

Trotter Controls, Inc. FORT WORTH, TEXAS	PRODUCT DATASHEET	NUMBER DS-0002	REVISION
		MODEL 5025-0008	
TITLE DATASHEET – RELAY ENCLOSURE FRDS GEN II	BY JBF	CHK'D VT	SERIAL 0001 and SUBS
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REVISIONS :

None

ELIGIBLE SERIAL NUMBERS :

5025-0008 S/N 0001 and SUBS.

PURPOSE :

This report provides appropriate specifications for the 5025-0008 FRDS GENII relay enclosure.

SUMMARY :

The data listed here is compiled from various component datasheets used in the manufacture of the relay enclosure assembly.

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GENERAL :**RELAY ENCLOSURE**

Rated Voltage	
Min:	22.5 VDC
Nominal:	28.0 VDC
Max:	36.0 VDC
Rated Current	
Min:	0.15 A (ALL VALVES OFF)
Nominal:	4.13 Amps (E-Dump (X2) & Bleed valves energized)
Max:	7.75 (During fire retardant release & hydraulic pump running)
Max Power Consumption:	186 W @ 24 VDC
Digital Inputs:	2 (150 mA) home sensors, 1 pressure switch
Digital Outputs:	9 (1.28A ea.) (max 8A total) solenoid valves, 1 run pump – internally fused
Analog inputs:	2 foam / hopper level (0~5 VDC), 1 hydraulic pressure (1~5 VDC)
Fuse:	10 A (internal)
Protective Device:	Use 10 A Circuit Breaker (external)
Temperature	
Ambient Operating :	0°F/+150°F
Storage:	-20F/+158°F
Ambient Humidity	
External components:	IP65 Ingress Protection
Internal Components:	90% Non-condensing
Dimensions:	11.8 L X 11.8 W X 4.75 H (Excludes mounting feet and connectors)
Weight:	14.5 lbs (Approx.)

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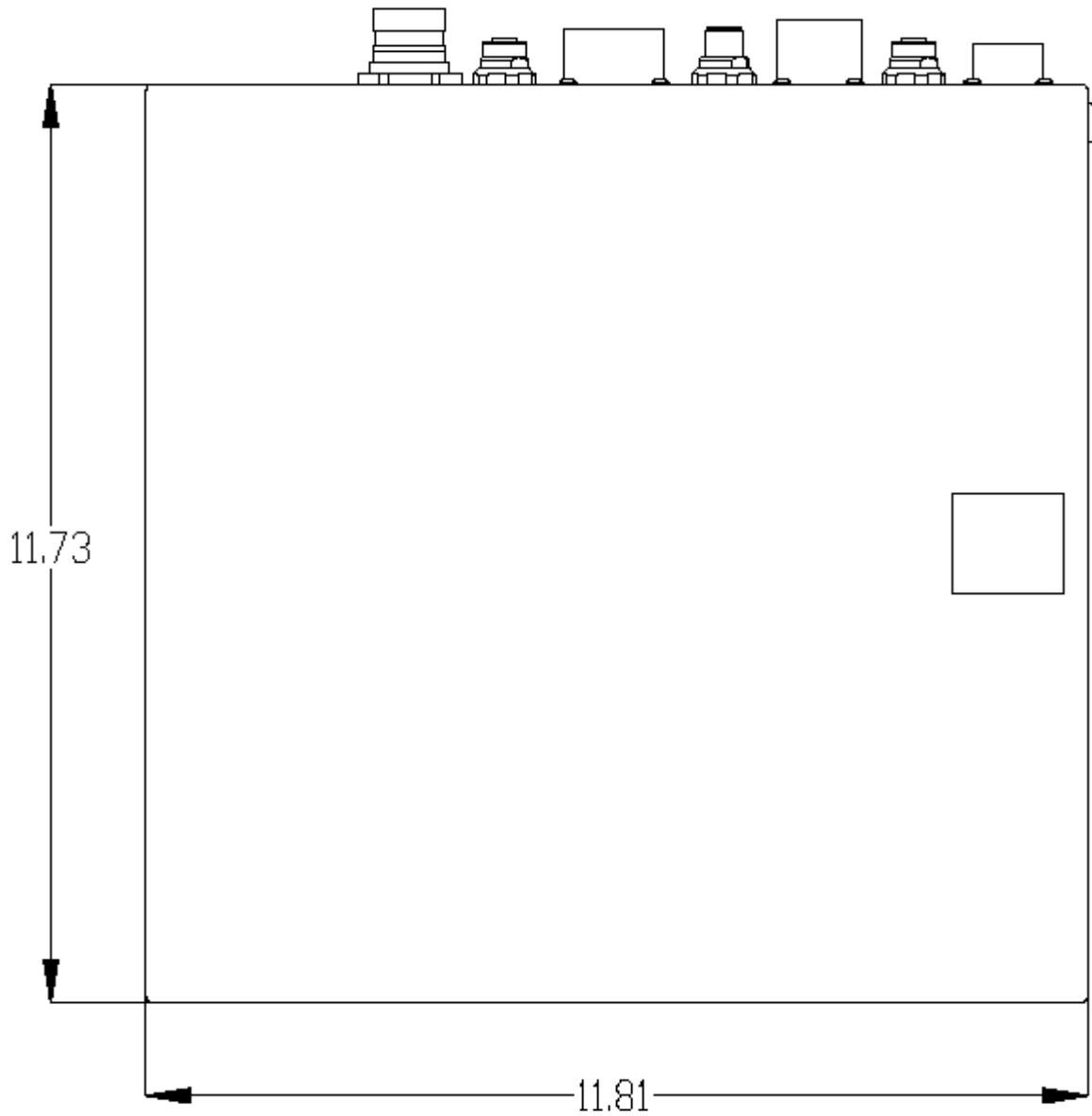


