



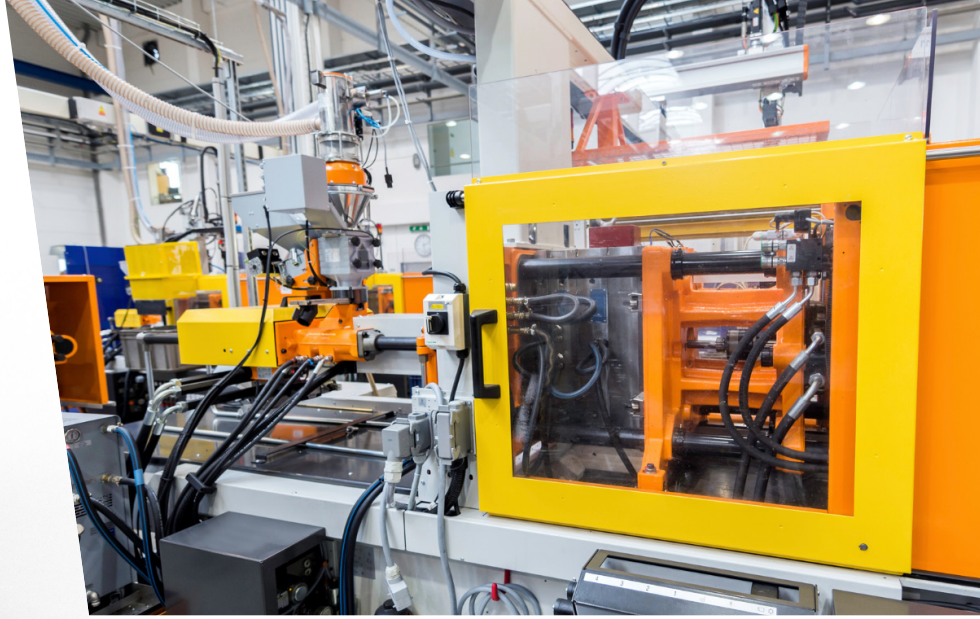
12.2023
VERSION 1.1

HYDRAPULSE SMART PUMP

SERVO HYDRAULIC SYSTEM

MAXIMIZE EFFICIENCY | MAXIMIZE DATA
HYDRAPULSE SMART HYDRAULIC SYSTEMS





SMART PUMP

MAXIMIZE EFFICIENCY | MAXIMIZE DATA
SERVO HYDRAULIC SYSTEMS

The Hydrapulse® Smart pump is a purpose built system designed to open up the benefits of a servo hydraulic system to a wider variety of applications by reducing the complexity of implementation and the cost.

The Hydrapulse® Smart Pump includes an integrated controller, permanent magnet motor, low noise hydraulic pump, built in pressure sensors, and relief valve. This liquid cooled package is designed to be completely standalone system ready to go right out of the box.

Additional options include output check valves, filtration, relief valves, and quiet pumps.

FEATURES

The Hydrapulse Smart Servo Hydraulic System includes on-board electronics and motor controls to provide you the most possible feedback points for data collection in an extremely compact package.

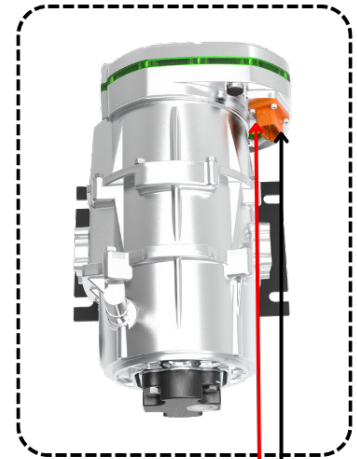
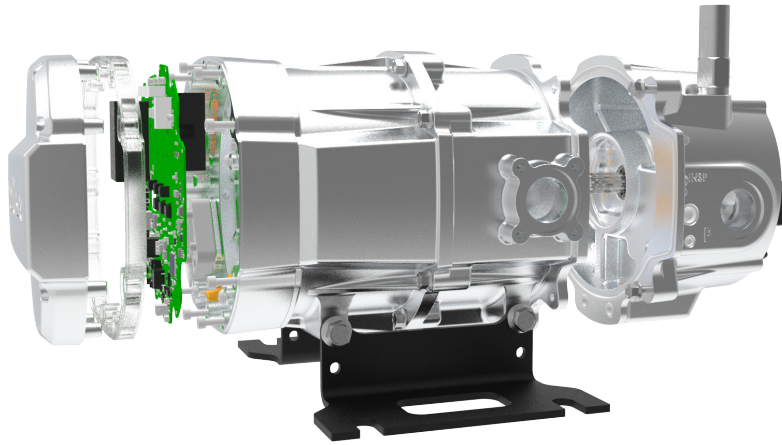
- Onboard Diagnostics
- Quiet Operation as low as 50 dB
- Power dense permanent magnet motor
- Three Phase AC Input w/ Hydrapulse Rectifier
- IP67 Protection Rating
- Liquid Cooled Motor and Electronics (Oil or WEG)
- CAN / J1939 Communication
- Power-on-demand / energy savings
- Complete temperature monitoring
- Current and Voltage feedback over CAN
- Bi-Rotational Pump Options

APPLICATIONS

Our flexible high voltage architecture makes the EHSU perfect for medium- & heavy-duty truck applications.

