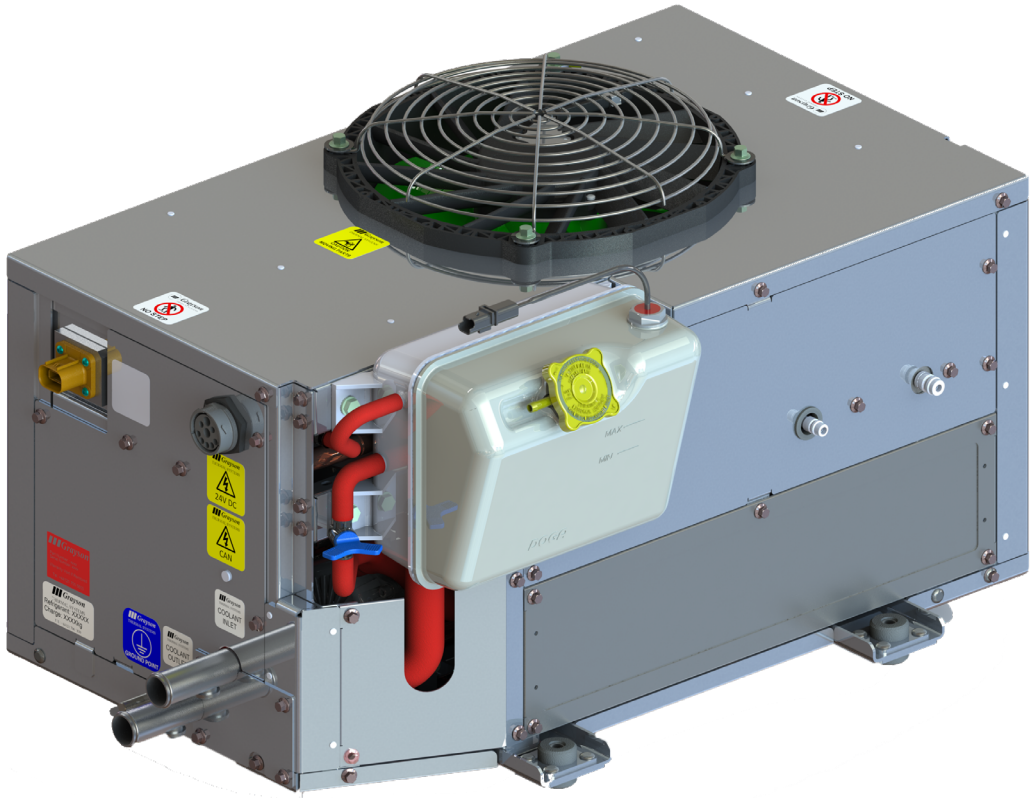
BATTERY THERMAL MANAGEMENT SYSTEM (BTMS)

generations of knowledge



Optimises battery efficiency & life

Plug & play easy installation

Adapts to ambient temperature

Production in 4 manufacturing plants

Specialists in the transportation industry

Designed with Grayson's extensive know-how & expertise

Service exceptional service and product support

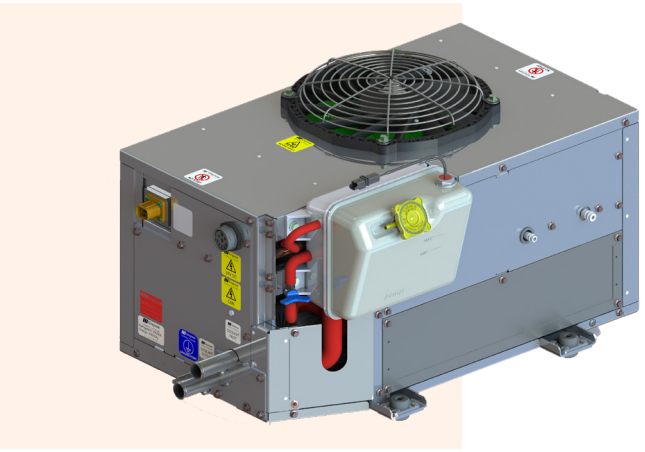
Guaranteed reliability

Lightweight solutions to fit your needs

Grayson Thermal Systems

BATTERY THERMAL MANAGEMENT SYSTEM (BTMS)

