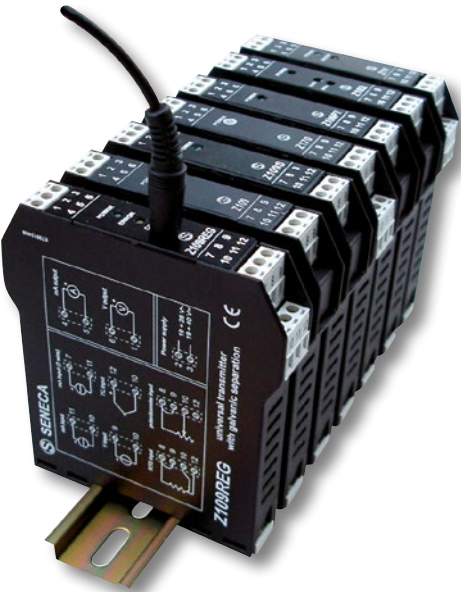
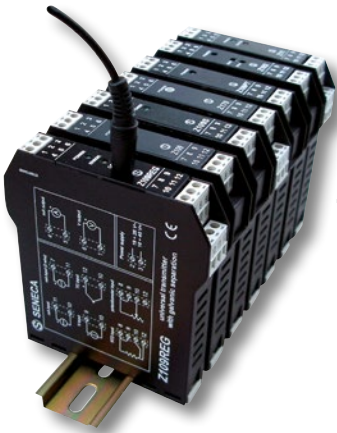


