

11.2022
VERSION 1.1

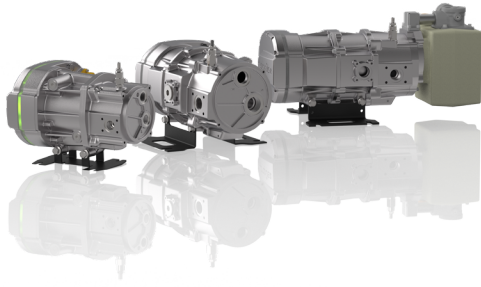
EHSU

ELECTRO-HYDRAULIC STEERING UNIT

HIGH VOLTAGE | HEAVY-DUTY
SMART HYDRAULIC STEERING UNIT

Onboard pressure transducers
200vDC 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
- 200vDC to 800vDC
- 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-xxx-350	EHSU-1-xxx-650	EHSU-2-xxx-350	EHSU-2-xxx-650
Rated Voltage (Vdc)	350	650	350	650
Rated Power kW (HP)	2.5 (3.3)	2.5 (3.3)	10 (13.4)	10 (13.4)
Rated Current (A)	7	3.8	30	17
IP Rating	IP67	IP67	IP67	IP67
Max Speed (rpm)	4,000	4,000	3,500	3,500
Operating Temp.	-40° C to 85° C	-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	-40° C to 125° C
Weight lbs. (kg)	31.4 (14.2)	31.4 (14.2)	48 (21.8)	48 (21.8)

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

HOW TO ORDER

EHSU - 1 - 056 - 350 - U - 4 - 500N

Model Type

EHSU - Electro-Hydraulic
Steering Unit

Frame Size

1 - Small Frame
2 - Medium Frame

Motor Stack Length

1 - 56mm
2 - 105mm

Baud Rate

500N - 500K/Bits without Terminating Resistor
500T - 500K/Bits with Terminating Resistor
250N - 250K/Bits without Terminating Resistor
250T - 250K/Bits with Terminating Resistor

Displacement

4 - 4 c.c. (Only on Frame size 1)
***4.5** - 4.5cc – Low Noise Helical Pump
8.2 - 8.2cc – Low Noise Helical Pump
***11.2** - 11.2cc – Low Noise Helical Pump

