

Characteristics:

General description:

This Termination Board (TB) provides direct connection between the I/O Card of the system and D5000 Series modules. The Intrinsically Safe protection and signal isolation between Safe and Hazardous Area, is provided by D5000 Series Associated Apparatus. 24 Vdc Supply to the TB can be provided by dedicated system screws or by two plug-in terminal blocks, for a redundant power supply.

The power supply for modules is given by TB power bus.

Termination Board general characteristics:

Termination Board Model	Number of positions	Features
TB-D5016-HON-004	16	1) Power Supply voltage redundancy; 2) HART multiplexing; 3) Abnormal supply voltage signaling; 4) Cumulative module fault signaling.

Supported Honeywell Safety Manager I/O Cards:

I/O Card Model	I/O Card Type	Number of channels per I/O Card	Number of I/O Cards per board	Number of channels per board	Supported GM Modules
SAI-1620m	Analog In	16	1	16	D5011S D5014S D5072S
			2	32	D5011D D5014D D5072D

Features:

- Support for Honeywell Safety Manager SAI-1620m 16 ch. AI Card
- 16 positions Terminal Board for up to 32 channels.
- Lower cables installation and maintenance costs.
- Power supplies fault monitoring.
- Spare fuse provided.
- Mounting hardware provided for:
 - Wall mounting, M4 thread screw;
 - Wall mounting, M4 self tapping screw;
 - Single Din Rail mounting kit.

Ordering Information:

Model: TB-D5016-HON-004

Technical Data:

Supply:

24 Vdc nom (20 to 30 Vdc) reverse polarity protected, double terminal blocks for redundant power supply, with OR diodes to mix supply voltages. Alternatively via dedicated Screws from Honeywell System.

Connection: by polarized plug-in disconnect screw terminal blocks to accommodate terminations up to 2.5 mm².

2 LEDs indication: green color, one for supply 1 and one for supply 2.

Protection fuse: 2 A time lag (spare fuse provided on Termination Board).

Fault detection:

1) **Abnormal supply voltage:** supply 1 or supply 2 is < 18 Vdc (Under Voltage, UV) or > 30 Vdc (Over Voltage, OV).

2) **Cumulative module fault:** at least one of the modules reports a field/internal fault **LED fault signaling (for both case 1 and 2):** 1 red LED for abnormal supply 1; 1 red LED for abnormal supply 2; a cumulative module fault red LED.

Relay fault signaling (one for each case 1 or 2): a voltage free NE SPDT - 1 Form C relay contacts (de-energized in fault condition), with the following characteristics:

Contact material: AgCdO.

Contact rating: 2 A 36 Vac 72 VA, 2 A 48 Vdc 80 W (resistive load).

Mechanical / Electrical life: 30 * 10⁶ / 1 * 10⁵ operation, typical.

Connection: by polarized plug-in disconnect screw terminal blocks to accommodate terminations up to 2.5 mm².

I/O card interface:

Connection: two 20 poles male connectors (require female mating connectors).

HART Multiplexing:

Connection: two 34 poles male connectors (require female mating connectors).

Environmental conditions:

Operating: temperature limits – 40 to + 70 °C,

relative humidity max 90 % non condensing, up to 35 °C.

Storage: temperature limits – 45 to + 80 °C.

Mounting:

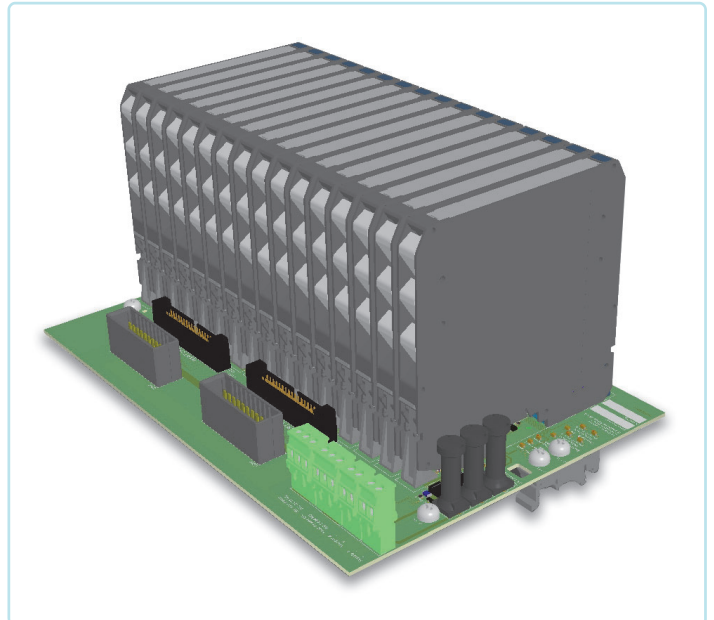
Hardware included for mounting on wall and single DIN rail.