8

8 MULTI-STANDARD SIGNAL CONVERTERS & ISOLATORS





Z-LINE

MULTI-STANDARD SIGNAL CONVERTERS & ISOLATOR

CONNECTIONS

Screw terminals
2,5 mm²

SETTING

DIP-switches & software

POWER SUPPLY

Vac / Vdc switching

TRANSMITTER SUPPLY

Min 20 Vdc

ISOLATION

From 1,5 kVac to 4 kVac

STANDARD SIGNAL

Analog (mA, A, mV, V, Ohm)
Sensors (TC, RTD, Strain gauge)
Pulses

WIDTH

7.5 mm

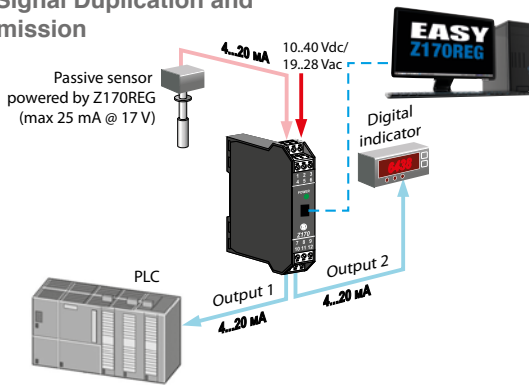
APPROVALS

CE, UL, CSA

APPLICATION NOTE

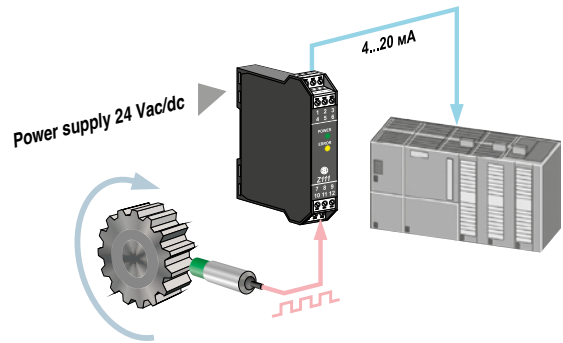
Z170REG

Analog Signal Duplication and Retransmission



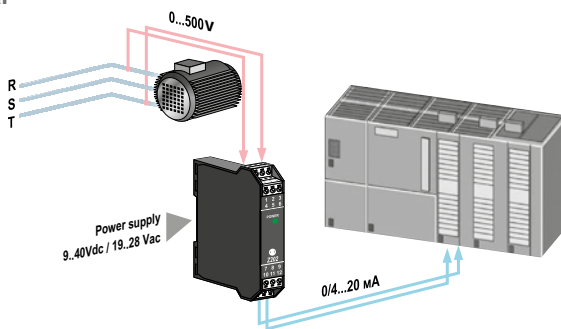
Z111

Pulses counter with analog output



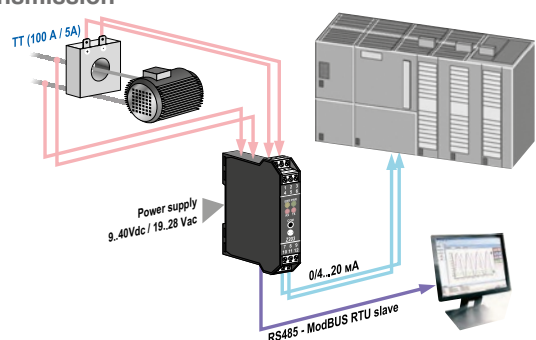
Z202

AC Voltage conversion into a normalized mA/V signal








Z203







One phase network analyzer with signal output retransmission



ANALOG CONVERTERS

	Z109REG	Z109REG2•Z109REG2-H	Z109UI2	Z109REG-BP	Z109S-DI
					
	Universal isolator/ converter	Universal isolator/ converter with advanced functions	DC Current/Voltage to DC Current/Voltage isolator/converter	Universal converter with isolated bipolar output	Wide range Current Loop Isolator
GENERAL DATA					
Power Supply	10..40 Vdc; 19..28 Vac; (50..60 Hz)	Z109REG2: 9..40 Vdc; 19..28 Vac; (50..60 Hz) Z109REG2-H: 85..265 Vac/dc	10..40 Vdc 19..28 Vac (50..60 Hz)	10..40 Vdc 19..28 Vac (50..60 Hz)	10..40 Vdc 19..28 Vac (50..60 Hz)
Power transducers	Active input 2 wire (min 18 Vdc)	Active input 2 wire (min 20 Vdc)	Active input 2 wire (min 20 Vdc)	Active input 2 wire (17 Vdc)	Active input 2 wire (17 Vdc)
Power Consumption	2.5 W	2.5 W (max) 1.6 W (24 Vdc, 20 mA)	2.5 W	2.5 W	2.5 W
Galvanic Isolation & Protection	1.500 Vac, 3 way Against surge pulses 400W/ms	1.500 Vac, 3 way 3.750 Vac (power supply / input -output) Against surge pulses 400W/ms	1.500 Vac, 3 way Against surge pulses 400W/ms	x 1.500 Vac, 3 way Against surge pulses 400W/ms	3.500 Vac, 3 way Safety insulation < 300 V~ referred to ground CAT II Against surge pulses 400W/ms
Status indicators	Power supply Error	Power supply Error Alarm	Power supply	Power supply Error Alarm	Power supply
Response time	35 ms	35 ms (11 bit)..140 ms (16 bit)	35 ms (11 bit)..140 ms (16 bit)	35 ms (11 bit)..140 ms (16 bit)	< 200 us
Interface				Micro USB frontal panel	
Accuracy	0,1%	0,1%	0,1%	0,1%	0,2% or 10 uA
Thermal drift	0.01%/°K	0.01%/°K	0.01%/°K	0.01%/°K	0.02%/°K
Linearity	0,05% (V/I), 0,2% (RTD), 1°C (TC)	0,05% / 0.4%	0,05% (V/I), 0,01% (Vout)		
Settings	Dip-switches Software (EASY SETUP)	Dip-switches Software (EASY SETUP)	Dip-switches Software (EASY SETUP) Jumper	Dip-switches Software (EASY SETUP) Jumper	
Operating Temperature	-20..+60°C	-20..+60 °C	-10..+60 °C	-10..+60 °C	-10..+60 °C
Dimensions (w x h x d)	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm
Connections	Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm ²	Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm ²	Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm ²	Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm ²	Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm ²
Weight	200 g	200 g	200 g	200 g	200 g
Approvals	CE	CE- UL-UR CSA	CE- UL-UR CSA	CE	CE
Norms	EN 50081-1, EN 50082-2, EN 61010-1	EN 61000-6-4 / 2002, EN 61000-2-2/2005 / EN 61010-1, EN 60742	EN 55011, EN 61000-4-2, EN 61000-4-4, EN 50140 / 141	EN 61000-6-2; EN 61000-6-4; EN 61010-1	EN 61000-6-2; EN 61000-6-4; EN 61010-1
INPUT DATA					
Channels	1	1 analog 1 strobe	1	1	1
Type	VOLTAGE Bipolar 0..2, 0..5, 0..10 V CURRENT Bipolar 0..20 mA RTD Pt100 (-200..+600°C) THERMOCOUPLE Tipo J, K, R, S, T, E, B, N POTENTIOMETER 0,5..15 kΩ	1 analog 1 strobe Bipolar from 75 mV to 20 V Resolution 15 bit + sign CURRENT Bipolar up to 20 mA Resolution 1 µA RTD Pt100, Pt500, Pt1000, Ni100, KTY81, KTY84, NTC Measure 2, 3, 4 wires Range: -200..600 °C Resolution 0,1°C THERMOCOUPLE Type J, K, R, S, T, E, B, N Resolution 2,5 µV POTENTIOMETER: 500 Ω ..100 kΩ RHEOSTAT: 500 Ω..25 kΩ STROBE: alternative to the relay output	VOLTAGE Bipolar da 75 mV a 20 V Resolution 15 bit + sign CURRENT Bipolar up to 20 mA Resolution 1 µA	VOLTAGE Bipolar from 75 mV to 20 V CURRENT Bipolar up to 20 mA RTD Pt100, Pt500, Pt1000, Ni100, KTY81, KTY84, NTC Measure 2, 3, 4 wires THERMOCOUPLE Type J, K, R, S, T, E, B, N POTENTIOMETER: 500 Ω ..100 kΩ RHEOSTAT: 500 Ω..25 kΩ	CURRENT 0 - 20 mA or 4 - 20 mA
OUTPUT DATA					
Channels	1	1 analog, 1 relay	1	1	1
Type	VOLTAGE 4 scales: 0..1, 0..5, 0..10, 2..10 V CURRENT 2 scales: 0/4..20 mA	VOLTAGE 4 scales: 0..1, 0..5, 0..10, 2..10 V Min load resistance: 2.000 Ω CURRENT 2 scales: 0/4..20 mA (active/passive) 2 scales: 0/4..20 mA (active/passive) Max load resistance: 600 Ω RELAY Alternative to the strobe NC / NA in case of alarm	VOLTAGE 4 scales: 0..1, 0..5, 0..10, 2..10 V Min load resistance: 2.000 Ω CURRENT 2 scales: 0/4..20 mA (active/passive) Max load resistance: 600 Ω	CURRENT -20 - +20 mA Maxium load resistance 500W VOLTAGE -10 - +10 V Minimum load resistance 1 kW	CURRENT 0 - 20 mA or 4 - 20 mA Max load 600 Ω
ORDER CODES					
Code	Z109REG -ER (square root extraction)	Z109REG2 (9..40 Vdc/19..28 Vac) Z109REG2-H (85..265 Vac/dc) -ER (square root extraction)	Z109UI2	Z109REG-BP	Z109S-DI
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ANALOG CONVERTERS

	Z109S	Z102	Z110	Z170REG	Z190	Z-SG
						
	DC Current isolator	Potentiometer to DC Current/Voltage isolator/converter	DC current isolator (self-powered) single/double channel	DC duplicator / isolator with universal input and 2 output	DC Current/Voltage adder/subtractor	Strain gauge to DC Current/Voltage isolator/converter

GENERAL DATA

Power Supply	9..40 Vdc 19..28 Vac; (50..60 Hz) Active input 2 wire (min 20 Vdc)	9..30 (opt.) - 19..40 Vdc 19..28 Vac (50..60 Hz)	Self Powered from the input (primary) loop.	10..40 Vdc 19..28 Vac; (50..60 Hz) Yes max 25 mA to max 17 V, short-circuit protected	19..40 (9..30 opt.) Vdc 19..28 Vac; (50..60 Hz) Active input 2 wire (min 20 Vdc)	10..40 Vdc 19..28 Vac
Power transducers						
Power Consumption	2,5W	2,5 W		0.5..2 W	2,5 W	2,0 W
Galvanic Isolation & Protection	1.500 Vac, 3 way Input protection: 60 V / 200 Ma Against surge pulses 400W/ms	1.500 Vac, 3 way Against surge pulses 400W/ms	1.500 Vac, 2 way Input/output Protection: up to 35 Vdc max	1.500 Vac, 4 way Input // Power supply // output 1 // output 2	1.500 Vac, 3 way Against surge pulses 400W/ms	1.500 Vac, 3 way
Status indicators	Power supply	Power supply		Power Supply, Alarm	Power Supply	Power supply Error Data Transmission Data reception RS485 ModBUS RTU 2 wires, speed 1200..115.200 k bps RS232, front jack, speed 2400 Baud, data bits 8, Parity: NO, Stop bits:1
Interface				RS232, jack stereo 3,5 mm (COM port)		
Response time	< 60 ms	40ms	100 ms	Max 25 ms		< 10 ms
Accuracy	0,20%	0,20%	0,10%	0,10%	0,20%	0,01%
Thermal drift	0,02 % f.s. / °C	0,02 % f.s. / °C	0,02 % f.s. / °C	0,01% /K	0,02% f.s./°C	0,0025 % f.s. / °C
Linearity	0,05%		0,1 % f.s.	<1% (input), 0.01% (output)	0,05%	0,01%
Configuration		Dip switch (0, span)		Dip switch: Software (EASY SETUP)	Dip switch: I/O type and electrical connections	Dip switch: Software (EASY SETUP)
Operating Temperature	-20..+60°C	0..+50 °C	0..+50 °C	-10..+65°C	0..50°C	-10..+65 °C
Dimensions (w x h x d)	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm
Connections	Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm ²	Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm ²	Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm ²	Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm ²	Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm ²	Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm ²
Weight	200 g	200 g	200 g	200 g	200 g	200 g
Approvals	CE	CE	CE	CE- UL-UR CSA	CE	CE
Norms	EN 55011, EN 61000-4-2, EN 61000-4-4, EN 50140 / 141	EN 55011, EN 61000-4-2, EN 61000-4-4, EN 50140 / 141	EN 55011, EN 61000-4-2, EN 61000-4-4, EN 50140 / 141	EN 61000-6-4, EN 61000-6-2, EN 61010-1	EN 50081-1, EN 50081-2, EN 61010-1	EN 61000-6-4, EN 61000-6-2, EN 61010-1, EN 60742, IEC 61131