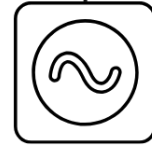
- Injection Molding
- Tool / Work Holding
- Robotics
- Distributed Hydraulic Systems
- Marine Hydraulics
- Robotics

OVERVIEW



Hydrapulse Front End
(AC to DC Rectifier)

AC Input -
220v - 3 Phase
50 or 60 Hz



MOTOR CONTROLS	PMAC MOTOR	HYDRAULIC PUMP
Speed Control 0 - 4000 RPM	Power dense	Standard Pump Mounting
Temperature Feedback,	Rapid Acceleration Rates	Integrated Pumps Available
Built-In Pressure Sensors	High Efficiency	Less Connection Points
Proven Robust Design	Liquid cooled, Oil or WEG	Low Noise Pump Options
Liquid Cooled, Oil or WEG		Integrated Pressure Sensors



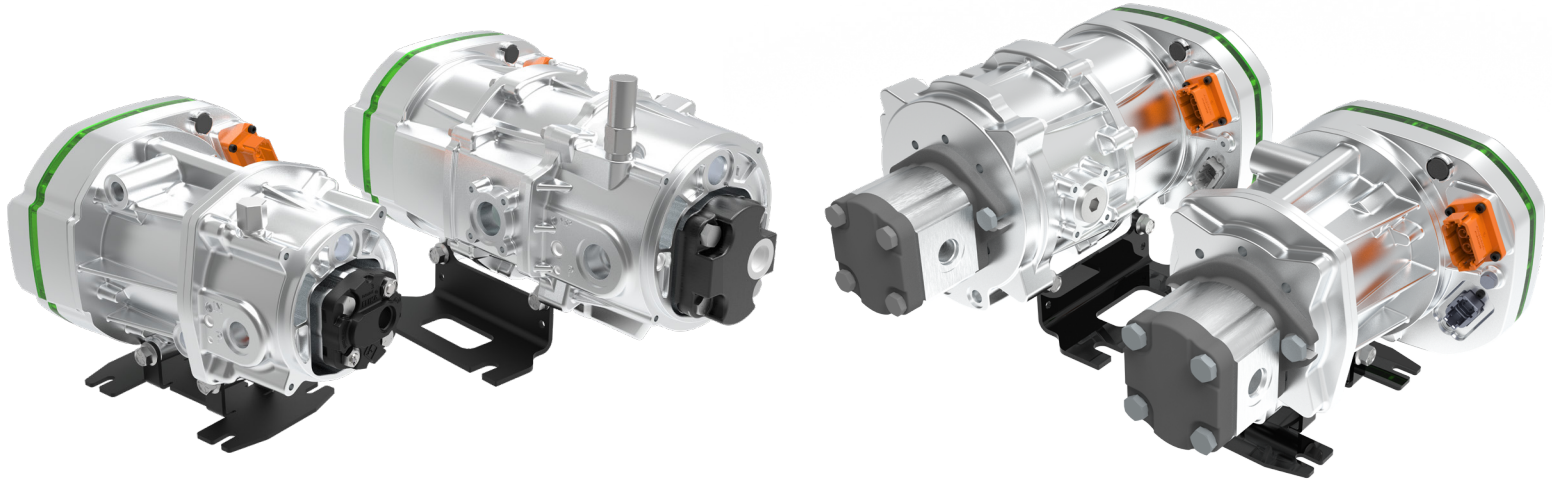
ATM06-08SA Plug

ATM06-08SA Plug

PIN#	NAME	DESCRIPTION
1	24V EXT 1	24v Output Power
2	24V EXT 1	24v Output Power
3	CAN-H	CAN High from Master
4	CAN-L	CAN Low from Master
5	24v EXT 2	24v Output Power
6	GND	GND
7	GND	GND
8	GND	GND

PIN#	NAME	DESCRIPTION
1	VCC	12v Control Power
2	GND	Control Power Ground
3	CAN-H	CAN High to Hydrapulse
4	CAN-L	CAN Low to Hydrapulse
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

