



**AAVID
THERMALLOY**

Celebrating 50 Years of Innovation 1964-2014

HydroSink™

RoHS
Compliant

HydroSink™ vs Air Cooling System

HydroSink™ is an intelligent, innovative, high performance Liquid Cooling System which aims to replace existing air cooled systems. HydroSink™ is the most efficient and convenient solution for medium/high power electronics.

COMPACT IN SIZE

The largest component of the HydroSink™ is the heat-exchanger which includes a smaller fan compared to those found in today's air cooled systems.

INTELLIGENT

The HydroSink™ control board strategically manages the system's components and sensor signals, ensuring the consistent monitoring of the system's performance.

HIGHER RELIABILITY

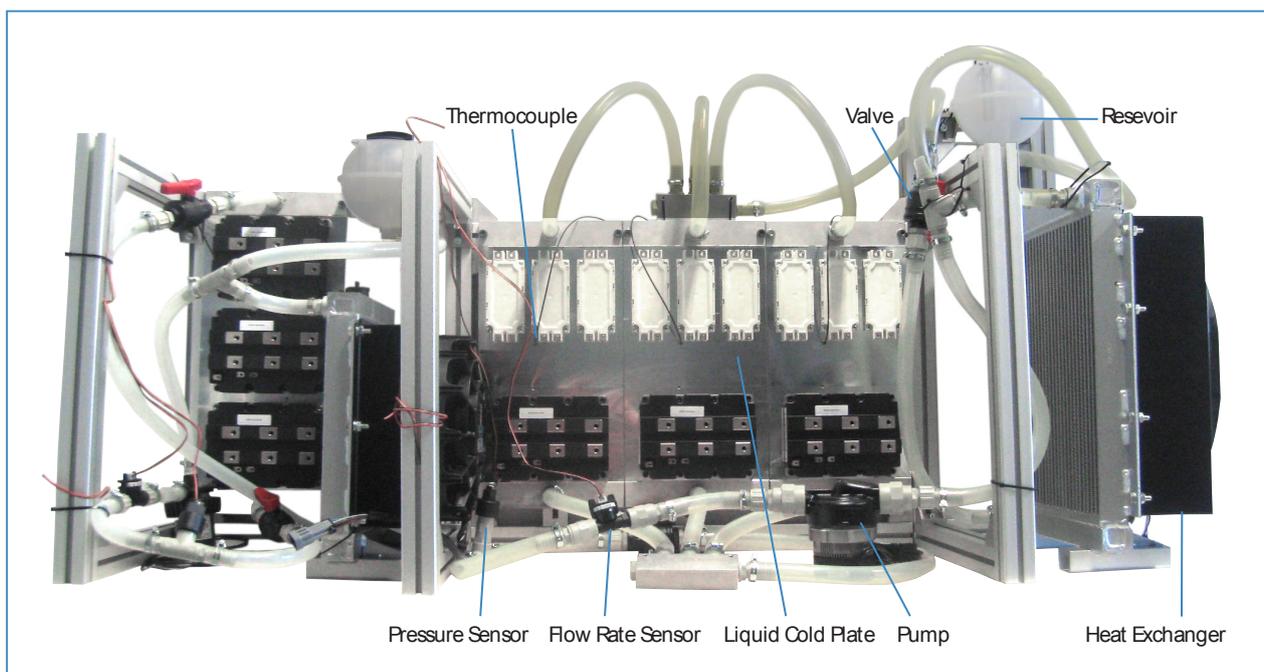
The estimated life-span of the HydroSink™ exceeds 50,000 hours in response to the control board's ability to reduce the fan and pump's usage. Therefore there is less stress to components when the system achieves the required performance.

COST EFFECTIVE

The smaller size, higher reliability and performance of the HydroSink™ components lower the cost in comparison to a traditional air cooled system.

ENHANCED THERMAL PERFORMANCE

The HydroSink™ performance is dependent on the fan and pump speeds along with environmental conditions of the application. The HydroSink™ control board allows the thermal performance to be modified according to the "boundary conditions" at any given moment.





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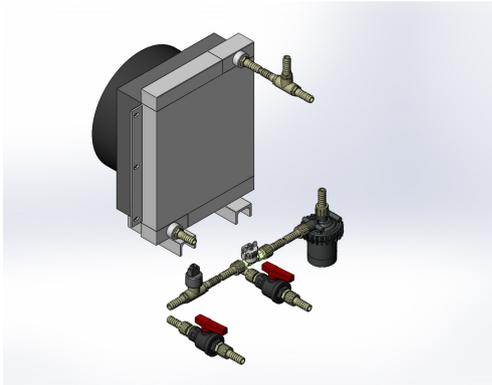
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Product Offerings

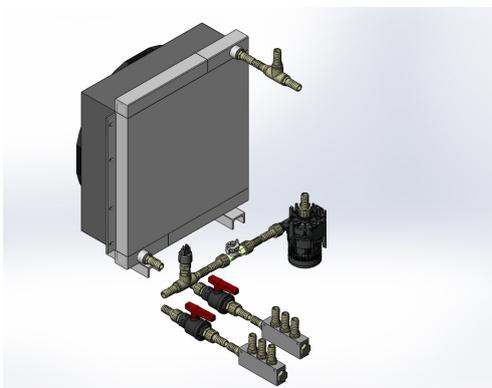
COMPONENTS

HydroSink™ components can be arranged in different ways. The HydroSink™ system includes pump, fan, heat exchanger, reservoir, valves, fittings, liquid cold plate(s), sensors and control board.

The HydroSink™ system allows for a customizable Liquid Cold Plate (LCP) feature to achieve the required thermal performance. The LCP can be located inside a sealed customer's cabinet, with remote location for pump and heat exchanger.