INPUT DATA

Channels	1	1	1,2	1	2	1 analog, 1 digital
Type	CURRENT	RHEOSTAT 2 wires: 0..300 Ω (I=6mA); 0..500 Ω (I=3,6 mA); 0..1 K Ω (I=1,8 mA) POTENTIOMETER 3 wires: Vref=1,8 Vcc, from 200 Ω to 1M Ω	CURRENT 4..20 mA	VOLTAGE Scale span configurable: from 0 to 10V. Input impedance: 120 kΩ CURRENT Scale span configurable: from 0 mA to 20 mA (active/passive) Internal shunt: 50 Ω POTENTIOMETER Input value from 1 kΩ to 100 kΩ THERMOCOUPLE Type J, K, R, S, T, E; B, N THERMORESISTANCE RTD type: PT100, PT500, PT1000, NI100 (2,3,4 wires connection) Resolution 14 bit	VOLTAGE 4 scales: 0..1, 0..5, 0..10, 2..10 V Input impedance 500 KΩ CURRENT 2 scales: 0/4..20 mA Active Input: 20 Vdc (not stabilized) Passive Input: impedance 100 Ω	ANALOG Load Cell (Strain Gauge), 4 or 6 wires connections, min 87 Ω for 1..4 load cells(350 Ω) or 1..8 Load cells (1.000 Ω); Sensibility: 1..64 mV/V DIGITAL Tare calibration






OUTPUT DATA

Channels	1	1	1,2	2	1	1 analog, 1 digital
Type	2 scales: 0/4..20 mA Max resistance load: 600 Ω	4 scales: 0..1, 0..5, 0..10, 2..10 V load impedance > 2.500 Ω CURRENT 2 scales: 0/4..20 mA (active/passive) loop impedance <600ohm	4..20 mA	Configurable between: 0 - 10 V (minimum resistance that can be connected: 20 kΩ) CURRENT Configurable between: 0 - 20 mA active/passive (maximum resistance that can be connected: 600 Ω, max13 V) Resolution 14 bit	4 scales: 0..1, 0..5, 0..10, 2..10 V Input impedance 2.000 Ω CURRENT 2 scales: 0/4..20 mA (active/passive) Max loop impedance: 600 Ω	0..20, 4..20 Ma VOLTAGE (V) 0..10, 0..5 Vdc DIGITAL weight limit





ORDER CODES

Code	Z109S	Z102	Z110S (single channel) Z110D (double channel)	Z170REG	Z190	Z-SG
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ELECTRIC METER CONVERTERS

	Z201/Z201-H	Z202/Z202-H	Z202-LP	Z203-1	Z204-1
					
	AC Current isolator converter	AC Voltage isolator converter	AC/DC Voltage isolator converter, loop powered	One phase power meter	AC/DC Voltage isolator converter TMRS
GENERAL DATA					
Power Supply	Z201: 10..40 Vdc; 19..28 Vac (50..60 Hz) Z201-H: 85..265 Vac/dc < 2,5 W	Z202: 10..40 Vdc; 19..28 Vac (50..400Hz). Z202-H: 85..265 Vac/dc (50..60 Hz) < 1,5 W	Self-powered from the input loop	10..40 Vdc 19..28 Vac (50..60 Hz)	10..40 Vdc 19..28 Vac (50..60 Hz)
Power Consumption			< 1mA	< 2,5 W	1 W
Galvanic Isolation & Protection	Z201: 3750 Vac input/output and input/ power supply; 1500 Vac output/power supply. Z201-H: 4000 Vac input/power supply; 4000 Vac output/power supply.	Z202: 3750 Vac input/output and input/ power supply; 1500 Vac output/power supply.	4000 Vac input/output	3750 Vac input/output/power supply	4000 Vac input/power supply and input/output 1500 Vac output/power supply
Status indicators	Power supply	Power supply	Power supply	Power Supply, Error, RS485 communication	Power Supply, Error, RS485 communication
Interface				RS485 (backplane), 1200..115200 Baud bps, ModBUS RTU protocol RS232 (jack stereo 3.5 mm front connector for configuration): baud rate, address, parity, data/stop bit	RS485 (backplane), 1200..115200 Baud bps, ModBUS RTU protocol RS232 (jack stereo 3.5 mm front connector for configuration): baud rate, address, parity, data/stop bit
Response time	Z201: <200ms. */* Z201-H: <100ms.	Z202: <30ms. */* Z202-H: <100ms.	< 100 ms	< 10 ms	For a step variation: 1s from 10 to 90 %.
Accuracy	0,3%	Z202: 0,25%; */* Z202-H: 0,3%	0,3%	0,5%	0,5% input; 0,1% outputs.
Thermal drift	+200 ppm/K	+150 ppm/K	+150 ppm/K	+150 ppm/K	+100 ppm/K
Operating Temperature	Z201: 0..+55°C */* Z201-H: -10..+65°C	Z202: 0..+60°C */* Z202-H: -10..+65°C	-20..+65°C	-10..+65°C	-20..+65°C
Dimensions (w x h x d)	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm	35 x 100 x 112 mm
Connections	Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm ²	Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm ²	Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm ²	Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm ² RS485 bus connection	Removable 3-way screw terminals, 5 mm pitch. Standard 4 mm banana sockets RS485 bus connection Frontal jack 3.5 mm for module configuration
Weight	200 g	200 g	140 g	140 g	140 g
Settings	Dip-switch Jumper (Output range)	Dip-switch Jumper (Output range)	Dip-switch (Input range)	Dip-switch (address, baud rate, line terminator, input range) EASY-SETUP (Plug&Play software)	Dip-switch (address, baud rate, line terminator, input range) EASY-SETUP (Plug&Play software)
Approvals	CE	CE	CE	CE	CE
Norms	EN 61000-6-4, EN 61000-6-2, EN 61010-1, EN 60742, IEC 61131	EN 60688+A1+A2, EN 61000-6- 4, EN 61000-6-2, EN 61010-1, EN 60742, IEC 61131	EN 61000-6-4, EN 61000-6-2, EN 61010-1, EN 60742, IEC 61131	EN 61000-6-4, EN 61000-6-2, EN 61010-1, EN 60742, IEC 61131	EN 61000-6-4, EN61000-6-2, EN61010-1
INPUT DATA					
Nr	1	1	1	1 (single phase load)	1
Type	AC CURRENT 0.5 / 0..10 A ac	AC VOLTAGE 0..500 Vac Input impedance: 2000 Ω /V Frequency: 10 Hz..1 kHz	AC VOLTAGE 0..500 Vac DC VOLTAGE 0..540 Vdc Maximum Voltage 710 Vpk Frequency DC / 20 Hz..400 Hz	AC VOLTAGE Up to 500 Vac, frequency 35 to 75 Hz. AC CURRENT Input range: 5 Arms, Max peak factor 3, Max Current 15 A, Frequency 35 to 75 Hz.	DC VOLTAGE 0..1200 Vdc Input impedance 4 MΩ AC VOLTAGE 0..850 Vac nput impedance 4 MΩ Frequency 30Hz – 60Hz
OUTPUT DATA					
Channels	1	1	1	1 analog, 1 digital	1
Type	CURRENT Active or passive: 0..20 mA or 4..20 mA * Maximum load resistance 600 Ohm VOLTAGE 0..5 V, 1..5 V, 0..10 V, 2..10 V Minimum load resistance: 2500 Ohm	CURRENT Active or passive: 0..20 mA or 4..20 mA Maximum load resistance 600 Ohm VOLTAGE 0..5 V, 1..5 V, 0..10 V, 2..10 V Minimum load resistance: 2500 Ohm	CURRENT Passive, 4..20 mA	CURRENT 0..20 mA, 4..20 mA, maximum load resistance 500 Ohm VOLTAGE 0..10 Vdc, 0..5 Vdc, minimum load resistance 2000 Ohm DIGITAL Passive digital Output for pulses (energy counter)	CURRENT 0..20 mA, 4..20 mA, maximum load resistance 500 Ohm VOLTAGE 0..10 Vdc, 0..5 Vdc, minimum load resistance 2000 Ohm DIGITAL Passive digital Output for pulses (energy counter)
ORDER CODES					
Code	Z201/Z201-H	Z202/Z202-H	Z202-LP	Z203-1	Z204-1
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TEMPERATURE AND PULSE CONVERTERS