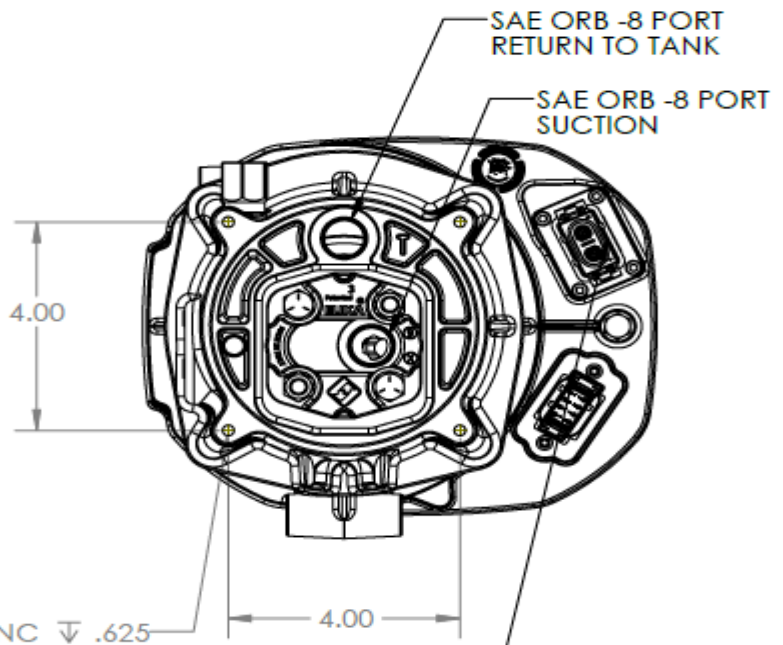
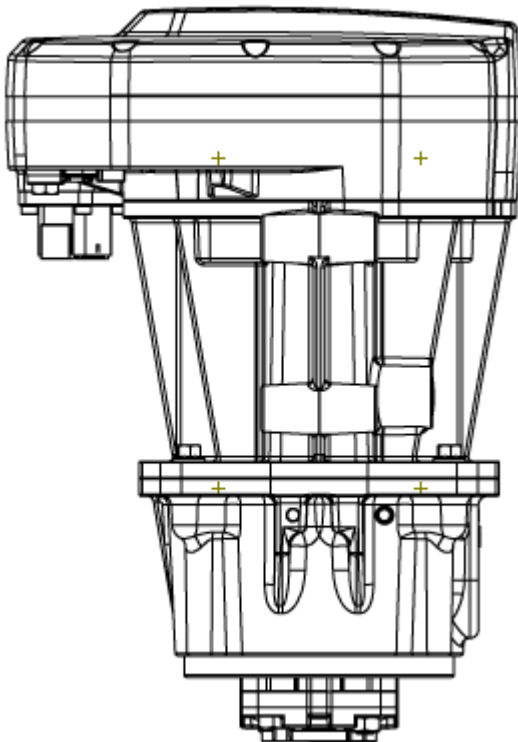
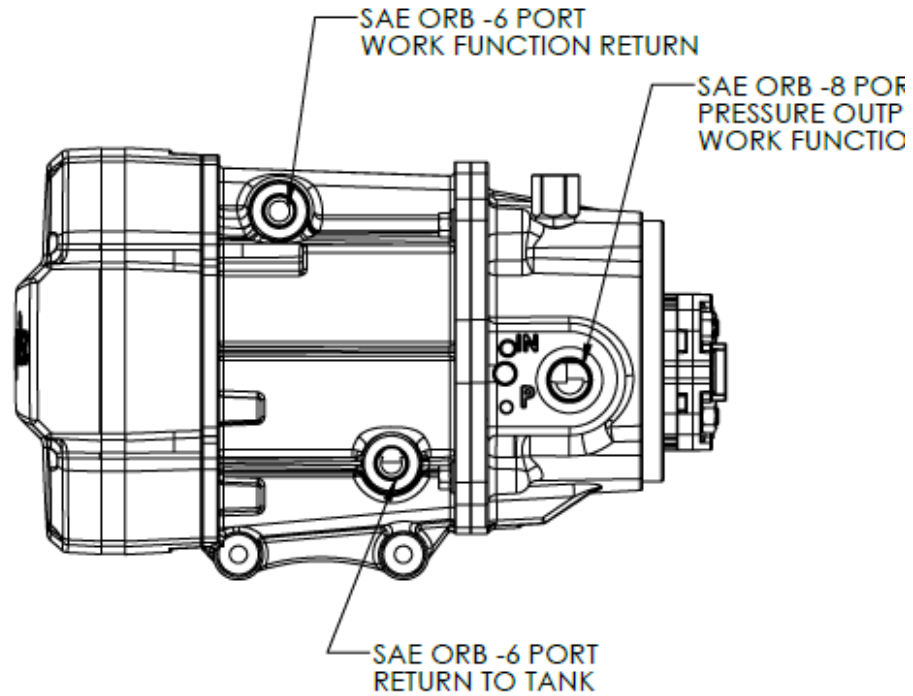
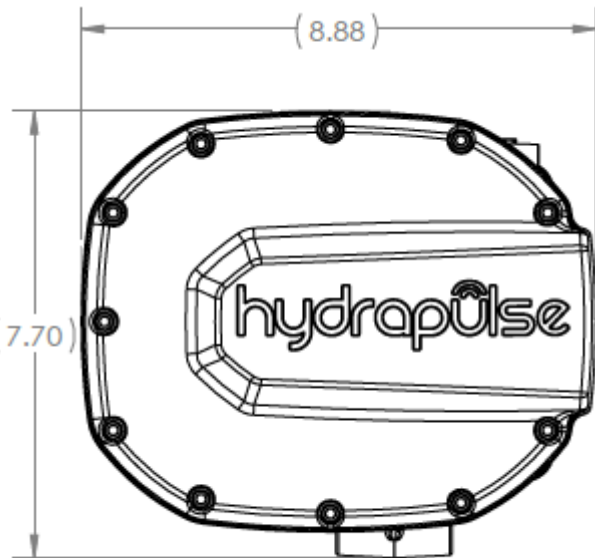
AC-DC Rectifier Specifications	
Protection Rating	IP65
Operating Temperatures	-25° to 60° C
Storage Temperature	-40° to 85° C
Weight lbs. (kg)	
Dimensions (Inches)	17.3" x 11.25" x 5.5"
Peak Power Output	10kw
High Voltage	
Input Voltage (AC)	220v AC - 3 Phase
Output Voltage (DC)	270 - 300 VDC
Rated Current HV Output	40A
Low Voltage	
Channels	2
Output Voltage	24V DC
Max Current	3.75 A x 2