GEN3 COMPACT



RANGE OPTIONS

3A-6720-0A00 - Active and Passive Cooling & Heating

3A-6720-0B00 - Active and Passive Cooling Only

3A-6720-0C00 - Active Cooling & Heating

3A-6720-0D00 - Active Cooling Only

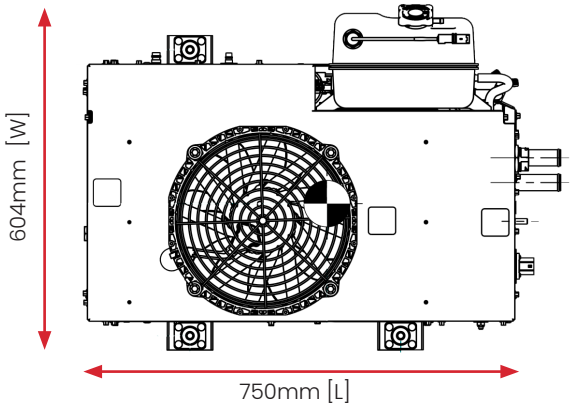
BTMS FEATURES

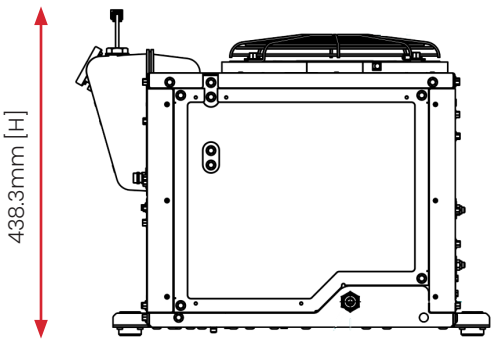
Incorporating all the same advancements and features of the Gen3 Standard, the Compact design gives a single unit solution. Ideal for installations where space is at a premium, the Compact still has all the controls and integration of the Standard model, bringing the benefits of the BTMS development into a single module. GTS have brought together their experience gained in the HVAC and BTMS markets to ensure the Gen3 Compact has all the durability and reliability our customers have come to expect but in an efficient compact module that still gives the critical battery thermal management that is needed for long operational life.

GEN3 Features

- Configurable with the options of active cooling, passive cooling and/or heating.
- Suitable for roof mounting or chassis / body mounting.
- Integrated water pump.
- CAN J1939 “plug and play” control.
- CAN boot loader for easy software updates.
- DM1 diagnostics messages on CAN network.
- Fuse-less smart power distribution on HV and LV circuits.
- Power consumption reporting (optional).
- Electric expansion valves.
- Pressure transducers for Analogue fan regulation.
- Brushless fans.
- Lightweight header tank.
- 24VDC for controller, fans and pump

DIMENSIONS





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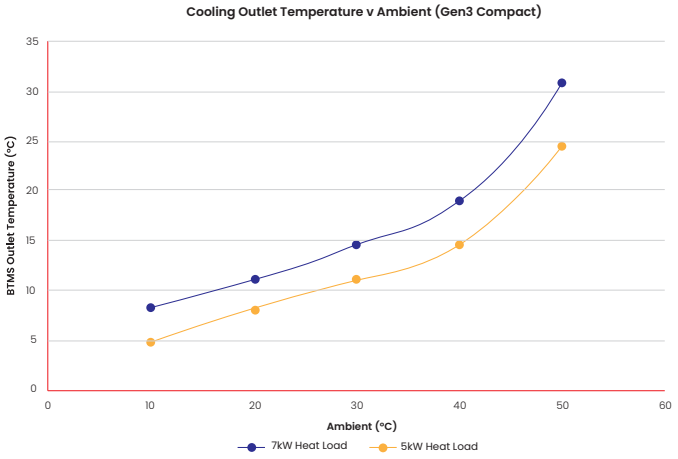
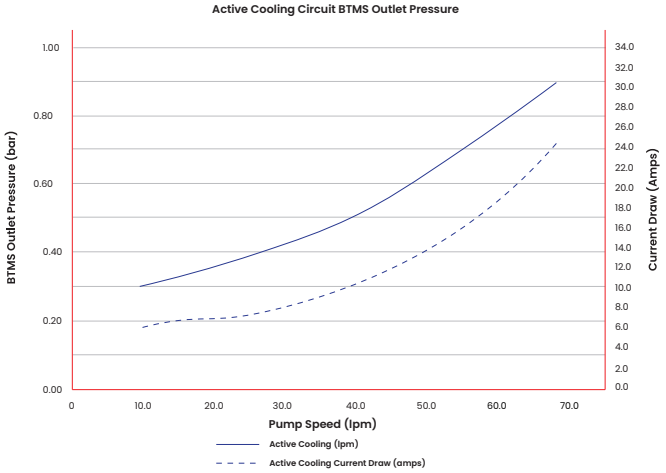
TECHNICAL INFORMATION

