
Power supply	10..40 Vdc / 19..28 Vac
Power Consumption	3,5 W
Isolation	1.500 Vac (3 way)
Status Indicator	Ethernet transmission Power Supply Ethernet connection
Protection Degree	IP20
Operating Temperature	0..+55 °C
Dimension (W x H x D)	17,5 x 100 x 112 mm
Weight	250 g
Enclosure	PBT
Connections	Removable terminal block, max wire size 2,5 mm^2
Mounting	35 mm DIN rail guide
Communication, Memory Process	
Interfaces	N° 1 RS232 port N° 2 RS485 port N° 1 RS232/RS485 port N°1 Ethernet port (server, 10 Mbps, http, ftp)
Protocol	ModBUS RTU master ModBUS TCP
Memory	CPU 32 bit, 512 kB flash, 256 kB RAM, backup battery
Configuration	
Programming	Z-NET3 (free software)
Standard	
Approvals	CE
Norms	EN50081-2; EN 55011; EN 50082-2; EN 61000-2-2; EN 50140/141; EN 61010-1; EN 60742;

APPLICATION NOTE



ORDER CODES

Code	Description
Z-BRIDGE	Modbus RTU / Modbus TCP-IP bridge (Multiple serial port), 10..40 Vdc / 19..28 Vac

ACCESSORIES & SOFTWARE

Z-PC-DIN
Backplane for power & bus communication
pg. 36

Z-SUPPLY
Switching power supply
pg. 36

Z-NET3
Z-PC system configurator, IEC 61131 based
pg. 36

SIMILAR PRODUCTS

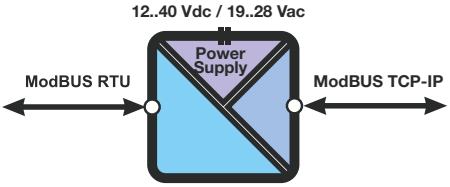
Z-GW-MB
Modbus RTU Master to Modbus TCP gateway / server
pg. 43

Z-LWS
Micro PLC
pg. 40

Z107E
Ethernet - RS232/RS485 Adapter
pg. 44

Z-GW-MB

MODBUS RTU / MODBUS TCP-IP BRIDGE (SINGLE SERIAL PORT)



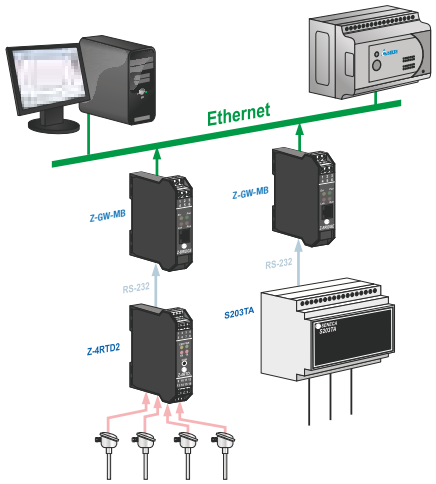
Z-GW-MB is a transparent ModBUS TCP/IP bridge for any ModBUS RTU serial device. It disposes of N.1 serial port, either RS485 and RS232, master or slave.
On Ethernet side is available a 10 Base-t port. The communication through Ethernet is protected by a galvanic isolation at 1500 V

CE Modbus MODBUS TCP -IP

TECHNICAL SPECIFICATIONS

General Data	
Power supply	12..28 Vac / 12..40 Vdc / 50-60 Hz
Power consumption	1,2 W
Isolation	500 Vac
Power transducers	-
Status Indicators	Power supply, Ethernet link, Ethernet connection
Protection Degree	IP20
Operating Temperature	-20..+70 °C
Dimension (W x H x D)	17.5 x 100 x 112 mm
Mounting	35 mm DIN rail guide
Communication, Memory Process	
Communication ports	Master mode for the RS485 or RS232 communication port with ModbusRTU protocol Maximum baud rate for ModbusRTU set to 115200 bps
Ethernet communication	Ethernet to RS232 or RS485 for remote control of the ModbusRTU device. 10-BaseT Ethernet port (10 Mbit / S)
Connection on RS485 port	Removable screw terminal (M4, M5, M6) or IDC10 (rear connector)
Connection on RS232 port	DB9-F in the side of the module
Memory	RJ45 front
Standard	
Approvals	CE
Norms	EN 61000-6-4/2002, EN 61000-6-2/2002, EN 61010, EN 60742

APPLICATION NOTE



ORDER CODES

Code	Description
Z-GW-MB	Modbus RTU / Modbus TCP-IP bridge (single serial port), 12..40 Vdc / 12..28 Vac

ACCESSORIES & SOFTWARE

Z-PC-DIN
Backplane for power & bus communication
pg. 36

Z-SUPPLY
Switching power supply
pg. 36

SIMILAR PRODUCTS

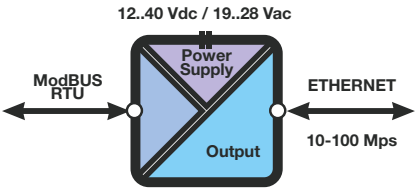
Z-BRIDGE
Modbus RTU / Modbus TCP-IP bridge (Four serial port)
pg. 42

Z-LWS
Micro PLC
pg. 40

Z107E
Ethernet - RS232/RS485 Adapter
pg. 44

Z107E

ETHERNET - RS232/RS485 ADAPTER - VIRTUAL COM



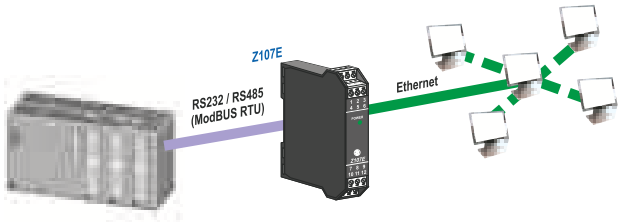
Z107E adapts the Ethernet communication signal into a serial signal RS485 or RS232; it can be used as a remote serial communication port via TCP or UDP port of the Ethernet network. The communication through Ethernet is protected by a galvanic isolation at 500 V

CE Modbus ETHERNET

TECHNICAL SPECIFICATIONS

General Data	
Power supply	12..28 Vac / 12..40 Vdc / 50-60 Hz
Power consumption	1,2 W
Isolation	500 Vac
Power transducers	-
Status Indicators	Power supply, Ethernet link, Ethernet connection
Protection Degree	IP20
Operating Temperature	-20..+70 °C
Dimension (W x H x D)	17.5 x 100 x 112 mm
Mounting	35 mm DIN rail guide
Communication, Memory Process	
Communication ports	Ethernet to RS485 or RS232 communication through VIRTUAL COM PORT Communication POINT TO POINT with ethernet TCP or UDP protocol connection Communication POINT TO MULTIPOINT with ethernet connection
Ethernet communication	Ethernet communication velocity: 10Mbit/s o 100Mbit/10-BaseT and 100-BaseT Ethernet port with TCP/IP communication protocol
Connection on RS485 port	Removable screw terminal (M4, M5, M6) or IDC10 (rear connector)
Connection on RS232 port	DB9-F in the side of the module
Connection on Ethernet port	RJ45 front
Standard	
Approvals	CE
Norms	EN 61000-6-4/2002, EN 61000-6-2/2002, EN 61010, EN 60742

APPLICATION NOTE



ORDER CODES

Code	Description
Z107E	Ethernet - RS232/RS485 adapter – virtual COM, 12..40 Vdc / 12..28 Vac

ACCESSORIES & SOFTWARE

Z-PC-DIN
Backplane for power & bus communication
pg. 36

Z-SUPPLY
Switching power supply
pg. 36

SIMILAR PRODUCTS

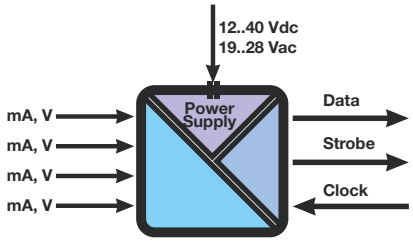
Z-BRIDGE
Modbus RTU / Modbus TCP-IP bridge (Four serial port)
pg. 42

Z-LWS
Micro PLC
pg. 40

Z-GW-MB
Modbus RTU / Modbus TCP-IP bridge (single serial port)
pg. 43

Z-4AI-D

4-CH DC CURRENT-VOLTAGE A/D CONVERTER

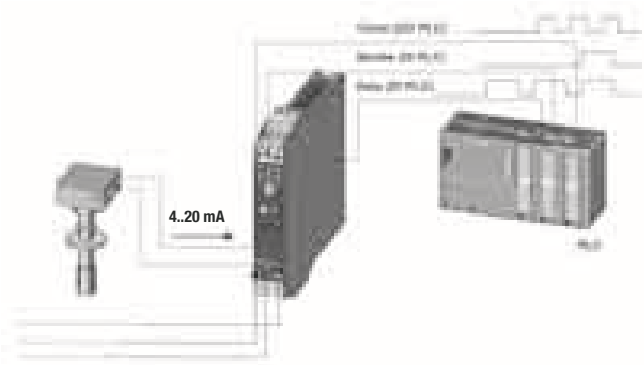


Z-4AI-D allows to acquire up to N.4 analogue inputs (ma or V) through a PLC with only digital input/output. The PLC interface is based on three PNP-type signals suited for connection to most PLCs available in the market.
The interface is composed of a CLOCK signal generated by the PLC (transistor output), a DATA signal and STROBE signal generated by the module.

TECHNICAL SPECIFICATIONS

General Data	
Power supply	19..40 Vdc / 19..28 Vac / 50-60 Hz
Power consumption	2,5 W
Isolation	1.500 Vac (3 way)
Power transducers	Yes
Status Indicators	Power supply, error, data transmission, data reception, input status
Protection Degree	IP20
Operating Temperature	0..+55 °C
Dimension (W x H x D)	17.5 x 100 x 112 mm
Mounting	35 mm DIN rail guide
Communication, Memory Process	
PLC communication	3-wire synchronous serial: CLOCK, DATA, STROBE, standard levels 24V pnp.
PLC type	Interface for PLC on standard digital I/O (only DC).
Sampling time	Sampling time settable at 400 ms @ 14 bit + sign, 200 ms @ 13 bit + sign.
Distance	Up to 100 m (with shielded cable)
Signals	
Channel Numbers	4
INPUT	VOLTAGE Bipolar with f.s. +/-10V DC or +/- 2V DC, input impedance 100 Kohm, resolution 14 / 13 bit + sign. CURRENT Bipolar with f.s. +/- 20 mA DC, input impedance 100 ohm, resolution 14 / 13 bit + sign.
Programming	
Software	The programming necessary for the PLC is extremely reduced: the SIEMENS S7-200 PLC requires one 10 lines of Ladder in order to read the analogue inputs; this corresponds to approx. 187 byte of programming space. It is not necessary to read all the channels: the programming tool can be used to decide which channels to be sent to the PLC. The tool also the selection of the module's various operating modes: field of measurement, filter, type of serialisation, type of data sent to the PLC, etc.
Standard	
Approvals	CE
Norms	EN 50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4; EN 50140/141; EN 61010-1

APPLICATION NOTE



ORDER CODES

Code	Description
Z-4AI-D	4-CH DC current-voltage A/D converter, 19..40 Vdc / 19..28 Vac

ACCESSORIES & SOFTWARE

Z-PC-DIN
Backplane for power & bus communication
pg. 36

Z-SUPPLY
Switching power supply
pg. 36

SIMILAR PRODUCTS

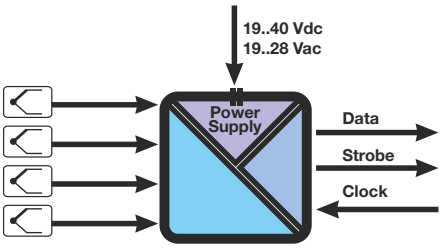
Z-4TC-D
4-CH thermocouples A/D converter
pg. 46

Z-4AI
4-CH analog input module / ModBUS
pg. 16

Z-8AI
8-CH analog input module / ModBUS
pg. 17

Z-4TC-D

4-CH THERMOCOUPLE A/D CONVERTER

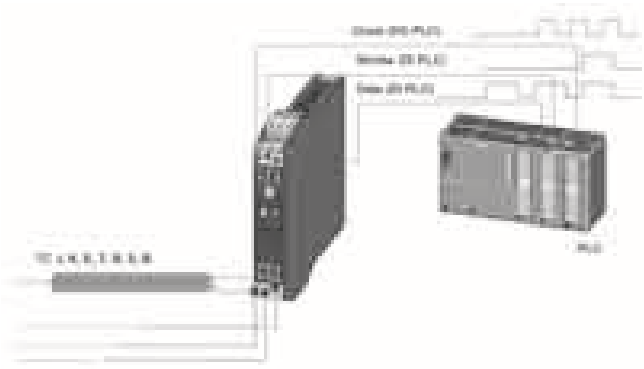


Z-4TC-D allows to acquire up to N.4 Thermocouple sensors (J, K, E, N, S, R ,B ,T) through a PLC with only digital input/output. The PLC interface is based on three PNP-type signals suited for connection to most PLCs available in the market.
The interface is composed of a CLOCK signal generated by the PLC (transistor output), a DATA signal and STROBE signal generated by the module.

TECHNICAL SPECIFICATIONS

General Data	
Power supply	19..40 Vdc / 19..28 Vac / 50-60 Hz
Power consumption	2,5 W
Isolation	1.500 Vac (3 way)
Power transducers	Yes
Status Indicators	Power supply, error, data transmission, data reception, input status
Protection Degree	IP20
Operating Temperature	0..+55 °C
Dimension (W x H x D)	17.5 x 100 x 112 mm
Mounting	35 mm DIN rail guide
Communication, Memory Process	
PLC communication	3-wire synchronous serial: CLOCK, DATA, STROBE, standard levels 24V pnp.
PLC type	Interface for PLC on standard digital I/O (only DC).
Sampling time	Sampling time settable at 400 ms @ 14 bit + sign, 200 ms @ 13 bit + sign
Distance	Up to 100 m (with shielded cable).
Signals	
Channel Numbers	4
INPUT	VOLTAGE bipolar with 80 mV f.s., input impedance > 10 Mohm, resolution 5 uV (10 uV @ 14 bit). THERMOCOUPLE J,K,R,S,T,B,E, and N type; resolution 5 uV (10 uV @14 bit), input impedance > 10 Mohm, TC cut-off detection.
Programming	
Software	The programming necessary for the PLC is extremely reduced: the SIEMENS S7-200 PLC requires one 10 lines of Ladder in order to read the analogue inputs; this corresponds to approx. 187 byte of programming space. It is not necessary to read all the channels: the programming tool can be used to decide which channels to be sent to the PLC. The tool also the selection of the module's various operating modes: field of measurement, filter, type of serialisation, type of data sent to the PLC, etc.
Standard	
Approvals	CE, UL-CSA
Norms	EN 50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4; EN 50140/141; EN 61010-1

APPLICATION NOTE



ORDER CODES

Code	Description
Z-4TC-D	4-CH Thermocouple A/D converter, 19..40 Vdc / 19..28 Vac

ACCESSORIES & SOFTWARE

Z-PC-DIN
Backplane for power & bus communication
pg. 36

Z-SUPPLY
Switching power supply
pg. 36

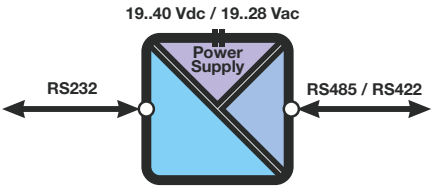
SIMILAR PRODUCTS

Z-4AI-D
4-CH DC current-voltage A/D converter
pg. 45

Z-8TC
8-CH thermocouple/mV input module / ModBUS
pg. 21

Z107

RS232↔RS485/422 SERIAL CONVERTER



Z107 allows a transparent conversion and isolation of RS485/ RS422 serial line into RS232 and viceversa.
The RS232 connection is available both on terminals and RJ10 connector. As well the RS485 connection is available both on terminals and back side connector.

TECHNICAL SPECIFICATIONS

General Data	
Power supply	19..40 Vdc, 19..28 Vac 50..60 Hz
Power Consumption	2,5 W
Isolation	1.500 Vac (3 way)
Status Indicator	Power supply, RST signal status, data transmission, data reception
Protection Degree	IP20
Operating Temperature	0..+55 °C
Dimension (W x H x D)	17.5 x 100 x 112 mm
Weight	200 g
Enclosure	PBT
Connections	Removable terminal block, max wire size 2,5 mm2
Mounting	35 mm DIN rail guide
Communication, Memory Process	
Interface	RS232 on RJ45 frontal connector RS485/RS422, removable termian blockwith screw type connection
Operating ways	2 wires Half Duplex, point to point, multidrop
Direction change	Automatic timing, command from RTS on RS232 interface
Speed	Up to 115 kbps
Protocol	ModBUS RTU slave
Distance	Up to 1.200 m
Configuration	
DIP switches	Speed, communication, change of direction
Standard	
Approvals	CE, UL-CSA
Norms	EN 50081-2, EN 55011, EN 50082-2, EN 61000-2-2/4, EN 50140/141, EN 61010-1, EN 60742

ORDER CODES

Code	Description
Z107	DIN rail RS232 - RS485/422 serial converter, 19..40 Vdc / 19..28 Vac

ACCESSORIES & SOFTWARE

Z-PC-DIN
Backplane for power & bus communication
pg. 36

Z-SUPPLY
Switching power supply
pg. 36

SIMILAR PRODUCTS

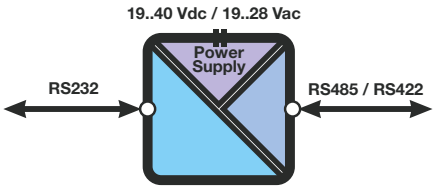
S107P
RS232 - RS485/422 serial converter, desk version
pg. 48

K107B
RS232/RS485 serial converter
pg. 53

K107USB
RS485↔USB serial converter
pg. 54

S107P

RS232↔RS485/422 SERIAL CONVERTER, DESK VERSION



S107P allows a transparent conversion and isolation of RS485/ RS422 serial line into RS232 and viceversa. The RS485 and RS422 interfaces are available on terminals.
The RS232 through a cable with DB9 female connector (included).
230V network power supply included into the box.

TECHNICAL SPECIFICATIONS

General Data	
Power supply	9..12 Vdc (with feeder 220 Vac)
Power consumption	1 W
Isolation	1.500 Vac (3 way)
Power transducers	Power supply, RST signal status, data transmission, data reception
Status Indicators	IP20
Protection Degree	0..+55 °C
Operating Temperature	17.5 x 100 x 112 mm
Dimension (W x H x D)	200 g
Enclosure	ABS
Communication, Memory Process	
Interface	S107P RS232, DB9 connector RS485/RA422, extractable clamps 5 poles Screw connection
Operating ways	2 wires Half Duplex, point to point, multidrop
Direction change	Automatic timing, command from RTS on RS232 interface
Speed	Up to 115 kbps
Protocol	ModBUS RTU slave
Distance	Up to 1.200 m
Configurations	
DIP switches	Speed, communication, change of direction
Standard	
Approvals	RINA, CE
Norms	EN 50081-2, EN 55011, EN 50082-2, EN 61000-2-2/4, EN 50140/141, EN 61010-1, EN 60742

ORDER CODES

Code	Description
S107P	RS232 - RS485/422 serial converter, portable version, 19..40 Vdc / 19..28 Vac

SIMILAR PRODUCTS

S117P1

RS232/USB, TTL/ USB, RS485/USB asynchronous serial converter

pg. 51

Z107

DIN rail RS232 - RS485/422 serial converter

pg. 47

S107USB

RS485/USB serial converter, portable version

pg. 49

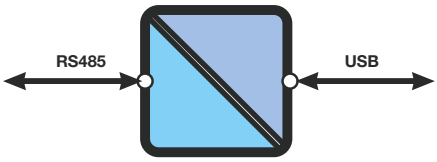
K107USB

RS485↔USB serial converter

pg. 54

S107USB

USB↔RS485 SERIAL CONVERTER, DESK VERSION



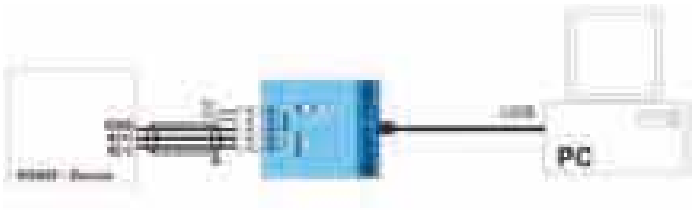
S107USB is an interface able to implement a RS485 serial port by using a PC USB port.
The available drivers will recognize the serial interface as a standard serial port; so the use of the product is directly allowed through any software able to communicate with the standard serial ports of the operating system (COM1, COM2, etc). RS485 and USB ports are isolated from each other at 1500 V.

CE

TECHNICAL SPECIFICATIONS

General Data	
Power supply	Through USB port
Power consumption	60 mA
Isolation	1.500 Vac (2 way)
Status Indicators	Power supply, data transmission, data reception
Protection Degree	IP20
Operating Temperature	0..+55°C
Dimension (W x H x D)	40 x 48 x 20,17 mm
X-SIDE	
SERIAL	RS485, line termination and speed (from 1.200 bps a 250 kbps) settable
Y-SIDE	
USB	USB 1.0 e 2.0, connectors USB A e MINI USB B, multiple connection on the same PC
Special Functions	
Operating system	Usable in Windows 98, 2000 and XP Environments. Usable in Linux Environment with Kernel 2.4.20 or later, for which the direct support exists.
Driver	With to the provided driver, the serial interface is considered by the operating system as a standard serial port; therefore the use of the product is directly allowed through any software able to communicate with the standard serial ports of the operating system (COM1, COM2, etc).
Standard	
Approvals	CE
Norms	EN 50081-2, EN 55011, EN 50082-2, EN 61000-2-2/4, EN 50140/141, EN 61010-1, EN 60742

APPLICATION NOTE



ORDER CODES

Code	Description
S107USB	USB↔RS485 serial converter (desk version), drivers and cable included

SIMILAR PRODUCTS

S117P1
RS232/USB, TTL/USB, RS485/USB asynchronous serial converter
pg. 51

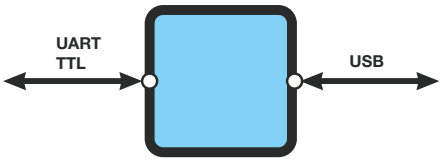
Z107
DIN rail RS232 - RS485/422 serial converter
pg. 47

K107USB
RS485↔USB serial converter
pg. 54

S107P
RS232↔RS485/422 serial isolator/ converter (desk)
pg. 48

EASY-USB

USB↔TTL CONVERTER

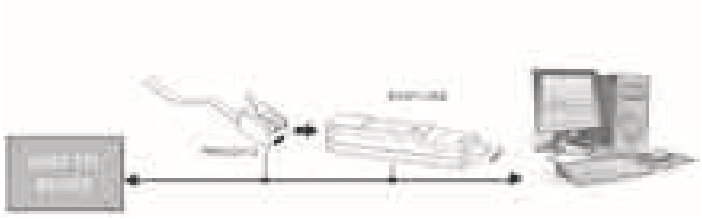


EASY-USB is a serial communication converter that convert the signal from the USB to a standard UART TTL signal and viceversa. EASY-USB can be use to configure a Seneca device that has an UART TTL serial port.
Through the installation of a provided driver for yours OS the EASY-USB will be configured as a standard communication port, this allow to use the EASY-USB with any configuration software that exploit the serial standard port (COM1, COM2, etc).

TECHNICAL SPECIFICATIONS

General Data	
Power supply	5V from PC up to 100 mA
Connection modality	From USB
Protection Degree	IP20
Operating Temperature	-10 °C.. +65 °C
Dimension (W x H x D)	84 x 21 x 17 mm
SERIAL UART TTL	
Connector	RJ11
Voltage level for TTL	5 V
Baud rate	300 bps up to 250 kbps
SERIAL USB	
Connector	USB A Type
Standard compatibility	1.0, 1.1, 2.0
Standard	
O.S. compatibility	Windows 98, 98SE, ME, 2000, Server2003, XP. Windows XP 64bit. Windows Vista. Windows XP embedded. Windows CE.net 4.2 & 5.0. Mac OS 8, 9, OS-X. Linux con Kernel 2.4.20 or subsequent, with direct support
Approval	CE
Norms	EN 61000-6-4, EN 64000-6-2, EN 61010-1, EN 60742

APPLICATION NOTE



ORDER CODES

Code	Description
EASYUSB	USB↔TTL converter, drivers and cable included

SIMILAR PRODUCTS

K107USB

RS485↔USB serial converter

pg. 54

S117P1

USB↔RS485/RS232/ TTL serial isolator/ converter (desk)

pg. 51

S107USB

RS485↔USB serial converter (desk)

pg. 49

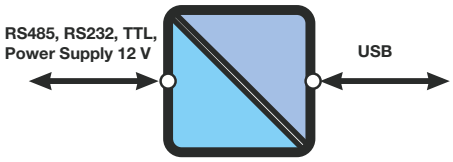
S107P

RS232↔RS485/422 serial isolator/ converter (desk)

pg. 48

S117P-1

USB↔RS485/RS232/TTL SERIAL ISOLATOR/CONVERTER (DESK)

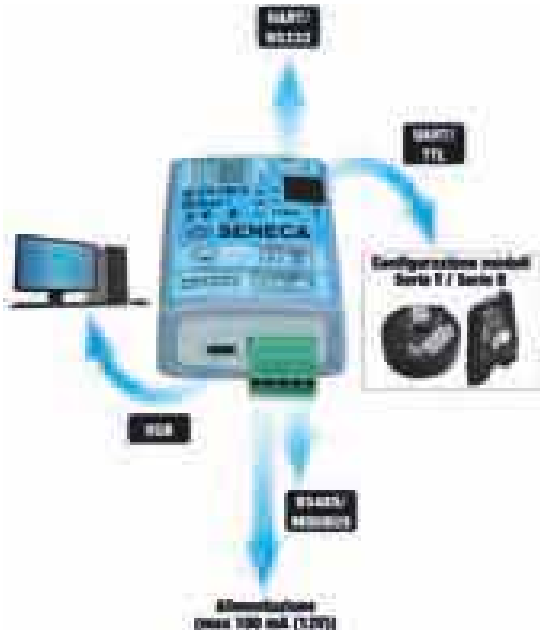


S117P1 is a converter that realizes a serial connection via RS232, RS485 or TTL, using a USB port on the PC.
Through the drivers the operating system treats the serial interface like a standard serial port, allowing the use of the converter through any software that can communicate with the standard serial ports present in the operating system (COM1, COM2, ecc.).
RS232, RS485 and TTL ports are electrically isolated from the USB avoiding most of the problems of electrical noises.

TECHNICAL SPECIFICATIONS

General Data	
Power supply	Through USB port
Power consumption	50 mA
Isolation	1.500 Vac (3 way)
Modules Power Supply	Yes, 12 Vdc available
Status Indicators	Power supply, data transmission, data reception
Mounting	RS232, RS485 or TTL, using an USB
Protection Degree	IP20
Operating Temperature	-20..+65°C
Dimension (W x H x D)	90 x 50 x 25 mm
O.S. compatibility	Usable in Windows 98, 2000 and XP Environments. Usable in Linux Environment with Kernel 2.4.20 or later, for which the direct support exists.
X-SIDE	
SERIAL	Serial RS232 Communication Serial RS485 Communication, max 32 nodes. RS232 connections: DB9 connector TTL connections: RJ-10 connector
Y-SIDE	
USB	USB standard 1.0, 1.1 e 2.0 compatible
Standard	
Approvals	CE
Norms	EN61000-6-4/2007, EN61000-6-2/2005, EN61010-1/2001

APPLICATION NOTE



ORDER CODES

Code	Description
S117P-1	USB↔RS485/RS232/TTL serial isolator/converter (desk), drivers and cable (RS232, TTL, USB) included

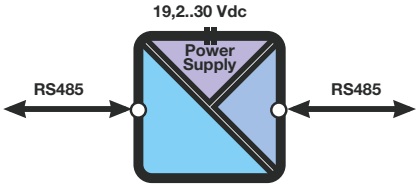
SIMILAR PRODUCTS

K107USB
RS485↔USB serial converter
pg. 54

S107USB
USB<->RS485 serial converter, desk
pg. 49

K107A

RS485↔RS485 SERIAL ISOLATOR/AMPLIFIER

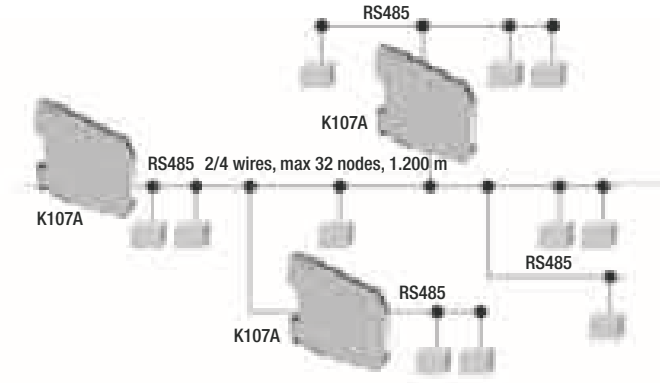


K107A is a amplifier for RS485 serial line. It's used in order to extend both the length or the number of devices admitted (max 32) on RS485 serial line.
Useful also when a star connection needed that usual is not possible with RS485 line.

TECHNICAL SPECIFICATIONS

General Data	
Power supply	19,2..30 Vdc
Side Power	Yes
Hot swapping	yes
Max current consumption	22 mA (24 Vdc)
Max power consumption	500 mW
Rejection	50 – 60 Hz (configurable)
Settings	DIP switches
Filter	Insertable
Dimensions (w x h x d)	6,2 x 93,1 x 102,5 mm
Isolation	1,5 kVac (3-way)
Isolation technique	Digital (optocoupler)
Data processing	32 bit floating point
Colour	Black
Enclosure	PBT
Weight	45 g
Operating temperature	-20..+65 °C
Connections	Clamp terminals / bus
Protection degree	IP20
Channels	1 input, 1 output
Status indicators	Power ON Data Inverted connection
Communication	Automatic handshake Baud rate: 1.200..115.200 bps
Approvals	CE, UL-UR CSA
Norms	EN 61010-1, EN 60742, EN 61000-2, EN 61000-4
DATA X SIDE	
Type	SERIAL RS485 Half duplex, 31 nodes, line termination, protection up to 30 Vdc
DATA Y SIDE	
Type	SERIAL RS485 half duplex, 31 nodes, terminal, protection up to 30 Vdc

APPLICATION NOTE



ORDER CODES

Code	Description
K107A	RS485↔RS485 serial isolator/amplifier

ACCESSORIES & SOFTWARE

K-BUS
Backplane for power connection
pg. 114

SIMILAR PRODUCTS

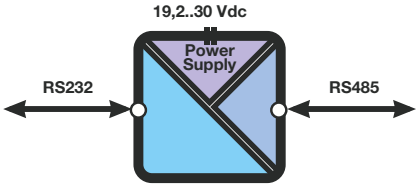
S107USB
RS485↔USB serial converter (desk)
pg. 49

K107USB
RS485↔USB serial converter
pg. 54

K107B
RS232↔RS485 serial isolator/ amplifier
pg. 53

K107B

RS232↔RS485 SERIAL CONVERTER

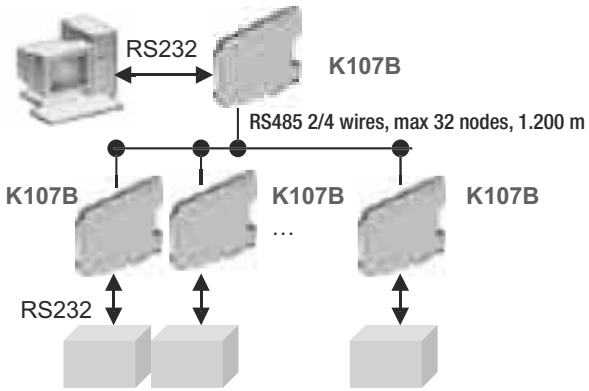


The K107B is designed to accept a single half duplex RS-485 input and give a single, isolated, half duplex RS-232 output, the K107B is ideal for most serial conversions and isolated transmissions over long distances. Being a K-Liner it features a super slim enclosure, just 102.5x93.1x6.2 mm. The DIN-Rail mountable K107B offers optional K-BUS connectivity allowing further savings in time and wiring by bussing together the nominal 24V DC power supply connections.

TECHNICAL SPECIFICATIONS

General Data	
Power supply	19,2..30 Vdc
Side Power	Yes
Hot swapping	yes
Max current consumption	22 mA (24 Vdc)
Max power consumption	500 mW
Rejection	50 – 60 Hz (configurable)
Settings	DIP switches
Filter	Insertable
Dimensions (w x h x d)	6,2 x 93,1 x 102,5 mm
Isolation	1,5 kVac (3-way)
Isolation technique	Digital (optocoupler)
Data processing	32 bit floating point
Colour	Black
Enclosure	PBT
Weight	45 g
Operating temperature	-20..+65 °C
Connections	Clamp terminals / bus
Protection degree	IP20
Channels	1 input, 1 output
Status indicators	Power ON Data Inverted connection
Communication	Automatic handshake Baud rate: 1.200..115.200 bps
Approvals	CE, UL-UR CSA
Norms	EN 61010-1, EN 60742, EN 61000-2, EN 61000-4
DATA X SIDE	
Type	SERIAL RS232, protection up to 30 Vdc
DATA Y SIDE	
Type	SERIAL RS485 half duplex, 31 nodes, terminal, protection up to 30 Vdc

APPLICATION NOTE



ORDER CODES

Code	Description
K107B	RS232↔RS485 serial converter, 19,2..30 Vdc

ACCESSORIES & SOFTWARE

K-BUS
Backplane for power connection
pg. 114

PM001970
RS232 communication cable
pg. 36

SIMILAR PRODUCTS

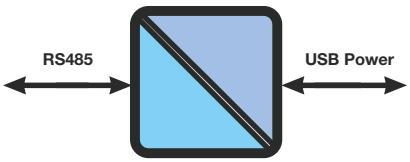
S107USB
RS485↔USB serial converter (desk)
pg. 49

K107USB
RS485↔USB serial converter
pg. 54

K107A
RS485↔RS485 serial isolator/ amplifier
pg. 52

K107USB

RS485↔USB SERIAL CONVERTER

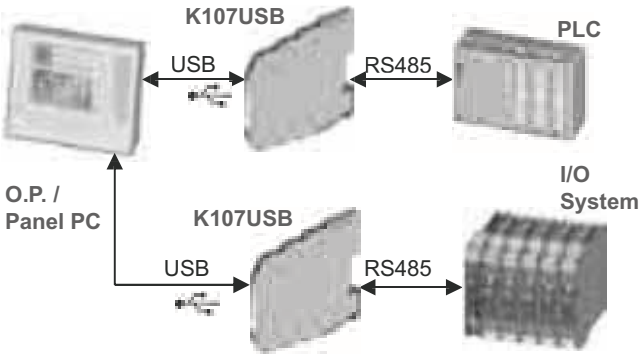


K107USB is an interface able to implement a RS485 serial port by using a PC USB port.
The available drivers will recognize the serial interface as a standard serial port; so the use of the product is directly allowed through any software able to communicate with the standard serial ports of the operating system (COM1, COM2, etc). RS485 and USB ports are isolated from each other at 1500 V.

TECHNICAL SPECIFICATIONS

General Data	
Power supply	Via USB port
Hot swapping	Yes
Max current consumption	60 mA
Rejection	50 – 60 Hz (configurable)
Settings	DIP switches
Filter	Insertable
Dimensions (w x h x d)	6,2 x 93,1 x 102,5 mm
Isolation	1,5 kVac (USB // RS485)
Isolation technique	Digital (optocoupler)
Data processing	32 bit floating point
Colour	Black
Enclosure	PBT
Weight	45 g
Operating temperature	-20..+65 °C
Connections	Clamp terminals / bus
Protection degree	IP20
Channels	1 input, 1 output
Status indicators	Power ON Data Inverted connection
Embedded functions	Compliance to USB 1.1 and 2.0 Plug&play for WIN 98, 2000 and XP Multiple connection on the same PC
Approvals	CE
Norms	EN 61010-1, EN 60742, EN 61000-2, EN 61000-4
DATA X SIDE	
Type	SERIAL USB interface, standard USB 1.0/ 2.0 compliance, USB A and MINI USB B connection
DATA Y SIDE	
Type	SERIAL RS485, max 31 nodes, spring cage terminal block

APPLICATION NOTE



ORDER CODES

Code	Description
K107USB	RS485↔USB serial converter (din mounting), drivers and cable included

SIMILAR PRODUCTS

S107USB
RS485↔USB serial converter (desk)
pg. 49

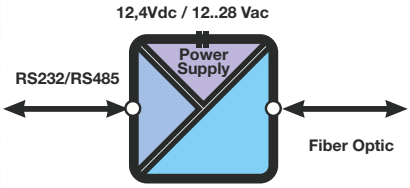
S117P1
USB↔RS485/RS232/ TTL serial isolator/ converter (desk)
pg. 51

Z107
RS232↔RS485/422 serial isolator/ converter
pg. 47

S107P
RS232↔RS485/422 serial isolator/ converter (desk)
pg. 48

Z107FO

OPTICAL FIBER↔SERIAL (RS232/RS485) CONVERTER

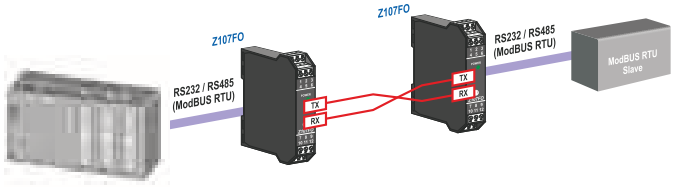


Z107FO is a RS232 and RS485 signal repeater through optical fiber.
The device can be used to increase a number of nodes connection into the same logical bus, and
its lenght can be extended up to 2 Km.