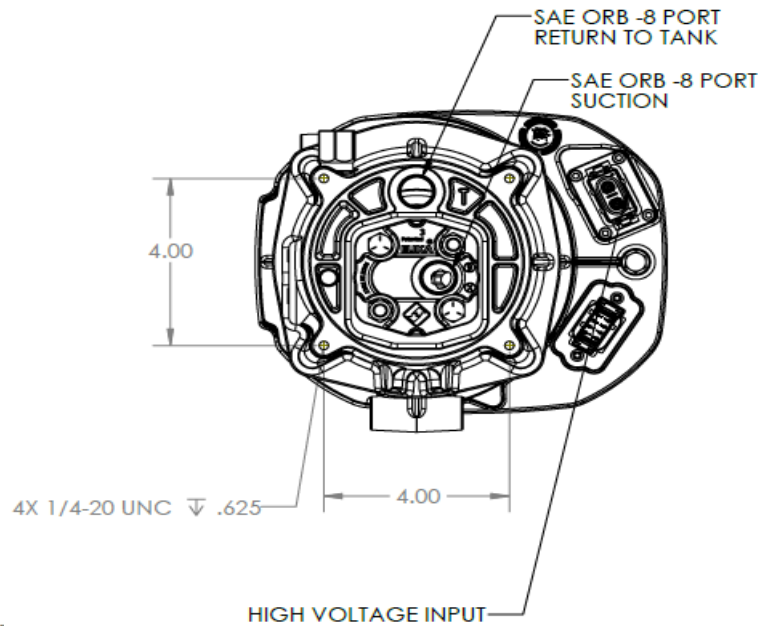
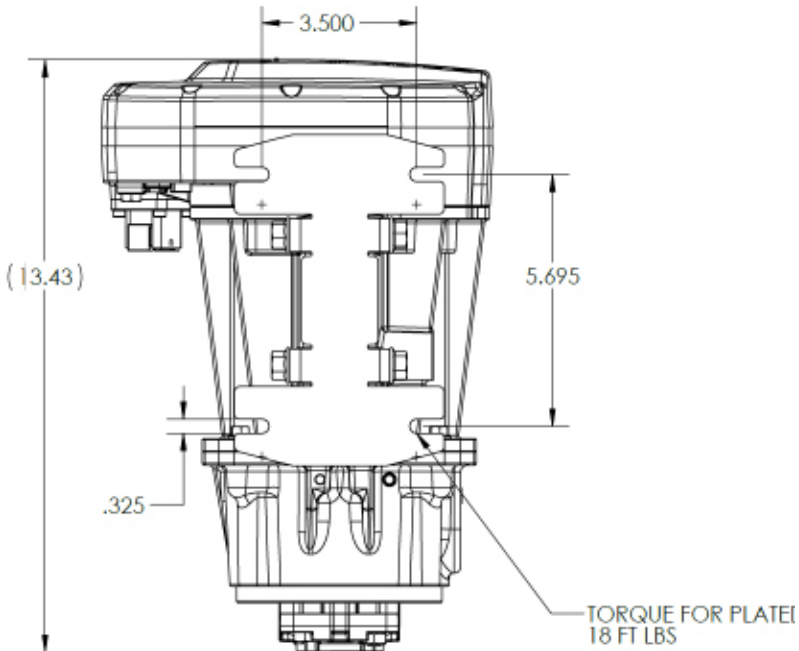
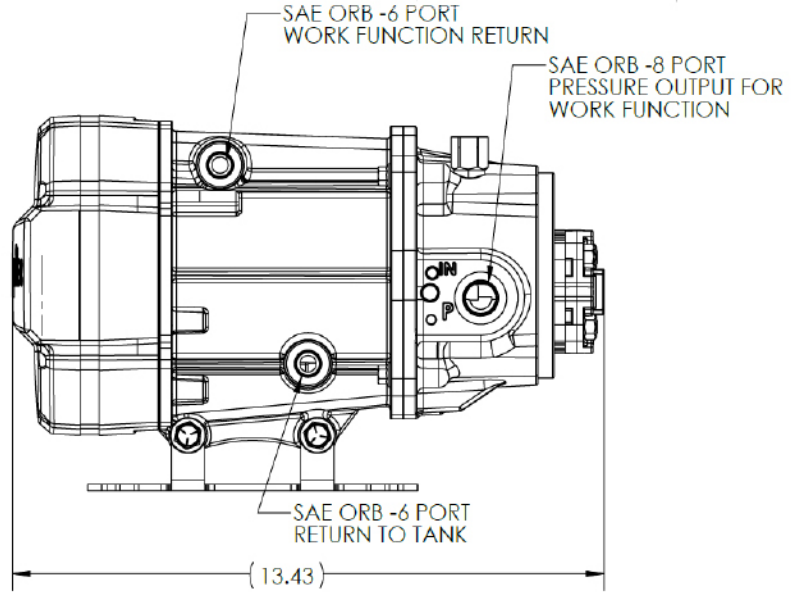
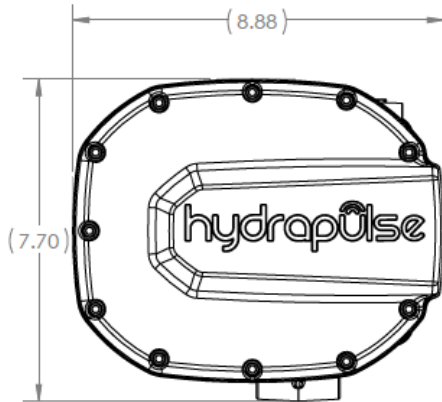


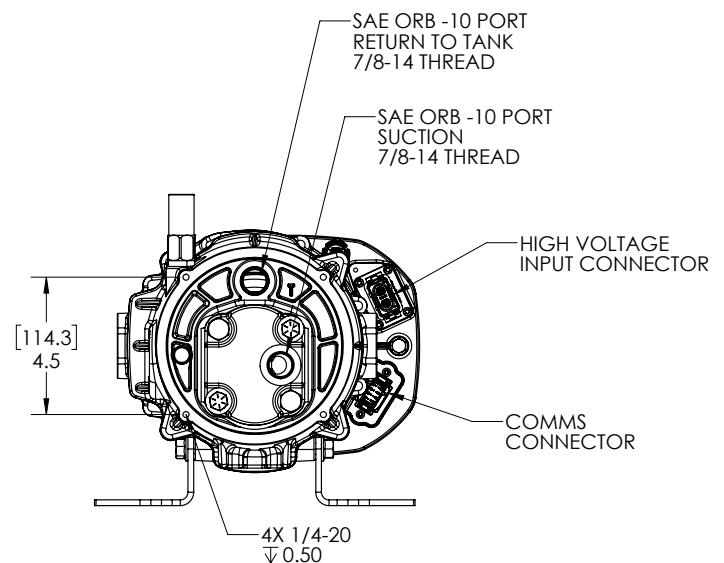
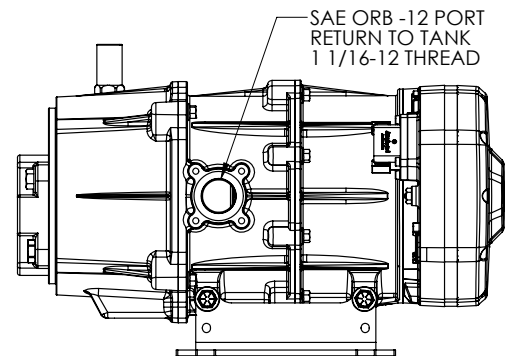
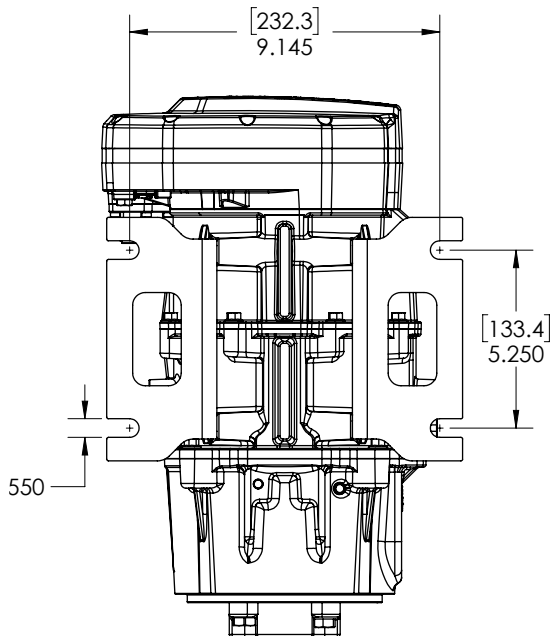
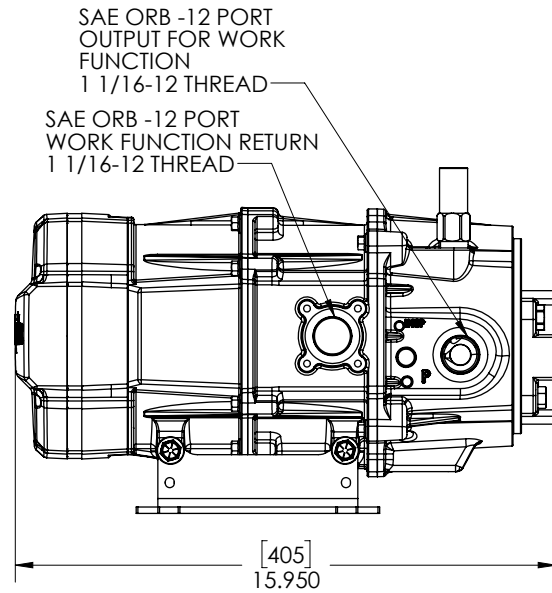
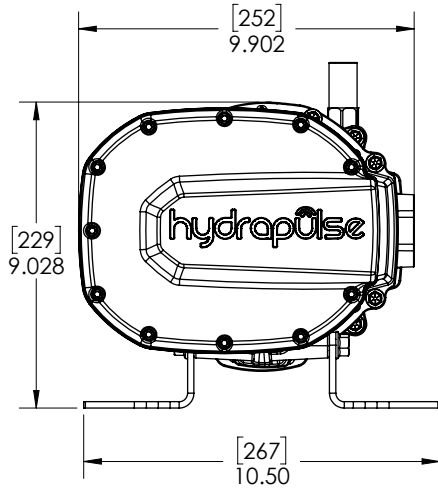
SPECIFICATIONS

