

# HCP 1 AND 2

## HYDRAPULSE COOLANT PUMP PROTOTYPE

HIGH VOLTAGE | HEAVY-DUTY

10.2023  
VERSION 1.1





## HCP

**HIGH VOLTAGE | HEAVY-DUTY**  
HYDRAPULSE COOLANT PUMP

**The Prototype Hydrapulse® HCP utilizes the proven high voltage motor controller from the EHSU and EHPU product lines, the model with dedicated electronics is expected to launch in 2024.**

The HCP is designed for easy integration into your battery electric vehicle and provides the high flow and pressures required to meet the cooling demands of any battery electric or hybrid vehicle application.

A variety of flow ranges and pressure capabilities are available upon request, please reach out to the Terzo Power sales team with your application requirements.

## FEATURES

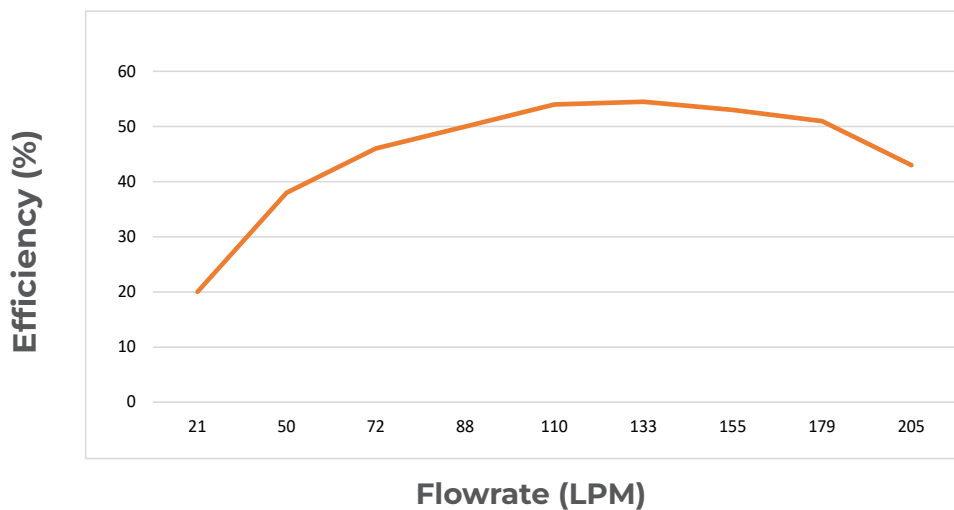
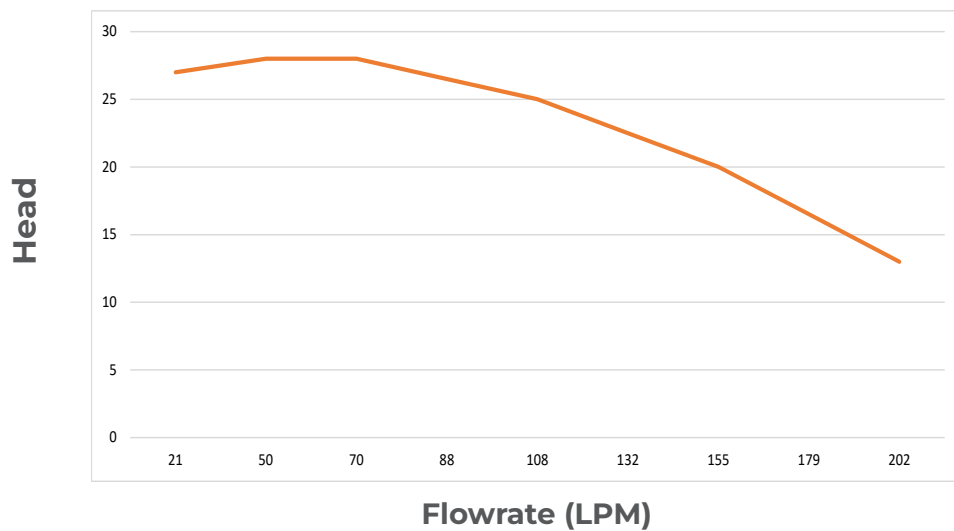
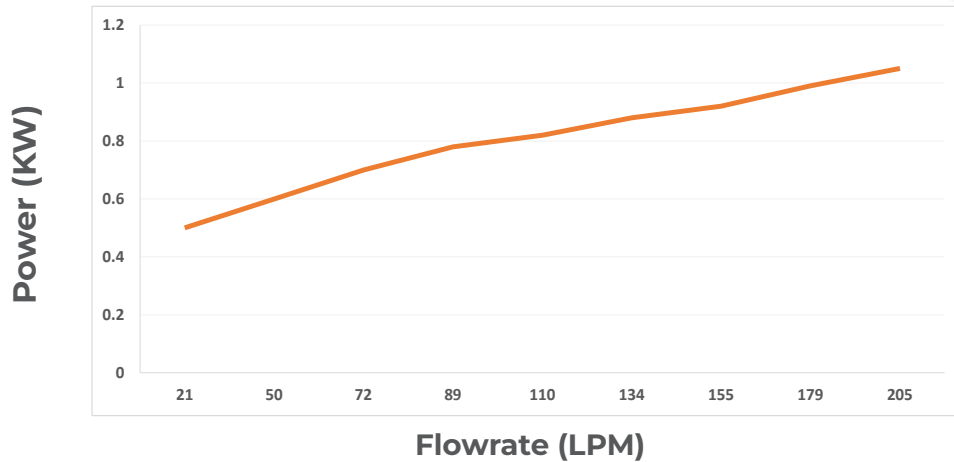
The Prototype Hydrapulse Coolant Pumps utilize our proven electronics from our EHSU products and an industry proven centrifugal water pump. This provides a proof of concept model to be validated in applications while the finishing touches are added to the fully integrated model, with dedicated electronics.

