

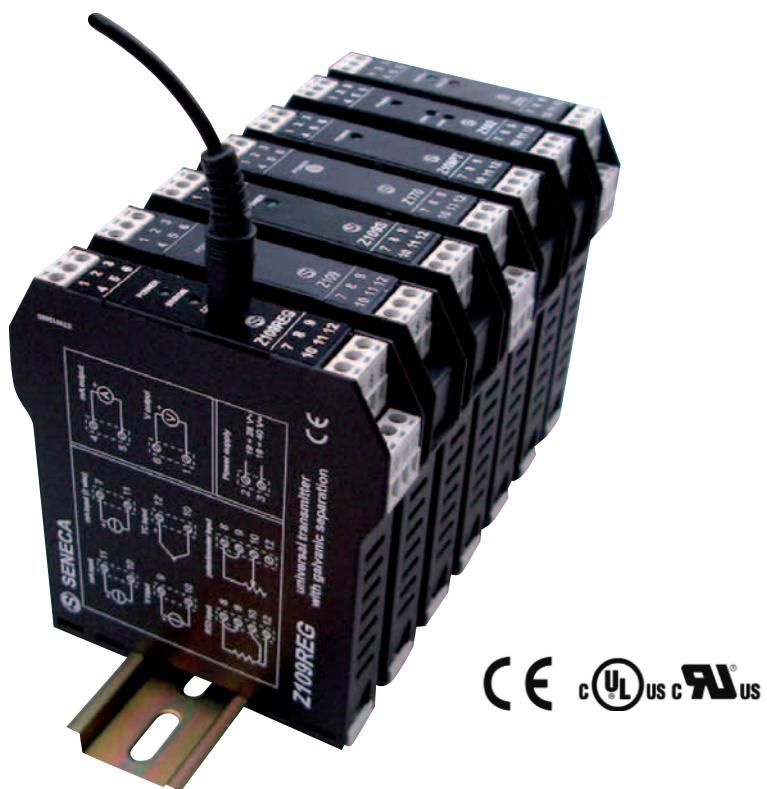


Z-LINE

Z-LINE

Modular signal conditioners

SHORT GUIDE



- ▶ Analogue and digital signal converters
- ▶ Galvanic isolators
- ▶ Communication interfaces
- ▶ Temperature converters
- ▶ Pulses converters
- ▶ Universal converter
- ▶ Limit alarm trips and switches

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Z-LINE

OVERVIEW

Z-Line series offers a full range of signal conditioners including **Signal Converters**, **Transmitters**, **Galvanic Isolators**, **Splitters**, **Trip Amplifiers** and **Maths Modules**. They are easy to use, simple to install and have a universal (ac/dc) low voltage supply.

Specifications Z-LINE

Power supply: 10 – 40 Vdc / 19 – 28 Vac / 85..265 Vac/dc / 5..30 Vdc loop powered

Maximum power consumption: 2.5 W

Isolation: from 1500 Vrms (up to 4.000 Vrms) for 1 minute at three points (power supply/input/output)

Operating temperature: 0 - +50 °C / -10..+60 °C

Storage temperature: -20 - +70 °C

Maximum humidity: 90% at +40 °C (non-condensing)

Connections: Screw-fit removable terminals for wires up to 2.5 mm²

Mounting: For guide 35 mm DIN 46277

Case dimensions: 17.5 x 100 x 112 mm

Case material: Nylon 6 filled with 30% fibreglass – self-extinguishing class V0

CE and UL Standards



All Serie Z products comply with the directives concerning electromagnetic compatibility in INDUSTRIAL ENVIRONMENTS:

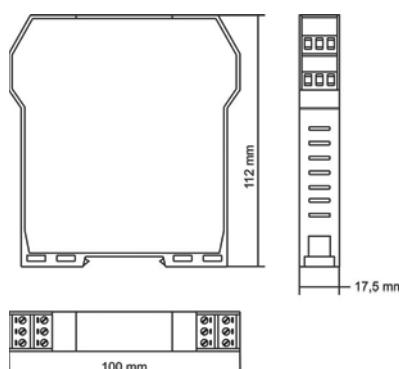
EMISSION in compliance with:

- Standard EN 50081-2
- Conducted EN 55011
- Radiated EN 55011

IMMUNITY in compliance with:

- Standard EN 50082-2:
- ESD EN 61000-4-2
- Burst EN 61000-4-4
- Radio frequency EN 50140 / 141

Dimensions



Highlights



Connections and Mechanics

- Screw-fit removable terminals
- Rail mounting
- Compact housing (17.5 mm wide)



Parameters configuration

- Configuration via DIP switch / Software (Z-SETUP) / Hand Held configurator (Test-3)
- Setup software for universal converter
- Selection input / output / filter / scaling / com / burn out etc.



