

Characteristics:

General description:

The Termination Board (TB) model PBCO-D8-010 is designed to connect the D1000 Series Intrinsically Safe isolation and protection modules, directly to the Foxboro FBM I/O cards type FBM201, FBM237, FBM204 and FBM205 without the standard Field Termination Assembly normally needed to interface the backplane. The TB consists of D1000 Series modules mounted on backplane which carry Safe Area signals and supply. The range of modules includes different types to handle the majority of applications.

The TB PBCO-D8-010 connector is pin to pin compatible with the standard system cable, thus avoiding the need of special cable or external wiring.

The TB connectors link with the Provox I/O cards by standard Provox cable (see connection tables for details).

The FBM201 is a 8 channels, 4-20 mA analog input board.

The FBM237 is a 8 channels, 4-20 mA analog output board.

The FBM204 is a 4 channels 4-20 mA analog input plus 4 channels 4-20 mA analog output board.

The FBM205 is a 4 channels 4-20 mA analog input plus 4 channels 4-20 mA analog output board.

The TB is provided with two connectors to interface two FBM I/O cards.

The Intrinsic Safety protection and signal isolation is made through the D1000 Series Associated Apparatus. The modules type accepted are:

Analog Input D1010D, D1014D, D1052D, D1072D to interface FBM201;

Analog Output D1020D to interface FBM237;

Analog Input D1010D, D1014D, D1052D, D1072D plus Analog Output D1020D to interface FBM204 or FBM205. The TB can accept 16 input channels AI or AO, and can only be used for 2 channels modules.

The connections to/from the Hazardous Areas are made at the module terminal blocks, thus avoiding the TB Intrinsic Safety certifications, resulting in a quick design and cost effective solution.

The 24 Vdc power supply for the TB is connected to a two dual plug-in terminal blocks, this resulting in a redundant power supply and daisy chain connection also when terminal block is not inserted in the corresponding mating connector.

The power supply is then bussed to the isolator modules by the TB.

Features:

- Two I/O card type FBM201 8 channels analog input board interface.
- Two I/O card type FBM237 8 channels analog output board interface.
- Two I/O card type FBM204 or FBM205 4 channels analog input plus 4 channels analog output interface.
- 8 positions Termination Board for up to 16 channels.
- Lower cables, installation and maintenance costs.
- One terminal block per input, no external terminal blocks required.
- Rugged carbon steel painted board support for easy installation.
- Shield Rail included.
- Power Supply Fault monitoring.
- Spare Fuse provided.
- Tagging provided on top side.

Ordering Information:

Model: PBCO-D8-010

Technical Data:

Supply:

24 Vdc nom (20 to 30 Vdc) reverse polarity protected, redundant terminal blocks, OR diodes to select higher supply source.

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

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

Fault detection:

Supply voltage fault detection: ≤ 18 Vdc.

Fault signalling: voltage free NE SPDT relay contact (de-energized in fault condition).

Contact material: AgCdO.

Contact rating: 2 A 250 Vac 500 VA, 2 A 250 Vdc 80 W (resistive load).

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

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

FBM I/O card interface:

Connection: two SUB D 25 poles male connector (requires female mating connector).

Environmental conditions:

Operating: temperature limits -20 to + 60 °C, relative humidity max 90 % non condensing, up to 35 °C.

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

Mounting:

surface mounting by four assembly slot for M6 screw.

Shield rail connection: five holes M5x10 to connect cable screen.

Earth connection: M4x10 screw to connect TB to earth rail.

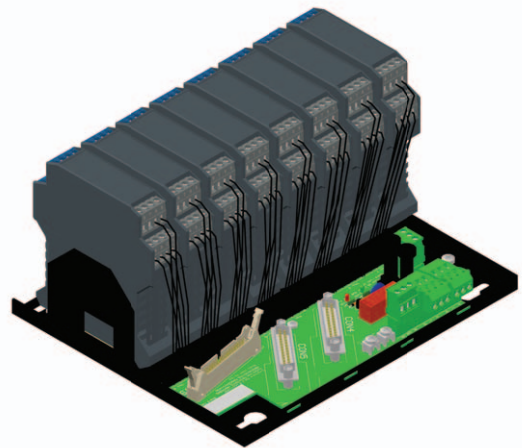
LED indication: green for power on, red for fault detection.

Weight: about 960 g (excluding modules).