Figure 1 Front View

Allow approximately 4.5 inches of clearance to disconnect cables and to maintain a minimum cable-bending radius once the enclosure is installed.

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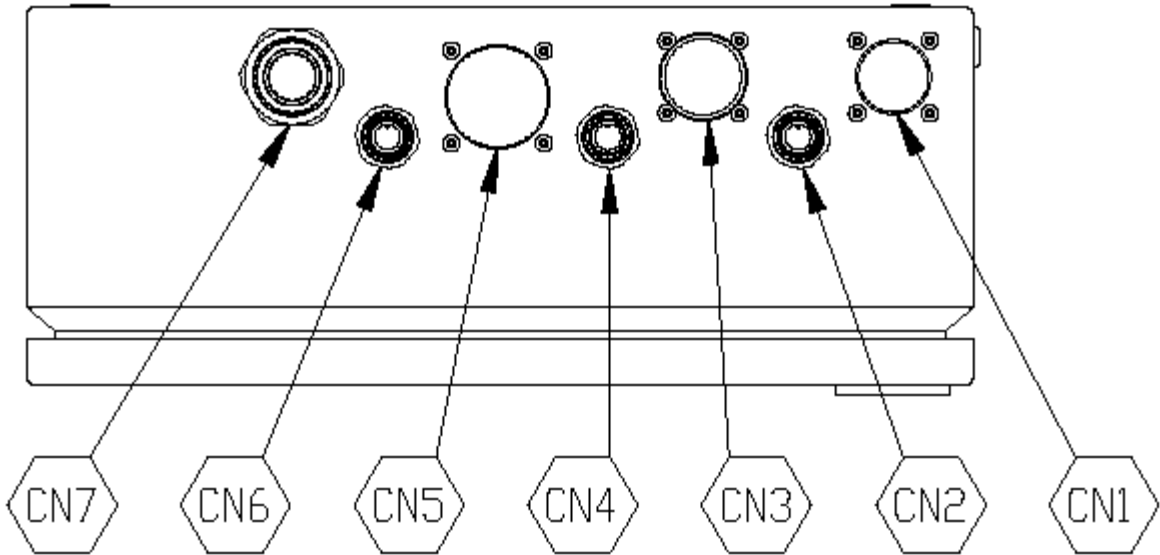


Figure 2 Top View

Connector functions and pin assignments are described in the 'Appendix'.