TECHNICAL SPECIFICATIONS

General Data	
Power supply	12,4 Vdc, 12..28 Vac (50..60 Hz)
Power Consumption	1,2 W
Status Indicator	Serial Communication and optical fiber status
Operating Temperature	-30..+60 °C
Storage Temperature	-30..+85 °C
Humidity	30..90% non condensing
Dimension (W x H x D)	17,5 x 100 x 112 mm
Weight	140 g
Enclosure	PBT, black
Mounting	35 mm DIN rail guide
Settings	DIP-switch (baud rate, parity, serial port, bit stop, termination)
Conformity	CE, EN 61000-6-4, EN 64000-6-2, EN 61010-1, EN 60742
Communication Ports	
RS232	DB9F connector (COM)
RS485 / CAN	Removable terminal block IDC10 back connector for Z-PC DIN backplane DB9F (COM)
Ethernet	
Optical Fiber	Multimodal mode (62,5/125 or 50/125 µm) Frontal connector ST/ST
Speed	From 1.200 to 115.200 bps
Delay Time	160 – 240 ms (9.600 bps) 145 – 155 ms (115.200 bps)

APPLICATION NOTE



ORDER CODES

Code	Description
Z107FO	Optical fiber↔serial (RS232/RS485) converter, 12..40 Vdc 12..28 Vac

ACCESSORIES & SOFTWARE

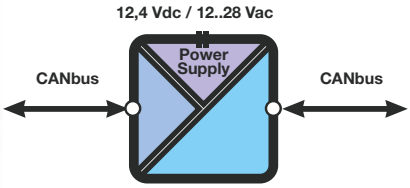
Z-PC FO
Fiber Optic cable with ST/ST connectors, L=2 m

SIMILAR PRODUCTS

ZC-107FO
Fiber optic↔CAN repeater converter
pg. 56

ZC-107FO

OPTICAL FIBER↔CAN REPEATER CONVERTER

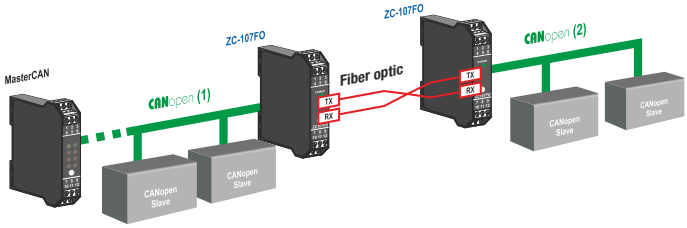


ZC-107FO is a CAN signal repeater through optical fiber.
The device can be used to increase a number of nodes connection into the same logical bus, and its lenght can be extended up to 2 Km even at 1 Mb data rate.

TECHNICAL SPECIFICATIONS

General Data	
Power supply	12,4 Vdc, 12..28 Vac (50..60 Hz)
Power Consumption	1,2 W
Status Indicator	Serial Communication, Functioning
Operating Temperature	-30..+60 °C
Storage Temperature	-30..+85 °C
Humidity	30..90% non condensing
Dimension (W x H x D)	17,5 x 100 x 112 mm
Weight	140 g
Enclosure	PBT, black
Mounting	35 mm DIN rail guide
Settings	DIP-switch (baud rate, parity, serial port, bit stop, termination)
Conformity	CE, EN 61000-6-4, EN 64000-6-2, EN 61010-1, EN 60742
Communication Ports	
RS485 / CAN	Removable terminal block IDC10 back connector for Z-PC DIN backplane DB9F (COM)
Optical Fiber	Multimodal mode (62,5/125 or 50/125 µm) Frontal connector ST/ST Delay in Sending Message 300 µs Max distance 2 km
Protocols	
CAN	CANBUS 2.0
Speed	Up to 1 Mbps

APPLICATION NOTE



ORDER CODES

Code	Description
ZC-107FO	Optical fiber↔CAN repeater converter, 12..40 Vdc 12..28 Vac

ACCESSORIES & SOFTWARE

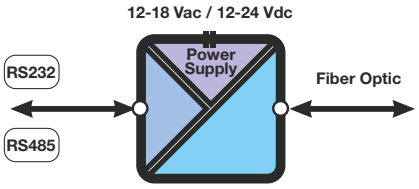
Z-PC FO
Fiber Optic cable with ST/ST connectors, L=2 m

SIMILAR PRODUCTS

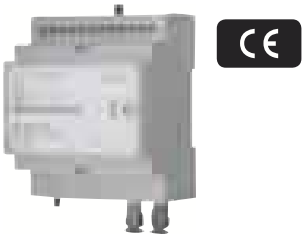
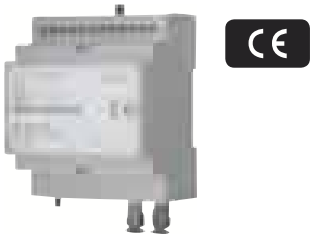
Z-107FO
Optical fiber↔serial (RS232/RS485) converter
pg. 55

S232 / S485

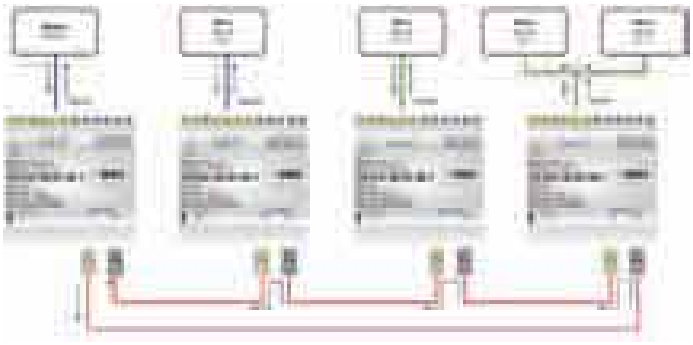
MULTIDROP FIBER OPTIC S232 / S485 SINGLE / DOUBLE LOOP CONVERTER



S232 / S485 is a multi-drop converter from RS232 to Single/Double Loop fiber Optic. The device is resistant to harsh environmental specifications. S232 / S485 is provided with isolation between power supply, fiber optic and serial line. S232 / S485 is mountable on DIN rail and it works from -40°C to 80°C (-40°F / 176°F).

TECHNICAL SPECIFICATIONS	S232	S485
		
	Multidrop fiber optic-RS232 single/double loop converter	**Multidrop fiber optic-RS485 single/double loop converter**
General Data		
Power Supply	12-24 Vdc; 12..28 Vac (50-60 Hz)	12-24 Vdc; 12..28 Vac (50-60 Hz)
Max Consumption	4 W	4 W
Operating temperature	-40..+80 °C	-40..+80 °C
Dimension	96x71x60 mm	96x71x60 mm
Weight	200 g	200 g
Case	PVC, white	PVC, white
Mounting	DIN 46277	DIN 46277
Setting	DIP-switch (baud rate, parità, porta seriale, bit stop, terminazione)	DIP-switch (baud rate, parità, porta seriale, bit stop, terminazione)
Conformity	CE	CE
Norms	EN 61000-6-4, EN 61000-6-2	EN 61000-6-4, EN 61000-6-2
Communication		
Serial ports	RS232, isolated, integrated terminal	RS485 isolated, integrated terminal
Fiber optic	Multimode (62,5/125 o 50/125 µm) ST/ST connector	Multimode (62,5/125 o 50/125 µm) ST/ST connector
Baud rate	From 300 to 115.200 kbps	From 300 to 115.200 kbps

APPLICATION NOTE



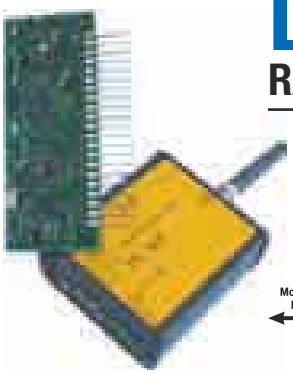
ORDER CODES

Code	Description
S232-SL	Multidrop fiber optic-RS232 single loop converter
S232-DL	Multidrop fiber optic-RS232 double loop converter
S485-SL	Multidrop fiber optic-RS485 single loop converter
S232-DL	Multidrop fiber optic-RS485 double loop converter

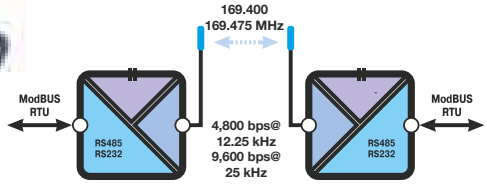
SIMILAR PRODUCTS

Z107F0
Fiber optic - serial (RS232/RS485) converter
pg. 55

ZC-107F0
Fiber optic - CAN repeater converter
pg. 56



DL169
RADIO MODEM 169,4 MHZ

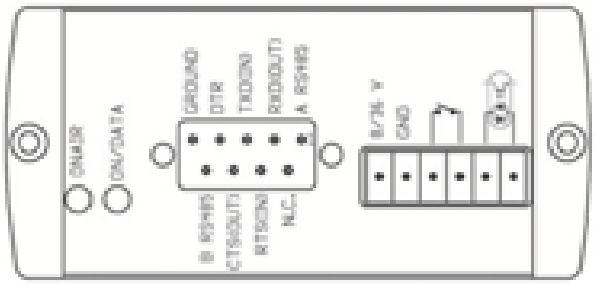


DL169 is a VHF simplex/half-duplex high quality radiomodem with an output power of 200 mWERP with a dedicated λ/4 antenna mod. ANT169L, or a vertical dipole, operating on six 12,5 kHz channels or three 25 kHz channels in the 169.400 – 169.475 MHz band in according to the European Decision 2005/928/CE. These products are characterised by free use. The radiomodem is enclosed in an extruded aluminium box containing the RS232/ RS485 interface and supply unit card.

TECHNICAL SPECIFICATIONS

General Data	
Operating band	169.400 – 169.475 Mhz
Channel number	3 @ CH 25 kHz , 6 @ CH 12.5 kHz – under European Decision 2005/928/CE
Canalisation	12.5 kHz or 25 kHz
Modulation	9K00F1D or 18K0F1D
Radio data rate (Tx/Rx)	4,800 bps @ 12.5 kHz – 9,600 bps @ 25 kHz
Frequency stability	±500 Hz
Supply voltage	8 → 36 Vdc with limited source power
Rx consumption	~ 30 mA @ 12 Vdc – RS232/485 Relay OFF
Tx consumption	~ 300 mA
Consumption DTR Off	< 1 mA
Antenna	→/4 - →//2 o 3 elements Yagi
Dimension (hxwxd)	100 x 90 x 40 mm (3.94 x 3.54 x 1.58 inches)
Operating temperature	–30 → +70 °C (-22 → 158 °F)
Reference directives	EN 300 220-1 v2.3.1 , EN 300 220-2 v2.3.1
Out switch aux	N.O. 28 Vac @ 0,5 A o 60 Vdc @ 1 A
Digital input	5 → 24 Vdc or 3.50 → 20 Vac. Zinp: 2.2 kΩ
Transmitter	
Output power	0.20 WERP (DL169-IN-B) 0.5 WERP (DL169-IN-B-Y3)
Frequency deviation	± 1.8 kHz @ 12,5 kHz - ± 3.6 kHz @ 25 kHz
Output power stability	±1.5 dB
Adjacent channel power	compliant EN 300 220-1
Ch. adjacent transitory power	compliant EN 300 220-1
Receiver	
Type	Class 2 – LBT and Agility
sensistivity@BER < 10-2	< -100 dBm@12.5 kHz <-107 dBm @ 25 kHz
Adjacent channel attenuation blocking	compliant EN 300 220-1
blocking	compliant EN 300 220-1
Interface	
Type	RS 232, RS 485
Data rate	1,200 to 38,400 bps
Data format	Asynchronous 8,N,1- 8,E,1-8,O,1
Operating mode	Simplex or half-duplex

FRONT LAYOUT



ORDER CODES

Code	Description
DL169-RS232	Radiomodem 169,4 MHz OEM, aluminum case RS232 interface
DL169-RS485	Radiomodem 169,4 MHz OEM, aluminum case RS485 interface

HMI - Displays

5

S401

THE NEW STANDARD FOR MODBUS INDICATORS

ModBUS RTU indicator with OLED 2,7” display

CE Modbus EASY PG
RS232 RS485 OLED

MINIMUM WIRING, MAXIMUM FLEXIBILITY

ONLY 2 WIRES AND 20 MEASURES ALL IN 1 DISPLAY

TECHNICAL SPECIFICATIONS

GENERAL DATA	
Power supply	10-40 Vdc / 19-28 Vac
Power consumption	1 W
Communication interface	2 x RS485 ModBUS RTU Master / Slave Speed 1.200..115.200 bps
Memory	RAM: 256 byte XRAM: 4kB Flash: 32 kB
VISUALIZATION AND MEASURE	
Display	OLED 2,7", 128 x 64 pixel
Front keys	3 menu keys
Visualization	Up to 20 measures (max 3 per page) With autoscrolling
Serial communication	Address, parity, baud rate, response delay time, transmission delay time, data receiving timeout
Data storage	RAM, 20 x 4 byte
THERMOMECHANICS DATA	
Operating temperature	-10..+60°C
Front protection	IP65
Dimension (w x h x d)	96x48x40 mm
SETTINGS, NORMS	
Software / query	Max free settings 20 query, data management via EASY S401
Settings	Communication parameters, language, contrast, brightness, range, offset, measure type
Conformity	EN 61000-6-4/2002, EN 61000-6-2/2005, EN 61010-1/2001
ORDER CODES	
Code	Description
Model	S401-L ModBUS RTU indicator with OLED 2,7" display

HIGHLIGHTS

HIGH BRIGHTNESS:
70 cd/m²

AUTOMATIC SCROLLING TEXT MESSAGGE

SPACE SAVING:
96x48x40 mm

VISUALIZATION:
up to 30 measurements (float, integer, boolean)

SETTINGS:
via software or front key menu

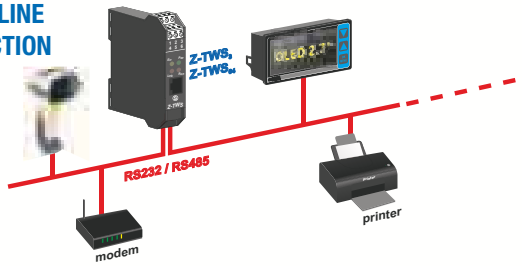
MASTER FUNCTIONS:
27 math functions, 20 readings from slave modules, 10 writings on slave devices,

SMART CABLING:
Nr. 2 RS485 ModBUS interfaces (1 Master / 1 Slave)

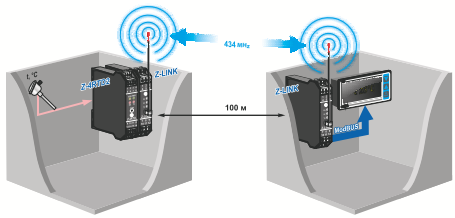
Alarms control on threshold or event

APPLICATIONS

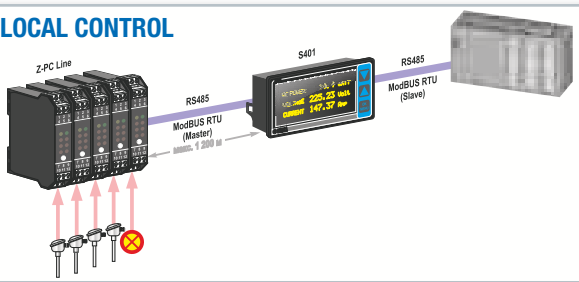
SERIAL LINE CONNECTION



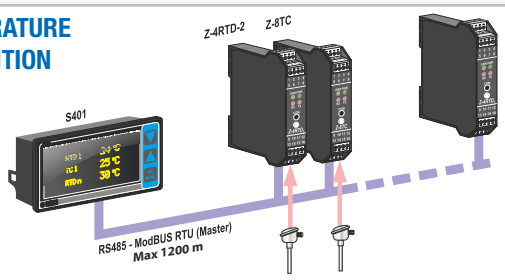
SIGNAL RETRANSMISSION



PLC LOCAL CONTROL



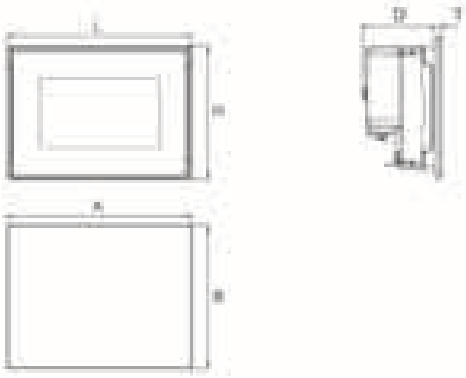
TEMPERATURE ACQUISITION



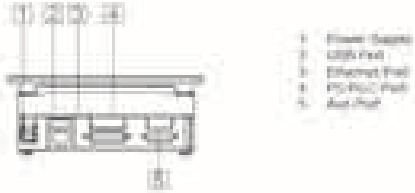
ZTOP SERIES
TOUCHSCREEN OPERATOR PANELS

ZTOP04C

Dimension

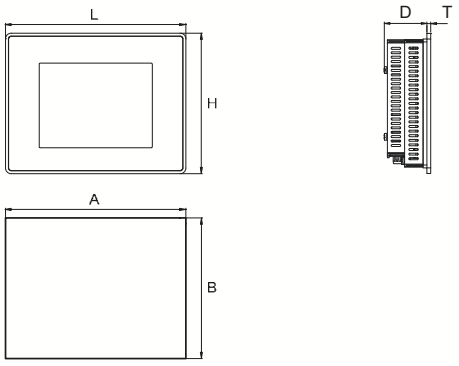


Connections

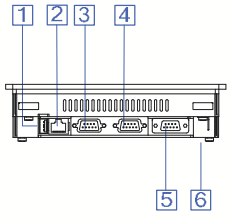


ZTOP306

Dimension



Connections



1 USB Port
2 Ethernet Port
3 PC/Printer Port
4 PLC Port
5 Aux Port
6 Power Supply

	ZTOP04C	ZTOP306
		
	4,3” widescreen touchscreen operator panel	TFT 5,7” touchscreen operator panel

TECHNICAL SPECIFICATIONS

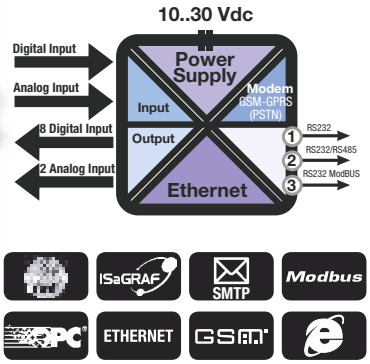
Display		
Format	TFT, 256 colori, 120 cd/m2 typ	TFT 64k colori 130 cd/m2 typ
Touchscreen	Resistive	Resistive
backlight	LED	LED
Resolution	480 x 272 pixel	320x240 QVGA
Active area	95.4 x 53.9 mm (4,3”)	5,7” diagonal
Functions	Dual driver	scalable vector graphic dynamics object true type font
Connections		
Printer / PC port	-	RS232, RS485, RS422
PLC port	RS232, RS485, RS422	RS232, RS485, RS422
Aux / fieldbus / Ethernet	Ethernet 100 Mbps, fieldbus (option)	Ethernet 10/100 Mbps, fieldbus (option)
USB	Host interface, version 1.1	Host interface, version 1.1
Programming speed	9.600 – 38.400 bps	
General Data		
# Var per page	unlimited	unlimited
Recipe Memory	32 kB	64 MB flash
User Memory	2 MB flash	64 MB flash
Alarms + Events	1.024 + 256	1.024 + 1.024
Alarm page	Yes	Yes
Password	Yes	Yes
Batteria	Battery Yes, Backup	Battery Yes, Backup
Hardware RTC	Yes	Yes
Screen saver	Yes	Yes
Buzzer	-	Yes
LED indicators	-	Alarm, communication, battery, hw error
Power supply	18..30 Vdc	18..30 Vdc
Max consumption	0.4 A @ 24 Vdc	0.55 A @ 24 Vdc
Weight	1 kg	1 kg
Operating temperature	0..+50°C	0..+50°C
Storage temperature	-20..+70 °C	-20..+70 °C
Humidity	5..85 % RH Non condensing	5..85 % RH Non condensing
Protection class	IP65	IP65
Dimension	149 x 109 mm (5,86 x 4,49 “); 136 x 96 mm (5,35 x 3,78 “)	187 x 147 mm (7,36 x 5,79 “); 176 x 136 mm (6,93 x 5,35“)

RTU, Remote Terminal Units

6

Z-RTU

ALL-IN-ONE REMOTE TERMINAL UNIT



Z-RTU is an all-in-one dedicated unit for telecontrol: simple solution for alarm management, datalogging and GSM/GPRS connection with central PC station. Z-RTU offers excellent calculus capabilities and memory, I/O on board, N.2 serial ports, N.1 Ethernet, an industrial dual band full type approval GSM modem for the remote connections, (alternatively, a PSTN modem may be installed) to allow the remote management of alarms, diagnostics and automatic data sending. For all these features Z-RTU is the ideal solution for environmental monitoring applications, water and pump control systems, gas control and energy management.

TECHNICAL DATA

General Data	
Power Supply	10-30 Vdc
Case	IP20
Operating temperature	-10..55°C (suggested)
Dimension	185 x 242 x 36,90 mm
CPU	Flash: 16 MB (data) RAM: 8 MB, 64 retentive variables
Communication & IO	
Communication ports	Nr 1 Ethernet 10 BaseT port Nr 1 RS232/RS485 programmable port Nr 1 RS485 Modbus expandable port Nr 1 RS232 Debug/User port
Modem	Dual band GSM 900/1800 MHz (opzionale tri-band), full type approval, GPRS class 8 PSTN, ITU-T V.90/ 56 k, ITU-T V.34
Fieldbus & System Protocols	PPP, http, TCP-IP, FTP, SMTP, ModBUS RTU Master (on RS485) / Master-Slave (on RS232/RS485), ModBUS TCP / IP
I/O	Nr 16 (8) digital input with internal/external suppli Nr 8 (4) SPDT relay digital output Nr 4 (2) analog input with settable loop power, 14 bit Nr 2 (1) voltage/current analog output, 12 bit
Programming	
Configuration software	Z-NET, Z-NET RTU
OPC	Yes
PLC programming	Isagraf. CoDeSys
Main libraries	Automatic motor routine Working hours Counters and totalizers Flow and compensation calculation
Web Editor	Yes
Norms	
Conformity	CE

ORDER CODES

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

ACCESSORIES & SOFTWARE

Z-PC-DIN
Backplane for power & bus communication
pg. 36

Z-SUPPLY
Switching power supply
pg. 36

Z-NET
IEC 61331 programming software
pg. 36

SIMILAR PRODUCTS

M-RTU-GP
Battery powered compact telemetry unit
pg. 68

Z-TWS-3
Multi-function control unit
pg. 38

Z-TWS-64
Multi-function control unit @ 64 bit
pg. 39

Z-GPRS
GSM / GPRS unit with ModBUS interface
pg. 70

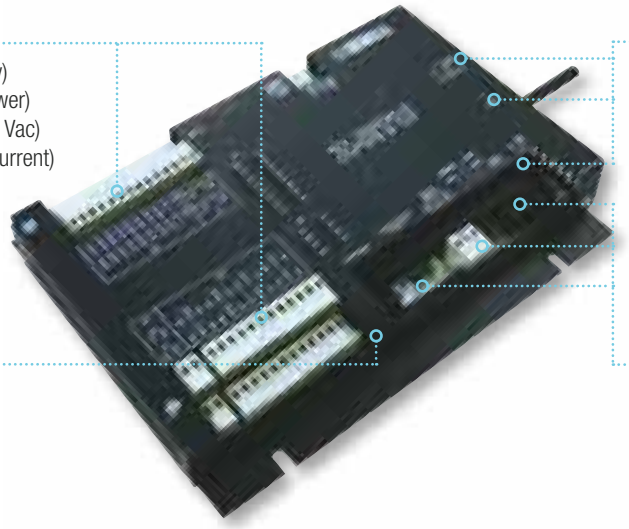
INTEGRATED SOLUTION

ALL-IN-ONE REMOTE CONTROL

- **IEC 61131 programming System**
- **OPC & Scada open technology**
- **Options: CANOpen / Profibus build-in board, smart speech kit**
- **Main applications: water treatment, monitoring of public utilities' mains network and energy management**

I/O WITH CONNECTORS

- 8+8 digital inputs (internal/external power supply)
- 2+2 analogue inputs (14 bits resolution, loop power)
- 4+4 digital outputs (relay SPDT, capacity 5A 250 Vac)
- 1+1 analogue outputs (12 bits resolution, volts/current)



REMOTE COMMUNICATION

- Housing for SIM + antenna GSM/GPRS
- PSTN communication port

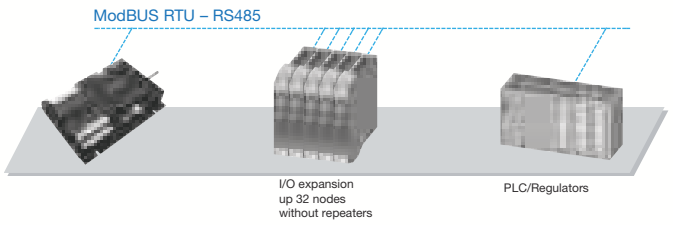
ETHERNET 10 BASE-T

- Interface of control system with SCADA via OPC or Java/VB/Windows applications
- Use of other protocols such as ModBUS TCP/IP, ftp, http, SMTP, IEC 870

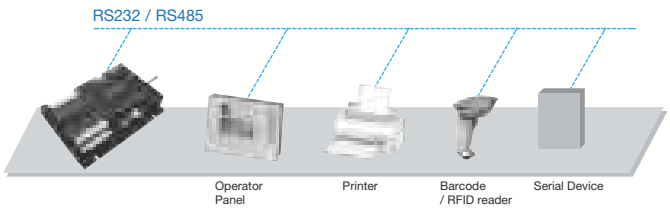
SERIAL PORTS

- RS232/RS485 programmable
- RS485 ModBUS RTU (connect I/O modules, ModBUS RTU/Master or Slave functions)
- RS232 debug/user

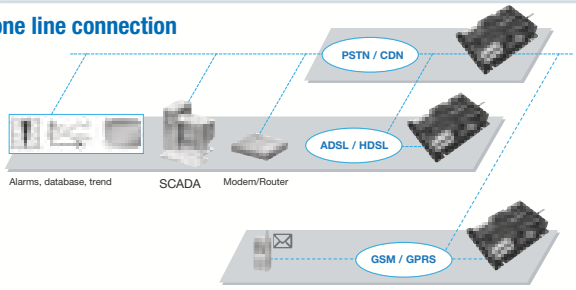
Serial connection (1)



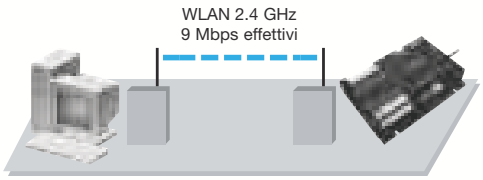
Serial connection (2)



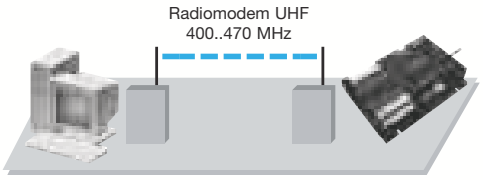
Phone line connection



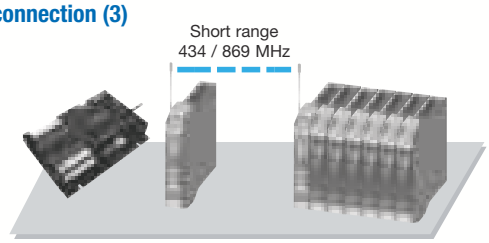
Wireless connection (1)



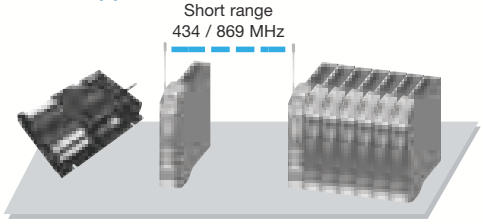
Wireless connection (2)



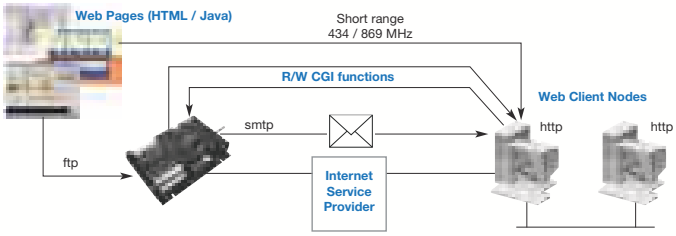
Wireless connection (3)



Wireless connection (4)

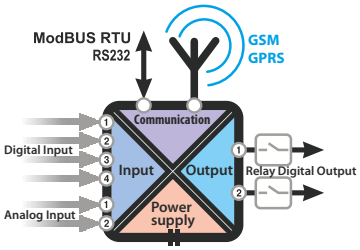


Web / PPP connection



M-RTU-GP

BATTERY POWERED COMPACT TELEMETRY UNIT

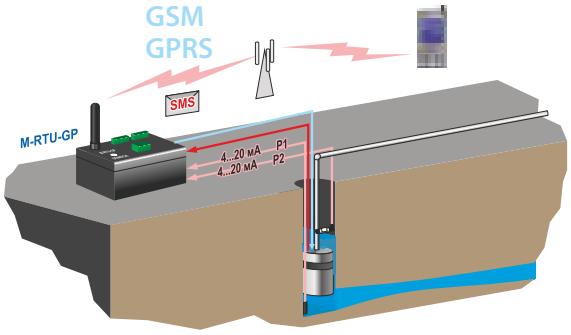


M-RTU-GP is an integrated remote terminal unit suitable for monitoring of small plants: easy to use and install, compact and flexible remote control suitable for data logging and alarming function. The low power consumption allows also a battery power supply (3 years life-time). The M-RTU-GP is able to acquire, process, store and transmit analog or digital signals to a PC central station using GSM and GPRS standard communication.

TECHNICAL SPECIFICATIONS

General Data	
Power supply	14,4 V battery power supply, 3 years life-time
External case protection	IP44
Operating temperature	-20..+70 °C (max stability: 0..35 °C)
Dimension	263 x 143 x 89 mm
Communication & IO	
Communication ports	• Nr 1 UART GSM port • Nr 1 serial port V24-RS232, half-duplex, local connection, baud rate: 1.200.. 115.200 baud
Modem	GSM / GPRS
CPU	32 bit, core ARM7, 2 UARTS, low power
Memories	EEPROM: 64 kByte FLASH: 2 MByte
Fieldbus and sytem protocols	ModBUS RTU Built-in SMS protocol
I/O	• Nr 4 isolated digital input, max freq. 10 Hz • Nr 2 analog input (V. mA, A), protected against overvoltages and overcurrents, max resolution 15 bit + sign • Nr 2 relay digital output, 30 Vdc – 1 A max (resistive load)
Programming	
Software configurator	M-RTU Workbench
Main functions	• Temporary turn on for SMS receiving / sending • Data transmission on event or on demand • I/O acquisition and datalogging • Daily data sending
Standard	
Approval	CE
Norms	EN61000-6-4/2002 EN6100-6-2/2005 EN61010-1/2001

APPLICATION NOTE



ORDER CODES

Code		Description
Model	M-RTU-1	Micro RTU, basic version, 4 DI, 2 AI, 2 DO, removable terminals
	M-RTU-GP	Micro RTU, general purpose version (M-RTU-1 + GSM external antenna + batteries package)
Software	M-RTU Workbench	Configuration tool, SMS data/command management, archives, alarms
Accessories	BATTHP	Lithium HP battery, 14.4V, 18,5 Ah
	A-STIL	GSM stilo antenna
	A-GSM	GSM external antenna dual band swing 3,2 m cable
	PM002490	RS232 M/F programming serial cable
	PM002500	RS232 firmware serial cable
	S-DIN	Rail DIN support

SIMILAR PRODUCTS

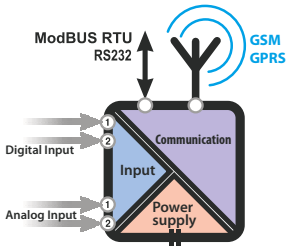
M-RTU-PC
Compact telemetry unit for cathodic protection
pg. 69

Z-RTU
All-in-one remote terminal unit
pg. 66

Z-GPRS
GSM / GPRS unit with ModBUS interface
pg. 70

M-RTU-PC

GSM/GPRS TERMINAL UNIT FOR CATHODIC PROTECTION

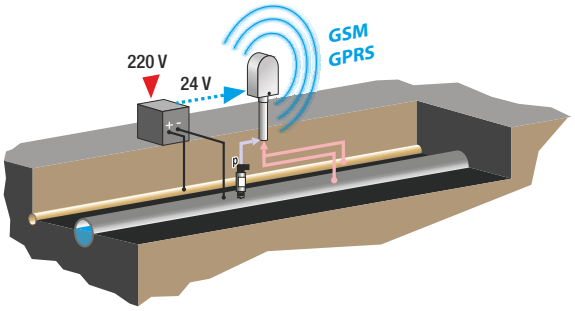


M-RTU-PC is a specific monitoring solution for cathodic protections: monitoring of parameters and analysis of material corrosion (oil and gas pipelines, tanks, plants, buildings, docks, etc.). The low power consumption allows also a battery power supply (3 years life-time). M-RTU-GP is able to acquire, process, store and transmit analog or digital signals to a PC central station using GSM and GPRS standard communication.

TECHNICAL SPECIFICATIONS

General Data	
Power supply	14,4 V battery power supply, 3 years life-time
External case protection	IP44
Operating temperature	-20..+70 °C (max stability: 0..35 °C)
Dimension	263 x 143 x 89 mm
Communication & IO	
Communication ports	• Nr 1 UART GSM port • Nr 1 serial port V24-RS232, half-duplex, local connection, baud rate: 1.200.. 115.200 baud
Modem	GSM / GPRS
CPU	32 bit, core ARM7, 2 UARTS, low power
Memories	EEPROM: 64 kByte FLASH: 2 MByte
Fieldbus and sytem protocols	ModBUS RTU Built-in SMS protocol
I/O	• Nr 2 isolated digital input, max freq. 10 Hz • Nr 2 analog input (V. mA, A), protected against overvoltages and overcurrents, max resolution 15 bit + sign
Programming	
Software configurator	M-RTU Workbench
Main functions	• Temporary turn on for SMS receiving / sending • Data transmission on event or on demand • I/O acquisition and datalogging • Daily data sending
Standard	
Approval	CE, Snam Rete Gas
Norms	EN61000-6-4/2002 EN6100-6-2/2005 EN61010-1/2001

APPLICATION NOTE



ORDER CODES

Code		Description
Model	M-RTU-2	Micro RTU, basic version, 2 DI, 2 AI ring connectors
	M-RTU-PC	Micro RTU, cathodic protection version (M-RTU-1 + GSM external antenna + batteries package)
Software	M-RTU Workbench	Configuration tool, SMS data/command management, archives, alarms
Accessories	BATTHP	Lithium HP battery, 14.4V, 18,5 Ah
	A-STIL	GSM stilo antenna
	A-GSM	GSM external antenna dual band swing 3,2 m cable
	PM002490	RS232 M/F programming serial cable
	PM002500	RS232 firmware serial cable
	S-DIN	Rail DIN support

SIMILAR PRODUCTS

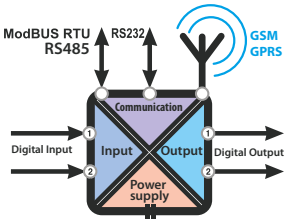
M-RTU-GP
GSM/GPRS battery powered terminal unit
pg. 68

Z-RTU
All-in-one remote terminal unit
pg. 66

Z-GPRS
GSM / GPRS unit with ModBUS interface
pg. 70

Z-GPRS

GSM / GPRS MODEM WITH MODBUS INTERFACE



CE Modbus GPRS GSM

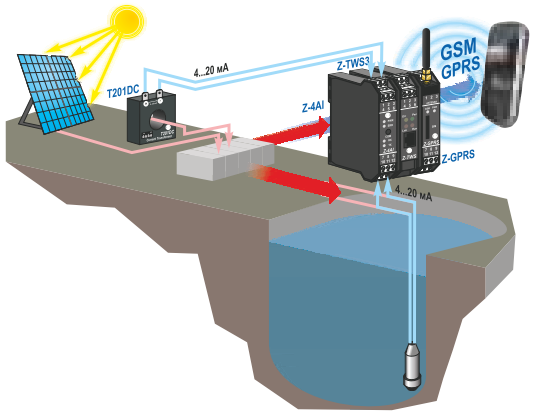
HTTP SMTP FTP POP3

Z-GPRS s a ModBUS Master module for wireless data acquisition and recording. It is able to receive and transmit commands, measures and alarms. Z-GPRS can be used in photovoltaic applications, building automation, telemetry and M2M communication, industrialremote control, remote environmental and energy control. It works as stand-alone unit or as node of a network. Z-GPRS is also a GSM/GPRS standard modem used withouta dditional programming, with SMS, e-mail and point-to-point communication mode. The GSM module supports serial connections at 9.600 bps and the following protocols: SMTP, FTP, POP3, HTTP through Internet.

