

OUT CAN MM Series

Type OUT4 | OUT8



Product description

MiniModules **OUT** feature four or eight electrically isolated output channels which are controlled via freely definable CAN bus messages. These modules are developed for use in engine compartments, i.e. they feature compact housings and are designed for extreme operating temperatures.

Each output channel can be individually set for the operating mode "Voltage", "Current", "Frequency", "PWM / duty cycle" or "Digital signal", respectively.

CAN

Key features

- ▶ Output channels galvanically isolated
- ▶ 4 or 8 individually configurable output channels for
 - ▶ Voltage
 - ▶ Current
 - ▶ Frequency
 - ▶ PWM/duty cycle
 - ▶ Digital signal

Scope of delivery

- ▶ MiniModule OUT4 or OUT8
- ▶ Configuration software CSMconfig
- ▶ Documentation
- ▶ Test protocol

Maintenance

- ▶ Inspection every 12 months recommended.

Accessories

- ▶ See datasheet "CAN Accessories".

Technical data

Type designation	OUT4	OUT8
		
Technical data valid as of revision	C100	C000
Outputs	4	8
Refresh rate	1 kHz	
Output operating mode	individually adjustable for each channel: voltage, current, frequency, PWM/duty cycle, digital signal	
Voltage		
Output range	0 V to 10 V	
Resolution	approx. 14 bit	
Accuracy ¹	0.1 % of final value of output range	
3 dB threshold frequency	200 Hz	
Output current	max. 20 mA	
Current		
Output ranges	0 mA to 20 mA/4 mA to 20 mA	
Resolution	approx. 14 bit	
Accuracy ¹	0.1 % of final value of output range	
3 dB threshold frequency	200 Hz	
Valid working resistance	0 Ω to max. 500 Ω	
Frequency		
Output ranges	0 Hz - 100 Hz/0 Hz - 1 kHz/0 Hz - 10 kHz/0 Hz - 100 kHz	
Level	Low = 0 V/High adjustable: 5 V, 8 V, 10 V, 12 V, 15 V	
Duty cycle	adjustable: 0 % < duty cycle t_{pulse}/T < 100 % in 1 % steps	
Resolution	0.1 Hz @ 100 Hz, 0.1 Hz @ 1 kHz, 1 Hz @ 10 kHz, 10 Hz @ 100 kHz	
PWM/duty cycle		
Output ranges	0 % - 100 %	
Level	Low = 0 V/High adjustable: 5 V, 8 V, 10 V, 12 V, 15 V	
Fundamental frequency	1 Hz to 100 Hz in 0.1 Hz steps 1 Hz to 1 kHz in 0.1 Hz steps 1 Hz to 10 kHz in 1 Hz steps	
Resolution	0.002 % @ 100 Hz 0.01 % @ 1 kHz 0.1 % @ 10 kHz	
Digital signal		
Level	Low = 0 V/High adjustable: 5 V, 8 V, 10 V, 12 V, 15 V	
Output current	max. 20 mA	

Type designation	OUT4	OUT8
Galvanic isolation ²	no safety isolation in terms of high-voltage applications	
Channel/channel	500 V	
CAN/channel	500 V	
CAN/power supply	500 V	
CAN interface	CAN 2.0B (active), High Speed (ISO 11898-2:2003) 125 kbit/s to max. 1 Mbit/s, data transfer free running	
Configuration	via CAN bus with CSMconfig settings and configurations stored in the device	
Power supply		
Minimum	7.5 V DC (-10 %)	
Maximum	50 V DC (+10 %)	
Power consumption ³	max. 3.5 W	max. 7 W
LED indicator	power (green), status (red)	
Housing ⁴	aluminum, gold anodized	
Protection class	IP67	
Weight (device)	approx. 500 g	
Dimensions (w × h × d)	approx. 200 × 35 × 50 mm, approx. 200 × 40 × 50 mm (Slide Case)	
Connectors		
CAN/power supply ⁴	LEMO 0B, 5-pole, code G	
Signal outputs	LEMO 1B, 2-pole, code A	
Operating and storage conditions		
Operating temperature range	-40 °C to +110 °C	
Relative humidity	5 % to 95 % (non-condensing)	
Pollution degree	3	
Storage temperature	-55 °C to +150 °C	
Conformity		

¹ At operating temperatures above +85 °C, additional deviations can occur.

² These MiniModules are designed for measurements in vehicles with 12 V, 24 V or 48 V on-board power supply systems. The voltage potential at the signal outputs must not exceed 60 V. Not suitable to be directly connected to systems with higher operating voltages, e. g. high-voltage batteries of hybrid or electric vehicles.

³ Power consumption depends on operating mode and load (see manual). The values specified for max. power consumption are valid for 12 V power supply.

⁴ Optionally available in other variants



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