

BATTERY THERMAL MANAGEMENT SYSTEM (BTMS) RANGE

generations of knowledge

GEN3 COMPACT
GEN3 STANDARD
GEN3 SPLIT



Optimises battery



Plug & play



Adapts



Production



Specialists in
the transportation
industry



Designed
with Grayson's extensive
know-how & expertise



Service
exceptional service and
product support



Guaranteed



Lightweight



Grayson
Thermal Systems

BTMS GEN3 COMPACT



PART NUMBERS:

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

**900V DC capability will be available from January 2024.
Enquire today for more information.**

SYSTEM OVERVIEW

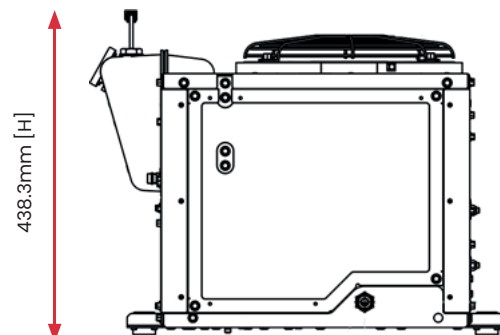
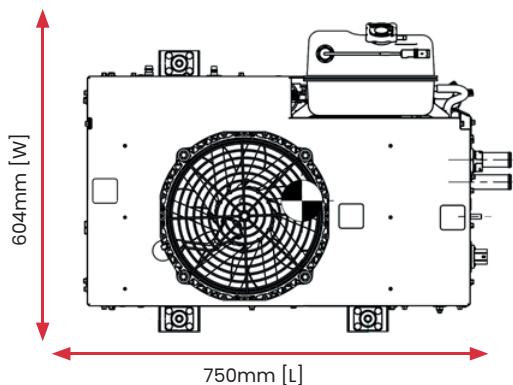
Providing precise thermal regulation for high-capacity, temperature-sensitive batteries, the BTMS GEN3 Compact is the ideal single unit battery thermal management solution for installations where space is at a premium.

Capable of providing battery heating and cooling in even the most extreme of climates, the BTMS GEN3 Compact includes the same controls and integration as the GEN3 Standard while its smaller footprint provides more packaging flexibility.

KEY 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
- DMI diagnostics messages on CAN network
- Fuseless smart power distribution on LV circuits
- Electric expansion valve
- Pressure transducers for fan speed regulation
- Brushless fan
- Lightweight header tank
- 24VDC for controller, fans and pump
- 600V DC nominal, 750V DC max

DIMENSIONS



Enquire today

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TECHNICAL INFORMATION

GEN3 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)

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 450mm (H) x 483 (W)

Refrigerant type
Charge weight (kg)

R134a/ 407C Optional
0.9

Connector types (High voltage (4-Pin))
24V DC & Control Protocol via CAN J1939

TE Connectivity - HVA280
Deutsch HDP24/26

Integrated header tank

Yes

Outlet size O.D. (mm)

