

HYPERION SERVO DRIVE DATASHEET



Insane Power Density & Durability

ESI Motion’s Hyperion servo drive line offers an incredibly high-powered, fully integrated “plug and play” control solution. Developed specifically for high-power density markets, the Hyperion drive is ideal for energy recovery, hybrid vehicles and other applications.



Specifications & Features:

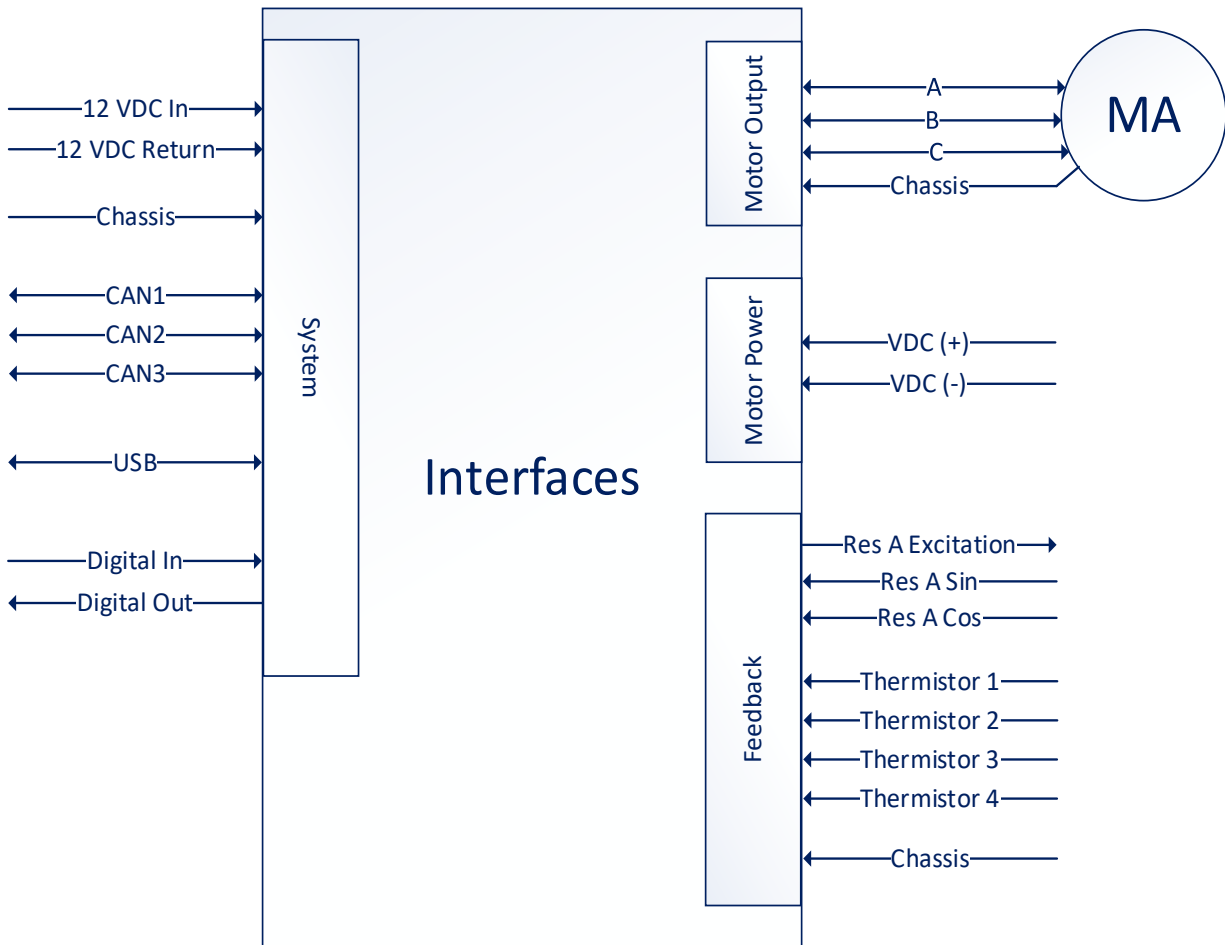
- Bus Voltage (DC) 400V to 800V
- Peak Current up to 220A
- Output Power 100kW
- Operating Temperature - 40°C to 75°C
- Maximum Electrical Speed 240,000 RPM
- Weight 9.8 lbs./4.4 kg
- Size: 10.3” L x 5.9” W x 4.0” H
- Shock and vibration tolerant construction
- Configurable, user friendly GUI with integrated oscilloscope feature

