

BTMS 2 (400V) (BTMS-0-6-400-12-1-1)

BATTERY THERMAL MANAGEMENT SYSTEMS



- Up to 6 kW cooling
- Operating voltage 400 VDC Nom
- Active cooling or
Passive cooling with separate radiator pack
- Coolant mixture 50% water / 50% glycol
- R1234yf or R134a Refrigerant
- Compact design
- CAN controlled
- Plug & Play installation
- Includes water pump & directional valves
- Optional remote mounted heater
- Optional HVAC feed

A Battery Thermal Management System (BTMS) is critical in electric vehicles (EVs), hybrid electric vehicles (HEVs), and fuel cell electric vehicles (FCEVs). Its primary function is to remove excess heat from the battery pack, maintaining temperatures within an optimal operating window under varying ambient conditions and driving loads.

Effective cooling is essential to ensure stable power delivery and charging performance, enhance operational safety by preventing overheating, and prolong battery life by minimising thermal stress.

Without adequate thermal control, battery packs can be exposed to elevated temperatures that reduce driving range, slow charging, accelerate degradation, and in critical situations, increase the risk of thermal runaway.

Calatherm provides application specific, vehicle focused BTMS solutions engineered to deliver reliable cooling performance and safe, consistent operation across diverse duty cycles and vehicle architectures.

BENEFITS

- Powertrain cooling management, controlling heat removal supporting stable operating temperatures.
- Modular radiator packs for system flexibility and simplified integration across multiple platforms .
- Variable speed flow rates, optimising thermal performance and minimising power consumption.
- Passive or active cooling intelligence.
- Improves battery range, lifespan, performance and efficiency.
- Reduced failures by preventing thermal runaway, limiting cell degradation or system shutdowns.
- Supports reliable operation in extreme temperatures and demanding duty cycles.
- Reduces energy consumption.
- Robust design, engineered for harsh environments such as off-highway applications.

TECHNICAL SPECIFICATION

Model No.		BTMS-0-6-400-12-1-1
Capacity	Cooling	6 kW
	Heating	Optional remote mounted heater
	Coolant Flow – Battery	5 ~ 25 lpm
Operating Voltage	HV Range	210 ~ 455 VDC
	LV Range	9 ~ 16 VDC
Ambient Temperature		+40°C with separate radiator pack
Fluid	Refrigerant	R1234yf or R134a
	Battery Circuit	50% Water / 50% Glycol
Passive Cooling	Battery	Yes (low loads, low ambient, with separate radiator pack)
	Powertrain	Yes (with separate radiator pack)
Active Cooling	Battery	Yes (high loads, high ambient)
	Powertrain	-
Interfaces	HV connector	APTIV APEX 2 Way
	LV Connector	TE HDSCS
	Water Out – Battery	19mm ID hose (1)
	Water In – Battery	19mm ID hose (2)
	Water Out – Radiator	19mm ID hose (3)
	Water In – Radiator	19mm ID hose (4)
	Powertrain Out	19mm ID hose (5)
	Powertrain Return	19mm ID hose (6)
General	Communication	CAN
	Mass	59.5 Kg (dry)
	Dimensions	796 x 346 x 335mm

Note: Other systems and designs are available.

OUTLINE DIMENSIONS

