

06.2024
VERSION 1.4

EHSU

ELECTRO-HYDRAULIC STEERING UNIT

HIGH VOLTAGE | HEAVY-DUTY
SMART HYDRAULIC STEERING UNIT

350vDC to 800vDC





EHSU

HIGH VOLTAGE | HEAVY-DUTY
ELECTRO-HYDRAULIC STEERING UNIT

The Hydrapulse® EHSU is a rugged electro-hydraulic smart pump unit with integrated motor, controller, and closed-loop feedback designed for mobile steering assist and e-steering applications.

The EHSU is available in high voltage for your electric or fuel cell chassis integration or low voltage with our available converter unit. Call our engineering team for custom options such as connectors, porting, mounting, and reservoirs.

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

FEATURES

With our integrated cooling, power electronics, motor, and pump, the Hydrapulse® EHSU provides the cleanest and most cost effective integration into your chassis, machine, or vehicle platform.

- Onboard pressure transducers
- Power dense permanent magnet motor
- 350vDC to 800vDC
- IP67 Protection Rating
- HVIL connection
- Integrated cooling (no external cooling required)
- CAN / J1939 Communications
- Onboard diagnostics
- Power-on-demand / energy savings
- Complete temperature monitoring

APPLICATIONS

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

- Electric Vehicle Steering
- E-PTO
- Trailer / Tag-axle steering
- Off-Highway Vehicles
- Hybrid and Electric Chassis Integration
- Auxillary hydraulics
- Steer-by-wire

SPECIFICATIONS

EHSU MODEL	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)	5 (6.5)	7.5(10)
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)	52 (23)

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

STANDARD MODELS

Frame Size 1

EHSU 1-056-350-U-4E

EHSU 1-056-650-U-4E

EHSU 1-075-350-U-6E

EHSU 1-075-650-U-6E

Frame Size 2

EHSU-2-105-350-U-8

EHSU-2-105-350-U-11

EHSU-2-105-650-U-8

EHSU-2-105-650-U-11

F1 Pump Options

4E - 4 c.c. Helical Gear Pump (F1)

