

Precise. Rugged. Universal.

CNT-Scan MiniModule

- ▶ Very compact CAN measurement module
- ▶ 4 electrically isolated inputs for
 - ▶ frequency measurement
 - ▶ cycle / pulse duration
 - ▶ duty cycle / PWM
 - ▶ event counter and speed
 - ▶ time offset measurement
- ▶ On- / Off-Trigger thresholds for each channel separately, AC coupling switchable
- ▶ Sensor excitation
- ▶ Constantly good accuracy over the whole measurement range
- ▶ Operating temperature:
 - 40 °C to +125 °C (Automotive Version)
 - 40 °C to +85 °C (Industrial Version)
- ▶ Robust aluminium housing: IP67 / IP50
- ▶ Good price-performance ratio



CNT-Scan MiniModule

The **CNT-Scan MiniModule** is a high-precision measurement module for frequencies up to 300 kHz, for measurement of duty cycles / PWM signals, measurement of cycle / pulse duration as well as event counting. Speed is captured directly in the module and displayed as value on the CAN bus. Furthermore the time offset between adjacent channels can be measured.

The inputs are completely electrically isolated and connected sensors can be powered directly from the module. Each measurement mode needs only one signal input.

Individually triggering on signal levels for On and Off is supported. The **On- / Off-Trigger thresholds** are separately adjustable for each channel. A switchable AC coupling allows to suppress an undesired DC offset of the input signal.

The user does not have to think over which measuring procedures should be used. High as well as low frequencies are automatically captured with **constant high accuracy**. This applies also to short and long periods and pulses.

Depending on the selected measurement mode many useful configuration options are available:

- ▷ Selection of measurements between rising or falling edges, and / or whether a "active high" or "active low" signal is measured. This allows measurement of unusual signal forms.

- ▷ Configurable timeout value, e.g. for setting the measurable minimum frequency.
- ▷ For event counting additional counting mode (overflow / saturation), resetting properties and overflow / saturation values are configurable.
- ▷ For direct speed measurement the number of counting pulses and missing teeth are configurable.
- ▷ The time offset measurement measures the time difference between two channels. A selectable input edge is marking the beginning of the measurement; a selectable edge of an adjacent input the end of the measurement.

Accessories

Cables for CAN and power supply, CAN adapter cable, signal cables for sensor connection, CAN bus termination and mounting angles. For further details please consult the data sheet: „**Accessories for CSM MiniModules**“.

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Specifications CNT-Scan MiniModule

Technical Data	CNT-Scan MiniModule Automotive	CNT-Scan MiniModule Industrial								
Inputs Input signal level On- / Off-Trigger thresholds Operating modes and measurement ranges Internal resolution Measurement data rate per channel Input protection Sensor excitation	4 $\pm 100\text{V DC}$ $\pm 5\text{V}$, in 10mV steps or $\pm 50\text{V}$, in 100mV steps each channel separately adjustable, AC coupling switchable frequency measurement: 0.1 Hz to 300 kHz cycle / pulse duration: 1 μs to 100 s duty cycle / PWM: 0 % to 100 % event counter: 0 to 65535 (16 bit) speed: 0.01 rpm to 60000 rpm time offset measurement: 1 μs to 100 s approx. 60 ns 1, 2, 5, 10, 20, 50, 100, 200, 500, 1000 Hz $\pm 100\text{ V}$ permanent, additional ESD protection 5 V, 8 V, 10 V, 12 V, 15 V DC average max. 30 mA each channel ¹⁾ , switchable by software									
Isolation voltages Channel / Channel CAN / Channel CAN / Power supply	500 V DC 500 V DC 500 V DC									
CAN interface Configuration	CAN2.0B (active) High-Speed CAN (ISO 11898) 125 kBit/s to max. 1 MBit/s via CAN bus with CSM Config Tool or CSM INCA AddOn compatible with all other xx-Scan CAN Modules from CSM settings and configuration data are stored within device alternative: Configuration and data transfer via CANopen protocol ²⁾									
Light emitting diode	LED: Power (green) / Status (red)									
Power supply Power consumption (without sensor excitation)	approx. 5 V to 60 V DC typ. 1,4 W									
Dimensions (W x H x D) Weight	approx. 93 x 30 x 46 mm (approx. 3.66 x 1.18 x 1.81 inch) approx. 230 g (approx. 8.11 oz)									
Operating temperature Storage temperature IP rate Relative humidity	<table border="1"> <tr> <td>-40 °C to +125 °C (-40 °F to +257 °F)</td> <td>-40 °C to +85 °C (-40 °F to +185 °F)</td> </tr> <tr> <td>-55 °C to +150 °C (-67 °F to +302 °F)</td> <td>-50 °C to +90 °C (-58 °F to +194 °F)</td> </tr> <tr> <td>IP67</td> <td>IP50</td> </tr> <tr> <td colspan="2" style="text-align: center;">5 % to 95 %</td> </tr> </table>		-40 °C to +125 °C (-40 °F to +257 °F)	-40 °C to +85 °C (-40 °F to +185 °F)	-55 °C to +150 °C (-67 °F to +302 °F)	-50 °C to +90 °C (-58 °F to +194 °F)	IP67	IP50	5 % to 95 %	
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Connector CAN / Voltage Connector signal inputs	LEMO 0B 5-pole LEMO 0B 6-pole or LEMO 1B 6-pole ³⁾									
Conformity										

1) 120mA in total, is distributed variable on the 4 channels

2) CANopen: see separate data sheet

3) CNT-Scan with LEMO 1B connector as signal inputs: dimensions (W x H x D) approx. 120 x 30 x 50 mm (approx. 4.72 x 1.18 x 1.97 inch) or approx. 200 x 35 x 50 mm (approx. 7.87 x 1.38 x 1.97 inch)

Shipping content: CAN bus MiniModule, CSM ConfigTool, documentation, calibration certificate

Part numbers: ART0200990 (Automotive) / ART0200991 (Industrial)

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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