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Z-LINE **Z109REG2**

Universal converter with galvanic isolation

ANALOG CONVERTERS

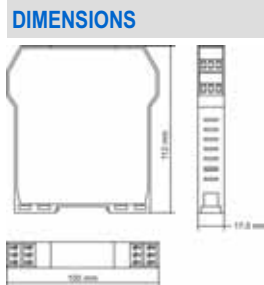


- ▶ **INPUT:** voltage (up to ± 20 V), current (up to 20 mA), RTD (Pt100, Pt500, Pt1000, Ni100, KTY81, KTY84, NTC(< 25 KOhm)), TC (J,K,R,S,T,C,B,E,N), potentiometer, rheostat,
- ▶ **STROBE** input (control analog output)
- ▶ **OUTPUT:** current, voltage, relay (SPST)
- ▶ **RESOLUTION:** programmable from 11 to 15 bits + sign
- ▶ **PRECISION:** 0.1%
- ▶ **RESPONSE TIME:** 35 ms (11 bits + sign)
- ▶ **ISOLATION:** 1.500 Vac @ 3 way
- ▶ **POWER SUPPLY:** 9..40 Vdc, 19..28 Vac



TECHNICAL SPECIFICATIONS

Z109REG2 • Universal converter with galvanic isolation



ORDER CODES

Code	Description	
Model	Z109REG2	Universal converter with galvanic isolation, 10..40 Vdc, 19..28 Vac
Option	-ER	Square root extraction
Accessories	S-TOOL	Z109REG2 toolkit: setup software (ZSETUP2) + serial cable (PM001600)



GENERAL DATA

Power supply	9..40 Vdc, 19..28 Vac 50-60 Hz
Consumption	Max 2.5 W; 1.6 W @ 24 Vdc (20 mA output)
Isolation	1.500 Vac @ 3 way
Input protection	Against pulse overvoltages 400 W/ms
Output/Supply protection	Against pulse overvoltages 400 W/ms
DIP switch configuration	Input type, start-end, output mode (zero elevation, scale inversion), output type (mA, V)
Software configuration	Start-end scale, root extraction, burn-out, etc.
Status indicators	Power supply, Out scale, error, alarm
Operating temperature	-10..+60°C
Humidity	Min 30%, max 90% at 40°C non condensing
Memory	EEPROM for all setup data; retention time: 40 years

Errors	V	mA	Ohm	Ni100	Pt100	Pt500	Pt1000	KTY81	KTY84	TC J	TC K	TC R	TC S	TC T	TCB	TC E	TC N	Vout
Calibration	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.3%
Thermal drift	0.01%/°K	0.01%/°K	0.01%/°K	0.01%/°K	0.01%/°K	0.01%/°K	0.01%/°K	0.01%/°K	0.01%/°K	0.01%/°K	0.01%/°K	0.01%/°K	0.01%/°K	0.01%/°K	0.01%/°K	0.01%/°K	0.01%/°K	0.01%/°K
Linearity	0.05%	0.05%			0.02% (>0°C); 0.05%					0.2°C	0.2°C	0.5°C	0.5°C		1.5°C	0.2°C	0.2°C	0.01%
EMI	<1%	<1%								<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	

CE Norms EN 61000-6-4 / 2002, EN 61000-2-2/2005, EN61010-1

INPUT DATA

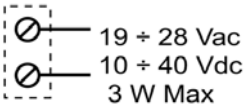
Voltage input	9 bipolar scales from 75 mV to 20 V, input impedance 1 MOhm, max resolution 15 bit + sign
Current input	Bipolar scales up to 20 mA, input impedance 50 Ohm, max resolution 1 µA
RTD input	Pt100, Pt500, Pt1000, Ni100, KTY81, KTY84 and NTC. 3 or 4 wires connection, excitation current 0,65 mA, resolution 0.1°C, RTD or cable interruption automatic detection. Resistive value for NTC: <25 KOhm. KTY81, KTY84 and NTC settable only by software.
TC input	TC J,K,R,S,T,B,E,N, resolution: 2,5 µV, TC interruption automatic detection, input impedance > 5 MOhm
Potentiometer input	Excitation voltage 300 mV, input impedance > 5MOhm, potentiometer range from 500 Ohm to 10 kOhm (with parallel resistor 500 Ohm)
Rheostat input	End scale min 500 Ohm, max 25 kOhm
Strobe input	Alternative to relay output
Sample frequency	240 sps (11 bit -+ sign)..15 sps (15 bit + sign)
Response time	35 ms (11 bit + sign)..140 ms (15 bit + sign)