Example of small size HydroSink™ layout

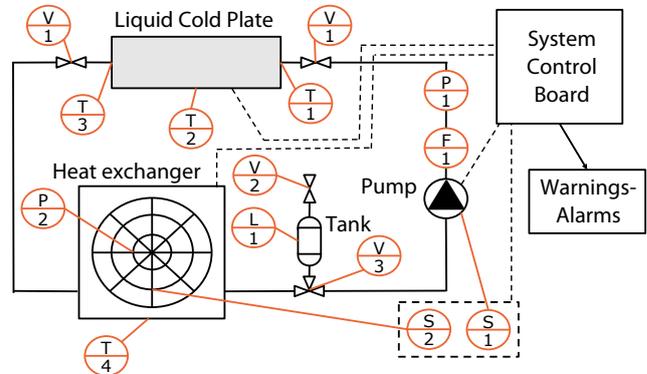


Example of medium size HydroSink™ layout

* Figures above don't show tank, controller, fan, power supply, silicone pipes and LCP(s)

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ADVANCED SYSTEM CONTROL BOARD

The HydroSink™ system features a control board managing both the fan and pump speeds. This allows for the thermal performance of the complete system to be modified according to the customer's application requirements.

HydroSink™ has a wide performance curve ranging from 2,9 to 21 °C/kW, in order to perfectly cover all power electronic applications

Control board, connectors and electronics devices are sealed and can be easily connected to the customer's machine controls.

The control board also manages the sensor signals to monitor and control the HydroSink™ components' performance and life-span.

LIQUID COOLANT

The "standard" HydroSink™ coolant will be a water and ethylene glycol (EG) solution (EG percentage depends on the ambient conditions). Even though the thermal conductivity of ethylene glycol (EG) is not as high as water, glycol provides freeze protection during use or during shipping.



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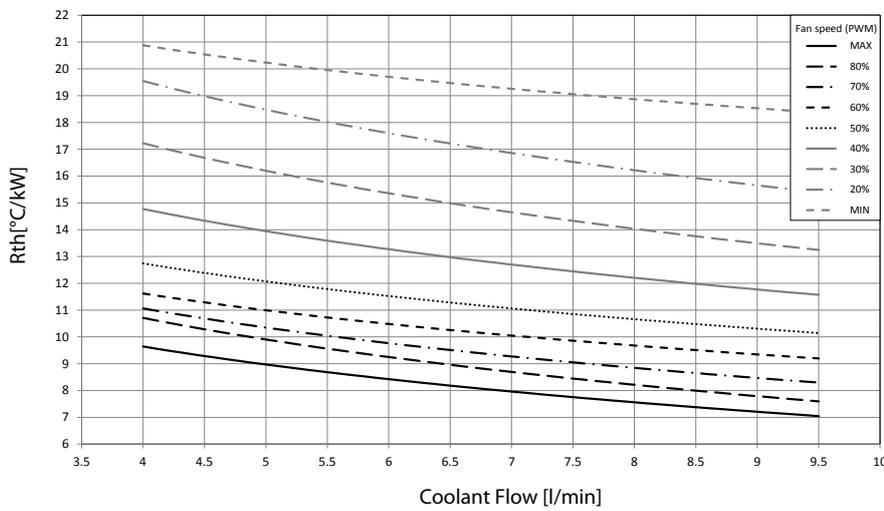
Currently two HydroSink™ versions are being introduced to market by Aavid:

1. Size "Small", $R_{th} = 7 - 21 \text{ } ^\circ\text{C}/\text{kW}$
2. Size "Medium", $R_{th} = 2,9 - 9,0 \text{ } ^\circ\text{C}/\text{kW}$

Model	Nominal Dissipated Power
HydroSink™ - Size "Small"	3.0 kW
HydroSink™ - Size "Medium"	9.9 kW

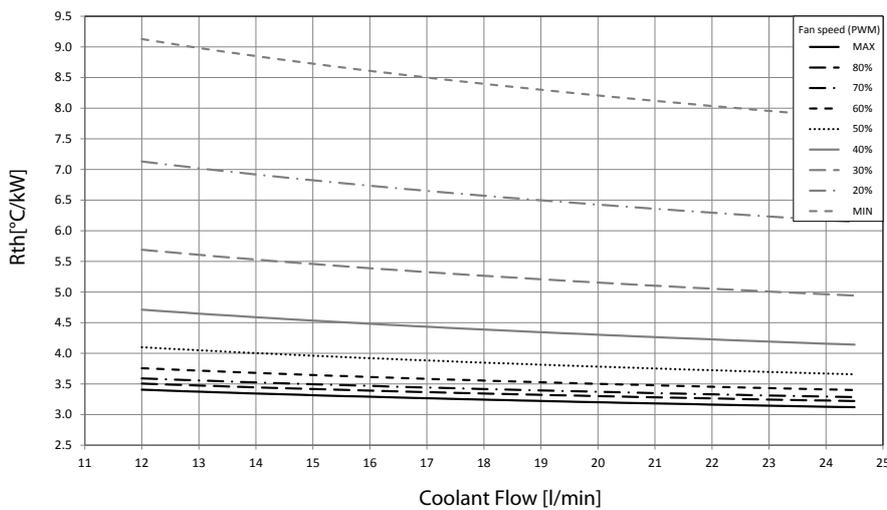
HYDROSINK™ SMALL

Thermal Resistance (R_{th}) vs Coolant Flow (HS-S)



HYDROSINK™ MEDIUM

Thermal Resistance (R_{th}) vs Coolant Flow (HS-M)



* Tests have been carried out using tap water without antifreeze



**AAVID
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*Successfully delivering electronics
cooling solutions since 1964*



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