Configurations:

- Single axis configuration
- Motor Types: DC brushless, brushed and induction
- Feedback: sensorless & resolver
- Cooling Options: Liquid
- Packaging: Ruggedized

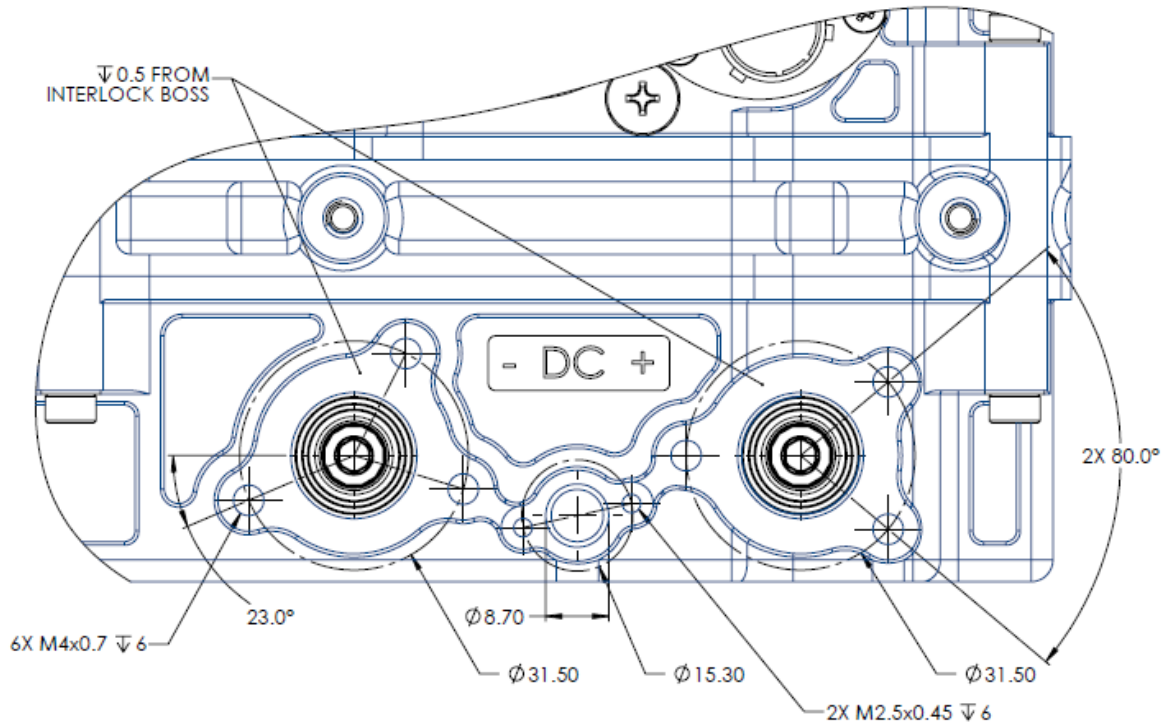
Hyperion Servo Drive

System Block Diagram



Electrical Interfaces

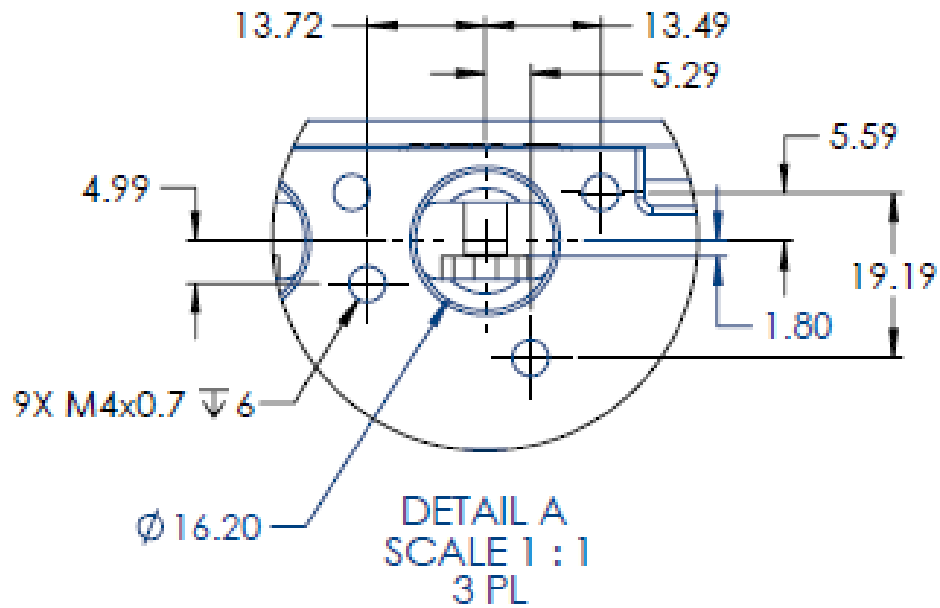
Motor (Input) Power Studs



Power Studs	
PIN	DESCRIPTION
VDC (+)	Voltage DC Positive
VDC (-)	Voltage DC Negative

Electrical Interfaces

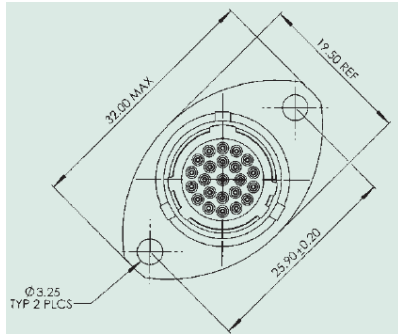
Motor Output Studs



Motor Studs

PIN	DESCRIPTION
Phase A	Motor A Phase A
Phase B	Motor A Phase B
Phase C	Motor A Phase C

Electrical Interfaces

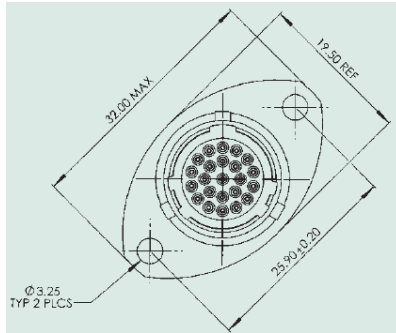


System, J1, Deutsch P/N ASDD010-23PB*

PIN	DESCRIPTION	WIRE GAUGE
1	12 VDC In	24
2	12 VDC In	24
3	12 VDC Return	24
4	12 VDC Return	24
5	Chassis	24