	Z109PT2	Z109TC2	Z104	Z111
				
	RTD to DC Current/Voltage isolator/converter	TC to DC Current/Voltage isolator/converter	DC Current/Voltage to frequency isolator/converter	Frequency to DC Current/Voltage isolator/converter
GENERAL DATA				
Power Supply	9..40 Vdc 19..28 Vac; (50..60 Hz)	9..40 Vdc 19..28 Vac; (50..60 Hz)	19 - 40 Vdc, 19 - 28 Vac (50 - 60 Hz)	19 - 40 Vdc, 19 - 28 Vac (50 - 60 Hz)
Power transducers			supply of the sensor with 2-wire method: 20VDC stabilized	
Power Consumption	2.5 W	2 W	2.5 W	2.5 W
Galvanic Isolation & Protection	1.500 Vac, 3 way Against surge pulses 400W/ms	1.500 Vac, 3 way	1.500 Vac, 3 way Against surge pulses 400W/ms	1.500 Vac, 3 way
Status indicators	Power supply, Out of range, Setting error	Power supply, Out of range, Setting error	Power supply Output (relay)	Power Supply Error
Response time	140 ms Sampling frequency: 15 bits + sign resolution.	35 ms with 11 bit resolution, 140 ms with 16 bit resolution.	350 ms	250 ms
Accuracy	0,1% (RTD) – 0.3% (voltage output)	0,1% (TC) – 0.3% (voltage output)	0,20%	0,30%
Thermal drift	0.01%/°K	0.01%/°K	0,02 % f.s. / °C	0,01 % f.s. / °C
Linearity	0,10%	TC J,K,E,T,N input: 0.2 °C TC R,S input: 0.5 °C TC B input: 1.5 °C Voltage output: 0.01%	0,05%	
Settings	Dip-switches: range and input type; output selecting Software (EASY SETUP)	Dip-switches: range and input type; output selecting Software (EASY SETUP)	Dip-switches: input type, output, end scale Trimmer: end scale settings, integration constant	Dip-switches: input type, filter, pulses average, output Trimmer: end scale settings (1 Hz..10KHz)
Operating Temperature	-10..+60°C	-20..+60 °C	0..+50 °C	0..+50 °C
Dimensions (w x h x d)	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm
Connections	Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm ²	Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm ²	Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm ²	Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm ²
Weight	200 g	200 g	200 g	200 g
Approvals	CE- UL-UR CSA	CE- UL-UR CSA	CE	CE- UL-UR CSA
Norms	EN 55011, EN 61000-4-2, EN 61000-4-4, EN 50140 / 141	EN61000-6-4, EN61000-6-2, EN61010-1	EN50081-2, EN50082-2, EN61010-1	EN50081-2, EN50082-2 EN61010-1
INPUT DATA				
Channels	1	1	1	1
Type	RTD PT100, PT500, PT1000, NI100 2, 3 or 4 wires measurement, energising current 1 mA, resolution 0.1 °C	TC Type J, K, R, S, T, B, E, N; resolution 2.5 µV, automatic TC burn out detection, input impedance > 5MΩ	VOLTAGE: 0 - 5 Vdc, 1 - 5 Vdc, 0 - 10 Vdc and 2 - 10 Vdc Input impedance 1 MΩ CURRENT: 0 - 20 mA or 4 - 20 mA, both active and passive connection. Active connection : loop supply voltage approx. 15 Vdc Passive connection : input impedance 100 Ω	PULSES Mechanical contact, reed, npn with 2 and 3 wires , pnp with 3 wires and 24V DC power supply, Namur, photoelectric, "HALL" sensor, and variable reluctance. Maximum frequency 10 KHz
OUTPUT DATA				
Channels	1	1	1	1
Type	VOLTAGE: 0..5 V / 0..10 V / 1..5 V / 2..10 V, min load resistance 2 kΩ Resolution: 2.5 µA/ 1.25mV. CURRENT: 0..20 / 4..20 mA, max load resistance 600 Ω Resolution: 2.5 µA/ 1.25mV.	VOLTAGE: 0..5 V / 0..10 V / 1..5 V / 2..10 V, min load resistance 2 kΩ Resolution: 2.5 µA/ 1.25mV. CURRENT :0..20 / 4..20 mA, max load resistance 600 Ω	PULSE Npn open-collector transistor 30 Vdc 300 mA Max frequency: 10 kHz Reed-relay 30 Vdc-ac 100 mA. Frequency below 40 Hz	Voltage: 0..5 V / 0..10 V / 1..5 V / 2..10 V , Min. load resistance: 25 kΩ CURRENT: 0/4..20 mA (active/passive) Max load resistance: 600 Ω
ORDER CODES				
Code	Z109PT2	Z109TC2	Z104	Z111
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RELAY CONDITIONERS