TECHNICAL SPECIFICATIONS

Electrical Specifications	
Power supply	12..40 Vdc o 12..28 Vac (50-60 Hz)
Power consumption	1,2 W
Isolation	1,5 kVac (power supply/input/output)
Status Led	Power supply/ GSM Network
Thermomechanical Specifications	
Operating Temperature	-30..+60 °C
Dimensions	100 x 112 x 17,5 mm (h x d x w)
Connections	• Frontal DB9 Connector • Back IDC10 Connector • Screw clamp max 2,5 mm^2 • Antenna Connector SMA standard
Mounting	for DIN rail guide
Communication, Elaboration, Memory	
Communication ports	• integrated RS232, max speed 115 Kbit/s, isolated • integrated RS485, max speed 115 Kbit/s, isolated
GSM / GPRS Modem Quad band	Frequency 850/900/1800/1900 MHz Voice, Data, Short Message Service (SMS) GSM Supplementary Services
Microprocessor	32 bit
Memories	Flash 4 MB 1 MBb RAM
System Protocols	MODBUS RTU master
Digital Input	N°2 isolated channels, with power supply 12.. 30 Vdc, max load 30 Vdc
Digital output	N°2 isolated channels, a Mosfet with common ground, max load 50 mA / 50 Vdc
Configuration	
DIP-switches	Baud rate, parity, serial port, bit stop, termination line
SMS & Alarms	Output & Input, Users list, Network Parameters & RTC
Standard	
Approval	CE
Norms	• EN 301 511 • EN 301 489-1 • EN 301 489-7 • EN 60950

APPLICATION NOTE



ORDER CODES

Code	Description
Z-GPRS-A1	Remote management of 2DI / 2 DO
Z-GPRS-A2	Remote management of 18 DI / 10 DO
Z-GPRS-B	Remote signal repetition
Z-GPRS-C	Electrical consumption monitoring
Z-GPRS-D	Control of photovoltaic inverters
Z-GPRS-E	Datalogging of analog variables
Z-GPRS-F	Datalogging of pulse output meters
Z-D-IN	5-CH digital input ModBUS RTU / RS485
PM002490	RS232 Programming Cable (DB9M – DB9F)
S117P	Handheld RS232-TTL-RS485 / USB converter
A-GSM	External GSM Antenna dual band swing, cable 3,2 m
Z-PC-DINAL2-17.5	Backplane, head + 2 slots (for module with depth of 17,5 mm)
Z-PC-DIN2-17.5	Backplane, 2 slots (modules 17,5 mm width)
Z-PC-DIN8-17.5	Backplane, 8 slots (modules 17,5 mm width)

SIMILAR PRODUCTS

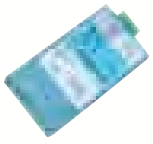
Z-RTU
All-In-One Remote Control Unit
pg. 66

MYALARM GSM
Remote control module GSM/GPRS
pg. 72

M-RTU-GP
GSM/GPRS battery powered terminal unit
pg. 68

M-RTU-PC
Compact telemetry unit for cathodic protection
pg. 69

ACCESSORIES & SOFTWARE



S117P1
USB serial converter
pg. 51

Z-PC-DIN
Backplane for power & bus communication
pg. 36

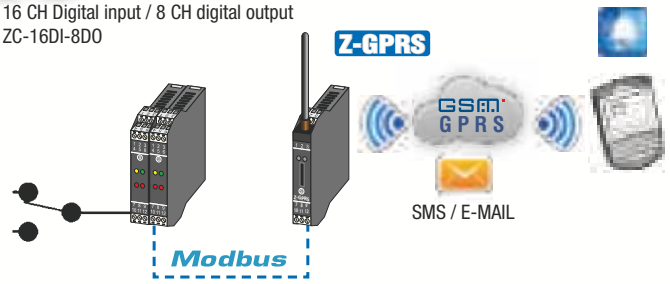
A-GSM
External GSM antenna
pg. 36

PM...
Programming cable
pg. 36

READY-TO-USE

A DIGITAL CONTACTS REMOTE MANAGEMENT

16 CH Digital input / 8 CH digital output
ZC-16DI-8DO



Application	Hardware configuration	Signal types	
		Digital inputs	Digital outputs
Remote management of 2DI / 2 DO	Z-GPRS-A1	2 (built-in on Z-GPRS)	2 (built-in on Z-GPRS)
Remote management of 18 DI / 10 DO	Z-GPRS-A2 ZC-16DI-8DO	18	10

B REMOTE SIGNAL REPETITION

Application	Hardware configuration	Signal types	
		Digital inputs	Digital outputs
Remote signal repetition	Z-GPRS-B I/O modules (Z-4AI, Z-3AO, Z-D-OUT…)	5, 10, 24	4, 8

C ELECTRICAL CONSUMPTION MONITORING

3-phase Network Analyzer
S203TA

Application	Hardware configuration	Signal types	
		Digital Inputs	Digital Outputs
Electrical consumption monitoring	Z-GPRS-C S203TA	-	-

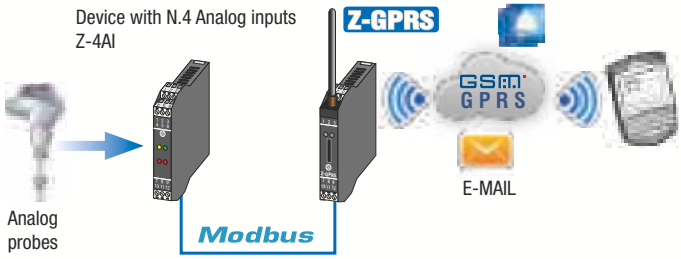
D CONTROL OF PHOTOVOLTAIC INVERTERS

Parameters
Power dc/ac
Current dc/ac
Voltage dc/ac
Network frequency
CosΦ
Temperature
CO2 emissions

Application	Hardware configuration	Signal types	
		Digital inputs	Digital outputs
Control of photovoltaic inverters	Z-GPRS-D I/O modules	n	n

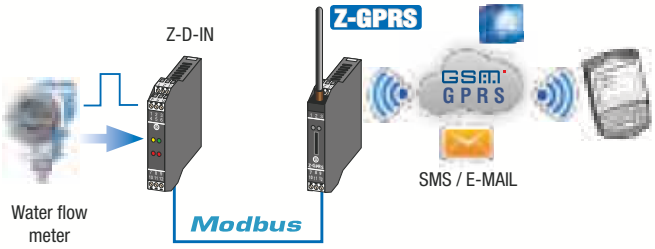
E DATALOGGING OF ANALOG VARIABLES

Device with N.4 Analog inputs
Z-4AI



Application	Devices used	Signal types	
		Digital inputs	Digital outputs
Datalogging of analog variables	Z-GPRS-E Z-4AI	0	4/8

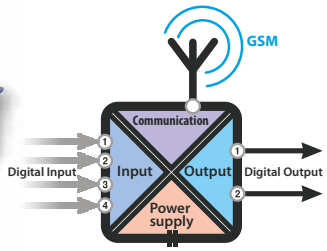
F DATALOGGING OF PULSE OUTPUT METERS



Application	Hardware configuration	Signal types	
		Digital inputs	Digital outputs
Datalogging of pulse output meters	Z-GPRS-F Z-D-IN	5	5

MYALARMGSM

SMS ALARM MANAGEMENT UNIT

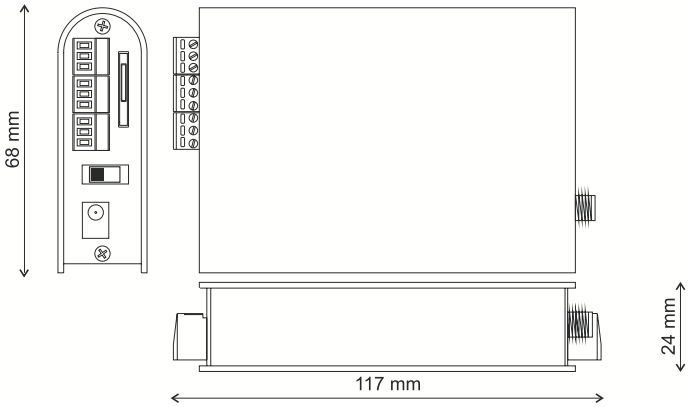


MyALARM GSM is a GSM telecontrol unit for home & building applications, industrial plants and machines thorugh simple commands sent by SMS text messages.
It works with any cell phone or smartphone. With MyALARMS GMS is possible to switch a boiler on / off, turn a contact on / off and so on.
The device has a GSM module inside that works as a telephone terminal on any cellular network.

TECHNICAL SPECIFICATIONS

Communication	
Modem	Quad band (850/900/1800/1900 Mhz) Output power class 4 (2W) @ 850 / 900 Mhz Output power class 1 (1W) @ 1800 / 1900 Mhz
Digital Input	
Channels	4
Input Type	Reed, contact, NPN 2 wire, Photoelectric, Hall, TTL
Power Supply	12 Vdc ± 1 Vdc (max), from 3,5 mm jack connector
Current	100 mA
Max Frequency	5 Hz
General Data	
Supply Voltage	12 Vdc @100 mA (max 330 mA)
Power Consumption	Typical 1.2 W, max 2 W
Oper. Temperature	-10..+65°C
Ip Protection	IP20
Connection	Removable terminal blocks, 3,5 mm PUSH-PUSH SIM card slot Stilo antenna connector 3,5 mm Jack connector Programming connector
Norms	EN 61000-6-2/2006-10 EN 61000-6-4/2002-10 EN 301 511 EN 301 489-1 EN 301 489-7 EN 60950
Dimensions	100 x 67,5 x 24,5 mm
Case	Alluminium, complete of DIN rail adapter

DIMENSIONS



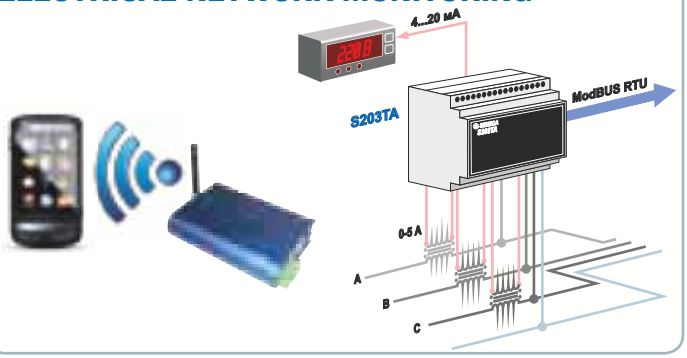
Article	Description	Order code	Article	Description	Order code
MY ALARM GSM 	SMS alarm management device, power supply 12V, modem quad band, 4 inputs, 2 outputs, network power supply (SIM not included)	MY-0	EASY-USB 	Programming KIT (USB interface, cable and software	EASY-USB
PULSECAP 	Converter for photoelectric sensor (from energy meter)	FD00	EASY-RELÈ 	Relay interface, SPDT 250 Vac, 3A	EASY-RELÈ

OTHER ACCESSORIES AVAILABLE:
Flood detector - Reed relay contact - Dual technology anti-intrusion sensor - GSM External Antenna GSM (3 m cable) - Fiber optic - Remote terminal - remote controlled socket

APPLICATIONS

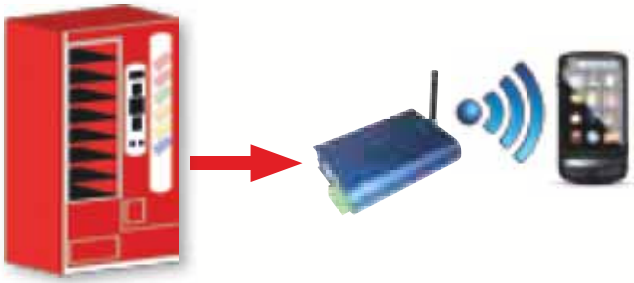
AUTOMATICALLY OPENING DOORS

ELECTRICAL NETWORK MONITORING

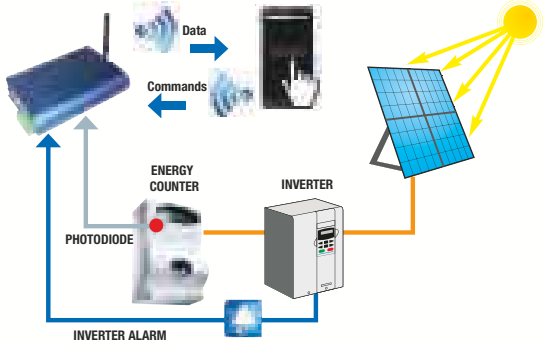


REMOTE CONTROL OF HEATER

REMOTE CONTROL OF VENDING MACHINE



REMOTE MONITORING OF ENERGY PRODUCTION



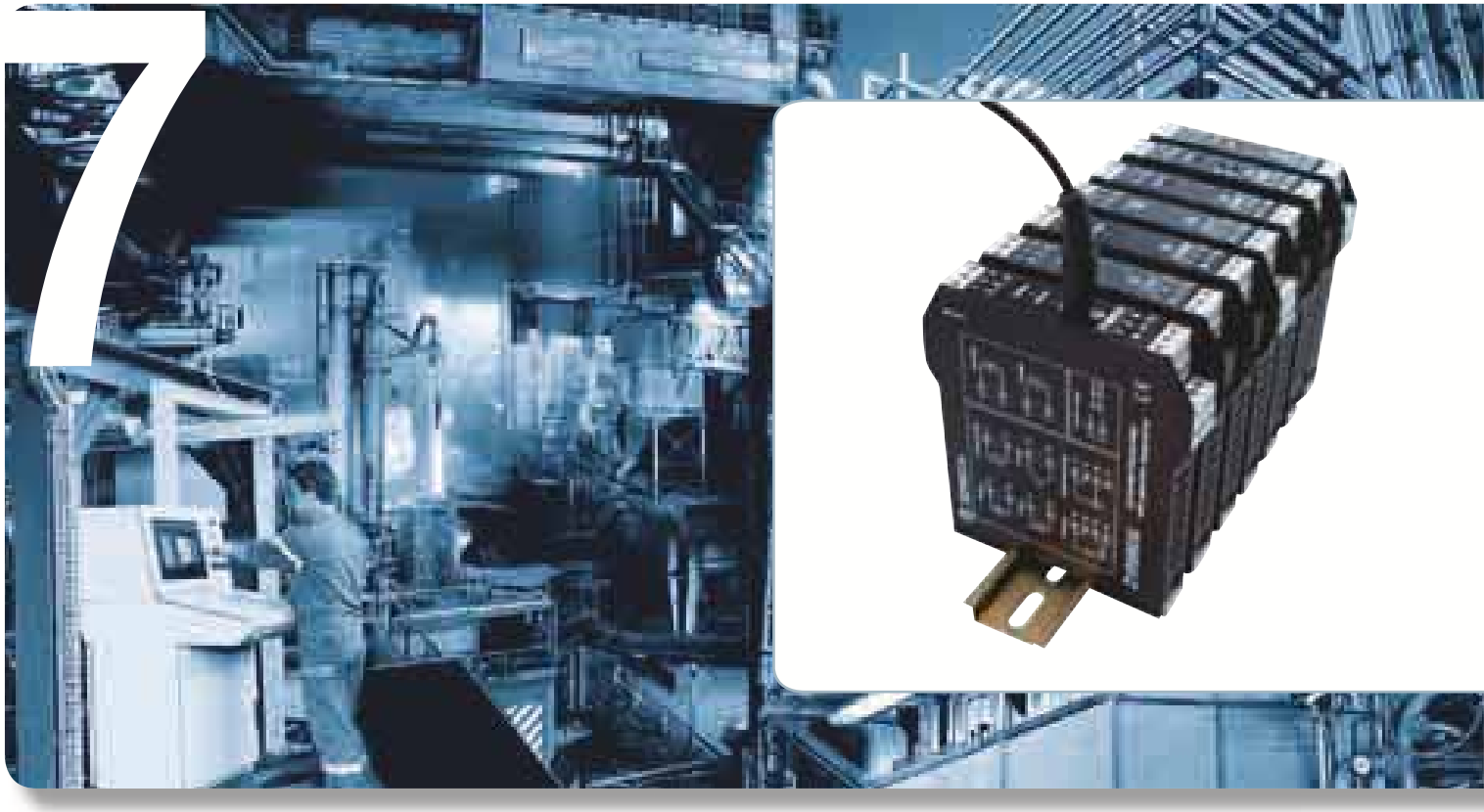
FLOOD CONTROL

FIBER OPTIC CONTINUITY TEST

ANTI-THEFT SYSTEMS

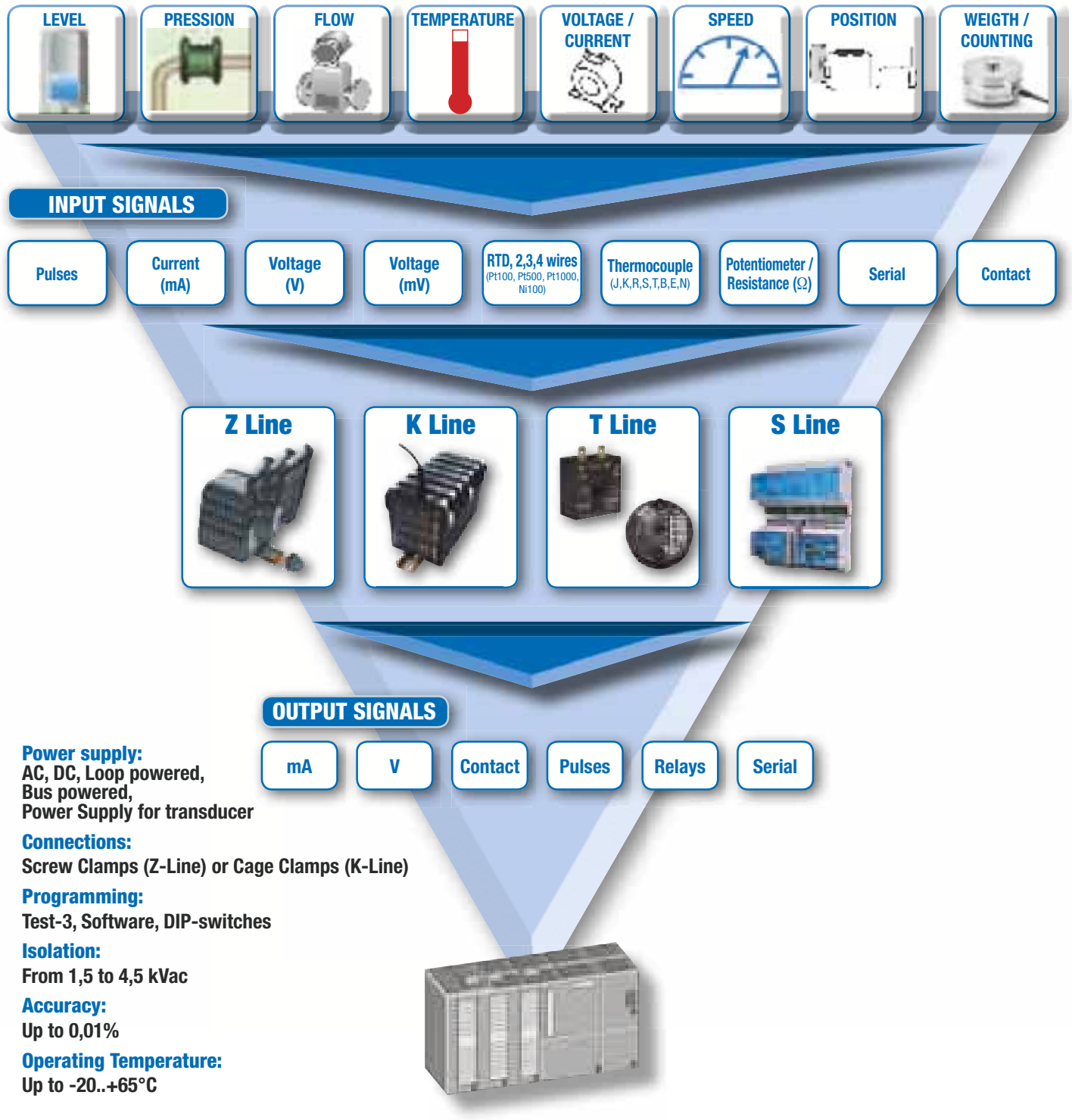
Multi-standard signal converters & isolators (Z-Line)

7



FROM SENSOR TO PLC:

conversion, power supply, isolation and signal standardization for any need



Power supply:
AC, DC, Loop powered,
Bus powered,
Power Supply for transducer

Connections:
Screw Clamps (Z-Line) or Cage Clamps (K-Line)

Programming:
Test-3, Software, DIP-switches

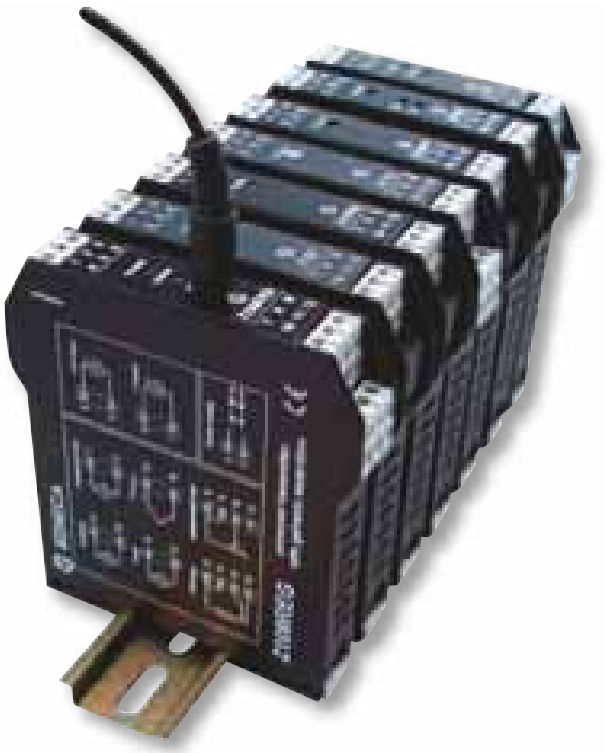
Isolation:
From 1,5 to 4,5 kVac

Accuracy:
Up to 0,01%

Operating Temperature:
Up to -20..+65°C

Z-LINE

MULTI-STANDARD SIGNAL CONVERTERS & ISOLATOR



CONNECTIONS

Screw terminals 2,5 mm²

SETTING


DIP-switches, software, Test-3

ISOLATION

From 1,5 kVac to 4 kVac

WIDE RANGE

Analog converters, serials, digitals, pulses

POWER SUPPLY

Vac/dc switching (on the same hardware) Range: 12 Vac/Vdc, 24 Vac/Vdc, 115 Vac/Vdc, 230 Vac

TRANSMITTER SUPPLY

Min 20 Vdc

WIDTH

17,5 mm

APPROVALS

TYPICAL APPLICATION AREAS

PAPER INDUSTRY

METAL INDUSTRY

OIL & GAS

FOOD & BEVERAGE

PHARMACEUTICAL SECTOR

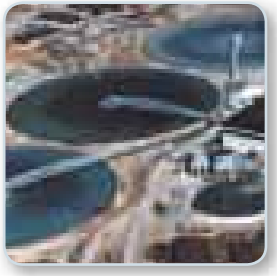
BUILDING CONSTRUCTIONS

HEAT ENGINEERING, THERMOTECHNICS

NON-METAL WORKINGS

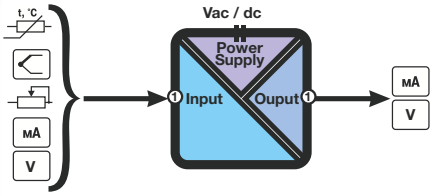
ENERGY

WATER INDUSTRY



Z109REG2

HIGH PERFORMANCE UNIVERSAL CONVERTER



Z109REG2 is an advanced universal converter able to manage all analog signals (mA, V, PT100, Pt1000, Pt500, Ni100, TCs, Ohm) and convert / isolate it into mA/V standard signals. The device can be configured through dip-switches, PC software or handheld device. A digital contact is available as ALARM or STROBE (multiplexing). It can be requested with low or high power supply. A 3-way galvanic isolation among Power supply // input // output circuits assures the integrity of your datas.

TECHNICAL SPECIFICATIONS

Electrical Specifications	
Power supply	10..40 Vdc / 19..28 Vac / 50-60 Hz
Power consumption	2,5 W
Isolation	1.500 Vac (3 way)
Power transducers	Yes
Status Indicators	Power supply, error, data transmission, data reception, input status
Protection Degree	IP20
Thermomechanical Specifications	
Operating Temperature	-10..+60 °C
Dimension (W x H x D)	17.5 x 100 x 112 mm
Accuracy	0,1%
Response time	35 ms (11 bit)..140 ms (16 bit)
Setting	Dip- switches EASY_Z109 (PC software) Test-3 (hand held calibrator)
Mounting	35 mm DIN rail guide
Input	
Channel Numbers	1
Voltage	(mV, V) 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 3, 4 wires Range: -200..600 °C Resolution 0,1°C
Thermocouple	Type J, K, R, S, T, E, B, N Resolution 2,5 µV
Potentiometer	500 Ω ..10 kΩ
Rheostat	500 Ω..25 kΩ
Strobe	Alternative to the relay output
Output	
Channel Numbers	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
Relay	Alternative to the strobe NC / NA in case of alarm
Standard	
Approval	CE, UL-CSA
Norms	EN 50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4; EN 50140/141; EN 61010-1

ORDER CODES

Code	Description
Z109REG2	High performance universal converter, Power supply 10..40 Vdc / 19..28 Vac
Z109REG2-H	High performance universal converter, Power supply 85..265 Vac/Vdc

ACCESSORIES & SOFTWARE

PM001601
Programming cable
pg. 98

TEST-3
Handheld configurator
pg. 133

EASY SETUP
Programming software
pg. 98

SIMILAR PRODUCTS

K121
Loop powered isolator / universal converter
pg. 102

Z109UI2
DC current / voltage converter
pg. 80

T121
Isolated loop powered temperature transmitter
pg. 117

ANALOG UNIVERSAL INPUT
mA, V, Ohm, RTD, TC

HIGH CLASS ACCURACY
0,1%

FAST RESPONSE TIME
35 ms (11 bit + segno)

WIDE OPERATING TEMPERATURE
-20..+60°C

TRANSDUCER POWER SUPPLY
20 Vcd, 20 mA

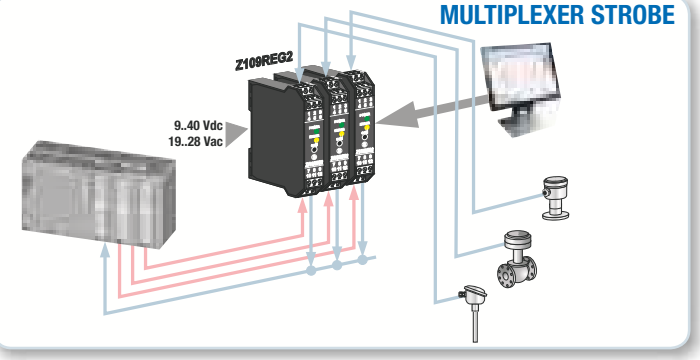
HIGH RESOLUTION
16 bit

AUXILIARY CONTACTS
Strobe Input SPDT relay Output

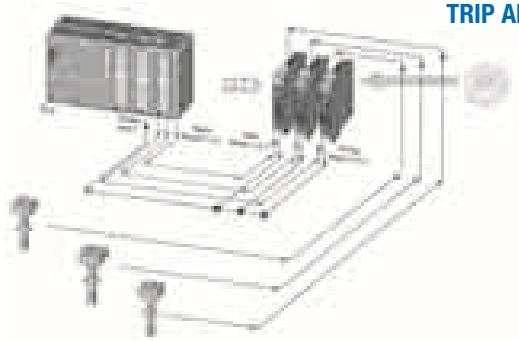
APPROVALS

APPLICATION NOTE

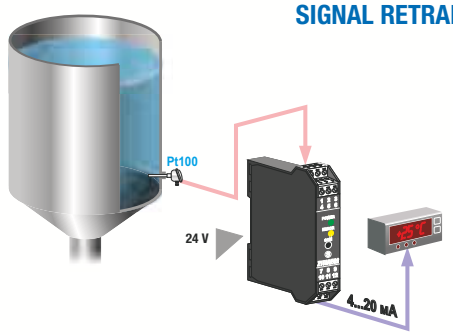
MULTIPLEXER STROBE



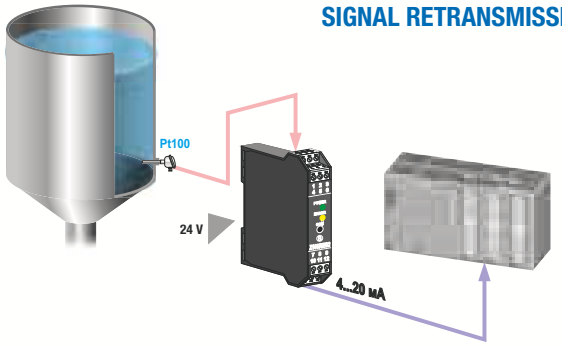
TRIP AMPLIFIER



SIGNAL RETRANSMISSION 1



SIGNAL RETRANSMISSION 2



CONFIGURATION

1- DIP-SWITCHES

- Input type
- Zero and Span
- Output type
- Scale inversion

2- HANDHELD

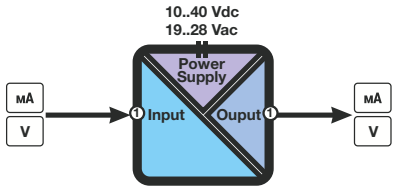
- Min / max range scale; digital filter; square root extraction
- Fault sensor
- Analog scale; error analog output value
- Rejection frequency (50 – 60 Hz)
- Sampling time / Resolution
- Measure 2, 3, 4 wires for RTD
- Relay alarm control, strobe configuration

3 - SOFTWARE

- Min / max range scale; digital filter; square root extraction
- Fault sensor
- Analog scale; error analog output value
- Rejection frequency (50 – 60 Hz)
- Sampling time / Resolution
- Measure 2, 3, 4 wires for RTD
- Relay alarm control, strobe configuration

Z109UI2

DC CURRENT/VOLTAGE ISOLATOR/CONVERTER

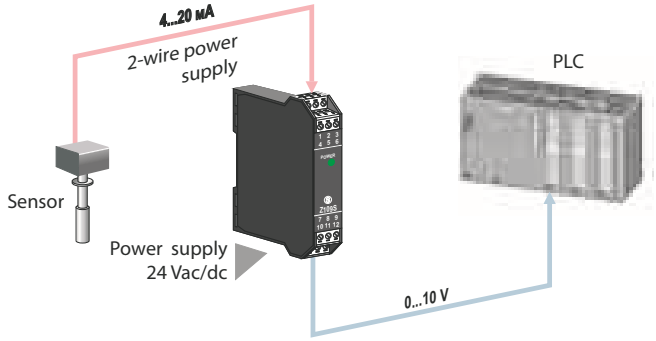


Z109UI2 is a device that accepts mA/V signals able to convert it into mA/V standard signals. It's configurable either for monopolar or bipolar inputs and all parameters are configurable through dip-switches. The device can power also all 2-wire sensors. A 3-way galvanic isolation among Power supply // input // output circuits assures the integrity of your datas.

TECHNICAL SPECIFICATIONS

General Data	
Power supply	10..40 Vdc / 19..28 Vac / 50-60 Hz
Power consumption	2,5 W
Isolation	1.500 Vac (3 way)
Power transducers	Yes
Accuracy	0,1%
Response time	35 ms (11 bit)..140 ms (16 bit)
Status Indicators	Power supply, error, data transmission, data reception, input status
Setting	Dip- switches EASY_Z109 (PC software) Test-3 (hand held calibrator)
Mounting	35 mm DIN rail guide
Protection Degree	IP20
Operating Temperature	-10..+60 °C
Dimension (W x H x D)	17.5 x 100 x 112 mm
Input	
Channel Numbers	1
Voltage	(mV, V) Bipolar from 75 mV to 20 V Resolution 15 bit + sign
Current	Bipolar up to 20 mA (active/passive) Resolution 1 µA
Output	
Channel Numbers	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
Standard	
Approval	CE, UL-CSA
Norms	EN 50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4; EN 50140/141; EN 61010-1

APPLICATION NOTE



ORDER CODES

Code	Description
Z109UI2	DC current/voltage isolator/converter, Power supply 10..40 Vdc / 19..28 Vac

ACCESSORIES & SOFTWARE

PM001601
Programming cable
pg. 98

EASY SETUP
Programming software
pg. 98

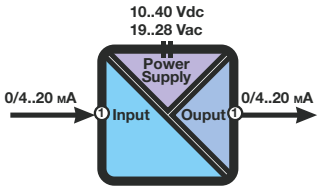
SIMILAR PRODUCTS

Z109REG2
Universal converter to DC current/voltage isolator converter with alarm output
pg. 78

K109UI
DC current / voltage to DC current/voltage isolator/ converter
pg. 103

K109S
DC current / voltage to DC current/voltage isolator/ converter (with power for 2-wire sensors)
pg. 104

Z109S
DC CURRENT ISOLATOR

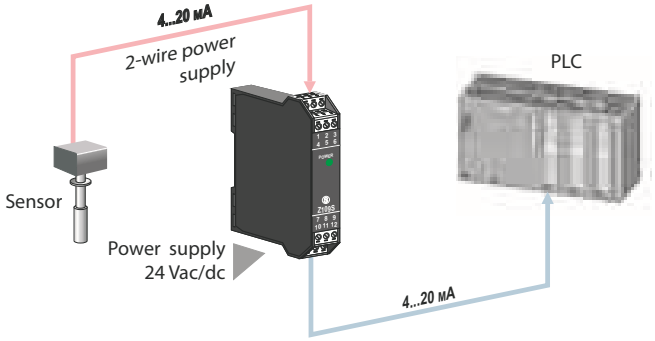


Z109S is a device that allows to isolate a mA signals. The device can power also all 2-wire sensors and it can be used to solve also power conflicts into the same mA loop. A 3-way galvanic isolation among Power supply // input // output circuits assures the integrity of your datas.

TECHNICAL SPECIFICATIONS

General Data	
Power supply	10..40 Vdc / 19..28 Vac / 50-60 Hz
Power consumption	2,5 W
Isolation	1.500 Vac (3 way)
Power transducers	Yes
Accuracy	0,2%
Response time	< 60 ms
Status Indicators	Power supply, error, data transmission, data reception, input status
Setting	-
Mounting	35 mm DIN rail guide
Protection Degree	IP20
Operating Temperature	0..50°C
Dimension (W x H x D)	17.5 x 100 x 112 mm
Input	
Channel Numbers	1
Current	2 scales: 0/4..20 mA (active/passive) Max load resistance: 600 Ω
Output	
Channel Numbers	1
Current	2 scales: 0/4..20 mA (active/passive) Max load resistance: 600 Ω
Standard	
Approval	CE, UL-CSA
Norms	EN 50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4; EN 50140/141; EN 61010-1

APPLICATION NOTE



ORDER CODES

Code	Description
Z109S	DC current isolator, Power supply 10..40 Vdc / 19..28 Vac

SIMILAR PRODUCTS

Z109REG2

Universal converter to DC current/voltage isolator converter with alarm output

pg. 78

Z109UI2

DC current / voltage to DC current/voltage isolator/converter

pg. 80

K121

Loop powered isolator / universal converter

pg. 102

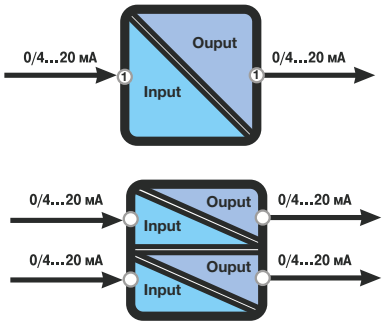
K109S

DC current / voltage to DC current/voltage isolator/converter (with power for 2-wire sensors)

pg. 104

Z110

DC CURRENT ISOLATOR (SELF POWERED)

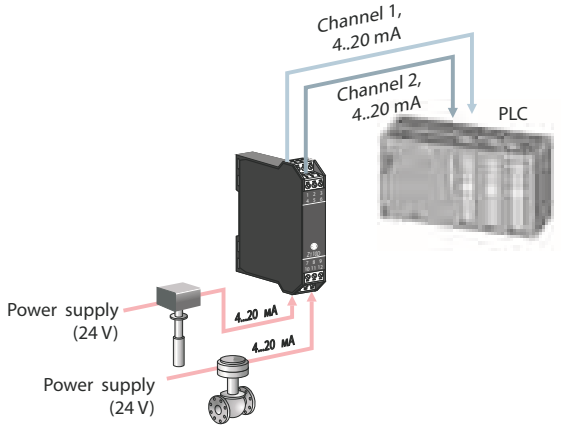


Z110 is a 4..20mA isolator powered through the input loop. It does not require any auxiliary power supply. Z110 is available in two different version: Z110S (single channel) or Z110D (double channel). A 2-way galvanic isolation between input // output circuits assures the integrity of your datas.

TECHNICAL SPECIFICATIONS

General Data	
Power supply	From the 4-20 mA input loop
Power consumption	-
Isolation	1.500 Vac (2 way)
Power transducers	No
Accuracy	0,1%
Response time	100 ms
Status Indicators	Power supply, error, data transmission, data reception, input status
Setting	-
Mounting	35 mm DIN rail guide
Protection Degree	IP20
Operating Temperature	0..50°C
Dimension (W x H x D)	17.5 x 100 x 112 mm
Input	
Channel Numbers	1 (Z110S), 2 (Z110D)
Current	4..20 mA
Output	
Channel Numbers	1 (Z110S), 2 (Z110D)
Current	4..20 mA
Standard	
Approval	CE
Norms	EN 50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4; EN 50140/141; EN 61010-1

APPLICATION NOTE



ORDER CODES

Code	Description
Z110S	DC current isolator - Self powered (single channel)
Z110D	DC current isolator - Self powered (double channel)

SIMILAR PRODUCTS

Z109S

Dc current isolator

pg. 81

Z109UI2

DC current / voltage to DC current/voltage isolator/ converter

pg. 80

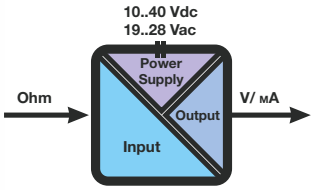
Z170REG

DC current/voltage duplicator/isolator

pg. 84

Z102

POTENTIOMETER TO DC CURRENT/VOLTAGE ISOLATOR/CONVERTER

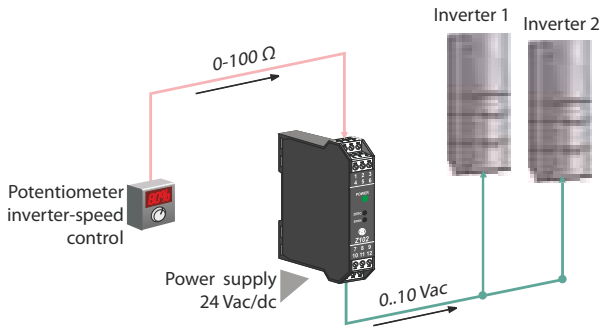


Z102 accepts signal from rheostat (2 wires) or potentiometer (3 wires) and converts/isolates it into mA/V standard signals. The auxiliary power supply allows also an active or passive connections on the output side. A 3-way galvanic isolation among Power supply // input // output circuits assures the integrity of your datas.

TECHNICAL SPECIFICATIONS

General Data	
Power supply	19..40 Vdc, 19..28 Vac
Power consumption	2,5 W
Isolation	1.500 Vac (3 way)
Power transducers	-
Accuracy	0,2%
Response time	40 ms
Status Indicators	Power supply, error, data transmission, data reception, input status
Setting	Dip switches
Mounting	35 mm DIN rail guide
Protection Degree	IP20
Operating Temperature	0..50°C
Dimension (W x H x D)	17.5 x 100 x 112 mm
Input	
Channel Numbers	1
Rheostat	2 wires: 0..300 Ω (I=6mA); 0..500 Ω (I=3,6 mA); 0..1 K Ω (I=1,8 mA)
Potentiometer	3 wires: Vref=1,8 Vcc, da 200 Ω a 1M Ω
Output	
Channel Numbers	1
Voltage	4 scales: 0..1, 0..5, 0..10, 2..10 V Min load resistance: 2.500 Ω
Current	2 scales: 0/4..20 mA (active/passive) Max load resistance: 600 Ω
Standard	
Approval	CE
Norms	EN 50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4; EN 50140/141; EN 61010-1

APPLICATION NOTE



ORDER CODES

Code	Description
Z102	Potentiometer to DC current/voltage isolator/converter, Power supply 19..40 Vdc / 19..28 Vac

SIMILAR PRODUCTS

Z109REG2

Universal converter to DC current/voltage isolator converter with alarm output

pg. 78

K121

Loop powered isolator / universal converter

pg. 102

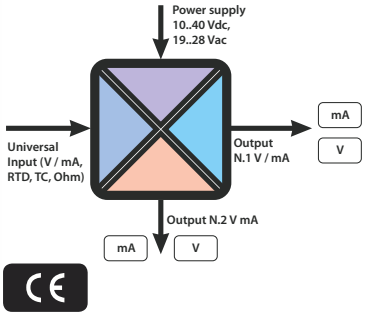
S311A

Universal analog input indicators - totalizers

pg. 123

Z170REG

DC UNIVERSAL DUPLICATOR/ISOLATOR WITH 2 OUTPUTS

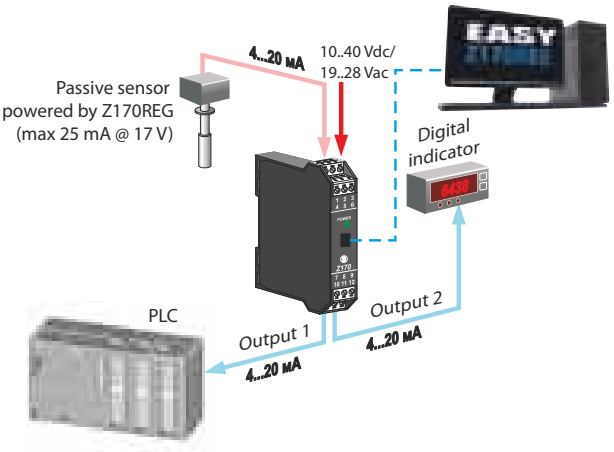


Z170 allows to convert and duplicate an analog signal (mA, V, PT100, Pt1000, Pt500, Ni100, TCs, Ohm) by 2 indipendents outputs (mA or V). It disposes also of dip switches to set the available input/output ranges. The auxiliary power supply allows also an active or passive connections on the output side. A 4-way galvanic isolation among Power supply // input // output1 // output2 circuits assures the integrity of your datas.

TECHNICAL SPECIFICATIONS

General Data	
Power supply	10..40 Vdc / 19..28 Vac / 50-60 Hz
Power consumption	2,0 W
Isolation	1.500 Vac (4 way)
Power transducers	Yes
Accuracy	0,1%
Response time	Max 25 ms
Status Indicators	Power supply, error, data transmission, data reception, input status
Setting	Dip- switches EASY Z170REG (PC software)
Mounting	35 mm DIN rail guide
Protection Degree	IP20
Operating Temperature	-10..+65 °C
Dimension (W x H x D)	17.5 x 100 x 112 mm
Input	
Channel Numbers	1
Voltage	0..10V, min impedance 120KΩ
Current	0..20 mA, max impedance 50 Ω
Rtd	Pt100, Pt500, Pt1000, Ni100 Measure 2, 3, 4 wires
Thermocouple	Type J, K, R, S, T, E, B, N
Potentiometer	1 KΩ ..100 KΩ
Output	
Channel Numbers	2
Voltage	0..10 V Min load resistance: 20 KΩ
Current	0..20 mA (active/passive) Max load resistance: 600 Ω
Standard	
Approval	CE
Norms	EN 50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4; EN 50140/141; EN 61010-1

APPLICATION NOTE



ORDER CODES

Code	Description
Z170REG	DC Universal duplicato/isolator with 2 outputs, 10..40 Vdc / 19..28 Vac

ACCESSORIES & SOFTWARE

PM001601
Programming cable
pg. 98

EASY SETUP
Programming software
pg. 98

SIMILAR PRODUCTS

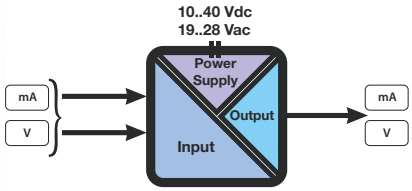
Z109REG2
Universal converter to DC current/voltage isolator converter with alarm output
pg. 78

K121
Loop powered isolator / universal converter
pg. 102

Z109UI2
DC current / voltage to DC current/voltage isolator/ converter
pg. 80

Z190

DC CURRENT/VOLTAGE ADDER/SUBTRACTOR

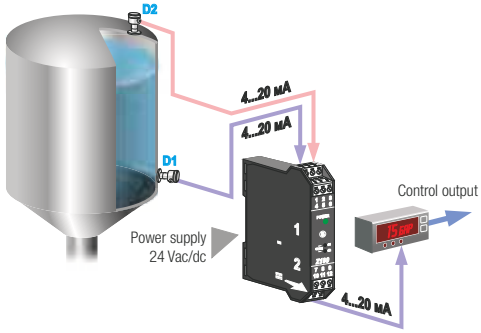


Z190 allows to make the addition or the subtraction of 2 analog signal (mA or V) and get the equivalent output by an analog signal (mA or V). The two inputs can have also different importance. It disposes of dip switches to set the available input/output ranges. The auxiliary power supply allows also an active or passive connections on the output side. A 3-way galvanic isolation among Power supply // input // output circuits assures the integrity of your datas.

TECHNICAL SPECIFICATIONS

General Data	
Power supply	10..40 Vdc / 19..28 Vac / 50-60 Hz
Power consumption	2,5 W
Isolation	1.500 Vac (3 way)
Power transducers	Yes
Accuracy	0,1%
Status Indicators	Power supply
Setting	Dip- switches
Mounting	35 mm DIN rail guide
Protection Degree	IP20
Operating Temperature	0..50 °C
Dimension (W x H x D)	17.5 x 100 x 112 mm
Input	
Channel Numbers	1
Voltage	4 scales: 0..1, 0..5, 0..10, 2..10 V Input impedance: > 500 KΩ
Current	2 scales: 0/4..20 mA (active/passive) Input impedance: 100 Ω
Output	
Channel Numbers	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) Loop impedance: < 600 Ω
Standard	
Approval	CE
Norms	EN 50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4; EN 50140/141; EN 61010-1

APPLICATION NOTE



ORDER CODES

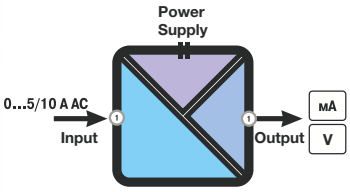
Code	Description
Z190	DC current/voltage adder/subtractor, Power supply 19..40 Vdc / 19..28 Vac

SIMILAR PRODUCTS

Z170REG
DC universal duplicator/isolator with 2 output
pg. 84

Z201 / Z201-H

AC CURRENT TO DC CURRENT/VOLTAGE ISOLATOR/CONVERTER

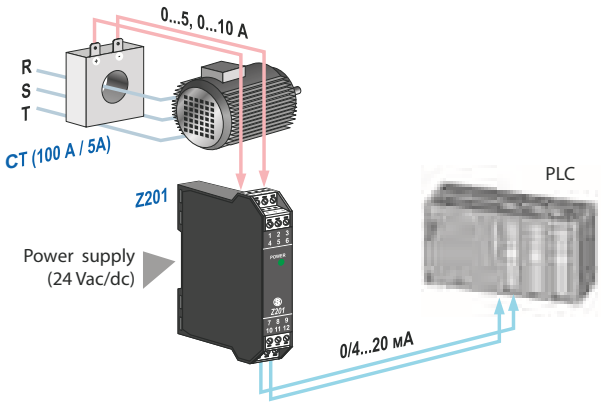


Z201 accepts an alternate current (5 or 10Aac) and provides an isolated analog output (mA or V). It disposes also of dip switches to set the output ranges. It can be requested with low or high power supply. A 3-way galvanic isolation among power supply // input // output circuits assures the integrity of your datas.

TECHNICAL SPECIFICATIONS

General Data	
Power supply	10..40 Vdc / 19..28 Vac (Z201) 85..265 Vac/Vdc (Z201-H)
Power consumption	2,5 W
Isolation	4000 Vac towards power supply / output ports.
Power transducers	Yes
Accuracy	0,3%
Response time	200 ms (Z201), 100 ms (Z201-H)
Status Indicators	Power supply
Setting	Dip- switches
Mounting	35 mm DIN rail guide
Protection Degree	IP20
Operating Temperature	0..55°C (Z201) -10..+65 °C (Z201-H)
Dimension (W x H x D)	17.5 x 100 x 112 mm
Input	
Channel Numbers	1
Current	5 Ac / 10Ac
Output	
Channel Numbers	1
Voltage	4 scales: 0..1, 0..5, 0..10, 2..10 V Min load resistance: 2.500 Ω
Current	2 scales: 0/4..20 mA (active/passive) Max load resistance: 600 Ω
Standard	
Approval	CE
Norms	EN60688/1997 + A1 + A2. EN61000-6-4/2002-10 EN61000-6-2/2006-10 EN61010-1/2001

APPLICATION NOTE



ORDER CODES

Code	Description
Z201	AC current to DC isolator / converter, Power supply 19..40 Vdc / 19..28 Vac
Z201-H	AC current to DC isolator / converter, Power supply 85..265 Vac/Vdc

SIMILAR PRODUCTS

T201

AC Current Transformer to 4..20mA converter (loop powered)

pg. 118

Z202

AC voltage to DC current/ voltage isolator / converter

pg. 87

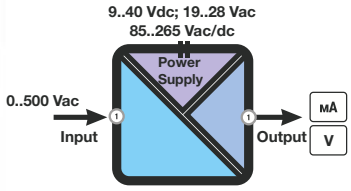
Z203

AC single phase network analyzer to DC current/ voltage isolator/converter

pg. 89

Z202 / Z202-H

AC VOLTAGE TO DC CURRENT/VOLTAGE ISOLATOR/CONVERTER

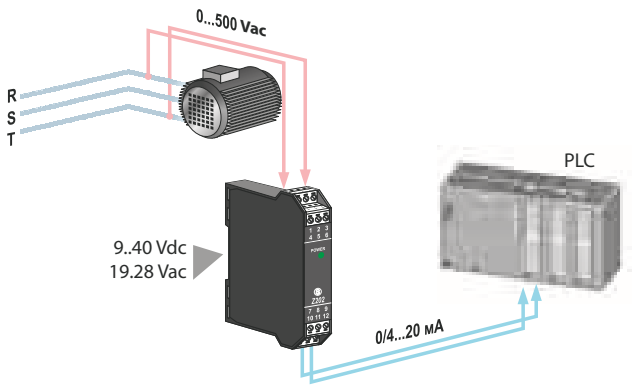


Z202 accept an alternate voltage (10..490 Vac) and provides an isolated analog output (mA or V). It disposes also of dip switches to set the specific range, input and output. It can be requested with low or high power supply. Z202 can be used also as a microammeter (500 µAfs).A 3-way galvanic isolation among Power supply // input // output circuits assures the integrity of your datas.

TECHNICAL SPECIFICATIONS

General Data	
Power supply	10..40 Vdc / 19..28 Vac (Z202) 85..265 Vac/Vdc (Z202-H)
Power consumption	1,5 W
Isolation	4000 Vac towards power supply / output ports.
Power transducers	Yes
Accuracy	0,25%
Response time	100 ms
Status Indicators	Power supply
Setting	Dip- switches
Mounting	35 mm DIN rail guide
Protection Degree	IP20
Operating Temperature	-10..+65 °C
Dimension (W x H x D)	17.5 x 100 x 112 mm
Input	
Channel Numbers	1
Voltage	0..500 Vac
Output	
Channel Numbers	1
Voltage	4 scales: 0..1, 0..5, 0..10, 2..10 V Min load resistance: 2.500 Ω
Current	2 scales: 0/4..20 mA (active/passive) Max load resistance: 600 Ω
Standard	
Approval	CE
Norms	EN60688/1997 + A1 + A2. EN61000-6-4/2002-10 EN61000-6-2/2006-10 EN61010-1/2001

APPLICATION NOTE



ORDER CODES

Code	Description
Z202	AC voltage to DC isolator / converter, Power supply 10..40 Vdc / 19..28 Vac
Z202-H	AC voltage to DC isolator / converter, Power supply 85..265 Vac/Vdc

SIMILAR PRODUCTS

Z201

AC current to DC current/ voltage isolator/converter

pg. 86

Z202-LP

AC/DC voltage to DC isolator/ converter, loop powered

pg. 88

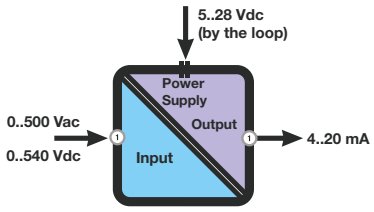
Z203

AC single phase network analyzer to DC current/ voltage isolator/converter

pg. 89

Z202-LP

AC/DC VOLTAGE TO 4..20 mA CONVERTER (LOOP POWERED)

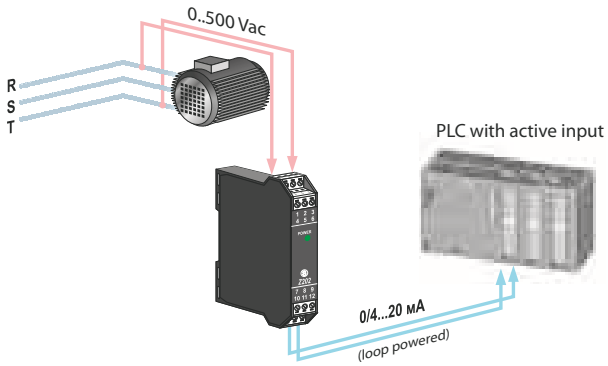


Z202-LP is an universal converter for AC or DC voltages (0..500 Vac or 0..540 Vdc) and provides an isolated 4..20mA output. It's a loop powered device through the 4..20mA loop output. Is possible to calibrate the instrument on any intermediate point in the continuous range of 0..500A. A 3-way galvanic isolation among Power supply // input // output circuits assures the integrity of your datas.

TECHNICAL SPECIFICATIONS

General Data	
Power supply	Powered through the 4..20mA loop output
Power consumption	-
Isolation	4000 Vac towards input / output ports.
Power transducers	Yes
Accuracy	0,25%
Response time	< 100 ms
Status Indicators	Data
Setting	Dip- switches
Mounting	35 mm DIN rail guide
Protection Degree	IP20
Operating Temperature	-20..+65 °C
Dimension (W x H x D)	17.5 x 100 x 112 mm
Input	
Channel Numbers	1
Voltage	0..500 Vac 0..540 Vdc
Output	
Channel Numbers	1
Current	4..20 mA passive loop
Standard	
Approval	CE
Norms	EN60688/1997 + A1 + A2. EN61000-6-4/2002-10 EN61000-6-2/2006-10 EN61010-1/2001

APPLICATION NOTE



ORDER CODES

Code	Description
Z202-LP	AC/DC voltage to 4..20mA converter (loop powered)

SIMILAR PRODUCTS

T201DC

DC Current Transducer to 4..20mA converter (loop powered

pg. 118

T201DCH

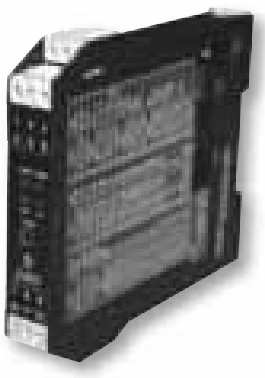
High performance universal converter

pg. 119

Z203

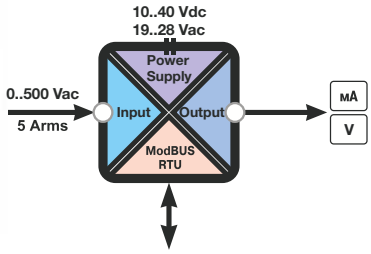
AC single phase network analyzer to DC current/ voltage isolator/converter

pg. 89



Z203-1

AC SINGLE PHASE NETWORK ANALYZER TO DC CURRENT/VOLTAGE ISOLATOR/CONVERTER

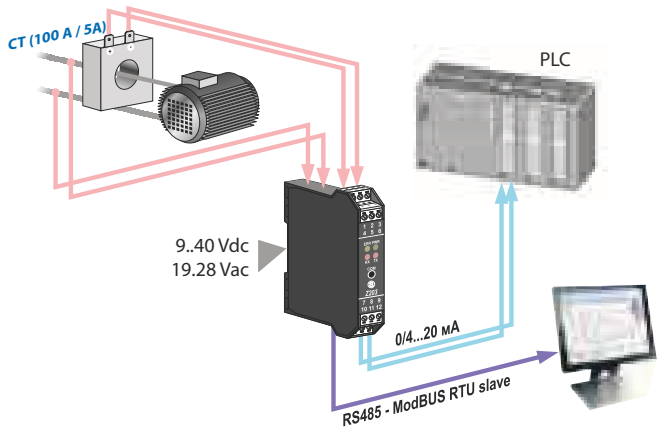


Z203 is a complete single-phase network analyser suited for use with up to 500 Vac voltage range and 5A current. The instrument provides all the following electrical measurable variable: Vrms, Irms, Watt, Var, Frequency, Cosϕ. Measurements are availables through Modbus serial communication or through analogue retransmission (ma or V). A 3-way galvanic isolation among Power supply // input // RS485 circuits assures the integrity of your datas.

TECHNICAL SPECIFICATIONS

General Data	
Power supply	10..40 Vdc / 19..28 Vac
Power consumption	2,0 W
Isolation	4000 Vac towards power supply / output ports.
Power transducers	Yes
Accuracy	0,25%
Response time	100 ms
Status Indicators	Power supply
Setting	Dip- switches (address, baud rate, analog output) Easy 203 (PC software)
Mounting	35 mm DIN rail guide
Protection Degree	IP20
Operating Temperature	-10..+65 °C
Dimension (W x H x D)	17.5 x 100 x 112 mm
Input	
Channel Numbers	2
Current	0..5 Aac
Voltage	0..500 Vac
Output	
Channel Numbers	1 (configurable for Vrms, Irms, P, Q, cosΦ)
Voltage	4 scales: 0..1, 0..5, 0..10, 2..10 V Min load resistance: 2.500 Ω
Current	2 scales: 0/4..20 mA (active/passive) Max load resistance: 600 Ω
Rs485	1200..115200 Baud
Rs232	2400 Baud, Address: 01, Parity: NO, Data: 8bits; Stop bits: 1
Standard	
Approval	CE
Norms	EN60688/1997 + A1 + A2. EN61000-6-4/2002-10 EN61000-6-2/2006-10 EN61010-1/2001

APPLICATION NOTE



ORDER CODES

Code	Description
Z203-1	AC single phase network analyzer to DC current/voltage isolator/converter, Power supply 10..40 Vdc / 19..28 Vac

ACCESSORIES & SOFTWARE

PM001601
Programming cable
pg. 98

Z-PC-DIN
Backplane for power & bus communication
pg. 38

EASY SETUP EASY SETUP
Programming software
pg. 98

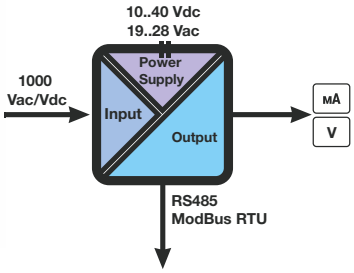
SIMILAR PRODUCTS

Z204
AC/DC Voltage converter (1000 Vac/Vdc) to DC current/voltage isolator/converter - RS485 Modbus RTU
pg. 90

S203TA
AC triple-phase network analyzer, 5 Arms input
pg. 132

Z204

AC/DC VOLTAGE TO DC CURRENT/VOLTAGE ISOLATOR/CONVERTER



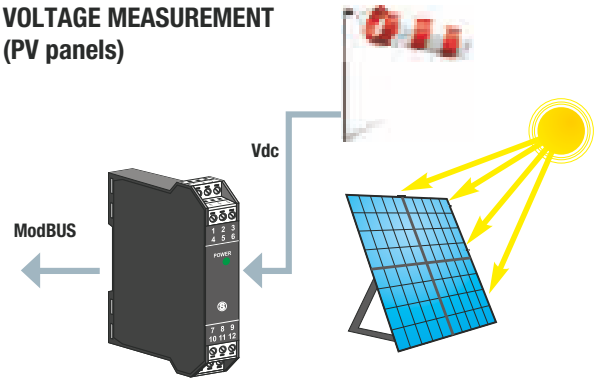
Z204 accept an alternate or direct voltage (up to 1000 Vac/Vdc) TRMS and provides an isolated analog output (mA or V). It disposes also of dip switches to set the specific range, input and output. Alternatively to the analog output is available a RS485 Modbus RTU interface. A 3-way galvanic isolation (up to 4 KV) among Power supply // input // output circuits assures the integrity of your datas.

TECHNICAL SPECIFICATIONS

General Data	
Power supply	10..40 Vdc / 19..28 Vac
Power consumption	1,0 W
Isolation	4000 Vac between input and power supply/output ports.
Power transducers	-
Accuracy	0,5%
Response time	-
Status Indicators	Power supply, fail, RS485 communication
Setting	Dip- switches (address, baud rate, line termination and input range) Easy 204 (PC software)
Mounting	35 mm DIN rail guide
Protection Degree	IP20
Operating Temperature	-20..+65 °C
Dimension (W x H x D)	17.5 x 100 x 112 mm
Input	
Channel Numbers	1
VOLTAGE (AC/DC)	0..300, 0..600, 0…1000 Vac/Vdc
Output	
Channel Numbers	1
VOLTAGE	0..10V Min load resistance: 2.500 Ω
CURRENT	2 scales: 0/4..20 mA (active/passive) Max load resistance: 600 Ω
RS485 ***(alternatively to the analog output)	1200..115200 Baud
RS232	2400 Baud, Address: 01, Parity: NO, Data: 8bits; Stop bits: 1
Standard	
Approval	CE
Norms	EN 61000-6-4 (2007) - EN 61000-6-2 (2006) - EN 61010-1 -(11-2001)

APPLICATION NOTE

VOLTAGE MEASUREMENT (PV panels)



ORDER CODES

Code	Description
Z204	AC/DC Voltage converter (1000 Vac/Vdc) to DC current/voltage isolator/converter – RS485 Modbus RTU

ACCESSORIES & SOFTWARE

PM001601
Programming cable
pg. 98

Z-PC-DIN
Backplane, bus & power support
pg. 38

EASY SETUP
Programming software
pg. 98

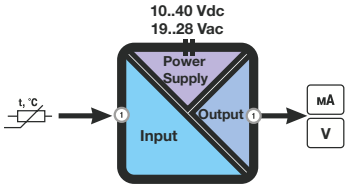
SIMILAR PRODUCTS

Z202
AC voltage to DC isolator converter
pg. 87

Z202-LP
AC/DC voltage to 4..20mA converter (loop powered)
pg. 88

Z109PT2

RTD TO DC CURRENT/VOLTAGE ISOLATOR/CONVERTER

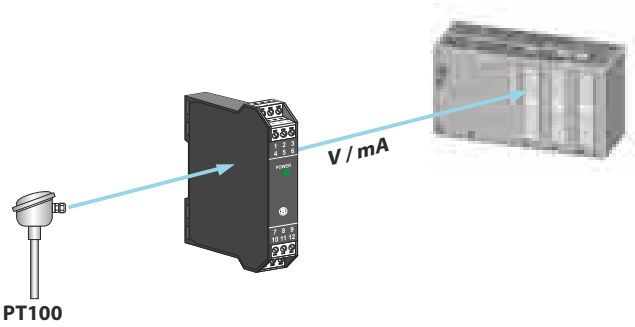


Z109PT2 is a converter for Thermoresistance RTD (PT100, PT1000, PT500, Ni100) with 2,3,4 wires and provides a mA/V standard output signal. It's completely configurable through dip switches and software. A 3-way galvanic isolation among Power supply // input // output circuits assures the integrity of your datas.

TECHNICAL SPECIFICATIONS

General Data	
Power supply	10..40 Vdc / 19..28 Vac / 50-60 Hz
Power consumption	2,5 W
Isolation	1.500 Vac (3 way)
Power transducers	Yes
Accuracy	0,1%
Response time	35 ms (11 bit)..140 ms (16 bit)
Status Indicators	Power supply, error, data transmission, data reception, input status
Setting	Dip- switches EASY_Z109 (PC software)
Mounting	35 mm DIN rail guide
Protection Degree	IP20
Operating Temperature	-10..+60 °C
Dimension (W x H x D)	17.5 x 100 x 112 mm
Input	
Channel Numbers	1
RTD	Pt100, Pt500, Pt1000, Ni100, KTY81,KTY84, NTC Measure 2, 3, 4 wires Range: -200..600 °C Resolution 0,1°C
Output	
Channel Numbers	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
Standard	
Approval	CE
Norms	EN 50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4; EN 50140/141; EN 61010-1

APPLICATION NOTE



ORDER CODES

Code	Description
Z109PT2	RTD to DC current/voltage isolator/converter, Power supply 10..40 Vdc / 19..28 Vac

ACCESSORIES & SOFTWARE

PM001601
Programming cable
pg. 98

EASY SETUP
Programming software
pg. 98

SIMILAR PRODUCTS

K109PT
Pt100 converter
pg. 106

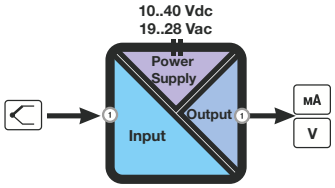
K121
Loop powered isolator / universal converter
pg. 102

Z109REG2
High performance universal converter
pg. 78

T121
Isolated loop powered temperature transmitter
pg. 117

Z109TC

THERMOCOUPLE TO DC CURRENT/VOLTAGE ISOLATOR/CONVERTER



Z109TC is a converter for Thermocouples TCs (J, K, E, N, S, R, B, T) and provides a mA/V standard output signal. It's completely configurable through dip switches.
A 3-way galvanic isolation among Power supply // input // output circuits assures the integrity of your datas.

TECHNICAL SPECIFICATIONS

General Data	
Power supply	10..40 Vdc / 19..28 Vac / 50-60 Hz
Power consumption	2,5 W
Isolation	1.500 Vac (3 way)
Power transducers	Yes
Status Indicators	Power supply, error, data transmission, data reception, input status
Accuracy	0,1%
Response time	330 ms
Setting	Dip- switches
Mounting	35 mm DIN rail guide
Protection Degree	IP20
Operating Temperature	-10..+60 °C
Dimension (W x H x D)	17.5 x 100 x 112 mm
Input	
Channel Numbers	1
Thermocouple	Type J, K, R, S, T, E, B, N Resolution 5 µV
Output	
Channel Numbers	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
Standard	
Approval	CE
Norms	EN 50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4; EN 50140/141; EN 61010-1

ORDER CODES

Code	Description
Z109TC	Thermocouple to DC isolator / converter, Power supply 10..40 Vdc / 19..28 Vac

ACCESSORIES & SOFTWARE

PM001601
Programming cable
pg. 98

EASY SETUP
Programming software
pg. 98

SIMILAR PRODUCTS

K121
Loop powered isolator / universal converter
pg. 102

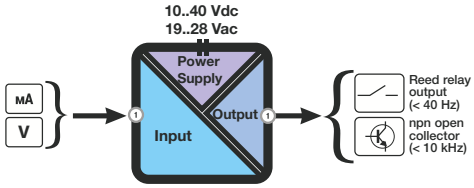
K109TC
TC to DC current/ voltage isolator / converter (with trip alarm)
pg. 110

T121
Isolated loop powered temperature transmitter
pg. 117

Z109REG2
Universal converter to DC current/voltage isolator converter with alarm output
pg. 78

Z104

DC CURRENT/VOLTAGE TO FREQUENCY ISOLATOR/CONVERTER

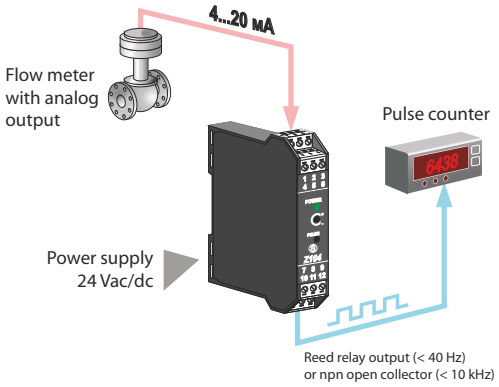


Z104 allows a conversion of the current or voltage input signal into a series of pulses with constant duration.
A typical use is when, with a flow meter featuring an analogue output (example 4-20mA), the flow must be totalized. the output is programmable in a range from 1 pulse every 2 hours to 10 KHz.
A 3-way galvanic isolation among Power supply // input // output circuits assures the integrity of your datas.

TECHNICAL SPECIFICATIONS

General Data	
Power supply	19..40 Vdc / 19..28 Vac / 50-60 Hz
Power consumption	2,5 W
Isolation	1.500 Vac (3 way)
Transducer Power Supply	Yes
Status Indicators	Power supply, error, data transmission, data reception, input status
Settings	Dip- switches EASY_Z109 (PC software)
Mounting	35 mm DIN rail guide
Protection Degree	IP20
Operating Temperature	0..+50 °C
Dimension (W x H x D)	17.5 x 100 x 112 mm
Accuracy	0,1%
Response time	35 ms (11 bit)..140 ms (16 bit)
Input	
Channel Numbers	1
Voltage	4 scales: 0..5, 1..5, 0..10, 2..10 V Min load impedance: 1.000 Ω
Current	2 scales: 0/4..20 mA (active/passive) Max load resistance: 600 Ω
Output	
Channel Numbers	1
Pulse	Transistor npn open-collector 30 Vcc 300 mA. Reed-relè 30 Vac/dc 100 mA. Max frequency 10 KHz
Standard	
Approval	CE
Norms	EN 50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4; EN 50140/141; EN 61010-1

APPLICATION NOTE



ORDER CODES

Code	Description
Z104	DC Current/Voltage to frequency isolator/converter, power supply 19..40 Vdc / 19..28 Vac

SIMILAR PRODUCTS

Z111
Frequency to DC isolator / converter
pg. 94

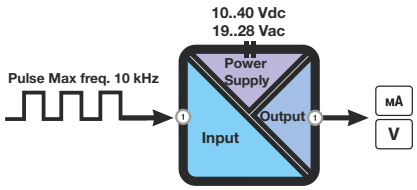
K111
Isolated dual output frequency trip amplifier
pg. 111

K112
Universal digital coupler/isolator
pg. 112

S311D
Frequency / digital input indicators - totalizers
pg. 124

Z111

FREQUENCY TO DC CURRENT/VOLTAGE ISOLATOR/CONVERTER

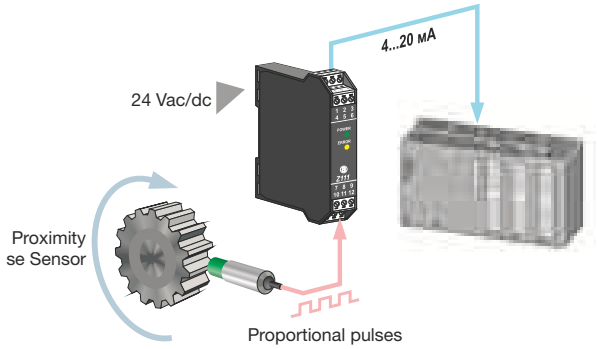


Z111 allows a conversion of a frequency signal and provides a mA/V standard output signal. The input is programmable in a range from 1 mHz to 9,99 KHz.
It's completely configurable through dip switches. A 3-way galvanic isolation among Power supply // input // output circuits assures the integrity of your datas.

TECHNICAL SPECIFICATIONS

General Data	
Power supply	10..40 Vdc / 19..28 Vac / 50-60 Hz
Power consumption	2,5 W
Isolation	1.500 Vac (3 way)
Transducer Power Supply	Yes
Accuracy	0,3%
Response time	-
Status Indicators	Power supply, error, data transmission, data reception, input status
Settings	Dip- switches
Mounting	35 mm DIN rail guide
Protection Degree	IP20
Operating Temperature	0..+50 °C
Dimension (W x H x D)	17.5 x 100 x 112 mm
Input	
Channel Numbers	1
Pulses	Contact / reed; npn 2/3 wires; pnp 3 wires with 24 Vdc power; namur; photoelectric; hall effect sensor, variable reluctance, 24V; TTL Max frequency: 10 kHz
Output	
Channel Numbers	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
Standard	
Approval	CE
Norms	EN 50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4; EN 50140/141; EN 61010-1

APPLICATION NOTE



ORDER CODES

Code	Description
Z111	Frequency to DC current/voltage isolator/converter, power supply 19..40 Vdc / 19..28 Vac

SIMILAR PRODUCTS

Z104
DC to frequency isolator / converter
pg. 93

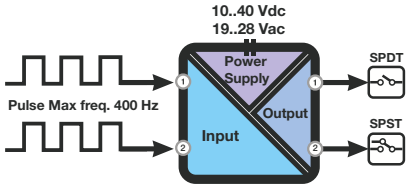
K111
Isolated dual output frequency trip amplifier
pg. 111

K112
Universal digital coupler/isolator
pg. 112

S311D
Frequency / digital input indicators - totalizers
pg. 124

Z112A - Z112D

AMPLIFIERS FOR ON/OFF SENSORS

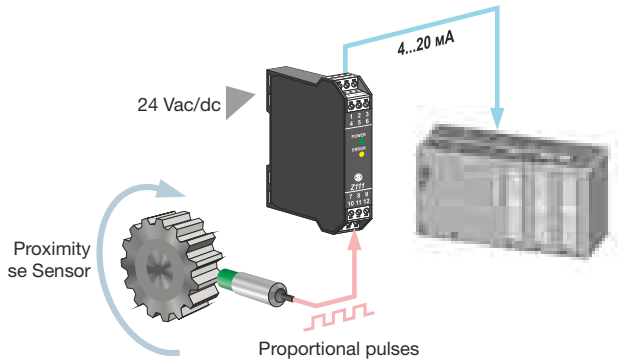


Z112 is an amplifier for ON/OFF sensors and provides a relay output. It's available as single channel (Z112A) or independent double channel (Z112D).
The single channel dispose also of pulse division system (from 1 to 256). Also the lenght of pulse output is configurable from 100ms to 500ms. A 3-way galvanic isolation among Power supply // input // output circuits assures the integrity of your datas.