Weight: about 400 g (excluding modules and mounting options).

Location: Safe Area / Ordinary locations.

Dimensions: Width 275 mm, Depth 175 mm, Height 125 mm.

Image:

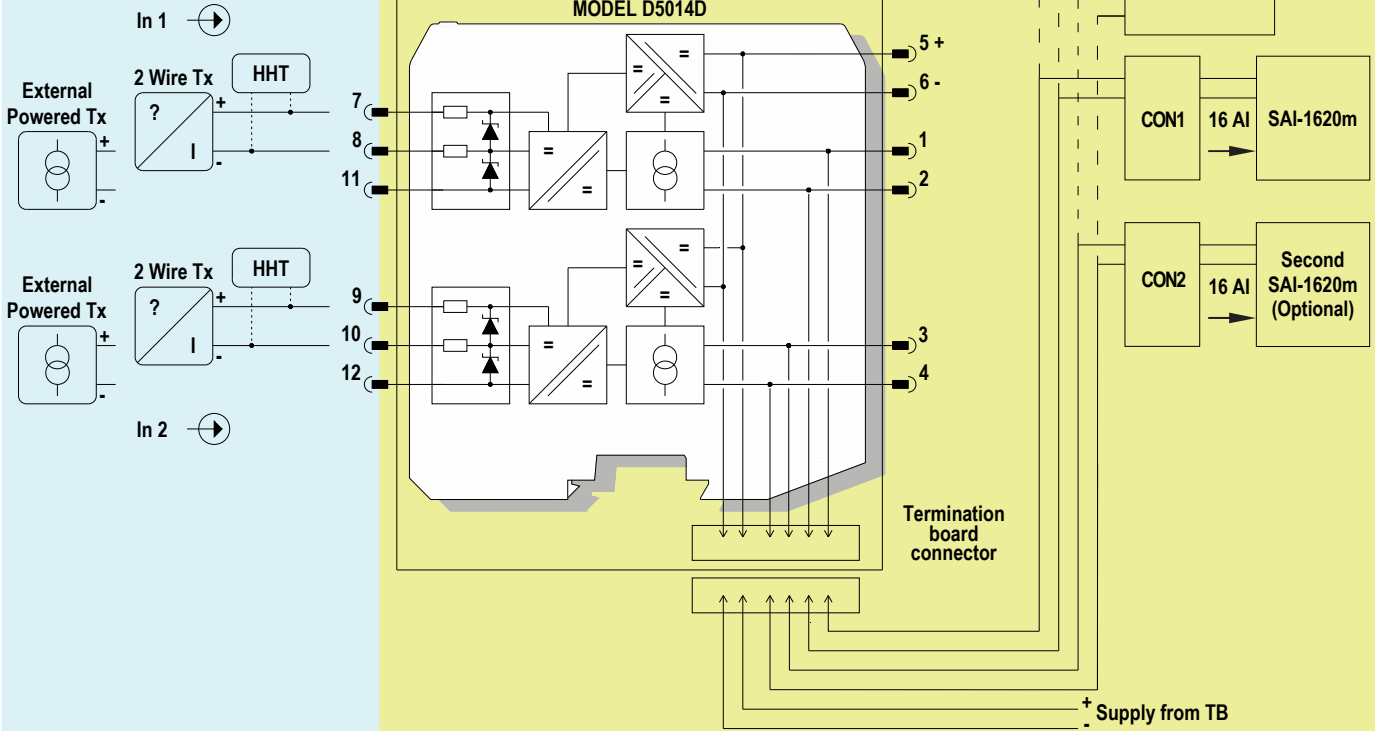


Loop Diagrams for SAI-1620m (16 AI) Interface Card:

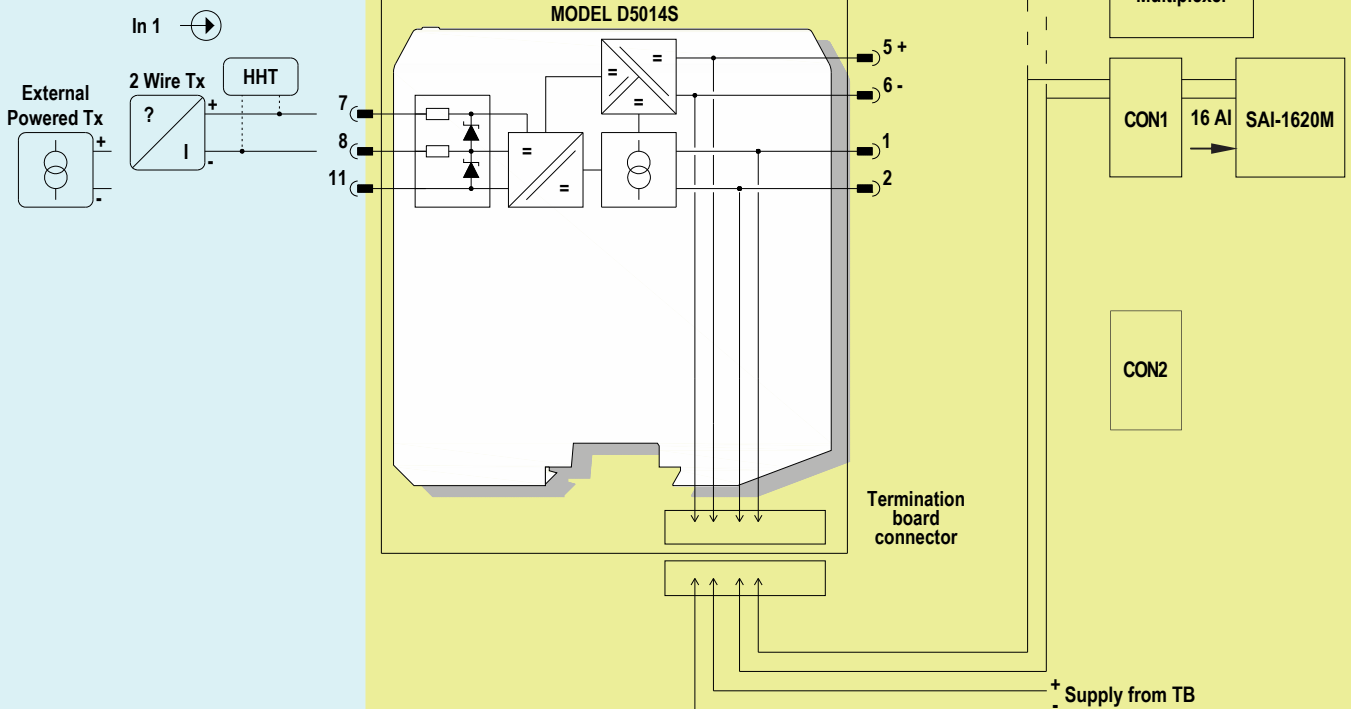
HAZARDOUS AREA

SAFE AREA

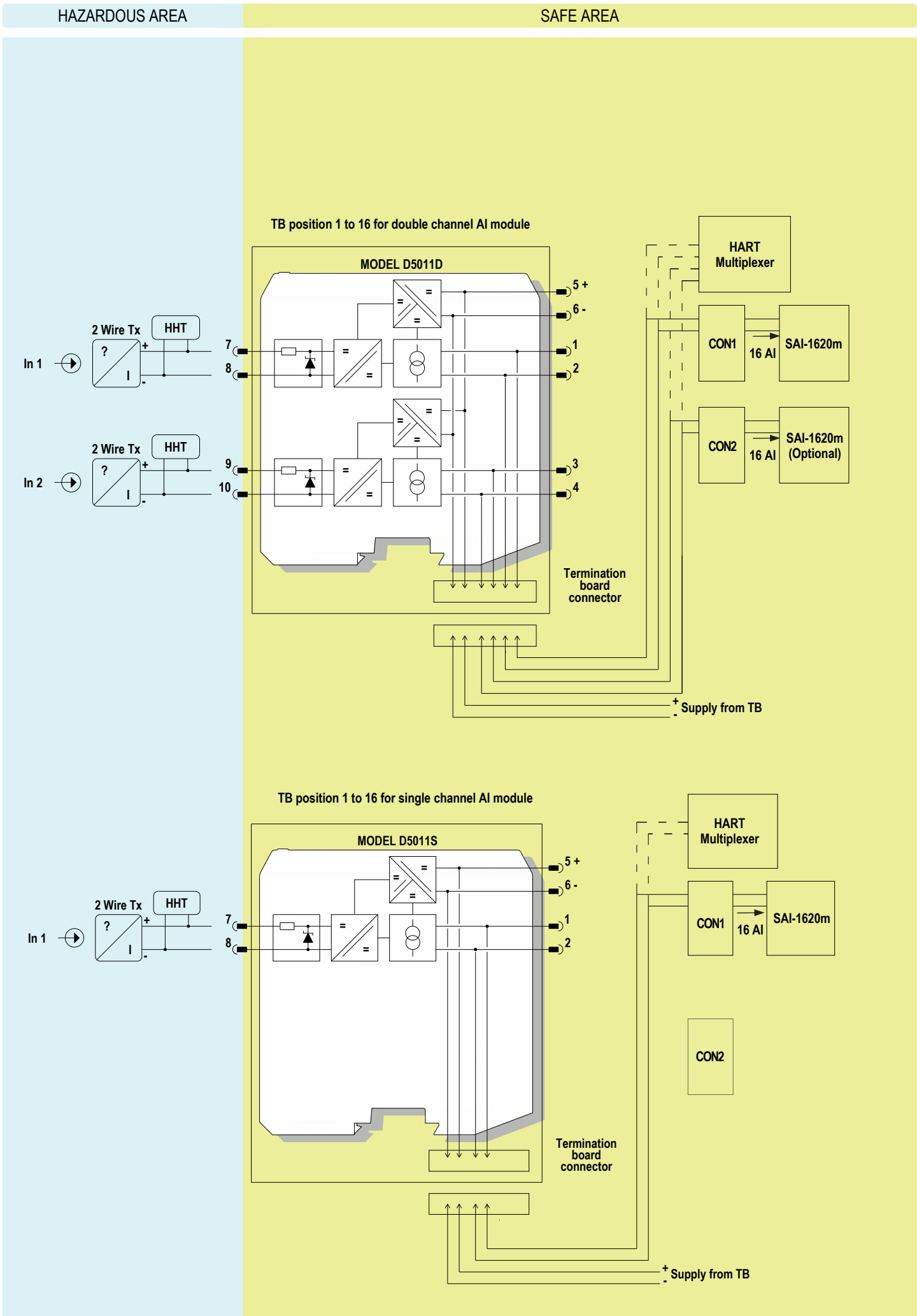
TB position 1 to 16 for double channel AI module