	Z112A • Z112D	Z113S • Z113D • Z113T	Z113-1
			
	ON / OFF Sensors amplifier	DC Current / Voltage alarm trip module	Double threshold with universal analog input
GENERAL DATA			
Power Supply	19..40 (9..30 opt.) Vdc; 19..28 Vac; (50..60 Hz)	19..40 (9..30 opt.) Vdc 19..28 Vac; (50..60 Hz)	10 - 40 Vdc, 19 - 28 Vac (50 - 60 Hz)
Power transducers	Yes, active input 2 wire (min 20 Vdc)	Yes, active input 2 wire (min 20 Vdc)	Yes, active input 2 wire
Power Consumption	2.5 W	2.5 W	2.5 W
Galvanic Isolation & Protection	Z112A: 1.500 Vac (power supply/input)4.000 Vac (input/power supply/output) Z112D:1.500 Vac	Z113S: 1.500 Vac (power supply/input), 4.000 Vac (input/power supply/output) Z113D, Z113T:1.500 Vac Against pulse overvoltages 400W/ms.	1.500 Vac, 3 way Against pulse overvoltages 400W/ms.
Status indicators	Power Supply Relay	Power Supply Overtaking limit	Power supply Alarm
Interface			Micro USB frontal plug
Thermal drift	±0,01% /°C	±0,01% /°C	0.01%/°K
Linearity		0,05%	
Settings	Dip-switches: input type, output retransmission, divider circuit settable from 1 to 256 Trimmer: pulse duration (100..500ms)	DIP switches: input type, functions (relays activation, min/max value alarm) Trimmer: Setpoint alarms (1..100% signal control) Delay (0,3..30 s) Hysteresis (2..15% of full-scale)	Dip-switches: input type, output, start scale, end scale. By EASY SETUP software (all the parameter)
Operating Temperature	0..+50 °C	0..+50 °C	-10...+65°C
Dimensions (w x h x d)	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm
Connections	Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm ²	Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm ²	Removable 3-way screw terminals, 5 mm pitch. cable section's 0.25-2.5 mm ²
Weight	200 g	200 g	200 g
Approvals	CE	CE	CE
Norms	EN 50081-1, EN 50082-2, EN 61010-1	EN 50081-1, EN 50082-2, EN 61010-1	EN61000-6-4; EN61000-6-2, EN 61010-1
INPUT DATA			
Channels	1	1	1
Type	PULSES Contact optoisolated Reed npn 2/3 wires- 12..24 Vdc, pnp 3 wires, power supply 24 Vdc NAMUR Pulses 24 Vdc Photoelectric sensor Hall effect sensor Max frequency 400 Hz	CURRENT: 0..20, 4..20 mA active/passive Input impedance 100 Ω VOLTAGE: 0..5, 1..5, 0..10, 2..10 Vdc Input impedance : 500 KΩ	TC type: J, K, R, S, T, B, E, N. input impedance: > 5 MΩ Automatic burn-out detection RTD type: PT100, PT500, PT1000, NI100. (2, 3 or 4 wires measurement). POTENTIOMETER input value from 1kΩ to 100kΩ. Energising current:1mA. Input impedance: >5MΩ. Automatic out of range detection. VOLTAGE input from 0V to 10V. Input impedance 120kΩ. Automatic out of range detection. CURRENT input mode(active / passive module) from 0mA to 20mA.
OUTPUT DATA			
Channels	1 / 2	1 / 2 / 3	2 digitali
Type	RELAYS Z112A: relay SPDT 1 A - 30 Vdc o 5 A – 250 Vac (resistive load) Z112D: reed relay SPST, max load0,5 A – 100 Vdc-ac (10 VA resistive load)	Z-113A: relay SPDT, 1A – 30 Vdc load or 5 A – 250 Vac (resistive load) Z-113D/T: relay SPST, max load 0,1 A – 30 Vdc-ac (10VA resistive load)	RELAYS SPST N.O. position with common Max RELAY current 3 A@ 250V; 3 A@ 30V Max RELAY voltage 250 V CAT. II
ORDER CODES			
Code	Z112A (single channel) Z112D (double channel)	Z113S (1 relay output) Z113D (2 relay outputs) Z113T (3 relay outputs)	Z113-1
Programming & Accessories	Page 50	Page 50	Page 50

Z SERIES • SOFTWARE & ACCESSORIES

EASY SETUP

Plug&Play Software for SENECA programmable Instruments

Free download on www.seneca.it

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



S-TOOL

Programming tool



- Software programming collection on CD
- Programming cable

ORDER CODES

Code	Description
S-TOOL	Configuration toolkit for Z-Line and S2000

LOAD CELL CONNECTION AND EQUALIZATION SYSTEM ORDER CODE



ORDER CODES

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

S117P1

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



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

ORDER CODES

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

Z-SUPPLY

Single-Phase Switching Power Supply 24V @ 1.5A



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

ORDER CODES

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

Z-POWER

DIN RAIL 19 VAC TRANSFORMERS



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

ORDER CODES

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

CABLE



ORDER CODES

Code	Description
PM001601	Programming serial cable (Z109REG, Z109REG2, Z-4AI-D, Z-4TC-D, Z203-1, Z204-1, Z109PT2, Z170REG, Z-D-IO, Z-4AI, Z-8AI, Z-3AO, Z-4TC, Z-8TC, Z-4RTD2, Z-SG, Z-DAQ-PID, ZC-24DI, ZC-24DO, ZC-16DI-8DO, ZC-8AI, ZC-3AO, ZC-4RTD, ZC-8TC, ZC-SG). Terminals: Jack / DB9F.
PM001970	Serial cable RS232 (K107B) (Probes/DB9F)