OUTPUT DATA

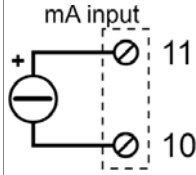
Current output	Scales: 0..20 / 4..20 mA, max load resistance: 600 Ohm
Voltage output	Scales: 0..5 / 0..10 / 1..5 / 2..10 V, min load resistance: 2kOhm
Relay output	Alternative to strobe input NC relay contact, NO in case of alarm
Resolution	2,5 µA / 1,25 mV
Output retransmission	Isolated analog output, current / voltage output Supplied active output connected to passive inputs

ELECTRICAL CONNECTIONS

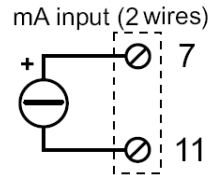
POWER SUPPLY



CURRENT INPUT

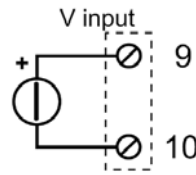


The loop is powered by the sensor

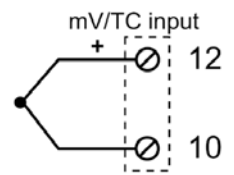


The loop is powered by the module

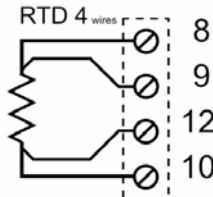
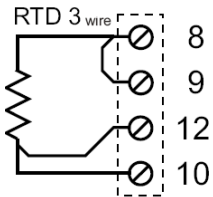
VOLTAGE INPUT



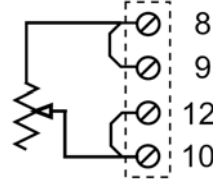
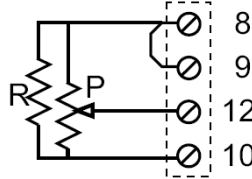
THERMOCOUPLE INPUT



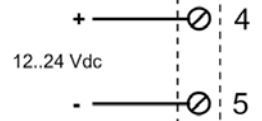
THERMORESISTANCE INPUT



POTENTIOMETER / RHEOSTAT INPUT

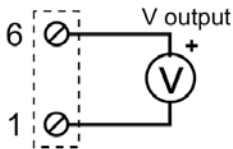


STROBE INPUT

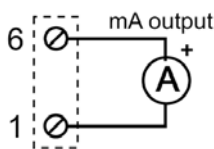


Alternative to relay output

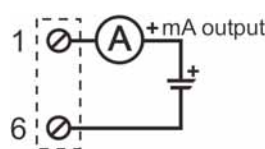
RETRANSMITTED OUTPUT



Voltage

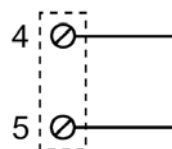


Current (supplied active output connected to passive inputs)



External power supply current

RELAY OUTPUT



Enabled alternatively to strobe input. Alarm NO / NC contact relay

DIP SWITCH CONFIGURATION

INPUT / MEASURE SCALE SELECTION

Input type selection is made by DIP switch SW1 group on the side of the module. Every kind of input signal match to end / start scale selectable by DIP switch SW2 group.

START / END SCALE FREE SETTINGS

START / END buttons under DIP-switches group SW2 enable to set start and end scale free. To complete this operation you need to use a signal generator that gives start / end scale values.

OUTPUT SELECTION

DIP-switches nr 7 and 8 of SW2 group enables to set output with or without zero elevation, direct or reversed output. DIP-switch group SW3 enables to select output type.