TB position 1 to 16 for single channel AI module



Loop Diagrams for SAI-1620m (16 AI) Interface Card:

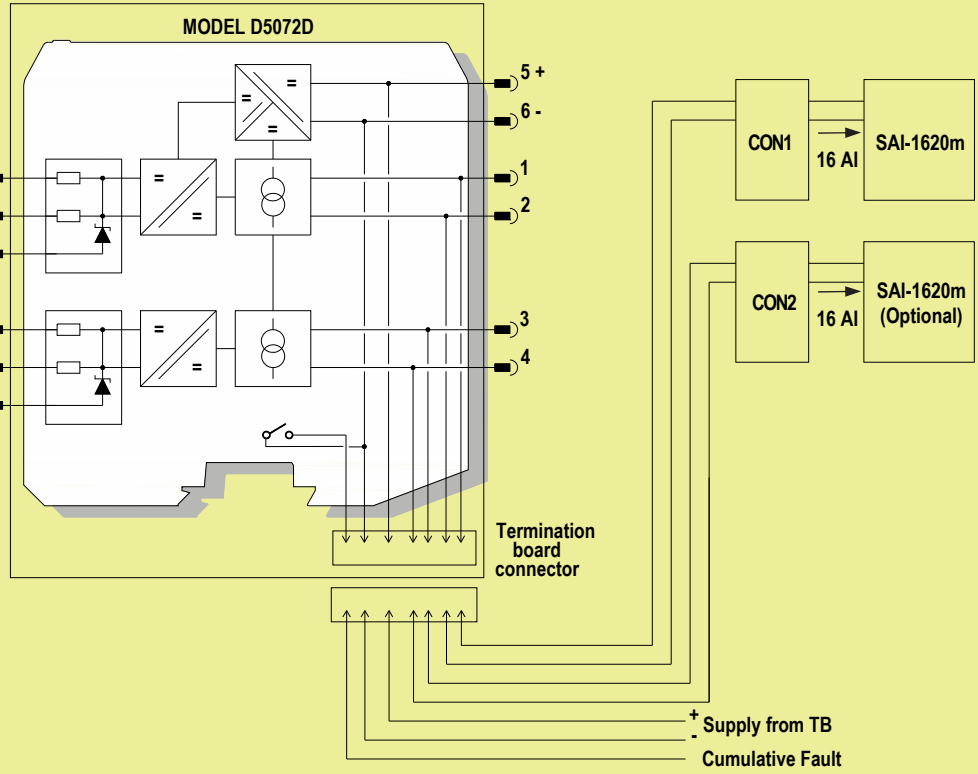
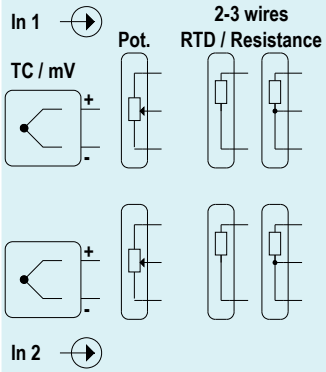