Transducers power supply

- Source for transducers
- Active input 2 wires
- Minimum voltage of 20 Vdc and current of 20 mA



Standard signals

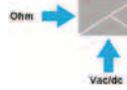
- ANALOG: currents (bidirectional, active or passive), voltage (bipolar), resistance (2 or 3 wires potentiometer, rheostat), electric parameters
- SENSORS: RTD (thermoresistance 2, 3, 4 wires), TC (thermocouples J K R S T E B N), Load Cell (strain gauge)
- Any kind of PULSES
- Electric parameters: W, I, V, cosfi, f



Isolation & Power Supply

- 3 way (Input / Supply / Output) galvanic isolation from 1.500 to 4.000 Vac
- Supply range: from 10 to 265 Vac/dc
- Switching supply

		Z109REG	Z109REG2•Z109REG2-H	Z109UI2	Z109S
FUNCTIONAL DIAGRAM					
ORDER CODE	Z109REG -ER (square root extraction)	Z109REG2 (9..40 Vdc/19..28 Vac) Z109REG2-H (85..265 Vac/dc) -ER (square root extraction)	Z109UI2	Z109S	
INPUT	NR	1	1 analog, 1 strobe	1	1
	TYPE	Voltage (mV, V) Bipolar 0..20 mA Bipolar 0..2, 0..5, 0..10 V Current (mA) Bipolar 0..20 mA RTD Pt100 (-200..+600°C) Thermocouple Type J, K, R, S, T, E, B, N Potentiometer 0..15 kΩ	Voltage (mV, V) Bipolar from 75 mV up to 20 V Resolution 15 bit + sign Current (mA) Bipolar up to 20 mA Resolution 1 μA RTD Pt100, Pt500, Pt1000, Ni100, KTY81, KTY84, NTC Thermocouple Type J, K, R, S, T, E, B, N Resolution 2,5 μV Potentiometer / Rheostat Potentiometer: 500 Ω..10 kΩ Rheostat: 500 Ω..25 kΩ Strobe Alternative to relay output	Voltage (mV, V) Bipolar from 75 mV up to 20 V 9 scales Resolution 15 bit + sign Current (mA) Bipolar up to 20 mA Resolution 1 μA	
OUTPUT	NR	1	1 analog, 1 relay	1	1
	TYPE	Voltage (V) 2 scales: 0..2, 0..10 V Current (mA) 2 scales: 0..20, 4..20 mA	Voltage (V) 4 scales: 0/1..5V, 0/2..10V Min load impedance 2 kΩ Current (mA) 2 scales: 0/4..20 mA Max load impedance 600 Ω Relay Alternative to strobe input NC / NO in case of alarm	Voltage (V) 4 scales: 0/1..5V, 0/2..10V Min load impedance 2 kΩ Current (mA) 2 scales: 0/4..20 mA Max load impedance 600 Ω	Current (mA) 2 scales: 0/4..20 mA Max load impedance 600 Ω
PRECISION CLASS	0,2%	0,1%	0,1%	0,1%	0,2 %
THERMAL DRIFT	0,02 % f.s. / °C	0,01%°K	0,01%°K	0,01%°K	0,02 % f.s. / °C
LINEARITY	0,05% (V,I), 0,2% (RTD), 1°C (TC)	0,05% / 0,4%	0,05% (V,I), 0,01% (Vout)	0,05% (V,I), 0,01% (Vout)	0,05 %
SETTINGS	DIP switch Z-SETUP (PC software)	DIP switch Z-SETUP2 (PC software) Test-3 (hand held calibrator)	DIP switch Jumper	DIP switch Jumper	
POWER SUPPLY	9..30 (option) - 19..40 Vdc 19..28 Vac; (50..60 Hz)	Z109REG2: 9..40 Vdc; 19..28 Vac; (50..60 Hz) Z109REG2-H: 85..265 Vac/dc	9..40 Vdc 19..28 Vac; (50..60 Hz)	9..40 Vdc 19..28 Vac; (50..60 Hz)	9..40 Vdc 19..28 Vac; (50..60 Hz)
SENSORS SUPPLY	Active input 2 wires (min 18 Vdc)	Active input 2 wires (min 20 Vdc)	Active input 2 wires (min 20 Vdc)	Active input 2 wires (min 20 Vdc)	
POWER CONSUMPTION	2,5 W (max)	2,5 W (max) 1,6 W (24 Vdc, 20 mA)	2,5 W	2,5 W	
ISOLATION & PROTECTIONS	1.500 Vac (1 at 3 way) Input: 60 V / 200 mA Pulses 400 W / ms	1.500 Vac (1 at 3 way) Pulses 400 W / ms	1.500 Vac (1 at 3 way) Input: 60 V / 200 mA Pulses 400 W / ms	1.500 Vac (1 at 3 way) Input: 60 V / 200 mA Pulses 400 W / ms	
FRONT LED	Power supply Error	Power supply Error Alarm	Power supply	Power supply	
RESPONSE TIME	300 ms	35 ms (11 bit)..140 ms (16 bit)	35 ms (11 bit)..140 ms (16 bit)	< 60 ms	
OPERATING TEMP.	0..+55°C	-10..+60°C	-10..+60°C	0..+50°C	
DIMENSIONS	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	Screw fit removable terminals	Screw fit removable terminals	Screw fit removable terminals	Screw fit removable terminals	
WEIGHT	200 g	200 g	200 g	200 g	
APPROVALS					
NORMS	EN 50081-1, EN 50082-2, EN 61010-1	EN 61000-6-4 / 2002, EN 61000-2-2/2005 / EN 61010-1, EN 60742	EN 55011, EN 61000-4-2, EN 61000-4-4, EN 50140 / 141	EN 55011, EN 61000-4-2, EN 61000-4-4, EN 50140 / 141	

