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CM0711 Controllers

Electronic Control Systems



ENGINEERING YOUR SUCCESS.

Application

The CM0711 is a rugged CAN controller. It is mainly intended for applications such as powertrain control (e.g. power shift transmissions), implementing single features on a vehicle (like auxiliary hydraulics control), or to act as an additional controller in systems where the existing main controller does not provide enough I/O for the system.

The CM0711 main focus is on high-end output control with closed loop current control, but it also is capable of measuring analog and digital input signals. Several modules on the system can be identified using addressing IDtag inputs built into the wire harness.

The CM0711 has a software development kit (SDK) that allows customers to develop their own software.

Properties

I/O flexibility

The CM0711 can control proportional valves using current mode (current closed-loop) or PWM mode (voltage open-loop) signals. The module has 7 high-side outputs with error detection, and 4 low-side outputs. The analog inputs accept 0-5V signals from input devices or sensors. Digital inputs can also be configured to measure 2 frequency or 1 directional frequency (quadrature) inputs. Highside outputs may alternatively be used as digital inputs for switches.

Weather resistance

The aluminum housing is designed to be rugged, and has 2 environmentally-sealed, 18-pin Deutsch DT14-18 type of connector. This controller is designed for the outdoor environment.

Diagnostics

An internal watch dog checks for software errors and will interrupt outputs if errors are detected. The outputs have diagnostics i.e. open load, current feedback. The reference output voltage, used for sensor supply, can be diagnosed. Also supply voltage can be monitored, as well as some of the internal signals. The module has an internal temperature sensor for protecting the module and system devices. A diagnostics LED is situated in the top of the module.

Specifications

General

Weight	0.6 kg
Operating temperature	-40°C - +85°C
Storage temperature	-40°C - +85°C
Protection	IP69K
Voltage supply	+5.5 V - +36 V

Performance

Processor	Freescale 32 bit, 64 MHz
Flash size (code + data)	576 kB
RAM size	40 kB
Additional flash	8 MB (for data logging)

Communication

CAN buses (J1939)	2
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Outputs

PWM high-side outputs	6 (max. 2 A)
Frequency	0 - 500 Hz

PWM high side output	1 (max. 5 A)
Frequency	0 - 100Hz

PWM low side outputs	4 (max. 2 A)
Frequency	0 - 500 Hz
Current sense range	0 - 2.5 A

Inputs¹

Ignition (digital) input	1
Start up threshold	5.6 V

Digital / frequency inputs	2
Input voltage range	0 - 5 V
Frequency range	5 Hz - 25 kHz

Analog / current / digital	4
Input modes	Voltage (range 0 - 5.5 V) Current (range 4 - 20 mA) Digital

Analog input	1
Measurement ranges (scalable)	5 to 170 mV 0.1 to 3.2 V 0.2 to 6.4 V 1 - 35 V

Address (IDtag) input ²	1
Input voltage range	0 - 3.3 V

Ordering part numbers

CM0711	88CM0711
Accessories ³	

1 All inputs withstand 36 V.
 2 The address IDtag shall be connected to addressing IDtag supply pin and address input pin. Do not use any external sensors or external voltage on these pins.
 3 See installation sheet & CM Controllers Accessories catalogue.

Environmental protection

EMC

Electrical transients ISO 7637-2 Test pulses 1,2,3,4 and 5 12V and 24 V system
Emissions: EN 55025, ISO 7637-2, ISO 13766
Immunity: ISO 10605, ISO 11452-4, ISO 11452-2
Electrical steady state SAE J1455

Mechanical environment

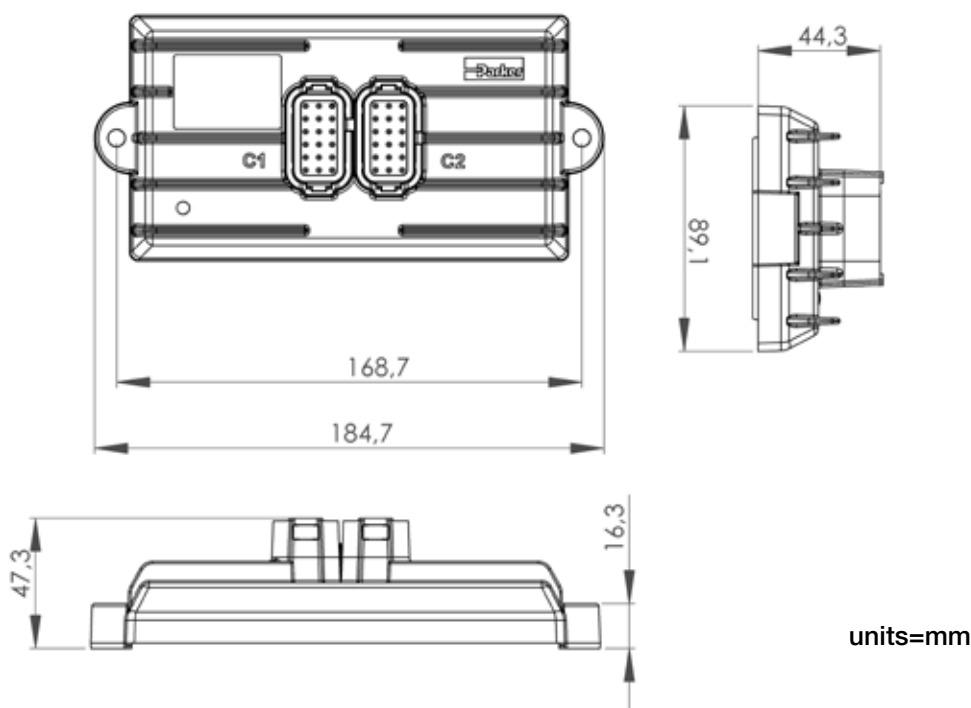
Mechanical shock EN 60068-2-27
Bump EN 60068-2-29
Drop EN 60068-2-32
Vibration resonance search EN 60068-2-6
Random vibration EN 60068-2-64
Particle impact SAE J1211

Climate environment

IP protection IP69K (EN 60259 IP6x, DIN 40050-9 IPx9K)
Hot soak EN 60068-2-2 B
Cold soak EN 60068-2-1 A
Thermal cycling EN 60068-2-14 Nb
Thermal shock EN 60068-2-14 Na
Humidity EN 60068-2-78 Cab, EN 60068-2-30 Db
Altitude EN 60068-2-13 M

Chemical environment

Salt spray EN 60068-2-52
Chemical resistance EN 60068-2-74
Ozone resistance ASTM D1171-99



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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