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Gold Drum HV Heat Sink Assembly Installation Guide



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Motion Control

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Catalog Numbers

Part	Part Number
	<p>G-DRURXXX/YYYYEAS DRURXXX/YYYYEAS</p>
	<p>G-Drum HV Heat Sink P/N ACC-HS-DRU-HV</p>
	<p>Thermal Foil P/N ACC-FOIL-DRU-HV</p>

Revision History

Version	Released
Ver. 1.0	Initial Release
Ver. 1.1	Updated P/N for Thermal foil



Chapter 1: Safety Information	5
1.1. Cautions.....	5
1.2. Directives and Standards.....	6
1.3. CE Marking Conformance.....	6
1.4. Warranty Information	7
Chapter 2: Product Description	8
2.1. Technical Data	8
Chapter 3: Installation	10
3.1. Site Requirements	10
3.2. Procedure	11
3.3. Heat Dissipation	16



Chapter 1: Safety Information

In order to achieve the optimum, safe operation of the Gold Drum HV Heat Sink servo drive, it is imperative that you implement the safety procedures included in this installation guide. This information is provided to protect you and to keep your work area safe when operating the Gold Drum HV Heat Sink and accompanying equipment.

Please read this chapter carefully before you begin the installation process.

Before you start, ensure that all system components are connected to earth ground. Electrical safety is provided through a low-resistance earth connection.

Only qualified personnel may install, adjust, maintain and repair the servo drive. A qualified person has the knowledge and authorization to perform tasks such as transporting, assembling, installing, commissioning and operating motors.

The Gold Drum HV Heat Sink servo drive contains electrostatic-sensitive components that can be damaged if handled incorrectly. To prevent any electrostatic damage, avoid contact with highly insulating materials, such as plastic film and synthetic fabrics. Place the product on a conductive surface and ground yourself in order to discharge any possible static electricity build-up.

To avoid any potential hazards that may cause severe personal injury or damage to the product during operation, keep all covers and cabinet doors shut.

The following safety symbols are used in this and all Elmo Motion Control manuals:



Warning:

This information is needed to avoid a safety hazard, which might cause bodily injury or death as a result of incorrect operation.



Caution:

This information is necessary to prevent bodily injury, damage to the product or to other equipment.



Important:

Identifies information that is critical for successful application and understanding of the product.



1.1. Cautions

- The maximum DC power supply connected to the instrument must comply with the parameters outlined in this guide.
- When connecting the Gold Drum HV Heat Sink to an approved isolated 18–30 VDC auxiliary power supply, connect it through a line that is separated from hazardous live voltages using reinforced or double insulation in accordance with approved safety standards.



1.2. Directives and Standards

The Gold Drum HV Heat Sink conforms to the following industry main standards:

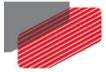
Main Standards	Item
STO IEC 61800-5-2:2007 SIL 3	Adjustable speed electrical power drive systems – Safety requirements – Functional
EN ISO 13849-1:2008 PL e, Cat 3	Safety of machinery — Safety-related parts of control systems.
Approved IEC/EN 61800-5-1	Adjustable speed electrical power drive systems Safety requirements – Electrical, thermal and energy
Recognized UL61800-5-1	Adjustable speed electrical power drive systems Safety requirements – Electrical, thermal and energy
Recognized UL 508C	Power Conversion Equipment
In compliance with UL 840	Insulation Coordination Including Clearances and Creepage Distances for Electrical Equipment
Conformity with CE 2006/95/EC	Low-voltage directive 2006/95/EC
Recognized CSA C22.2 NO. 14-13	Industrial Control Equipment

The Gold Drum HV Heat Sink has been developed, produced, tested and documented in accordance with the relevant standards. Elmo Motion Control is not responsible for any deviation from the configuration and installation described in this documentation. Furthermore, Elmo is not responsible for the performance of new measurements or ensuring that regulatory requirements are met.

1.3. CE Marking Conformance

The Gold Drum HV Heat Sink is intended for incorporation in a machine or end product. The actual end product must comply with all safety aspects of the relevant requirements of the European Safety of Machinery Directive 98/37/EC as amended, and with those of the most recent versions of standards EN 60204-1 and EN 292-2 at the least.