6	Chassis	24
7	CAN 1 H	24
8	CAN 1 L	24
9	CAN 2 H	24
10	CAN 2 L	24
11	CAN 3 H	24
12	CAN 3 L	24
13	CAN Gnd	24
14	USB Gnd	24
15	USB DP	24
16	USB DN	24
17	USB Vbus	24
18	Digital Return	24
19	Digital Out	24
20	Digital In	24
21	Spare	24
22	Spare	24
23	Spare	24

* Mating connector Deutsch P/N ASDD610-23SB

Electrical Interfaces



Feedback, J2, Deutsch P/N ASDD010-23SN*

PIN	DESCRIPTION	WIRE GAUGE
1	Resolver A Excitation (+)	24
2	Resolver A Excitation (-)	24
3	Resolver A Sin (+)	24
4	Resolver A Sin (-)	24
5	Resolver A Cos (+)	24
6	Resolver A Cos (-)	24
7	Thermistor 1 (+)	24
8	Thermistor 1 (-)	24
9	Thermistor 2 (+)	24
10	Thermistor 2 (-)	24
11	Thermistor 3 (+)	24
12	Thermistor 3 (-)	24
13	Thermistor 4 (+)	24
14	Thermistor 4 (-)	24
15	Chassis	24
16	Chassis	24
17	Spare	24
18	Spare	24
19	Spare	24
20	Spare	24
21	Spare	24
22	Spare	24
23	Spare	24