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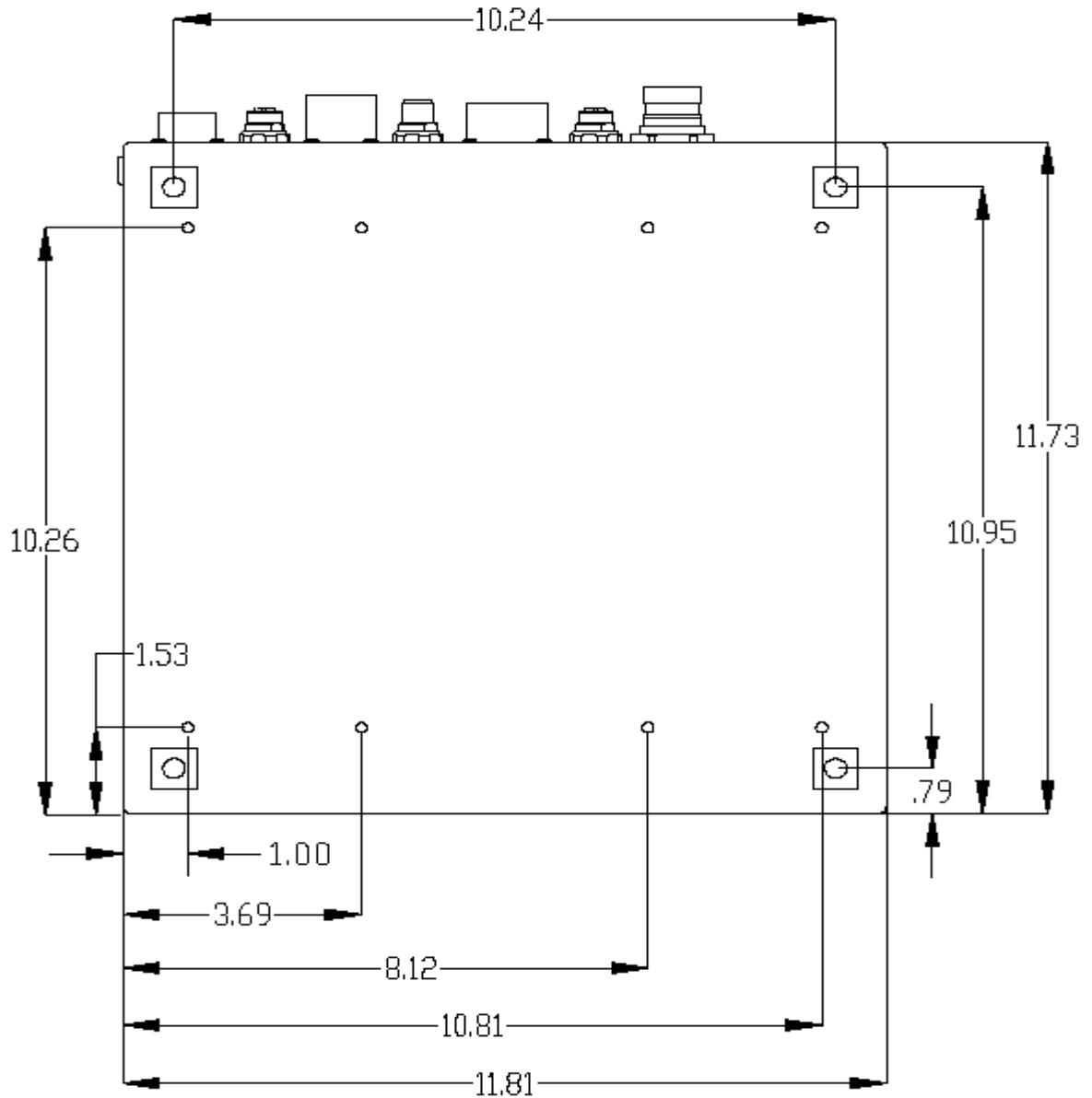


Figure 3 - Back View

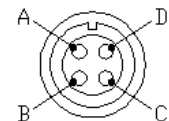
This figure illustrates the mounting holes used for installing vibration isolators or other mounting means. Holes not used, should be plugged and sealed to maintain IP65 environmental rating.

