

# CAN-CBX-THERMO

## 4 Thermocouple Interfaces



### 4 High Resolution Thermocouple Inputs

- Electrical isolation of thermocouple inputs, all channels are electrically isolated against each other
- Support of J, K, B, E, N, R, S and T thermocouples
- Voltage measurement
- CANopen CiA 404 support
- InRailBus technology combines high ease of use and proven reliability

- High resolution and accuracy
- Automatic cold junction compensation
- Offset/Gain can be adjusted by the user

### High Resolution Thermocouple Interfaces

The CAN-CBX-THERMO is designed for direct connection of up to four thermocouples. Depending on the selected sample rate and the external wiring a resolution of at least 1  $\mu\text{V}$  can be achieved.



For cold junction compensation the temperature of the the sensor clamp is measured by a digital temperature sensor.

The conversion of the four thermocouple inputs is realized by four independent  $\Sigma\Delta$ -converters. Linearisation according to NIST is achieved by the on board microcontroller.

### CAN Interface and LED Display

The CAN interface is designed according to ISO 11898-2 high-speed layer with electrical isolation and supports bit rates up to 1 Mbit/s.

The CANopen-node number and the CAN-bit rate can be easily set via coding switches.

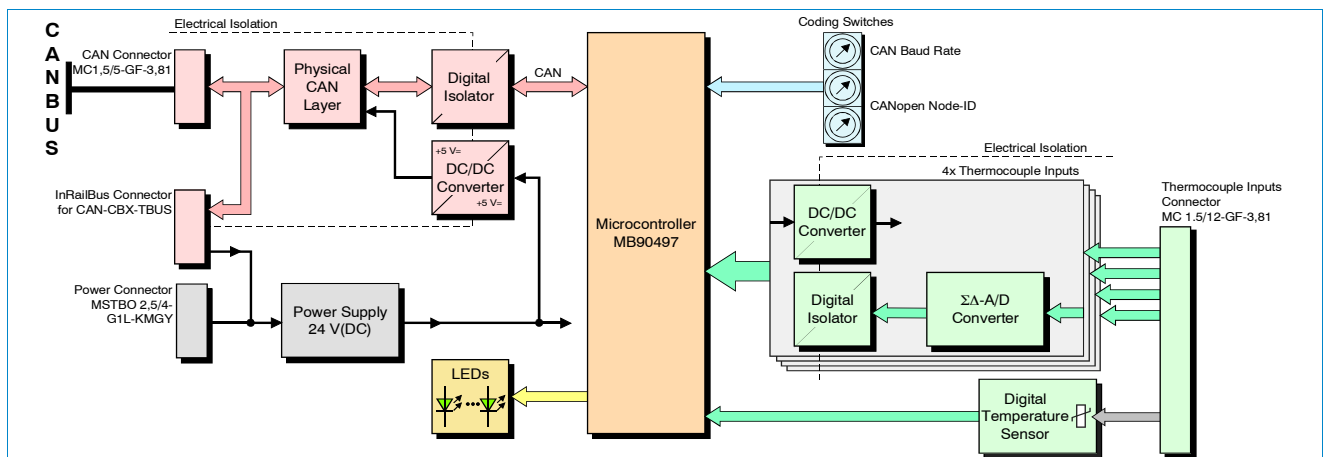
Four LEDs indicate the thermocouple and CANopen node status.

### InRailBus

The CAN-CBX-THERMO features the possibility to connect the power supply and the CAN bus signals via the InRailBus connector (TBUS-connector) integrated in the mounting rail. Individual modules can then be removed from the InRailBus without interrupting the bus signals.

### Software Support

The module comes with CANopen firmware according to CiA 301 and supports the CiA 404 profile for measuring devices.



### Technical Specifications:

<b>Microcontroller and CAN interface:</b>	
Microcontroller:	MB90F497, 16-bit, 1x ISO 11898-1
CAN interface:	high-speed, acc. to ISO 11898-2, up to 1 Mbit/s
Connector:	1x electrically isolated, 5-pin COMBICON style, 1x InRailBus
Protocol:	CANopen CiA 301, CiA 404
<b>Thermocouple inputs:</b>	
Number of inputs:	4 $\Sigma\Delta$ -A/D-converter
Sensor types:	- J, K, B, E, N, R, S or T thermocouples with cold junction compensation - voltage measurement
Accuracy:	sensor dependent (<1 °C)
Input resistance:	> 1 M $\Omega$
Conversion rate:	2.5 Hz ... 1000 Hz
Resolution:	<1 $\mu\text{V}$ at 25 Hz conversion rate $\approx$ 0.1 °C
Connector:	12-pin Mini-COMBICON connector
Electrical isolation:	electrical isolation of thermocouple inputs against each other and against power supply

<b>General:</b>		
Operating supply voltage:	nom. 24 VDC, $\pm$ 20%	
Current consumption:	typically (24 V): 90 mA	
Ambient temperature:	-20 °C ... +60 °C	
Relative humidity:	max. 90 % (non-condensing)	
Dimensions:	22.5 mm x 99 mm x 114.5 mm	
Weight:	145 g	
<b>Order information:</b>		
Designation	order no.	
CAN-CBX-THERMO	4 thermocouple interfaces with cold junction compensation	C.3034.02