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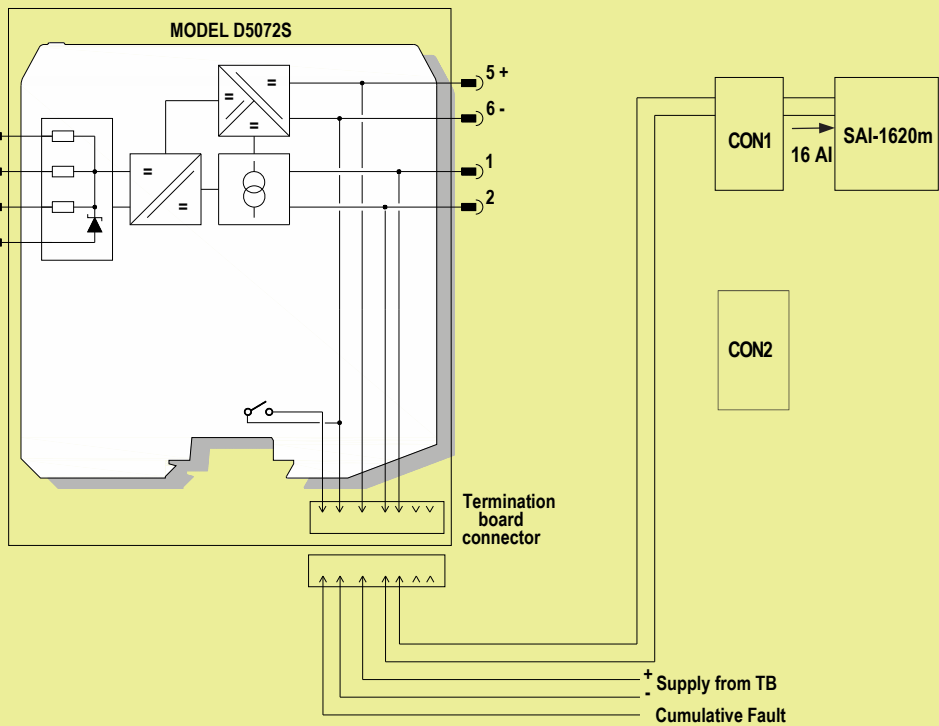
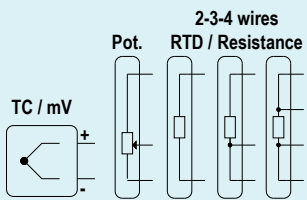
HAZARDOUS AREA

SAFE AREA

TB position 1 to 16 for double channel Temperature module



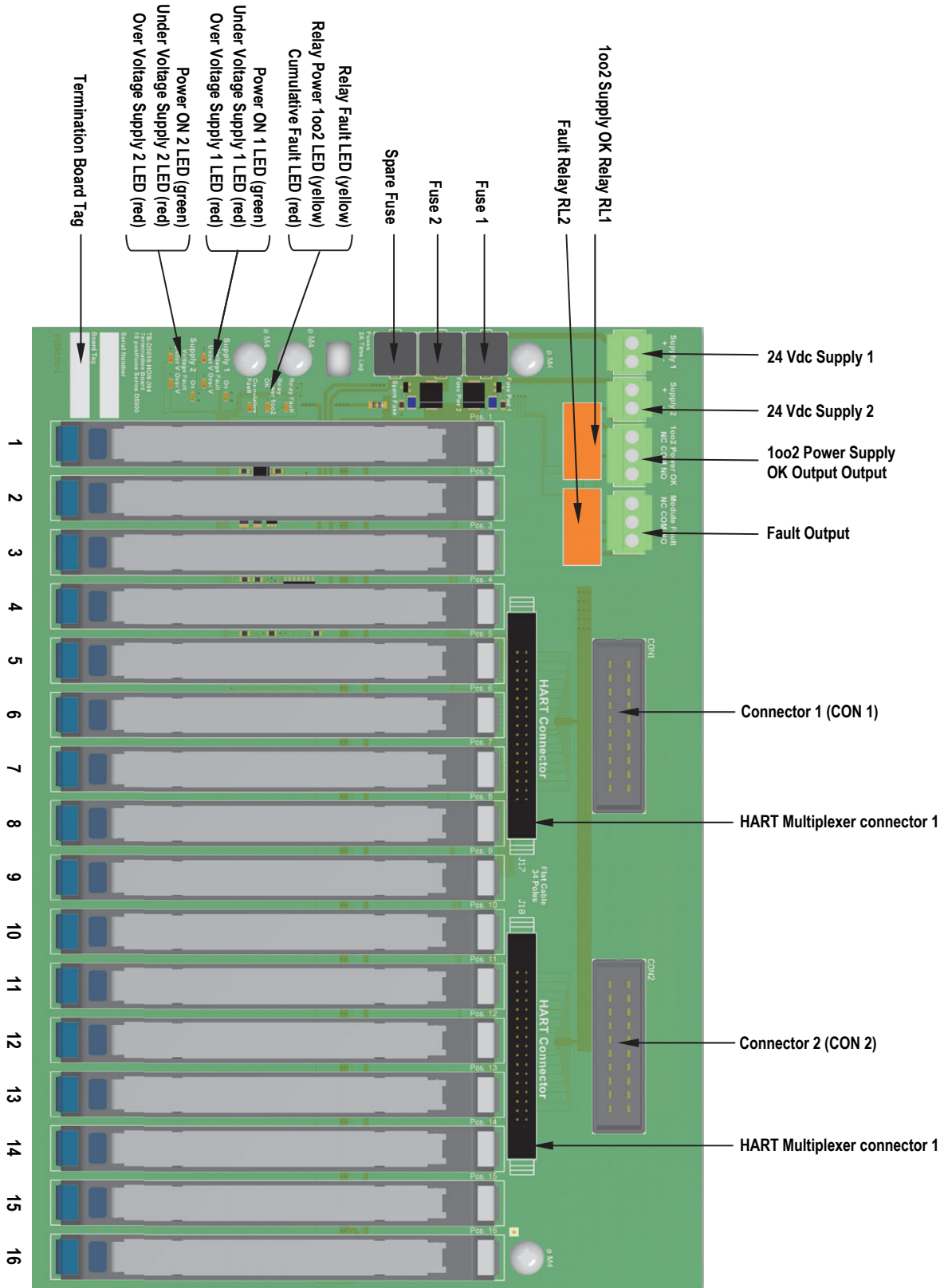
TB position 1 to 16 for single channel Temperature module