SW1

INPUT TYPE	1	2	3	4
V	↑	↑	↑	↑
ohm	↑	↑	↑	↓
mA	↑	↑	↓	↓
NI100	↑	↑	↓	↓
PT100	↑	↑	↓	↓
PT500	↑	↑	↓	↓
PT1000	↑	↑	↓	↓
Tc J	↑	↑	↓	↓

INPUT TYPE	1	2	3	4
Tc K	↑	↑	↑	↑
Tc R	↑	↑	↑	↓
Tc S	↑	↑	↓	↓
Tc T	↑	↑	↓	↓
Tc B	↑	↑	↓	↓
Tc E	↑	↑	↓	↓
Tc N	↑	↑	↓	↓
Pot	↑	↑	↓	↓

SW2

START	END
123	456
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8

SW2

OUTPUT MODE
7
0..20mA / 0..10V
4..20mA / 2..10V
8
NORMAL
REVERSED

SW3

OUTPUT VOLTAGE
12
Voltage
Current

CONFIGURATION SOFTWARE

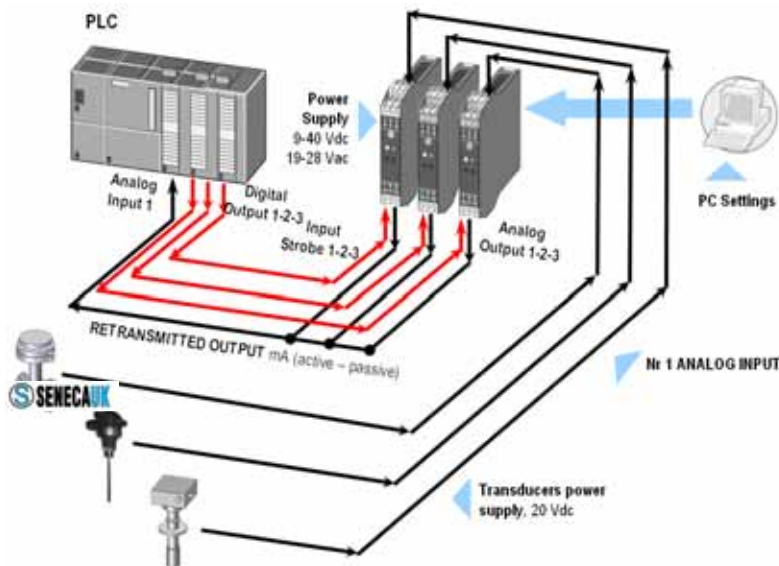
ZSETUP2 software:

- Min / max range scale; digital filter; square root extraction
- Burn-out
- 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



APPLICATION EXAMPLES

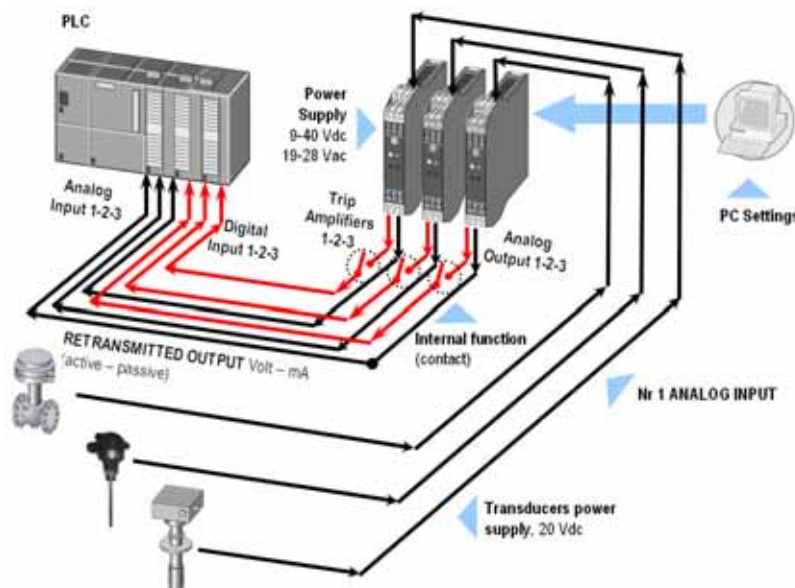
MULTIPLEXER



Advantage:

Just 1 analogue input (plc) is able to read signals outcoming from several Z109REG2.

TRIP AMPLIFIER



Advantages:

Z109REG2 can handle also threshold by a relay settable on 0..100% of universal input value.