



GMI 070

CE 

AC High-Voltage Motor Controller



Superb Performance and Value

The Curtis Model GMI 070 Motor Controller is designed for 400V battery class applications up to 100kW. Model GMI 070 provides accurate speed and torque control of 3-phase AC induction and PMAC motors.

The GMI 070 uses dual, high-performance ARM Cortex microprocessors that provide a category 2 designated architecture for functional safety, as well as efficient motor control and flexible system control. The controller is designed for electric traction, hydraulic pump and on-engine generator (OEG) hybrid systems on mobile equipment applications such as material handling trucks, mobile elevating work platforms, airport ground support and construction equipment.

Features

Fit for Purpose

- Field-oriented motor control algorithms maintain optimal performance for 3-phase AC motors under all operating conditions.
- Real-time motor torque and power estimates optimize vehicle-level power.
- Rugged aluminum housing with a small footprint for the power rating.
- Liquid-cooled (50/50 water/glycol with a 65°C maximum coolant temperature).
- IP6K9K/IP67 ingress protection.
- Sealed, 35-pin Ampseal I/O connector.
- 8–32V isolated logic board.
- A mounting kit is supplied.
- CE marked as a programmable safety device.
- UL583 recognized component.



Motors

- Works with any AC induction or PMAC motor up to approximately 100kW.
- Motor auto-characterization simplifies on-truck pairing with different induction motor types.
- Supports most motor position sensors, including resolver, sine/cosine and quadrature AB incremental sensors.

You Feel It When You Drive It— Maximum Torque, Minimum Losses, Full Control

- Curtis' renowned field-oriented control algorithms and PWM switching technology assure maximum torque and system efficiency across the entire torque/speed spectrum.
- Smooth and predictable drive control that only Curtis can deliver.

Get More Out of Your Battery— Regardless of the Technology

- High-efficiency means more of your battery's energy is converted to motor output power.
- Configurable overvoltage and undervoltage protection parameters.
- Wide operating voltage range allows use with cell chemistries such as lithium ion.
- Configurable CANbus and VCL allow easy integration with the Battery Management Systems (BMS) typically found on lithium battery packs.



Features continued

Powerful Dual Microprocessors

- Dual-micro architecture supports category 2 functional safety under EN ISO 13849-1:2023 and EN 1175:2020.
- Blazing processor speeds for precise regulation of voltage, frequency and current.

Customize Your Vehicle with VCL

- The Curtis Vehicle Control Language (VCL) enables Curtis AC Motor Controllers to operate as system controllers, eliminating the need for costly additional controllers.

Flexible I/O

- 8–32V isolated logic:
 - Dual CANbus
 - 2 thermistors
 - 4 digital outputs
 - 2 digital inputs
 - 2 analog inputs (configurable)
 - 5V external supply
 - CAN termination option
 - Inputs for quadrature, sine/cosine and resolver motor position sensors

Comprehensive CAN Capabilities

- Configurable 11 or 29 bit protocol support for CANopen or J1939 use.
- Dual independent CAN ports with full galvanic isolation.
- Plug and play support for Curtis CAN displays.
- Fully CANopen compliant per CiA 301.
- Acts as a “CAN interpreter” that allows third-party CAN devices with differing profiles to work on the same CANbus.

Diagnostics

- Internal active discharge.
- Motor active short circuit protection in event of overvoltage.
- Thermal cutback, warning and automatic shutdown protect the motor and controller.
- High voltage interlock (HVIL).
- Error logging, fault history and CAN Emergency Messages.

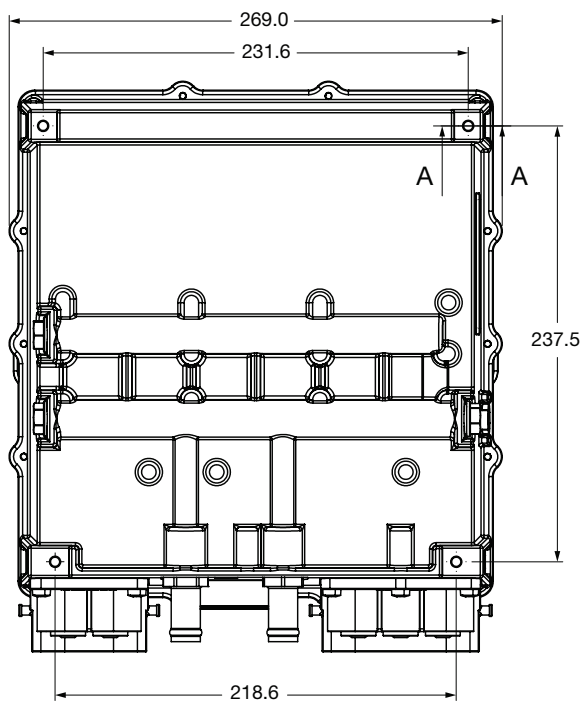
CAN-based Programming

- Model GMI 070 is programmable over the CANbus.
- Supports most CAN-based service tools used by major industrial truck manufacturers worldwide.
- Develop, configure, optimize and debug vehicle systems with the Curtis Integrated Toolkit