6E - 6 c.c. Helical Gear Pump (F1)**

6 c.c. pump limited to 3000 RPM

Additional Pump displacements available upon Request

Voltage Options

350 - 350 VDC Nominal Input Voltage

F2 Pump Options

8 - 8 c.c. Helical Gear Pump

11 - 11 c.c. Standard Gear Pump

Additional Pump displacements available upon Request

Voltage Options

350 - 350 VDC Nominal Input Voltage

650 - 650 VDC Nominal Input Voltage

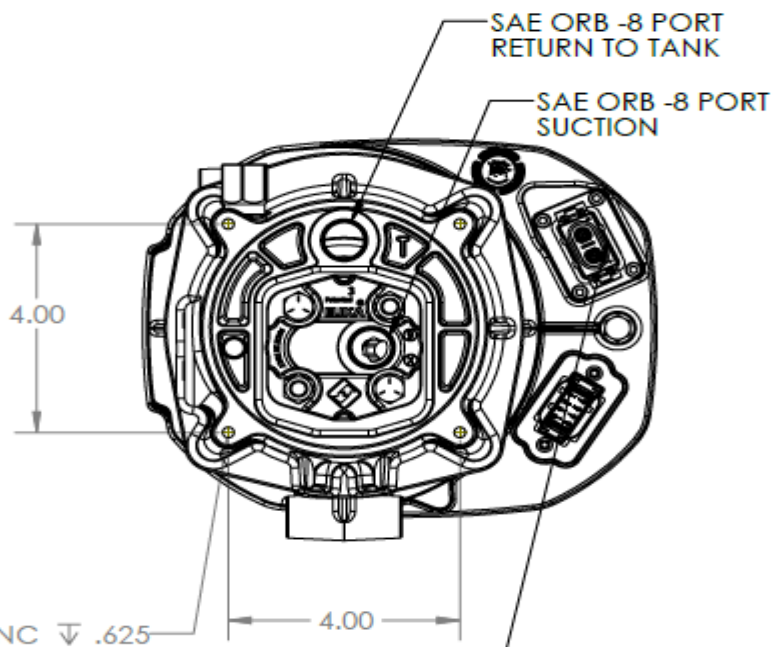
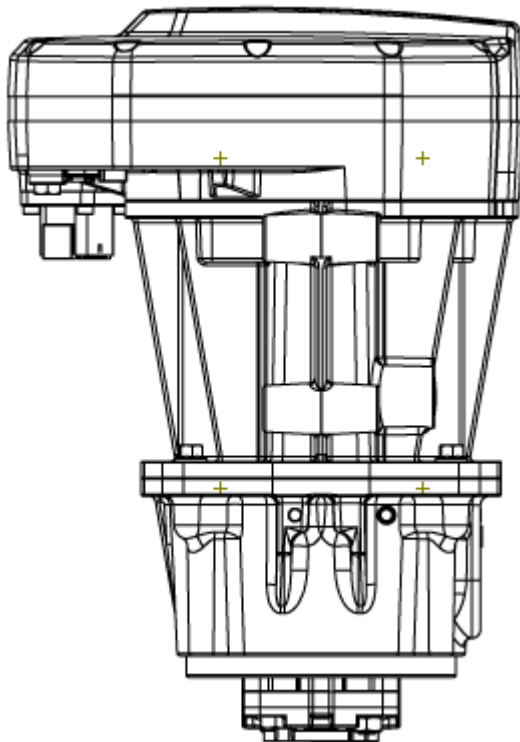
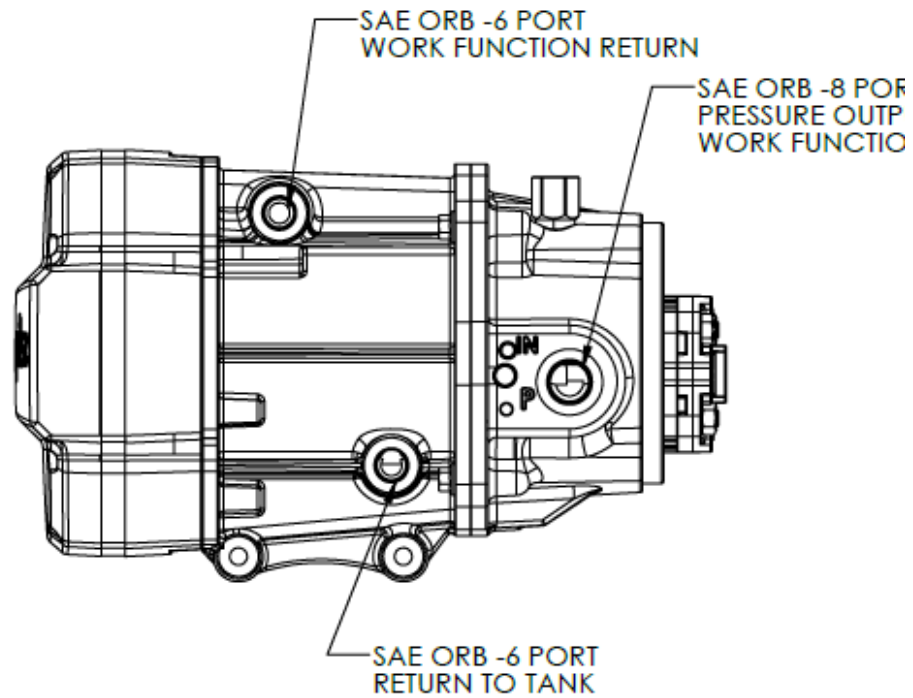
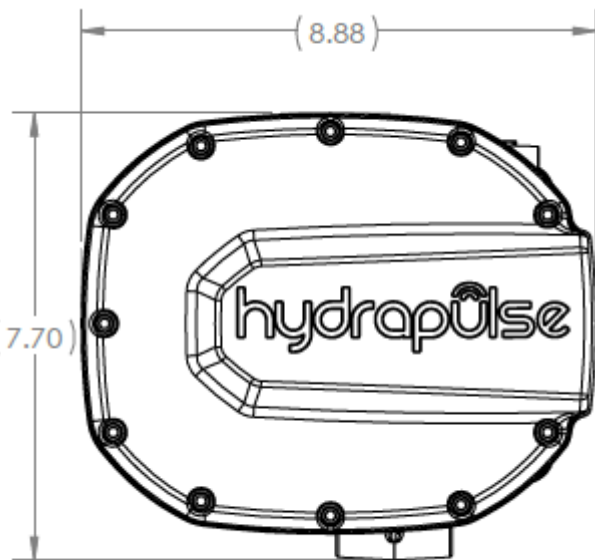
Firmware Options Available