- Power dense permanent magnet motor
- 200vDC to 800vDC
- HVIL connection
- Integrated cooling (no external cooling required)
- CAN / J1939 Communications
- Onboard diagnostics
- up to 200 LPM @ 1.5 Bar (Larger pumps options to come)
- Complete temperature monitoring

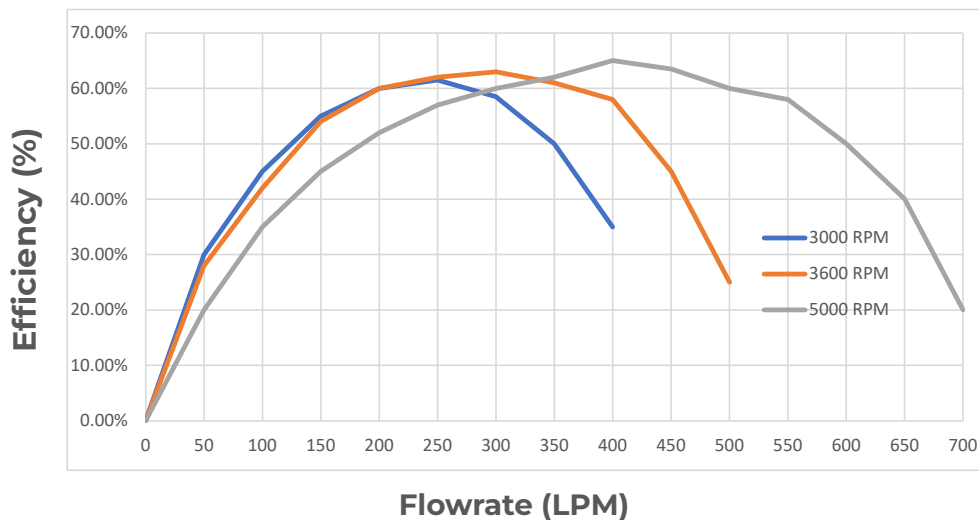
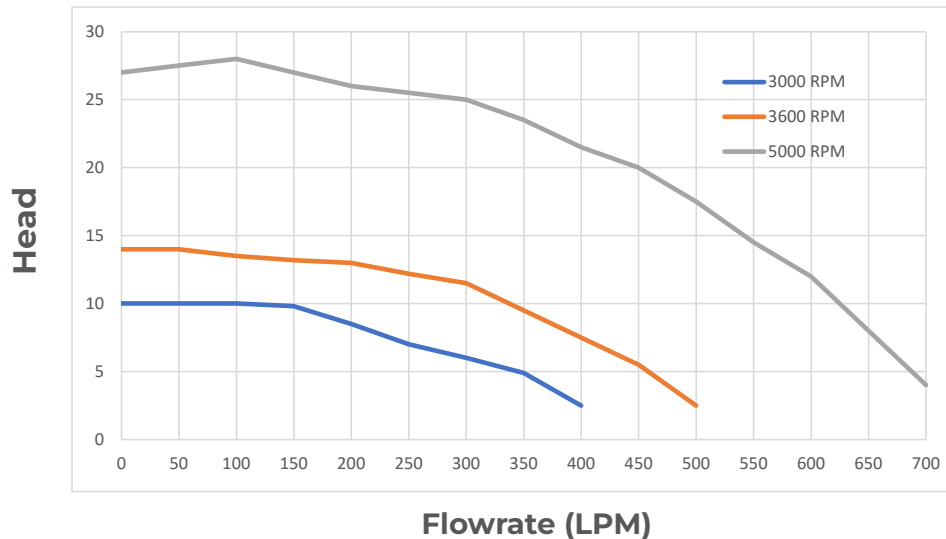
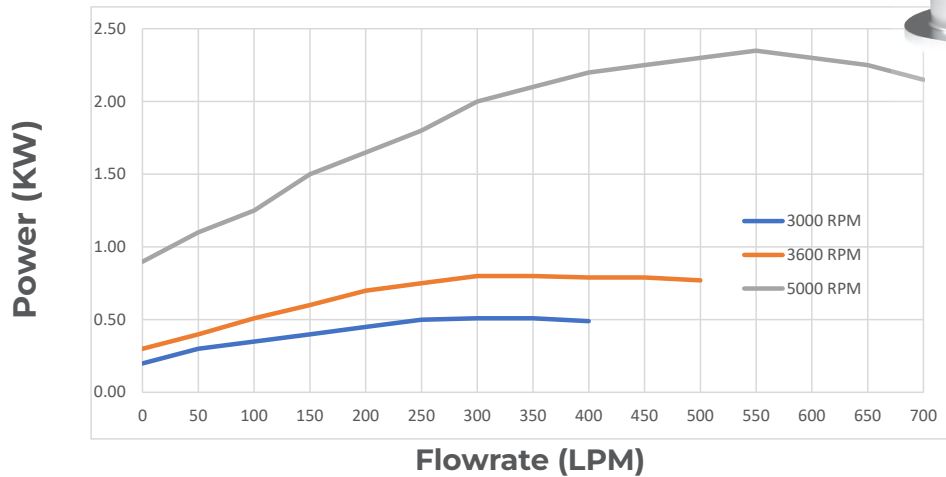
## APPLICATIONS

