

M-CNT2

4-channel universal counter module with sensor excitation

- 4 sensor excitations (unipolar 15 V, up to ± 60 mA)
- Measurement data output to CAN
- Galvanic isolation (inputs, CAN, supply, enclosure)
- Designed for engine compartment applications
- Toolless module to module connection
- Ruggedized and compact modules for harsh environments



General channel properties	
Special functions	Averaging
Oversampling	100 MHz
Channel sampling rates	1 / 2 / 5 / 10 / 50 / 100 / 200 / 500 / 1000 / 2000 / 5000 Hz
Aggregate sample rate	20 kHz
Hardware filter (switchable)	1 ... 30 kHz Accuracy 10 %
Filter damping at ambient temperature 25 °C	± 1.0 dB
Filter damping at ambient temperature -40 ... 125 °C	± 3.0 dB
DC compensation	0.8 Hz (lower cut-off frequency -3 db)
DC compensation damping at ambient temperature 25 °C	± 1 dB (variance)
DC compensation damping at ambient temperatur -40 ... 125 °C	± 3 dB (variance)
Channel LED	Yes

Channel LED	Channel status LED responds to detected input signal Channel LED is flashing during configuration Channel status LED of a channel marked in the software interface flashes yellow
Channel CNT	
Mode: frequency	0.03 Hz ... 200 kHz
Mode: duty cycle	0.01 ... 99.99 % 0.03 Hz (minimum frequency) 10 kHz (maximum frequency)
Resolution of duty cycle	1 μ or 1/100 fc filter (higher value)
Mode: period duration, pulse duration, pause duration	1 μ s (minimum duration) 200 s (maximum duration)
Resolution Period duration, pulse duration, pause duration	1 μ or 1/100 fc filter (higher value)
Mode: event counter reset modes	Without reset Reset by overflow (max. 32 bit) Reset by time
Mode: event counter with direction (Encoder)	up / down counting
Accuracy at ambient temperature 25 °C	± 0.01 % (internal time base)
Drift at ambient temperature -40 ... 85 °C	± 1.5 ppm/K
Drift at ambient temperature 85 ... 105 °C	± 2.5 ppm/K
Drift at ambient temperature 105 ... 125 °C	± 5.0 ppm/K
Adjustable trigger threshold	± 40 V resolution 0.20 V ± 4 V resolution 0.025V
Accuracy of trigger threshold at ambient temperature 25 °C	± 3 %
Accuracy of trigger threshold at ambient temperature -40 ... 125 °C	± 8 %
Excitation	
Sensor excitation ranges	Unipolar 2.5 / 5 / 7.5 / 10 / 12.5 / 15 V
Sensorspeisung	Unipolar 2.5/ 5/ 7.5/ 10/ 12.5/ 15V
Accuracy excitation at ambient temperature 25 °C	± 5.0 %
Accuracy excitation at ambient temperature 85 °C	± 6.0 %
Accuracy excitation at ambient temperature 120 °C	± 7.0 %
Sensor excitation current	60 mA, (short-circuit proof, with safety shutdown)
Galvanic isolation	
Input ↔ module power supply	± 100 V (indefinitely), ± 500 V (pulse voltage)
Input ↔ CAN	± 100 V (indefinitely), ± 500 V (pulse voltage)
Input ↔ enclosure	± 100 V (indefinitely), ± 500 V (pulse voltage)
Input ↔ input	± 100 V (indefinitely), ± 500 V (pulse voltage)
Device	

Inputs	4
Maximum input protection voltage (channel)	±100 V (indefinitely), ±200 V (short-time, t < 2 ms)
Voltage supply	9 ... 36 VDC
Supply voltage thresholds	On 9 ±0.3 VDC / Off 6 ±0.3 VDC
Power consumption, typical	2.0 W (all excitations off)
Working temperature range	-40 ... 125 °C (-40 ... 257 °F)
Storage temperature range	-55 ... 150 °C (-67 ... 302 °F)
IP-Code	IP 67 (ISO 20653 - 2013)
Relative humidity	5 ... 95 %
Dimensions	W106 mm x H43 mm x D60 mm (4.17 in x 1.69 in x 2.36 in)
Weight	420 g (0.93 lb)
Configuration interface	CAN high speed
Data transfer rate	Software selectable up to 1 MBit/s (ISO11898-2)
Housing material	Aluminum, gold anodized
Input sockets	Lemo EGG 1B 307 (7-Pin) ODU series F, size 1 (5-pin) S11F1C-T05MJG0-2500
Output sockets	LEMO 0B,9-pol./P,30°
Status LED	Yes
Accessories	
System cable	M-CAN-ABS 620-502 M-CAN cable SUBD/S Term. 620-560 M-CAN cable 620-561 M-PWR term cable, banana 620-567 M-CAN/PWR term cable SubD/S, banana
Input cable	600-857 600-857 CNT LEMO 1B7p cable BNC/P 600-858 CNT LEMO 1B7p cable open