According to Annex III of Article 13 of Council Directive 93/68/EEC, amending Council Directive 73/23/EEC concerning electrical equipment designed for use within certain voltage limits, the Gold Drum HV Heat Sink meets the provisions outlined in Council Directive 73/23/EEC. The party responsible for ensuring that the equipment meets the limits required by EMC regulations is the manufacturer of the end product.



1.4. Warranty Information

The products covered in this manual are warranted to be free of defects in material and workmanship and conform to the specifications stated either within this document or in the product catalog description. All Elmo drives are warranted for a period of 12 months from the time of installation, or 18 months from time of shipment, whichever comes first. No other warranties, expressed or implied — and including a warranty of merchantability and fitness for a particular purpose — extend beyond this warranty.



Chapter 2: Product Description

This installation guide describes the Gold Drum HV Heat Sink and the steps for its wiring, installation and power-up. Following these guidelines ensures optimal performance of the drive and the system to which it is connected.

2.1. Technical Data

Feature	Units	Drum	Heat Sink	Drum + Heat Sink
Heat Sink Power Requirements	V		24 ± 10% 800 mA	
Weight	Kg (oz)	1.65 Kg (58.202 oz)	4.250 Kg (149.91 oz)	5.90 Kg (208.116 oz)
Dimensions	mm (in)	180 x 142 x 75.2 (7.08" x 5.53" x 2.96")	Refer to Figure 1 below	Refer to Figure 1 below
Mounting method		Panel / Wall Mounted		

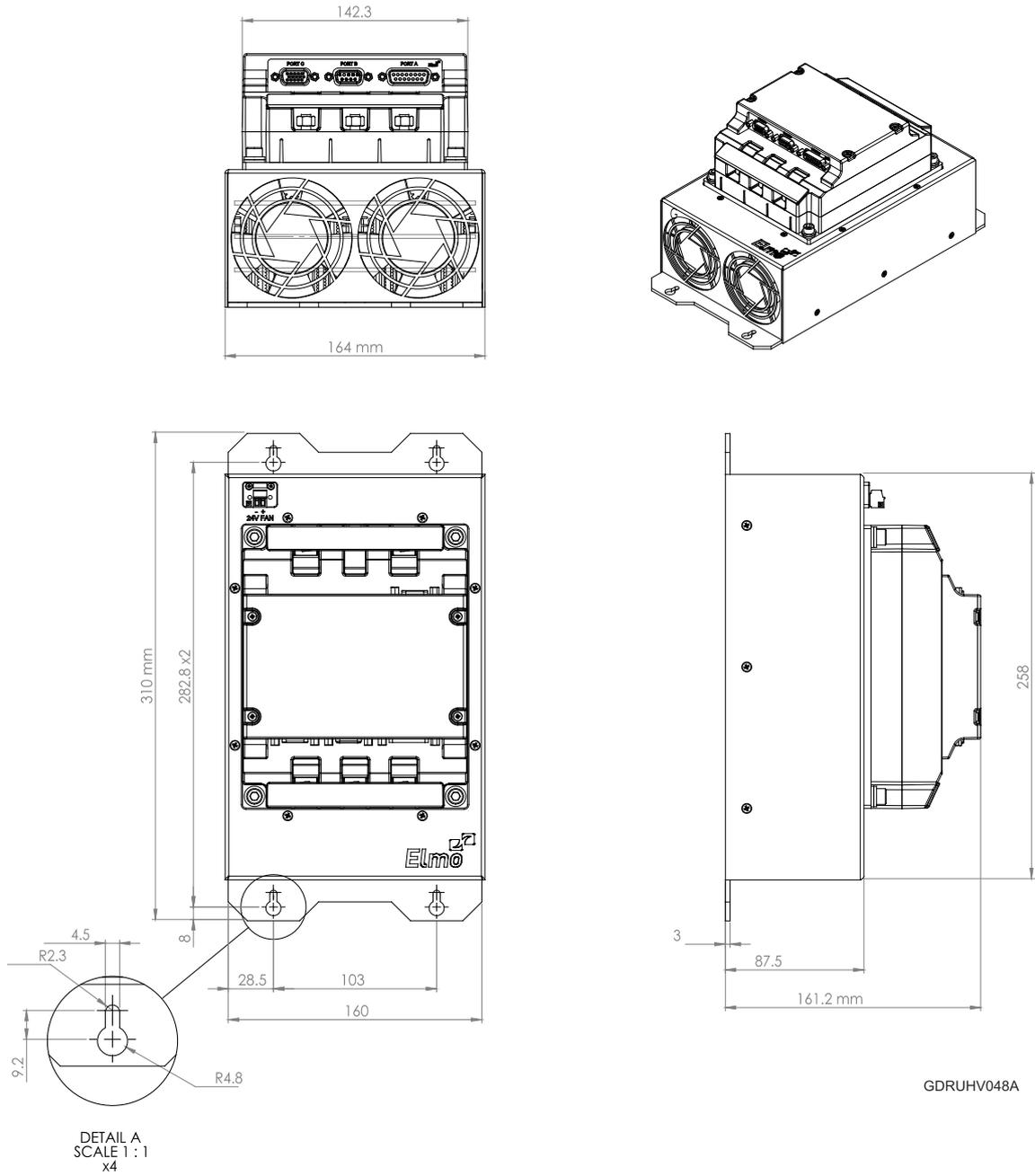


Figure 1: Drum, Heat Sink, and combined Dimensions



Chapter 3: Installation

The Gold Drum HV Heat Sink must be installed in a suitable environment and properly connected to its voltage supplies and the motor.

3.1. Site Requirements

You can guarantee the safe operation of the Gold Drum HV Heat Sink by ensuring that it is installed in an appropriate environment.

Feature	Value
Ambient operating temperature	0 °C to 40 °C (32 °F to 104 °F)
Maximum non-condensing humidity	90%
Operating area atmosphere	No flammable gases or vapors permitted in area



3.2. Procedure

To install and mount the G-DRUM HV on the Heat Sink:

1. Thoroughly clean the lower contact surface of the Drum (P/N G-DRURXXX/YYEAS or otherwise) and top area surface of the Heatsink (P/N ACC-HS-DRU-HV) using Ethyl or Isopropyl Alcohol and a lintless cloth.
Make sure to remove all dirt and residues.



Figure 2: Heat Sink surface cleaned

2. Remove the Thermal Foil (P/N ACC-FOIL-DRU-HV) from its packaging, and carefully place the Foil on the Heat Sink, within the area allocated for the Drum. Align the Foil's holes with the four holes of the Heat sink.
Make sure not to bend the foil.

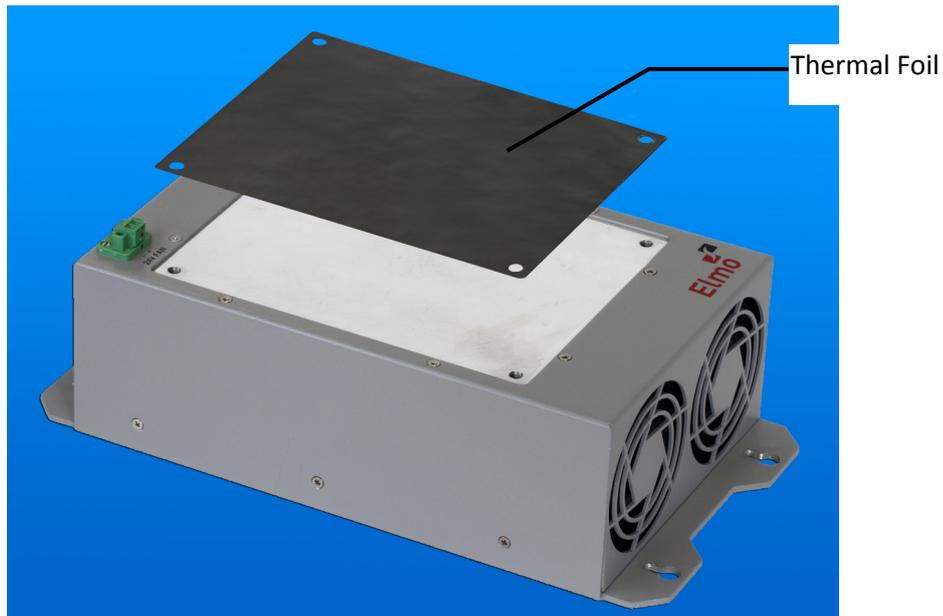


Figure 3: Mounting the Thermal Foil on the Heat Sink



3. Mount the Drum on the area of the Heat Foil, making sure not to scratch or move the foil. Make sure that the Drum is aligned as shown in Figure 4, according to the air flow.

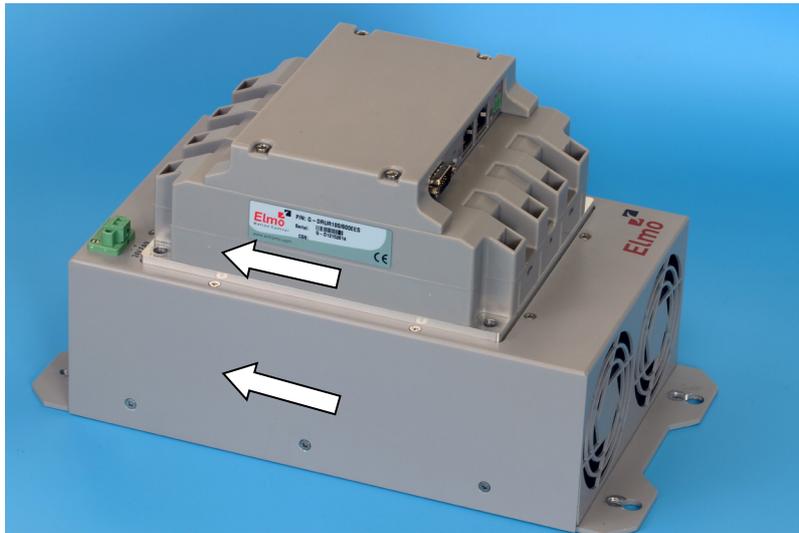


Figure 4: Mounting the Drum on the Thermal Foil and Heat Sink

4. Make sure that the Drum and Heat sink screw holes are aligned as shown in Figure 5.

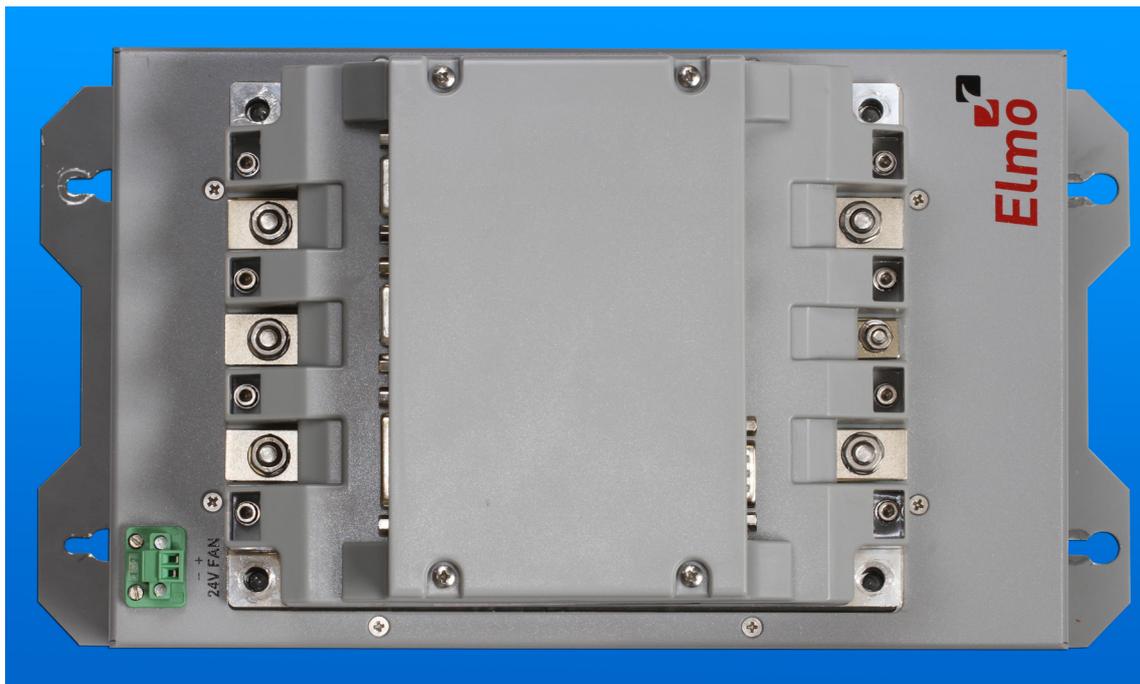


Figure 5: Drum and Heat Sink screw holes aligned



5. Install four Allen M6 x 14 screws, spring and flat washers to secure the Drum to the Heat sink:
 - a. Install the first screw, spring and flat washer, at a front corner, but only tighten to hand-tight (0.5 Nm).



Figure 6: Installing the first screw to secure the drum

- b. Install the second screw and grounding cable lug at the opposite diagonal corner as shown in Figure 7, but only tighten to hand-tight (0.5 Nm).

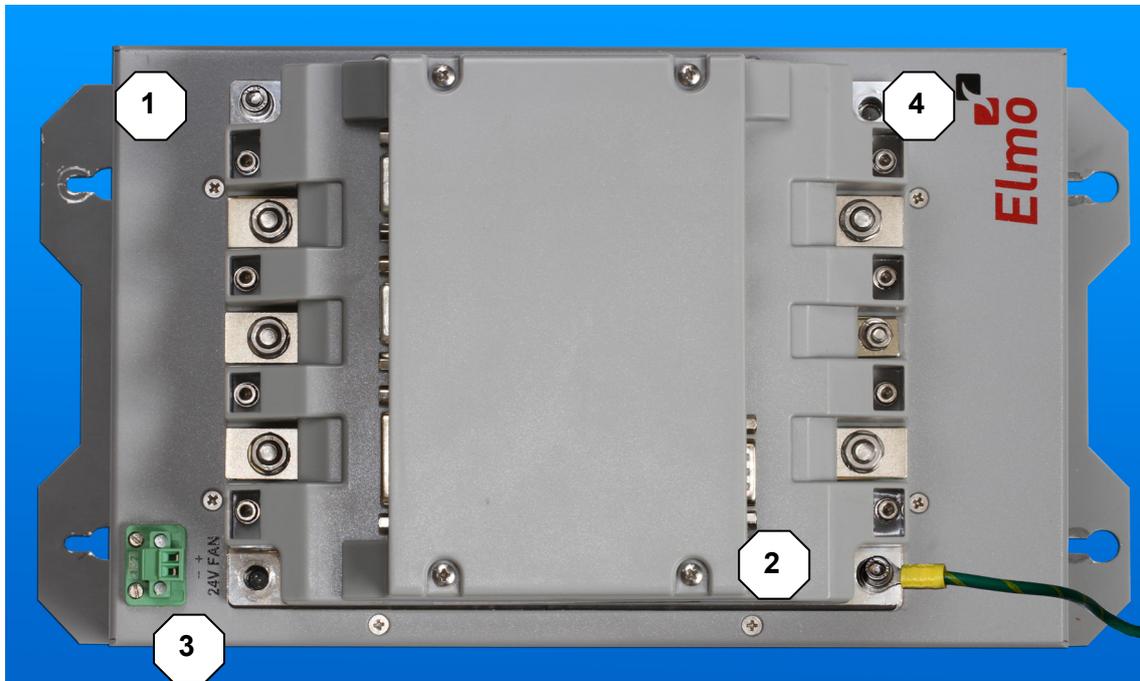


Figure 7: Pattern to install four securing screws



- c. Repeat steps a. and b. for the third and fourth screws as shown Figure 7. Make sure to only tighten the screws to hand-tight (**0.5 Nm**).
 - d. Starting from the first screw installed, use a torque screwdriver to tighten all four screws installed according to steps a. – c., to **8 Nm**.
6. The mounted Drum and Heat Sink should appear as shown in Figure 8.

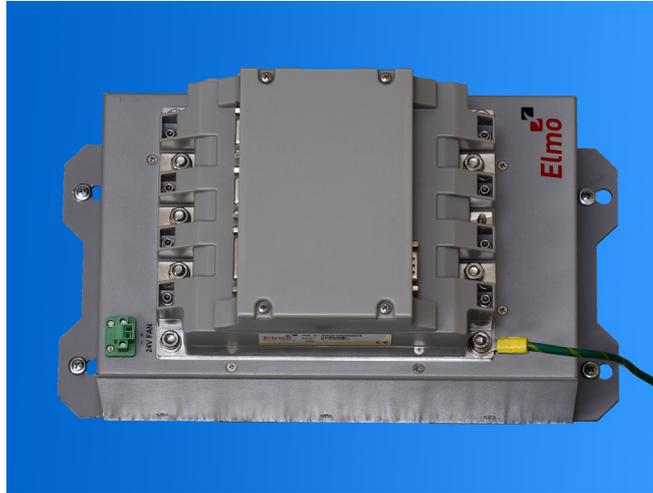


Figure 8: Installed securing screws

7. Install the Drum and Heat Sink to the wall using four screws (max 4.5 mm diameter, refer to Figure 1) and washers. Make sure that there is a space of 10 cm, between the top of the Heat Sink and any other electrical part or otherwise. Similarly, a space of 10 cm is required between the lower fans and any other electrical part or otherwise.