TECHNICAL SPECIFICATIONS

General Data	
Power supply	19..40 Vdc / 19..28 Vac / 50-60 Hz
Power consumption	2,5 W
Isolation	1.500 Vac (3 way)
Transducer Power Supply	Yes
Accuracy	-
Response time	-
Status Indicators	Power supply, error, data transmission, data reception, input status
Settings	Dip- switches
Mounting	35 mm DIN rail guide
Protection Degree	IP20
Operating Temperature	0..+50 °C
Dimension (W x H x D)	17.5 x 100 x 112 mm
Input	
Channel Numbers	1 (Z112A) 2 (Z112D)
Pulse	Contact optoisolated Reed npn 2/3 wires- 12..24 Vdc pnp 3 wires, power supply 24 Vdc NAMUR Pulses 24 Vdc Photoelectric sensor Hall effect sensor Max frequency 400 Hz
Output	
Channel Numbers	1 (Z112A) 2 (Z112D)
RELAY	Z112A: relay SPDT 1 A - 30 Vdc o 5 A – 250 Vac (resistive load) Z112D: reed relay SPST, max load0,5 A – 100 Vdc-ac (10 VA resistive load)
Standard	
Approval	CE
Norms	EN 50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4; EN 50140/141; EN 61010-1

APPLICATION NOTE



ORDER CODES

Code	Description
Z112A	Amplifiers for ON/OFF sensors, power supply 19..40 Vdc / 19..28 Vac
Z112D	Dual channel amplifier for ON/OFF sensors, power supply 19..40 Vdc / 19..28 Vac

SIMILAR PRODUCTS

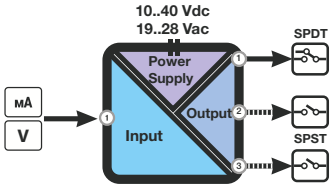
K112
Universal digital coupler/ isolator
pg. 112

K111
Isolated dual output frequency trip amplifier
pg. 111

S311D
Frequency / digital input indicators - totalizers
pg. 124

Z113S - Z113D - Z113T

DC CURRENT/VOLTAGE ALARM TRIP MODULE



Z113 is a family of simple interface suitable for alarm trip management of mA or V signals. It's available as single relay (Z113S), double relay (Z113D) or triple relay (Z113T).
They have special function as min/MAX alarm setting, working delay, hysterisis and relays state setting (normally powered or normally not powered). A 3-way galvanic isolation among Power supply // input // output circuits assures the integrity of your data.

TECHNICAL SPECIFICATIONS

General Data	
Power supply	19..40 Vdc / 19..28 Vac / 50-60 Hz
Power consumption	2,5 W
Isolation	1.500 Vac (3 way)
Transducer Power Supply	Yes
Settings	Dip- switches
Mounting	35 mm DIN rail guide
Status Indicators	Power supply, error, data transmission, data reception, input status
Protection Degree	IP20
Operating Temperature	0..+50 °C
Dimension (W x H x D)	17.5 x 100 x 112 mm
Input	
Channel Numbers	1
Voltage	4 scales: 0..5, 1..5, 0..10, 2..10 V Min input impedance: 1.000 Ω
Current	2 scales: 0/4..20 mA (active/passive) Max load resistance: 600 Ω
Output	
Channel Numbers	1
Relay	Z-113A: relay SPDT, 1A – 30 Vdc load or 5 A – 250 Vac (resistive load) Z-113D/T: relay SPST, max load 0,1 A – 30 Vdc-ac (10VA resistive load)
Standard	
Approval	CE
Norms	EN 50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4; EN 50140/141; EN 61010-1

ORDER CODES

Code	Description
Z113S	DC current/voltage single alarm trip module, power supply 19..40 Vdc / 19..28 Vac
Z113D	DC current/voltage double alarm trip module, power supply 10..40 Vdc / 19..28 Vac
Z113T	DC current/voltage triple alarm trip module, power supply 10..40 Vdc / 19..28 Vac

SIMILAR PRODUCTS

Z109REG2

Universal converter to DC current/voltage isolator converter with alarm output

pg. 78

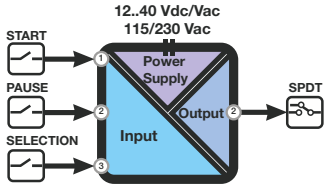
S311A

Universal analog input indicators - totalizers

pg. 123

Z-TIMER-D

ELECTRONIC TIMER WITH MICROPROCESSOR



Z-TIMER-D is a Microprocessor Cyclic Electronic Timer with 2 Functions settable by external contact, 4 Time-scales 1 s to 10 h settable by DIP-switches. Universal power supply 12 - 24 Vdc-ac and 115 - 230 Vac. The relay output with 1 SPDT switch with capacity of 8 A 250 Vac (resistive load).

TECHNICAL SPECIFICATIONS

General Data	
Power supply	12..40 Vdc/Vac 115 / 230 Vca 50-60 Hz
Power consumption	2,5 W
Isolation	1.500 Vac (3 way)
Power transducers	-
Status Indicators	Power supply, pause (relay), Timer
Settings	Dip-switches
Mounting	35 mm DIN rail guide
Protection Degree	IP20
Operating Temperature	-10..+60 °C
Dimension (W x H x D)	17.5 x 100 x 112 mm
Input	
Channel Numbers	1
Contacts	START Timer PAUSA Timer SELECTION (Z-TIMER-D)
Output	
Channel Numbers	1
Relay	SPDT 8 A – 250 Vac (resistive load)
Standard	
Approval	CE
Norms	EN 50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4; EN 50140/141; EN 61010-1

ORDER CODES

Code	Description
Z-TIMER	Electronic timer with microprocessor, Power supply 10..40 Vdc / Vac, 115..230 Vac

TEST-3

HANDHELD MULTIMETER
Z109REG2 CONFIGURATION WITH OLED DISPLAY

- Accuracy: 0,1%
- Input/Output Setting parameters, range, Z109REG2 alarms
- Signal Generation / Measuring of Voltage (0-10 V) and Current (0-20 mA) Signals
- OLED Display 128 x 64 points
- Batteries NiMh, type AA 2.650 mAh (20 h)

ORDER CODES

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

Z-SUPPLY

- Power Supply 110-240 Vac rated
- Output 24 Vdc, 1.5 A
- Operating temperature -20…70 °C.
- Parallel connection
- Redundant connection with external diode
- Contact (relay) for GOOD output status signal
- POWER / GOOD Led signal
- Output voltage direct connection to power bus

ORDER CODES

Code	Description
Z-SUPPLY	Redundant 24 Vdc Vac power supply

EASY SETUP

END-USER PLUG&PLAY SOFTWARES FOR SENECA PROGRAMMABLE DEVICES

Automatic or manual research of connected devices

- Use with S117P1/Z107/K107USB/S107USB or other RS485 converter
- Reading / Writing / Test / Setting
- Input parameters configuration, output and communication
- File saving
- Device data uploading
- Report (creation and printing)

ORDER CODES

Code	Description
Easy Z109 Z109REG2, Z109UI2, Z109PT2, Z109TC2	configurator
Easy Z170REG Z170REG	configurator
Easy Z203 Z203	configurator

S-TOOL

CONFIGURATION KIT

- Configuration Software on CD
- Programming cable

ORDER CODES

Code	Description
Z-SUPPLY	Redundant 24 Vdc Vac power supply

Z-POWER

VOLTAGE TRANSFORMER WITH OUTPUT AT 19 VAC (DIN RAIL MOUNTING)

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

ORDER CODES

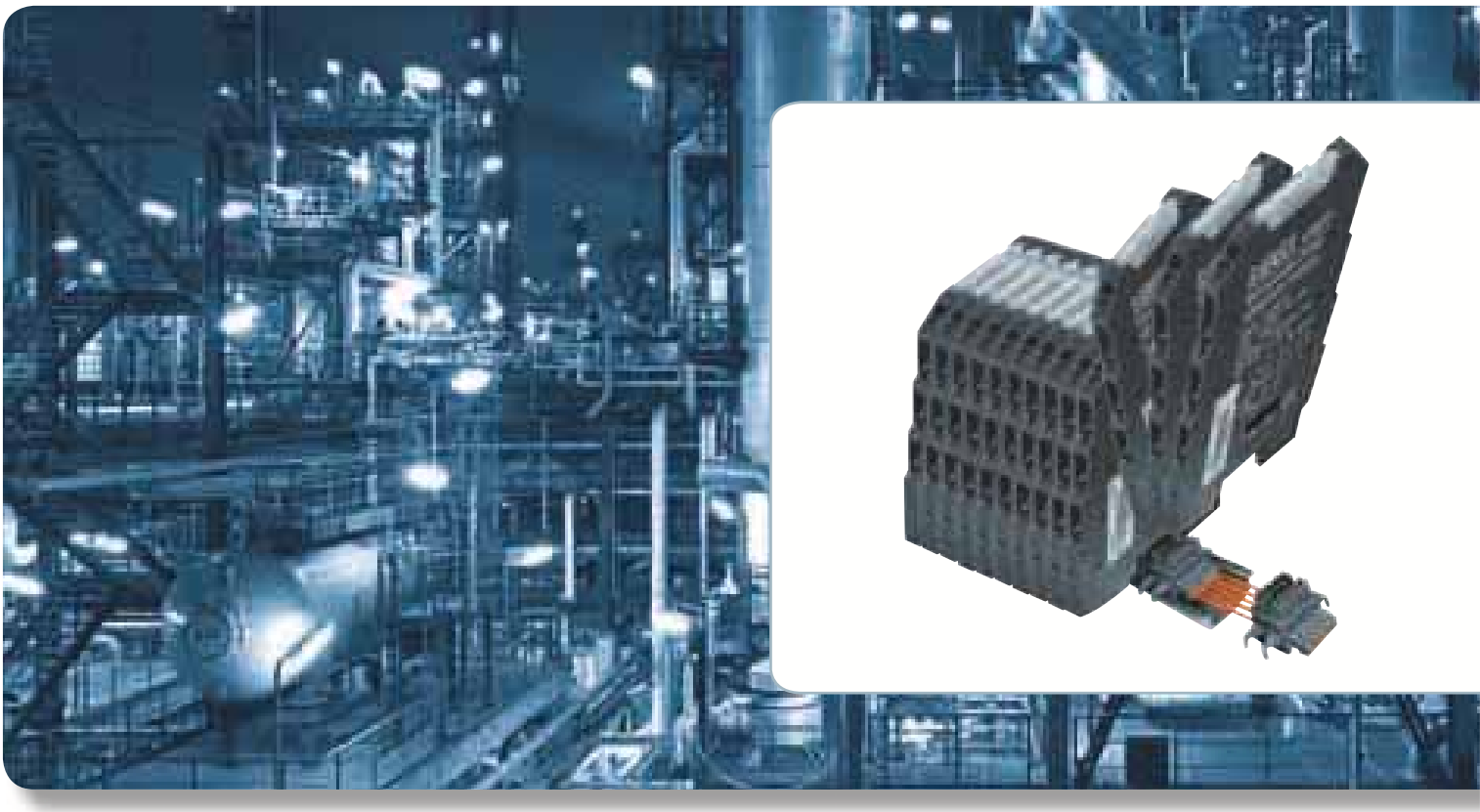
Code	Description
Z-POWER 230-15VA	Voltage Transformer 19 Vac, 230-15 VA
Z-POWER 230-25VA	Voltage Transformer 19 Vac, 230-25 VA
Z-POWER 115-15VA	Voltage Transformer 19 Vac, 115-15 VA

PROGRAMMING CABLES

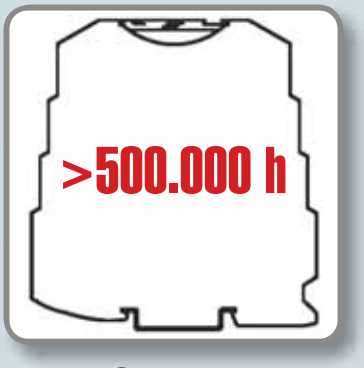
ORDER CODES

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

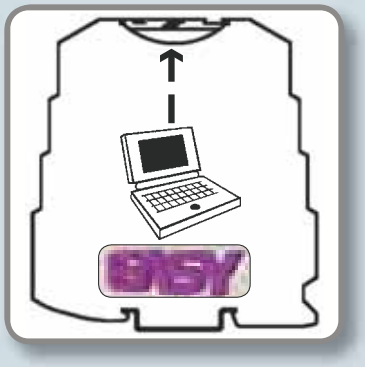
Compact Signal Converters Isolators



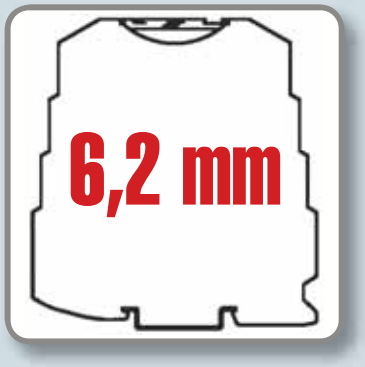
10 good reasons to **choose** K LINE



HIGH LEVEL RELIABILITY

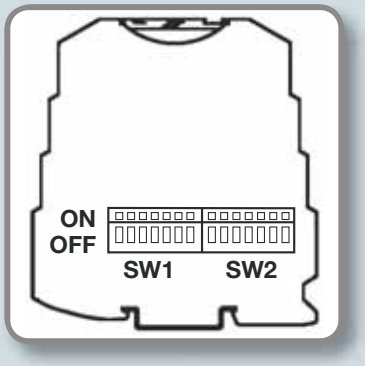


PC PROGRAMMING

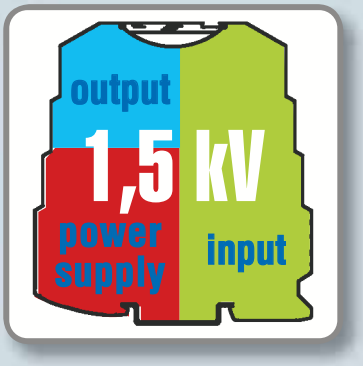


COMPACT SIZE

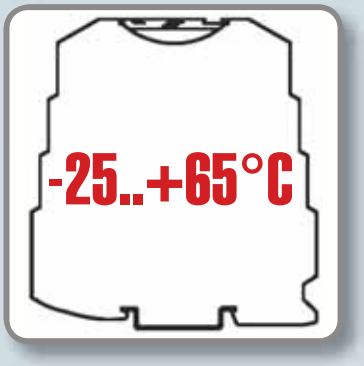
BEST ACCURACY



FLEXIBLE CONFIGURATION VIA DIP-SWITCHES



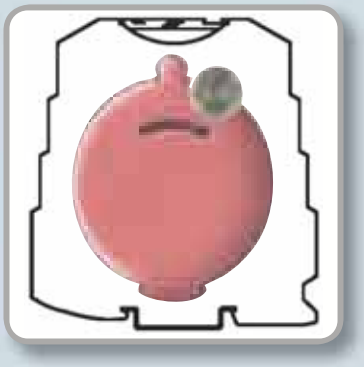
ISOLATION 3-WAY



WIDE OPERATING TEMPERATURE

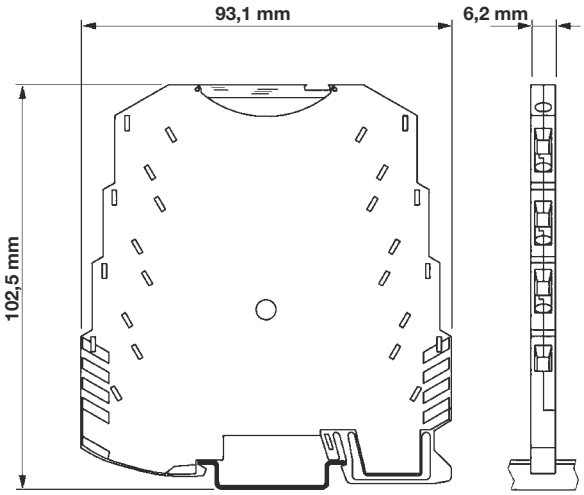
LOW POWER CONSUMPTION

INTERNATIONAL STANDARDS



COST EFFECTIVE

K LINE
Compact Signal Conditioners & Isolators

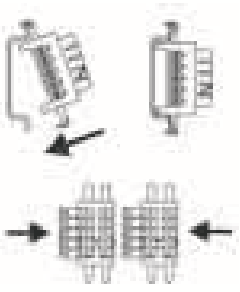


Power supply range*	19,2.. 30 Vdc
Bridge supply	Bus connectors (K-BUS) can be snapped into 35 mm DIN rail according to EN 60175
Wire section	0,2..2,5 mm²
Wire stripping	8 mm
Power on side terminals	yes
Hot swapping	yes
Max current consumption*	21..25 mA (24 Vdc)
Consumption without load @ 25°C	7,5 mA
Max power consumption	500 mW
A/D conversion	16 bit
Rejection	50 o 60 Hz (programmable)
Settings	DIP switch, software
Filter	Insertable
Dimension	93,1 x 6,2 x 102,5 mm
Isolation	1,5 KV (50 Hz, 1 min)
Isolation technique	Digital (optocoupler)
Processing	Floating point 32 bit
Colour	Black
Case material	PBT
Weight	45 g
Operating temperature	-20..+65 °C
Storage temperature	-40..+85 °C
Humidity	10..90 % non condensing
Connection	Clamp terminals and/orBUS
Protection degree	IP 20
Conformity	CE, UL-UR CSAEN 50081-2, EN 50082-2, EN 61010-1, EN 60742, EN 61000-6-4, EN 61000-6-2

* except loop powered versions

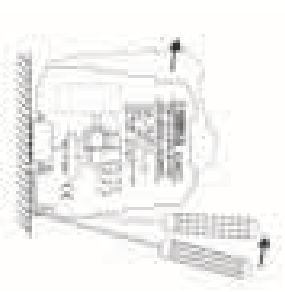
CONNECTION AND INSTALLATION

CAGE CLAMP CONNECTION



K-BUS CONNECTOR

INSERTING MODULE ON DIN GUIDE

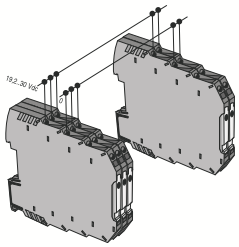


EXTRACTING MODULE FROM DIN GUIDE

POWER SUPPLY TECHNIQUE

SUPPLY SYSTEM. With the exception of loop powered instruments, which aren't bus powered, K Line signal conditioners can be powered in 3 different ways: by the springcage terminal block (24 Vdc direct from power supply) or by SMART SUPPLY system. SMART SUPPLY system is based on expandable KBUS 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 needed K-SUPPLY module that gets overvoltages protections on-board.

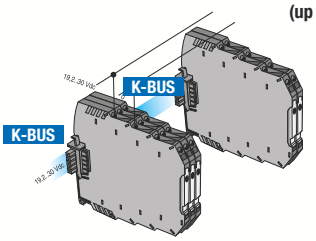
POWER SUPPLY ON SPRING-CAGE TERMINAL



1

SMART SUPPLY SYSTEM

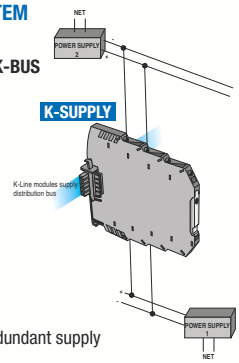
Distributed supply with 2 slot connector K-BUS (up to 16 modules)



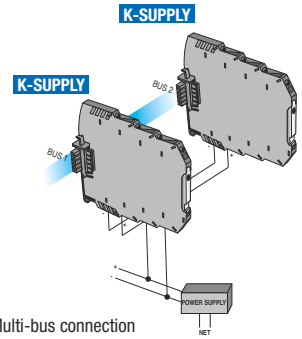
2

SMART SUPPLY SYSTEM

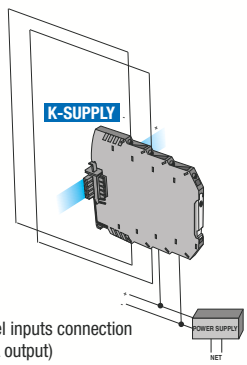
Distributed supply with K-SUPPLY module and K-BUS (up to 75 modules)



Redundant supply



Multi-bus connection

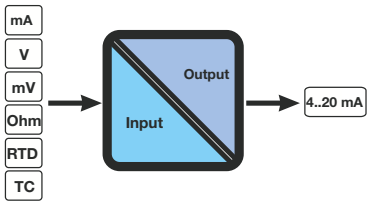


Parallel inputs connection (2 A output)

3

K121

LOOP POWERED UNIVERSAL CONVERTER

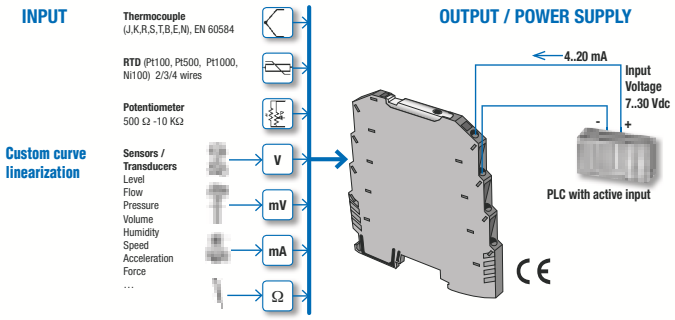


K121 is a performant universal converter able to manage all analog signals (mA, mV, V, PT100, Pt1000, Pt500, Ni100, TCs, Ohm) and convert / isolate it into 4..20mA loop powered signal.
The output mode (normal/inverted), scale overrange, output in case of fault sensor are selectable parameters available by PC software. A 2-way galvanic isolation among input // output circuits assures the integrity of your datas.

TECHNICAL SPECIFICATIONS

General Data	
Power supply	7..30 Vdc
Power consumption	< 660 mW
Isolation	1.500 Vac (2 way)
Transducer Power Supply	No
Accuracy	0,1%
Response time	About 140 ms
Status Indicators	Power supply, error
Setting	EASY LP (PC software)
Mounting	35 mm DIN rail guide
Protection Degree	IP20
Operating Temperature	-20..+65 °C
Dimension (W x H x D)	6,2 x 93 x 102,5 mm
Input	
Channel Numbers	1
Voltage	-150…+150 mV (input imped. 10 MΩ) -30...+30V (input imped. 200KΩ)
Current	-24..24 mA Input impedance 40Ω
Rtd	Pt100, Pt500, Pt1000, Ni100 Measure 2, 3, 4 wires
Thermocouple	Type J, K, R, S, T, E, B, N
Potentiometer	500 Ω ..10 KΩ
Output	
Channel Numbers	1
Current	4…20mA (loop powered)
Standard	
Approval	CE
Norms	EN 50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4; EN 50140/141; EN 61010-1

APPLICATION NOTE



ORDER CODES

Code	Description
K121	Loop powered universal converter

ACCESSORIES & SOFTWARE

EASY USB
USB↔UART TTL CONVERTER
pg. 60

EASY_LP
Programming software
pg. 114

SIMILAR PRODUCTS

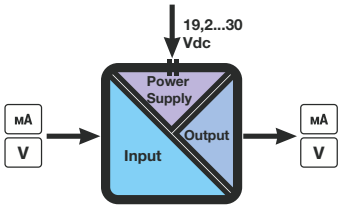
Z109REG2
Universal converter to DC current/voltage isolator converter with alarm output
pg. 78

T121
Loop powered temperature transmitter
pg. 117

K120RTD
Pt100, Ni100 loop powered transmitter
pg. 109

K109UI

DC CURRENT/VOLTAGE TO DC CURRENT/VOLTAGE ISOLATOR/CONVERTER

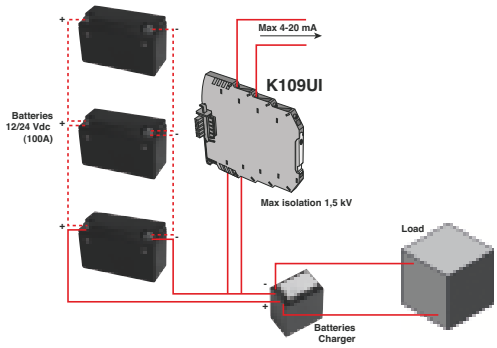


K109UI is a device that accepts mA/V signals able to convert it into mA/V standard signals. It's configurable for input up to 30V (battery voltage monitoring) and all parameters are configurable through dip-switches.
The power supply connection is available on the terminals or a special connector (K-BUS) allows a distribution of the power supply to the modules via bus connector. A 3-way galvanic isolation among Power supply // input // output circuits assures the integrity of your datas.

TECHNICAL SPECIFICATIONS

General Data	
Power supply	19,2…30 Vdc
Power consumption	500 mW
Isolation	1.500 Vac (3 way)
Transducer Power Supply	No
Accuracy	0,1%
Response time	40 ms
Status Indicators	Power supply, error
Setting	Dip Switches
Mounting	35 mm DIN rail guide
Protection Degree	IP20
Operating Temperature	-20..+65 °C
Dimension (W x H x D)	6,2 x 93 x 102,5 mm
Input	
Channel Numbers	1
Voltage	Range: 0..10 / 10..0 / 0..5 / 1..5 / 0..15 / 0..30 V (inversion as well) Impedance: 110 kΩ - 325 kΩ
Current	Range: 4..20 / 20..4 / 0..20 / 20..0 mA Impedance: 35 Ω
Output	
Channel Numbers	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
Standard	
Approval	CE
Norms	EN 50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4; EN 50140/141; EN 61010-1

APPLICATION NOTE



ORDER CODES

Code	Description
K109UI	DC current / voltage to DC current/voltage isolator/converter

ACCESSORIES & SOFTWARE

K-BUS
Backplane for power connection
pg. 114

K-SUPPLY
Redundant power supply module
pg. 114

SIMILAR PRODUCTS

K109S
DC current / voltage to DC current/voltage isolator/ converter (with power for 2-wire sensors)
pg. 104

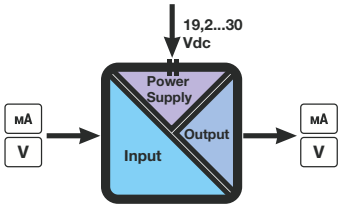
Z109UI
DC current / voltage to DC current/voltage isolator/ converter
pg. 80

Z109S
DC current isolator
pg. 81

K109S

DC CURRENT / VOLTAGE TO DC CURRENT/VOLTAGE ISOLATOR/CONVERTER

(WITH POWER FOR 2-WIRE SENSORS)



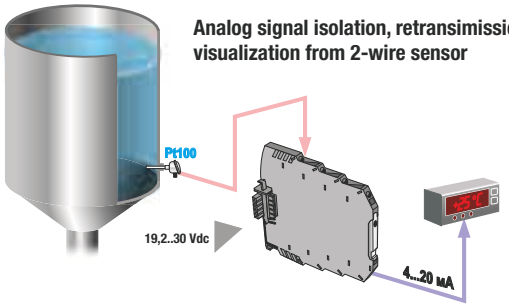
K109S is a device that accepts mA/V signals able to convert it into mA/V standard signals. The device can power also all 2-wire sensors and all parameters are configurable through dip-switches. The power supply connection is available on the terminals or a special connector (K-BUS) allows a distribution of the power supply to the modules via bus connector.
A 3-way galvanic isolation among Power supply // input // output circuits assures the integrity of your datas.

TECHNICAL SPECIFICATIONS

General Data	
Power supply	19,2…30 Vdc
Power consumption	500 mW
Isolation	1.500 Vac (3 way)
Transducer Power Supply	Yes
Accuracy	0,1%
Response time	40 ms
Status Indicators	Power supply, error
Setting	Dip Switches
Mounting	35 mm DIN rail guide
Protection Degree	IP20
Operating Temperature	-20..+65 °C
Dimension (W x H x D)	6,2 x 93 x 102,5 mm
Input	
Channel Numbers	1
Voltage	Range: 0..10 / 10..0 / 0..5 / 1..5 V Impedance: 110 kΩ
Current	Range: 4..20 / 20..4 / 0..20 / 20..0 mA (active or passive input) Impedance: 35 Ω
Output	
Channel Numbers	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
Standard	
Approval	CE
Norms	EN 50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4; EN 50140/141; EN 61010-1

APPLICATION NOTE

Analog signal isolation, retransimission, visualization from 2-wire sensor



ORDER CODES

Code	Description
K109S	DC current/voltage to DC current/voltage isolator/converter (with power for 2-wire sensors)

ACCESSORIES & SOFTWARE

K-BUS
Backplane for power connection
pg. 114

K-SUPPLY
Redundant power supply module
pg. 114

SIMILAR PRODUCTS

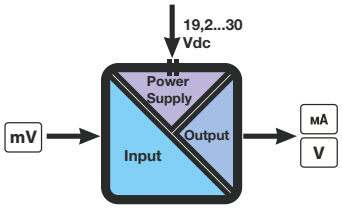
K109UI
DC current / voltage to DC current/voltage isolator/converter
pg. 103

Z109UI2
DC current / voltage to DC current/voltage isolator/converter
pg. 80

Z109S
DC current isolator
pg. 81

K109LV

DC LOW VOLTAGE TO DC CURRENT/VOLTAGE ISOLATOR/CONVERTER



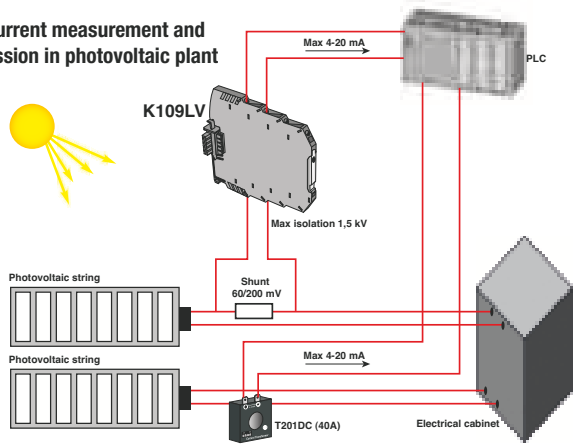
K109LV allows a conversion of the signals with mV (±25 mV.. ±2000 mV) standard into mA/V standard signals. It's useful for DC current monitoring through shunts. The power supply connection is available on the terminals or a special connector (K-BUS) allows a distribution of the power supply to the modules via bus connector. A 3-way galvanic isolation among Power supply // input // output circuits assures the integrity of your datas.

TECHNICAL SPECIFICATIONS

General Data	
Power supply	19,2…30 Vdc
Power consumption	500 mW
Isolation	1.500 Vac (3 way)
Transducer Power Supply	-
Accuracy	0,1%
Response time	25 ms
Status Indicators	Power supply, error
Setting	Dip Switches
Mounting	35 mm DIN rail guide
Protection Degree	IP20
Operating Temperature	-20..+65 °C
Dimension (W x H x D)	6,2 x 93 x 102,5 mm
Input	
Channel Numbers	1
Voltage (mV)	Range: ±25, 50, 60, 75, 80, 100, 120, 150, 200, 250, 300, 400, 500, 1000, 2000 mV (via Dip switches)
Output	
Channel Numbers	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
Standard	
Approval	CE
Norms	EN 50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4; EN 50140/141; EN 61010-1

APPLICATION NOTE

String current measurement and transmission in photovoltaic plant



ORDER CODES

Code	Description
K109LV	DC Low Voltage to DC current/voltage isolator/converter

ACCESSORIES & SOFTWARE

K-BUS
Backplane for power connection
pg. 114

K-SUPPLY
Redundant power supply module
pg. 114

SIMILAR PRODUCTS

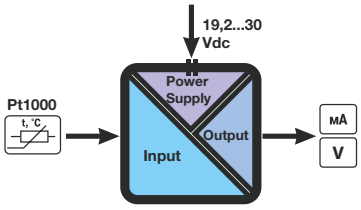
Z109REG2
Universal converter to DC current/voltage isolator converter with alarm output
pg. 78

K121
Loop powered universal converter
pg. 102

Z-4TC
4-CH thermocouple/mV input module / RS485
pg. 34

K109PT

PT100 TO DC CURRENT/VOLTAGE ISOLATOR/CONVERTER

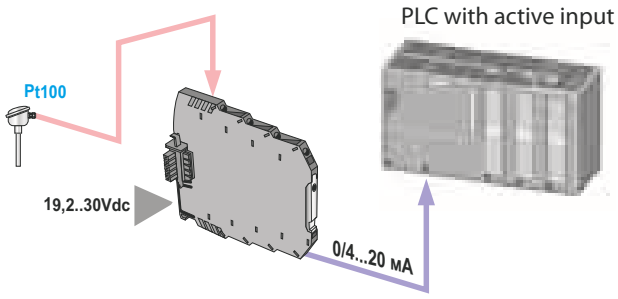


K109PT is a converter for Thermoresistance PT100 with 2,3,4 wires and provides a mA/V standard output signal. It's completely configurable through dip switches.
A 3-way galvanic isolation among Power supply // input // output circuits assures the integrity of your datas.

TECHNICAL SPECIFICATIONS

General Data	
Power supply	19,2..30 Vdc / 50-60 Hz
Power consumption	500 mW
Isolation	1.500 Vac (3 way)
Transducer Power Supply	-
Accuracy	0,1%
Response time	< 50 ms (without filter) < 200 ms (with repeat filter 50 Hz)
Status Indicators	Setting error, connection malfunction, internal malfunction
Settings	Dip-switches
Mounting	35 mm DIN rail guide
Protection Degree	IP20
Operating Temperature	-20..+65 °C
Dimension (W x H x D)	6,2 x 93,1 x 102,5 mm
Input	
Channel Numbers	1
RTD	Pt100, Measure 2, 3, 4 wires Range: -150..650 °C Resolution 14 bit
Output	
Channel Numbers	1
Voltage	4 scales: 0..10, 10..0, 0..5, 1..5 V Min load resistance: 2.000 Ω
Current	2 scales: 0/4..20 mA (active/passive) Max load resistance: 500 Ω
Standard	
Approval	CE
Norms	EN 50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4; EN 50140/141; EN 61010-1

APPLICATION NOTE



ORDER CODES

Code	Description
K109PT	PT100 to DC current/voltage isolator/converter, Power supply 19,2..30 Vdc

ACCESSORIES & SOFTWARE

K-BUS
Backplane for power connection
pg. 114

K-SUPPLY
Redundant power supply module
pg. 114

SIMILAR PRODUCTS

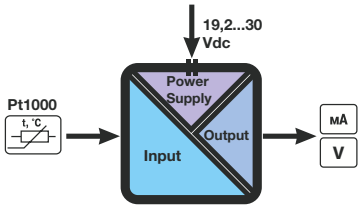
Z109PT2
RTD to DC current/voltage isolator converter
pg. 91

K109PT-HPC
Pt100 (high-precision) to DC current/voltage isolator converter
pg. 107

K120RTD
Pt100, Ni100 loop powered converter
pg. 109

K109PT-HPC

PT100 (HIGH-PRECISION) TO DC CURRENT/VOLTAGE ISOLATOR CONVERTER

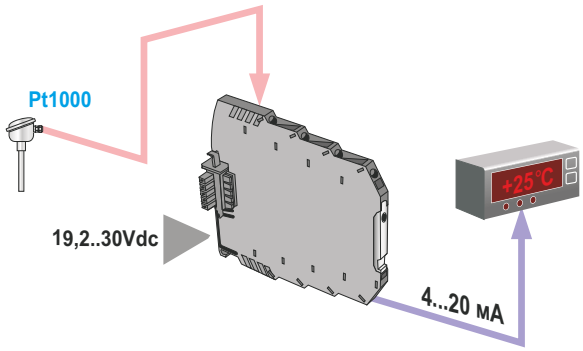


K109PT-HPC is an high performance converter for Thermoresistance PT100 with 2,3,4 wires and provides a mA/V standard output signal. The max admitted error is lower than K109PT because reported to a smaller range.
It's completely configurable through dip switches. A 3-way galvanic isolation among Power supply // input // output circuits assures the integrity of your datas.

TECHNICAL SPECIFICATIONS

General Data	
Power supply	19,2..30 Vdc
Power consumption	500 mW
Isolation	1.500 Vac (3 way)
Power transducers	-
Accuracy	0,1%
Response time	< 50 ms (without filter) < 200 ms (with repeat filter 50 Hz)
Status Indicators	Settings error, connection malfunction, internal malfunction.
Settings	Dip- switches
Mounting	35 mm DIN rail guide
Protection Degree	IP20
Operating Temperature	-20..+65 °C
Dimension (W x H x D)	6,2 x 93,1 x 102,5 mm
Input	
Channel Numbers	1
RTD	Pt100, Measure 2, 3, 4 wires Range: -200..160 °C Resolution 14 bit
Output	
Channel Numbers	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
Standard	
Approval	CE
Norms	EN 50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4; EN 50140/141; EN 61010-1

APPLICATION NOTE



ORDER CODES

Code	Description
K109PT-HPC	Pt100 (high-precision) to DC current/voltage isolator converter, power supply 19,2..30 Vdc

ACCESSORIES & SOFTWARE

K-BUS
Backplane for power connection
pg. 114

K-SUPPLY
Redundant power supply module
pg. 114

SIMILAR PRODUCTS

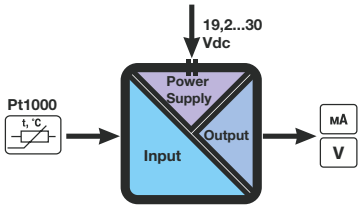
Z109PT2
RTD to DC current/voltage isolator/ converter
pg. 91

T120
Pt100, Ni100 loop powered transmitter
pg. 116

K120RTD
Pt100, Ni100 loop powered converter
pg. 109

K109PT1000

PT1000 TO DC CURRENT/VOLTAGE ISOLATOR/CONVERTER

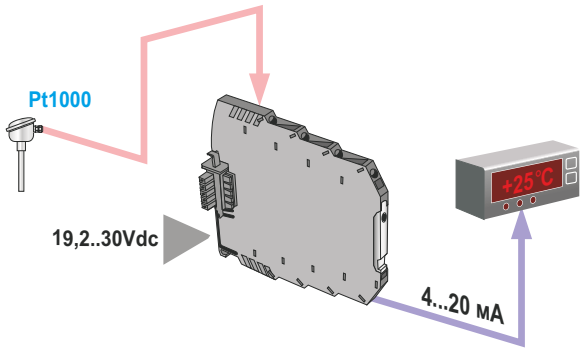


K109PT1000 is a converter for Thermoresistance PT1000 with 2,3,4 wires and provides a mA/V standard output signal. It's completely configurable through dip switches. A 3-way galvanic isolation among Power supply // input // output circuits assures the integrity of your datas.

