ALLWEILER CMA SERIES

SEALLESS MAGNETIC-DRIVE PUMP PLATFORM FOR LIQUID COOLING APPLICATIONS

Hermetically Sealed Pump Technology for Leakage-Sensitive Cooling Architectures

Advanced liquid-cooling systems place increasing emphasis on reliability, maintenance reduction, fluid containment and system integrity. In high-value AI infrastructure, leakage exposure and service interruptions can become critical design considerations.

The ALLWEILER CMA Series uses magnetic-drive technology and a hermetically sealed design to eliminate dynamic shaft seals while maintaining efficient centrifugal pump performance.

The CMA platform provides an alternative approach to conventional mechanically sealed pump concepts and is particularly relevant where leakage mitigation, fluid containment and reduced maintenance exposure are key evaluation criteria.

A Different Approach to Cooling-Pump Design

Conventional centrifugal pumps typically rely on dynamic shaft sealing. The CMA Series eliminates this sealing point through a sealless magnetic-drive concept.

This design may support liquid-cooling applications where system designers seek to reduce leakage exposure, improve containment and minimize maintenance requirements in critical cooling loops.

Sealless by Design

The CMA Series eliminates dynamic shaft seals and provides a hermetically sealed pump concept for applications where fluid containment and system integrity matter.

Key Value Propositions

Leakage Mitigation

The sealless magnetic-drive concept eliminates dynamic shaft seals and may help reduce leakage exposure in critical cooling circuits.

Hermetic Fluid Containment

The pump design supports high system integrity through a fully contained hydraulic concept.

Reduced Maintenance Exposure

With no mechanical shaft seal, the CMA platform reduces one typical wear and maintenance point found in conventional pump designs.

Suitable for Advanced Cooling Architectures

A future-oriented design approach for liquid-cooling systems where reliability, containment and reduced service intervention are important.

Flexible Motor and Interface Concepts

Motor selection, drive concepts and connection interfaces can be evaluated based on customer-specific requirements, preferred suppliers and cooling-system architecture.

Platform Expansion Underway

To address increasing cooling capacities in next-generation AI infrastructure, higher-capacity CMA variants are currently under development.

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TECHNICAL OVERVIEW AND APPLICATION FIT

Typical Liquid-Cooling Applications

Coolant Distribution Units, CDUs • High-reliability liquid-cooling loops • Leakage-sensitive cooling circuits • AI infrastructure cooling systems • Mission-critical thermal management • Advanced OEM cooling platforms

Technical Overview

Parameter	CMA Series	
Pump Type	Magnetic-drive centrifugal pump	
Max. Flow	80 m³/h (352 GPM)	*200 m³/h (881 GPM) in development*
Max. Head/Pressure	55 m (80 psi)	*83 m (121 psi) in development*
Max. Nominal Pressure	PN16	
Max. Temperature	150 °C	
Materials for Liquid Cooling	ASTM A351 CF8M (EN 1.4408) Stainless Steel	
Suitable Fluids	Water, demineralized water, water-glycol mixtures and selected engineered cooling fluids	

Efficiency and Operating Point

Pump efficiency depends on the selected hydraulic size, duty point, fluid properties and system requirements. Detailed performance and efficiency data can be provided once target flow rate, head, coolant specification and operating conditions are defined.

Why CMA for Liquid Cooling?

The ALLWEILER CMA Series is suited for liquid-cooling applications where leakage mitigation, fluid containment and long-term operational reliability are key evaluation criteria.

Its sealless magnetic-drive concept offers a different design approach compared to conventional mechanically sealed pumps and may support advanced CDU and liquid-cooling architectures where reduced maintenance exposure and system integrity are increasingly important.

For OEMs developing future cooling platforms, the CMA Series provides not only a current sealless pump option, but also a platform with larger-capacity variants under development to address growing cooling demand in AI infrastructure.