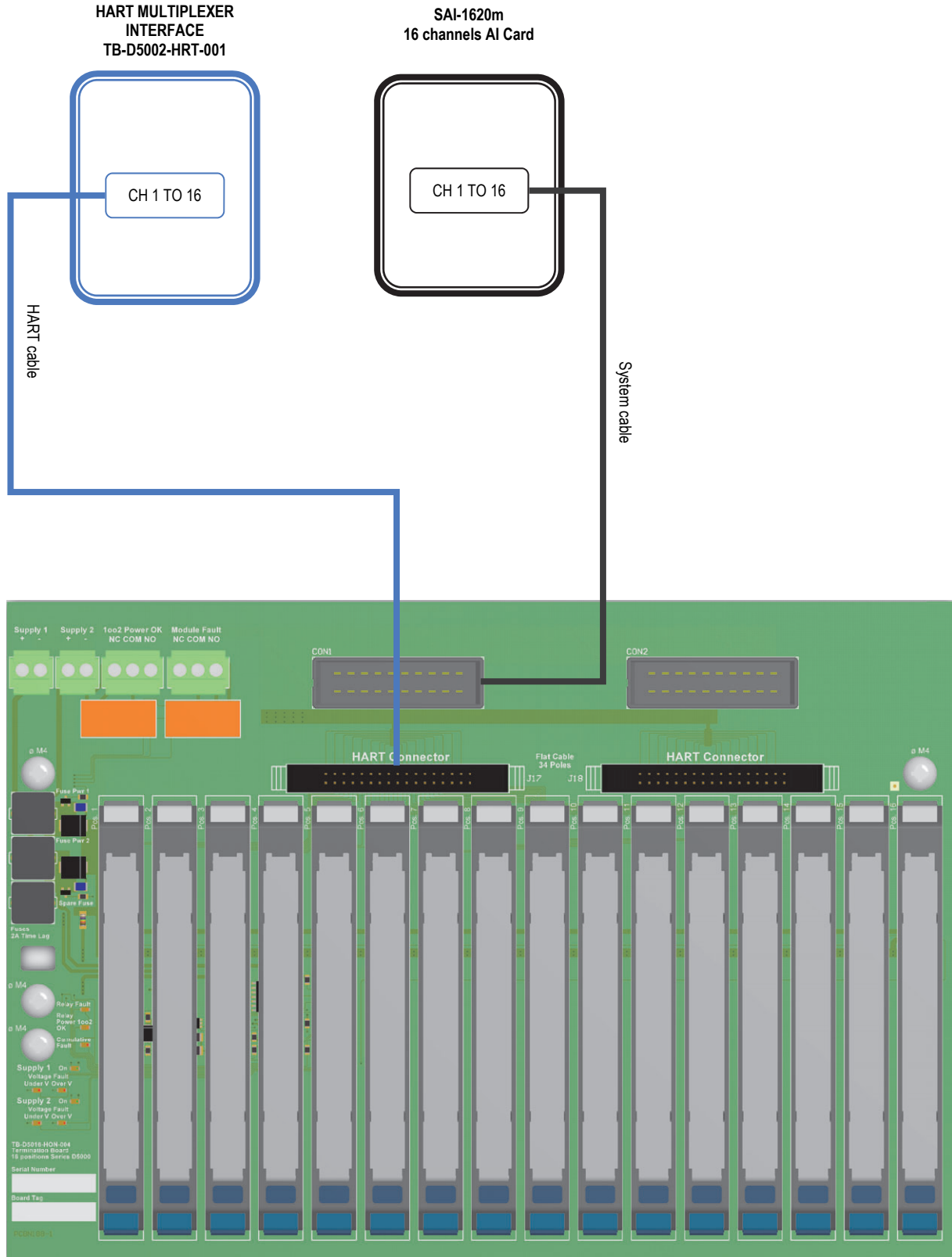
Termination Board Description:

HAZARDOUS AREA / HAZARDOUS LOCATION

SAFE AREA / ORDINARY LOCATION



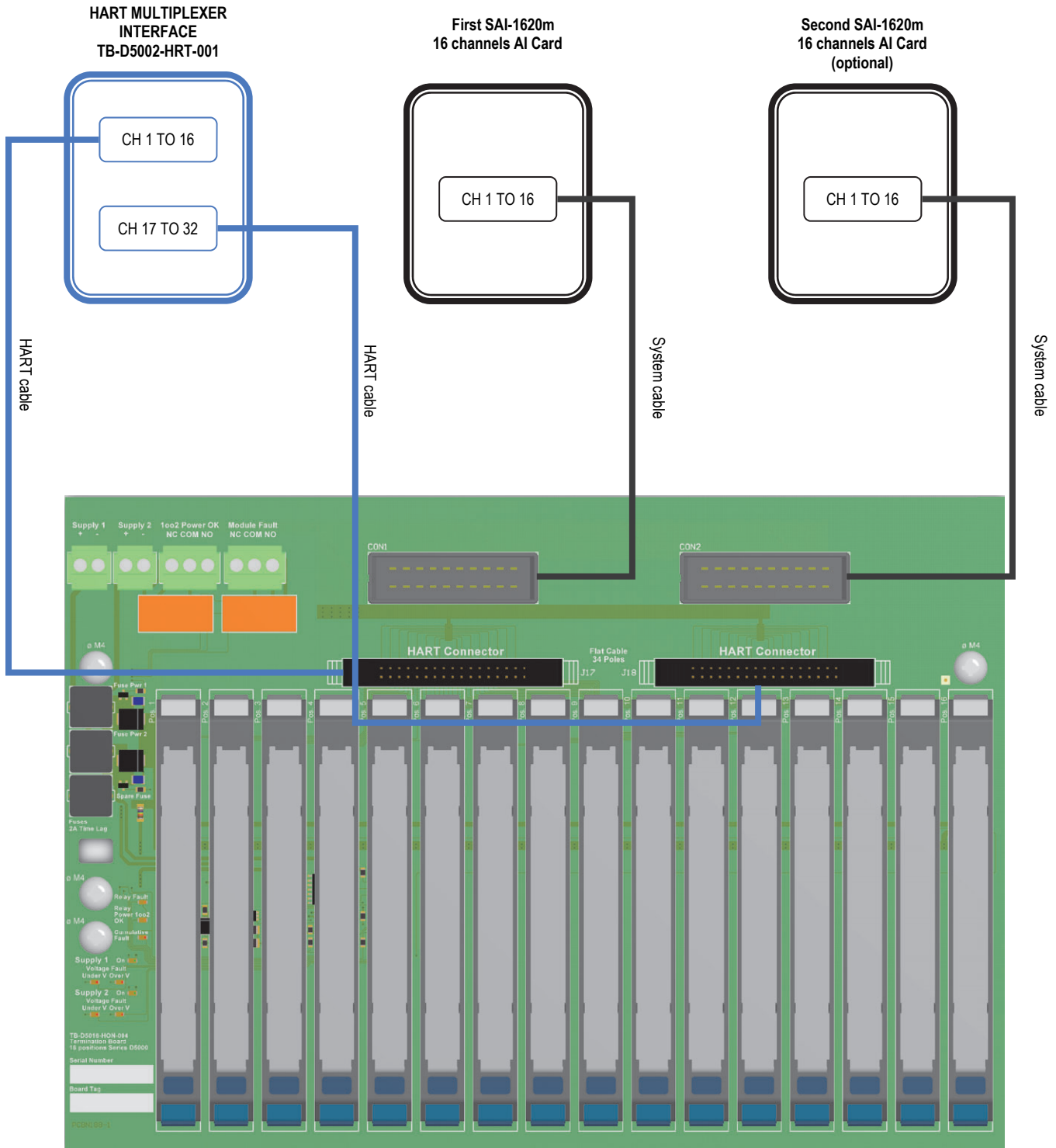
SAFE AREA / ORDINARY LOCATION



TB positions 1 to 16 for single channel modules




HAZARDOUS AREA / HAZARDOUS LOCATION

Termination Board Connections (Double channel modules):