* Mating connector Deutsch P/N ASDD610-23PN

Electrical Characteristics

Signal Description			
SIGNAL	MINIMUM	MAXIMUM	UNITS
DC	400	800	V
Peak Phase Current	-	250 ⁽⁷⁾	A
12 VDC In	10	14	V
12 VDC Current	-	0.8	A
Digital In ⁽¹⁾	1	18	V
Digital Out Current ⁽¹⁾	9	54	mA
Resolver Excitation ⁽¹⁾	4.0 ⁽⁶⁾	-	V rms
Resolver Sin, Cos, Analog In ⁽¹⁾	2 ⁽⁶⁾	4.2	V rms
Resolver, Frequency ⁽¹⁾	0	5K ⁽⁶⁾	Hz
Resolver, Impedance ⁽¹⁾	-	20	K Ohm
Thermistor ^{(1) (5)}	-	1100	Ohm
CAN ^{(1) (3) (4)}	-	1000	K bps
USB 2.0 ⁽¹⁾	-	12	M bps

(1) ESD protection.

(2) Physical Interface compliant to the TIA/EIA-422-B.

(3) Short circuit protection from -7 V to 12 V protection.

(4) Compliant to ISO 11898-2 specification.

(5) Recommended NTC 5k, Epcos part # B57540G502F.