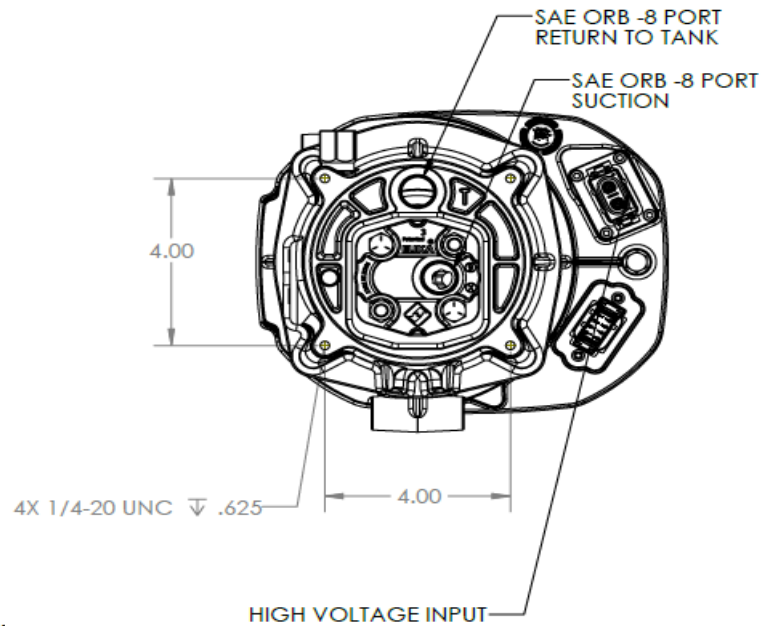
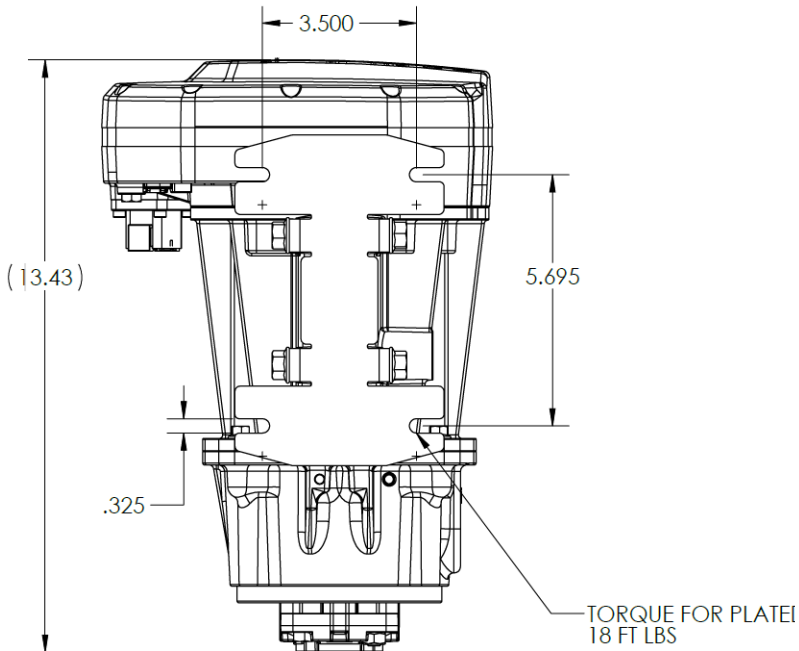
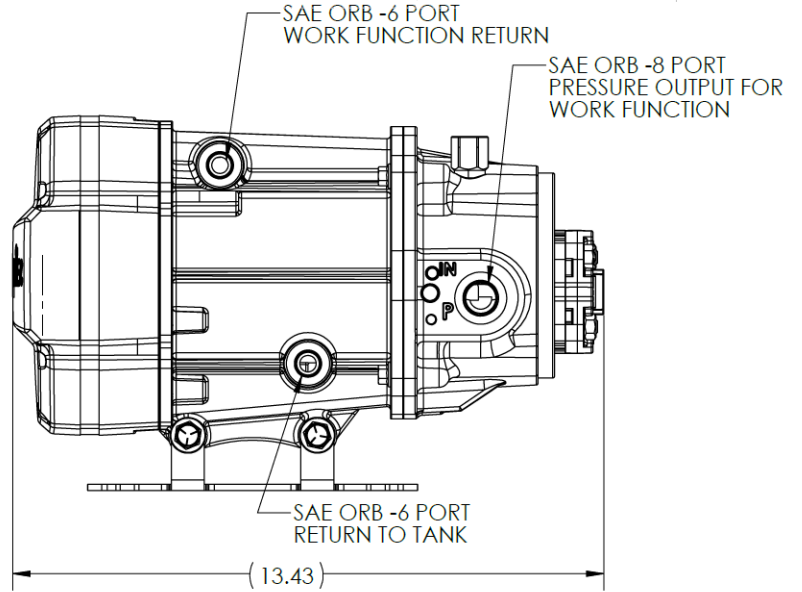
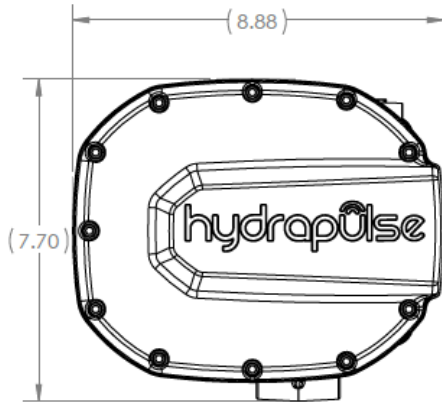
500N - 500K/Bits without Terminating Resistor*

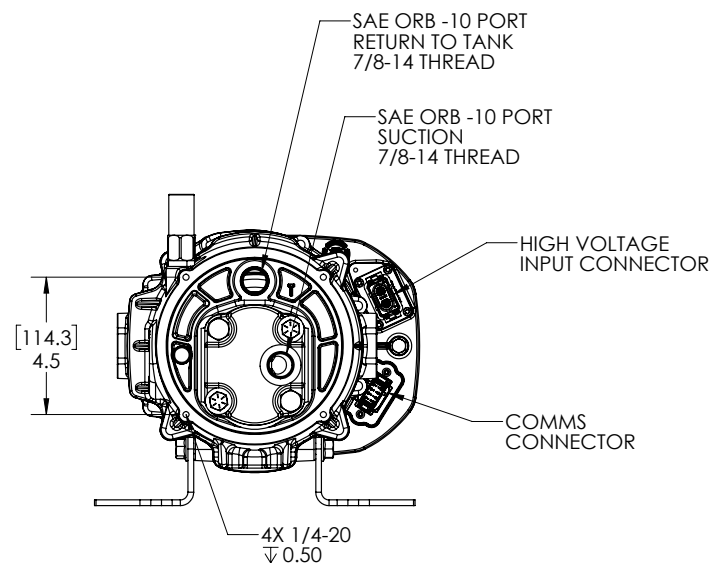
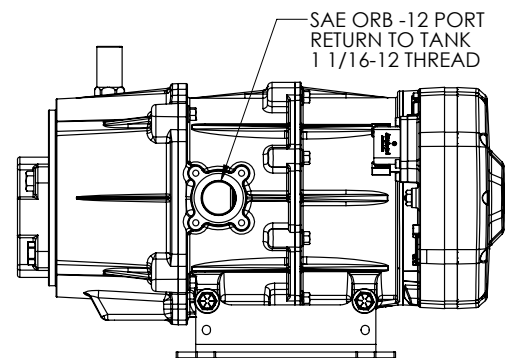
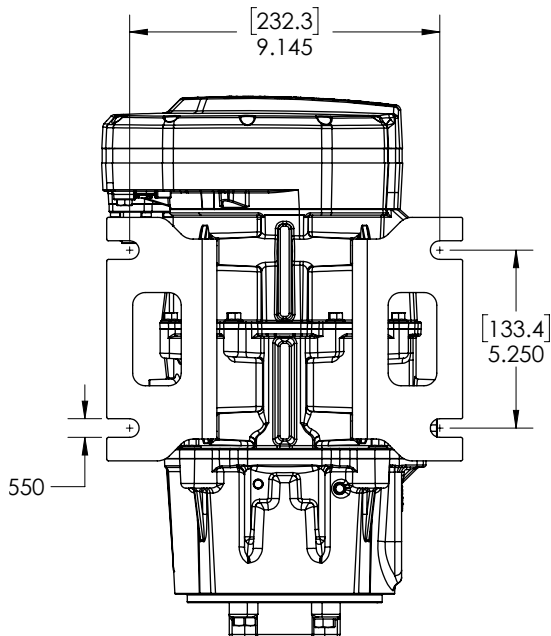
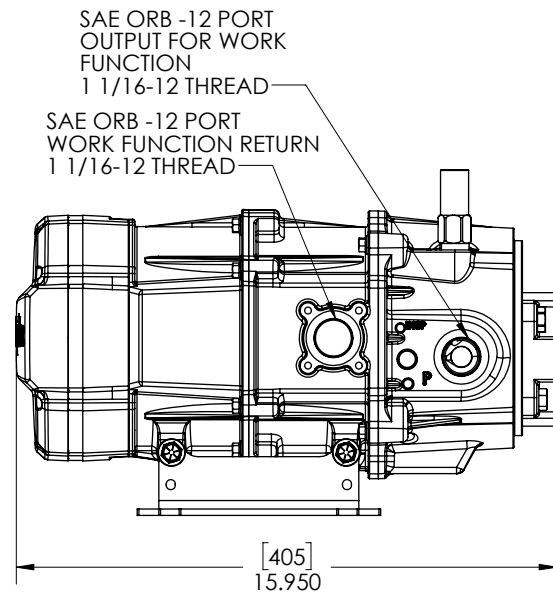
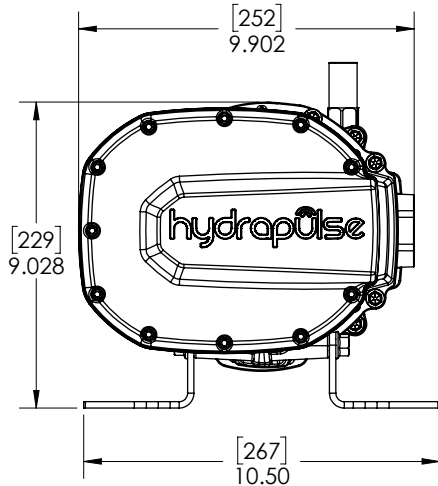
250N - 250K/Bits without Terminating Resistor

*Standard units will ship with 500k baud rate



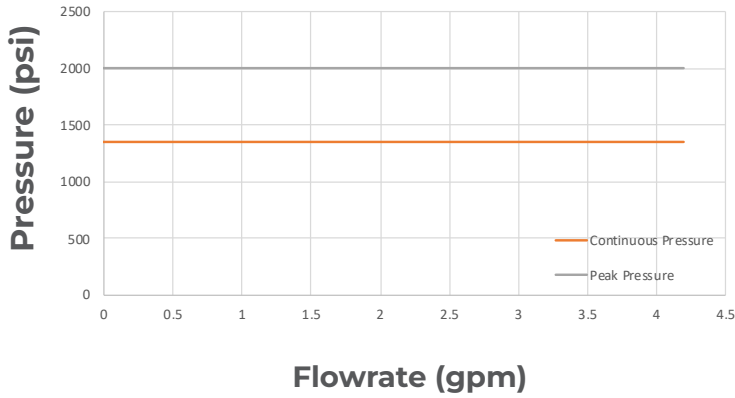








EHSU-1-56-XXX-U-4E Pressure Rating



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

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

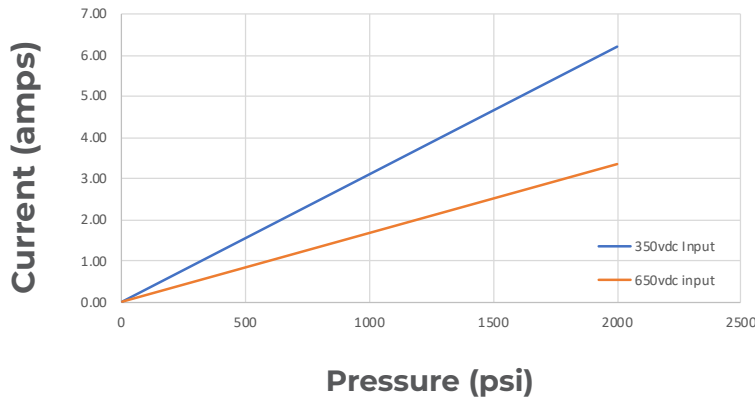
Temperature = 40° +/- 3°C

Kinematic Viscosity = 28.8 mm²/s (cSt)

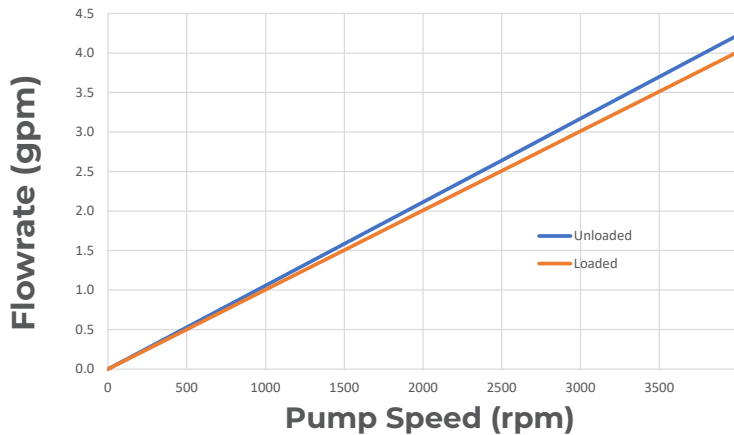
*All curves dependent on loading conditions and may vary.

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)

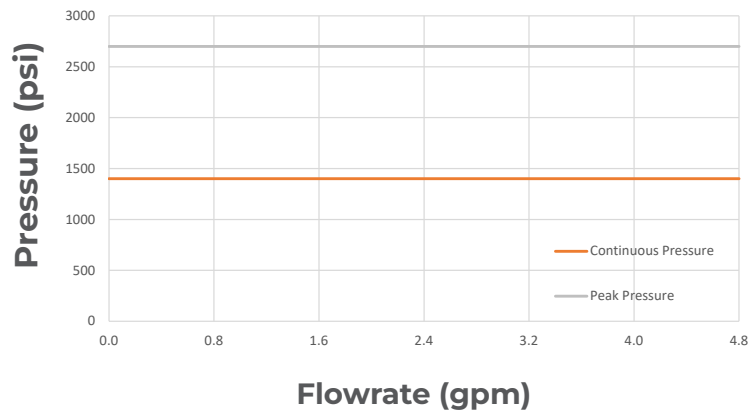


EHSU-1-56-XXX-U-4E Flowrate





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

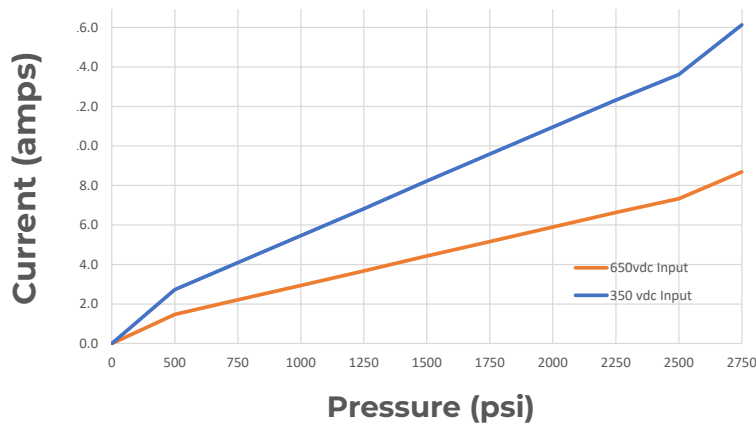
Temperature = 40° +/- 3°C

Kinematic Viscosity = 28.8 mm²/s (cSt)