TB positions 1 to 16 for single channel modules

Connections table to SAI-1620m (16 AI) Interface Card:

FIELD DEVICE	MODULE TYPE	MODULE FUNCTION	MODULE POSITION	MODULE CHANNEL NUMBER ("B" is only for Double channel)	INTERFACE CARD CHANNEL NUMBER	INTERFACE CARD CONNECTOR CONN.(20 poles) PIN NUMBER	HART MULTIPLEXING CONN.(34 poles) PIN NUMBER (D5011-14 only)	NOTE
  	D5011S D5011D	Analog IN	1	1A	1 of card 1	(+) A9 (CON1)	(+) 1 (J17) (-) 2 (J17)	<p>Interface Card Connectors D-3100D, 20 poles CON1, CON2 : Pole B1 are not connected; GND available on A1, B10.</p> <p>HART Multiplexing Connector J17, J18 : Poles No. 33 and 34 are not connected.</p>
				1B	1 of card 2	(+) A9 (CON2)	(+) 1 (J18) (-) 2 (J18)	
			2	2A	2 of card 1	(+) B9 (CON1)	(+) 3 (J17) (-) 4 (J17)	
				2B	2 of card 2	(+) B9 (CON2)	(+) 3 (J18) (-) 4 (J18)	
			3	3A	3 of card 1	(+) A8 (CON1)	(+) 5 (J17) (-) 6 (J17)	
				3B	3 of card 2	(+) A8 (CON2)	(+) 5 (J18) (-) 6 (J18)	
			4	4A	4 of card 1	(+) B8 (CON1)	(+) 7 (J17) (-) 8 (J17)	
				4B	4 of card 2	(+) B8 (CON2)	(+) 7 (J18) (-) 8 (J18)	
			5	5A	5 of card 1	(+) A7 (CON1)	(+) 9 (J17) (-) 10 (J17)	
				5B	5 of card 2	(+) A7 (CON2)	(+) 9 (J18) (-) 10 (J18)	
			6	6A	6 of card 1	(+) B7 (CON1)	(+) 11 (J17) (-) 12 (J17)	
				6B	6 of card 2	(+) B7 (CON2)	(+) 11 (J18) (-) 12 (J18)	
			7	7A	7 of card 1	(+) A6 (CON1)	(+) 13 (J17) (-) 14 (J17)	
				7B	7 of card 2	(+) A6 (CON2)	(+) 13 (J18) (-) 14 (J18)	
			8	8A	8 of card 1	(+) B6 (CON1)	(+) 15 (J17) (-) 16 (J17)	
				8B	8 of card 2	(+) B6 (CON2)	(+) 15 (J18) (-) 16 (J18)	
	9		9A	9 of card 1	(+) A5 (CON1)	(+) 17 (J17) (-) 18 (J17)		
			9B	9 of card 2	(+) A5 (CON2)	(+) 17 (J18) (-) 18 (J18)		
	10		10A	10 of card 1	(+) B5 (CON1)	(+) 19 (J17) (-) 20 (J17)		
			10B	10 of card 2	(+) B5 (CON2)	(+) 19 (J18) (-) 20 (J18)		
	11		11A	11 of card 1	(+) A4 (CON1)	(+) 21 (J17) (-) 22 (J17)		
			11B	11 of card 2	(+) A4 (CON2)	(+) 21 (J18) (-) 22 (J18)		
	12		12A	12 of card 1	(+) B4 (CON1)	(+) 23 (J17) (-) 24 (J17)		
			12B	12 of card 2	(+) B4 (CON2)	(+) 23 (J18) (-) 24 (J18)		
	13		13A	13 of card 1	(+) A3 (CON1)	(+) 25 (J17) (-) 26 (J17)		
			13B	13 of card 2	(+) A3 (CON2)	(+) 25 (J18) (-) 26 (J18)		
	14		14A	14 of card 1	(+) B3 (CON1)	(+) 27 (J17) (-) 28 (J17)		
			14B	14 of card 2	(+) B3 (CON2)	(+) 27 (J18) (-) 28 (J18)		
	15		15A	15 of card 1	(+) A2 (CON1)	(+) 29 (J17) (-) 30 (J17)		
			15B	15 of card 2	(+) A2 (CON2)	(+) 29 (J18) (-) 30 (J18)		
	16		16A	16 of card 1	(+) B2 (CON1)	(+) 31 (J17) (-) 32 (J17)		
			16B	16 of card 2	(+) B2 (CON2)	(+) 31 (J18) (-) 32 (J18)		

Termination Board Supply:

