Allen Aircraft Products

Elevate Test Fixture

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1. **OVERVIEW**
   This document defines the board level hardware requirements as well as the mechanical and environmental requirements for PCBA for the Elevate Test Fixture.

2. **SCOPE**
   This document defines the design requirements for the Elevate Test Fixture PCBA. This specification is subject to change.

3. **CONTROLLER: PLC on a CHIP**
   a. Part # PLChip
   b. Watchdog LED

4. **PROGRAMMING LANGUAGE: EZ LADDER (Ladder Diagram and Function Block)**

5. **INPUTS**
   a. Sensor Inputs
      i. Qty 4
      ii. Current Excitation
         1. 14mA reference
         2. Current sourcing
      iii. Connectors
         1. Pluggable
         2. 5mm screw terminals
         3. Pinout

Pinout	Function
1	Sensor 1 +
2	Sensor 1 -
3	Sensor 2 +
4	Sensor 2 -
5	Sensor 3 +
6	Sensor 3 -
7	Sensor 4 +
8	Sensor 4 -

   b. PWM Driver Control Signals
      i. Voltage
         1. 5V
      ii. Pull up resistor
         1. 10K
      iii. Functions
         1. Enable
         2. Direction
         3. Speed0
         4. Speed1
         5. Speed2
      iv. Connectors
         1. Pluggable

2. 5mm Screw terminals
3. Pinout

Pinout	Function
1	COM
2	~~ENABLE~~ SPD2
3	~~DIR~~ SPD1
4	SPD0
5	~~SPD1~~ DIR
6	SPD2 ENABLE

6. OUTPUTS

a. Analog Outputs
   i. Qty 4
   ii. Signal from sensor input
   iii. Voltage Divider
      1. Ratio: TBD
   iv. Connector
      1. Pluggable
      2. 5mm Screw terminals
      3. Pinout

Pinout	Function
1	AI0+
2	AI0-
3	AI1+
4	AI1-
5	AI2+
6	AI2-
7	AI3+
8	AI3-

b. Pump Output
   i. Qty: 1
   ii. H-bridge output
   iii. 4A
   iv. 12-32 VDC
   v. Connector
      1. Pluggable
      2. 5mm Screw terminals
      3. Pinout

Pinout	Function
1	PUMP+
2	~~PUMP-~~
3	PUMP-

8. POWER SUPPLY

a. 12-32 VDC input
b. PWR IN - Connector
   i. Pluggable

ii. 5mm Screw terminals
iii. Pinout

Pinout	Function
1	+V
2	COM

c. PWR OUT - Connector
   i. Pluggable
   ii. 5mm Screw terminals
   iii. Pinout

Pinout	Function
1	+V
2	COM

8. ENVIRONMENTAL REQUIREMENTS

a. TEMPERATURE
   i. Operating temperature: 10 - 40 °C
   ii. Storage temperature: 0 - 60 °C

b. HUMIDITY
   i. 0-95 %

9. MECHANICAL REQUIREMENTS

a. Construction
   i. Conformal Coating
b. Mounting
   i. DIN RAIL Track
c. Size
   i. TBD