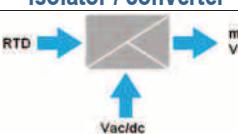
Z102	Z110	Z-4AI-D	Z-4TC-D	Z-SG	
					
Potentiometric to DC isolator / converter	DC current isolator (loop-powered)	4 Current / voltage A/D converter	4 Thermocouples A/D converter	Strain gauge to DC isolator / converter	
FUNCTIONAL DIAGRAM					
ORDER CODE	Z102	Z110S (single channel) Z110D (double channel)	Z-4AI-D	Z-4TC-D	Z-SG
INPUT NR	1	1, 2	4	4	1 analog, 1 digital
TYPE	Potentiometer 2 wires: 0..300 Ω (I=6mA); 0..500 Ω (I=3,6 mA); 0..1 KΩ (I=1,8 mA) 3 wires: Vref=1,8 Vcc, from 200 Ω to 1 MΩ	Current (mA) 4..20 mA	Voltage (V) 2..10 V f.s. Resolution 16.000 points Impedance: 100 KΩ	Thermocouples Type J, K, R, S, T, E, B, N	Analog Strain gauge load cell, 4 or 6 bridge connections, min 87 Ω for 1..4 load cells (350 Ω) or 1..8 load cells (1.000 Ω); Sensitivity: 1.64 mV/V
OUTPUT NR	1	1,2	2	2	Digital Tare calibration / threshold weight
TYPE	Voltage (V) 4 scales: 0..5, 1..5, 0..10 2..10 V Load impedance > 2,5 KΩ Current (mA) 2 scales: 0..20, 4..20 mA Loop impedance < 600 Ω	Current (mA) 4..20 mA	Digital Channels from/to control unit (1 settable as clock or reset input)	Digital Channels from/to control unit (1 settable as clock or reset input)	1 analog, 1 digital Current (mA) 0..20, 4..20 mA Voltage (V) 0..10, 0..5 Vdc Digital Tare calibration / threshold weight
INTERFACE			RS485 2 wires, 1.200..115k bps RS232 (setup)	RS485 2 wires, 1.200..115k bps RS232 (setup)	RS485 ModBUS RTU 2 wires, 1.200..115k bps RS232, 2.400 bps
PRECISION CLASS	0,2%	0,1%			0,01%
THERMAL DRIFT	0,02 % f.s. / °C	0,02 % f. / °C			0,0025% / °C
LINEARITY	0,05 %	0,1 % f.s.			0,01%
SETTINGS	DIP switch (zero, span)		PLC IEC 61131 libraries DIP switch (filter time, input time, scales, serial interface)	PLC IEC 61131 libraries DIP switch (filter time, input time, scales, serial interface)	DIP Switch Z-NET3 (PC software)
POWER SUPPLY	9..30 (option) - 19..40 Vdc 19..28 Vac (50..60 Hz)	Self powered on input	9..30 (option) - 19..40 Vdc 19..28 Vac (50..60 Hz)	9..30 (option) - 19..40 Vdc 19..28 Vac (50..60 Hz)	10..40 Vdc 19..28 Vac
CONSUMPTION	2,5 W				2 W
ISOLATION & PROTECTIONS	1.500 Vac 3 way 400 W/ms impulsive overvoltages	I/O isolation 1.500 Vac I/O protection: up to 35 Vdc max	1.500 Vac Input protection 60 V continuous	1.500 Vac Input protection 60 V continuous	1.500 Vac
FRONT LED	Power supply		Power supply Fault Data transmission Data receiving	Power supply Fault Data transmission Data receiving	Power supply Fault Data transmission Data receiving
RESPONSE TIME	40 ms	100 ms	< 400 ms	< 400 ms	< 10 ms
OPERATING TEMP.	0..+50°C	0..+50°C	0..+50°C	0..+50°C	-10..+65°C
DIMENSIONS	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	Screw fit removable terminals	Screw fit removable terminals	Screw fit removable terminals	Screw fit removable terminals	Screw fit removable terminals
WEIGHT	200 g	200 g	200 g	200 g	200 g
APPROVALS					
NORMS	EN 55011, EN 61000-4-2, EN 61000-4-4, EN 50140 / 141	EN 55011, EN 61000-4-2, EN 61000-4-4, EN 50140 / 141	EN 55011, EN 61000-4-2, EN 61000-4-4, EN 50140 / 141	EN 55011, EN 61000-4-2, EN 61000-4-4, EN 50140 / 141	EN 61000-6-4, EN 61000-6-2, EN 61010-1, EN 60742, IEC 61131

ELECTRIC MEASURES CONVERTERS

	T201	Z201 • Z201-H	Z202 • Z202-H • Z202-LP	Z203	S203T • S203TA
					
FUNCTIONAL DIAGRAM	Loop powered current transformer	AC current to DC isolator / converter	AC voltage to DC isolator / converter	AC single phase network analyzer	Advanced 3-phase network analyzer
ORDER CODE	T201	Z201 (10..40 Vdc / 19..28 Vac) Z201-H (85..265 Vac/dc)	Z202 (10..40 Vdc / 19..28 Vac) Z202-H (85..265 Vac/dc) Z202-LP (5..28 Vdc loop powered)	Z203 (10..40 Vdc / 19..28 Vac)	S203T (input 100 mA) S203TA (input 5 Arms)
INPUT	NR 1	TYPE AC Current (A) 5, 10, 15, 20, 25, 30, 35, 40 A Max current capacity: 800 A Frequency: 20..1.000 Hz Crest Factor: 2	NR 1	TYPE AC Current (A) 0..5 / 10 A	NR 1
				AC Voltage (V) Alternate voltage 0..500 Vac, input impedance 2.000 Ω/V, frequency 10 Hz..1kHz	AC Voltage (V) Up to 600 Vac AC Current (A) S203T: Nominal range 15 (25, 100) mA(rms) S203TA: Nominal range defined by primary current
OUTPUT	NR 1	TYPE Current (mA) 4..20 mA (2 wires)	NR 1	TYPE Current (mA) 2 scales: 0..10V, 2..10 V Min load impedance 2,5 kΩ	NR 1
				Voltage (V) 4 scales: 0..5, 1..5, 0..10, 2..10 V Min load impedance 2,5 kΩ Current (mA) Active or passive 2 scales: 0..20 or 4..20 mA Max load impedance 600 Ω	Voltage (V) 4 scales: 0..5, 0..10 V Min load impedance 2 kΩ Current (mA) 2 scales: 0..20, 4..20 mA Analog Retransmission I, V, W, Q, cosφ
COMMUNICATION INTERFACES					RS485, 2 wires, 1.200..115k bps RS232, 2.400 bps ModBUS RTU Slave protocol
PRECISION CLASS	0,1%	0,3 %	0,25 %	0,5%	0,2% (voltmeter, ampermeter, wattmeter)
THERMAL DRIFT	115 ppm/°K	0,02 % f.s. / °C	100 ppm/K		
LINEARITY		0,3 %	0,25 %		
SETTINGS	DIP switch	DIP switch	DIP switch (input / output scale)	DIP switch Software (Z-NET)	DIP switch Software (Z-NET)
POWER SUPPLY	Loop powered (5..28 Vdc)	Z201: 19..40 Vdc / 19..28 Vac Z201-H: 85..265 Vac/dc	Z202: 19..40 Vdc / 19..28 Vac Z202-H: 85..265 Vac/dc Z202-LP: 5..28 Vdc	10..40 Vdc 19..28 Vac (50..60 Hz)	10..40 Vdc 19..28 Vac (50..60 Hz)
CONSUMPTION		2,5 W	< 1,5 W	2,5 W	< 2,5 W
ISOLATION & PROTECTIONS	CAT III 300 Vac	3.750 Vac	1.500 Vac 3 way 400 W/ms impulsive overvoltages	3.750 Vac from/to power 1.500 Vac other circuits	3.750 Vac from/to measure input 1.500 Vac other circuits 4 kV (ESD)
FRONT LED		Power supply	Power supply	PWR (power supply) Fail Tx (data transmission) Rx (data receiving)	
RESPONSE TIME	< 100 ms	< 200 ms	30 ms	< 10 ms	400 ms
OPERATING TEMP.	-20..+65 °C	0..+55°	0..+60°C	0..+55 °C	-10..+65 °C
CONNECTIONS	Faston clamp	Screw fit removable terminals	Screw fit removable terminals	Screw fit removable terminals IDC10 back connector for DIN rail Front jack RS232	Screw terminals – step 5,08 mm
DIMENSIONS	38 x 40 x 20 mm	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm	105 x 89 x 60 mm
WEIGHT	50 g	200 g	140 g	140 g	
APPROVALS					
NORMS	EN 60668+A1+A2, EN 61000-6-4, EN 61000-6-2, EN 61010-1	EN 55011, EN 61000-4-2, EN 61000-4-4, EN 50140 / 141	EN50081-2, EN50082-2, EN61010-1, EN60742	EN 61000-6-4/2002, EN 61000-6-2/2002, EN 61010-1	EN 61000-6-4/2002, EN 61000-6-2/2002, EN 61010-1, EN 60742

TEMPERATURE CONVERTERS

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Z109PT2		Z109TC	FlexTop	FlexTop ISO
				
RTD to DC isolator / converter		Thermocouple to DC isolator / converter	PT100 transmitter (loop powered)	Universal temperature transmitter
FUNCTIONAL DIAGRAM				
				
ORDER CODE	Z109PT2	Z109TC	FLEXTOP (standard) -C (programming) -EX (EEx ia)	FLEXTOP ISO (standard) -C (programming) -EX (EEx ia)
INPUT	NR 1 TYPE RTD Pt100, Pt500, Pt1000, Ni100, KTY81, KTY84, NTC 2, 3, 4 wires measurement Energizing current 1 mA Resolution 0,1°C	NR 1 TYPE Thermocouple Type: J, K, R, S, T, E, B, N Resolution 5 µV TC interruption automatic detection	NR 1 TYPE Pt100 Thermoresistance: 2/3/4 wires measurement IEC/DIN/EN 60 751-2 -200/+850 °C Min span 25 °C Protection ± 35 Vdc	NR 1 TYPE RTD Pt25..Pt1000, Ni25..Ni1000, Cu25..Cu1000 2/3/4 wires measurement Thermocouple B,E,J,K,L,T,U,IEC 584, ASTM 988 Voltage (mV, V) -10..70 mV, -0,1..1 V Ohm 0..390 Ω, 0..2 200 Ω Protection ± 35 Vdc
OUTPUT	NR 1 TYPE Voltage (V) 4 scales: 0..5, 0..10, 1..5, 2..10 V Min load impedance 2 kΩ Resolution: 2,5 µA / 1,25 mV Current (mA) 2 scales: 0..20, 4..20 mA Max load impedance 600 Ω Resolution: 2,5 µA / 1,25 mV	NR 1 TYPE Voltage (V) 4 scales: 0..5, 1..5, 0..10, 2..10 V Min load impedance 2,5 kΩ Resolution: 0,025%..0,032 % Current (mA) Active / passive connection 2 scales: 0..20, 4..20 mA Max load impedance: 600 Ω Resolution: 0,025%..0,032 %	NR 1 TYPE Current (mA) 4..20 mA, 2-wire Resolution 12 bit Burn out positive / negative Up/down limits 23 mA / 3,5 mA Damping 0..30 s Protection with polarity inversion	NR 1 TYPE Current (mA) 4..20, 20..4 mA, 2 wires Resolution 12 bit
PRECISION CLASS	0,1% (RTD) 0,3% (voltage output)	0,2 % - input 0,1 % - output	< 0,1%	< 0,1%
THERMAL DRIFT	0,02 % f.s. / °C	0,02 % f.s. / °C -input 0,01% f.s. / °C -output	Max 0,01% f.s. / °C, typical 0,003% f.s./°C	
LINEARITY	0,1 %	1°C, 3 °C over 600 °C 0,1 % - output	0,1 %	Max 0,01% f.s. / °C, typical 0,003% f.s./°C
SETTINGS	DIP Switch: range (f.s input f.s selection);output selection (range of scale)	DIP switch (type, zero and span of input thermocouples, output scale and polarity) TC emulator	Flex Programmer (sw toolkit) Programmable Damping Technical units selection Settable tag up to 15 characters	Flex Programmer (sw toolkit) Programmable Damping
POWER SUPPLY	9..40 Vdc, 19..28 Vac (50..60 Hz)	9..30 (opt.) - 19..40 Vdc 19..28 Vac (50..60 Hz)	8..35 Vdc (loop powered)	6,5..35 Vdc (loop powered)
CONSUMPTION	2,5 W	2,5 W		
ISOLATION & PROTECTION	Power supply / Input / Output isolation: 1.500 Vac Overvoltage protections: 400 W/ms	Power supply / Input / Output isolation: 1.500 Vac Overvoltage protections: 400 W/ms	Box IP40, terminals IP00 Internal inductivity < 10 µF Internal capacity 10 nF Barrier: Umax 28 Vcc, Imax 0,1A, Pmax 0,7 W	Isolation: 3,75 KVac; protection: IP55 box, IP10 terminals Internal inductivity < 15 µF Internal capacity < 2 nF Barrier: Umax=30 Vdc, Imax=0,1 A, Pmax=0,75W
FRONT LED	Power Supply Setting Fault Out scale	Power supply Fault	Sensor fault	
RESPONSE TIME	35..140 ms	330 ms	0,7 s	
RESOLUTION	11bit+sign..15bit+sign		12 bit	12 bit
OPERATING TEMP.	-10..+60°C	0..+50°C	-40..+85 °C	-40..+85 °C
CONNECTIONS	Screw fit removable terminals	Screw fit removable terminals	Spring loaded system	Spring loaded system
DIMENSIONS	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm	Ø 44 x 19 mm	Ø 44 x 26,3 mm
WEIGHT	200 g	200 g		
APPROVALS			CE, EEx ia IIC T5/T6 ATEX II 1G (EEx versions)	CE, Namur NE 21, Demko EEx ia IIC T5/T6
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	EN50081-1, EN50081-2 EN50014, EN50020	EN 61326

PULSES CONVERTERS & SIGNAL PROCESSORS

Z104



Z111



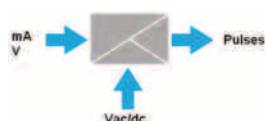
Z170



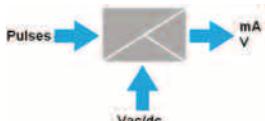
Z190



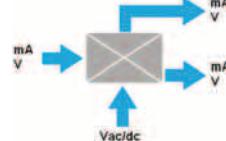
DC to frequency converter / isolator



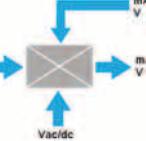
Frequency to DC converter / isolator



DC duplicator / isolator



DC adder - subtractor / isolator



FUNCTIONAL DIAGRAM

ORDER CODE	Z104	Z111	Z170	Z190
INPUT NR	1	1	1	2
TYPE	Voltage (V) 4 scales: 0..1, 0.5, 0..10, 2..10 V Input impedance 1 MΩ Current (mA) 2 scales: 0/4..20 mA Active connection: loop powered 15 Vdc not stabilized Passive connection: input impedance 100	Pulses Contact / reed; 2/3 wires npn; 3 wires pnp with 24 Vdc power supply; namur; photoelectric; hall effect sensor; variable reluctance; 24 V; TTL Max frequency: 10 kHz	Voltage (V) 4 scales: 0..1, 0.5, 0..10, 2..10 V Input impedance 500 kΩ Current (mA) 2 scales: 0/4..20 mA Active connection: loop powered 20 Vdc not stabilized Passive connection: input impedance 100	Voltage (V) 4 scales: 0..1, 0.5, 0..10, 2..10 V Input impedance 500 kΩ Current (mA) 2 scales: 0/4..20 mA Active connection: loop powered 20 Vdc not stabilized Passive connection: input impedance 100
OUTPUT NR	1	1	2 (independent)	1
TYPE	Pulses Transistor npn open collector, 30 Vcc, 300 mA Reed relay, 30 Vdc-ac, 100 mA Max frequency: 10 kHz	Voltage (V) 4 scales: 0.5, 0..10, 1.5, 2..10 V, min load resistance 2.500 Ω Current (mA) 2 scales: 0/4..20 mA Max load resistance 600 Ω	Voltage (V) 4 scales: 0.5, 0..10, 1.5, 2..10 V, min load resistance 2.500 Ω Current (mA) 2 scales: 0/4..20 mA Active connection: max loop impedance 600 Ω Passive connection	Voltage (V) 4 scales: 0.5, 0..10, 1.5, 2..10 V, min load resistance 2.500 Ω Current (mA) 2 scales: 0/4..20 mA Active connection: max loop impedance 600 Ω Passive connection
PRECISION CLASS	0,2 %	0,3%	0,2 %	0,2 %
THERMAL DRIFT	0,02 % f.s. / °C	0,01 % f.s. / °C	0,02 % f.s. / °C	0,02 % f.s. / °C
LINEARITY	0,05 %		0,05 %	0,05 %
SETTINGS	DIP switch: input type, output, top of the scale Trimmer: top of the scale regulation, setting constant	DIP switch: input type & frequency, filter, pulses average, output Trimmer: top of the scale regulation (1 Hz..10 KHz)	DIP switch: I/O type & connections	DIP switch: I/O type & connections
POWER SUPPLY	19..40 (9..30 opt.) Vdc; 19..28 Vac (50..60 Hz)	19..40 (9..30 opt.) Vdc; 19..28 Vac (50..60 Hz)	19..40 Vdc; 19..28 Vac (50..60 Hz)	19..40 (9..30 opt.) Vdc; 19..28 Vac (50..60 Hz)
SENSORS SUPPLY	Active input 2 wires (min 20 Vdc)	Active input 2 wires (min 20 Vdc)	Active input 2 wires (min 20 Vdc)	Active input 2 wires (min 20 Vdc)
CONSUMPTION	2,5 W	2,5 W	2,5 W	2,5 W
ISOLATION & PROTECTIONS	1.500 Vac (at 3 way) Input: 100 mA Pulses 400 W/ ms	1.500 Vac (at 3 way)	1.500 Vac (at 3 way) Pulses output / power: 400 W/ ms	1.500 Vac (at 4 way) Pulses output / power 400 W/ ms
FRONT LED	Power supply Output (attracted relay)	Power supply Error	Power supply	Power supply
RESPONSE TIME	350 ms	250 ms		
OPERATING TEMP.	0..+50°C	0..+50°C	0..+50°C	0..+50°C
CONNECTIONS	Screw fit removable terminals	Screw fit removable terminals	Screw fit removable terminals	Screw fit removable terminals
DIMENSIONS	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm
WEIGHT	200 g	200 g	200 g	200 g
APPROVALS	CE	CE	CE	CE
NORMS	EN50081-1, EN50081-2, EN61010-1	EN50081-1, EN50081-2, EN61010-1	EN50081-1, EN50081-2, EN61010-1	EN50081-1, EN50081-2, EN61010-1

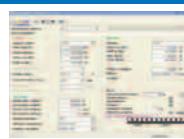
Z112		Z113		Z-TIMER	
					
On/Off sensors amplifier		DC current / voltage alarm trip module		Electronic timer	
FUNCTIONAL DIAGRAM					
	Pulse → Relay Vac/dc	mA → Relay Vac/dc	Start / Pause → Relay (T) Vac/dc		
ORDER CODE	Z112A (single channel) Z112D (double channel)	Z113S (1 relay output) Z113D (2 relay output) Z113T (3 relay output)	Z-TIMER Z-TIMER-D (2 independent times, working time and pause time)		
INPUT NR	1 / 2	1	1		
TYPE	Pulses Optoisolated from mechanical contact Reed 2/3 wires npn - 12..24 Vdc 3 wires pnp with 24 Vdc power supply NAMUR Pulses 24 Vdc Photoelectric sensor HALL effect sensor Max frequency 400 Hz	Voltage (V) 4 ranges: 0/1..5 Vdc, 0/2..10 Vdc Input impedance 500 KΩ Current (mA) 2 ranges: 0..20 mA; 4..20 mA Active connections Passive connection, input impedance:100 Ω	Contacts START time switch PAUSE time switch		
OUTPUT NR	1 / 2	1 / 2 / 3	1		
TYPE	Relay Z112A: relay with SPDT changeover and capacity 1 A - 30 Vdc or 5 A - 250 Vac (resistive load) Z112D: reed relays with SPST contact, max capacity 0,5 A - 100 Vdc-ac (10 VA on resistive load)	Relay Z-113A: relay with SPDT changeover and capacity 1A - 30 Vdc or 5 A – 250 Vac (resistive load) Z-113D/T: relais with SPST contact and max capacity 0,1 A - 30 Vdc-ac (10 VA on resistive load)	Relay SPDT changeover and capacity 8 A – 250 Vac (resistive load)		
THERMAL DRIFT		0.02 % f.s. / °C			
LINEARITY		0.05 %			
SETTINGS	DIP switch Input type, output repetition of input pulses, divisor circuit with programmable dividing factor between 1 and 256 Trimmer Pulse duration (100..500 ms)	DIP switch Input type Functions (excitement/de-excitement relays, minimum/maximum alarms) Trimmer Alarm set-point (1..100% control signal) Cut-in delay (0,3..30s) Hysteresis (2..15% of cut-in value)	DIP switch Nr 8 timer functions (delay upon excitement; delay upon de-excitement; blinker with non energized relay start; blinker with energized relay start; calibrator; opening timing with delay upon de-excitement; reopening timing with delay upon de-excitement) Nr 8 scales of times (50ms..10h) Trimmer Timing regulation		
POWER SUPPLY	19..40 (9..30 option) Vdc; 19..28 Vac; (50..60 Hz)	19..40 (9..30 option) Vdc 19..28 Vac; (50..60 Hz)	12..40 Vdc ± 10 % 12..40 Vac / 115..230 Vac ± 10 % 50..60 Hz		
SENSORS SUPPLY	Active input 2 wires (min 20 Vdc)	Active input 2 wires (min 20 Vdc)	Active input 2 wires (min 20 Vdc)		
CONSUMPTION	2,5 W	2,5 W	2 W		
ISOLATION & PROTECTIONS	Z112A 1.500 Vac (power/input) and 4.000 Vac (input/power/output) Z112D 1.500 Vac	Z113S 1.500 Vac (power./input) 4.000 Vac (input/power/output) Z113D, Z113T 1.500 Vac Impulsive over-voltages 400 W/ms	1.500 Vac (power/input) 4.000 Vac (input/power/output)		
FRONT LED	Powered instrument Energized relay	Power supply Threshold overcoming	Power supply Pause (energized relay) Timer (time switch pause)		
OPERATING TEMPERATURE	0..+50°C	0..+50°C	-10..+60°C		
CONNECTIONS	Screw fit removable terminals	Screw fit removable terminals	Screw fit removable terminals		
DIMENSIONS	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm	17,5 x 100 x 112 mm		
WEIGHT	200 g	200 g	200 g		
APPROVALS	CE	CE	CE		
NORMS	EN 50081-1, EN 50082-2, EN 61010-1	EN 50081-1, EN 50082-2, EN 61010-1	EN 50081-1, EN 50082-2, EN 61010-1		

Z-SETUP**Z109REG configuration software****MAIN FEATURES**

On line help for DIP-switches configuration guide.
Download / Upload / Acquisition of the module configuration
Inversion of the scale
Positive or negative burn-out setting
Positioning of the digital filter
Extraction of the square-root
Free conversion scales

ORDER CODES

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

Z-SETUP2**Z109REG configuration software****MAIN FEATURES**

Start / End scale, digital filter
Extraction of the square-root
Positive or negative burn-out setting
Analog output Start / End scale
Frequency rejection 50/60 Hz
Sample rate / resolution setting
Automatic alarm relay energizing in case of fault

ORDER CODES

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

S-TOOL**Configuration toolkit with SENECA software collection****MAIN FEATURES**

Setup software collection

ORDER CODES

S-TOOL Configuration toolkit including Z-PROG, Z-SETUP, Z-SETUP2, Z-4AI-D, Z-4TC-D libraries, Soft2000DOS/WIN, PM001600 cable

TEST-3**Hand held OLED multimeter and Z109REG2 configurator****MAIN FEATURES**

Precision class 0,1%
Z109REG2 Alarms, scales, I/O parameters settings
Generation / measure of voltage (0-10 V) and current (0-20 mA) signals
OLED display 128 x 64
NiMh batteries, AA type 2.650 mAh (20 h)

ORDER CODES

TEST-3 Hand held multimeter and Z109REG2 with OLED display

/T Calibration service (NIST traceable)

TEST-3-PK Precision kit with Z109REG2 programming cable

Flex Programmer**Programming toolkit FlexTop series****MAIN FEATURES**

Working as a datalogger for measures recording
Saving and loading of the configuration sets
Printing facility for hard copy records
An interface converter with a 1,5 mt long cable with a 9 pole RS232C plug to PC
Multi-language software CD

ORDER CODES

SOFT-FLEX Programming toolkit for FlexTop 2201 and FlexTop ISO

S117P**RS232-TTL/USB asynchronous serial converter****MAIN FEATURES**

Windows (Xp, Vista, Xp Embedded, CE .Net), Mac OS (8, 9, X), Linux (2.24.0) support
USB / RS232 isolation: 1.500 V
Loop powered by USB PC port
Dimensions: 90 x 50 x 25 mm
Standard USB 1.0, 1.1, 2.0

ORDER CODES

S117P RS232-TTL/USB asynchronous serial converter

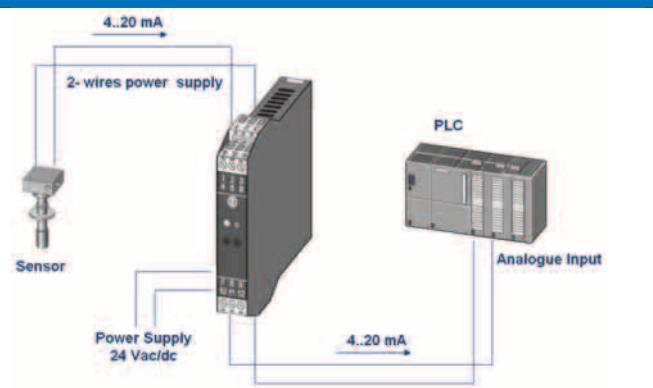
Z-POWER**DIN rail mounting 19 Vac transformer****ORDER CODES**

Z-POWER 230-15VA 19 Vac, 230-15 VA transformer
Z-POWER 230-25VA 19 Vac, 230-25 VA transformer
Z-POWER 115-15VA 19 Vac, 115-15 VA transformer

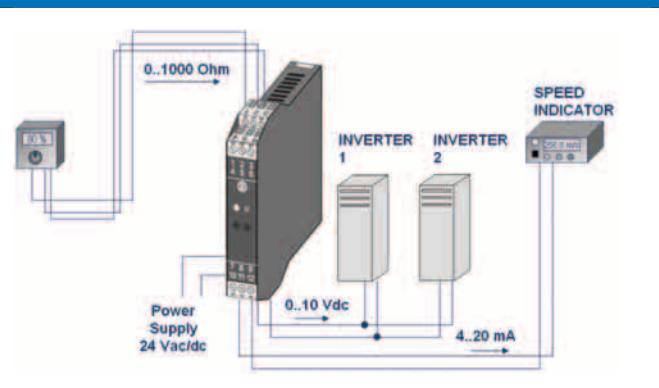
Programming cables**Programming cables****ORDER CODES**