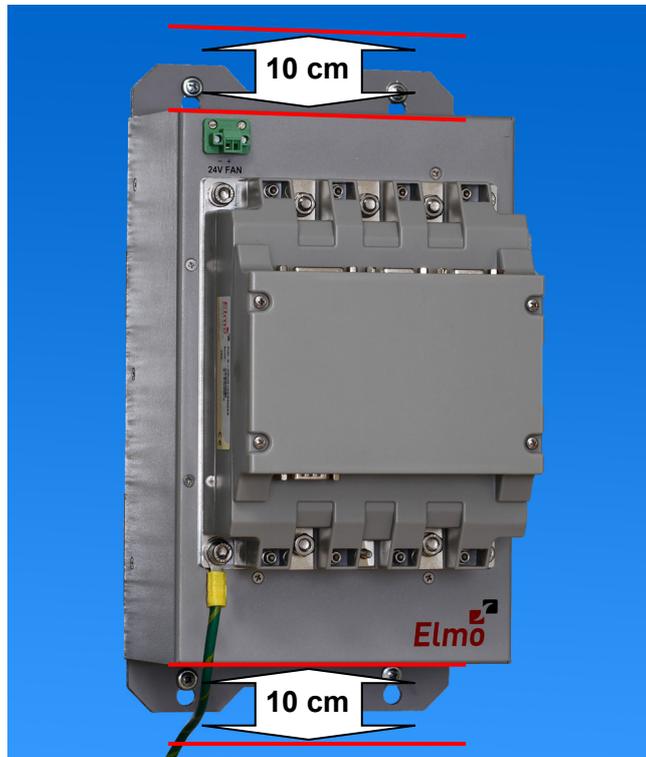


Figure 9: Drum and Heat Sink installed to wall



8. The final connected Drum and Heat Sink will appear as shown in Figure 10.

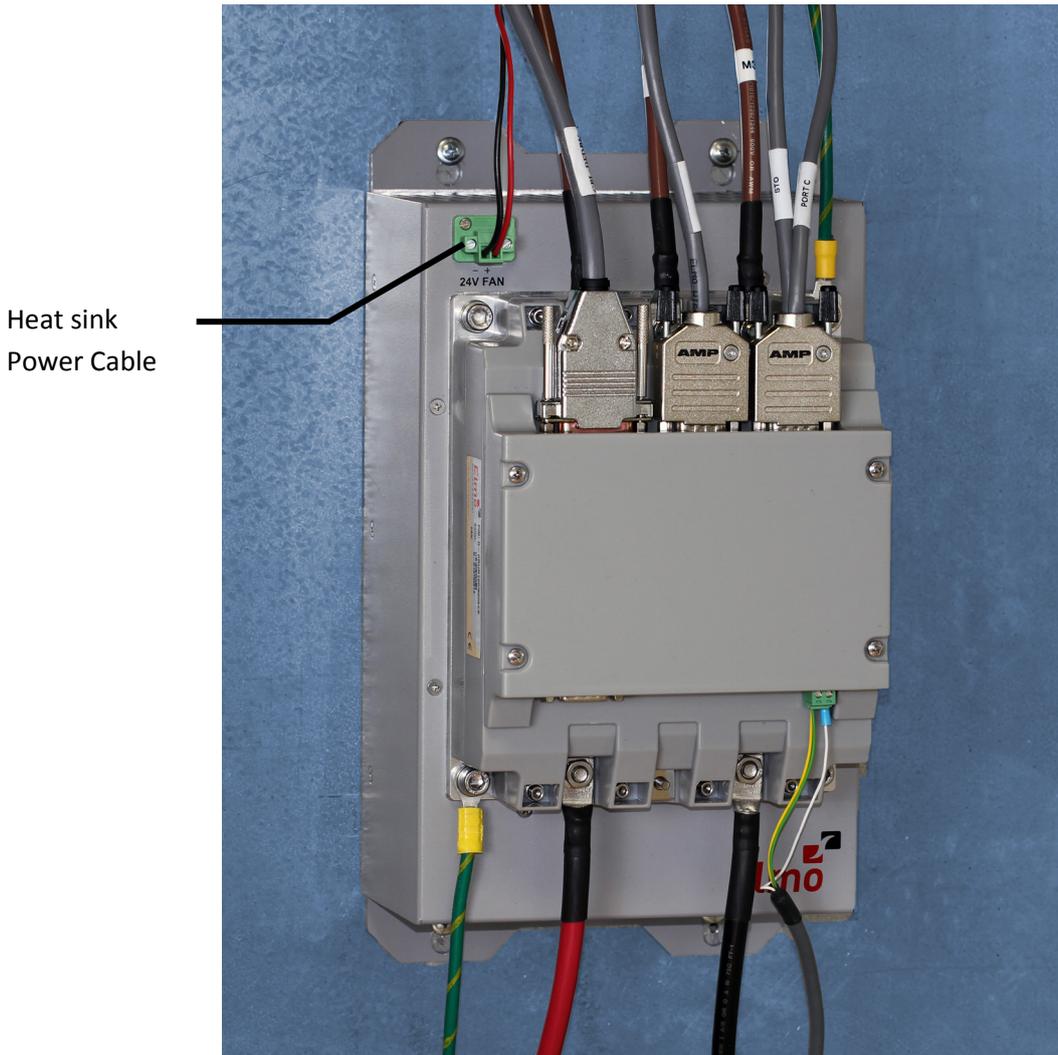
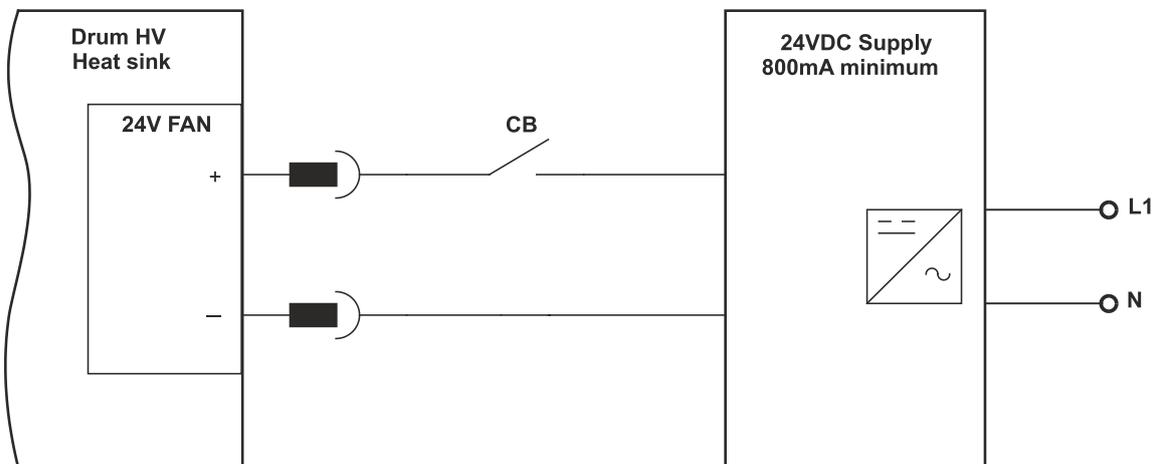


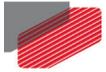
Figure 10: Connections to the Drum and Heat Sink

9. Connect the 24 VDC Heat Sink Power cable to the Heat Sink connector (Figure 11). If necessary, use a circuit breaker as shown in Figure 11.



GDRUHV047A

Figure 11: 24 VDC Heat Sink Power Supply Connection



3.3. Heat Dissipation

For full power output capability the Gold Drum HV Heat Sink is designed to be mounted on an external heatsink. It is highly recommended that the “Wall” on which the Drum is mounted will have heat dissipation capabilities.

The Heat Sink Assembly P/N ACC-HS-DRU-HV can dissipate $\approx 600\text{W}$ at an ambient temperature of 40°C . With adequate “ Air Convection” the assembly can dissipate the power of the whole G-DRUM-HV Servo drive series.



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