9

9

SIGNAL CONVERTERS AND COMPACT ISOLATORS



K-LINE

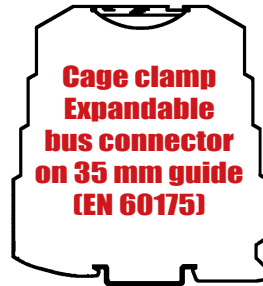
COMPACT CONVERTERS AND ISOLATORS



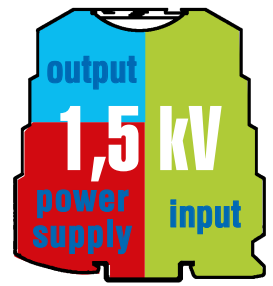
DIMENSIONS



ACCURACY



CONNECTIONS



ISOLATION



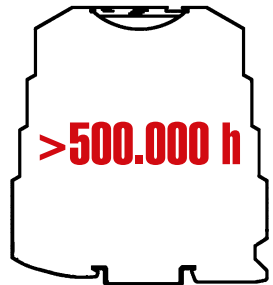
OPERATING TEMPERATURE



POWER CONSUMPTION



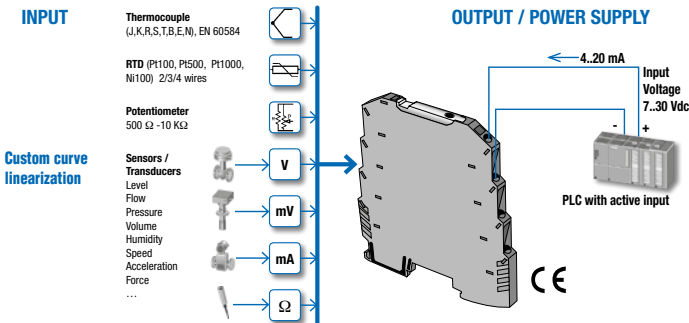
APPROVALS



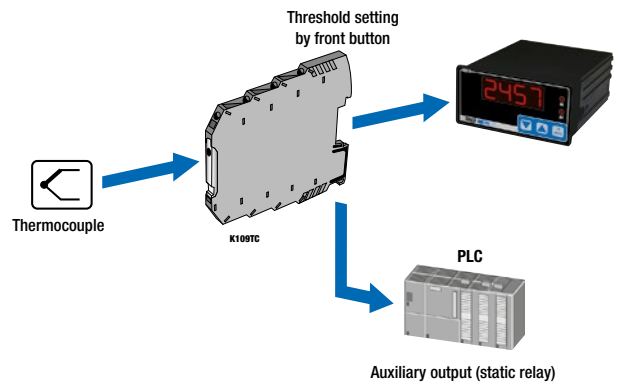
RELIABILITY

APPLICATION EXAMPLES

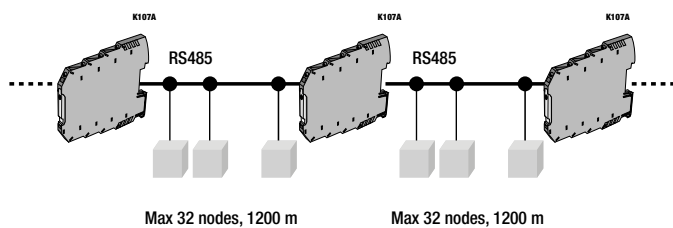
UNIVERSAL ANALOG SIGNAL CONVERSION



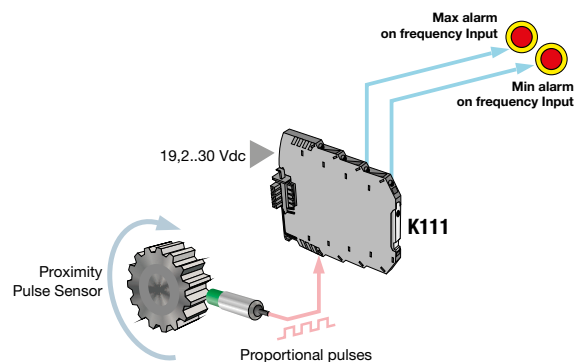
CONVERSION AND RETRANSMISSION OF A TEMPERATURE VALUE FROM THERMOCOUPLE









SERIAL RS485 REPETITION WITH GALVANIC ISOLATION








FREQUENCY CONVERSION WITH ALARM



ANALOG AND DIGITAL CONVERTERS

	K121	K109UI	K109S	K109LV	K111	K112	
							
	Universal converter (mA, V, Ohm, RTD, TC) isolated, loop powered	DC current/voltage to current/voltage isolator converter	DC current/voltage to current/voltage isolator converter (2 wire power transducer)	DC low voltage to current/ voltage isolator converter	Frequency threshold with 2 outputs	Digital sensor amplifier with 2 outputs	
GENERAL DATA							
Power supply	7..30 Vdc (from loop 4..20mA)	19,2.. 30 Vdc	19,2.. 30 Vdc	19,2.. 30 Vdc	19,2.. 30 Vdc	19,2.. 30 Vdc	
Side Power		Yes	Yes	Yes	Yes	Yes	
Hot swapping	Yes	Yes	Yes	Yes	Yes	Yes	
Current consumption	24 mA	22 mA (24 Vdc)	23 mA (24 Vdc); 45 mA (with aux power)	22 mA (24 Vdc)	< 25 mA	< 25 mA	
Power consumption	<660 mW	500 mW	500 mW	500 mW	500 mW	500 mW	
A/D Conversion	16 bit	14 bit	14 bit	14 bit	14 bit	14 bit	
Rejection	50 o 60 Hz (configurable)	50 o 60 Hz (configurable)	50 o 60 Hz (configurable)	50 o 60 Hz (configurable)	50 o 60 Hz (configurable)	50 o 60 Hz (configurable)	
Settings	software (EASY)	DIP Switches	DIP Switches	DIP Switches	DIP Switches, software	DIP Switches	
Filter	Added for stable reading	Added for stable reading	Added for stable reading	Added for stable reading	Configurable		
Dimensions (w x h x d)	6,2 x 93,1 x 102,5 mm	6,2 x 93,1 x 102,5 mm	6,2 x 93,1 x 102,5 mm	6,2 x 93,1 x 102,5 mm	6,2 x 93,1 x 102,5 mm	6,2 x 93,1 x 102,5 mm	
Isolation	1,5 KVac (3-way)	1,5 KVac (3-way)	1,5 KVac (3-way)	1,5 KVac (3-way)	-	1,5 KVac (3-way)	
Isolation technique	Digital (optocoupler)	Digital (optocoupler)	Digital (optocoupler)	Digital (optocoupler)	-	Digital (optocoupler)	
Data processing	32 bit floating point	32 bit floating point	32 bit floating point	32 bit floating point	32 bit floating point	32 bit floating point	
Colour	Nero	Nero	Nero	Nero	Nero	Nero	
Enclosure	PBT	PBT	PBT	PBT	PBT	PBT	
Weght	45 g	45 g	45 g	45 g	45 g	45 g	
Operating temperature	-20..+65 °C	-20..+65 °C	-20..+65 °C	-20..+65 °C	-20..+65 °C	-20..+65 °C	
Connections	8 Clamp terminals	Clamp terminals / bus	Clamp terminals / bus	Clamp terminals / bus	Clamp terminals / bus	Clamp terminals / bus	
Protection degree	IP 20	IP 20	IP 20	IP 20	IP 20	IP 20	
Precision class	0,10%	0,10%	0,10%	0,10%			
Thermal drift	< 120 ppm/K	< 120 ppm/K	< 120 ppm/K	< 120 ppm/K			
Status indicators	Fault, alarm	Fault, alarm	Fault, alarm	Fault, alarm	Power, threshold, error	Power, output state	
Special functions	Cold junction compensation Filter Reversed output	Root extraction Signal inversion Scale settable Linearization	Root extraction Signal inversion Scale settable Linearization	Fault configuration Filter	Frequency divider Medium value of N pulses (N <= 256)		
Approvals	CE	CE, UL-UR CSA	CE, UL-UR CSA	CE	CE	CE	
Norms	EN 61000-6-4, EN 61010-6-2, EN 61010-1	EN 61000-6-4, EN 61010-6-2, EN 61010-1	EN 61000-6-4, EN 61010-6-2, EN 61010-1	EN 61000-6-4, EN 61010-6-2, EN 61010-1	EN 61000-6-4, EN 61010-6-2, EN 61010-1	EN 61000-6-4, EN 61010-6-2, EN 61010-1	
INPUT DATA							
Channels	1	1	1	1	1	1	
Type	THERMOCOUPLE J, K, R, S, T, E, B, N (EN 60584) RTD (PT100, PT500, PT1000, NI100) connection 2,3,4 wires Voltage (V) \pm 30V, impedance 200 k Ω Voltage (mV) \pm 150 mV, impedance 10 M Ω Current: \pm 24 mA, impedance 40 Ω Potentiometer: 500 Ω ..10 K Ω Resistance: up to 1760 Ω	VOLTAGE Range: 0..10 / 10..0 / 0..5 / 1..5 / 0..15 / 0..30 V (inversion as well) Impedance: 110 k Ω - 325 k Ω CURRENT Range: 4..20 / 20..4 / 0..20 / 20..0 mA Impedance: 35 Ω	VOLTAGE Range: 0..10 / 10..0 / 0..5 / 1..5 V Impedance: 110 k Ω CURRENT Range: 4..20 / 20..4 / 0..20 / 20..0 mA Impedance: 35 Ω	SHUNT Range: \pm 25, 50, 60, 75, 80, 100, 120, 150, 200, 250, 300, 400, 500, 1000, 2000 mV (via Dip switches)	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: \pm 28 Vdc Frequency: Max 20 kHz, min 1 pulse every 116 minutes	Contact IEC 1131.2 (type1) Namur (DIN 19234, EN 60947-5-6) NPN / PNP (12 o 22 V) 2/3 wires Reed Photocell Max frequency: 400 Hz	
Absolute value		\pm 32 V (400 mW limitation)	\pm 30 V (limitation 400 mW)	\pm 50 V			
OUTPUT DATA							
Channels	1	1	1	1	1	1	
Type	CURRENT 4..20mA	VOLTAGE Range: 0..10 / 10..0 / 0..5 / 1..5 V Min load resistance: 2 k Ω CURRENT Range: 4..20 / 20..4 / 0..20 / 20..0 mA Max load resistance: 500 Ω Protection: 25 mA	VOLTAGE Range: 0..10 / 10..0 / 0..5 / 1..5 V Min load resistance: 2 k Ω CURRENT Range: 4..20 / 20..4 / 0..20 / 20..0 mA Max load resistance: 500 Ω Protection: 25 mA	VOLTAGE Range: 0..10 / 10..0 / 0..5 / 1..5 V Min load resistance: 2 k Ω CURRENT Range: 4..20 / 20..4 / 0..20 / 20..0 mA Max load resistance: 500 Ω Protection: 25 mA	N.2 threshold channels, PNP, BJT, Mosfet; Max load: 60 mA / 24 Vdc	PNP e NPN simultaneous channels Max current 200 mA Max voltage 30 V (continuous), 50V (pulse)	
Response time (10-90%)	140..620ms	< 40 ms (without filter) < 88 ms (with filter)	< 40 ms (without filter) < 88 ms (with filter)	< 25 ms (without filter) < 55 ms (with filter)			
ORDER CODES							
Code	K121	K109UI	K109S	K109LV	K111	K112	
Accessories / Software	Page 56	Page 56	Page 56	Page 56	Page 56	Page 56	