Ø 28.75 mm

Anti-vibration mounts

Included

Fan technology

Brushless motor

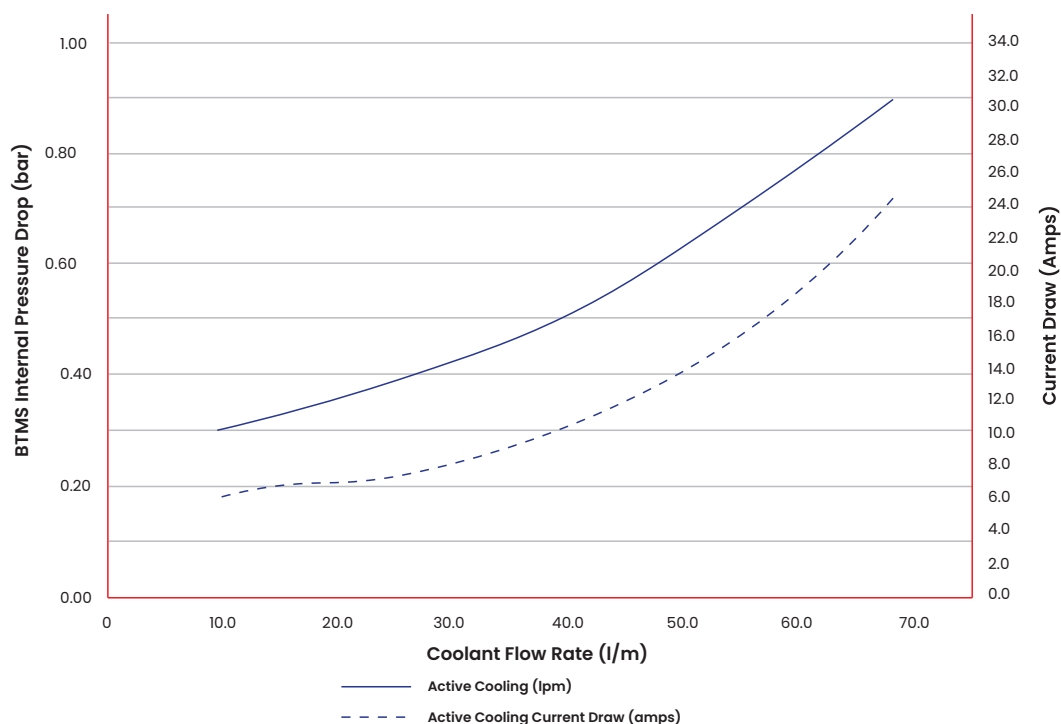
Integrated water pump

Yes (brushless motor)

Option for remote water heater

Yes - up to 35kW

Active Cooling Circuit Internal Pressure Drop



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BTMS GEN3 STANDARD



PART NUMBERS:

3A-6725-0A00 – Active and Passive Cooling & Heating

3A-6725-0B00 – Active and Passive Cooling Only

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

3A-6725-0D00 – Active Cooling Only

**900V DC capability will be available from January 2024.
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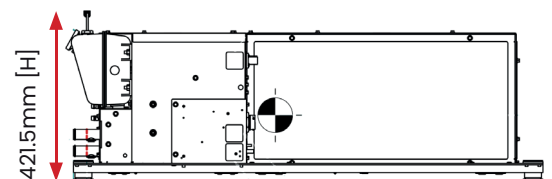
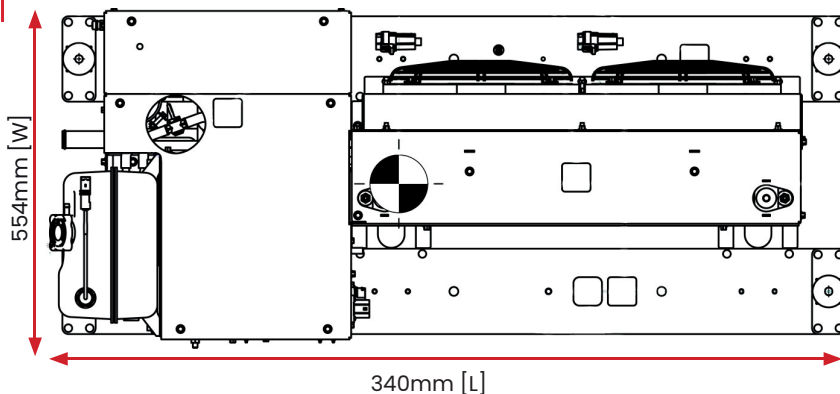
SYSTEM OVERVIEW

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.

KEY FEATURES:

- Configurable with active cooling, passive cooling and/or heating options
- Suitable for roof mounting or chassis/body mounting
- Integrated water pump
- CAN J1939 “plug and play” control
- CAN boot loader for easy software updates
- DMI diagnostics messages on CAN network
- Fuseless smart power distribution on LV circuits
- Electric expansion valve
- Pressure transducers for fan speed regulation
- Brushless fans
- Lightweight header tank
- 24VDC for controller, fans and pump
- 600V DC nominal, 750V DC max
- Available as a split system to improve integration with vehicle architecture

DIMENSIONS



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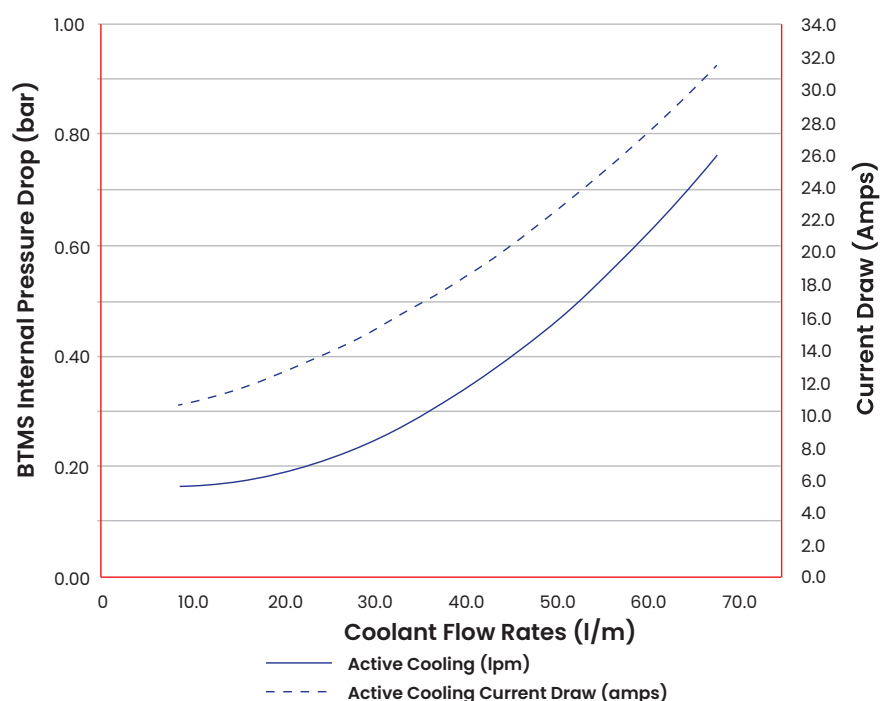
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TECHNICAL INFORMATION

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 or 5kW	
Operating voltage	600V DC / 24V DC	
24V DC maximum power consumption (pump / fan)	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 (HVA280) Deutsch (HDP24/26)	
Integrated header tank	Yes	
Outlet size O.D. (mm)	Ø 28.75 mm	
Anti-vibration mounts	Included	
Fan technology	Brushless Motor	
Integrated water pump	Yes (brushless motor)	
Option for remote water heater	Yes – up to 35kW	

Active Cooling Circuit Internal Pressure Drop

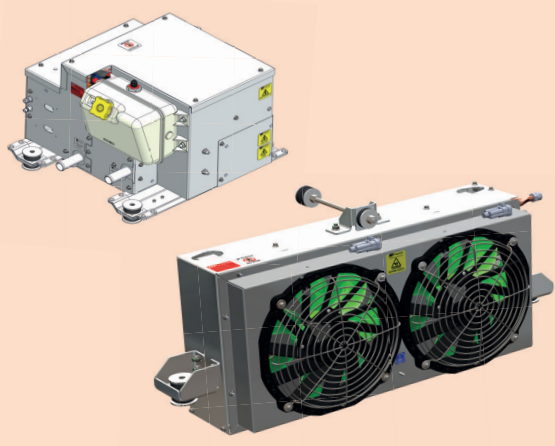


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BTMS GEN3 SPLIT



PART NUMBERS:

3A-6725-0EXX – Split System – Active/Passive Cooling & Heating

3A-6725-0FXX – Split System – Active/Passive Cooling Only

3A-6725-0GXX – Split System – Active Cooling & Heating

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SYSTEM OVERVIEW

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 split model is designed for easy packaging with the condenser assembly separate to the chiller, pump and controls unit.

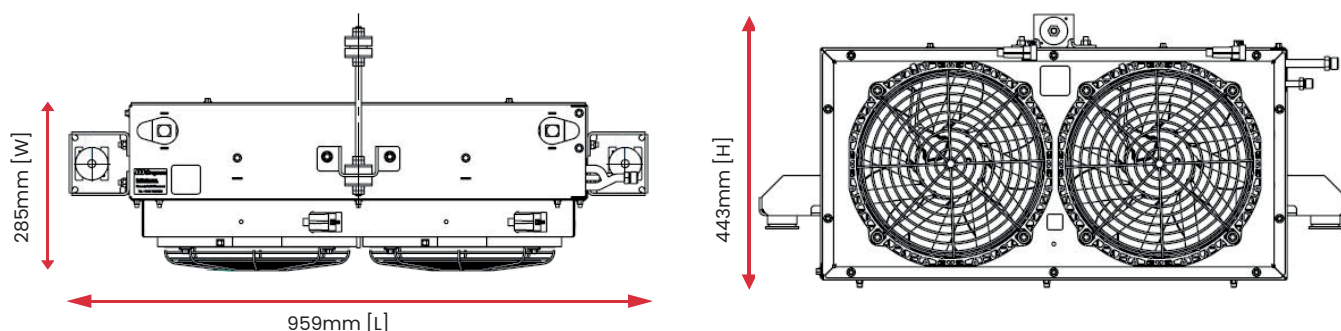
KEY FEATURES:

- Configurable with active cooling, passive cooling and/or heating options
- Suitable for roof mounting or chassis / body mounting
- Integrated water pump
- CAN J1939 "plug and play" control
- CAN boot loader for easy software updates
- DMI diagnostics messages on CAN network
- Split unit for ease of packaging
- Fuseless smart power distribution LV circuits
- Electric expansion valve
- Pressure transducers for fan speed regulation
- Brushless fans
- Lightweight header tank
- 24VDC for controller, fans and pump
- Supplied with link harness + refrigerant hose kit
- 600V DC nominal, 750V DC max