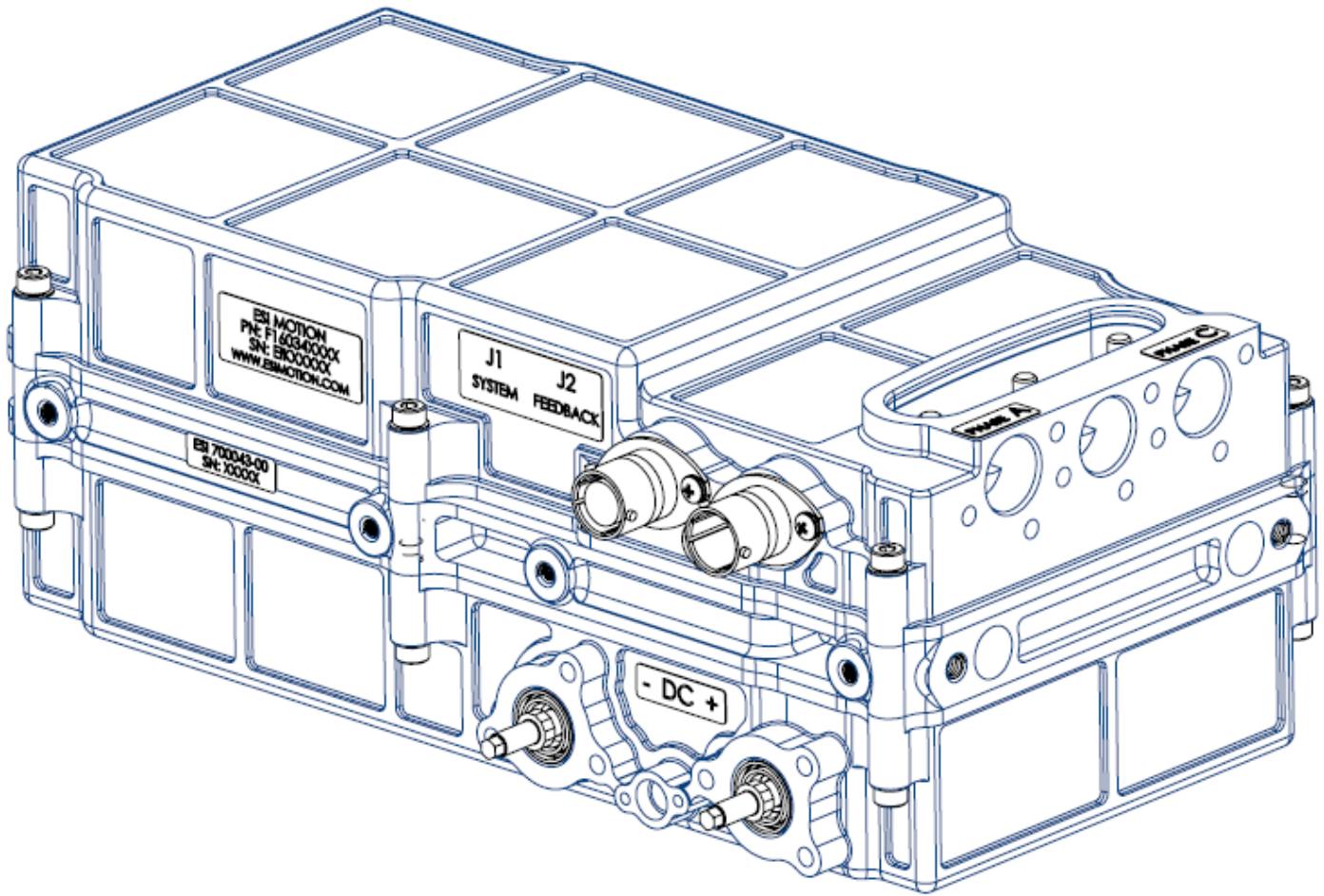
(6) Nominal value

(7) Peak Sine Wave



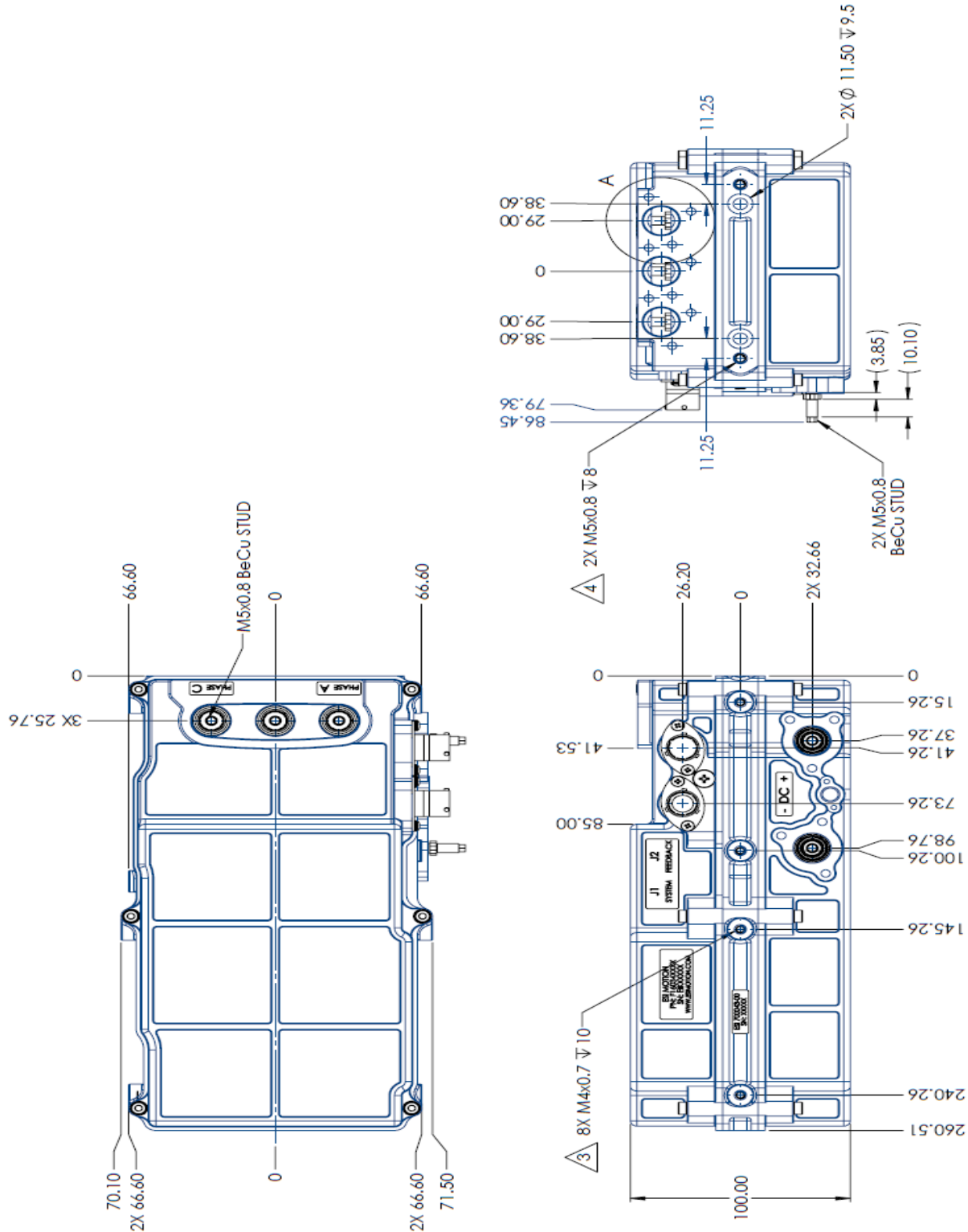