Our flexible high voltage architecture and rugged design makes the HCP perfect for heavy duty On-and-Off Highway Equipment.

- Battery Electric Vehicle Cooling Systems
- Fuel Cell Cooling
- Ag Implement Sprayer systems
- Off-Highway Electric Vehicle Applications
- Hybrid and Electric Chassis Integration
- Traction Motor Cooling

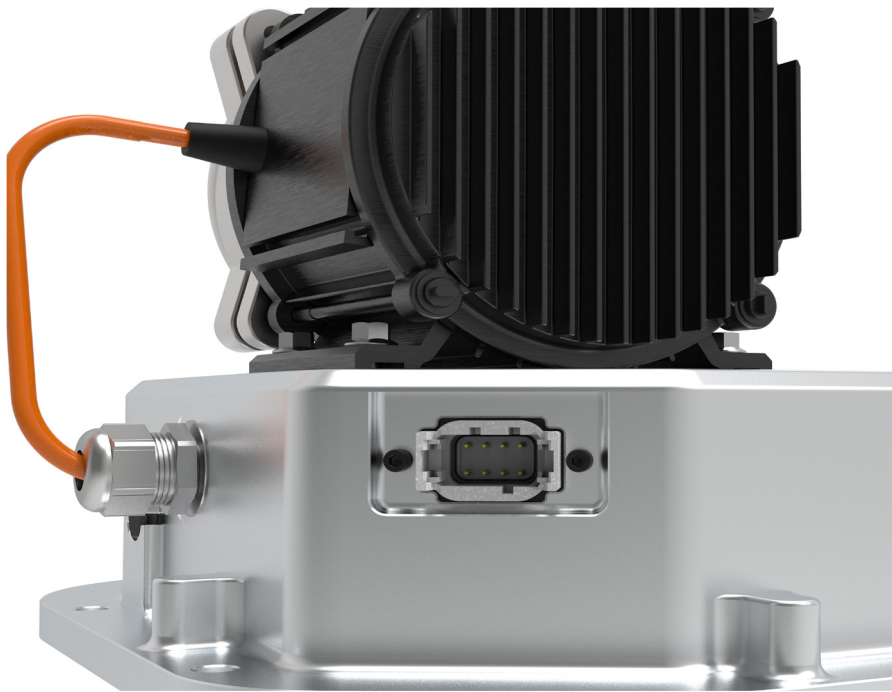


## PERFORMANCE CURVES HCP-2





## HCP CONNECTOR PINOUTS



**Amphenol ATM Connector Pinout  
(All Frame Sizes)**

