BATTERY THERMAL MANAGEMENT SYSTEMS

Ensuring Optimal Battery Temperature in critical Heavy Duty Electric Vehicles, Rapid Charging Stations and Renewable Energy Stations

APPLICATIONS

Haul Trucks | Freight Locomotives | Rapid Charging Stations | Renewable Energy Stations

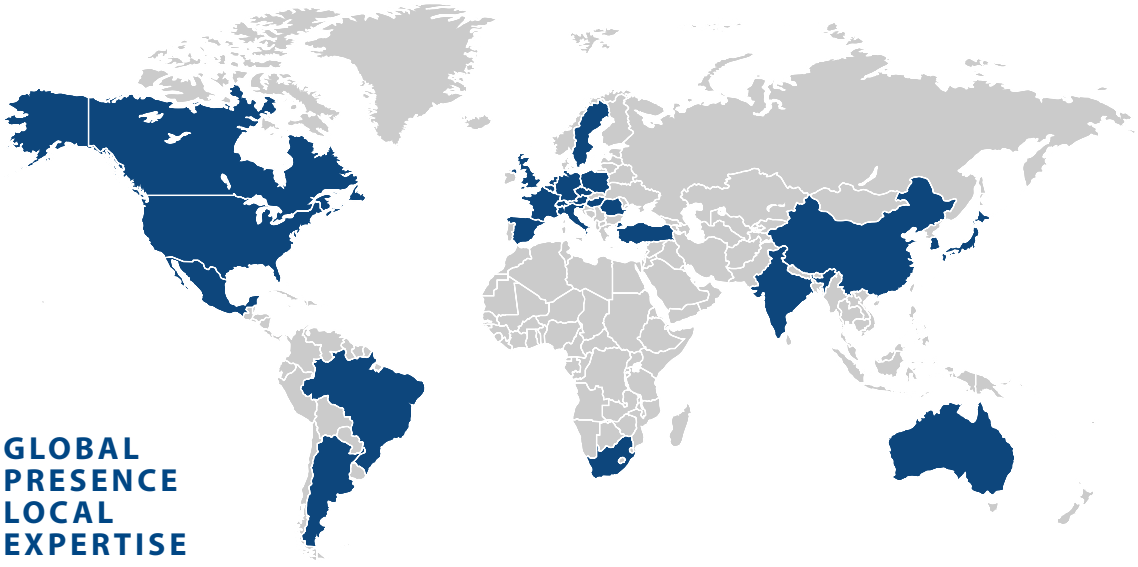
SIGMA

Battery Thermal Management System (BTMS)

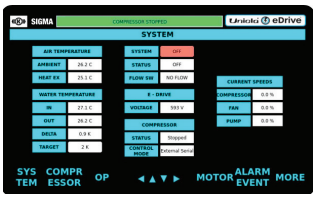
Designed & engineered in Australia for global deployment. With over 65+ years of experience in specialised HVAC solution SIGMA develops and designs bespoke Heavy Duty Thermal Management Systems for the Mining, Industrial, Defence and Track maintenance markets and an OEM supplier to global brands.

Our global network, local partners, wide experience in project management and system integration allow us to offer our customers a unique combination of global knowledge and outstanding local support. This enables us to customise standard products to suit the specific needs of our customers.

At SIGMA we have designed an ulta efficient Battery Thermal Management System (BTMS) to maintain the ideal temperature range and minimise temperature fluctuations. We provide maximum efficiency through 'free-cooling', using ambient air temperature up to 30°C (86°F) and autonomous control introduces 'active cooling' as ambient temperature increase toward 50°C



GLOBAL PRESENCE LOCAL EXPERTISE



BTMS Display

- Set Point Adjustment
- Operating Temperature
- CAN connectivity

POWERED BY Uniola eDrive

Why is BTMS Important?

Today's battery chemistry has evolved significantly to enable regular, repeat rapid charge and discharge events. Our customers, operators and end-users are demanding more from battery electric drivetrains and remote battery banks.

Optimum battery life, performance and safety is reliant on a narrow operating temperature range (typically between 30°C to 35°C / 86°F to 95°F). In the high ambient temperatures of the Pilbara in Western Australia, it is widely recognised that air cooled systems are inadequate and hence all suitable industrial batteries are provisioned with immersion cooling.

SIGMA BTMS accepts high voltage DC power from the battery and is controlled via a simple touch pad to select the desired coolant temperature. The BTMS will autonomously manage coolant pump speed, fan speed and compressor speed to maintain battery coolant temperature with absolute minimum power draw on the battery. The BTMS is also provisioned for CAN connectivity if remote health capabilities are required.

SPECIFICATION

IPF12GX1

Suitable Battery Capacities	up to 400kWh		
Ambient Temperature	30°C 86°F	40°C 104°F	50°C 122°F
Free Cooling Capacity (kW)	3.6	-	-
Active Cooling Capacity (kW)	10	8	6
Heating Capacity	Optional		
Voltage	400VDC / 600VDC		
Coolant Flow Rate	10 - 20 l/min		
Refrigerant	R134a / R513a / R1234yf		
Weight	125kgs		
Dimension (L x W x H)	960mm x 475mm x 950mm 37.8in x 18.7in x 37.4in		

Key Features

- Free Cooling capability below 30°C (86°F) ambient
- Plug n Play connections for simple installation
- Brushless eDrive compressor, brushless motors & variable speed fluid pump
- In-line electric heater (Optional)
- Long life expectancy (20,000 hrs)
- Superior fluid temperature controlled to within 2°C
- High efficiency operation, low energy consumption
- Smart control logic & remote health check capability
- CAN Connectivity
- Safety compressor reliability guarantee

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SIGMA

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