Mechanical

Hyperion Mechanical Overview



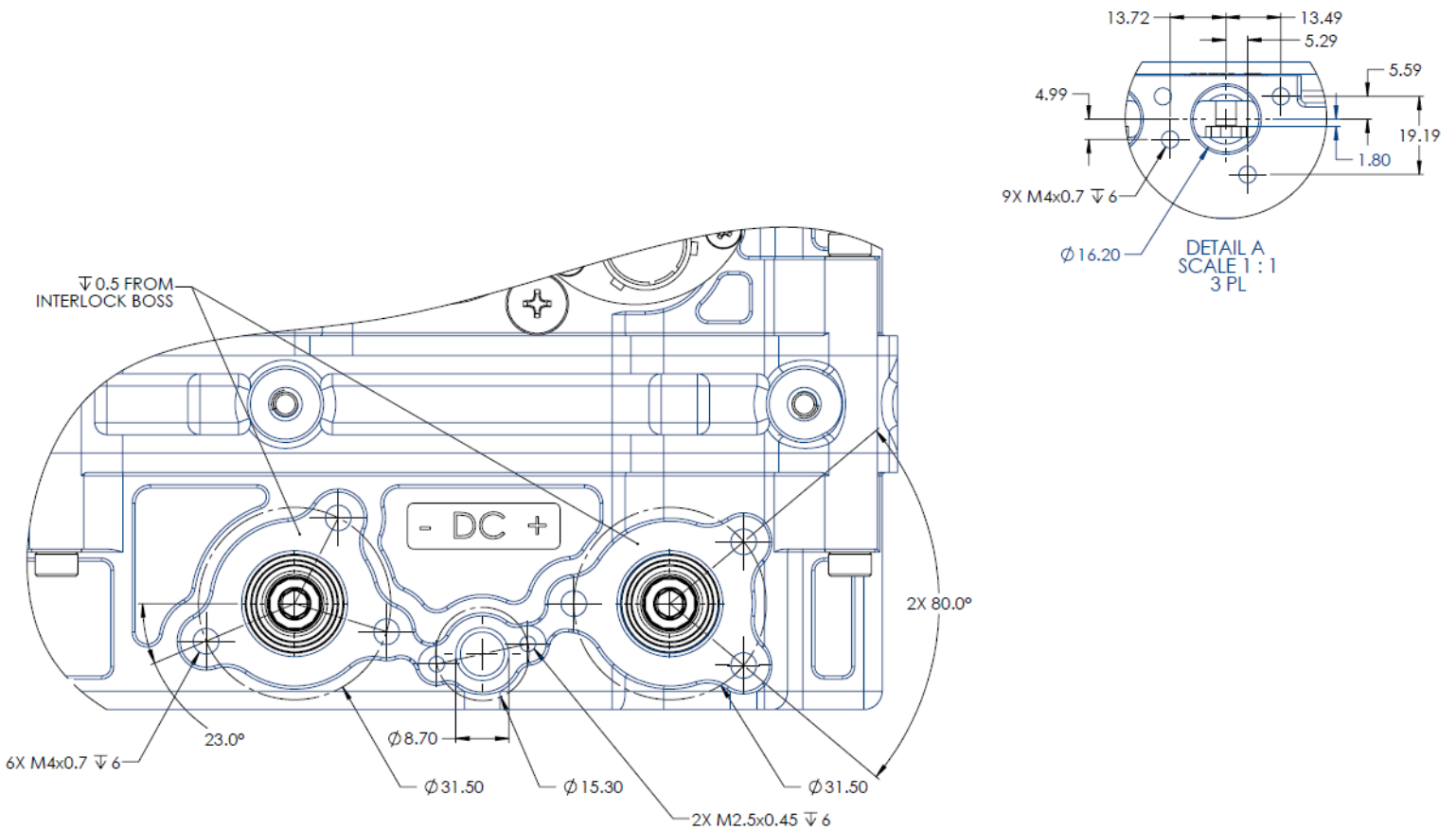
Mechanical

