

Thermo-Scan MiniModules pro

- ▶ Extremely compact CAN bus measurement modules
- ▶ 8 or 16 NiCr-Ni temperature inputs (Type K), completely electrically isolated
- ▶ Internal cold junction compensation per channel
- ▶ Very good measurement precision under all temperature and environmental conditions
- ▶ Unrivaled low power consumption
- ▶ Operating temperature: -40 °C to +125 °C
- ▶ Robust aluminum housing: IP65 / IP67
- ▶ Attractive price-performance ratio



The measurement modules of the CSM MiniModule family solve extreme and combine competing demands on automotive measurement technology. Developed for use inside engine compartment, they are designed for extreme temperature and environmental conditions and are very compact. All CSM MiniModules have excellent specifications and a very good price-performance ratio.

Customer driven, only for temperature measurement with thermocouples, 3 different housings are available, which can be combined in any way. Important for handling: All connectors are placed at the front side.

Thermo-Scan 8/16 pro (THMM 8/16 pro)

8- or 16-channel module with 16 NiCr-Ni Mini Thermo-Connectors and a two-colour status LED per channel. This module has a measurement data rate up to **200 Hz** and is particularly suitable for multi channel applications.

In configuration THMM 16 pro is handled as two THMM 8 pro.

These modules are available with or without Slide Case mechanism as well as Type J and Type T. Other types on request.

Thermo-Scan MC 16 (THMC 16)

16-channel module with 2 NiCr-Ni Multi-Connectors. This solution is preferred if modules often have to be changed quickly.

In configuration THMC 16 is handled as two THMM 8 pro.

THMC 16 is available with or without Slide Case mechanism.

Accessories

Cables for CAN and power supply, adapter cable CAN, signal cable for THMC, CAN bus termination plug and mechanical mounting parts please see „**Accessories for CSM MiniModules**“.

Shipping Content:

CAN bus MiniModule, CSM ConfigTool, documentation, Calibration certificate according to DIN EN ISO/IEC 17025.

Part numbers:

| | |
|-------------|-------------------------|
| THMM 8 pro | ART1011103 (Slide Case) |
| THMM 16 pro | ART0200943 (Slide Case) |
| THMC 16 | ART1012301 (Slide Case) |
| THMM 8 pro | ART1011104 |
| THMM 16 pro | ART0200970 |
| THMC 16 | ART0200999 |

We recommend a calibration interval of 1 year. For further technical information and references please ask our technical sales and distribution.

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Specifications Thermo-Scan MiniModules pro

| Technical Data | THMM 8 pro | THMM 16 pro | THMC 16 |
|------------------------------------|---|---|-------------------------------------|
| Inputs | 8 NiCr-Ni (Type K) ¹⁾ | 16 NiCr-Ni (Type K) ¹⁾ | |
| Measurement ranges | -100 °C to +1372 °C | | |
| Internal resolution | 16 bit | | |
| Internal sampling rate per channel | 1000 Hz | | |
| Measurement data rates per channel | 1, 2, 5, 10, 20, 50, 100, 200 Hz | | |
| Input protection | ±60 V permanent, additional ESD protection | | |
| HW Input filter | low-pass filter 250 Hz | | |
| SW Input filter | FIR-Filter (Finite Impulse Response) . Threshold frequency automatically adjusted to measurement data rate | | |
| Broken sensor detection | Yes | | |
| Cold junction compensation | internal reference per channel | | |
| Galvanically Isolation | | | |
| Channel / Channel | 500 V DC | | |
| CAN / Channel | 500 V DC | | |
| CAN / Power Supply | 500 V DC | | |
| CAN Interface | CAN2.0B (active), High-Speed CAN (ISO 11898) 125 kBit/s up to 1 MBit/s, data transfer is free running | | |
| Configuration | via CAN bus with CSM Config Tool or CSM INCA AddOn all settings and configuration data stored in module alternatively: Configuration and data transfer using CANopen protocol ²⁾ | | |
| LED Power / Status | LED: Power (green), Status (red) | | |
| LED per input channel | configuration: open channel (green blinking), plugged sensor (red blinking) measurement operation: open channel or broken sensor (red) / sensor detected (out) | - | |
| Power Supply | approx. 5 V to 60 V DC | | |
| Power Consumption | typ. 1.0 W | typ. 2.0 W | |
| Dimensions (W x H x D) | approx. 120 x 33 x 50 mm approx. 120 x 37 x 50 mm (Slide Case) | approx. 200 x 35 x 50 mm approx. 200 x 40 x 50 mm (Slide Case) | |
| Weight | approx. 300 g | approx. 500 g | |
| Operating temperature | -40 °C to +125 °C | | |
| Storage temperature | -55 °C to +150 °C | | |
| Relative humidity | 5 % to 95 % | | |
| Protection | IP65 | | IP67 |
| Connectors CAN / Voltage | LEMO 0B 5-pole or Fischer Series 102, 7-pole | | |
| Connectors signal inputs | Miniature Thermo-Connectors | | LEMO 2B NiCr-Ni Multi-Connectors |
| Housing | Aluminium – gold anodized | | |
| Conformity | CE | | |

1) Other types on request 2) CANopen: see separate data sheet