



MCC TMS

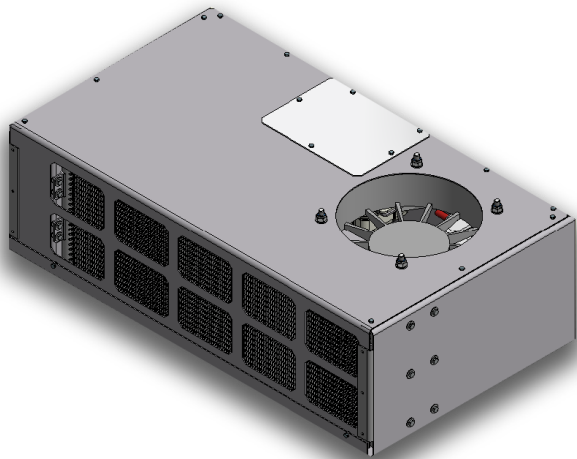
Thermal Management Systems for high energy storage batteries

The MCC TMS is designed to manage high energy storage batteries to a desired temperature while being used in ambient conditions of -40 °F to 131 °F (-40 °C to 55 °C). The TMS manages the battery temperature through the following functions:

1. Active cooling mode: Through refrigerant system using liquid to liquid heat exchanger

2. Passive cooling mode: Through cooler ambient air using air to liquid heat exchanger

3. Heating mode: Through heat source using liquid to liquid heat exchanger (Hybrid engine heated glycol or electric heated glycol)

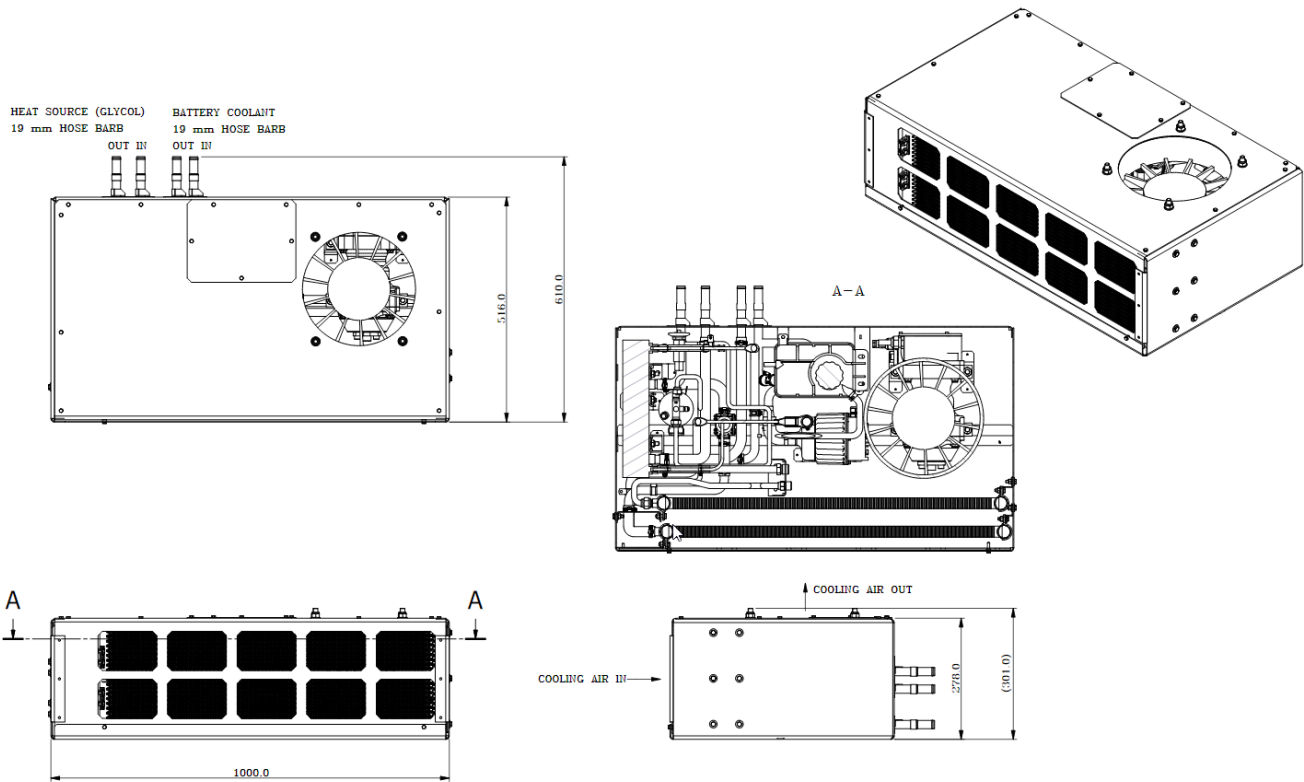


Features

- Active cooling mode
- Passive cooling mode
- Heating mode
- CAN (Controlled Area Network)

Benefits

- Dedicated refrigerant system optimized for energy efficiency
- Further energy efficiency during cooler ambient conditions
- Dedicated liquid to liquid heat exchanger allowing flexibility to use hybrid engine glycol for electric heated glycol
- Ability to communicate and integrate with vehicle control modules for optimize control and function



Technical Data

Cooling capacity (active cooling mode)	12000 Btu/hr (3.5 kW at 40°C ambient)
Cooling capacity (passive cooling mode)	17000 Btu/hr (5 kW at -10°C ambient)
Heating capacity	3 kW Q_{80}
Glycol flow rate	30 l/min (max)
Voltage	24 VDC
Glycol heater voltage	Application specific (24 to 600 VDC)
Active cooling power	1500 W
Passive cooling power	250 W
Heating power	125 W for hybrid engine heated glycol up to 3000 W for electric heated glycol
Dimensions (W x D x H)	39.3" x 24" x 11.8" (1000 mm x 610 mm x 300 mm)
Weight	88 lbs (40 kg)