Mechanical Dimensions



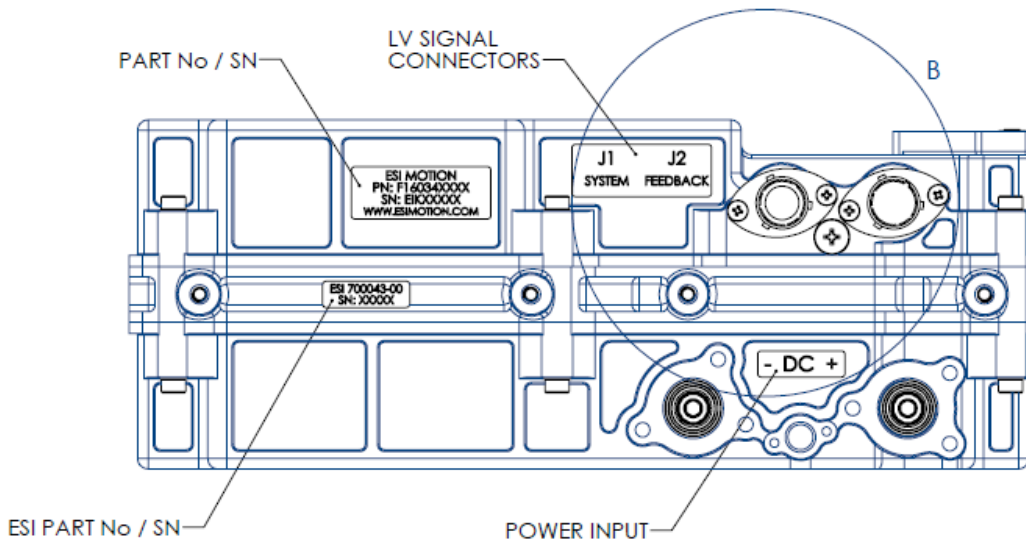
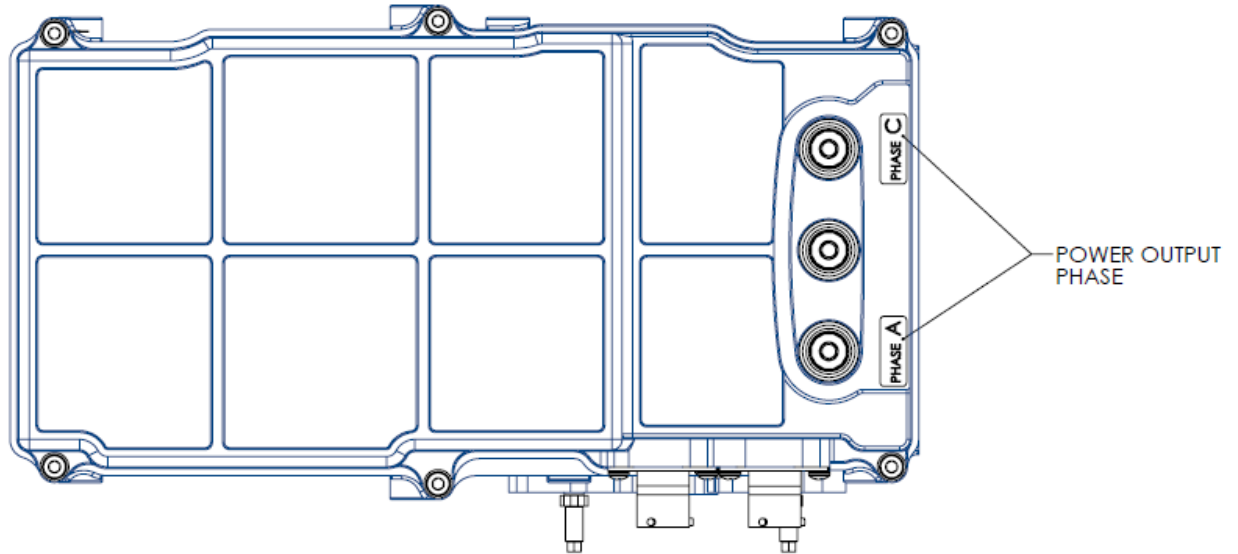
Mechanical