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APPENDIX:

Table 1 ~ Connector CN1 - Dump and Limit Switches

DUMP & LIMIT SWITCH		
CN1 PIN#	J27 PIN#	DESCRIPTION
	[1]	5825-0021-01-00
A	1	EM_VALVE_PWR
B	2	DUMP_SW
C	3	NOT_DUMP_SW
D	4	LIMITS/GND



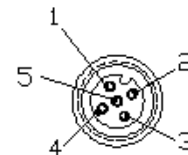
4 Pin (F)
(FRONT VIEW)

NOTES: [x]

1. Pin numbers correspond to termination points on PCB P/N 5950-0008 located inside the enclosure.
2. Pin D of CN1 must be grounded for the relay enclosure to receive power.
3. Pins B & C of CN1 are complementary inputs from the pilot operated dump switch.
4. Pin A supplies power for the EM system independently from the primary control system.

Table 2 ~ Connector CN2 - SPARE Digital Output

SPARE		
CN2 PIN#	J28 PIN#	DESCRIPTION
	[1]	5825-0022-01-00
1	1	SPARE 1
2	2	+24V
3	3	GND
4	4	N/C



5 Pin (F)
(FRONT VIEW)

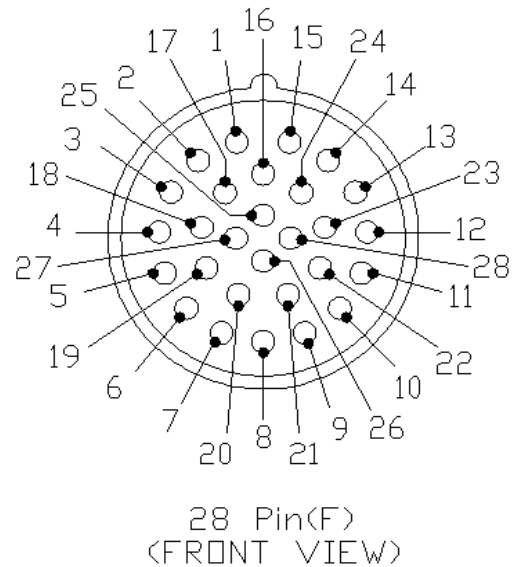
NOTES: [x]

1. Pin numbers correspond to termination points on PCB P/N 5950-0008 located inside the enclosure.
2. This output is fused at 3 amps internally via Fuse 22 on PCB ASSY P/N 5950-0008 located inside the enclosure.

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Table 3 ~ Connector CN3 - Relay Enclosure

FRDS RELAY ENCLOSURE		
CN3 PIN# [2]	J10,J26 PIN# [1]	DESCRIPTION
		5825-0017-01-00-01
1	J10-1	μP_AUTO_SALVO
2	J10-2	μP-V1-OPEN
3	J10-3	μP-V1-CLOSE
4	J10-4	μP-V2-OPEN
5	J10-5	μP-V2-CLOSE
6	J10-6	μP-V3-OPEN
7	J10-7	μP-V3-CLOSE
8	J10-8	μP-RUN_PUMP
9	J10-9	μP-SPARE1
10	J10-10	μP-SPARE2
11	J10-11	μP-BLEED_SOL
12	J10-12	μP-EDUMP1
13	J10-13	μP-EDUMP2
14	J10-14	NOT_DUMP_SW
15	J10-15	DUMP_SW
16	J10-16	EM_V+_SW_&ARMED_SW
17	J26-1	HYD_PWR_SW_&ARMED_SW
18	J26-2	I_EM_PWR1
19	J26-3	I_EM-V3-OPEN
20	J26-4	I_EM-V3-CLOSE
21	J26-5	I_EM-RUN_PUMP
22	J26-6	EM_AUTO_SALVO_ON
23	J26-7	FOAM-LVL
24	J26-8	HYD-PRESS
25	J26-9	HOPPER-LVL
26	J26-10	+V-AI-ISO
27	J26-11	GNDA
28	N/A	(PIN HAS NO WIRE)