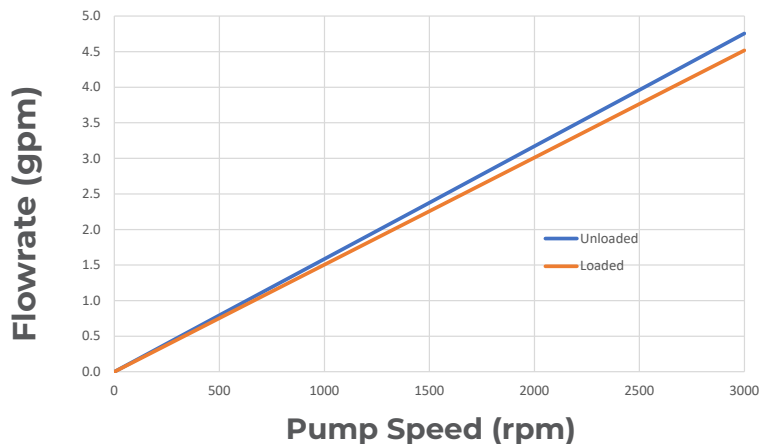
*All curves dependent on loading conditions and may vary.

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 (2700 RPM)



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

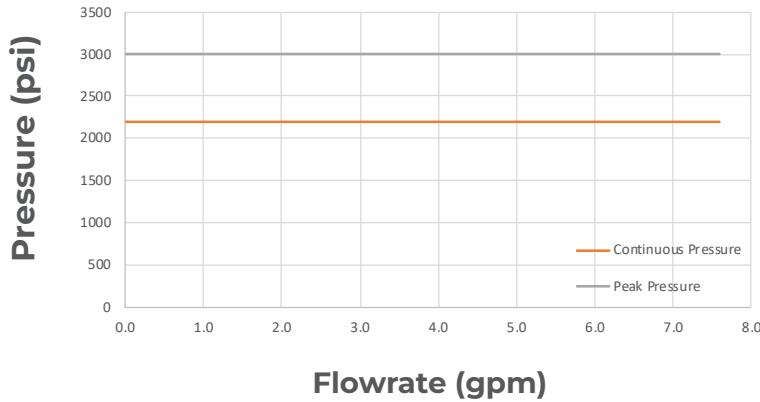
Temperature = 40° +/- 3°C

Kinematic Viscosity = 28.8 mm²/s (cSt)

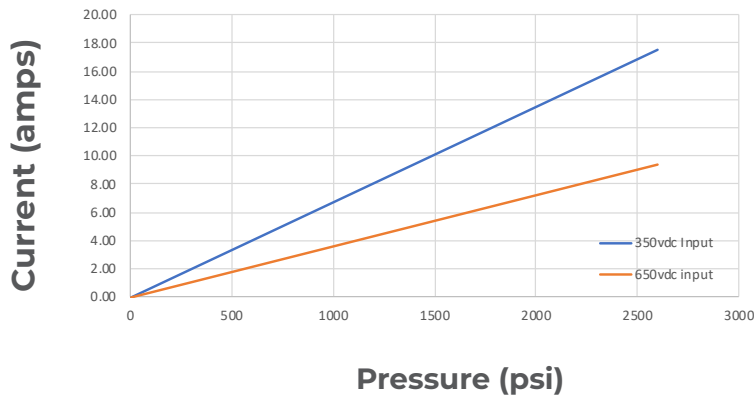
*All curves dependent on loading conditions and may vary.

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

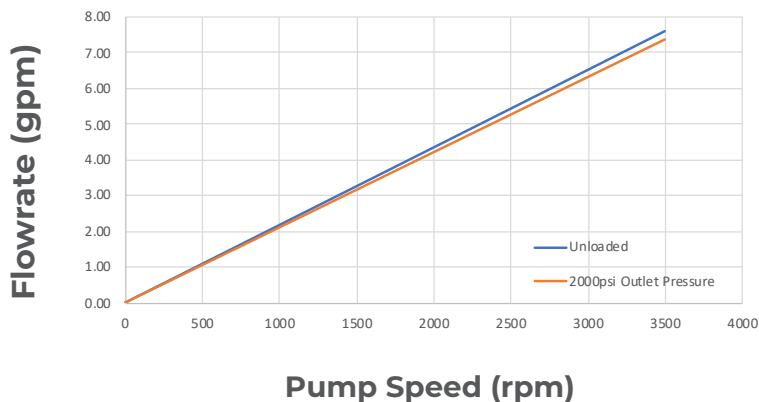
EHSU-2-105-XXX-U-8 Pressure Rating



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

1235 Glenhaven Ct. Ste. 300 | El Dorado Hills, CA 95762
916-245-9660 | Info@TerzoPower.com | TerzoPower.com



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