GEN 3 Compact	40°C	50 °C
Maximum cooling capacity (kW) at: outside temperature (°C) of coolant outlet (°C) of coolant flow (l/m)	5.8 40 25 40	4.4 45 25 40
Water heating capacity	3.6Kw (5kW Optional)	
Operating voltage	600V DC / 24V DC	
24V DC Maximum power consumption (pump / fan) (1 fan)	18 + 24A	
600VDC Maximum power consumption (compressor / heater)	6.25A	
Maximum weight (without coolant) (kg) (0AXX variant - active and passive cooling and heating)	55kg	
Dimensions L x W x H (mm)	750mm (L) x 604mm (W) x 438.3mm (H)	
Refrigerant type Charge weight (kg)	R134a / 407c Optional 0.9	
Connector types (High Voltage (4-Pin) 24V DC & Control Protocol via CAN J1939	HVA280 Deutsch HDP24	
Integrated Header Tank	Yes	
Outlet Size O.D. (mm)	28.75 mm	
Anti-Vibration mounts	Included	
Fan technology	Brushless Motor	
Integrated water pump	Yes (brushless motor)	
Option for remote water heater	Yes – upto 35kW	

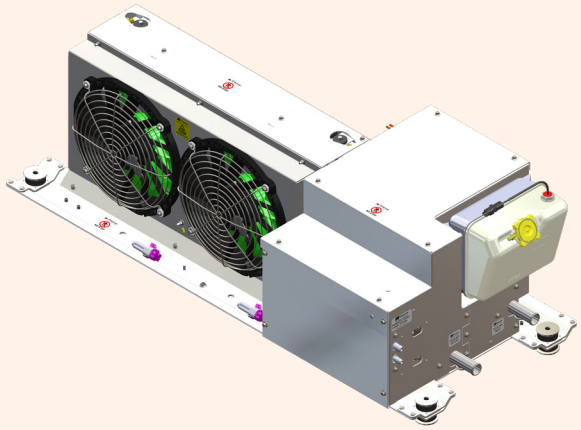
(Cooling curves at 40 l/min) Flow Rate





BATTERY THERMAL MANAGEMENT SYSTEM (BTMS)

GEN3 STANDARD



RANGE OPTIONS

3A-6725-0A00 - Active / Passive, Cooling & Heating

3A-6725-0B00 - Active / Passive , Cooling Only

3A-6725-0C00 - Active Cooling & Heating

3A-6725-0D00 - Active Cooling Only

BTMS FEATURES

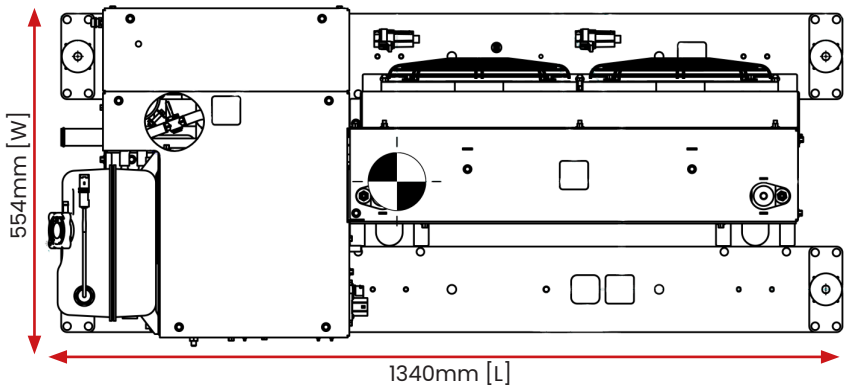
Utilising the latest advancements in control and design, our Gen3 BTMS provides advanced functions for the critical thermal management of vehicle battery systems. Designed to work across a wide range of applications and markets across the world the Gen3 builds on the performance and reliability of the previous generation BTMS designs. The standard model maximises performance with a condenser module separate to the chiller, pump and controls unit.

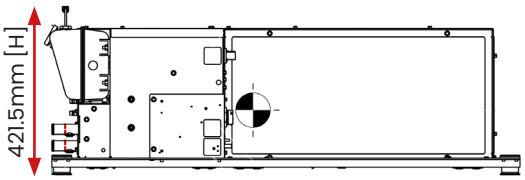
GEN3 Features

- Configurable with the options of active cooling, passive cooling and/or heating.
- Suitable for roof mounting or chassis / body mounting.
- Integrated water pump.
- CAN J1939 "plug and play" control.
- CAN boot loader for easy software updates.
- DM1 diagnostics messages on CAN network.
- Fuse-less smart power distribution on HV and LV circuits.
- Power consumption reporting (optional).
- Electric expansion valves.
- Pressure transducers for anolouge fan regulation.
- Brushless fans.
- Lightweight header tank.
- 24VDC for controller, fans and pump

The GEN3 Standard is also available as a split system to improve integration with vehicle architecture

DIMENSIONS





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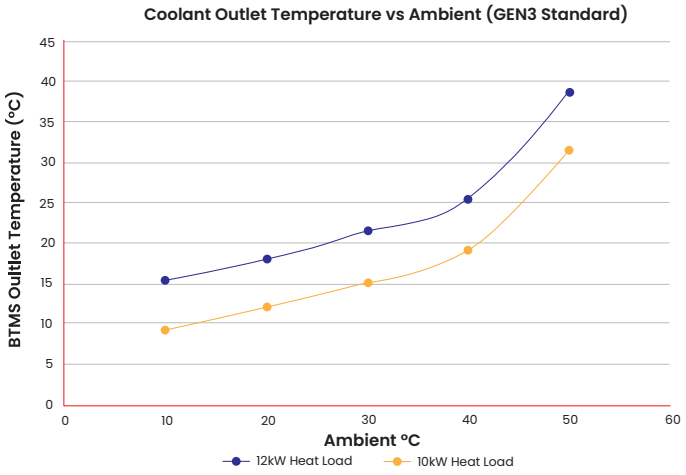
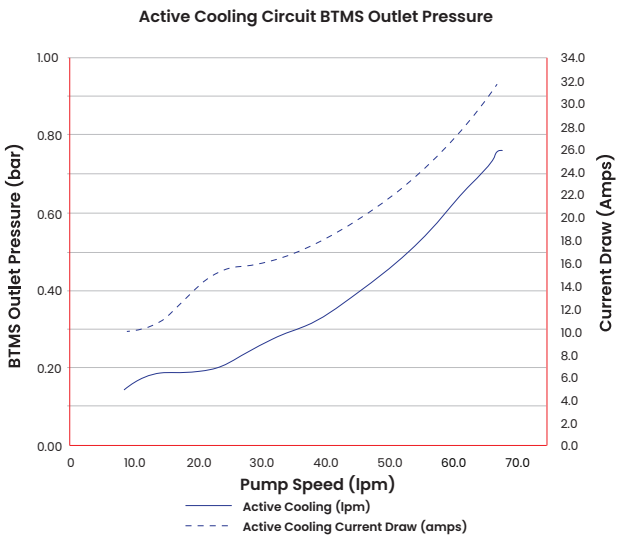
TECHNICAL INFORMATION

GEN3 Standard	40°C	50°C
Maximum cooling capacity (kW) at: outside temperature (°C) of coolant outlet (°C) of coolant flow (l/m)	11.5 40 25 40	10 50 25 50
Water heating capacity	3.6Kw (5kW Optional)	
Operating voltage	600V DC / 24V DC	
24V DC Maximum power consumption (pump / fan) (2 fans)	18 + 48A	
600VDC Maximum power consumption (compressor / heater)	6.25A	
Maximum weight (without coolant) (kg) (0AXX variant - active and passive cooling and heating)	74kg	
Dimensions L x W x H (mm)	1340mm (L) x 554mm (W) x 421.5mm (H)	
Refrigerant type Charge weight (kg)	R134a / 407c Optional 1.2kg	
Connector types (High Voltage (4-Pin) 24V DC & Control Protocol via CAN J1939	TE Connectivity (PA66-GF35) Deutsch (HDP24/26)	
Integrated Header Tank	Yes	
Outlet Size O.D. (mm)	28.75 mm	
Anti-Vibration mounts	Included	
Fan technology	Brushless Motor	
Integrated water pump	Yes (brushless motor)	
Option for remote water heater	Yes – upto 35kW	



(Cooling curves at 40 l/min) Flow Rate



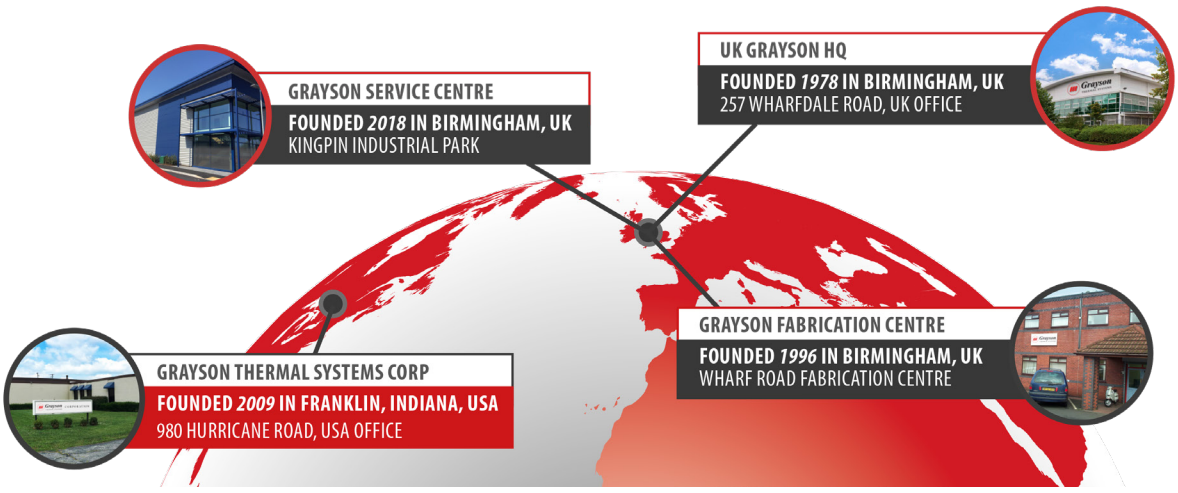
WHO WE ARE

Grayson are a specialist engineering company with a strong reputation for quality, innovation and working in partnership with customers. We pride ourselves in being able to develop and supply solutions to specific business issues.

We design and manufacture OE and aftermarket cooling and heating products for bus and coach, specialist off-road vehicles and commercial vehicles. Our customers include some of the best known OE manufacturers and vehicle operators.

We are a proud Birmingham business with two extensive manufacturing facilities, dedicated engineering, research and test operations, and a separate service centre. From the heart of England, we serve customers in Britain and right around the globe. Client locations range from China, the US, Eastern and Central Europe and New Zealand. We have opened Grayson North America Corporation, and plan a further programme of satellite businesses across the world.

Grayson has come a long way since 1978 when chairman, Graham Hateley, opened a radiator repair business from a small unit in Hay Mills, Birmingham. Now, we are a proud family-run business with an excess of 290 employees across two continents. Our employees include three generations of the Hateley family.



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