PIN#	NAME	DESCRIPTION
1	VCC	9-36vDC control power
2	GND	9-36vDC control ground
3	CAN-H	CAN High
4	CAN-L	CAN Low
5	STO-0 (E-STOP 0)	E-Stop 0
6	STO-1 (E-STOP 1)	E-Stop 1
7	HVIL-0	High Voltage Interlock Loop - 0
8	HVIL-1	High Voltage Interlock Loop - 1

**Mating Connector  
(Cable Side)**



*ATM06-08SA Plug  
(with wedge & contacts shown)*

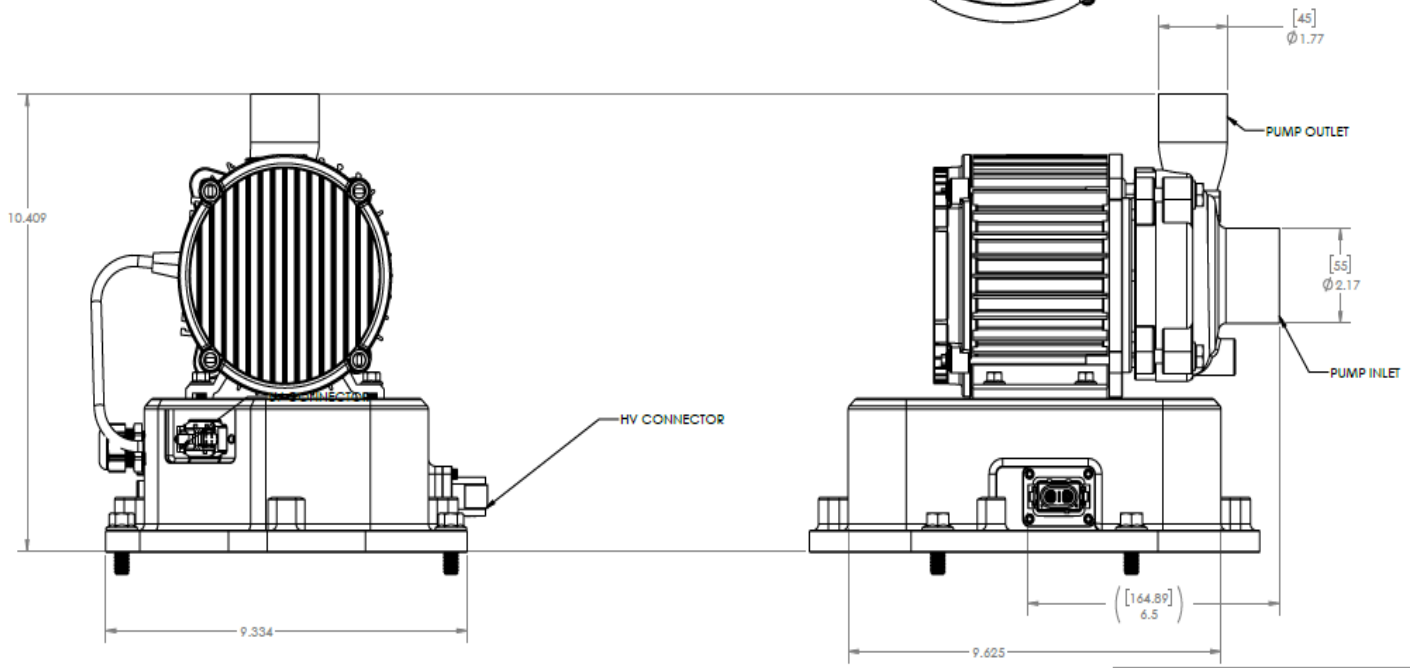
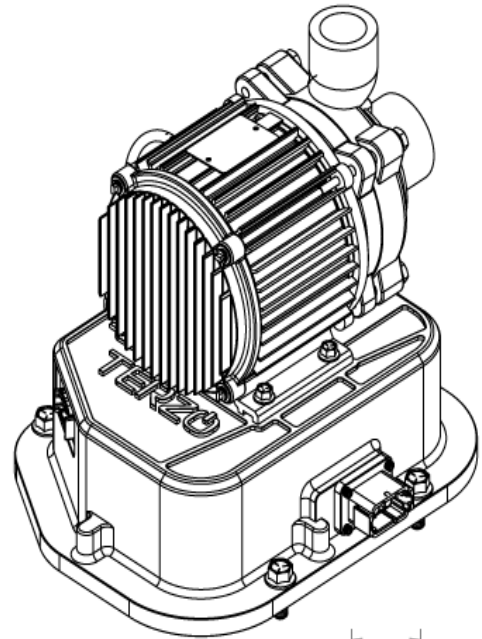
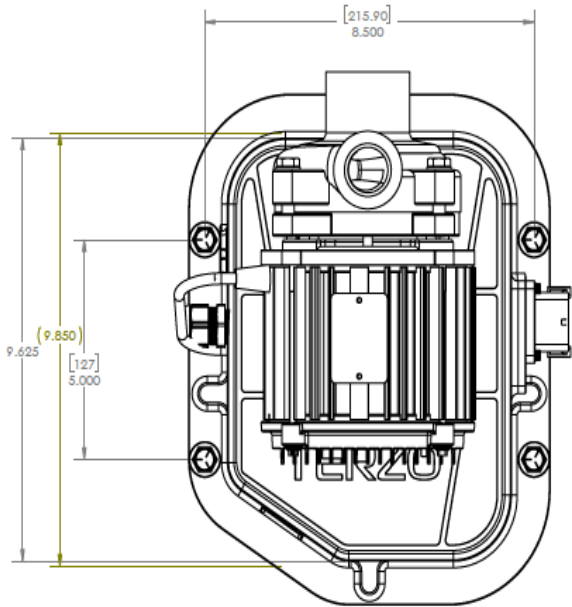