PM001600 Programming serial cable (Z109REG, Z109REG2, Z203, Z-4AI-D, Z-4TC-D, Z-3AO, Z-8AI, Z-8TC) (jack / DB9F)
PM001970 RS232 (K107B) serial cable (probes / DB9F)
PM002240 Z109REGREG2 / TEST-2 programming cable (jack / jack)

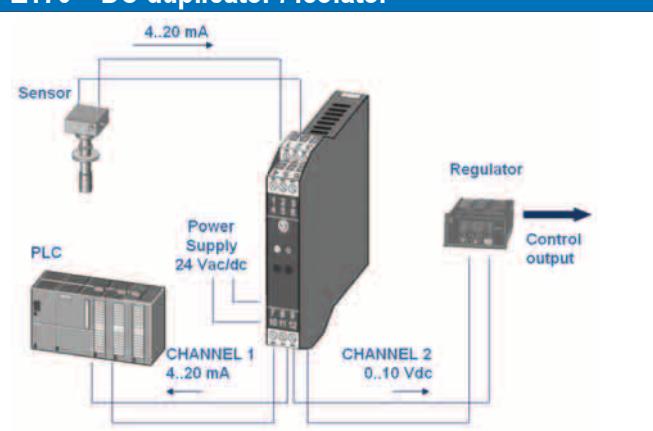
Z109S – DC current converter



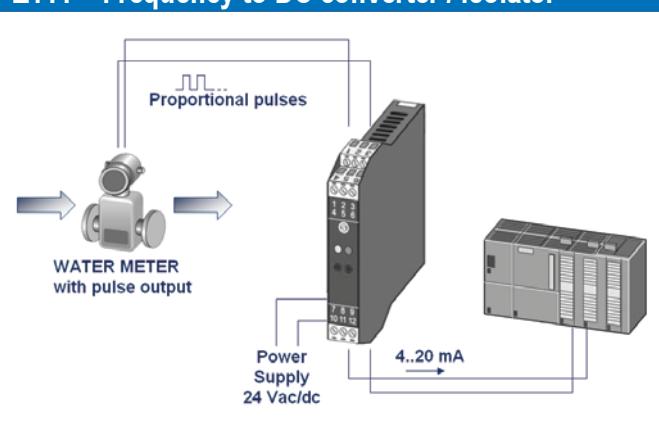
Z102 – Potentiometric to DC converter / isolator



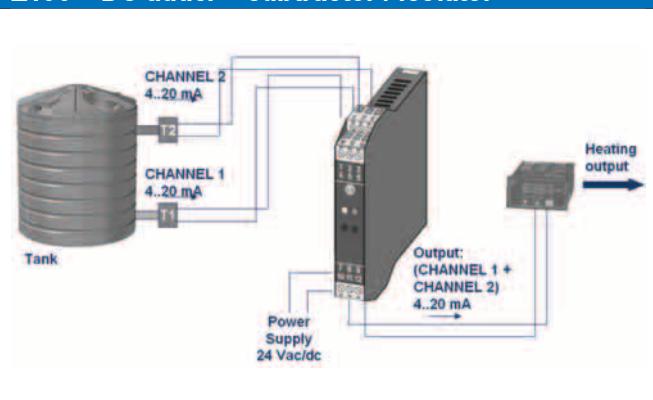
Z170 – DC duplicator / isolator



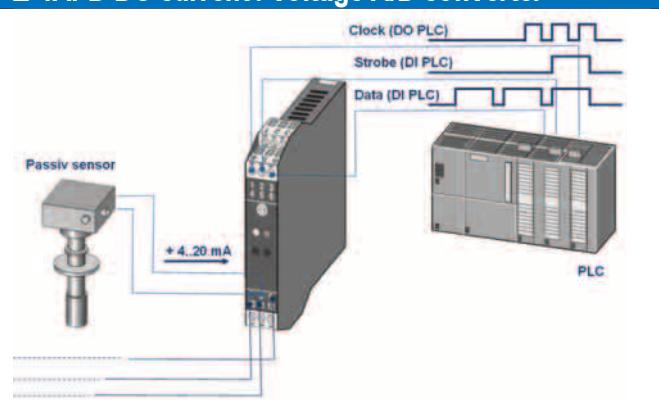
Z111 – Frequency to DC converter / isolator



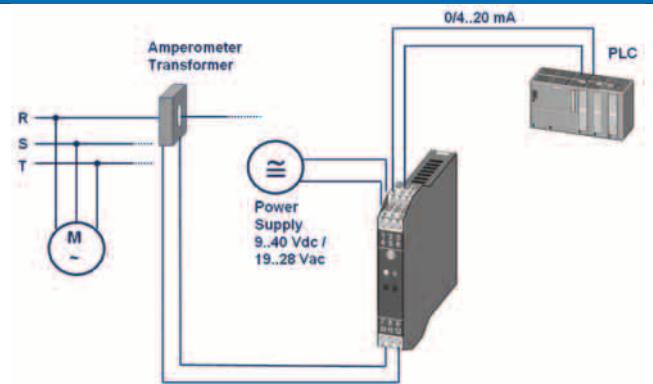
Z190 – DC adder – subtractor / isolator



Z-4AI-D DC current / voltage A/D converter



Z201 – AC current to DC converter / isolator



Z110 – DC current isolator (self-powered)