TEMPERATURE CONVERTERS

	K109PT	K109PT-HPC	K109PT1000	K120RTD	K109TC
					
	Pt100 to DC current/voltage isolator converter	Pt100 to DC current/voltage isolator converter (high precision)	Pt1000 to DC current/voltage isolator converter	Pt100, Ni100 to DC current converter -Loop powered (non isolated)	TC to DC current/voltage isolator converter (with alarm)

GENERAL DATA

Power supply	19,2..30 Vdc	19,2..30 Vdc	19,2..30 Vdc	Loop powered (5..30 Vdc)	19,2..30 Vdc
Side Power	Yes	Yes	Yes	-	Yes
Hot swapping	Yes	Yes	Yes	-	Yes
Max current consumption	21..25 mA (24 Vdc)	21..25 mA (24 Vdc)	21..25 mA (24 Vdc)	21..25 mA (24 Vdc)	21..25 mA (24 Vdc)
Max power consumption	500 mW	500 mW	500 mW	500 mW	500 mW
A/D conversion	14 bit	14 bit	14 bit	14 bit	14 bit
Transmission	Optical - digital	Optical - digital	Optical - digital	Optical - digital	Optical - digital
Rejection	50 – 60 Hz (configurable)	50 – 60 Hz (configurable)	50 – 60 Hz (configurable)	50 – 60 Hz (configurable)	50 – 60 Hz (configurable)
Settings	DIP switches	DIP switches	DIP switches	DIP switches	DIP switches
Filter	Added for stable reading	Added for stable reading	Added for stable reading	Added for stable reading	Added for stable reading
Dimensions (W x H x D)	6,2 x 93,1 x 102,5 mm	6,2 x 93,1 x 102,5 mm	6,2 x 93,1 x 102,5 mm	6,2 x 93,1 x 102,5 mm	6,2 x 93,1 x 102,5 mm
Isolation	1,5 kVac (3-way)	1,5 kVac (3-way)	1,5 kVac (3-way)	-	1,5 kVac (3-way)
Isolation technique	Digital (optocoupler)	Digital (optocoupler)	Digital (optocoupler)	-	Digital (optocoupler)
Data processing	32 bit floating point	32 bit floating point	32 bit floating point	32 bit floating point	32 bit floating point
Colour	Black	Black	Black	Black	Black
Enclosure	PBT	PBT	PBT	PBT	PBT
Weight	45 g	45 g	45 g	45 g	45 g
Operating temperature	-20..+65 °C	-20..+65 °C	-20..+65 °C	-20..+65 °C	-20..+65 °C
Connections	Clamp terminals / bus	Clamp terminals / bus	Clamp terminals / bus	Clamp terminals / bus	Clamp terminals / bus
Protection degree	IP20	IP20	IP20	IP20	IP20
Channels	1 input, 1 output	1 input, 1 output	1 input, 1 output	1 input, 1 output	1 input, 2 outputs
Accuracy	0,1% (max range)	0,1% (max range)	0,1%	0,1%	0,1%
Thermal drift	< 100 ppm/K	< 100 ppm/K	< 100 ppm/K	< 100 ppm/K	< 100 ppm/K
Status indicator	Fault Alarm	Fault Alarm	Fault Alarm	Fault Alarm	Fault Alarm
Embedded functions	fault and cut-off configuration, filter	fault and cut-off configuration, filter	fault and cut-off configuration, filter	RTD type / connection, filter, measure range, error, output inversion, over-range	fault and cut-off configuration, filter
Approvals	CE, UL-UR CSA	CE	CE	CE	CE, UL-UR CSA
Norms	EN 61000-6-4, EN 61000-6-2, EN 61010-1	EN 61000-6-4, EN 61000-6-2, EN 61010-1	EN 61000-6-4, EN 61000-6-2, EN 61010-1	EN 61000-6-4, EN 61000-6-2, EN 61010-1	EN 61000-6-4, EN 61000-6-2, EN 61010-1

INPUT DATA

Type	Pt100 IEC 751 standard / EN 60751 – ITS90 Range: -150..+650 °C Min span: 50 °C Current on transmitter: 900 µA Connection: 2,3,4 wires Max cable resistance: 20 Ω	Pt100 IEC 751 standard / EN 60751 – ITS90 Range: -200..+160 °C Min span: 20 °C Current on transmitter: 900 µA Connection: 2,3,4 wires Max cable resistance: 20 Ω	Pt1000 EN 60751/A2 – ITS90 Range: -200..+210 °C Min span: 30 °C Current on transmitter: < 350 µA Connection: 2,3,4 wires Max cable resistance: 50 Ω	Pt100 EN 60751/A2 – ITS90 Range: -200..+650 °C Min span: 20 °C Connection: 2,3,4 wire Ni100 Range: -60..+250°C Min span: 20 °C Connection: 2,3,4 wires	Thermocouple Type: J,K,E,N,S,R,B,T (ITS90) Min span: 100 °C Impedance: 10 MΩ Semiconductor sold joint ADC 13 bit Precision: 0,15 °C Update: 10 s Max voltage: ±32 V
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OUTPUT DATA

Type	VOLTAGE Range: 0..10 / 10..0 / 0..5 / 1..5 V Min load resistance: 2 kΩ CURRENT Range: 4..20 / 20..4 / 0..20 / 20..0 mA Max load resistance: 500 Ω Protection: 25 mA	VOLTAGE Range: 0..10 / 10..0 / 0..5 / 1..5 V Min load resistance: 2 kΩ CURRENT Range: 4..20 / 20..4 / 0..20 / 20..0 mA Max load resistance: 500 Ω Protection: 25 mA	VOLTAGE Range: 0..10 / 10..0 / 0..5 / 1..5 V Min load resistance: 2 kΩ CURRENT Range: 4..20 / 20..4 / 0..20 / 20..0 mA Max load resistance: 500 Ω Protection: 25 mA	CURRENT Range: 4..20 / 20..4 mA (2 wire) Load resistance: 1 kΩ Resolution: 0,5 µA (15 bit+sign) Protection: 30 mA	VOLTAGE Range: 0..10 / 10..0 / 0..5 / 1..5 V Min load resistance: 2 kΩ CURRENT Range: 4..20 / 20..4 / 0..20 / 20..0 mA Max load resistance: 500 Ω
Static relay					Nominal voltage: 24 Vac/dc Current: 60 mA Overvoltage protection: 50 V Settable hysteresis / alarm trip
Response time (10-90%)	< 50 ms (without filter) < 200 ms (with filter)	< 50 ms (without filter) < 200 ms (with filter)	< 50 ms (without filter) < 200 ms (with filter)	< 220 ms (without filter) < 620 ms (with filter)	< 40 ms (without filter) < 88 ms (with filter)
A/D conversion, resolution	1 mV, 2 µA	1 mV, 2 µA	1 mV, 2 µA	1 mV, 2 µA	1 mV, 2 µA