**Mating High Voltage Connector  
(Cable Side)**

*ATHP062S25EL-S2*



PIN#	NAME	DESCRIPTION
A	BATT +	200-800 vdc input
B	BATT -	200-800 vdc negative



## ENVIRONMENTAL PROTECTION

### CLIMATE

SAE J1455-4.1.3 Temperature Cycle  
SAE J1455-4.1.3 Thermal Shock  
SAE J1455-4.1.3 Thermal Stress  
SAE J1455-4.2 Humidity  
SAE J1455-4.3 Salt Spray Atmosphere  
SAE J1455-4.3.3 Immersion Testing  
SAE J1455-4.4 High Exposure Splash Testing  
SAE J1455-4.5 Steam Cleaning and Pressure Washing

### MECHANICAL VIBRATION

SAE J1455-4.10 Swept Sine Vibration  
SAE J1455-4.10.4 Random Vibration  
SAE J1455-4.11 Mechanical Shock  
SAE J1455-4.11 Operational Shock / Harness Shock  
SAE J1455-4.12 Combined Environmental  
ISO 16750 Vibration

### ELECTRICAL

SAE J1455-4.13 Heavy-Duty Truck Electrical Environment

### EMI/EMC

EIC 61000-6-4 Radiated Emissions  
IEC 61000-6-2 Industrial Immunity  
FCC Part 15B Class A  
CISPR 25  
ISO 11452-2 RI  
ISO 11452-4 BCI  
ISO 10605 ESD  
ISO 7637-2 3rd Edition transients (on 12vdc)

The Terzo HCP is designed to adhere to the standards listed on this page, formal testing has not yet been conducted.

#### Terzo Power Systems, LLC

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## **WARNING!** FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

This document and other information from Terzo Power Systems, LLC, its subsidiaries and authorized distributors provide product and/or system options for further investigation by users having technical expertise. It is important that you analyze all aspects of your application, including consequences of any failure, and review the information concerning the product or system in the current product catalogue. Due to the variety of operating conditions and applications for these products or systems, the user, through its own analysis and testing, is solely responsible for making the final selection of the products and systems and assuring that all performance, safety and warning requirements of the application are met. The products described herein, including without limitation, product features, specifications, designs, availability and pricing, are subject to change by Terzo Power Systems, LLC and its subsidiaries at any time without notice.



#### **WARNING!**

WARNING: This product can expose you to chemicals including lead, which is known to the State of California to cause cancer. For more information, go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)