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CM2904 Controllers

Electronic Control Systems



ENGINEERING YOUR SUCCESS.

Application

The CM2904 is a small module that has standard software for J1939 network (with proprietary CAN messages) for expanding the system I/O.

CM2904 can be utilized as an interface to the CAN bus. The module takes measuring data from buttons, switches, potentiometers and/or joysticks. It is recommended for in-cab applications, for example; in tractors, forest machines, and construction equipment.

Properties

I/O flexibility

The CM2904 can control proportional valves using current mode (current closed-loop) or PWM mode (voltage open-loop) signals. The analog inputs accept 0-8V signals from input devices or sensors. There are 2 sensor supply circuits, 1 is 5 Vdc and the other is 8 Vdc.

Weather resistance

The plastic housing with silicone sealing is designed for indoor cabin applications. The CM2904 fullfills IP54 in an upside-down mounting position (with all 4 pcs of fixing screws installed).

Diagnostics

An internal watch dog checks for software errors and will interrupt outputs if errors are detected. The outputs have diagnostics with open load/short circuit detection and current feedback. Overvoltage protection drives outputs safely down.

Diagnostics leds are situated inside the module and they are viewable through transparent silicone sealing.

There is also separate service tool available for downloading software and parameters.

Specifications

General

Weight	160 g
Operating temperature	-40°C to +85°C
Protection	IP54
(upside down mounting, indoor cabin applications)	
Voltage supply	+9V to +32V

Performance

Processor	Freescale @ 40MHz
Flash size	60kB
RAM size	3kB

Communication

CAN buses (J1939)	2
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Outputs

PWM high-side outputs (max. total current rating 4A, all together)	
Number	4
Max. load per output	2 A (continuous)
Feedback accuracy	Typical ± 25 mA max. ± 50 mA

Inputs¹

Digital / frequency inputs	
Number	2
Measurement range	1 Hz - 4 kHz
Sensor types (stuffing options)	active (NPN) or passive (VR)

Analog inputs (pull-down)

Number	8
Measurement range	0 - 8 V (± 80 mV)

Digital / analog inputs (Multifunction digital inputs)

Number	19
Measurement range	0 - 32 V (± 500 mV)

Ordering part numbers

CM2904	88CM2904
CM2904IQ ²	88CM2904IQ
Accessories ³	

¹ All inputs withstand 36 V.

² Motomit IQ version.

³ See CM Controllers Accessories catalogue HY33-4910/UK.

Environmental protection

EMC

Electrical transients ISO 7637-2 Test pulses
1,2a,2b,3a,3b,5a 12V system
Emissions: CISPR 25, ISO 14982 - 2009
Immunity: ISO 10605, ISO 15003, ISO 11452-2, ISO
11452-4
Electrical steady state SAE J1455

Electrical

Operating, over/under voltage,
reverse polarity, short circuit protection,
transient batteryless operation ISO 15003
Accessory noise EP455

Mechanical environment

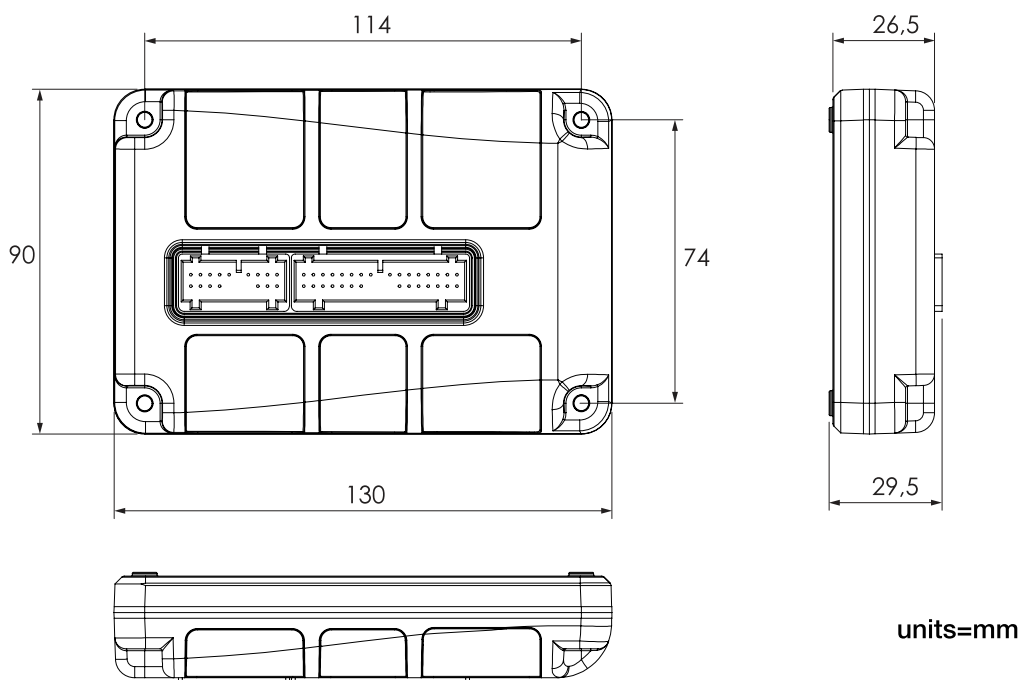
Mechanical shock ISO 15003
Drop EN 60068-2-32
Vibration ISO 15003

Climate environment

IP protection IP22 / IP54 (depending on mounting
position)
Operating temperature EP455
Storage high/low temp IEC 60068-2-2Bb
Thermal cycling ISO 15003
Thermal shock ISO 15003

Chemical environment

Chemical brush exposure ISO 15003



WARNING

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

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