TECHNICAL SPECIFICATIONS

General Data	
Power supply	19,2..30 Vdc
Power consumption	500 mW
Isolation	1.500 Vac (3 way)
Power transducers	-
Accuracy	0,1%
Response time	200 ms
Status Indicators	Power supply, error, data transmission, data reception, input status
Settings	Dip- switches
Mounting	35 mm DIN rail guide
Protection Degree	IP20
Operating Temperature	-10..+60 °C
Dimension (W x H x D)	17.5 x 100 x 112 mm
Input	
Channel Numbers	1
RTD	Pt1000 Measure 2, 3, 4 wires Range: -200..210 °C Resolution 0,1°C
Output	
Channel Numbers	1
Voltage	4 scales: 0..5, 1..5, 0..10, 10..0 V Min load resistance: 2.000 Ω
Current	2 scales: 0/4..20 mA (active/passive) Max load resistance: 600 Ω
Standard	
Approval	CE
Norms	EN 50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4; EN 50140/141; EN 61010-1

APPLICATION NOTE



ORDER CODES

Code	Description
K109PT1000	PT1000 to DC current/voltage isolator/converter, Power supply 19,2..30 Vdc

ACCESSORIES & SOFTWARE

K-BUS
Backplane for power connection
pg. 114

K-SUPPLY
Redundant power supply module
pg. 114

SIMILAR PRODUCTS

K121
Loop powered universal converter
pg. 102

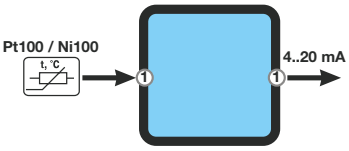
Z109REG2
Universal converter to DC current/voltage isolator converter with alarm output
pg. 78

T121
loop powered universal transmitter
pg. 117

K120RTD
Pt100, Ni100 loop powered converter
pg. 109

K120RTD

PT100, NI100 LOOP POWERED CONVERTER

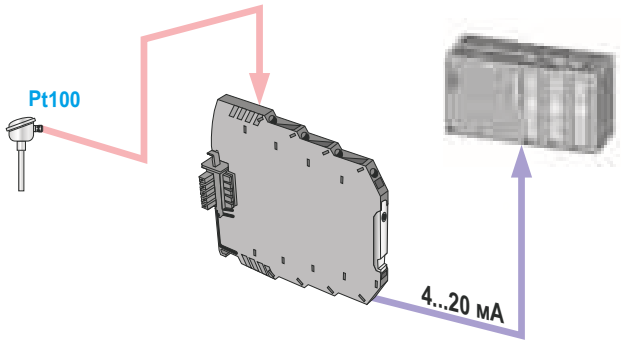


K120RTD is a converter for Thermoresistance PT100/Ni100 with 2,3,4 wires and convert / isolate it into 4..20mA loop powered signal. It's completely configurable through dip switches or PC software. The output signal is not isolated from the input one.

TECHNICAL SPECIFICATIONS

General Data	
Power supply	5..30 Vdc
Power consumption	< 660 mW
Isolation	-
Transducer Power Supply	-
Accuracy	0,1%
Response time	About 220 ms
Status Indicators	Power supply, error
Setting	Dip Switches EASY LP (PC software)
Mounting	35 mm DIN rail guide
Protection Degree	IP20
Operating Temperature	-20..+65 °C
Dimension (W x H x D)	6,2 x 93 x 102,5 mm
Input	
Channel Numbers	1
RTD	Pt100, Ni100 Measure 2, 3, 4 wires
Output	
Channel Numbers	1
Current	4…20mA (loop powered)
Standard	
Approval	CE
Norms	EN 50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4; EN 50140/141; EN 61010-1

APPLICATION NOTE



ORDER CODES

Code	Description
K120RTD	Pt100, Ni100 loop powered converter

ACCESSORIES & SOFTWARE

EASY USB
USB↔UART TTL CONVERTER
pg. 60

EASY_LP
Programming software
pg. 114

SIMILAR PRODUCTS

Z109REG2
Universal converter to DC current/voltage isolator converter with alarm output
pg. 78

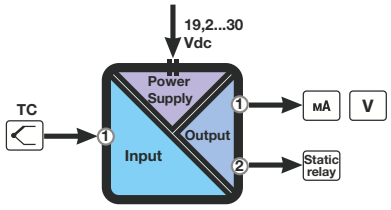
T121
loop powered universal transmitter
pg. 117

K121
Loop powered universal converter
pg. 102

K109PT1000
PT1000 to DC current/voltage isolator/converter
pg. 108

K109TC

TC TO DC CURRENT/VOLTAGE ISOLATOR/CONVERTER (WITH TRIP ALARM)



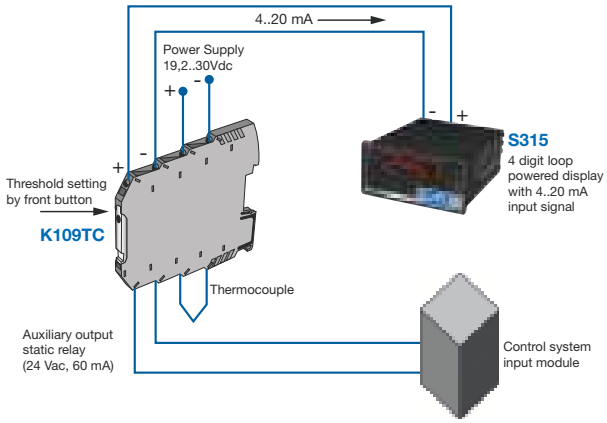
K109TC is a converter for Thermocouples TCs (J, K, E, N, S, R ,B,T) and provides a mA/V standard output signal. Beside available there is a configurable threshold (relay) that may generate an alarm or may be utilized like a thermostat. It's completely configurable through dip switches/trimmer. A 3-way galvanic isolation among Power supply // input // output circuits assures the integrity of your datas.

TECHNICAL SPECIFICATIONS

General Data	
Power supply	19,2…30 Vdc
Power consumption	500 mW
Isolation	1.500 Vac (3 way)
Transducer Power Supply	-
Accuracy	0,1%
Response time	40 ms
Status Indicators	Power supply, error
Setting	Dip Switches
Mounting	35 mm DIN rail guide
Protection Degree	IP20
Operating Temperature	-20..+65 °C
Dimension (W x H x D)	6,2 x 93 x 102,5 mm
Input	
Channel Numbers	1
Thermocouple	Type: J,K,E,N,S,R,B,T (ITS90) Min span: 100 °C Impedance: 10 MΩ
Output	
Channel Numbers	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
Realy	Alarm settable as low/high: 24 Vac Nominal Current: 60 mA Max
Standard	
Approval	CE, UL
Norms	EN 50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4; EN 50140/141; EN 61010-1

APPLICATION NOTE

TC conversion / displaying through 315 alarm management



ORDER CODES

Code	Description
K109TC	TC to DC current/voltage isolator/converter (with trip alarm), Power supply 19,2..30 Vdc

ACCESSORIES & SOFTWARE

K-BUS
Backplane for power connection
pg. 114

K-SUPPLY
Redundant power supply module
pg. 114

SIMILAR PRODUCTS

Z109TC
Thermocouple to DC current/voltage isolator/converter
pg. 92

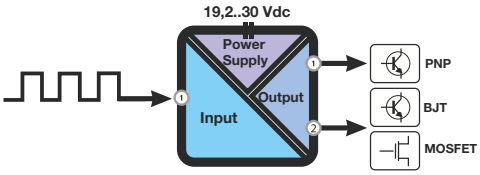
Z109REG2
Universal converter to DC current/voltage isolator converter with alarm output
pg. 78

T121
loop powered universal transmitter
pg. 117

K121
Loop powered isolator / universal converter
pg. 102

K111

ISOLATED DUAL OUTPUT FREQUENCY TRIP AMPLIFIER

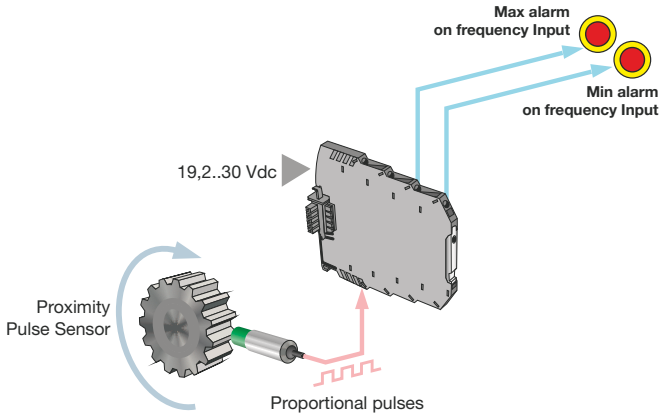


K111 is a dual output isolated trip amplifier/converter for specific on/off sensors (Max frequency 20 KHz), beside it is input repeater and frequency divider. It's useful as stand alone speed monitoring system of rotative wheel. The 2 outputs are independent each therefore is possible to configure 1 output as alarm and the second one as frequency repeater. A 2-way galvanic isolation among input // output circuits assures the integrity of your datas.

TECHNICAL SPECIFICATIONS

General Data	
Power supply	19,2..30 Vdc
Power consumption	500 mW
Isolation	1.500 Vac (2 way)
Transducer Power Supply	-
Status Indicators	Power, threshold, error
Accuracy	-
Response time	-
Settings	Easy LP (PC Software)
Mounting	35 mm DIN rail guide
Protection Degree	IP20
Operating Temperature	-20..+65 °C
Dimension (W x H x D)	6,2 x 93,1 x 102,5 mm
Input	
Channel Numbers	1
Pulses	Contact IEC 1131.2 (type 1) Namur (DIN 19234, EN 60947-5-6) NPN / PNP (12 o 22 V) 2/3 wires Reed Photocell Max voltage: ±28 Vdc Frequency: Max 20 kHz, min 1 pulse every 116 minutes
Output	
Channel Numbers	1
Contact	N.2 threshold channels, PNP, BJT, Mosfet; Max load: 60 mA / 24 Vdc
Standard	
Approval	CE
Norms	EN 50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4; EN 50140/141; EN 61010-1

APPLICATION NOTE



ORDER CODES

Code	Description
K111	Isolated dual output frequency trip amplifier, Power supply 19,2..30 Vdc

ACCESSORIES & SOFTWARE

K-BUS
Expandable power supply connector
pg. 114

K-SUPPLY
Redundant power supply module
pg. 114

EASY USB
USB↔UART TTL CONVERTER
pg. 60

EASY_LP
Programming software
pg. 114

SIMILAR PRODUCTS

Z111
Frequency to DC current/voltage isolator/converter
pg. 34

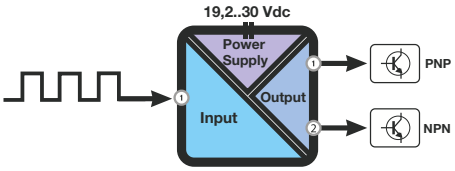
Z104
DC current/voltage to frequency isolator/converter
pg. 33

K112
Universal digital coupler/isolator
pg. 112

S311D
Frequency / digital input indicators - totalizers
pg. 124

K112

UNIVERSAL DIGITAL COUPLER/ISOLATOR



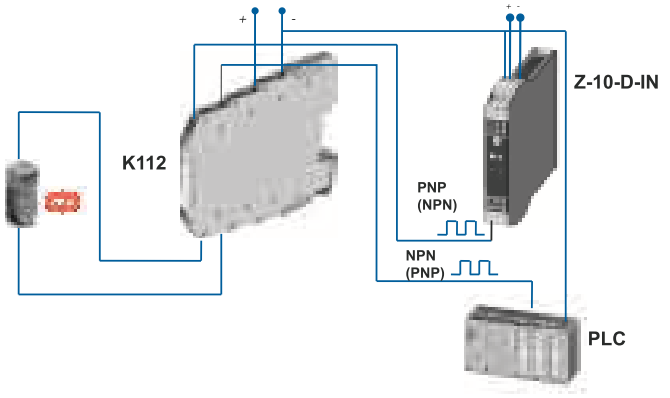
K112 isolation module has been designed to adapt specific on/off sensors to a standard NPN and/or PNP connection. It's a useful solution to interface a proximity sensor with a plc. The two outputs (PNP and NPN) can be utilized simultaneously. A 2-way galvanic isolation among input // output circuits assures the integrity of your datas.

TECHNICAL SPECIFICATIONS

General Data	
Power supply	19,2..30 Vdc
Power consumption	500 mW
Isolation	1.500 Vac (2 way)
Transducers Power Supply	Yes
Status Indicators	Power, output state
Accuracy	-
Response time	-
Settings	Dip-switches
Mounting	35 mm DIN rail guide
Protection Degree	IP20
Operating Temperature	-20..+65 °C
Dimension (W x H x D)	6,2 x 93,1 x 102,5 mm
Input	
Channel Numbers	1
Pulses	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
Output	
Channel Numbers	1
Contact	PNP e NPN simultaneous channels Max current 200 mA Max voltage 30 V (continuous), 50 V (pulse)
Standard	
Approval	CE
Norms	EN 50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4; EN 50140/141; EN 61010-1

APPLICATION NOTE

Isolated digital coupling Namur sensor - acquisition system / PLC



ORDER CODES

Code	Description
K112	Universal digital coupler/isolator, power supply 19,2..30 Vdc

ACCESSORIES & SOFTWARE

K-BUS
Backplane for power connection
pg. 114

K-SUPPLY
Redundant power supply module
pg. 114

SIMILAR PRODUCTS

Z104
DC current/voltage to frequency isolator/converter
pg. 93

Z111
Frequency to DC current/voltage isolator/converter
pg. 94

K111
Isolated dual output frequency trip amplifier
pg. 111

S311D
Frequency / digital input indicators - totalizers
pg. 124

K107A

RS485 ↔ RS485 serial isolator amplifier

Serial port #1: RS485 Half Duplex
Serial port #2: RS485 Half Duplex
Isolation: 1,5 kVac (3-way)
Handshake: Automatic
Baud rate: 1.200..115.200 bps

K107B

RS232 ↔ RS485 serial isolator converter

Serial port #1: RS232B
Serial port #2: RS485 Half Duplex
Isolation: 1,5 kVac (3-way)
Handshake: automatic
Baud rate: 1.200..115.200 bps

K107USB

USB ↔ RS485 serial isolator converter

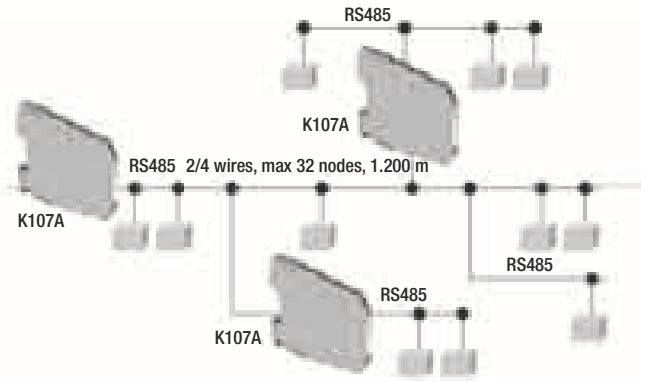
Power supply: By USB port
Serial port #1: USB standard 1.0 e 2.0, USB A and MINI USB B connectors
Serial port #2: RS485 Half Duplex
Compliance: USB standard 1.1 e 2.0
Isolation: 1,5 kVac (USB//RS485)
Handshake: automatic

CD Driver

S107USB
Portable version

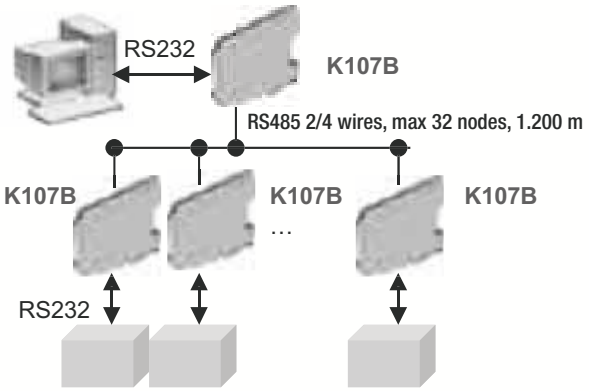
K107A

Multiple serial connection RS485 (Modbus) with isolation



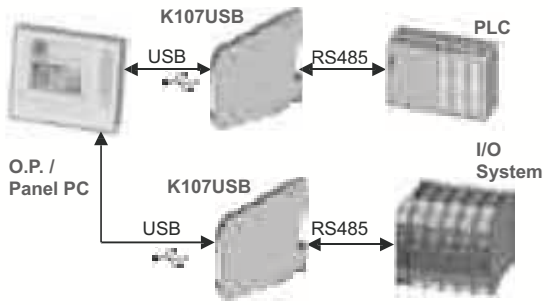
K107B

RS232/RS485 bi-directional remote transmission with isolation up to 32 nodes



K107USB

Multiple connection and data transmission with USB/RS485 isolation



K-SUPPLY

Redundant power supply module with overvoltages protection

Power supply: 19,2..30 Vdc
Max drop voltage: 300 mV
Input: Nr 2 independent channels, max current per terminal 4 A
Differential mode filter

S117P-1

RS232 ↔ RS485 serial isolator converter

EASY-USB

USB ↔ TTL converter

EASY LP

K120RTD, K121, T120, T121 programming software

K-BUS

Expandable power supply connector (EN 60175)

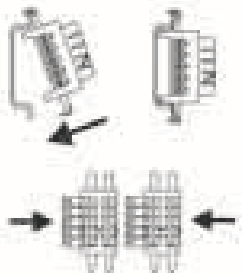
K121, K120RTD, K111, T120, T121 configuration toolkit including S117P-1 (RS485, RS232, TTL / USB converter with power transducer), PM002411 (S117P connection cable), Easy LP, Easy K111 (programming software)

EASY K111

K111 programming software

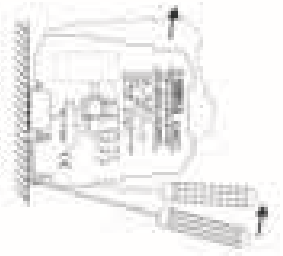
CONNECTION AND INSTALLATION

CAGE CLAMP CONNECTION



K-BUS CONNECTOR

INSERTING MODULE ON DIN GUIDE

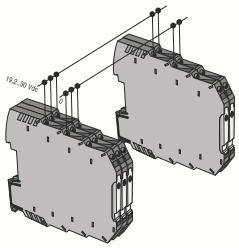


EXTRACTING MODULE FROM DIN GUIDE

POWER SUPPLY TECHNIQUE

SUPPLY SYSTEM. With the exception of loop powered instruments, which aren't bus powered, K Line signal conditioners can be powered in 3 different ways: by the springcage terminal block (24 Vdc direct from power supply) or by SMART SUPPLY system. SMART SUPPLY system is based on expandable KBUS 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 needed K-SUPPLY module that gets overvoltages protections on-board.

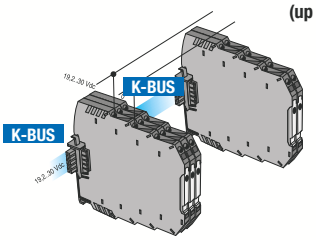
POWER SUPPLY ON SPRING-CAGE TERMINAL



1

SMART SUPPLY SYSTEM

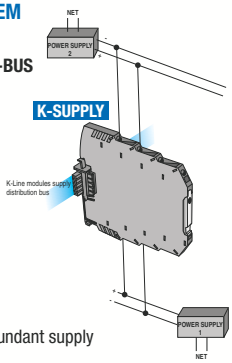
Distributed supply with 2 slot connector K-BUS (up to 16 modules)



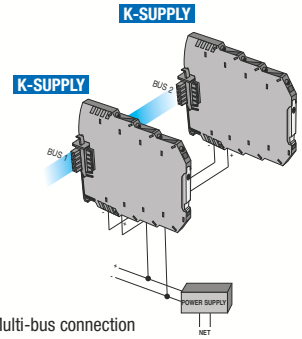
2

SMART SUPPLY SYSTEM

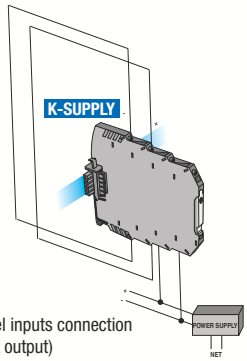
Distributed supply with K-SUPPLY module and K-BUS (up to 75 modules)



Redundant supply



Multi-bus connection



Parallel inputs connection (2 A output)

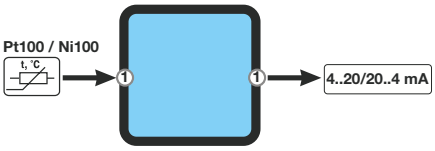
3

T-Line - Loop Powered Devices

9

T120

LOOP POWERED TRANSMITTER FOR PT100 AND NI100 PROBES (IN HEAD MOUNTING)



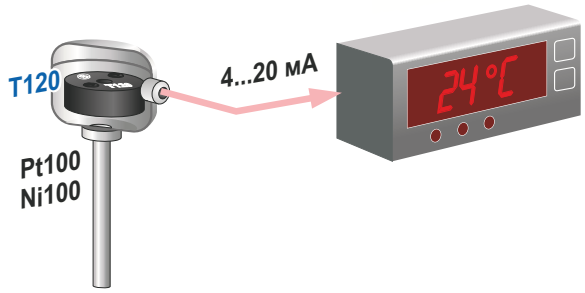
CE

T120 is a converter for Thermoresistance PT100/Ni100 with 2,3,4 wires and convert it into 4..20mA loop powered signal. It's completely configurable through PC software. T120 is suitable for in-head mounting (Pt100). The output signal is not isolated from the input one.

TECHNICAL SPECIFICATIONS

General Data	
Power supply	5..30 Vdc
Power consumption	20mA
Isolation	-
Power transducers	-
Accuracy	0,1%
Response time	<620 ms
Settings	Easy_LP (PC software)
Mounting	In-Head mounting (PT100) Available adapter for DIN RAIL guide
Protection Degree	IP20
Operating Temperature	-40..+85 °C
Dimension	Ø 43,7 x 20 mm
Input	
Channel Numbers	1
RTD	Pt100 Standard: EN 60751/A2 (ITS-90) Range: -200..+650°C Min span: 20°C Sensors with 2, 3, 4 wires Ni100 Range: -60..+650°C Min span: 20°C Sensors with 2, 3, 4 wires
Output	
Channel Numbers	1
Current	CURRENT (mA) 4..20, 20..4 mA (2 wire)
Standard	
Approval	CE
Norms	EN 50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4; EN 50140/141; EN 61010-1

APPLICATION NOTE



ORDER CODES

Code	Description
T120	Loop powered transmitter for Pt100 and Ni100 probes (in head mounting), Power supply 5..30 Vdc

ACCESSORIES & SOFTWARE

EASY USB
USB↔UART TTL CONVERTER
pg. 50

EASY_LP
Programming software
pg. 114

PM002780
FLEX DIN
-

SIMILAR PRODUCTS

K120RTD
Pt100, Ni100 loop powered converter
pg. 109

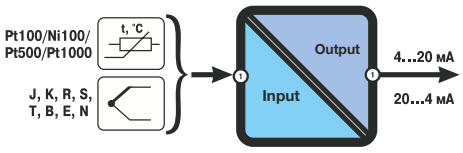
T121
Isolated loop powered temperature transmitter (in head mounting)
pg. 117

Z109PT2
RTD to DC current/ voltage isolator/ converter
pg. 91

K109PT
PT100 to DC current/ voltage isolator/ converter
pg. 106

T121

ISOLATED LOOP POWERED TEMPERATURE TRANSMITTER (IN HEAD MOUNTING)

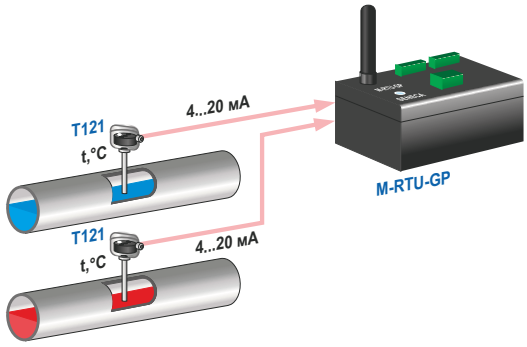


T121 is a converter for Thermoresistance (mA, mV, PT100, Pt1000, Pt500, Ni100, TCs, Ohm) with 2,3,4 wires and convert / isolate it into 4..20mA loop powered signal. It's completely configurable through PC software. T121 is suitable for in-head mounting (RTD or TC). A 2-way galvanic isolation among input // output circuits assures the integrity of your datas.

TECHNICAL SPECIFICATIONS

General Data	
Power supply	7..30 Vdc (loop powered)
Power consumption	500 mW
Isolation	1.500 Vac (2 way)
Power transducers	-
Accuracy	0,1%
Response time	< 620 ms
Settings	Easy-LP (PC software)
Mounting	In-Head mounting (PT100) Available adapter for DIN RAIL guide
Protection Degree	IP20
Operating Temperature	-40..+85 °C
Dimension	Ø 43,7 x 20 mm
Input	
Channel Numbers	1
RTD	Pt100 (EN 60751/A2, -200..+650°C, min span 20°C) Ni100 (-60..+250°C, min span 20°C) Pt500 2,3,4 wires, range -200… 650 °C Pt1000 2,3,4 wires, range -200… +200°C TC: J, K, R, S, T, B, E, N Potentiometer: 450..1.800 ohm Voltage: -150..+150 mV
Output	
Channel Numbers	1
Current	CURRENT (mA) 4..20, 20..4 mA (2 wire) Resolution 2µA = 13 bit = 0.0125%
Standard	
Approval	CE
Norms	EN 50081-2; EN 55011; EN 50082-2; EN 61000-2-2/4; EN 50140/141; EN 61010-1

APPLICATION NOTE



ORDER CODES

Code	Description
T121	Isolated loop powered temperature transmitter (in head mounting), Power supply 7..30 Vdc

ACCESSORIES & SOFTWARE

EASY USB
USB↔UART TTL CONVERTER
pg. 50

EASY_LP
Programming software
pg. 114

PM002780
FLEX DIN
-

SIMILAR PRODUCTS

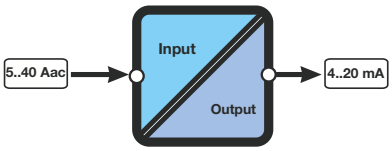
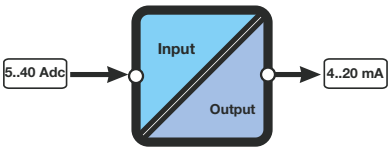
K121
Isolated loop powered isolator/ universal converter
pg. 102

Z109REG2
Universal converter to DC current/voltage isolator converter with alarm output
pg. 78

K120RTD
Pt100, Ni100 loop powered converter
pg. 109

T-LINE

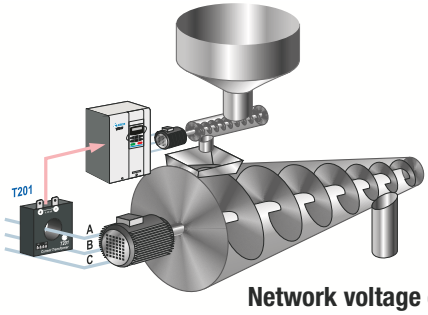
AC/DC CURRENT TRANSFORMER TO MA (V) – LOOP POWERED

	T201	T201DC
		
	AC Current Transformer to DC Current (4..20 mA – loop powered)	**DC Current Trasducer to DC current (4..20 mA - loop powered)**
		

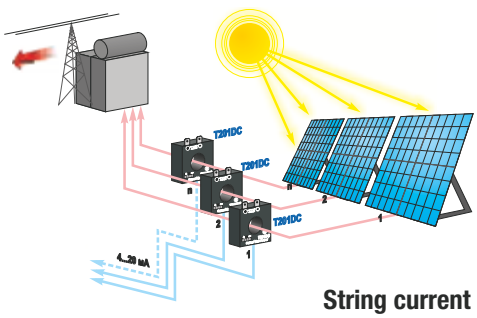
TECHNICAL SPECIFICATIONS

General Data		
Power supply	5..28 Vdc (loop powered)	5..28 Vdc (loop powered)
Power consumption	-	-
Isolation	Yes	Yes
Power transducers	-	-
Accuracy	0,1%	0,1%
Response time	< 100ms	< 100ms
Settings	Dip-switches	Dip-switches
Mounting	35 mm DIN rail guide	35 mm DIN rail guide
Protection Degree	IP20	IP20
Operating Temperature	-20..+65°C	-20..+65°C
Dimension (W x H x D)	38 x 40 x 20 mm	38 x 40 x 20 mm
Input		
Channel Numbers	1	1
Type	CURRENT range (A) 5, 10, 15, 20, 25, 30, 35, 40 A Max overcurrent : 800 A Frequency: 20..1.000 Hz Crest factor: 2	Current range (A) 5, 10, 15, 20, 25, 30, 35, 40 A Max overcurrent : 800 A Frequency: 20..1.000 Hz Crest factor: 2
Output		
Channel Numbers	1	1
Type	CURRENT (mA) 4..20 mA (2 wires)	Current (mA) 4..20 mA (2 wires)
Standard		
Approval	CE	CE, European Patent
Norms	EN60688/1997 +A1 +A2. Standards : EN61000-6-4/2002-10 EN61000-6-2/2006-10 EN61010-1/2001	EN60688/1997 +A1 +A2 EN61000-6-4/2002-10 EN61000-6-2/2006-10 EN61010-1/2001

APPLICATION NOTE

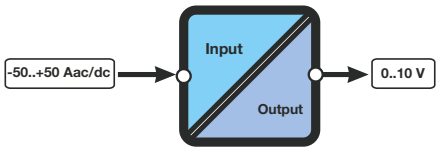
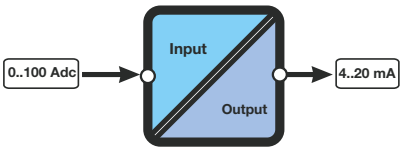


Network voltage control



String current acquisition

T201 family is an isolated, contact-less loop powered direct current transducer range.
These devices looks similar to a standard CT but with the remarkable feature of measuring the continuous component of the pass-through current. The range is selectable through dip switches from 5A to 40 / 100 A, single o double polarity, Hall effect or Magnetic Principle (patented technology), mA or Voltage output.

	T201DC-H	T201DC-100
		
	AC/DC Current Trasducer to DC voltage, Hall effect	**DC Current (100A) Trasducer to DC current (4..20 mA - loop powered)**
		

TECHNICAL SPECIFICATIONS

General Data		
Power supply	11.28 Vdc	-
Power consumption	21 mA	-
Isolation	-	1,5 kVdc
Power transducers	-	
Accuracy class	0,5% f.s.	0,2%
Thermal drift	< 200 ppm/°C	< 150 ppm/K
Response time	800 ms	100 ms (no filter)..600 ms (with filter)
Settings	Dip-switches	Dip-switches
Mounting	35 mm DIN rail guide	35 mm DIN rail guide
Protection Degree	IP20	IP20
Operating Temperature	-20..+65°C	-10..+65°C
Connectors	-	Faston 6,3 x 0,8 m (for 4..20 mA loop) Through hole 17,8 mm (for current cable)
Dimension (W x H x D)	38 x 40 x 20 mm	50 x 52 x 39,8 mm
Enclosure	-	PBT, black
Input		
Channel Numbers	1	1
Type	Current range: -50..+50 A (bipolar) Measuring type: TRMS Max overcurrent: 2.000 A (pulse) Bandwidth: 1 kHz Crest factor: 2	Current range: 0..10 A, 0..25 A, 0..50 A, 0..100 A (monopolar); -10..0..+10 A, -25..0..+25 A, -10..0..+50 A, -25..0..+100 A (bipolar)
Output		
Channel Numbers	1	1
Type	Voltage range: 0..10 Vdc Resolution: 12 bit	Current (mA) 4..20 mA (2 wires)
Standard		
Approval	CE	CE
Norms	EN60688/1997 +A1 +A2 EN61000-6-4/2002-10 EN61000-6-2/2006-10 EN61010-1/2001	EN60688/1997 +A1 +A2 EN61000-6-4/2002-10 EN61000-6-2/2006-10 EN61010-1/2001

ORDER CODES

Code	Description
T201	AC Current Transformer to DC Current (4..20 mA – loop powered)
T201DC	DC Current Trasducer to DC current (4..20 mA - loop powered)
T201DC-H	AC/DC Current Trasducer to DC voltage, Hall effect
T201DC100	DC Current (100A) Trasducer to DC current (4..20 mA - loop powered)
PM002780	DIN rail fastening base
BC-Ct	Battery connector for current transformer

Displays And Panel Mounting Units

Highest accuracy, lowest price

S315

4 DIGIT
LOOP POWERED DISPLAYS

ANALOG INPUT: 4..20 mA
POWER SUPPLY:
By the 4..20 mA input loop

S311AK

4 DIGIT
DISPLAYS AND I/V ANALOG INPUT

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

S311A

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

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

S311D

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

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

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

LED | CE | EASY PC | Modbus

	S311A-4	S311A-6	S311A-8	S311A-11
				
	4 digit universal analog input indicator - totalizer and analog output	6 digit universal analog input indicator - totalizer and analog output	8 digit universal analog input indicator - totalizer and analog output	11 digit universal analog input indicator - totalizer and analog output

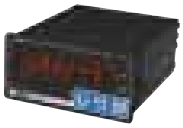
TECHNICAL SPECIFICATIONS

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

S311A is an universal display with analog input (mA, V, PT100, TCs, Ohm) that allows to view the istantaneous value (engineering units), retransmit it through an isolated analog output and, by the optional board, have N.2 relay alarms and Modbus interface. Furthermore the unit allows to integrate the input and totalize it into the internal memory. It is available with 4,6 or 8 digits and an 7+4 digits (double line).