NOTES: [x]

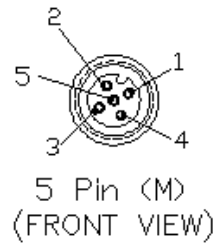
1. Pin numbers correspond to termination points on PCB P/N 5950-0008 located inside the enclosure.
2. Connects Relay Enclosure to Pilot Interface.
3. Signals carried on CN3-1 ~ CN3-13 are low level outputs used by the primary microprocessor to control hydraulic valves.
4. Signals carried on CN3-14 ~ CN3-22 are signal, low current relay control, and status lines.
5. Signals carried on CN3-23 ~ CN3-25 are analog sensor input signals requiring low bandwidth.

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6. Signals carried on CN3-26 ~ CN3-27 are for the analog sensor voltage supply used to power the external devices/sensor side of the CORE microprocessors optically isolated analog inputs.

Table 4 ~ Connector CN4 - Hopper Level

RB - HOPPER LEVEL		
CN4 PIN#	J4 PIN#	DESCRIPTION
	[1]	5825-0020-01-00
1	1	+V-HOPPER
2	2	HOPPER_LVL
3	3	GNDA
4	4	N/C
5	N/A	N/C

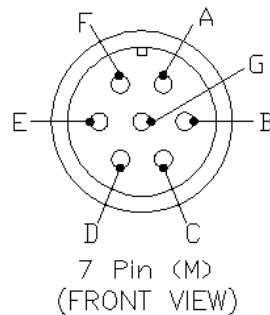


NOTE: [x]

1. Pin numbers correspond to termination points on PCB P/N 5950-0008 located inside the enclosure.

Table 5 ~ Connector CN5 - Input Power

POWER IN		
CN5 PIN#	J30 PIN#	DESCRIPTION
	[1]	5825-0018-01-00
A	1	VBAT-IN
B	2	V+
C	3	GND
D	4	GNDA
E	5	EM SALVO#1 [2]
F	6	EM SALVO#2 [2]
G	N/C	--



NOTE: [x]

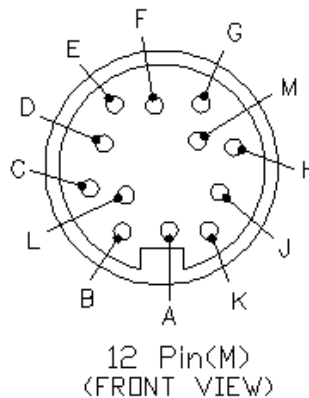
1. Pin numbers correspond to termination points on PCB P/N 5950-0008 located inside the enclosure.

2. Applying +24Vdc power to pins 5 and 6 simultaneously, causes the system hydraulic pump to be directly operated via pressure switch, and relays to be energized causing the gatebox doors to open using hardwired logic / relay connections.

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Table 6 ~ Connector CN6 – I2C Communication and Power

I2C COMMUNICATION / POWER		
CN6 PIN#	J3 PIN#	DESCRIPTION
	[1]	5825-0019-01-00
1	1	+12V_LOGIC_I2C
2	2	I2C_CABLE-PWR
3	3	SCL
4	4	SDA
5	5	I2C_GND
6	6	HOME-PRX1
7	7	HOME-PRX2
8	8	HYD_SW
9	9	ARM_LT_OK
10	10	GND
11	N/C	--
12	N/C	--



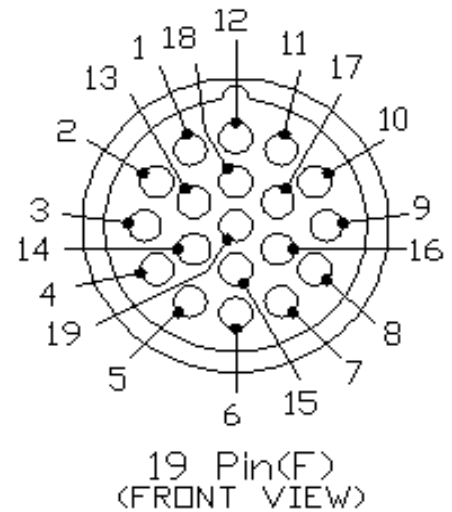
NOTE: [x]

