



DATASHEET

BTMS FOR CYLINDRICAL CELLS

Advanced Thermoplastic Liquid Cooling System
for Cylindrical Battery Modules & Packs

BTMS CYLINDRICAL CELLS

FOR BATTERY MODULES AND PACKS OF ELECTRIC VEHICLES

PRODUCT OVERVIEW

BTMS for CYLINDRICAL CELLS is a thermoplastic-based cooling solution designed for liquid-cooled battery systems. It offers superior thermal control, reduced weight, and flexible integration, outperforming traditional aluminium plates in efficiency and safety. Engineered for cylindrical cells, BTMS reduces system weight by over 70% vs. traditional aluminium solutions while delivering superior thermal uniformity and safety.

FEATURES

- Optimized for cylindrical battery cells in high-performance modules and packs.
- Manufactured under IATF 16949 and ISO 9001 quality management systems for automotive-grade reliability and traceability.

KEY ADVANTAGES

- **Exceptional price-performance ratio:** Delivers superior cooling at a fraction of the cost of traditional aluminium systems, maximizing ROI through reduced manufacturing and operational expenses.
- **Outstanding durability and reliability:** Built with robust polymers for long-term performance in demanding environments, with non-flammable properties and >90% recyclability.
- **Superior heat transfer efficiency:** Achieves higher thermal performance for faster heat removal and even distribution to prevent hotspots, enabling safer high-load operations and extending battery lifespan.
- **High design flexibility:** Modular serpentine channels allow custom geometries and easy integration, supporting compact, lightweight builds for diverse applications.
- **Ultra-lightweight design:** Over 70% lighter than aluminium alternatives—boosting vehicle range, efficiency, and payload capacity.
- **Excellent chemical resistance:** Resists degradation from coolants and harsh conditions, ensuring reliable operation over extended cycles. Compatible with dielectric oils.
- **Excellent electrical resistance:** Provides inherent insulation for enhanced safety, eliminating risks associated with conductive metal designs—no additional insulation layers needed, unlike aluminium HEX.

APPLICATIONS

Primary applications: Passenger and commercial electric vehicles (EVs), stationary energy storage systems (ESS), and high-power battery modules. Key customer benefits: Extended battery lifespan through uniform cooling, support for faster charging, and enhanced overall pack safety.

TECHNICAL SPECIFICATIONS

Parameter	Value	
Model:	BTMS CYLINDRICAL CELLS	
Application:	Thermal control of cylindrical cells in battery modules & packs	
Design:	Liquid-cooled modular cooler with internal serpentine channels	
Inlet/Outlet Diameter:	16 mm	0.63 in
Tube External Diameter:	1.3 mm	0.051 in
Tube Length:	1 161.0 mm	45.709 in
External Dimensions:	567 x 473 x 82 mm	22.32 x 18.62 x 3.22 in
Weight (dry):	430 g	0.947 lb
Internal Volume:	0,44 l	14,88 fl oz
Working Fluid:	Water-glycol or dielectric oil	
Fluid Cleanliness:	ISO 4406 class 12/10/7 maximum	
Operating Pressure:	1.5 – 3 bar	21.8 – 43.5 psi
Thermal resistance (short-term):	-40 to +100 °C	-40 to +212°F
Thermal resistance (long-term):	-30 to +80 °C	-22 to +176°F

MATERIAL AND COMPLIANCE PROPERTIES

Flammability

The product is composed of engineering polymers and complies with the UL 94 HB flammability classification (horizontal burn, 3 mm). No flame-retardant additives are used. The flash point of individual components ranges from ≥ 143 °C to over 370 °C. Verified according to ISO 3795 / UL 94.

Electrical Resistance

The product includes electrically insulating components. Surface resistivity typically ranges from 10^{12} to 10^{16} Ω , and volume resistivity exceeds 10^{14} $\Omega \cdot \text{cm}$. Insulation characteristics meet requirements for non-conductive parts used in structural and technical assemblies. Verified according to standard: IEC 62631-3-2.

Chemical Resistance

The product is resistant to oils, fuels, coolants, and standard automotive fluids. It is not suitable for prolonged exposure to strong oxidizing agents or aggressive industrial solvents such as chlorinated or aromatic hydrocarbons. Verified according to ISO 175.

Recyclability

The product is designed with end-of-life recyclability in mind. Based on current composition and available recycling technologies, the estimated recyclability rate is 93.4 % by weight. Assessment is based on material separation feasibility and compliance with ISO 11469 / ISO 22628.

SAFETY AND COMPLIANCE

Inherent electrical insulation eliminates the need for additional layers (unlike many aluminium heat exchangers), reducing complexity, weight, and costs while enhancing safety. Compliant with relevant automotive standards including IATF 16949 for quality and ISO processes.