ORDER CODES

Code	K109PT	K109PT-HPC	K109PT1000	K120RTD	K109TC
Accessories / Software	Page 56	Page 56	Page 56	Page 56	Page 56

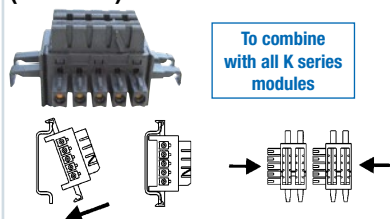
SERIAL CONVERTERS

	K107A	K107B	K107USB
			
	RS485↔RS485 serial isolator/repeater	RS232↔RS485 serial isolator/converter	USB↔RS485 serial isolator/converter
GENERAL DATA			
Power supply	19,2..30 Vdc	19,2..30 Vdc	via USB port
Side Power	Yes	Yes	-
Hot swapping	Yes	Yes	Yes
Max current consumption	22 mA (24 Vdc)	22 mA (24 Vdc)	60 mA
Max power consumption	500 mW	500 mW	-
Rejection	50 – 60 Hz (configurable)	50 – 60 Hz (configurable)	50 – 60 Hz (configurable)
Settings	DIP switches	DIP switches	DIP switches
Filter	Added for stable reading	Added for stable reading	Added for stable reading
Dimensions (w x h x d)	6,2 x 93,1 x 102,5 mm	6,2 x 93,1 x 102,5 mm	6,2 x 93,1 x 102,5 mm
Isolation	1,5 kVac (3-way)	1,5 kVac (3-way)	1,5 kVac (USB // RS485)
Isolation technique	Digital (optocoupler)	Digital (optocoupler)	Digital (optocoupler)
Data processing	32 bit floating point	32 bit floating point	32 bit floating point
Colour	Black	Black	Black
Enclosure	PBT	PBT	PBT
Weight	45 g	45 g	45 g
Operating temperature	-20..+65 °C	-20..+65 °C	-20..+65 °C
Connections	Clamp terminals / bus	Clamp terminals / bus	Clamp terminals / bus
Protection degree	IP20	IP20	IP20
Channels	1 input, 1 output	1 input, 1 output	1 input, 1 output
Status indicators	Power ON Data Inverted connection	Power ON Data Inverted connection	Power ON Data Inverted connection
Communication	Automatic handshake Baud rate: 1.200..115.200 bps	Automatic handshake Baud rate: 1.200..115.200 bps	
Embedded functions			Compliance to USB 1.1 and 2.0 Plug&play for WIN 98, 2000 and XP Multiple connection on the same PC
Approvals	CE, UL-UR CSA	CE, UL-UR CSA	CE, UL-UR CSA
Norms	EN 61000-6-4, EN 61000-6-2, EN 61010-1	EN 61000-6-4, EN 61000-6-2, EN 61010-1	EN 61000-6-4, EN 61000-6-2, EN 61010-1
DATA X SIDE			
Type	SERIAL RS485 Half duplex, 31 nodes, line termination, protection up to 30 Vdc	SERIAL RS232, protection up to 30 Vdc	SERIAL USB interface, standard USB 1.0/ 2.0 compliance, USB A and MINI USB B connection
DATA Y SIDE			
Type	SERIAL RS485 half duplex, 31 nodes, terminal, protection up to 30 Vdc	SERIAL RS485 half duplex, 31 nodes, terminal, protection up to 30 Vdc	SERIAL RS485, max 31 nodes, spring cage terminal block
ORDER CODES			
Code	K107A	K107B	K107USB (programming cable and CD rom included)
Accessories / Software	Page 56	Page 56	Page 56

SOFTWARE & ACCESSORIES

K-BUS

Expandable power supply connector (EN 60175)



ORDER CODES

K-BUS 2 slot expandable power supply connector

K-SUPPLY

Redundant power supply module



To combine with all K series modules

ORDER CODES

K-SUPPLY Power supply module with electronic protections

EASY SETUP / EASY LP

Complete collection of plug&play configurators

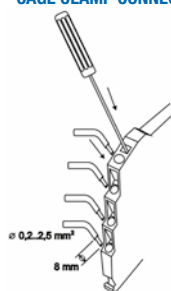


Free download on www.seneca.it

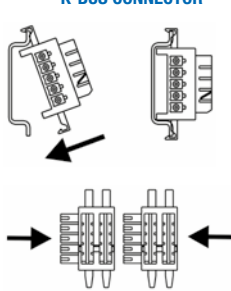
To combine with K111 - K121 K120RTD

CONNECTION AND INSTALLATION

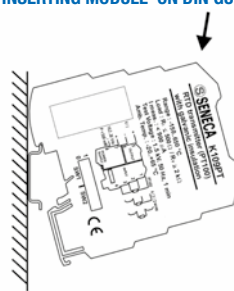
CAGE CLAMP CONNECTION



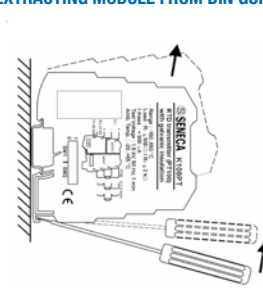
K-BUS CONNECTOR



INSERTING MODULE ON DIN GUIDE



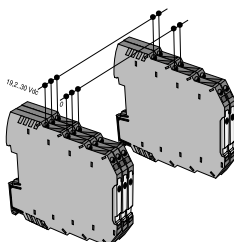
EXTRACTING MODULE FROM DIN GUIDE



POWER SUPPLY TECHNIQUE

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

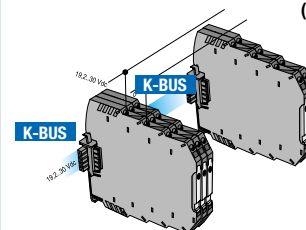
POWER SUPPLY ON SPRING-CAGE TERMINAL



1

SMART SUPPLY SYSTEM

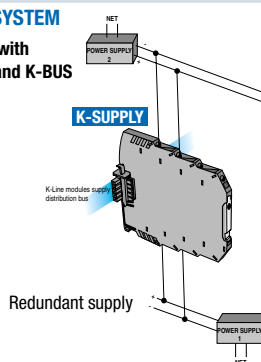
Distributed supply with 2 slot connector K-BUS (up to 16 modules)



2

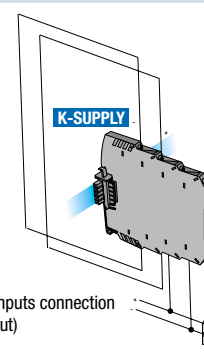
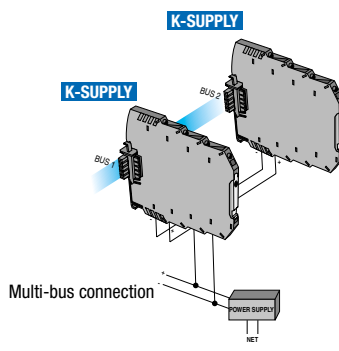
SMART SUPPLY SYSTEM

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



K-SUPPLY

K-SUPPLY



3

EASY USB USB - UART TTL Converter



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

CODICI D'ORDINE

EASY-USB USB - UART TTL Converter

S117P1

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



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

CODICI D'ORDINE

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