1. Pin numbers correspond to termination points on PCB P/N 5950-0008 located inside the enclosure.

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Table 7 ~ Connector CN7 – Relay Enclosure

RELAY ENCLOSURE					
CN7 PIN# [2]	J7, J8 PIN # [1]	J-BOX PORT [3]	DESCRIPTION	FUSE No. [1]	FUSE (A) RATING
			5825-0023-01-00-01		
1	J8-1	PORT15	VALVE1-OPEN	F12	3
2	J8-2	PORT11	VALVE1-CLOSE	F11	3
3	J8-3	PORT7	VALVE2-OPEN	F10	3
4	J8-4	PORT4	VALVE2-CLOSE	F9	3
5	J8-5	PORT3	VALVE3-OPEN	F8	3
6	J8-12	- VOLT	GND – (Valve Common)	F2 [6]	10
7	J8-7	PORT2	VALVE3-CLOSE	F7	3
8	J8-8	PORT6	RUN_PUMP	F6	3
9	J8-9	PORT10	BLEED-SOL	F5	3
10	J8-10	PORT14	EDUMP1	F4	3
11	J8-11	PORT13	EDUMP2	F3	3
12	J8-6	GND	GNDA – (Analog Common)	N/A	--
13	J7-1	PORT12	HOME-PRX1	F20	2
14	J7-2	PORT8	HOME-PRX2	F20	2
15	J7-3	PORT1	HYD_SW	F20	2
16	J7-4	PORT5	FOAM_LVL	F20	2
17	J7-5	PORT9	HYD_PRESS	F20	2
18	J7-7	PORT16	SPARE-IN1	F20	2
19	J7-6	+V (15Vdc)	+V – (SW / SENSOR SUPPLY COMMON)	F20 [1]	2
N/A	J7-8		SPARE2-REG	F1	3



NOTES: [x]

1. Pin / Fuse numbers correspond to termination points on PCB ASSY P/N 5950-0008 located inside the enclosure.
2. Connects Relay Box to MultiBox 16 point Multibox.
3. Port numbers are for a 16 point Multibox used to connect valves and sensors to the system and are shown for reference only.
4. The +V supply for the 16 point Multibox is supplied via pin 19 of connector CN7. Fuse 20 protects this circuit in addition to the sensors and switches connected to pins 13 ~ 18 on CN7 (since the +V supply for all circuits is via Pin 19).
5. The sourcing outputs for valve control are individually fused at 3 amps.
6. The common ground for valve outputs is fused at 10 amps.

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The following table lists fuses not listed in table 7.

Table 8 ~ Additional Fuse Schedule

FUSE SCHEDULE		
FUSE No.	FUSE RATING (AMPS) [1]	CIRCUIT PROTECTED
F1	2	I2C BUS POWER
F13	5	VBUS2, V1 & V2 VALVES (open & close)
F14	5	VBUS1 (µP AUTO SALVO VOLTAGE SELECT)
F15	10	+V BATT SUPPLY IN (VBAT-IN)
F16	10	+V BATT SUPPLY IN 2 (V+)
F17	5	VBUS4, RUN_PUMP, SPR1, SPR2, BLEED AND EDUMP VALVES
F18	2	VBUS3, V3 VALVES (open & close)
F19	2	SPARE +28V TO CN2
F21	2	EM_VALVE_POWER & HYD POWER - ARMED
F22	5	SPARE1- OUTPUT (not regulated)
F23	5	EM_V+ SW_SUPPLY, VREG 5, 6 & 7
F24	2	+V_EM_AUTO_SALVO

NOTES: [x]

1. Fuse numbers correspond to termination points on PCB ASSY P/N 5950-0008 located inside the enclosure.