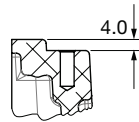


Dimensions (mm)

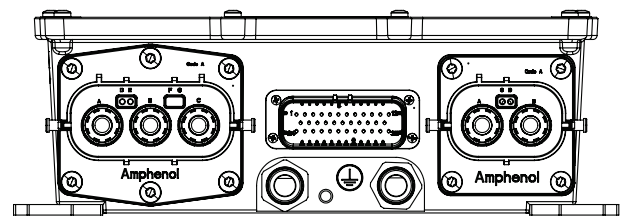
Without Mounting Kit



4 x M6 ∇ 10.0
TIGHTEN TO
5Nm $\pm$ 10%

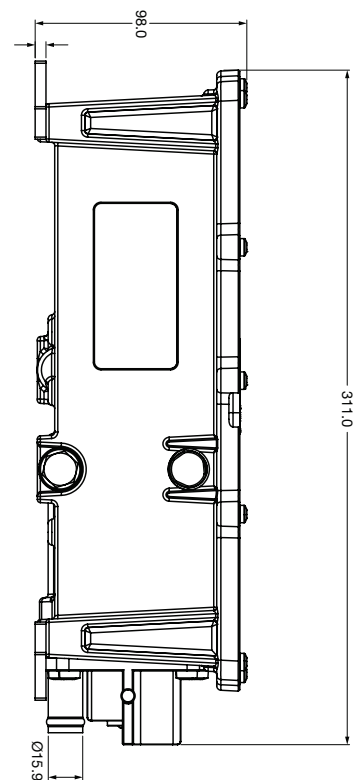
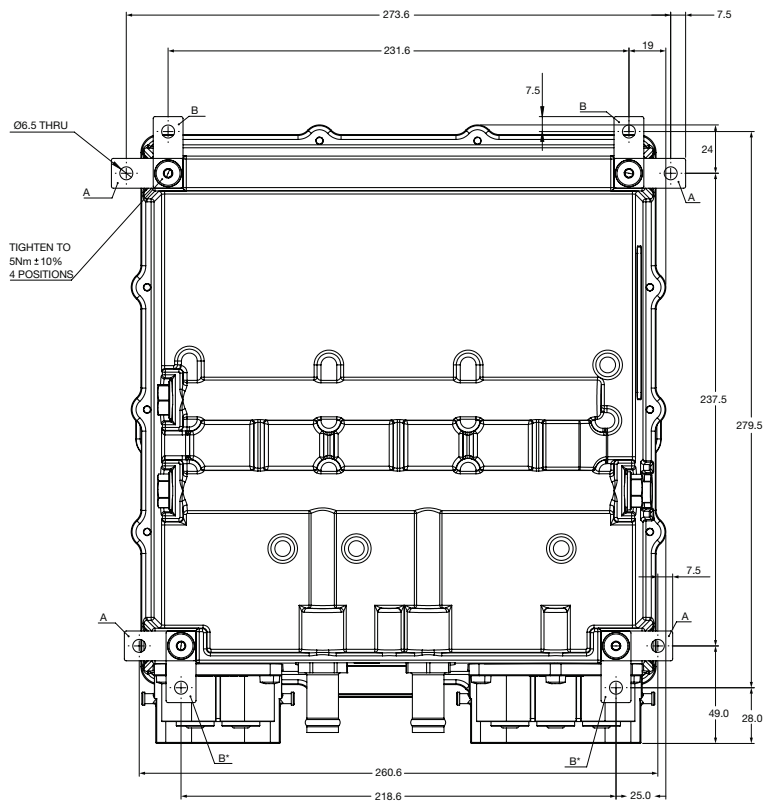


