

# 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 mm<sup>2</sup>  
**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:

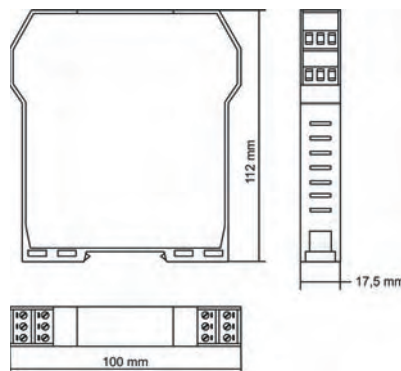
EMISSION in compliance with:

- 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

Z104


**DC to frequency  
converter / isolator**

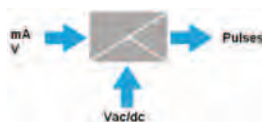
Z111


**Frequency to DC  
converter / isolator**

Z170


**DC duplicator / isolator**

Z190


**DC adder – subtractor /  
isolator**
**FUNCTIONAL  
DIAGRAM**


| ORDER CODE              | Z104   | Z111  | Z170   | Z190   |
|-------------------------|--|---|--|--|
| INPUT NR                | 1  | 1   | 1  | 2  |
| TYPE                    | <b>Voltage (V)</b><br>4 scales: 0..1, 0..5, 0..10, 2..10 V<br>Input impedance 1 M $\Omega$<br><b>Current (mA)</b><br>2 scales: 0/4..20 mA<br>Active connection: loop powered<br>15 Vdc not stabilized<br>Passive connection: input impedance 100 | <b>Pulses</b><br>Contact / reed; 2/3 wires npn; 3 wires pnp with 24 Vdc power supply; namur; photoelectric; hall effect sensor; variable reluctance; 24 V; TTL<br>Max frequency: 10 kHz | <b>Voltage (V)</b><br>4 scales: 0..1, 0..5, 0..10, 2..10 V<br>Input impedance 500 k $\Omega$<br><b>Current (mA)</b><br>2 scales: 0/4..20 mA<br>Active connection: loop powered<br>20 Vdc not stabilized<br>Passive connection: input impedance 100 | <b>Voltage (V)</b><br>4 scales: 0..1, 0..5, 0..10, 2..10 V<br>Input impedance 500 k $\Omega$<br><b>Current (mA)</b><br>2 scales: 0/4..20 mA<br>Active connection: loop powered<br>20 Vdc not stabilized<br>Passive connection: input impedance 100 |
| OUTPUT NR               | 1  | 1   | 2 (independent)  | 1  |
| TYPE                    | <b>Pulses</b><br>Transistor npn open collector, 30 Vcc, 300 mA<br>Reed relay, 30 Vdc-ac, 100 mA<br>Max frequency: 10 kHz   | <b>Voltage (V)</b><br>4 scales: 0..5, 0..10, 1..5, 2..10 V, min load resistance 2.500 $\Omega$<br><b>Current (mA)</b><br>2 scales: 0/4..20 mA<br>Max load resistance 600 $\Omega$       | <b>Voltage (V)</b><br>4 scales: 0..5, 0..10, 1..5, 2..10 V, min load resistance 2.500 $\Omega$<br><b>Current (mA)</b><br>2 scales: 0/4..20 mA<br>Active connection: max loop impedance 600 $\Omega$<br>Passive connection                          | <b>Voltage (V)</b><br>4 scales: 0..5, 0..10, 1..5, 2..10 V, min load resistance 2.500 $\Omega$<br><b>Current (mA)</b><br>2 scales: 0/4..20 mA<br>Active connection: max loop impedance 600 $\Omega$<br>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<br>Trimmer: rop of the scale regulation, setting constant   | DIP switch: input type & frequency, filter, pulses average, output<br>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;<br>19..28 Vac (50..60 Hz)   | 19..40 (9..30 opt.) Vdc;<br>19..28 Vac (50..60 Hz)  | 19..40 Vdc;<br>19..28 Vac (50..60 Hz)  | 19..40 (9..30 opt.) Vdc;<br>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)<br>Input: 100 mA<br>Pulses 400 W/ ms  | 1.500 Vac (at 3 way)  | 1.500 Vac (at 3 way)<br>Pulses output / power. 400 W/ ms   | 1.500 Vac (at 4 way)<br>Pulses output / power 400 W/ ms  |
| FRONT LED               | Power supply<br>Output (attracted relay)   | Power supply<br>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               |  |   |  |  |
| NORMS                   | EN50081-1, EN50081-2,<br>EN61010-1   | EN50081-1, EN50081-2,<br>EN61010-1  | EN50081-1, EN50081-2,<br>EN61010-1   | EN50081-1, EN50081-2,<br>EN61010-1   |