



# GROUNDING LOW VOLTAGE (GLV) ENCLOURE INTERCONNECTIVITY DOCUMENT

## Abstract

This document describes the interconnect control for the GLV enclosure. This includes connections from GLV to the GLV cockpit and exterior panels as well as to the other GLV dependent electrical systems.

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## Overview

Below is the ICD for the GLV enclosure. It includes each type of connector and specifies what travels along each pin. All of the connectors on the GLV enclosure are panel mount DT-04, and they each use 20 Gauge wire to connect to the other systems.

## GLV Enclosure Left Side

### GLV Battery – J1

**Connector Type:** DT04-2P Panel Mount

**Pin 1:** Battery+ (+24VDC)

**Pin 2:** Battery- (Low Voltage Ground)

### Exterior Panel (Left Side) – J3

**Connector Type:** DT04-2P Panel Mount

**Pin 1:** Left Side E-Stop (+24VDC)

**Pin 2:** Left Side E-Stop Return (+24VDC)

### Exterior Panel (Right Side) – J4

**Connector Type:** DT04-6P Panel Mount

**Pin 1:** GLV Master Switch (+24VDC)

**Pin 2:** GLV Right E-Stop Return (+24VDC)

**Pin 3:** Master Reset (+24VDC)

**Pin 4:** Master Reset Return (+24VDC)

**Pin 5:** TSV Master Switch (+24VDC)

**Pin 6:** TSV Master Switch Return (+24VDC)

### Cockpit Panel – J6

**Connector Type:** DT04-12P Panel Mount

**Pin 1:** VSCADA Select Button (+5VDC)

**Pin 2:** VSCADA Scroll Button (+5VDC)

**Pin 3:** VSCADA Cruise Button (+5VDC)

**Pin 4:** Driver E-Stop (+24VDC)

**Pin 5:** Driver E-Stop Return (+24VDC)

**Pin 6:** Crash Protection Reset (+24VDC)

**Pin 7:** Crash Protection Reset Return (+24VDC)

**Pin 8:** GLV Present LED (+24VDC)

**Pin 9:** Safety Loop LED (+24VDC)

**Pin 10:** Subsystem Safety Loop Fault LED (+24VDC)

**Pin 11:** AIRs Energized LED (+24VDC)

**Pin 12:** GLV Return (Low Voltage Ground)

## GLV Enclosure Right Side

### HDMI – J5

**Connector Type:** HDMI Panel Mount Connector

**Pin 1:** HDMI

### UART – J7

**Connector Type:** DT04-3P Panel Mount

**Pin 1:** UART TX (UART)

**Pin 2:** UART RX (UART)

**Pin 3:** UART Reference (UART)

### Cooling – J10

**Connector Type:** DT04-6P Panel Mount

**Pin 1:** CAN bus High (CAN bus)

**Pin 2:** CAN bus Low (CAN bus)

**Pin 3:** CAN bus Shield (CAN bus)

**Pin 4:** Chassis Ground (Low Voltage Ground)

**Pin 5:** 24VDC to Power Subsystems (24VDC)

**Pin 6:** 24VDC to Power Subsystems Return (Low Voltage Ground)

### USB – J11

**Connector Type:** USB Panel Mount Connector

**Pin 1:** USB

### Ethernet – J12

**Connector Type:** Ethernet Panel Mount Connector

**Pin 1:** Ethernet

### VSCADA I/O – J13

**Connector Type:** DT04-3P Panel Mount

**Pin 1:** 5V to Cockpit (5VDC)

**Pin 2:** Low Voltage Ground (Low Voltage Ground)

**Pin 3:** Chassis Ground (Low Voltage Ground)

### Tractive System Energized Light (TSEL) – J14

**Connector Type:** DT04-2P Panel Mount

**Pin 1:** TSEL Return (Low Voltage Ground)

**Pin 2:** TSEL (24VDC)

### Dyno Load – J15

**Connector Type:** DT04-3P Panel Mount

**Pin 1:** Enable 100V Supply (+24VDC)

**Pin 2:** 100V Supply Return (Low Voltage Ground)

### Motor Data – J16

**Connector Type:** DT04-6P Panel Mount

**Pin 1:** Tachometer (0V to 5VDC)

**Pin 2:** Strain Gauge (0V to 5VDC)

**Pin 3:** Throttle (0V to 5VDC)

**Pin 4:** Throttle Return (Low Voltage Ground)

**Pin 5:** Solenoid (0V to 5VDC)

**Pin 6:** Solenoid Return (Low Voltage Ground)