ORDER CODES

Code		Description
Model	S331A	Universal analog input indicator - totalizer and analog output
Display	-4 / -6 / -8 / -11	4 / 6 / 8 / 4+7 digit
Power Supply	-H / -L	80-265 Vac / 10-40 Vdc; 19-28 Vac
Options	-O	Optional board: nr 2 SPDT relay alarms, ModBUS RTU interface, reset input
	/T	Calibration service
Software		EASYS311A Plug&play software configurator via serial converter to RS485 (i.e. S107USB)

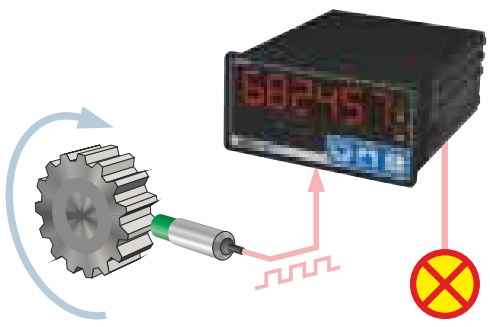
	S311D-4	S311D-6	S311D-8	S311D-11
				
	4 digit frequency / digital input indicator - totalizer and analog output	6 digit frequency / digital input indicator - totalizer and analog output	8 digit frequency / digital input indicator - totalizer and analog output	11 digit frequency / digital input indicator - totalizer and analog output

TECHNICAL SPECIFICATIONS

General Data				
Power supply	80-265 Vac (H version) 10-40 Vdc / 19-28 Vac (L version)	80-265 Vac (H version) 10-40 Vdc / 19-28 Vac (L version)	80-265 Vac (H version) 10-40 Vdc / 19-28 Vac (L version)	80-265 Vac (H version) 10-40 Vdc / 19-28 Vac (L version)
Power transducers	Max 18 V, 25 mA	Max 18 V, 25 mA	Max 18 V, 25 mA	Max 18 V, 25 mA
Power consumption	Max 3 W	3 W	3 W	3 W
Isolation	1.500 Vac	1.500 Vac	1.500 Vac	1.500 Vac
Communication interface	ModBUS RTU slave (optional board)	ModBUS RTU slave (optional board))	ModBUS RTU slave (optional board)	ModBUS RTU slave (optional board)
Memory	EEPROM 10 years storage memory	EEPROM 10 years storage memory	EEPROM 10 years storage memory	EEPROM 10 years storage memory
Visualization And Measure				
Display	LED, 4 digit	LED, 6 digit	LED, 8 digit	LED, 11 (4+7) digit
Status indicators	2 alarm leds (enabled threshold trips)	2 alarm leds (enabled threshold trips)	2 alarm leds (enabled threshold trips)	2 alarm leds (enabled threshold trips)
Front Buttons	3 navigation keys	3 navigation keys	3 navigation keys	3 navigation keys
Display errors	Over range, fault sensor	Over range, fault sensor	Over range, fault sensor	Over range, fault sensor
Input Data				
Nr	1	1	1	1
Type	0-10 V (min 1K) 0-20 / 4-20 mA (max 500 ohm)	0-10 V (min 1K) 0-20 / 4-20 mA (max 500 ohm)	0-10 V (min 1K) 0-20 / 4-20 mA (max 500 ohm)	0-10 V (min 1K) 0-20 / 4-20 mA (max 500 ohm)
Frequency	0.001 – 9.9999 Hz	0.001 – 9.9999 Hz	0.001 – 9.9999 Hz	0.001 – 9.9999 Hz
Reset (totalizer)	Yes: by digital input and front keys	Yes: by digital input and front keys	Yes: by digital input and front keys	Yes: by digital input and front keys
Output Data				
Nr	1	1	1	1
Type	0-10 V (min 1K) 0-20 / 4-20 mA (max 500 ohm)	0-10 V (min 1K) 0-20 / 4-20 mA (max 500 ohm)	0-10 V (min 1K) 0-20 / 4-20 mA (max 500 ohm)	0-10 V (min 1K) 0-20 / 4-20 mA (max 500 ohm)
Resolution	10.000 points	10.000 points	10.000 points	10.000 points
Optional board	Nr 2 SPDT 220 Vac (5A resistive, 2 A inductive) relay alarms Nr 1 RS485 ModBUS RTU slave port Nr 1 reset digital input	r 2 SPDT 220 Vac (5A resistive, 2 A inductive) relay alarms Nr 1 RS485 ModBUS RTU slave port Nr 1 reset digital input	Nr 2 SPDT 220 Vac (5A resistive, 2 A inductive) relay alarms Nr 1 RS485 ModBUS RTU slave port Nr 1 reset digital input	Nr 2 SPDT 220 Vac (5A resistive, 2 A inductive) relay alarms Nr 1 RS485 ModBUS RTU slave port Nr 1 reset digital input
Themomechanics Data				
Operating temperature	-10..+60 °C	-10..+60 °C	-10..+60 °C	-10..+60 °C
Enclosure	PPO self-extinguish DIN 43700	PPO self-extinguish DIN 43700	PPO self-extinguish DIN 43700	PPO self-extinguish DIN 43700
Protection degree	IP65 (frontal)	IP65 (frontal)	IP65 (frontal)	IP65 (frontal)
Terminal blocks	Removable, step 3,5 – 5,08 mm	Removable, step 3,5 – 5,08 mm	Removable, step 3,5 – 5,08 mm	Removable, step 3,5 – 5,08 mm
Dimension (w x h x d)	96x48x98 mm	96x48x98 mm	96x48x98 mm	96x48x98 mm
Panel cut -out	91x45 mm	91x45 mm	91x45 mm	91x45 mm
Weight	200 g	200 g	200 g	200 g
Settings, Norms				
Software / settings	Display parameters, alarms, signals, timeout, reset, trips	Display parameters, alarms, signals, timeout, reset, trips	Display parameters, alarms, signals, timeout, reset, trips	Display parameters, alarms, signals, timeout, reset, trips
Calibration	Yes, factory-made	Yes, factory-made	Yes, factory-made	Yes, factory-made
Norms	EN 61000-6-4/2002, EN 61000-6-2/2005, EN 61010-1/2001	EN 61000-6-4/2002, EN 61000-6-2/2005, EN 61010-1/2001	EN 61000-6-4/2002, EN 61000-6-2/2005, EN 61010-1/2001	EN 61000-6-4/2002, EN 61000-6-2/2005, EN 61010-1/2001

S311D is an universal display with frequency input (reed, npn, pnp, NAMUR, photoelectric, Hall, 24 V input, TTL, variable reluctance.) that allows to view the istantaneous value (engineering units), retransmit it through an isolated analog output and, by the optional board, have N.2 relay alarms and Modbus interface. Furthermore the unit allows to totalize it into the internal memory. It is available with 4,6 or 8 digits and an 7+4 digits (double line).

APPLICATION NOTE



ORDER CODES

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

	S311AK	S311AK/IP66
		
	4 digit display with mA/V analog input	4 digit display with mA/V analog input, IP66 case

LED

CE

TECHNICAL SPECIFICATIONS

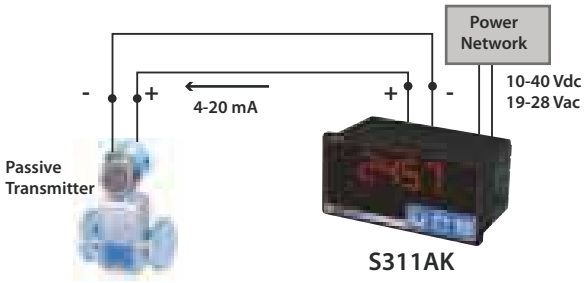
General Data		
Power supply	10-40 Vdc, 19-28 Vac	10-40 Vdc, 19-28 Vac
Power transducers	Max 16 V, 25 mA	Max 16 V, 25 mA
Power consumption	Max 0,9 W	Max 0,9 W
Isolation	1.500 Vac between measure port and power supply	1.500 Vac between measure port and power supply
Memory	EEPROM, 10 years	EEPROM, 10 years
Visualization And Measure		
Display	4 digit, red LEDs	4 digit, red LEDs
Front buttons	3 (down, up, menù)	3 (down, up, menù)
Accuracy	0,05%	0,05%
Stability	0,005%/°K	0,005%/°K
Linearity error	0,05% (0-10 V, 0-20 mA)	0,05% (0-10 V, 0-20 mA)
A/D resolution	16 bit	16 bit
Input Data		
Nr	1	1
Type	Voltage: 0-10 V (protection ±30 Vdc), impedance ~25 IΩ , ADC 16 bit, settable scales: 0-10, 1-5 V ecc. Current: 0-20 / 4-20 mA (protection ±25 mA), impedance ~20 Ω, ADC 16 bit, settable scales 0-20.	Voltage : 0-10 V (protection ±30 Vdc), impedance ~25 IΩ , ADC 16 bit, settable scales: 0-10, 1-5 V ecc. Current: 0-20 / 4-20 mA (protection ±25 mA), impedance ~20 Ω, ADC 16 bit, settable scales 0-20
Themomechanics Data		
Operating temperature	-10..+65°C	-10..+65°C
Enclosure	PPO self-extinguish, DIN 43700	ABS RAL 7035
Protection degree	IP65 (frontal)	IP66
Terminal block	Removable 2-way screw terminals, 5,08mm pitch, 3 way screw terminals, 5,08 mm pitch	
Dimension (w x h x d	96 x 48 x 40 mm	130x89x60 mm
Panel cut-out	91x45 mm	
Weight	200 g	280 g
Settings, Norms		
Programming	Front keys (enabling password, input type, electric start / full scale, display start / full scale, decimal point, filter)	Front keys (enabling password, input type, electric start / full scale, display start / full scale, decimal point, filter)
Access protection	By password	By password
Approvals	EN	CE, UL, NEMA
Norms	61000-6-4, EN 64000-6, EN 61010-1, EN 60742	EN 61000-6-4, EN 64000-6, EN 61010-1, EN 60742, EN 50298, En 60259, EN 62262, UL 94 HB, NEMA 1, 4, 4X, 6

S311AK allows to display a voltage (0-10 V) or current (0/4-20 mA) signals also in engineering units (configuration through front keys buttons). It supports also power for 2-wire sensors.The compact dimensions (deep only 40mm) help to improve the assembly in electrical switchboard.

ORDER CODES

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

APPLICATION NOTE



	S315	S315/IP66
		
	4 digit loop powered display with 4-20 mA input signal	4 digit loop powered display with 4-20 mA input signal and IP66 case

LED CE

EASY PC

TECHNICAL SPECIFICATIONS

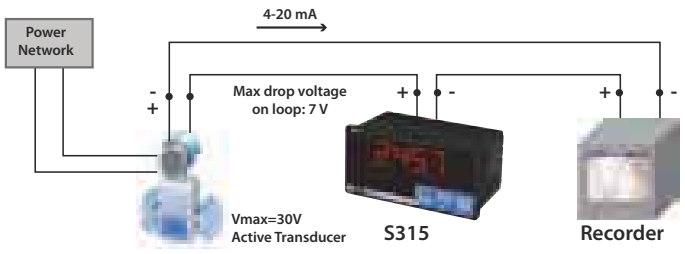
General Data		
Power supply	By loop (max 30 V)	By loop (max 30 V)
Drop voltage	Max 7 V	Max 7 V
Memory	EEPROM, 10 years	EEPROM, 10 years
Visualization And Measure		
Display	4 digit, red LEDs	4 digit, red LEDs
Front buttons	3 (down, up, menù)	3 (down, up, menù)
Accuracy	0,05%	0,05%
Stability	0,005%/°K	0,005%/°K
Linearity error	0,05%	0,05%
A/D resolution	16 bit	16 bit
EMI	< 1%	< 1%
Input Data		
Nr	1	1
Type	4-20 mA	4-20 mA
Themomechanics Data		
Operating temperature	-10..+65°C	-10..+65°C
Enclosure	PPO self-extinguish, DIN 43700	ABS RAL 7035
Protection degree	IP65 (frontal)	IP66
Terminal block	Removable 2-way screw terminals, 5,08mm pitch, 3 way screw terminals, 5,08 mm pitch	
Dimension (w x h x d	96 x 48 x 40 mm	130x89x60 mm
Panel cut-out	91x45 mm	
Weight	200 g	280 g
Settings, Norms		
Programming	Front keys (enabling password, input type, electric start / full scale, display start / full scale, decimal point, filter)	Front keys (enabling password, input type, electric start / full scale, display start / full scale, decimal point, filter)
Access protection	By password	By password
Approvals	CE	CE, UL, NEMA
Norms	EN 61000-6-4, EN 64000-6, EN 61010-1, EN 60742	EN 61000-6-4, EN 64000-6, EN 61010-1, EN 60742, EN 50298, En 60259, EN 62262, UL 94 HB, NEMA 1, 4, 4X, 6

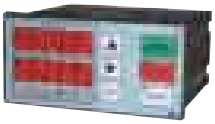
S315 allows to display a 4-20 mA current signals. It does not need a power supply because it gets the power from the current loop. It displays the value in engineering units (configuration through front keys buttons). The compact dimensions (deep only 40mm) help to improve the assembly in electrical switchboard.

ORDER CODES

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

APPLICATION NOTE



	S20N	S21	S30	S6000
LED CE LCD Ex	 Batch controller	 Batch controller with clock	 Advanced batch controller	 Control unit pump controller

TECHNICAL SPECIFICATIONS

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

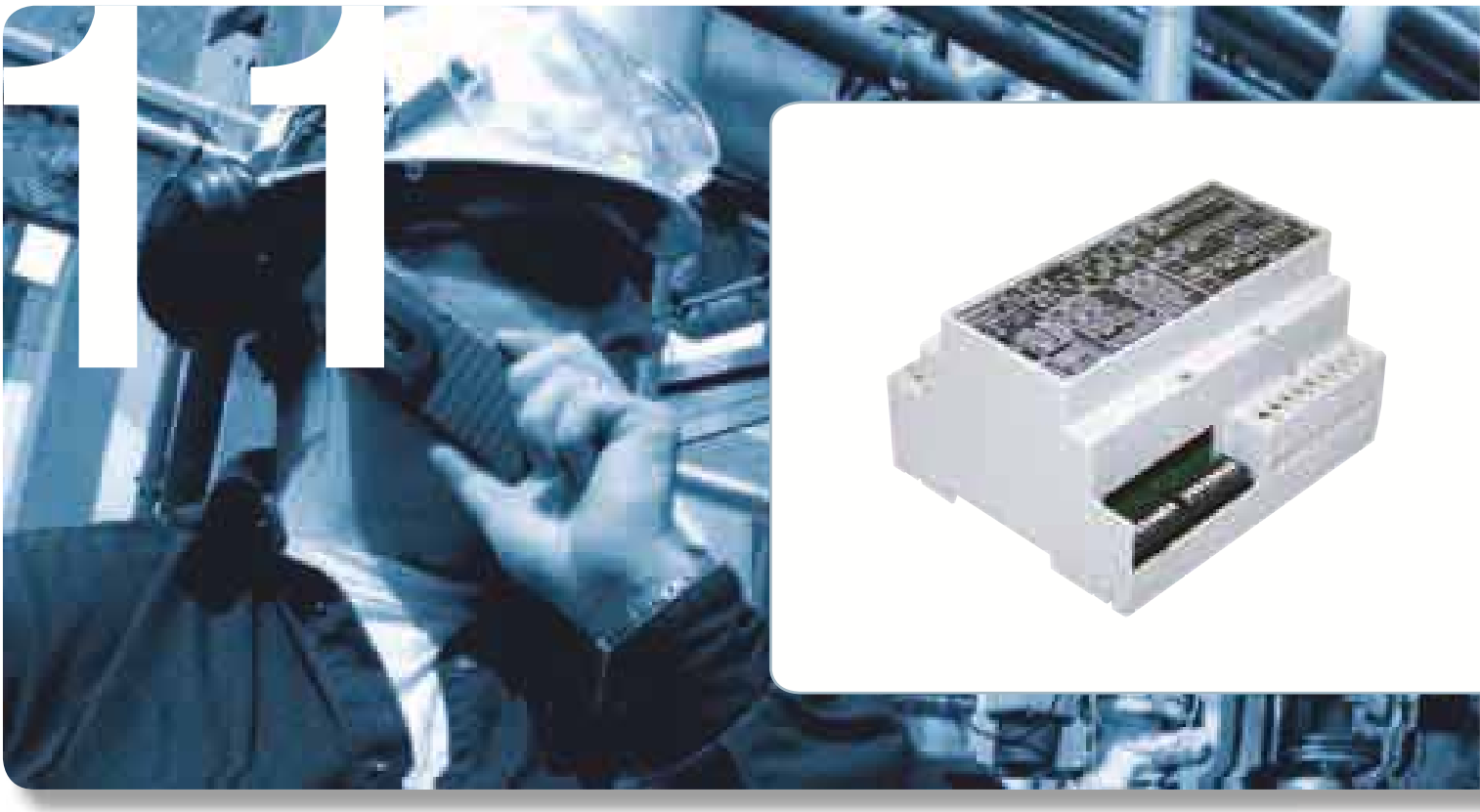
The batch controllers allow the control and display in one device. By a buttons interface will be possible to set a batch, make a totalizing of the flow and manage the relay outputs in order to realize a precise filling of tanks. Those units are available in IP65 or EExd (explosion proof) protected cases.

ORDER CODES

Code		Description
Model	S20N	Batch controller
	S20NIP65	Batch controller in IP65 protected case
	S20NEX	Batch controller in EExd flame retardant case
Accessories	S20NKIT	External kit
	S20ADP	Input adapter board (hall effect / photoelectric sensor)
	S20ADP-CM	IP20 DIN rail input adapter board (hall effect / photoelectric sensor)
	S20ADP-IP65	IP65 Input adapter board (hall effect / photoelectric sensor)
Model	S6000	Control unit, pump controller
Power supply	-1-ST / -23-ST	115 / 230 Vac / 24 Vac/dc

Code		Description
Model	S21	Batch controller with clock
	S21IP65	Batch controller with clock in IP65 protected case
	S21EX	Batch controller with clock in EExd flame retardant case
Accessories	S20ADP	Input adapter board (hall effect / photoelectric sensor)
	S20ADP-CM	IP20 DIN rail input adapter board (hall effect / photoelectric sensor)
	S20ADP-IP65	IP65 Input adapter board (hall effect / photoelectric sensor)
Model	S30	Advanced batch controller
	S30IP65	Advanced batch controller in IP65 protected case
Accessories	S30-STAMP	Printer interface
	S20ADP	Input adapter board (hall effect / photoelectric sensor)
	S20ADP-CM	IP20 DIN rail input adapter board (hall effect / photoelectric sensor)
	S20ADP-IP65	IP65 Input adapter board (hall effect / photoelectric sensor)

Power Devices



Power Devices




- NETWORK ANALYZERS
- HANDHELD METER CALIBRATOR
- AC SIGNAL CONVERTERS
- OVERVOLTAGE PROTECTIONS

ISOLATION TEST / FAULT DETECTION

POWER CONSUMPTION MONITORING

MACHINE SAFETY

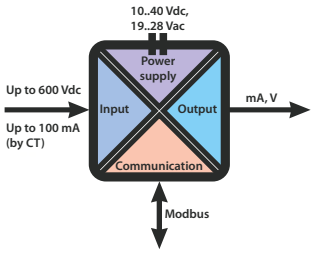
TEST BENCH

POWER QUALITY

CALIBRATION & DIAGNOSTIC

S203T

AC TRIPLE PHASE NETWORK ANALYZER, 100 MA INPUT

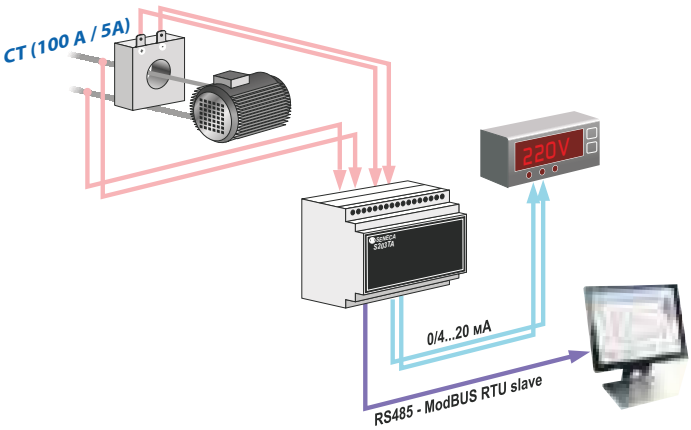


S203T is a complete three-phase network analyser suited for use with up to 600 Vac voltage range and up to 100mA current range (specific CTs must be used). The instrument provides all the following electrical measurable variable: Vrms, Irms, Watt, Var, Va, Frequency, Cosϕ. Measurements are availables through Modbus serial communication or through analogue retransmission (ma or V). A 3-way galvanic isolation among Power supply // input // RS485 circuits assures the integrity of your datas.

TECHNICAL SPECIFICATIONS

General Data	
Power supply	10..40 Vdc; 19..28 Vac (50-60 Hz)
Power Consumption	2,5 W
Isolation	3.750 Vac (from/to power) 1500 Vac (other circuits)
Status Indicator	Power supply, error, RS485 communication
Accuracy class	0,2%
Protection Degree	IP20
Operating Temperature	-10..+65 °C
Dimension (W x H x D)	105 x 89 x 60 mm
Weight	About 160 g
Enclosure	Plastic Material UL V0
Mounting	35 mm DIN rail guide
Communication	
Interface	2 wire RS485 RS232, front jack, speed 2400 Baud, data bits 8, Parity: NO, Stop bits:1
Speed	Reading every 25 ms
Protocol	ModBUS RTU slave
Distance	Up to 1.200 m
Connectivity	Max 32 nodes
Data Memory	EEPROM configuration parameters, retention time 10 years
I/O	
Channel Numbers	1 input, 1 output
Input Type	Voltage: max 600 Vac, 50-60 Hz Current: 100mA from CT (S203T) -Single phase -Aron (three phase with N.2 CT) -Four wires (three-phase with N.3 CT)/ current)
Output Type	Rs485 Modbus RTU slave: 1200…115200 baud rate Analogue output: corresponding at Vrms, Irms, Watt, cosϕ
Programming	
DIP switches	Address setting Baud rate setting - Selection of inserction type - Selection of 3 phase o 1 phase - Output
Software	All parameters
Standard	
Approval	CE
Norms	EN 61000-6-4/2002, EN 61000-6-2/2002, EN 61010, EN 60742

APPLICATION NOTE



ORDER CODES

Code	Description
S203T	AC triple phase network analyzer, 100 mA input

ACCESSORIES & SOFTWARE

TA15
Current transformer (CT) – 15 A / 100 mA
-

TA25
Current transformer (CT) – 25 A / 100 mA
-

TA100
Current transformer (CT) – 100 A / 100 mA
-

EASY SETUP
Plug&Play configuration software
pg. 98

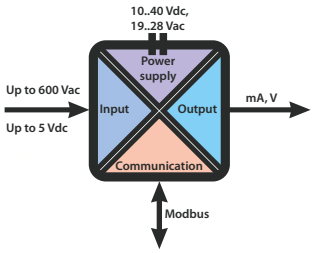
SIMILAR PRODUCTS

S203TA
AC triple-phase network analyzer, 5 Arms input
pg. 132

Z203
Single phase network analyzer
pg. 89

S203TA

AC TRIPLE-PHASE NETWORK ANALYZER, 5 ARMS INPUT

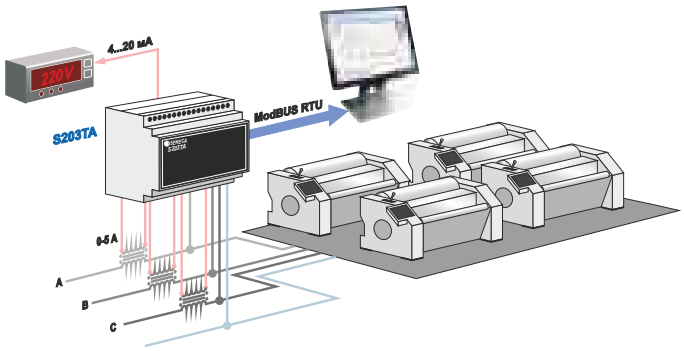


S203TA is a complete three-phase network analyser suited for use with up to 600 Vac voltage range and up to 5A current range. The instrument provides all the following electrical measurable variable: Vrms, Irms, Watt, Var, Va, Frequency, Cosϕ. Measurements are availables through Modbus serial communication or through analogue retransmission (ma or V). A 3-way galvanic isolation among Power supply // input // RS485 circuits assures the integrity of your datas.

TECHNICAL SPECIFICATIONS

General Data	
Power supply	10..40 Vdc; 19..28 Vac (50-60 Hz)
Power Consumption	2,5 W
Isolation	3.750 Vac (from/to power) 1500 Vac (other circuits)
Status Indicator	Power supply, error, RS485 communication
Accuracy class	0,2%
Protection Degree	IP20
Operating Temperature	-10..+65 °C
Dimension (W x H x D)	105 x 89 x 60 mm
Weight	About 160 g
Enclosure	Plastic Material UL V0
Mounting	35 mm DIN rail guide
Communication	
Interface	2 wire RS485 RS232, front jack, speed 2400 Baud, data bits 8, Parity: NO, Stop bits:1
Speed	Reading every 25 ms
Protocol	ModBUS RTU slave
Distance	Up to 1.200 m
Connectivity	Max 32 nodes
Data Memory	EEPROM configuration parameters, retention time 10 years
I/O	
Channel Numbers	1 input, 1 output
Input Type	Address setting Baud rate setting - Selection of inserction type - Selection of 3 phase o 1 phase - Output
Output Type	Rs485 Modbus RTU slave: 1200…115200 baud rate Analogue output: corresponding at Vrms, Irms, Watt, cosϕ
Programming	
DIP switches	Address setting Baud rate setting - Selection of inserction type - Selection of 3 phase o 1 phase - Output
Software	All parameters
Standard	
Approval	CE
Norms	EN 61000-6-4/2002, EN 61000-6-2/2002, EN 61010, EN 60742

APPLICATION NOTE



ORDER CODES

Code	Description
S203TA	AC triple-phase network analyzer, 5 Arms input

EASY SETUP
Plug&Play configuration software
pg. 39

SIMILAR PRODUCTS

S203T
AC triple phase network analyzer, 100 mA input
pg. 131

Z203
Single phase network analyzer
pg. 89

TEST-3

VOLTAGE / CURRENT SIMULATOR METER (HANDHELD)

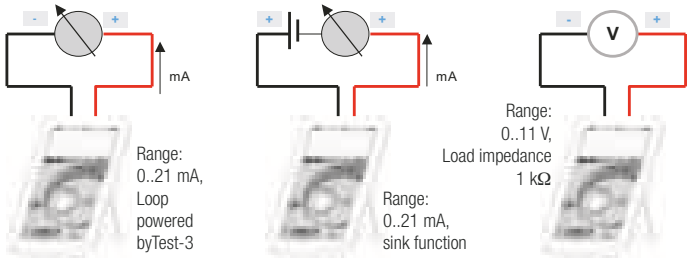
Test-3 is a process calibrator able to generate or measure process signals: voltage values from 0 to 11 V and current values from 0 to 21 mA. Both in generation or measuring function it's able to power the 2-wire sensors (i.e. pressure sensor, level sensor etc.). Furthermore, it enables complete programming of the Seneca Z109REG2 module.You can also select the language (Italian, English, French, German or Spanish) as well as other parameters such as the automatic switch-off option.

TECHNICAL SPECIFICATIONS

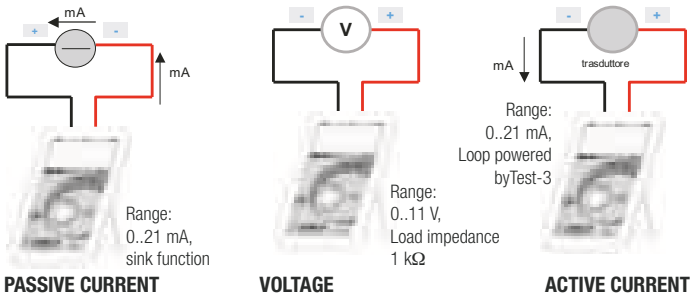
General Data	
Power supply	2 NiMh batteries AA type, 2.650 mAh Lifetime: 8 hours (min, max load), 20 hours (typical) 220 Vac with battery charger
Power Consumption	Min 50 mA, max 300 mA - 6 V, 300 mA stabilized
Protection degree	IP 20
Operating temp.	0..50°C
Humidity	30..90 % non condensing
Dimensions	140 x 75 x 33 mm
Weight	250 g
Isolation	Intrinsically safe
Rejection	50-60 Hz
Frequency	10 Hz
I/O signals	Voltage measurement / generation: 0-11 V Current measurement / generation: 0-21 mA Protection: ± 30 V
Accuracy	0.1%
Resolution	0.002 mA - 0.001 V
Norms	EN61000-6-4/2002; EN61000-6-2/2005; EN61010-1/2001; EN60742
Interfaces	
Input / Output	2 mm diameter probes
Power supply	Battery charge connector, battery on the back side
Serial	Stereo jack connector 3,5 mm, RS232 (COM), 9.600 bps, ModBUS RTU
Controls	
Buttons	ESC / ON/OFF – general navigator SELECT (rotation) – current / voltage variation SELECT (pressure) – coefficient variation (value*10N, N=0,1,2,3)
Language	Italian, english, french, german, spanish
Contrast	15 levels
Screensaver	Display vertical scroll after 7 minutes inactivity Restart pressing ESC / ON / OFF button
Functions menu	General setup (function mode selection, signal type, language, contrast, display, encoder sensitivity Signal generator (voltage / current / passive current selection) Measure (voltage / current) Z109REG2 programming
Errors display	Over voltage (V > 11 V) Under voltage (V < -0,2 V) Over current (> 21 mA) Under current (< -0,1 mA) Blinking value (signal generation fault)

APPLICATION NOTE

SIGNAL GENERATION



SIGNAL MEASUREMENT



CONFIGURATION

Z109REG2 PROGRAMMING

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

ORDER CODES

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

Z-LINE AC POWER CONVERTERS

This family product allows the conversion of all AC electric parameters such as current, voltage, active power, reactive power, Cosϕ, frequency into mA/V signals. The high level of isolation (3,75 KV) assure a reliable conversion of those parameter for plc acquisition. A product as Z202-LP is able to convert both AC and DC voltage.

Z201

AC current to DC isolator / converter 19..40 Vdc, 19..28 Vac

Input: Current (0..5, 0..10 A)
Output: Current (0..20, 4..20 mA), voltage (0..5, 0..10, 1..5, 2..10 V)
Accuracy Class: 0,3%
Power supply: 19..40 Vdc, 19..28 Vac
Max isolation: 3.750 Vac

Z201-H

AC current to DC isolator / converter, 85..265 Vac/dc

Power supply: 85..265 Vac/dc
Input: Current (0..5, 0..10 A)
Output: Current (0..20, 4..20 mA), voltage (0..5, 0..10, 1..5, 2..10 V)
Accuracy Class: 0,3%
Max isolation: 3.750 Vac

Z202

AC voltage to DC isolator converter 19..40 Vdc / 19..28 Vac

Power supply: 9..40 Vdc / 19..28 Vac (50-400 Hz
Input: Tensione, 41 scale pretarate, 0..50 V
Output: Corrente (0..20, 4..20 mA), tensione (0..5, 0..10, 1..5, 2..10 V)
Accuracy Class: 0,25%
isolation: 3.750 Vac (output/power supply), 1.500 Vac (other cicuits)

Z202-H

AC voltage to DC isolator / converter, 85-265 Vac/dc

Power supply: 85..265 Vac/dc
Input: Voltage, 41 pre-setted scales 0..500 V
Output: Current 0..20, 4..20 mA, voltage 0..5, 0..10, 1..5, 2..10 V
Accuracy: 0,25%
Max isolation: 4.000 Vac

Z202-LP

AC/DC voltage to DC isolator / converter, loop powered

Power supply: 5..28 Vdc (by loop)
Input: Alternate voltage 0..500 Vac, direct voltage 0..540 Vdc (settable range by DIP-switch)
Input frequency: 20..400 Hz (alternate voltage)
Output: Passive current 4..20 mA
Accuracy: 0,3% (full scale)
Response time: < 100 ms
Max isolation: 4.000 Vac

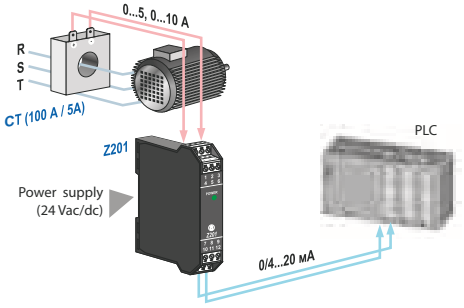
Z203

Single phase network analyzer

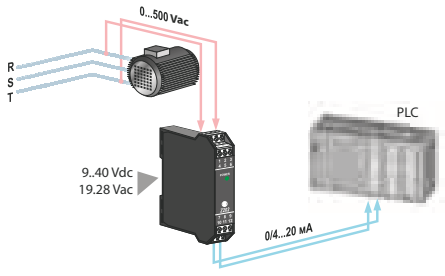
Input: Voltage 0..500 V, current 0..5 A
Output: Current 0..20, 4..20 mA; voltage 0..5, 0..10, 1..5, 2..10 V
Accuracy: 0,5%
Re-transmitted variables: Vrms, Irms, active power, re-active power, cosfi
RS232 interface: Front jack, ModBUS RTU slave half duplex, 2.400 bps
RS485 interface: DIN rail IDC10 bus, ModBUS RTU slave half duplex, 2.400..115.200 bps

APPLICATION NOTE

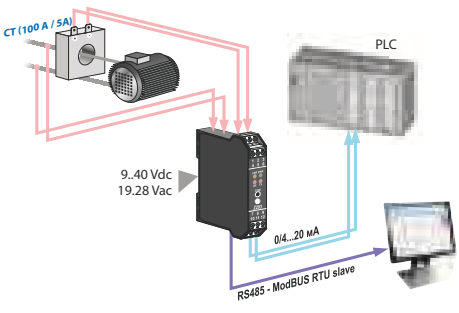
Z201



Z202



Z203



ORDER CODES

Codes		Description
Model	Z201	AC current to DC isolator / converter 19..40 Vdc, 19..28 Vac
	Z201-H	AC current to DC isolator / converter, 85..265 Vac/dc
	Z202	AC voltage to DC isolator converter 19..40 Vdc / 19..28 Vac
	Z202-H	AC voltage to DC isolator / converter, 85-265 Vac/dc
	Z202-LP	AC voltage to DC isolator / converter, loop powered
	Z203	Single phase network analyzer
Accessories	PM001601	Programmable serial cable
Software	EASY Z203	Z203 sofware configurator

T201 SERIES – LOOP POWERED CURRENT TRANSFORMERS

This family product allows the conversion of AC or DC currents (up to 40 A) into a 4..20mA signal (loop powered). Those CTs are passing cable transformer with integrated electronic able to convert the AC or DC current into 4..20mA signal.

T201

AC Current Transformer to 4..20mA converter (loop powered)

Input: 8 selectable scales via DIP-SWITCH from ± 5 A to 40 A (AC)
Dimension: 38 x 40 x 20 mm (Ø 12,5 mm)
Power supply: on the output loop 4..20 mA
Accuracy: better than 0,2%
Self-consumption: < 50 mW
Answer Speed: checked by auxiliary filter

T201DC

DC Current Transducer to 4..20mA converter (loop powered)

Patented Technology

Input: 8 selectable scales mono/bi-polars via DIP-switch from ±5 A to 40 A (continuous)
Accuracy: Better than 0,2%
Extended loop voltage: 6..100 V
Compact size: 38 x 40 x 20 mm (Ø 12,5 mm)
Connection: Direct without external shunt (also for pulsed currents)
Note: Patent pending product (new inductive measurement technology)

T201DC-100

DC Current Transducer to 4..20mA converter (loop powered) (100 A)

Patented Technology

Input scales: Monopolar 0..10 A, 0..25 A, 0..50 A, 0..100 A; bipolar -10..0..+10 A, -25..0..+25 A, -10..0..+50 A, -25..0..+100 A
Isolation: 1,5 kVdc on raw conductor
Output/Power Suplply: 4 ..20 mA passive current loop
Accuracy Class: 0,2
Connectos: Faston 6,3 x 0,8 mm for loop 4..20 mA; 17.80 mm hole for current cable
Dimension: 50 x 52 x 29.8 mm except from Faston connectors

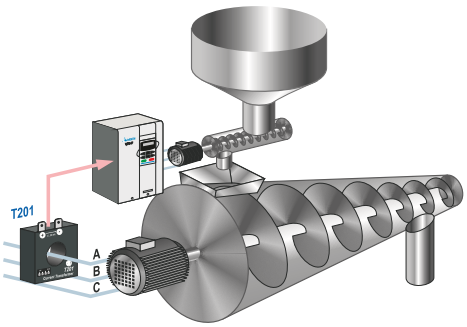
T201DC-H

AC/DC Current Transducer to 0..10 V converter (Hall effect)

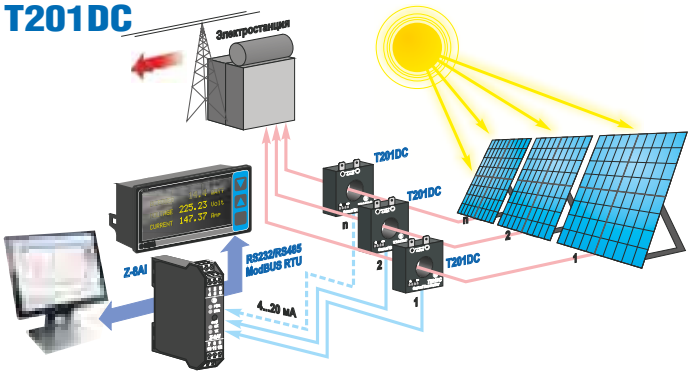
Input: ±50 A AC/DC
Meaure type: TRMS
Peak factor (Ipk/Irms): 2
Output: 0-10 Vdc
Power supply range: 11-28 Vdc
Accuracy class: 1%
Resolution: 12 bit
Overload: 2.000 A pulse
Compact size: 38 x 40 x 20 mm (Ø 12,5 mm)

APPLICATION NOTE

T201



T201DC



ORDER CODES

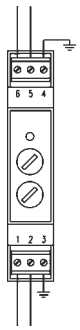
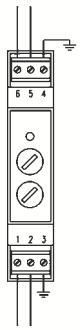
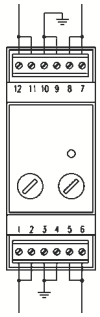
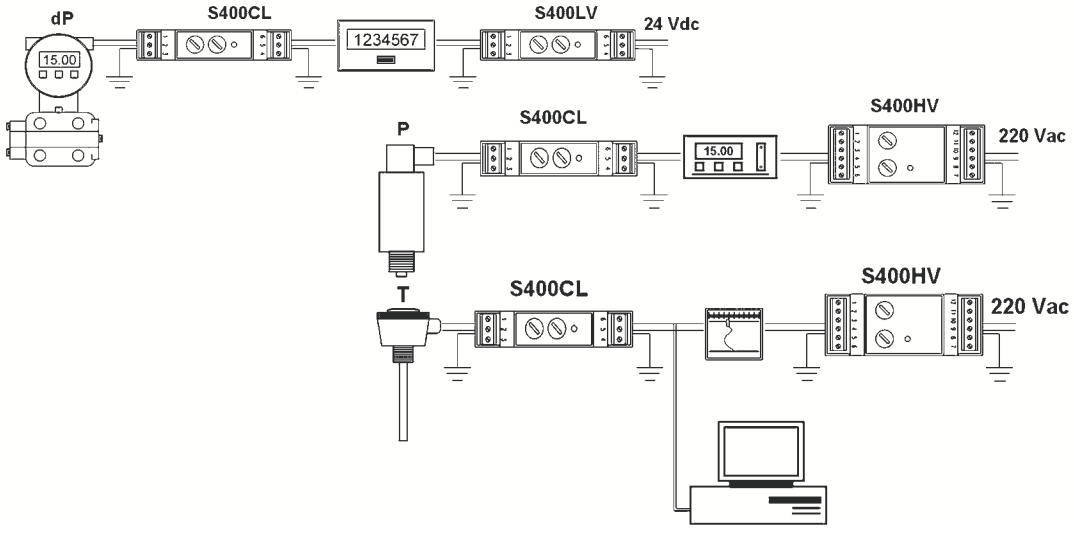
Codes		Description
Model	T201	DC Current Transducer to 4..20mA converter (loop powered)
	T201DC	DC Current Transducer to 4..20mA converter (loop powered) (Hall effect)
	T201DC-100	DC Current Transducer to 4..20mA converter (loop powered) (100 A)
	T201DC-H	AC/DC Current Transducer to 0..10 V converter (Hall effect)
	BC-CT	DIN rail fastening base

S400 - OVERVOLTAGE PROTECTIONS

S400 is a family of electronic static protections design to protect the 24 Vac/dc power supply lines, 230Vac power supply lines and 4 - 20 mA current loops. They are widely used to protect against overvoltage or power surges either signal acquisition instrumentation or field transducers.