Hydrapulse MODELS	EHSU-1-056-xxx	EHSU-1-075-xxx	EHSU-2-105-xxx
Rated Voltage (Vdc)	350 to 800	350 to 800	350 to 800
Rated Power kW (HP)	2.5 (3.3)	4 (6.5)	8.8(13.5)
Rated Current (A)	7	16.5	14.5
IP Rating	67	67	67
Max Speed (rpm)	4,000	4,000	4,000
Operating Temp.	-40° C to 85° C	-40° C to 85° C	-40° C to 85° C
Storage Temp.	-40° C to 125° C	-40° C to 125° C	-40° C to 125° C
Weight lbs. (kg)	31.4 (14.2)	34 (15.5)	34 (15.5)

Specifications are nominal and subject to change. Consult Factory prior to ordering.



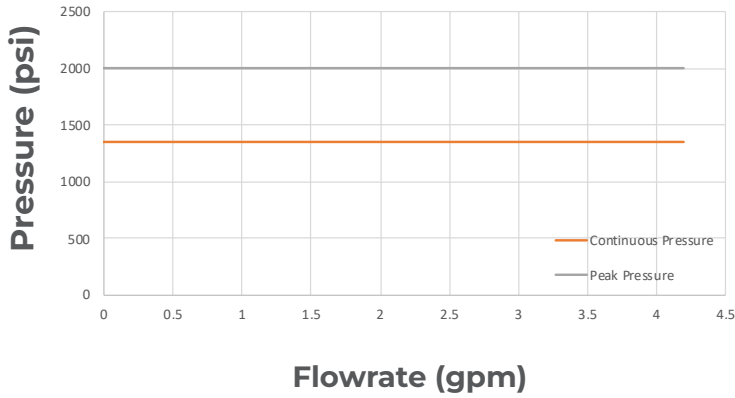




PERFORMANCE CURVES



EHSU-1-56-XXX-U-4E Pressure Rating



EHSU-1-56-XXX-U-4E

**Frame Size 1
56 mm motor
350-800Vdc
4 c.c. pump**

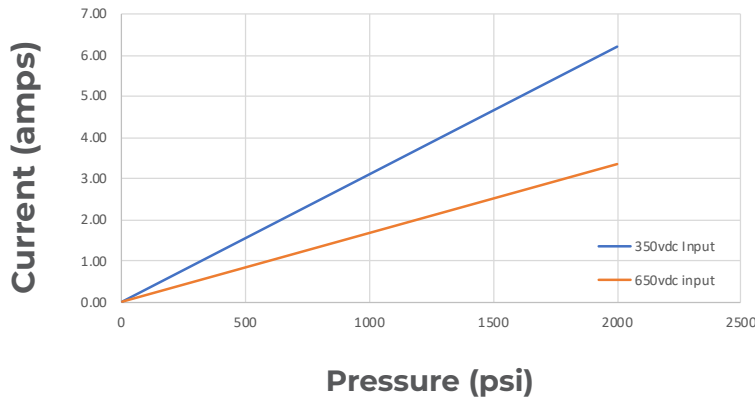
Temperature = 40° +/- 3°C

Kinematic Viscosity = 28.8 mm²/s (cSt)

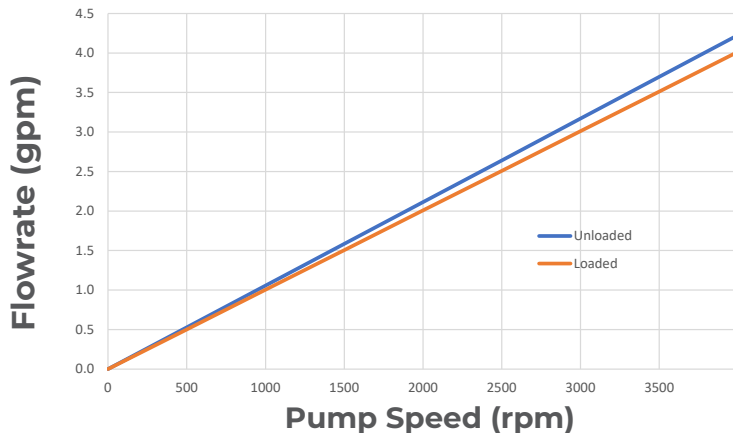
*All curves dependent on loading conditions and may vary.

The charts on this page represent expected performance at 350 and 650Vdc Nominal

EHSU-1-56-XXX-U-4E Current Draw with 2 Gpm (2000 RPM)

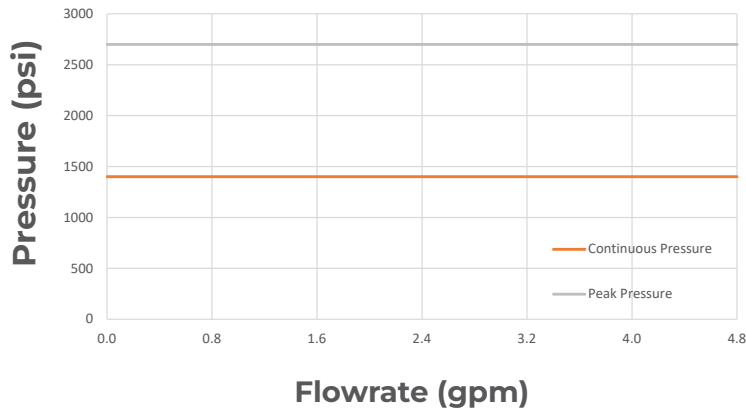


EHSU-1-56-XXX-U-4E Flowrate





EHSU-1-075-XXX-U-6E Pressure Rating



EHSU-1-75-XXX-U-6E

Frame Size 1
75 mm motor
350-800Vdc
6 c.c. pump

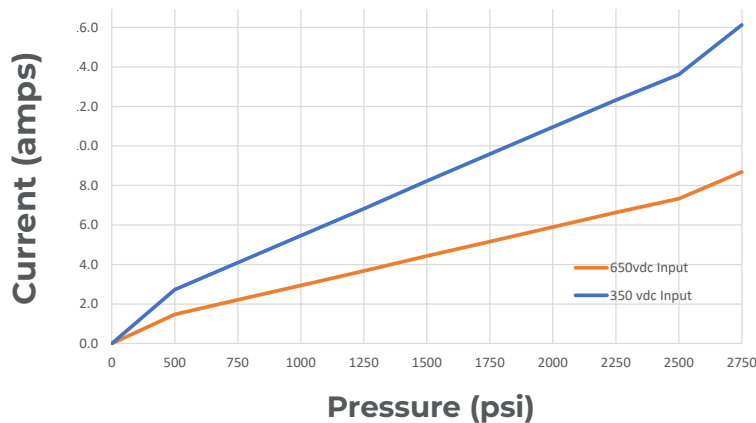
Temperature = 40° +/- 3°C

Kinematic Viscosity = 28.8 mm²/s (cSt)

