



Z-8TC-LAB

8-CH Thermocouple inputs module / Modbus RTU with interchangeable clamps

Highlights

- **Power supply: 10..40 Vdc; 19..28 Vac (50-60 Hz) bus powered**
- **Isolation: 1.5 kVac 6-way**
- **Acquisition speed (selectable): up to 1 reading every 25 ms**
- **Accuracy: 0.1%**
- **Inputs: N°8 channels from thermocouples type J,K,R,S,T,B,E,N or shunt up to 70 mV**
- **Channels can be activated individually and pairable**
- **Communication: Interface RS485 2-wire, protocol ModBUS RTU slave; Micro port USB**
- **Programming: via software and MicroUSB or DIP-switch**
- **Programmable filter for stabilization of reading**
- **Cold junction compensation**

Z-8TC-LAB is a digital converter for thermocouples, with eight channels of measurement, collected in 4 groups of clamps. The module is characterized by RS485 ModBUS RTU communication, cold junction compensation, 16-bit resolution, six-point overall insulation up to 1.5 kV between input channels, power supply and serial communication line. Compared with standard model Z-8TC-1, Z-8TC-LAB has the following terminals individually interchangeable and a modularity of the same blocks of 2 (instead of blocks of 4 as in the Z-8TC-1). The measurement formats available in voltage (μV), temperature ($^{\circ}\text{C}$, $^{\circ}\text{F}$, $^{\circ}\text{K}$) over 16-bit integer and floating-point 32 bit, direct or swapped.

Each thermocouple has its own "flying" terminal, which is easy and fast to use in particular for laboratory experiments. The module has a compact size of 17.5x100x112 mm and is designed to be mounted on 35 mm rail (DIN 46277).

Modbus



8-CH THERMOCOUPLE INPUTS MODULE / MODBUS RTU WITH INTERCHANGEABLE CLAMPS

DATI TECNICI

DATI GENERALI

Power supply	10..40 Vdc, 19..28 Vac 50..60 Hz
Power consumption	Max 0,6 W
Isolation	1.500 Vac @ 3 ways
ESD discharge protection	Up to 4 kV
LED status indicators	Power supply Fault, anomaly Data transmission Data reception
Protecion degree	IP20
Operating temperature	-20..+70°C
Dimension	17,5x100x112 mm
Weight	Approx 140 g
Case	PA6, black
Connections	Removable screw terminals for conductors up to 2.5 mm ² IDC10 rear connector for DIN rail Nr.1 Micro USB 2.0 front for ModBUS RTU configuration and communication
Mounting	For 35 mm rail DIN 46277
Settings and programming	System Software (Z-NET4) Plug&play configurator (EASY SETUP) DIP switch Programmable value in case of failure or stop of last reading
Data Memory	EEPROM for configuration parameters, retention time 10 years

COMMUNICATION

Interfaces	Nr.1 RS485 2 wires; Nr.1 Micro USB
Data rate	Up to 115.200 bps
Protocols	ModBUS RTU slave
Communication time	< 10 ms (@38.400 ms)
Distance	Up to 1.200 m
Connectivity	Max 32 nodes

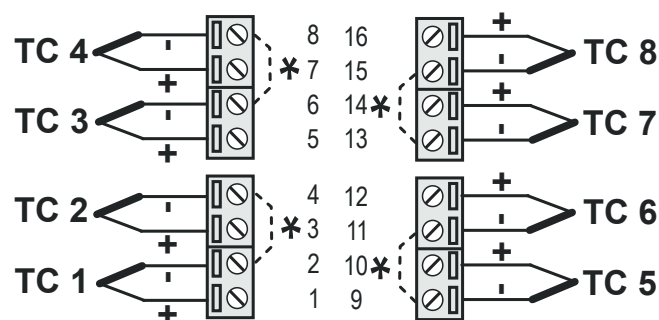
INPUT / OUTPUT DATA

Number of channels	Nr.8 inputs can be activated individually and configured in pairs
Typier	Thermocouple type J, K, E, N, S, R, B, T
Measurement format	Voltage (µV), temperature (°C, °F, °K) on Integer 16 bit and Floating-point 32 bit, direct or swapped
Settings for input pairs	Programmable filter for reading stabilization Programmable rejection @ 50 / 60 Hz Three different selectable acquisition speeds (two @ 14-bits, one @ 15-bit) Cold junction compensation
Resolution	15 bit
Accuracy class	0,1%
Thermal drif	< 100 ppm/K

NORME

Approvals	CE
Norms	EN 61000-6-4, EN 61000-6-2, EN 61010, EN 60742

WIRING DIAGRAM



Couples of channels belonging to the same group of terminals have the ground terminal internally connected and they're not isolated from each other.

Instead, an isolation of 1.5 kV is guaranteed between channels relating to groups of different clamps.

CODICI D'ORDINE

Code	Description
Z-8TC-LAB	8-CH Thermocouple inputs module / Modbus RTU with interchangeable clamps

ACCESSORIES

CU-A-MICROB	USB-A Micro USB-B 5 P plug cable
Z-PC-DIN2-17.5	DIN rail quick mounting support 2 slots 17.5 mm pitch
Z-PC-DIN8-17.5	DIN rail quick support bracket 8 slot 17.5 mm pitch
Z-PC-DINAL2-17.5	Support for quick mounting on DIN rail head + 2 slots pitch 17.5 mm
Z-POWER-115-15VA	DIN rail transformer 19 Vac, 115 / 15 VA with thermofuse
Z-POWER-230-15VA	DIN rail transformer 19 Vac, 230 / 15 VA with thermofuse
Z-POWER-230-25VA	DIN rail transformer 19 Vac, 230 / 25 VA with thermofuse
Z-SUPPLY	Single-phase switching power supply 24V @ 1.5 A

SOFTWARE

EASY SETUP	SENECA Plug & Play programmable instruments configurator
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