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

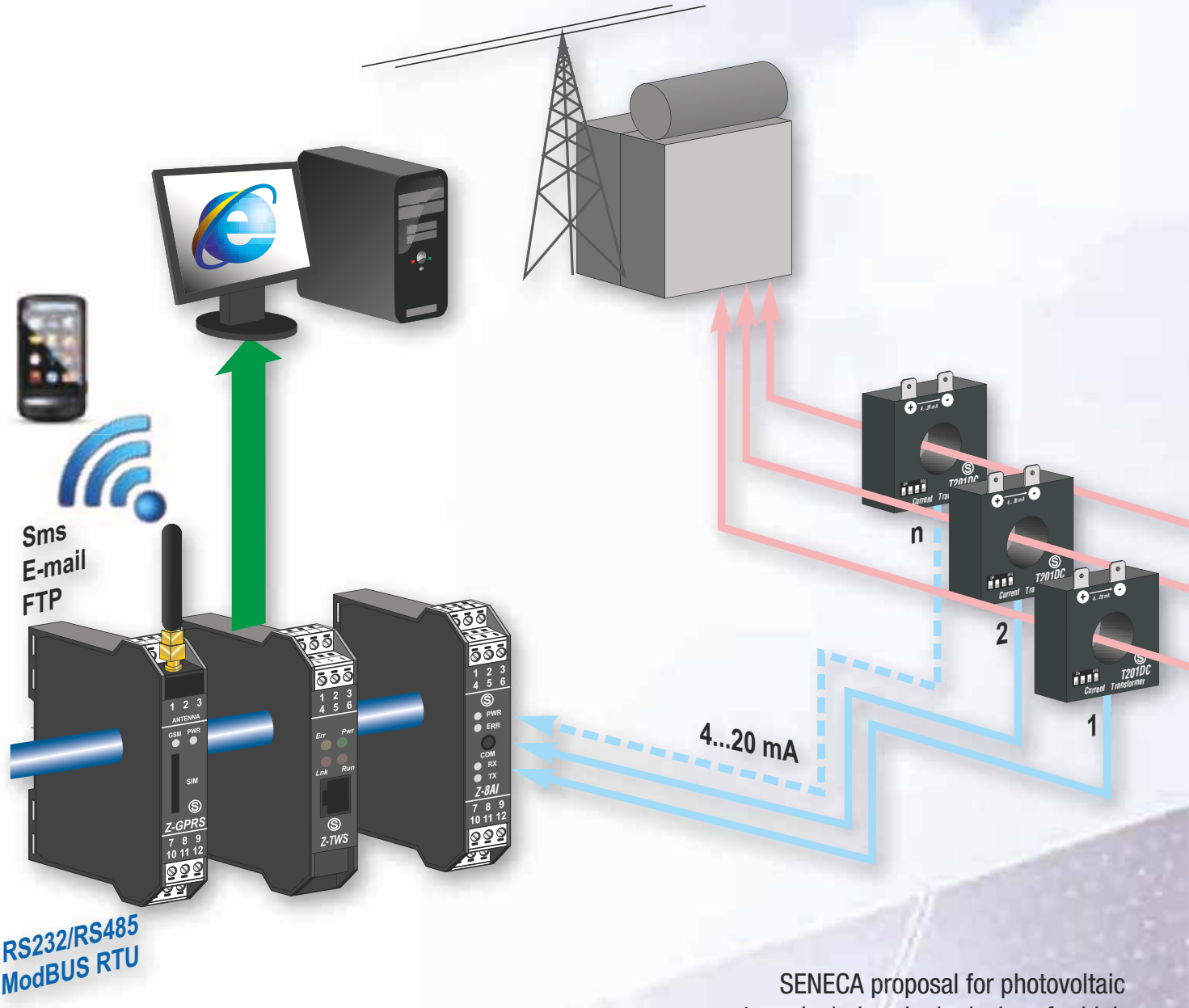
TECHNICAL SPECIFICATIONS

ORDER CODES			
Models	S400CL	S400HV	S400LV
Visualization And Measure			
Enclosure	1-module size box to be mounted into to 35mm bar, DIN 46277, in UL94 V0 plastic material, with transparent protection that can be plumbed.	1-module size box to be mounted into to 35mm bar, DIN 46277, in UL94 V0 plastic material, with transparent protection that can be plumbed.	2-module size box to be mounted into to 35mm bar, DIN 46277, in UL94 V0 plastic material, with transparent protection that can be plumbed.
Rated Voltage	< 35Vcc supply for 4-20mA current loop	low voltage lines up to 35Vdc or ac (+/-15%)	220Vac lines (+/-15%)
Operating voltage	47 V (rms) (wire to wire)	47 V (rms) (wire to wire)	275 V (rms) (wire to wire)
Discharge voltage	90 V (wire to wire and wire to ground)	90 V (wire to wire and wire to ground)	470 V (wire to wire and wire to ground)
Discharge current	> 5000 A	> 5000 A	> 5000 A
Breaking capability	1500 A	1500 A	1500 A
Max load		1 A	6,3 A
Loop voltage drop	approx. 2.2 Vdc		
Dimension (w x h x d)	90 x 18.5 x 73 mm	90 x 18.5 x 73 mm	90 x 36 x 73 mm
Weight	150 g	150 g	200 g
Electrical Connections / front view	Output Current Loop 	Output 24 Vdc (max 800 mA) 	Output 230 Vac (max 5 A) 
Application schemes			

Photovoltaic Components

12

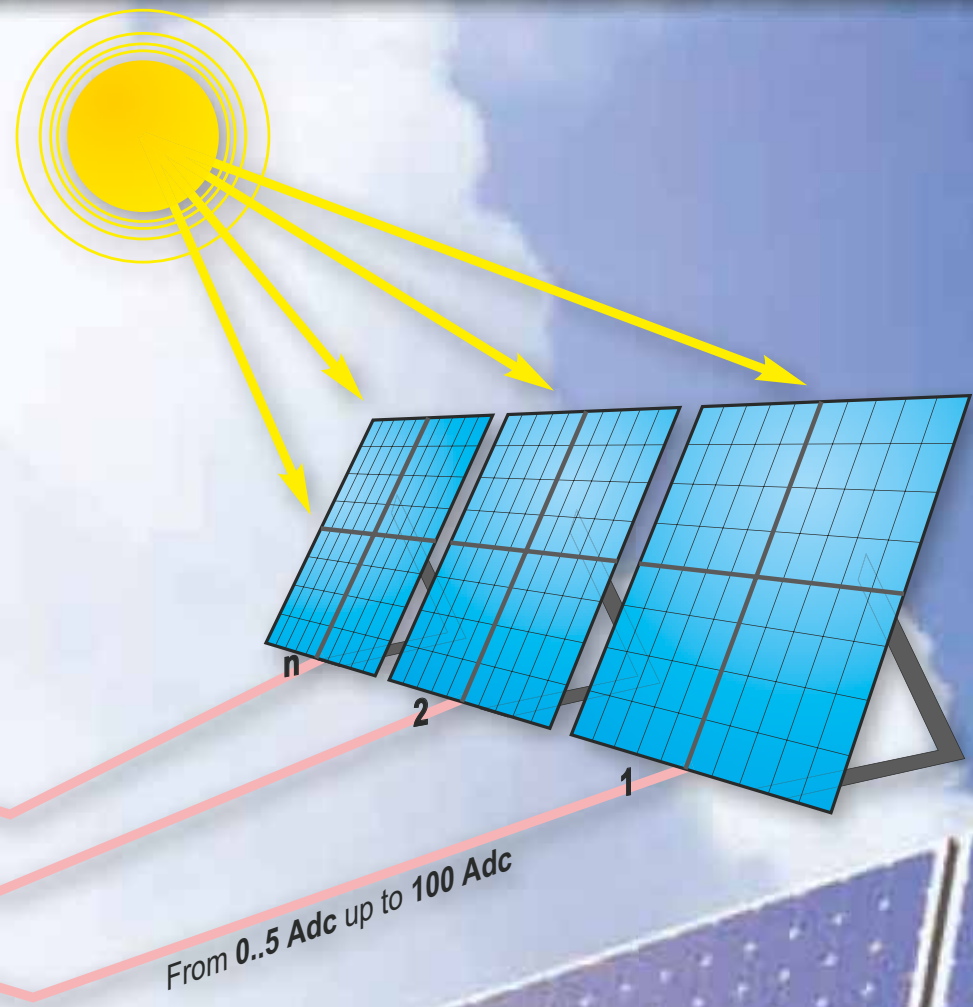
SENECA MODULAR SOLUTION



SENECA proposal for photovoltaic systems includes single devices for high accuracy data acquisition and parameters remote control.

The modularity and wide range of models continues to meet the actual needs, so the users can design and assemble themselves without having any constraint on the number of signals to manage.

The overall compact size allows installation even in design of existing equipment, without impacting power signals. The high degree of isolation between signals and power, makes the solution SENECA among the most reliable and immune to noise available on the market.

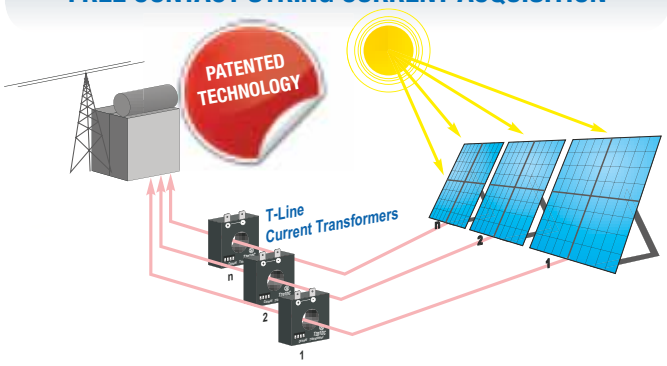


COMPONENTS

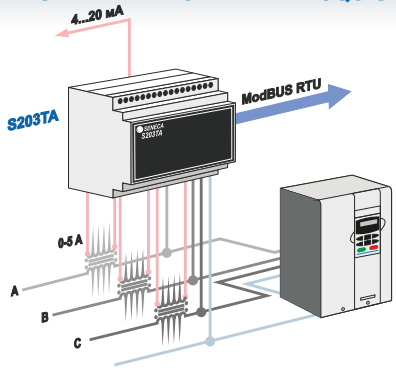
- Measurement Transducers
- I/O modules for string box
- Communication Interfaces
- HMI&Control

COMPONENTS > MEASUREMENT TRANSDUCERS

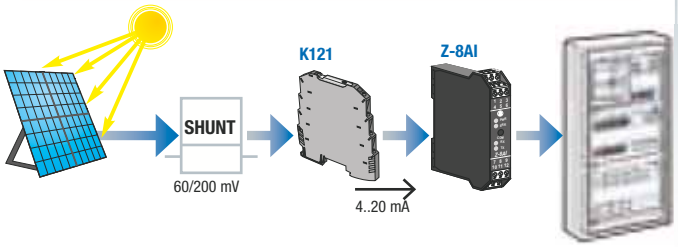
FREE CONTACT STRING CURRENT ACQUISITION



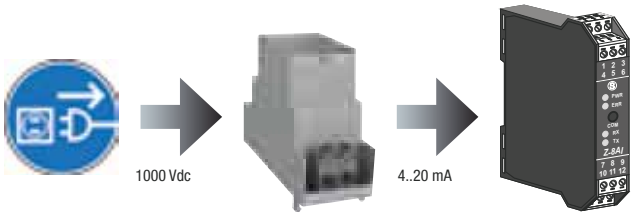
POWER NETWORK DATA ACQUISITION



STRING VOLTAGE ACQUISITION (BY SHUNT)

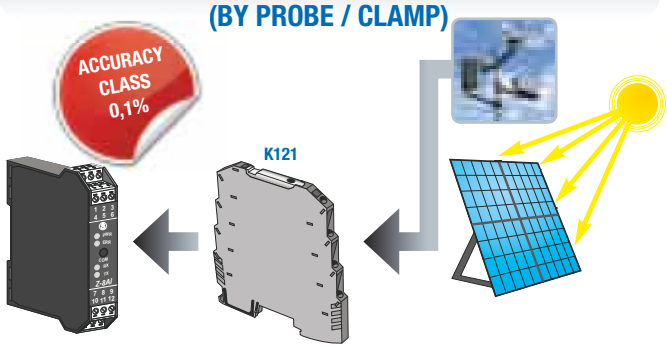


STRING VOLTAGE ACQUISITION (HIGH RATED)

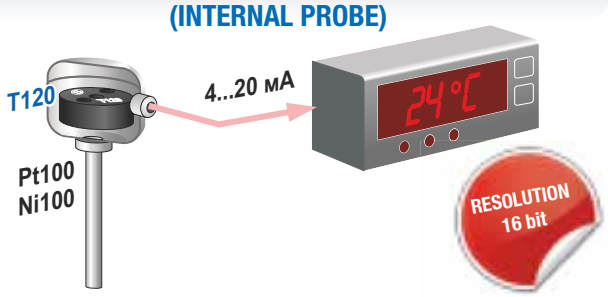


AIR / PANEL TEMPERATURE ACQUISITION

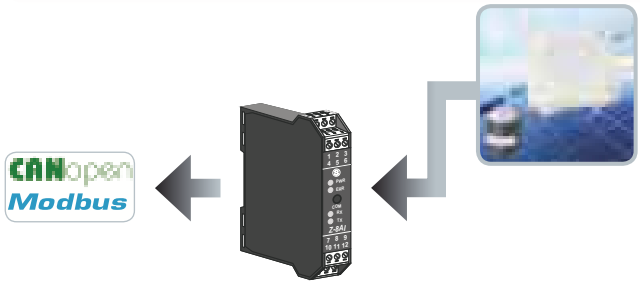
ENVIRONMENT PARAMETERS ACQUISITION (BY PROBE / CLAMP)



ENVIRONMENT PARAMETERS ACQUISITION (INTERNAL PROBE)



SOLAR RADIATION TRANSDUCING

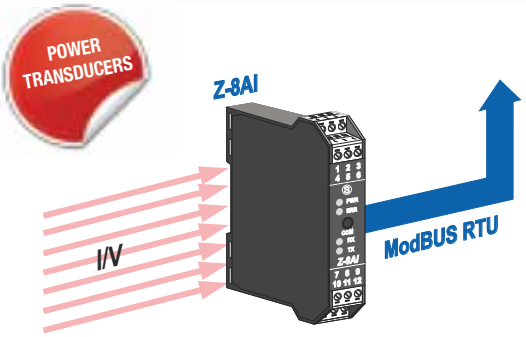


ORDER CODES

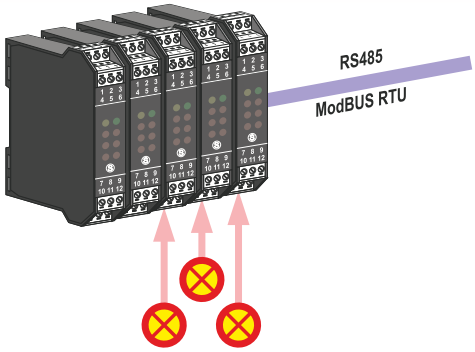
Code	Description	Code	Description
T201DC	DC Current Transformer, loop powered	BOX-1000-01/10	1000/100V Voltage divider (with protections)
T201DC100	Passive current tranducers 100 Adc for 4..20 mA current loop	K121	Universal converter suitable for parameters reading
T201DCH	AC/DC contactless TRMS direct and alternate current transformers	T121	Universal transmitter suitable for parameters reading
S203T	3-phases network analyzer, input up to 100mArms	PT100-A	Atmospher thermoprobe
S203TA	3-phases network analyzer, input up to 5Arms	PT100-A-mA	Atmospher thermoprobe with mA output
Z203	AC single phase network analyzer	PT100-SUN	Solar thermoprobe
K109LV	DC mV (shunt) to mA/V isolator converter	PT100-SUN-mA	Solar thermoprobe with mA output

COMPONENTS > IO MODULES & COMMUNICATION INTERFACES

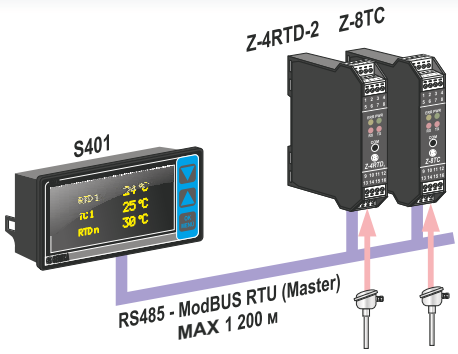
ANALOG I/O MODULES



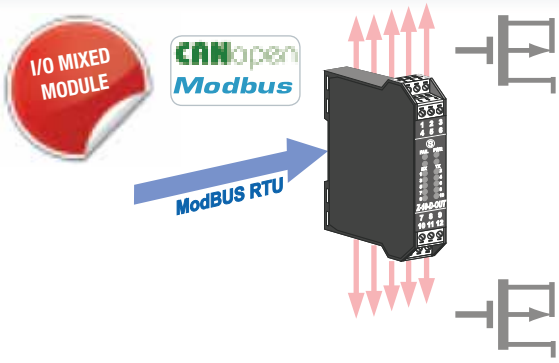
ALARM MANAGEMENT - DIGITAL I/O MODULES



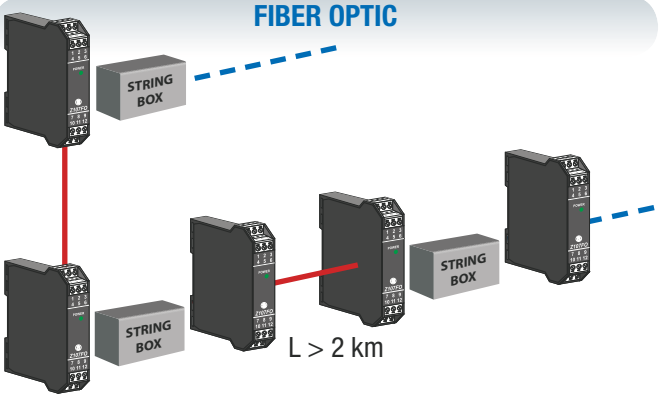
TEMPERATURE CONTROL MODULES



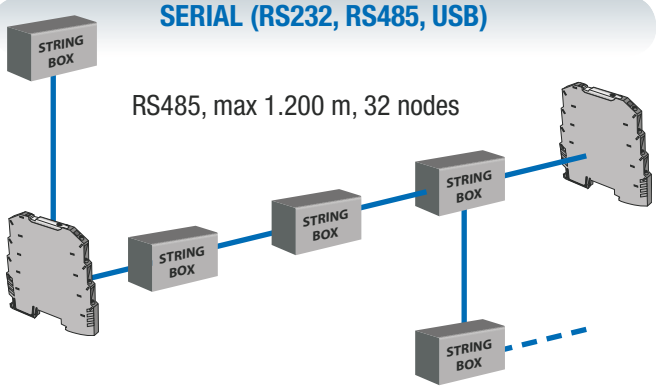
COMMAND & CONTROL MODULES



FIBER OPTIC



SERIAL (RS232, RS485, USB)

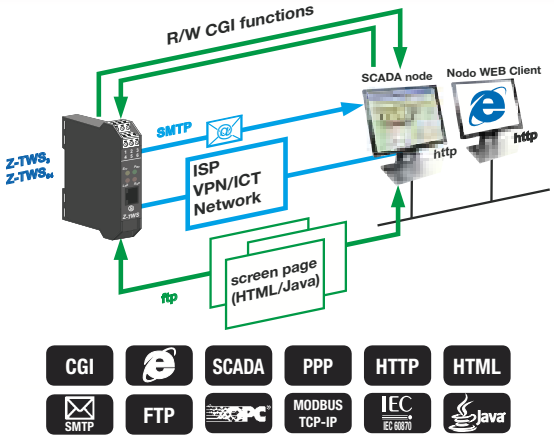


ORDER CODES

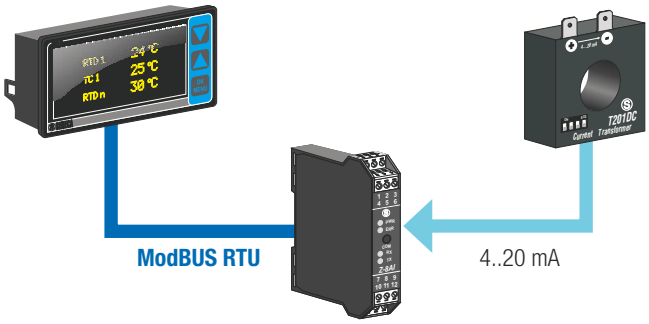
Code	Description	Code	Description
Z-DAQ-PID	I/O universal module with PID regulation	S117P-1	RS232/USB, TTL/USB, RS485/USB asynchronous serial converter
Z-4AI	4-CH analog input module / RS485	Z-BRIDGE	Modbus RTU / Modbus TCP-IP bridge
Z-8AI	8-CH analog input module / RS485	K107A	RS485/RS485 serial repeater
Z-4RTD-2	4-CH RTD input module / RS485	K107B	RS232/RS485 serial converter
ZC-4RTD	4 Ch RTD (P100, Ni100, Pt500, Pt1000) input CANopen module	K107USB	DIN rail RS485/USB aynchronous serial converter
Z-4TC	4-CH thermocouple input module / RS485	Z107FO	Fiber optic - serial (RS232/RS485) converter
Z-8TC	8-CH thermocouple input module / RS485	ZC-107FO	Fiber optic - CAN repeater converter
ZC-8TC	8 CH Thermocouple (J,K,E,N,S,R,B,T) CANopen module	Z107E	Ethernet - RS232/RS485 Adapter
Z-D-IN	5-CH Digital input module / RS485	DL169-RS232	Radio modem 169,4 MHz OEM RS232 interface
Z-10-D-IN	10-CH Digital Input module / RS485	DL169-RS485	Radio modem 169,4 MHz OEM RS485 interface
Z-D-IO	8-CH, 6 digital input - 2 digital outputs control module	S232-SL	Single loop fiber optic - Rs232 multidrop converter
ZC-24DI	24 CH digital input CANopen / ModBUS	S232-DL	Double loop fiber optic - Rs232 multidrop converter
ZC-24DO	24 CH digital output CANopen / ModBUS	S485-SL	Single loop fiber optic - Rs485 multidrop converter
ZC-16DI-8DO	16 CH digital input - 8 CH digital output CANopen / ModBUS	S485-DL	Double loop fiber optic - Rs485 multidrop converter
		Z-GW-MB	Modbus RTU Master to Modbus TCP gateway / server

COMPONENTS > HMI & CONTROL

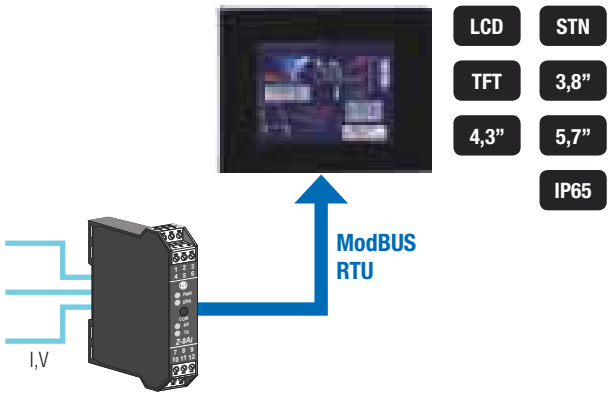
MULTI-FUNCTION CONTROL UNITS



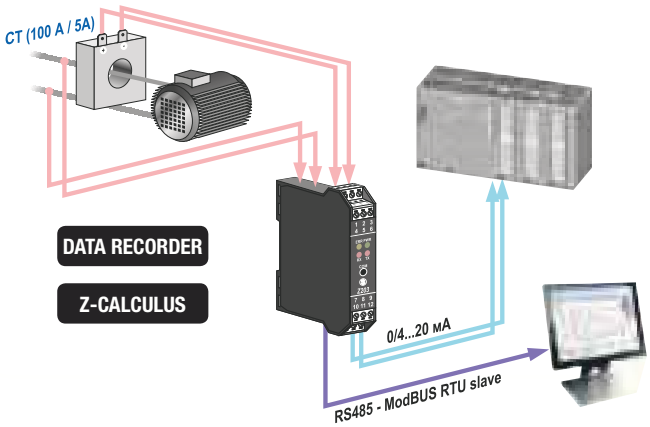
LED / OLED DISPLAYS



TOUCHSCREEN OPERATOR PANELS

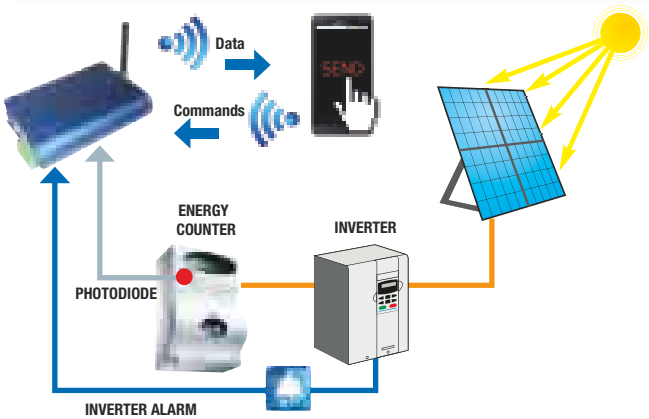


POWER CONSUMPTION MEASUREMENT SOFTWARE



PHOTOVOLTAIC INVERTER CONTROL

REMOTE POWER MONITORING



ORDER CODES

Code	Description	Code	Description
Z-LWS-C	Micro PLC – Standard CoDeSys	ZTOPKIT	Programming toolkit ZTOP series
Z-TWS-3-C	Multi-function control unit - Standard CoDeSys	S401-L	OLED display indicator with ModBUS interface
Z-TWS-64-C	Multi-function control unit @ 64 bit- Standard CoDeSys	Z-GPRS	GSM / GPRS unit with ModBUS interface
ZTOP04C	4,3" widescreen color touchscreen HMI terminal	MY ALARM GSM	Alarm management & Remote Control GSM Unit
ZTOP306	5,7" touchscreen HMI terminal		

CONVERTER SELECTOR

	CONVERSION TYPE			SIGNALS / INTERFACES		OTHER FEATURES			
PRODUCT CODE	MEASUREMENT	IN	OUT	NR INPUT	NR OUTPUT	POWER SUPPLY	MAX GALVANIC ISOLATION	CASE (DIMENSION)	ACCURACY CLASS
Z-4AI-D	A/D PLC	mA, V	Digital contact	4	3	19..40 Vdc (9..30 Vdc opt.); 19..28 Vac	1,5 kVac	Z (17.5 x 100 x 112 mm)	0.1%
Z-4TC-D	A/D PLC	TC	Digital contact	4	3	19..40 Vdc (9..30 Vdc opt.); 19..28 Vac	1,5 kVac	Z (17.5 x 100 x 112 mm)	0.1%
K109UI	Analog	mA, V	mA, V	1	1	19,2..30 Vdc	1,5 kVac	K (6,2 x 93,1 x 102,5 mm)	0.1%
K109S	Analog	mA, V	mA, V	1	1	19,2..30 Vdc	1,5 kVac	K (6,2 x 93,1 x 102,5 mm)	0.1%
K109LV	Analog	mV	mA, V	1	1	19,2..30 Vdc	1,5 kVac	K (6,2 x 93,1 x 102,5 mm)	0.1%
Z109S	Analog	mA	mA	1	1	19..40 Vdc (9..30 Vdc opt.)	1,5 kVac	Z (17.5 x 100 x 112 mm)	0.2%
Z109UI2	Analog	mA, V, mV	mA, V	1	1	10..40 Vdc; 19..28 Vac	1,5 kVac	Z (17.5 x 100 x 112 mm)	0.1%
Z110S	Analog	mA	mA	1	1	external / by loop	1,5 kVac	Z (17.5 x 100 x 112 mm)	0.1%
Z110D	Analog	mA	mA	2	2	external / by loop	1,5 kVac	Z (17.5 x 100 x 112 mm)	0.1%
Z102	Analog	Ohm	mA, V	1	1	19..40 Vdc (9..30 Vdc opt.)	1,5 kVac	Z (17.5 x 100 x 112 mm)	0.2%
Z-SG	Analog	mV, load cell	mA, V, RS485 ModBUS	1	1	10..40 Vdc; 19..28 Vac	1,5 kVac	Z (17.5 x 100 x 112 mm)	0.01%
Z170REG	Analog	mA, mV, V, Ohm, TC (J,K,R,S,T,B,E,N), Pt100, Ni100, Pt500, Pt1000, (Strobe)	mA, V, (SPST Relay)	1	2	10..40 Vdc; 19..28 Vac	1,5 kVac	Z (17.5 x 100 x 112 mm)	0.1%
Z190	Analog	mA, V	mA, V	2	1	19..40 Vdc (9..30 Vdc opt.); 19..28 Vac	1,5 kVac	Z (17.5 x 100 x 112 mm)	0.2%
Z104	Digital / Pulse	mA, V	NPN Open Collector, Reed Relè	1	1	19..40 Vdc (9..30 Vdc opt.); 19..28 Vac	1,5 kVac	Z (17.5 x 100 x 112 mm)	0.2%
Z111	Digital / Pulse	Contact, Reed, NPN, Namur, Photoelectric, Hall, Var. Reluctance, Imp. 24 V, TTL, Volumetric meter	mA, V	1	1	19..40 Vdc (9..30 Vdc opt.); 19..28 Vac	1,5 kVac	Z (17.5 x 100 x 112 mm)	0.2%
K111	Digital / Pulse	Namur, PNP, NPN, Reed, Photocell	PNP	1	2	19,2..30 Vdc	1,5 kVac	K (6,2 x 93,1 x 102,5 mm)	
K112	Digital / Pulse	Namur, PNP, NPN, Reed, Photocell	PNP, NPN	1	2	19,2..30 Vdc	1,5 kVac	K (6,2 x 93,1 x 102,5 mm)	
Z201	Electric	Aac	mA, V	1	1	19..40 Vdc (9..30 Vdc opt.); 19..28 Vac	1,5 k Vac	Z (17.5 x 100 x 112 mm)	0.3%
Z201-H	Electric	Aac	mA, V	1	1	85..265 Vac/dc	4 kVac	Z (17.5 x 100 x 112 mm)	0.3%
Z202	Electric	Vac	mA, V	1	1	10..40 Vdc; 19..28 Vac	3,75 k Vac	Z (17.5 x 100 x 112 mm)	0.25%
Z202-H	Electric	Vac	mA, V	1	1	85..265 Vac/dc	4 kVac	Z (17.5 x 100 x 112 mm)	0.25%
Z202-LP	Electric	Vac/dc	mA, V	1	1	external / by loop	4 kVac	Z (17.5 x 100 x 112 mm)	0.25%
Z203	Electric	A, V	mA, V, RS485 ModBUS	1	1	10..40 Vdc; 19..28 Vac	3,75 k Vac	Z (17.5 x 100 x 112 mm)	0.5%
Z204	Electric	Vac/dc	mA, V, RS485 ModBUS	1	1	10..40 Vdc; 19..28 Vac	4 kVac	Z (17.5 x 100 x 112 mm)	0.5%
S203T	Electric	Vac, mA	mA, V, RS485 ModBUS	1	1	10..40 Vdc; 19..28 Vac	3,75 k Vac	S (105 x 89 x 60 mm)	0.2%
S203TA	Electric	Vac, Arms	mA, V, RS485 ModBUS	1	1	10..40 Vdc; 19..28 Vac	3,75 k Vac	S (105 x 89 x 60 mm)	0.2%
T201	Electric	Aac	mA	1	1	external / by loop	300 Vac	T (38 x 40 x 20 mm (Ø 12,5 mm)	0.2%
T201DC	Electric	Adc	mA	1	1	external / by loop	1 kVdc	T (38 x 40 x 20 mm (Ø 12,5 mm)	0.2%
K107A	Serial	RS485	RS485	1	1	19,2..30 Vdc	1,5 kVac	K (6,2 x 93,1 x 102,5 mm)	
K107B	Serial	RS232	RS485	1	1	19,2..30 Vdc	1,5 kVac	K (6,2 x 93,1 x 102,5 mm)	
K107USB	Serial	USB	RS485	1	1	external / by loop	1,5 kVac	K (6,2 x 93,1 x 102,5 mm)	
K109PT	Temperature	Pt100	mA, V	1	1	19,2..30 Vdc	1,5 kVac	K (6,2 x 93,1 x 102,5 mm)	0.1%
K109PT-HPC	Temperature	Pt100	mA, V	1	1	19,2..30 Vdc	1,5 kVac	K (6,2 x 93,1 x 102,5 mm)	< 0,1%
K109PT1000	Temperature	Pt1000	mA, V	1	1	19,2..30 Vdc	1,5 kVac	K (6,2 x 93,1 x 102,5 mm)	0.1%
K120RTD	Temperature	Pt100, Ni100	mA	1	1	external / by loop		K (6,2 x 93,1 x 102,5 mm)	0.1%
K109TC	Temperature	TC (J,K,R,S,T,B,E,N)	mA, V	1	2	19,2..30 Vdc	1,5 kVac	K (6,2 x 93,1 x 102,5 mm)	0.1%
Z109PT2	Temperature	Pt100, Ni100, Pt500, Pt1000	mA, V	1	1	10..40 Vdc; 19..28 Vac	1,5 kVac	Z (17.5 x 100 x 112 mm)	0.1%
Z109TC	Temperature	TC (J,K,R,S,T,B,E,N)	mA, V	1	1	19..40 Vdc (9..30 Vdc opt.); 19..28 Vac	1,5 kVac	Z (17.5 x 100 x 112 mm)	0.2%
T120	Temperature	Pt100, Ni100	mA	1	1	external / by loop		T (20,0 mm x Ø 44,0 mm)	0.1%
T121	Temperature	Pt100, Ni100, Pt500, Pt1000, TC (J,K,R,S,T,B,E,N)	mA	1	1	external / by loop	1,5 kVac	T (20,0 mm x Ø 44,0 mm)	0.1%
K121	Universal	mA, V, Ohm, TC (J,K,R,S,T,B,E,N), Pt100, Ni100, Pt500, Pt1000	mA	1	1	19,2..30 Vdc	1,5 kVac	K (6,2 x 93,1 x 102,5 mm)	0.1%
Z109REG	Universal	mA, mV, V, Ohm, TC (J,K,R,S,T,B,E,N), Pt100	mA, V	1	1	19..40 Vdc (9..30 Vdc opt.); 19..28 Vac	1,5 kVac	Z (17.5 x 100 x 112 mm)	0.2%
Z109REG2	Universal	mA, mV, V, Ohm, TC (J,K,R,S,T,B,E,N), Pt100, Ni100, Pt500, Pt1000, (Strobe)	mA, V, (SPST Relay)	2	2	10..40 Vdc; 19..28 Vac	1,5 kVac	Z (17.5 x 100 x 112 mm)	0.1%
Z109REG2-H	Universal	mA, mV, V, Ohm, TC (J,K,R,S,T,B,E,N), Pt100, Ni100, Pt500, Pt1000, (Strobe)	mA, V, (SPST Relay)	2	2	85..265 Vac/dc	1,5 kVac	Z (17.5 x 100 x 112 mm)	0.1%
Z112A	Relay output	Contact, Reed, NPN, PNP, Namur, Photoelectric, Hall, Var. Reluctance, Imp. 24 V, TTL, Volumetric meter	SPDT Relay	1	1	19..40 Vdc (9..30 Vdc opt.); 19..28 Vac	1,5 kVac	Z (17.5 x 100 x 112 mm)	
Z112D	Relay output	Contact, Reed, NPN, PNP, Namur, Photoelectric, Hall, Var. Reluctance, Imp. 24 V, TTL, Volumetric meter	SPST Relay	2	2	19..40 Vdc (9..30 Vdc opt.); 19..28 Vac	1,5 kVac	Z (17.5 x 100 x 112 mm)	
Z113S	Relay output	mA, V	SPDT Relay	1	1	19..40 Vdc (9..30 Vdc opt.); 19..28 Vac	1,5 kVac	Z (17.5 x 100 x 112 mm)	
Z113D	Relay output	mA, V	SPST Relay	1	2	19..40 Vdc (9..30 Vdc opt.); 19..28 Vac	1,5 kVac	Z (17.5 x 100 x 112 mm)	
Z113T	Relay output	mA, V	SPST Relay	1	3	19..40 Vdc (9..30 Vdc opt.); 19..28 Vac	1,5 kVac	Z (17.5 x 100 x 112 mm)	

www.seneca.it

CONTACT AND INFORMATION

Address

Headquarter: Via Germania, 34 - 35127 Padova (I)
Operation Unit: Via Svizzera, 17 - 35127 Padova (I)
Tel. +39 049 8705 359 (408)
Fax +39 049 8706287

Web

Official Site: www.seneca.it
Catalogs: www.seneca.it/downloads
Support: www.seneca.it/supporto

E-mail

General information: info@seneca.it
Sales Office: sales@seneca.it
Administration & Logistics: amministrazione@seneca.it
Quality Management: qualita@seneca.it
Product technical support: support@seneca.it

SENECA

Publication PC1112EN - December 2011