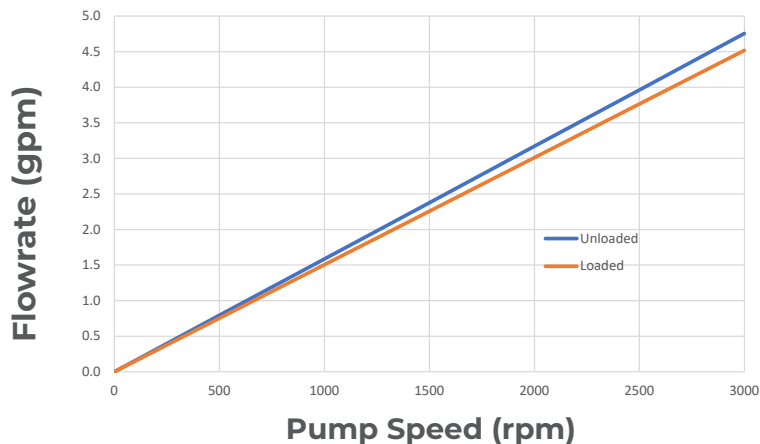
*All curves dependent on loading conditions and may vary.

The charts on this page represent expected performance at 350 and 650Vdc Nominal

EHSU-1-075-XXX-U-6E Current Draw at 4.2 GPM



EHSU-1-075-XXX-U-6E Flowrate



PERFORMANCE CURVES



EHSU-2-105-XXX-U-8
Frame Size 2
105 mm motor
350-800Vdc
8 c.c. pump

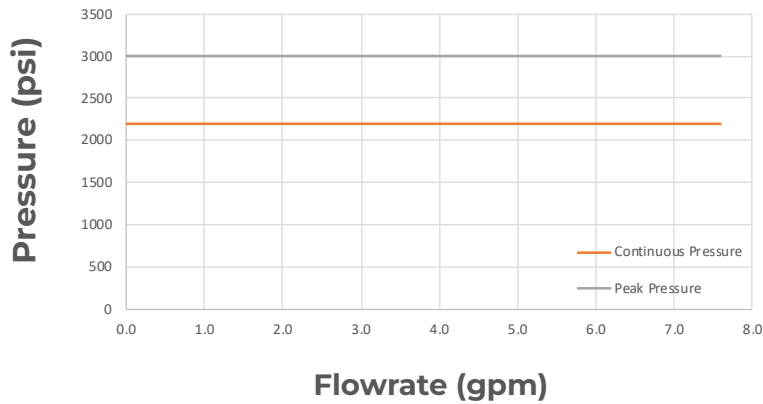
Temperature = 40° +/- 3°C

Kinematic Viscosity = 28.8 mm²/s (cSt)

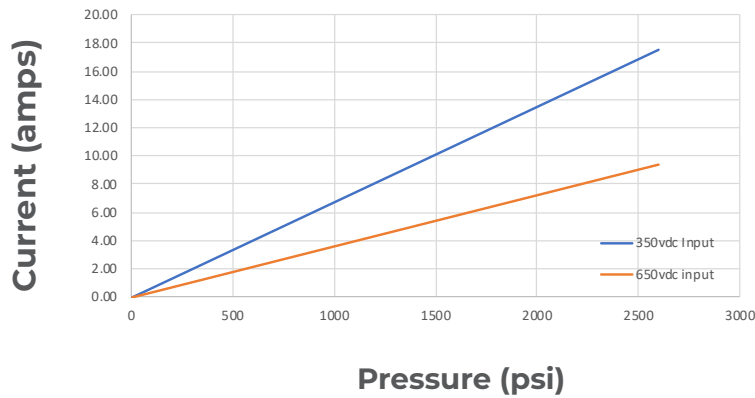
*All curves dependent on loading conditions and may vary.

The charts on this page represent expected performance at 350 and 650Vdc Nominal

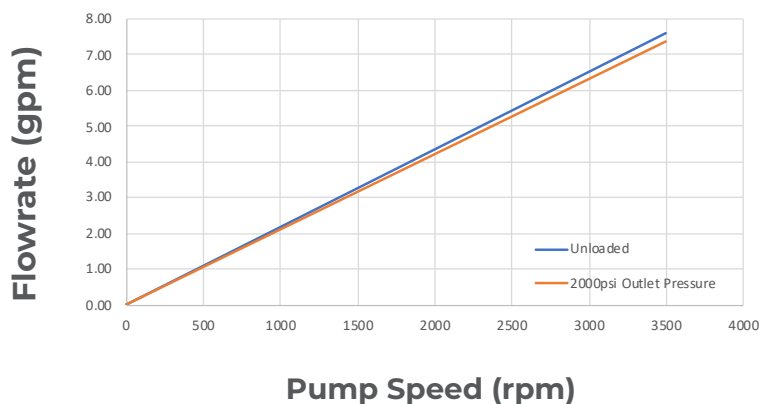
EHSU-2-105-XXX-U-8 Pressure Rating



EHSU-2-105-XXX-U-8 Current Draw with 4.3 Gpm (2000 RPM)



EHSU-2-105-XXX-U-8 Flowrate



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)

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.

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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