* Longer lead times and different pricing may apply

Direction

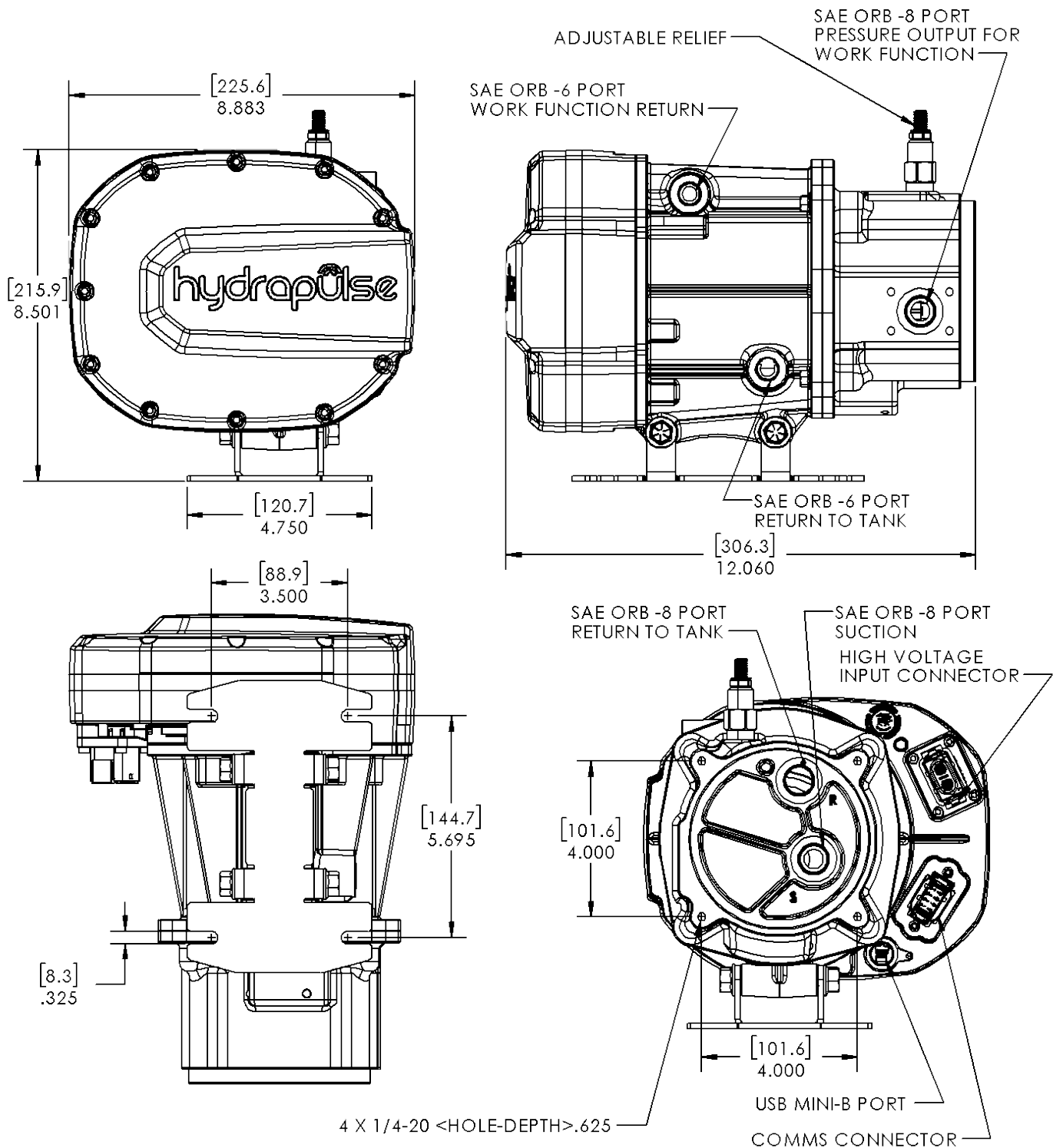
U - Unidirectional

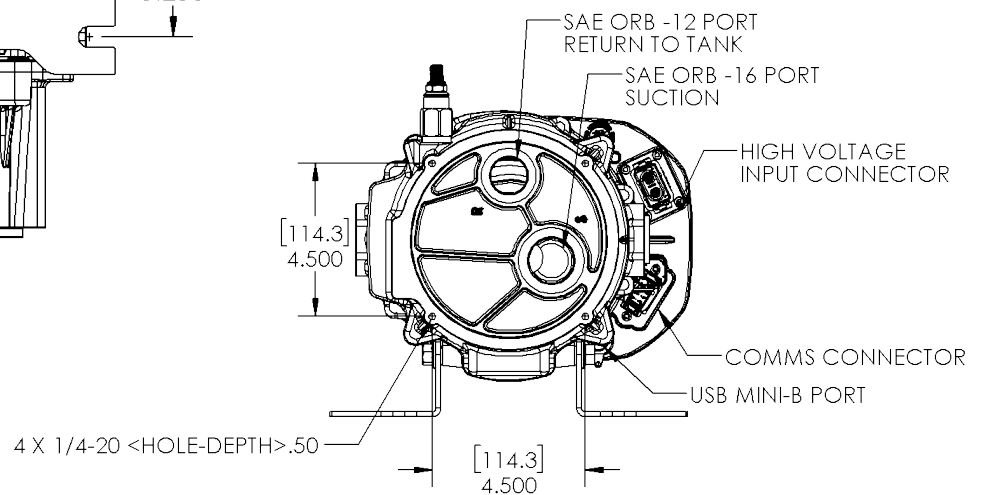
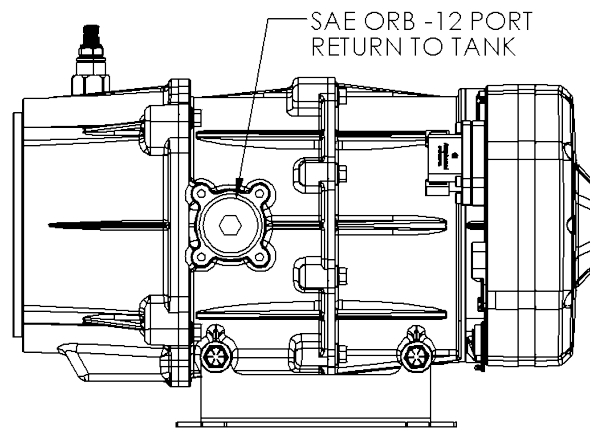
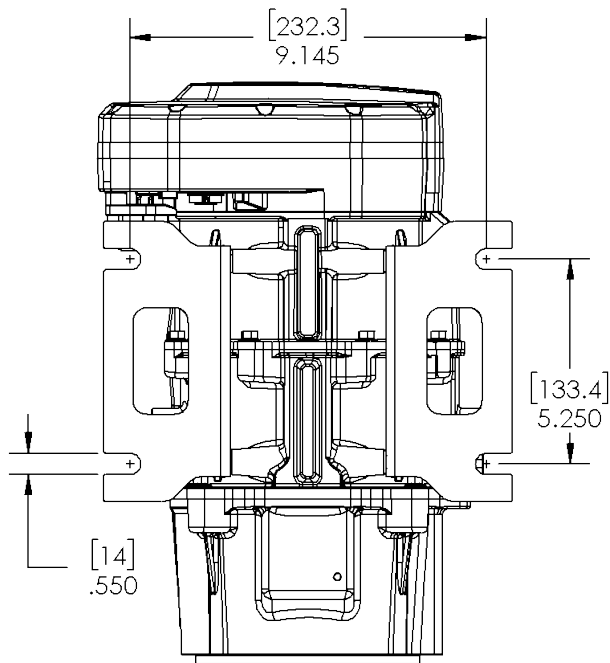
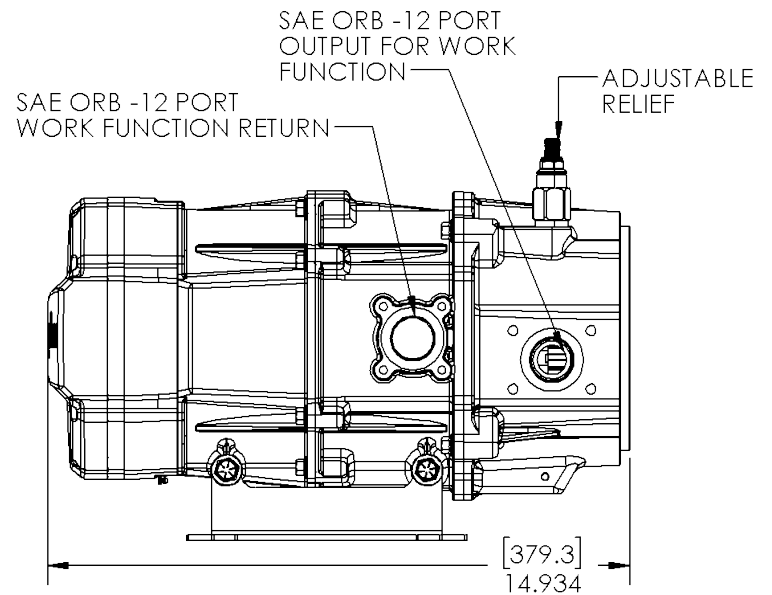
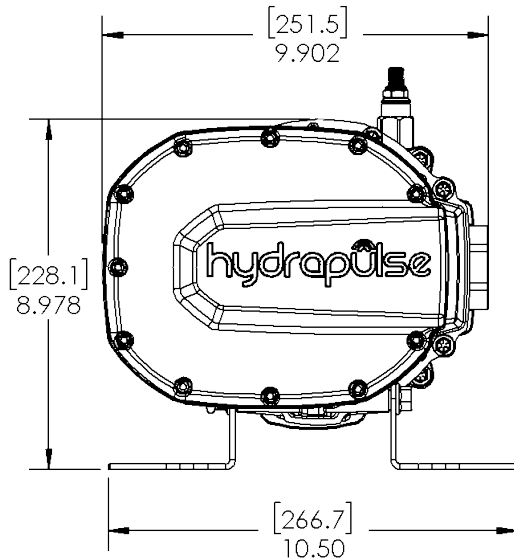
Nominal Voltage

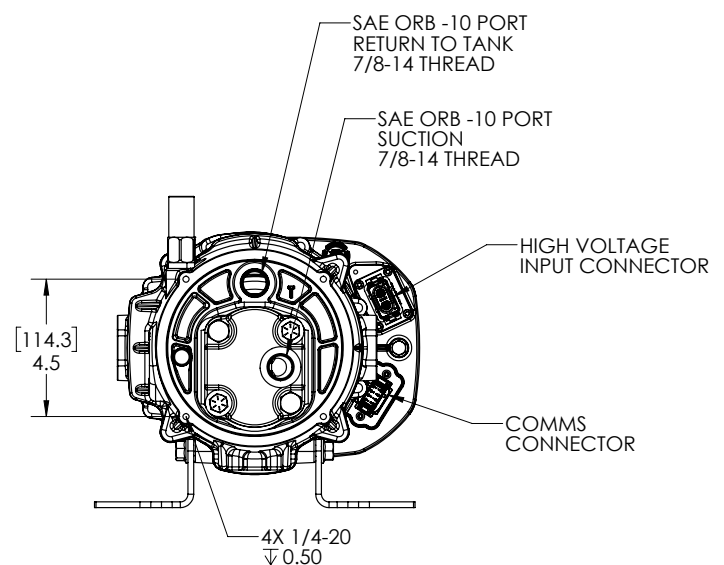
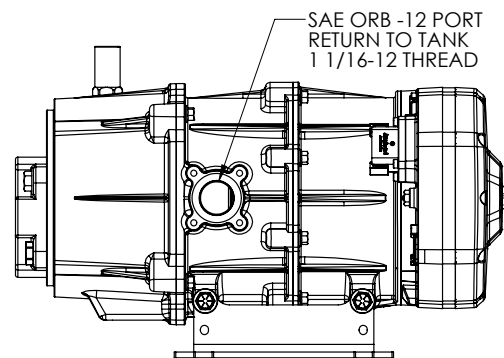
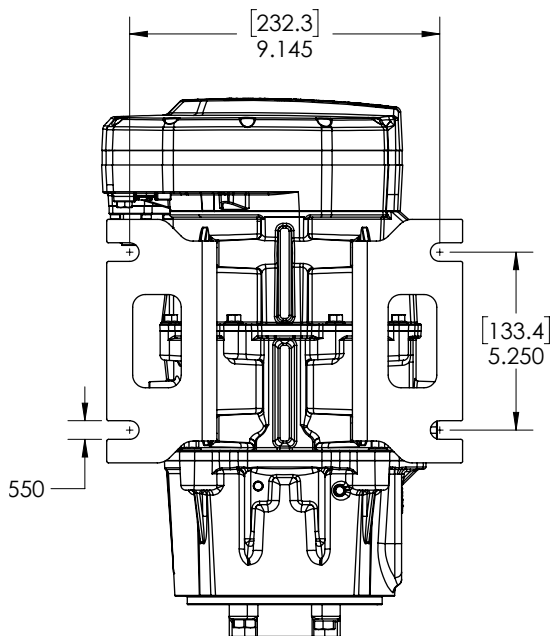
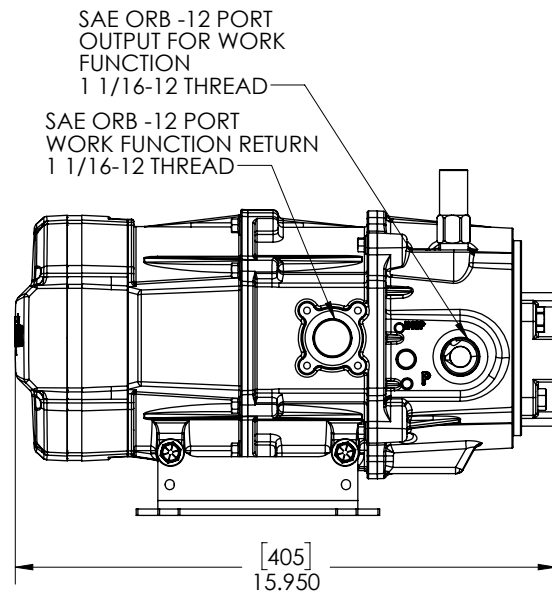
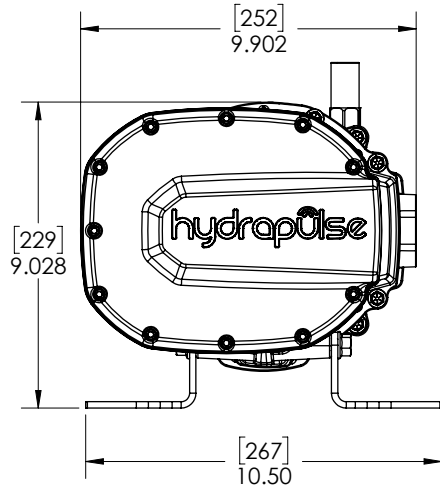
350 - 350 Vdc
650 - 650 Vdc

* Special Order only.

Call for non-standard displacements,
voltages, or other custom features.

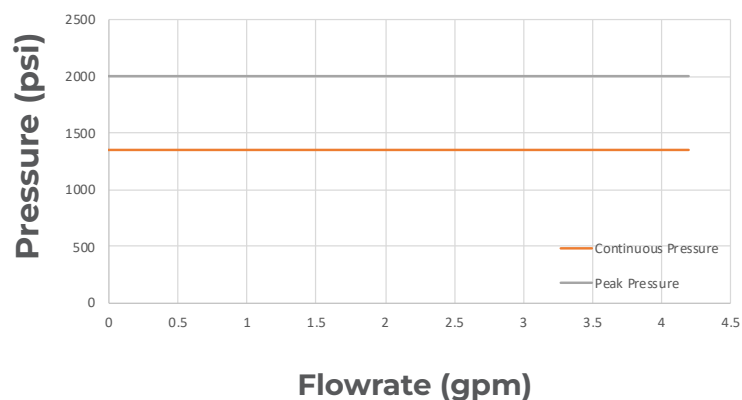








EHSU-1-56-XXX-U-4 Pressure Rating



EHSU-1-56-XXX-U-4

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

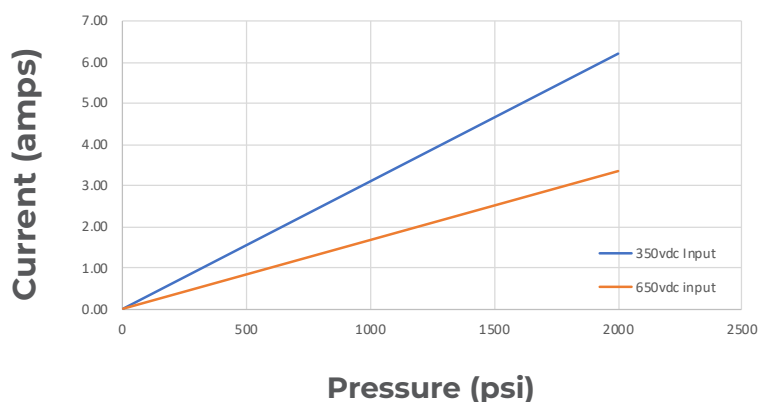
Temperature = 40° +/- 3°C

Kinematic Viscosity = 28.8 mm²/s (cSt)

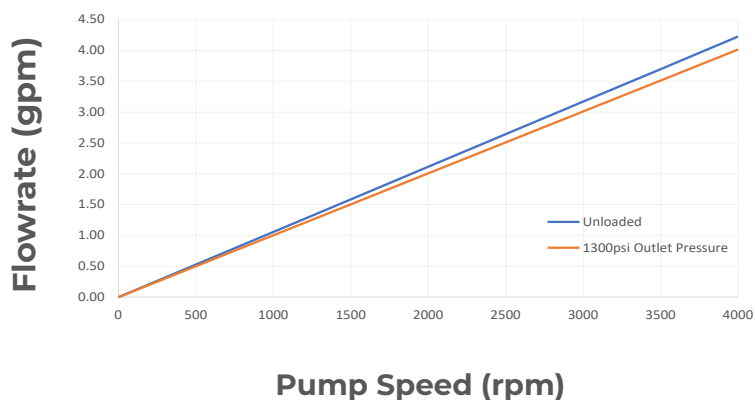
*All curves dependant on loading conditions and may vary.

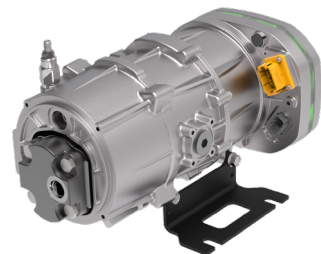
The charts on this page represent expected performance at 350 and 650Vdc Nominal

EHSU-1-56-XXX-U-4 Current Draw with 2 Gpm Outlet Flow

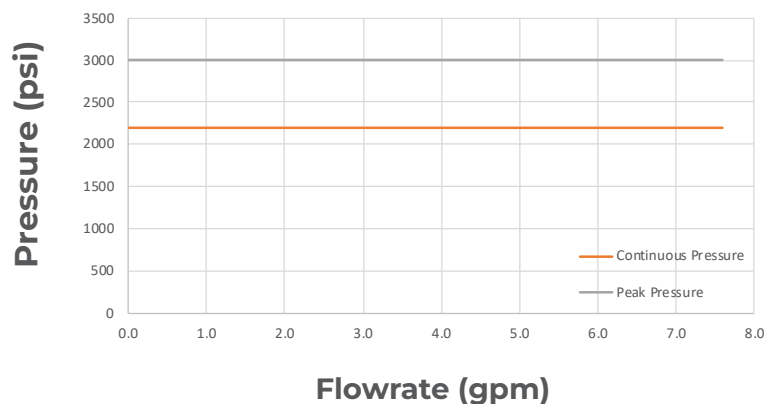


EHSU-1-56-XXX-U-4 Flowrate





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



EHSU-2-105-XXX-U-8

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

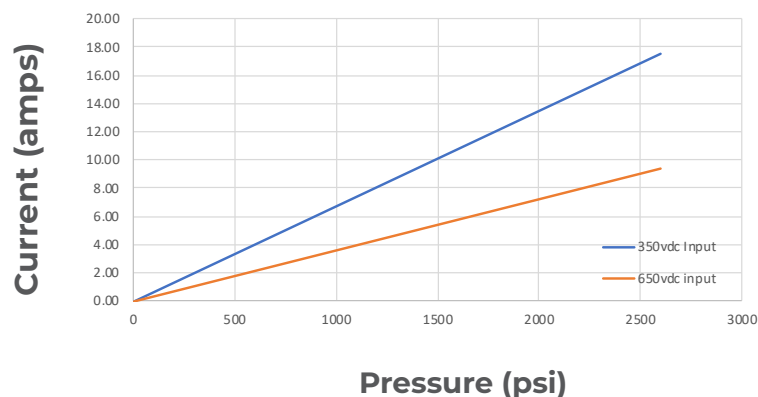
Temperature = 40° +/- 3°C

Kinematic Viscosity = 28.8 mm²/s (cSt)

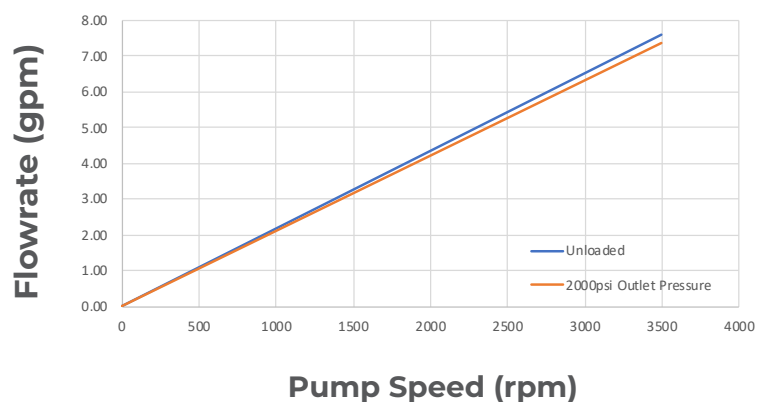
*All curves dependant on loading conditions and may vary.

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

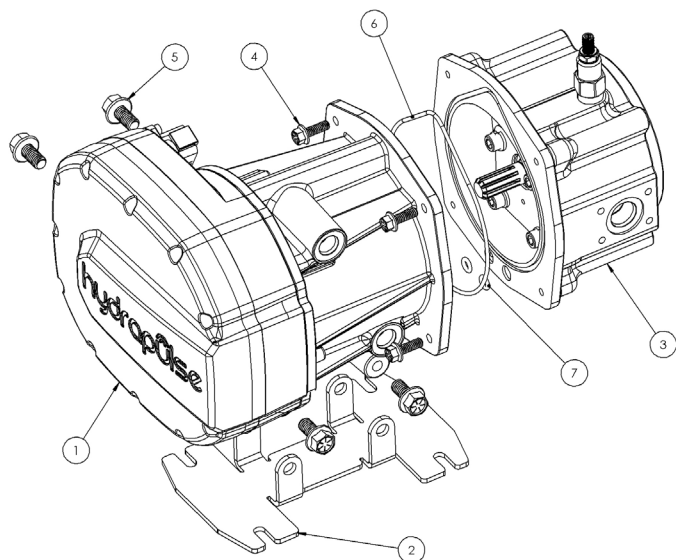
EHSU-2-105-XXX-U-8 Current Draw with 4.3 Gpm Outlet Flow



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

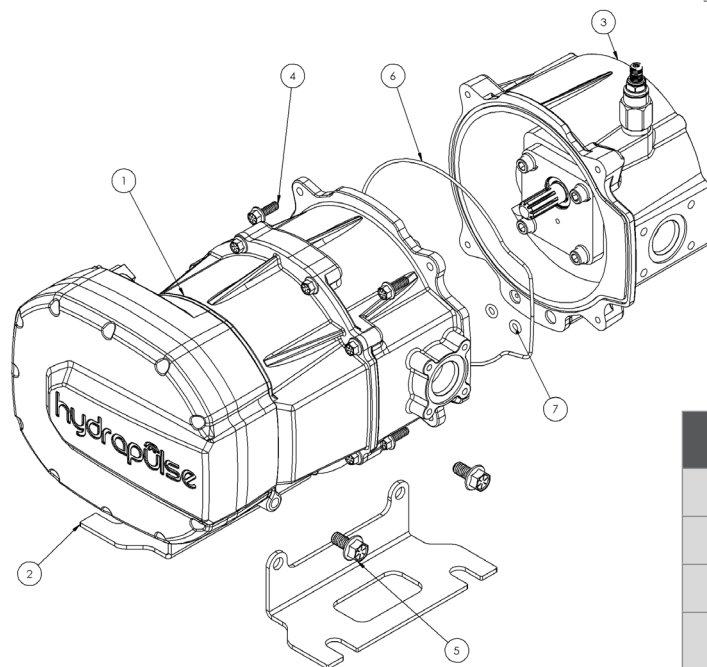


PARTS LIST



EHSU-1 (FRAME SIZE 1)

ITEM #	PART NUMBER	DESCRIPTION	QTY
1	016-00xxx	Size 1 Drive Assembly	1
2	500-10356	Foot Mount	1
3	016-0050x	Pump Assembly	1
4	500-00467	DRIVE BOLT (1/4-20 x 3/4")	4
5	500-00467	FOOT BOLT (3/8-16 x 3/4")	4
6	500-00416	MAIN O-RING - SIZE 1	1
7	500-00440	SENSOR O-RING	2



EHSU-2 (FRAME SIZE 2)

ITEM #	PART NUMBER	DESCRIPTION	QTY
1	016-00xxx	Size 2 Drive Assembly	1
2	500-10356	Foot Mount (ea.)	2
3	016-0050x	Pump Assembly	1
4	500-00467	DRIVE BOLT (1/4-20 x 3/4")	4
5	500-00467	FOOT BOLT (3/8-16 x 3/4")	4
6	500-00417	MAIN O-RING - SIZE 2	1
7	500-00440	SENSOR O-RING	2

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

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.

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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