— Refrigerant gas charge required at the time of installation

DIMENSIONS

CONDENSER AND FAN ASSEMBLY



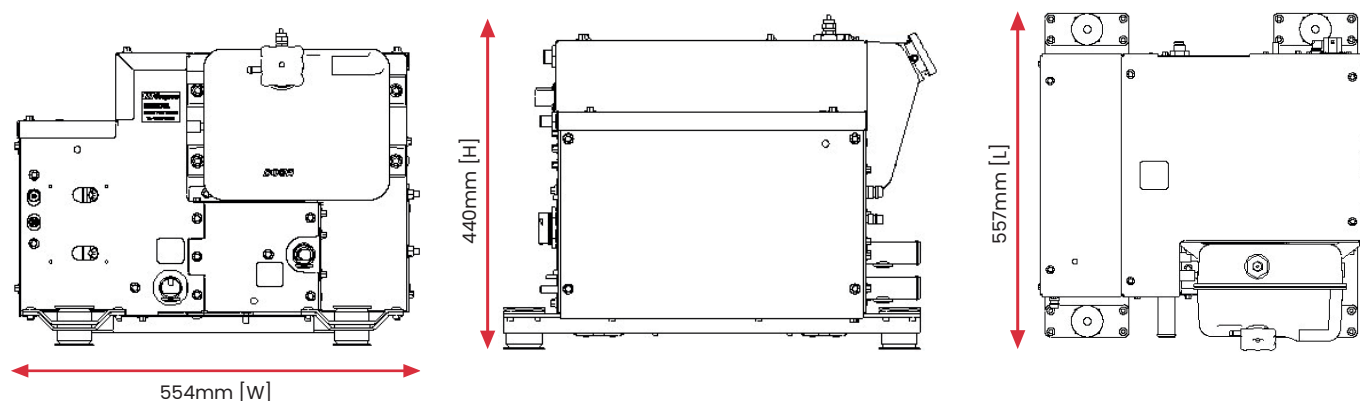
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DIMENSIONS

REFRIGERANT CHILLER ASSEMBLY



TECHNICAL INFORMATION

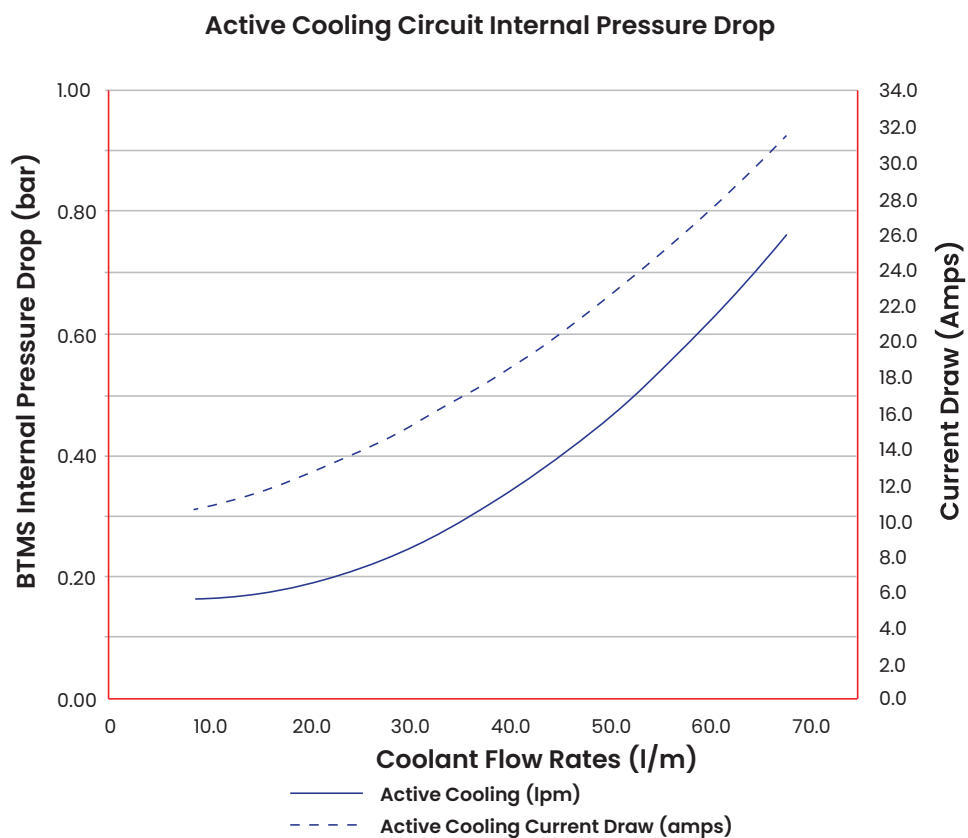
GEN3 Split	40°C	50°C
Maximum cooling capacity (kW) at: outside temperature (°C) of coolant outlet (°C) of coolant flow (l/m)	11.5 50 25 40	10 50 25 50
Water heating capacity	3.6kW (5kW Optional)	
Operating voltage	600V DC / 24V DC	
24V DC Maximum power consumption (pump / fan)	18 + 48A	
600VDC Maximum 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 – up to 35kW	

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TECHNICAL INFORMATION



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