FusionCol600-L450MA

Thermal Management Unit (TMU)

INTRODUCTION

FusionCol600-L450MA is launched for high-density large-scale AI DC, it is Reliable, Agile, Sustainable, which help customer building a high-quality liquid cooling solution.
By adjusting secondary-side coolant temperature and flow volume, TMU exchanges the heat from IT equipments to primary-side through the built-in heat exchanger. It ensures the IT equipments running stably at a proper temperature, facilitating the efficient and energy-saving operation.

FusionCol600-L450MA

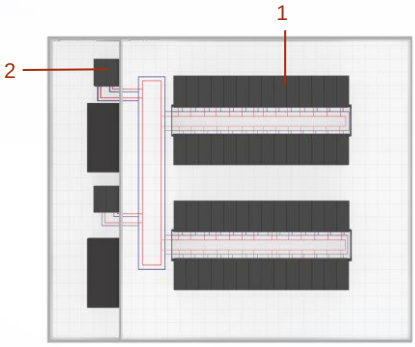
APPLICATION SCENARIOS

- High-density large-scale AI DC
- Carrier IDC
- e-Government Cloud DC, and DC for provincial/municipal government

FEATURES

Reliable

- Dual AC/DC hot standby, seamless A/B path switching for pumps without power loss, ensuring fluctuation-free liquid supply and zero-interruption cooling.
- Core components such as power distribution modules, pumps, and sensors with 2N redundant, zero downtime during single-point failure.
- One-click maximum cooling, 20s quick startup, 5 minutes emergency liquid replenishment, built-in interface for direct mains-powered pump operation.
- Smart pressure monitoring, sensors with real-time cross-verification, self-adaptive pump adjustment, dual pressure relief protection.
- Primary/secondary side conductivity sensor optional, Primary/secondary side pH sensor optional (not connected to system), online monitoring of water quality abnormalities.
- One-click emergency stop, Local triggering, instant fault isolation.
- Integrated PFC harmonic mitigation, THDi < 10% (full load) , Power factor ≥95%, eliminate APF/SVG requirements.
- Intelligent unit rotation prevents coolant stagnation.

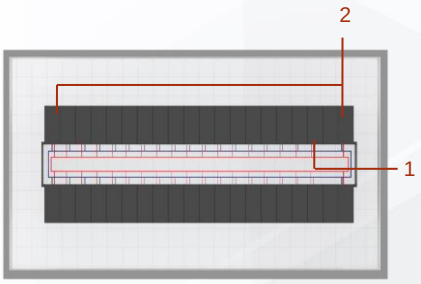


1: IT equipment 2: FusionCol600-L45MA

In Room

Agile

- Supports three operation modes: Single-pump rotation, Automatic load connection/ disconnection, and Synchronization control, enabling on-demand heat exchange allocation.
- One-click online self-check for core components (expansion tank, replenishment tank, replenishment pump, etc.), streamlined O&M .
- Startup wizard configuration automatically collects operational data, assesses critical component status, and enables streamlined deployment.
- Controller/Power/ Auxiliary power/Driver modular hot-swappable designs, enabling ≤1min maintenance time.
- Water pump adopts a separated motor and drive design, enhancing maintainability.
- replenishment tank is standard equipped with filling pump and replenishment pump, enabling tool-free self-priming refilling.
- Core components can be maintained from both front and rear without cabinet relocation.



1: IT equipment 2: FusionCol600-L450MA

In Row

Sustainable

- High-efficiency split-type centrifugal pump with automatic variable frequency adjustment based on system pressure and flow rate.
- Smart ring network teamwork control, enabling rotational operation of units, centralized on-demand pump regulation, dynamic cooling capacity allocation based on load.
- High-efficiency plate heat exchanger, supports high-temperature fluid supply and return, effectively reducing the energy consumption.

Technical Specifications

Specifications	Unit	FusionCol600-L450MA
Cooling capacity	kW	450(dual-pump)/ 360(single-pump)
Power supply	V/Ph/Hz	380-415/ 3 / 50/60
Number of water pumps	PCS	2 (Single-pump rotation, Automatic load connection/disconnection, and Synchronization control)
Water flow on the secondary side	L/min	650(dual-pump)/ /520(single-pump)
Available lift on the secondary side	kPa	250(dual-pump)/ /180(single-pump)
Primary side inlet and outlet liquid rated temperature	°C	37/45
Secondary side supply and return liquid rated temperature	°C	40/50
Primary side inlet and outlet liquid pipeline interface	in	3，Quick-connect chuck interface (Chuck outer diameter: 91 mm; Welded pipe outer diameter : 76 mm)
Secondary side supply and return liquid pipeline interface	in	3，Quick-connect chuck interface (Chuck outer diameter: 91 mm; Welded pipe outer diameter : 76 mm)
Primary side working medium	-	Chilled water / Ethylene glycol aqueous solution / Propylene glycol aqueous solution
Secondary side working medium	-	Deionized water / Ethylene glycol aqueous solution / Propylene glycol aqueous solution
Precision of the filter on the primary side	mesh	50
Precision of the filter on the secondary side	mesh	270
Pipe routing mode	-	Bottom piping
W x D x H	mm	600×1200×2250 (with casters) / 600×1200×2200 (without casters)
Net weight	kg	≤700
Communication interface	-	RS485、FE and USB with security protection mechanism
Communication protocol	-	Modbus-RTU、Modbus-TCP、SNMP

Remarks:

1.Rated working conditions: primary side inlet and outlet liquid 37°C / 45°C, water; Secondary side supply and return liquid 40°C / 50°C, deionized water.

2.Operating temperature range: primary side inlet temperature range: 10°C ~ 50°C; Secondary side supply temperature range: 20°C ~ 60°C.

3.The equipment supports Single-pump rotation, Automatic load connection/disconnection, and Synchronization control operating modes. The cooling capacity, water flow and available lift are technical parameters of rated working conditions when the equipment works in dual-pump or single-pump mode.

Copyright © Huawei Digital Power Technologies Co., Ltd. 2025. All rights reserved.

No part of this document may be reproduced or transmitted in any form or by any means without the prior written consent of Huawei Digital Power Technologies Co., Ltd.

Disclaimer

The information in this document may contain predictive statement including, without limitation, statements regarding the future financial and operating results, future product portfolios, and new technologies. There are a number of factors that could cause actual results and developments to differ materially from those expressed or implied in the predictive statements. Therefore, such information is provided for reference purposes only, and constitutes neither an offer nor a commitment. The information is subject to change without prior notice.