Input and Output Power Studs



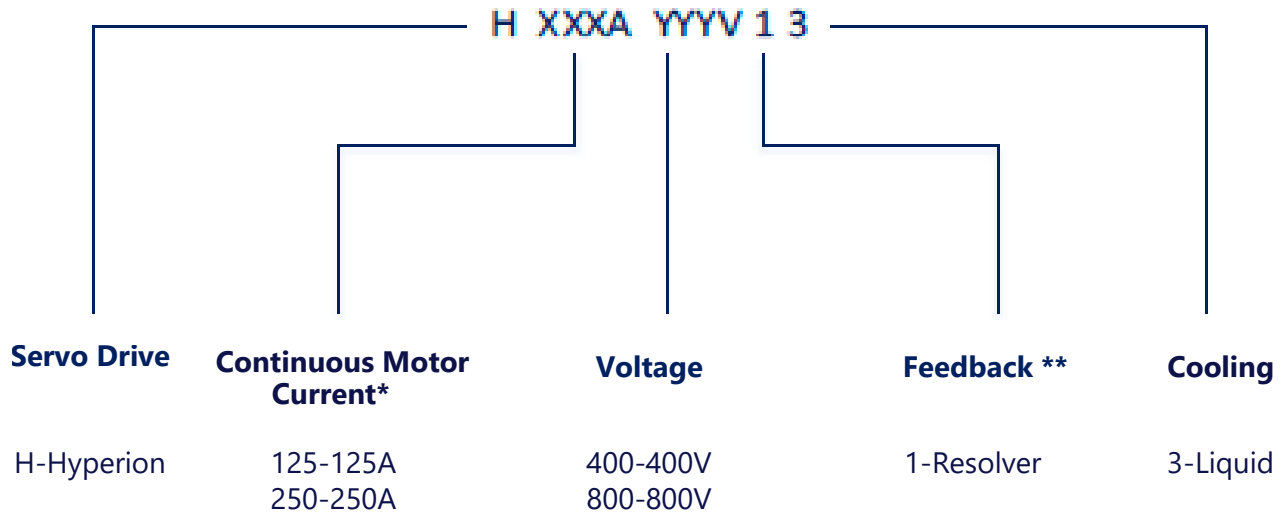
Hyperion Servo Drive

Interface Overview



ASSEMBLY AND INTERFACE IDENTIFICATION

Ordering Information



*Peak of sine wave

**All options allow for sensorless feedback

Example:

Part Number: H125A800V13

- Servo Drive: Hyperion
- Continuous Current: 125A
- Nominal Voltage: 800V
- Feedback: Resolver
- Cooling: Liquid



Important Information:

ESI MOTION makes no warranty, either express or implied, including but not limited to any implied warranties of merchantability and fitness for a particular purpose, regarding any marketing materials and makes such materials available solely on an "as-is" basis. In no event shall ESI MOTION be liable to anyone for special, collateral, incidental, or consequential damages in connection with or arising out of the purchase or use of these materials, and the sole and exclusive liability of ESI MOTION, regardless of the form of action, shall not exceed the purchase price of this product. Moreover, ESI MOTION shall not be liable for any claim of any kind whatsoever against the use of these materials by any other party.