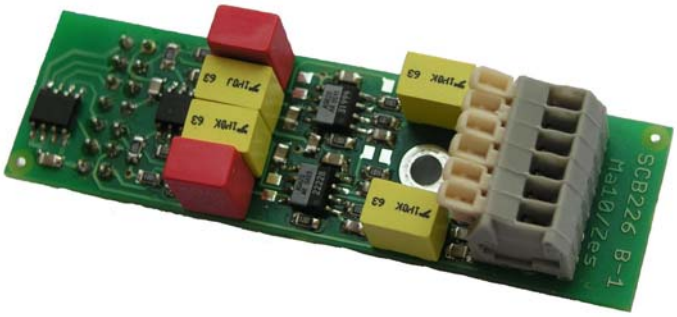
- In-built module for MA10
- Pt100 temperature sensor
- Disturbance filter
- Parameter stability
- Digital calibration
- 2 measuring channels



Basic characteristic

Z100 module works as a voltage amplifier from Pt100 temperature sensor for temperature measuring. Z100 sensor is designed for mounting into an analog inputs unit, MA10 type, with D/A converter.

Temperature sensor is connected to a measuring bridge and changes sensor resistance to voltage, which is subsequently amplified and filtered by 2.level filter.

Connection between input voltage and sensor resistance is roughly described by relations:

$$Uout = G \cdot VR \cdot \left(\frac{R2}{R2+R3} - \frac{R1}{R1+R_{Pt}} \right) \qquad R_{Pt} = \frac{G \cdot VR \cdot R1}{G \cdot VR \cdot \frac{R2}{R2+R3} - Uout}$$

where is G… amplification
VR….reference voltage of bridge
Uout.. output voltage
RPt…. Actual value of sensor voltage

Temperature sensor needs to be three-wire connected.

Z100 module contains 2 measuring channels.

Calibration constants for both measuring channels are stored in EEPROM.

Technical data

Digital power supply	+5V±5%, max. 5mA
Analog power supply	+5V±2%, max. 10mA
	-5V±2%, max. 10mA
Reference voltage Vref	+3V max. 1mA
Output voltage	max. ±3,5V
amplification G (without calibration)	42,17 ±1,5%
output offset (without cal.)	7,3mV
calibration accuracy	0,1% from range

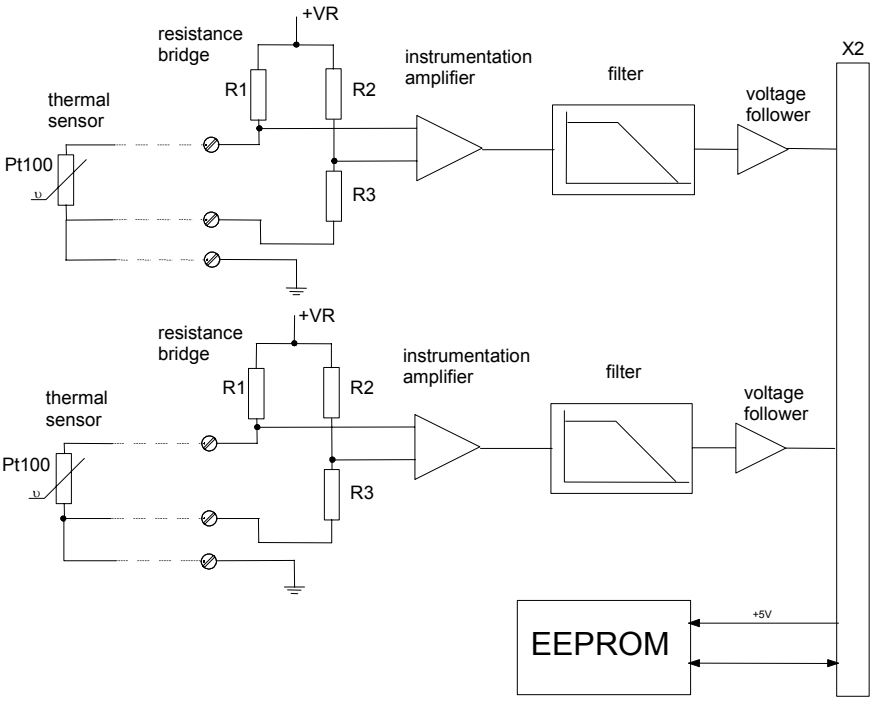
Measurable resistance range	82 .. 158Ω
Adequate temperature for Pt100	-42°C - +155°C
Ambient temperature	0 - 50°C
for guarantied accuracy	20 - 30°C
Dimensions	max. 20x70x22mm
Wire section	max. 1,5mm^2

Note: The actual amplifies and offsets are stored in EEPROM

Order data

Modules are standardly supplied as a part of MA10 unit, but can be also supplied separately.
Specify Z100 type mark in the order.
After agreement can be supplied modules with other parameters.

Schematic diagram



top view

1	GND
2	-AV
3	DO
4	UoutB
5	DI
6	GND
7	GND
8	GND
9	SK
10	UoutA
11	CS
12	+VR
13	+5V
14	+AV

Typical values of resistors
For Pt100

R1	3,3kΩ
R2	3,3kΩ
R3	82Ω

Mounting dimensions