SECTION A-A



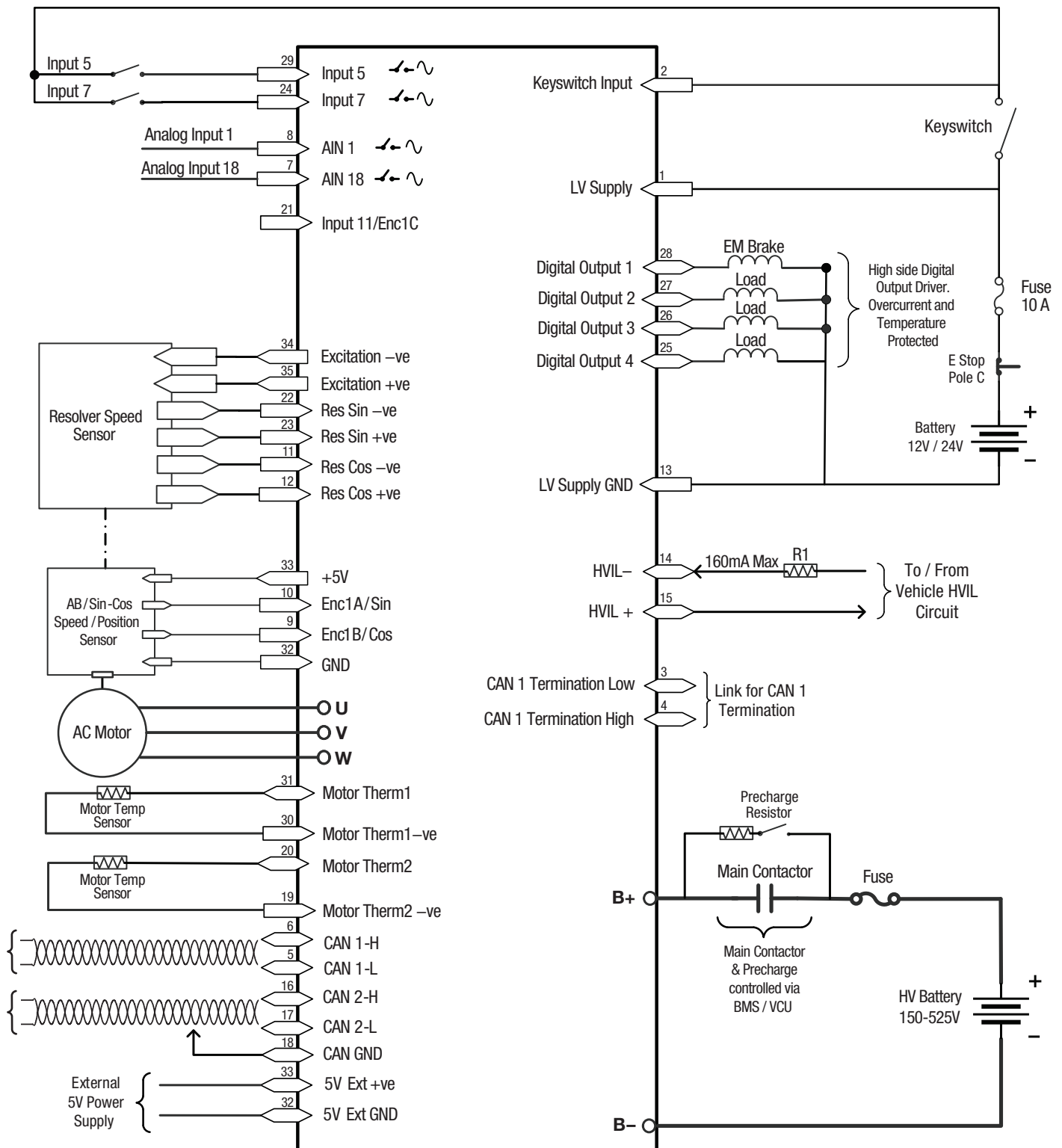
EARTH POINT
M6 ∇ 16.5
TIGHTEN TO 5Nm $\pm$ 10%

With Mounting Kit



Note: The positions marked with asterisks are not recommended for most applications due to partial obstruction.

Logic Connector Wiring



Specifications

Model No.		GMI 070-400-200-001	GMI 070-400-300-001
Operating Voltage Range		Without Derating: 150–500VDC ¹ / With Derating: 500–525VDC	
LV Supply Voltage Range		12–24 VDC (8–32 VDC)	
Maximum Controller Output Frequency		599Hz	
PWM Frequency		10 kHz nominal	
Current [Arms]	Continuous, 60 min.	100Arms	150Arms
	S2, 2 min. (Max.)	200Arms	300Arms
Coolant		50/50 water-glycol mix	
Nominal Flow Rate		10 l/min	
Maximum Coolant Cavity Pressure		<2 bar	
Coolant Temperature Range		–40°C to 65°C ²	
Storage Ambient Temperature		–40°C to 95°C ²	
Operating Ambient Temperature		–40°C to 50°C ²	
Weight		7.2 kg	
Dimensions		315 mm x 290 mm x 98 mm	
Ingress Protection		IP6K9K/IP67	
Motor Sensor Support		Resolver, sine/cosine, quadrature AB	
EMC		Designed to the requirements of EN12895:2015+A1:2019, ISO 13766-1:2018 and ISO 13766-2:2018. UNECE Regulation 10 Revision 6:2019. Approved at ESA level.	
Safety		Designed to the requirements of EN 1175-1:2020 and EN ISO 13849-1:2023	
Environmental & Chemical		Designed to the requirements of ISO 16750-3 & -4 and ISO 19014-3	
UL		UL recognized component per UL583	
Design Life		20,000 hours ³	

1: Overvoltage protection cuts back the regenerative braking (regen) current when the voltage is above 500 VDC.

2: Coolant may freeze at lower temperatures.

3: The lifetime current rating ≥ 30% of the maximum current rating.

Note: Regulatory compliance of the complete vehicle system with the controller installed is the responsibility of the vehicle OEM.

Warranty

Two year limited warranty from time of delivery.

Parker Hannifin Corporation
Electronic Controls & Motion Division
200 Kisco Ave
Mt. Kisco, NY 10549
phone 1.914.666.2971

www.parker.com/ecm

50368 Rev G 6/26

© 2026 Parker Hannifin Corporation



CURTIS