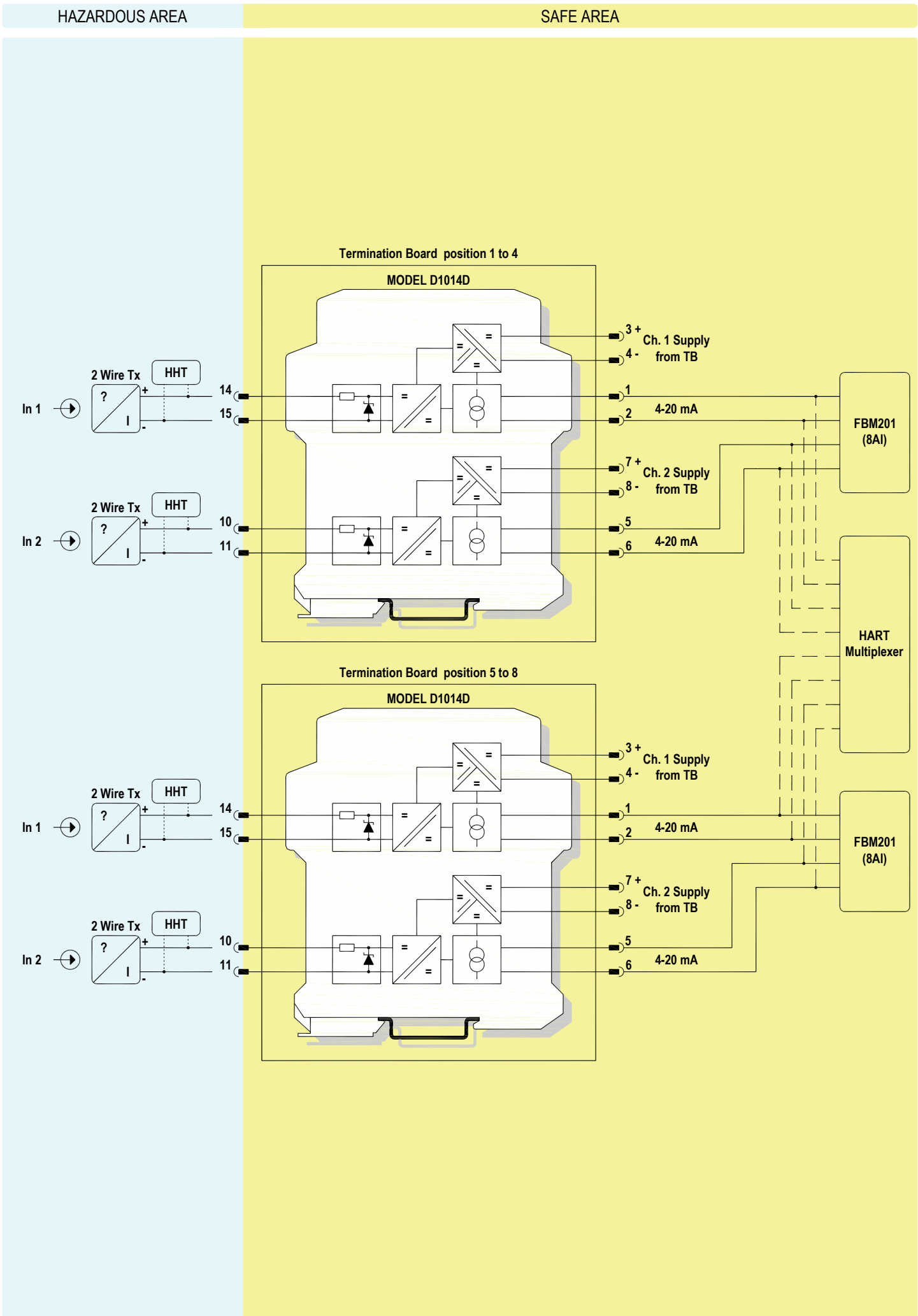
Location: Safe Area/Non Hazardous Locations.

Dimensions: Width 224 mm, Depth 190 mm, Height 122 mm.

Image:



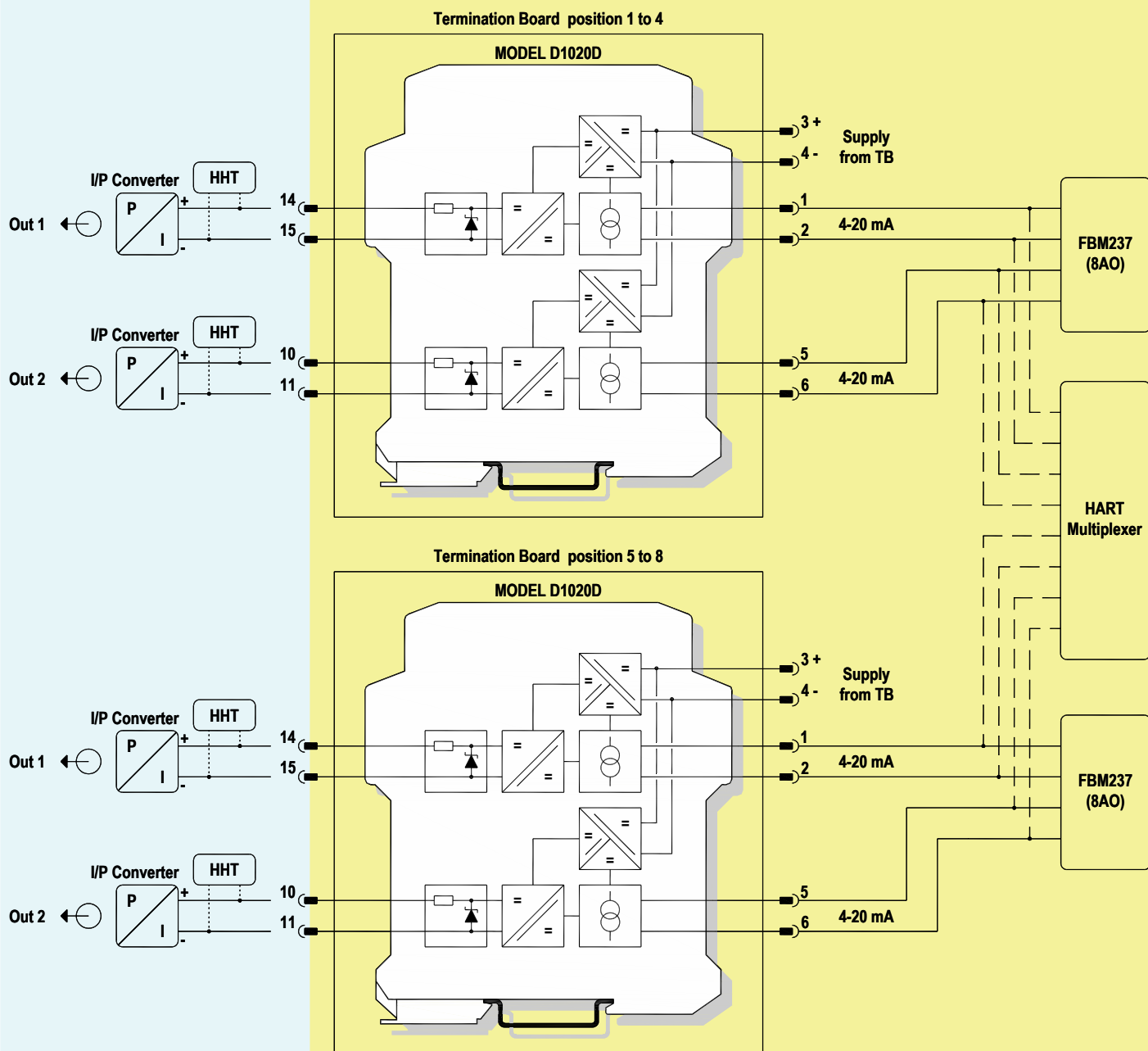
Loop Diagram for FBM201 (8AI) Interface Card:



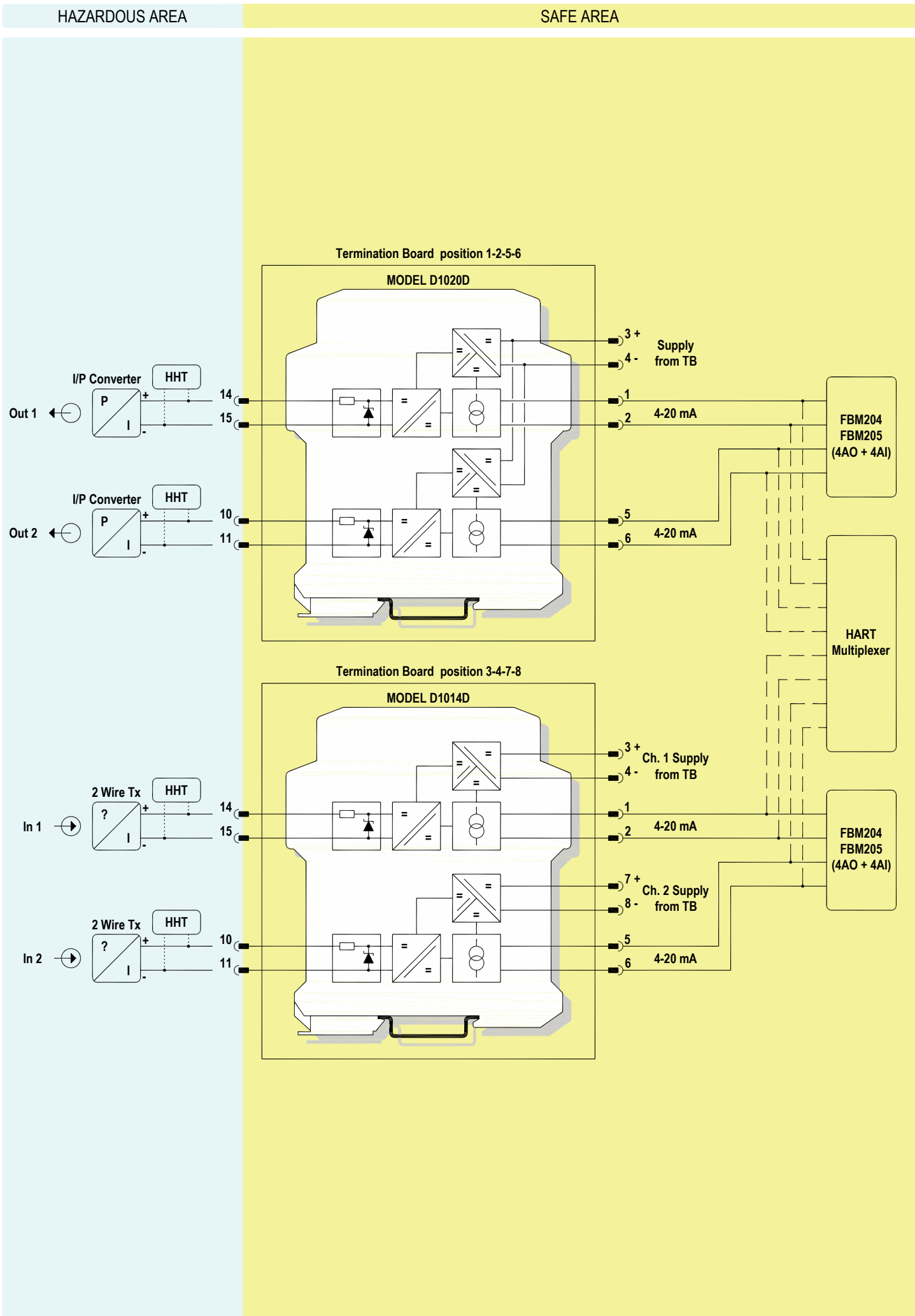
Loop Diagram for FBM237 (8AO) Interface Card:

HAZARDOUS AREA

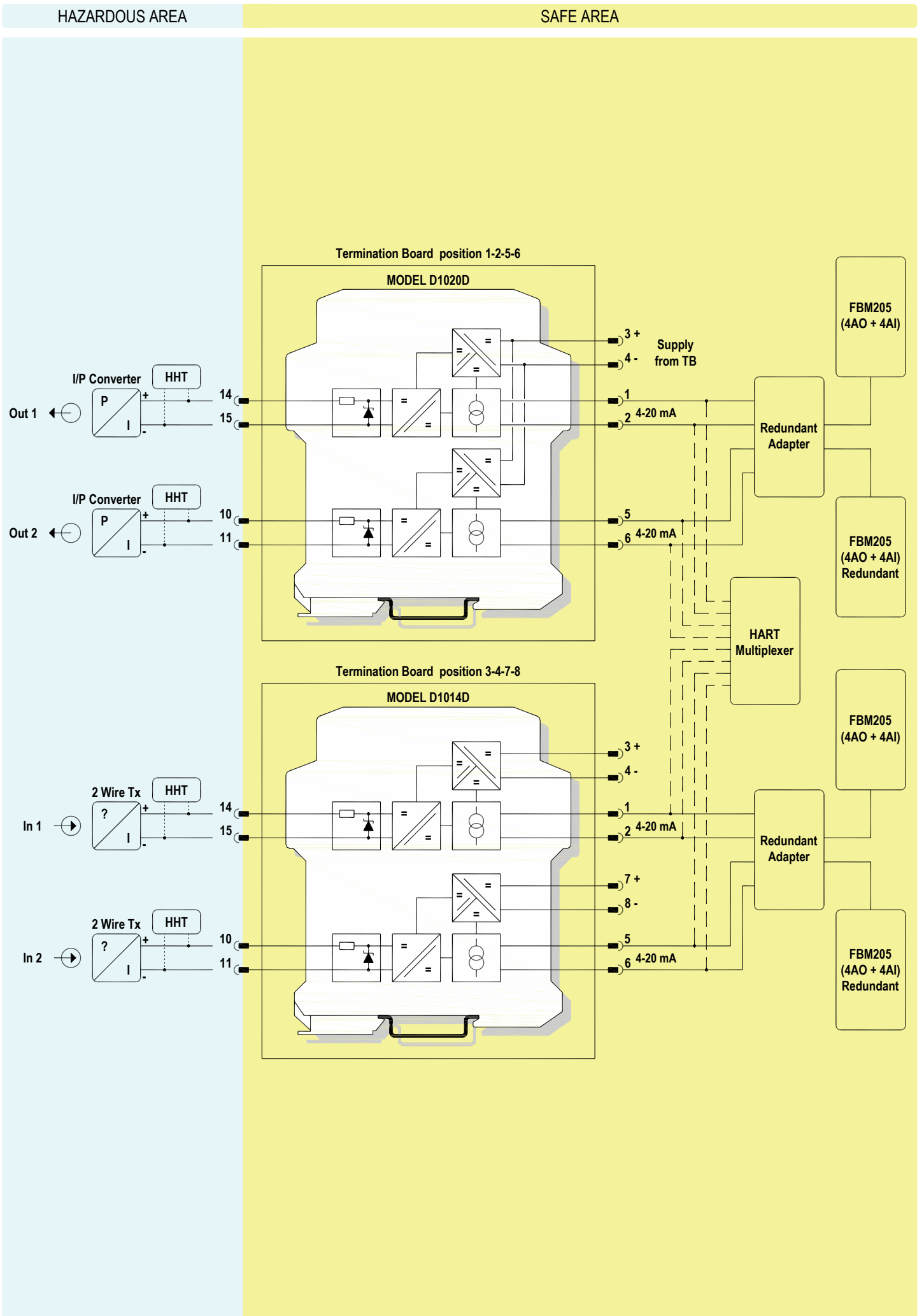
SAFE AREA



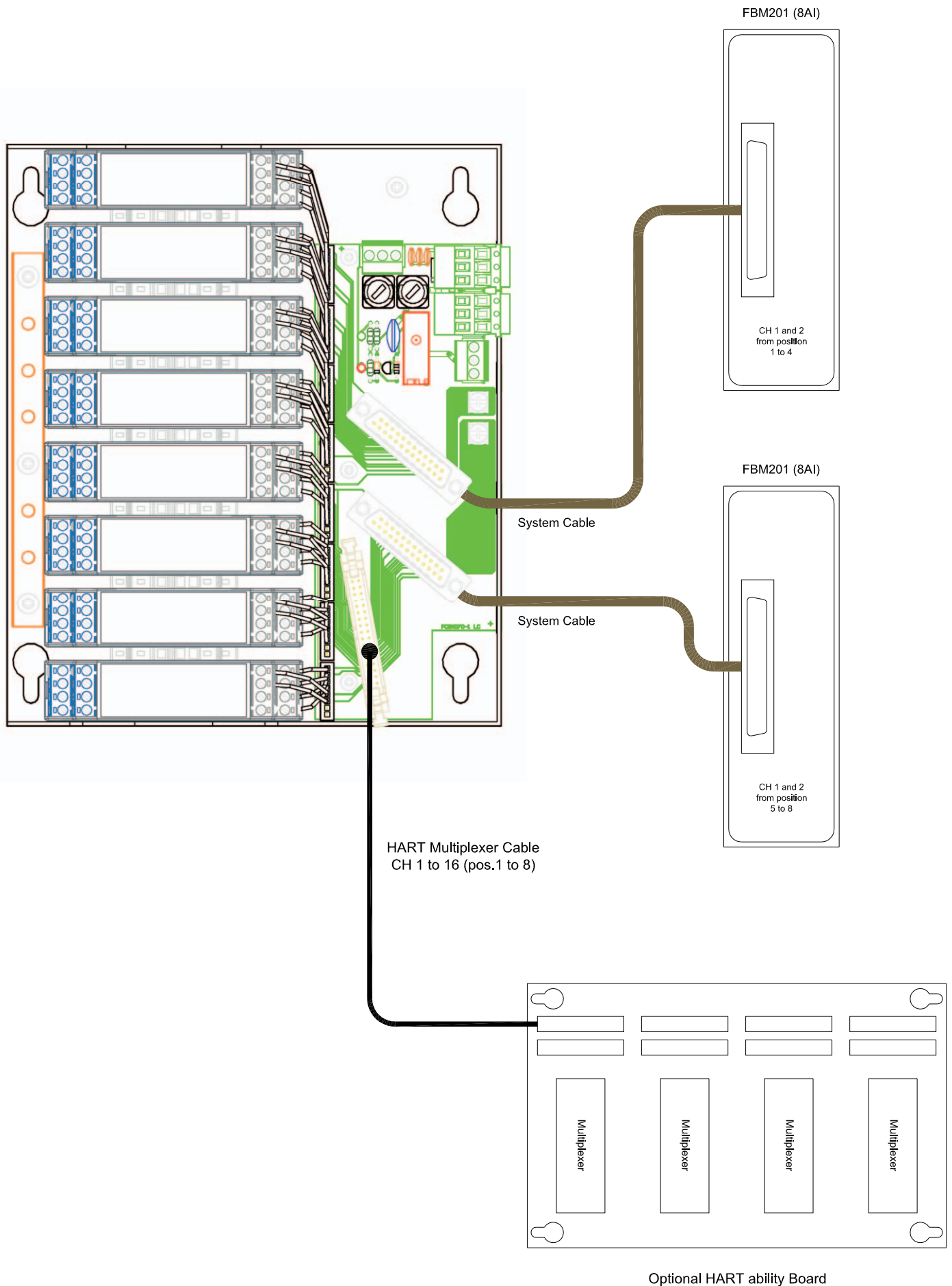
Loop Diagram for FBM204 (4AO+4AI) or FBM205 (4AO+4AI) Interface Card:



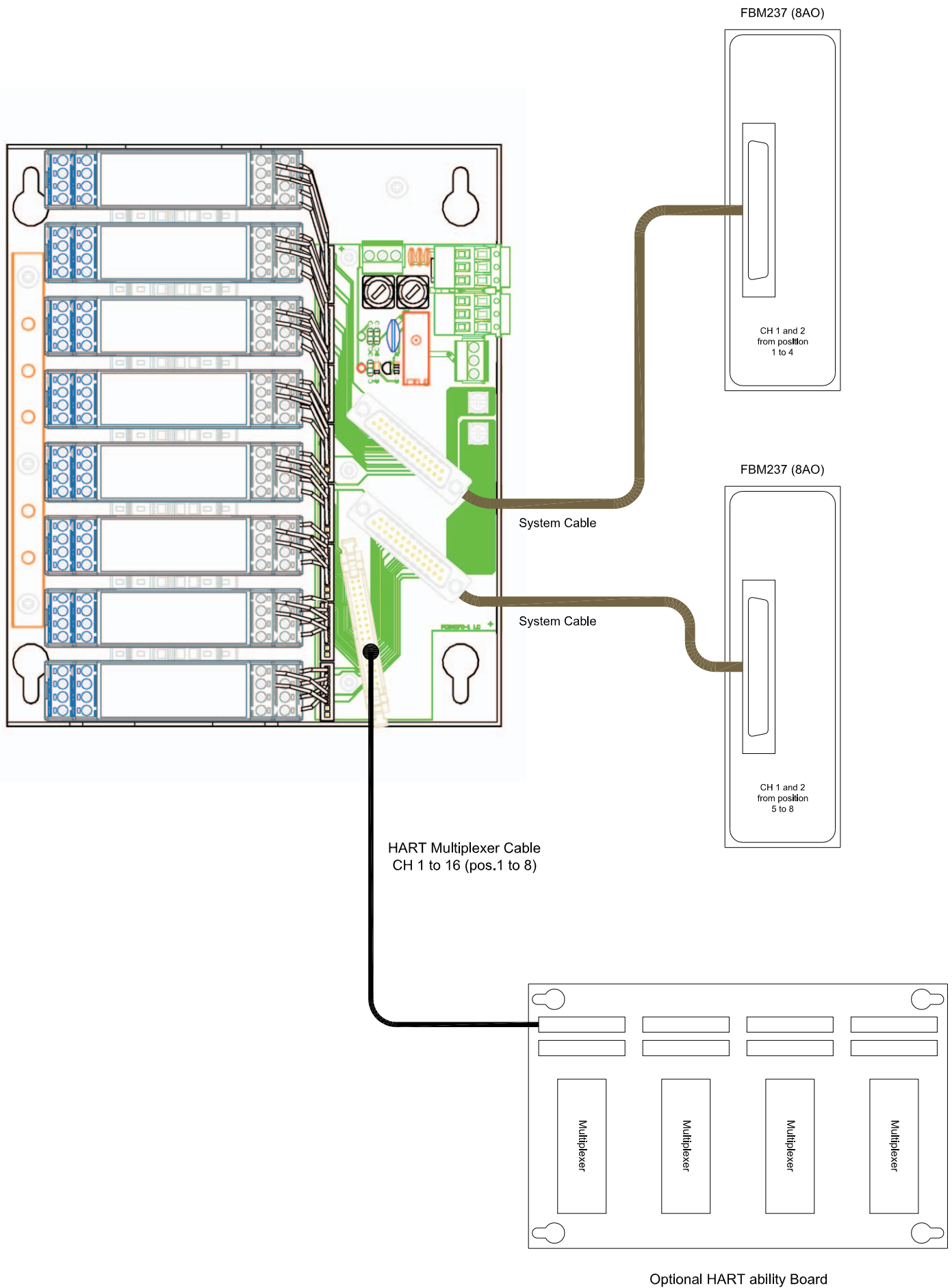
Loop Diagram for FBM205 (4AO+4AI) Interface Card:



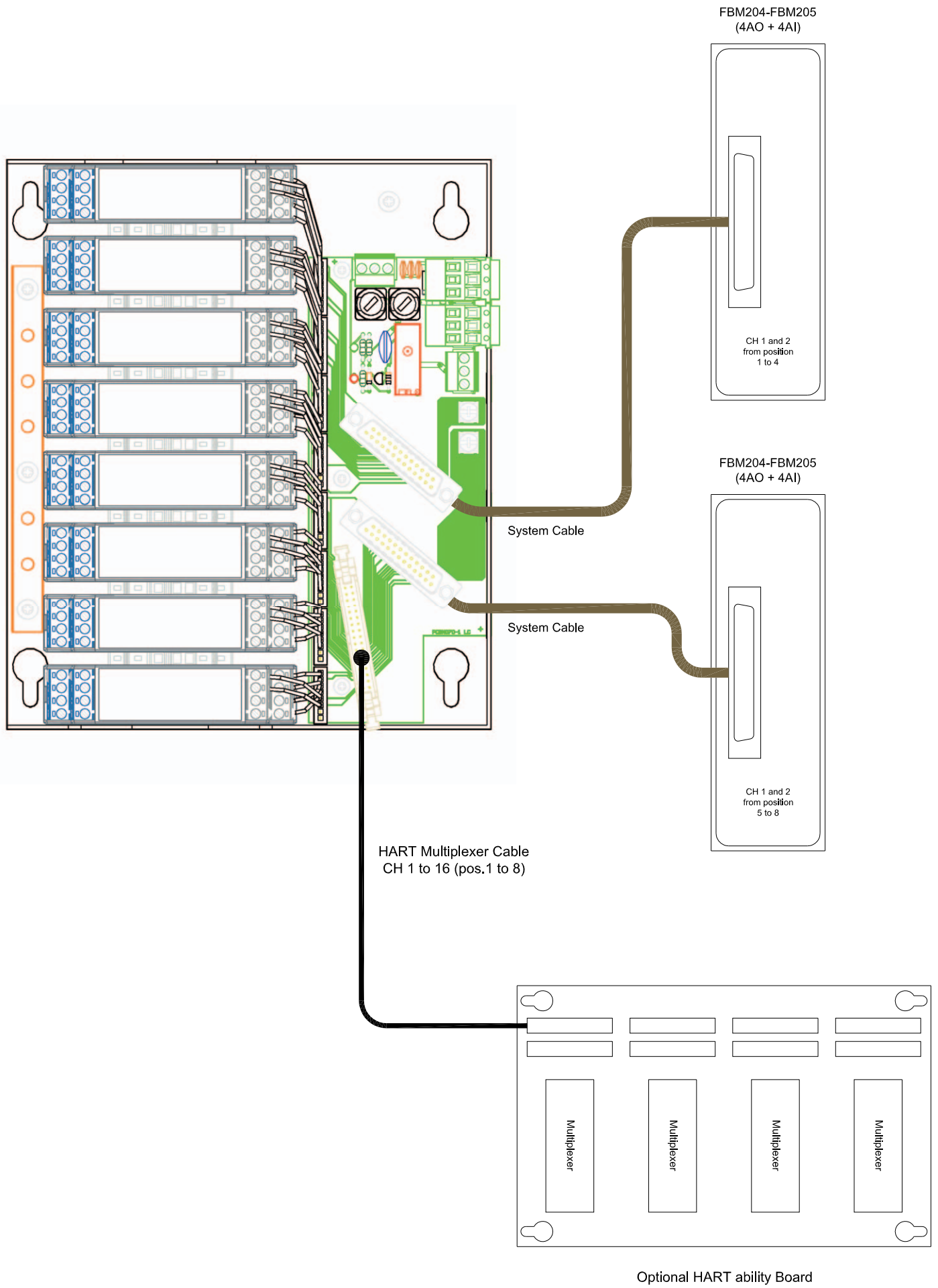
Termination Board Connection Diagram for FBM201 (8AI) Interface Card:



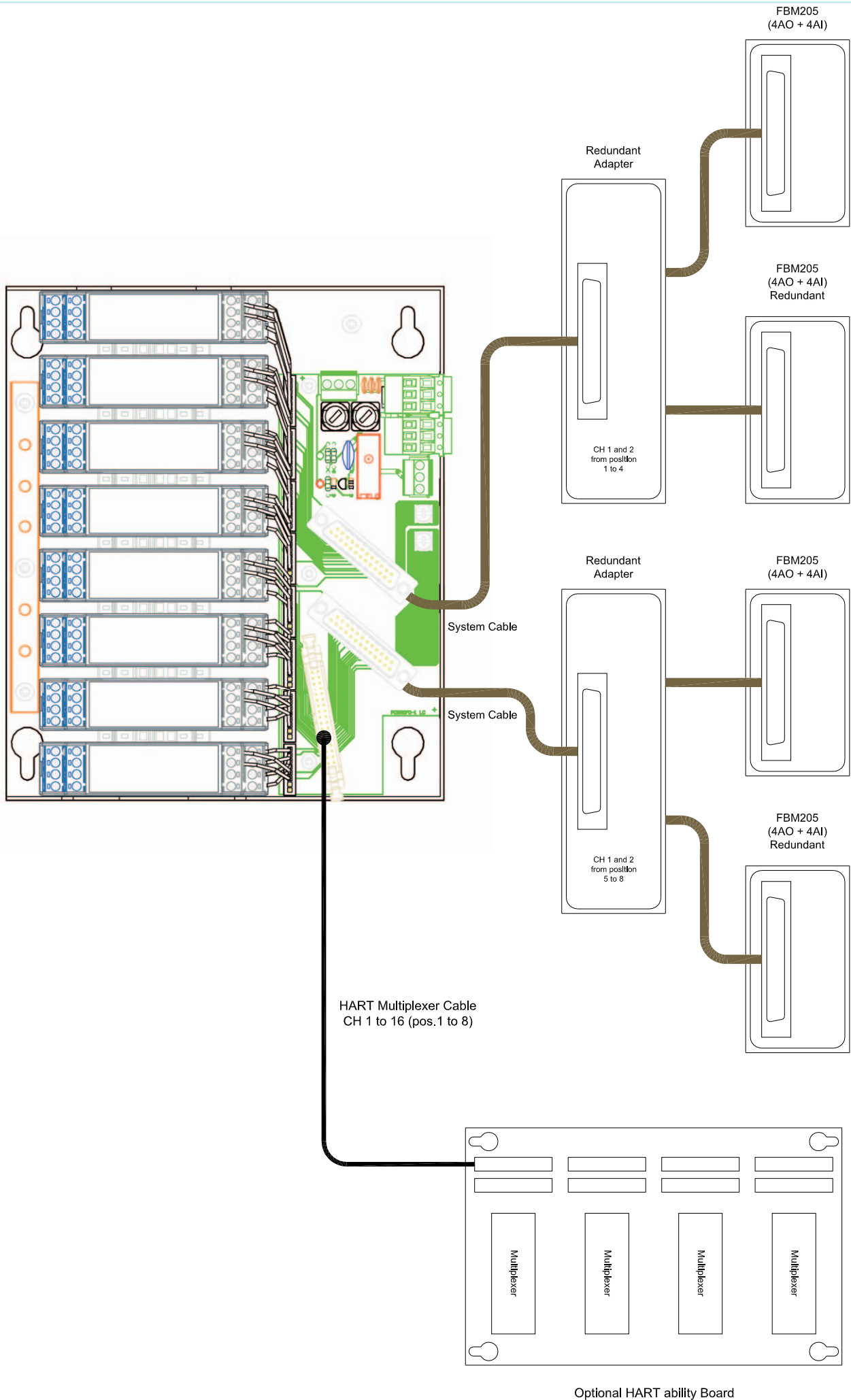
Termination Board Connection Diagram for FBM237 (8AO) Interface Card:



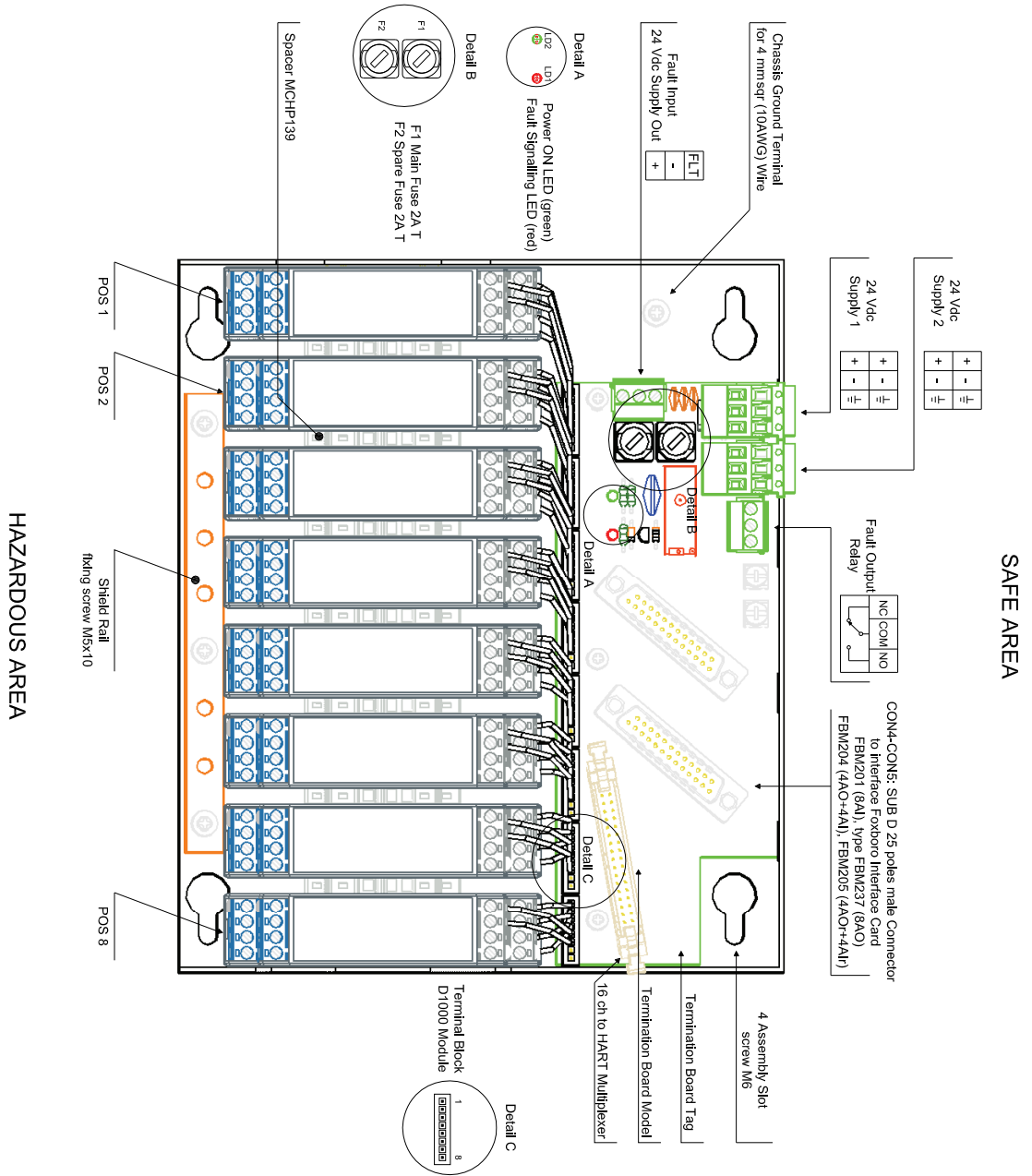
Termination Board Connection Diagram for FBM204 (4AO+4AI) or FBM205 (4AO+4AI) Interface Card:



Termination Board Connection Diagram for FBM205 (4AO+4AI) Interface Card:

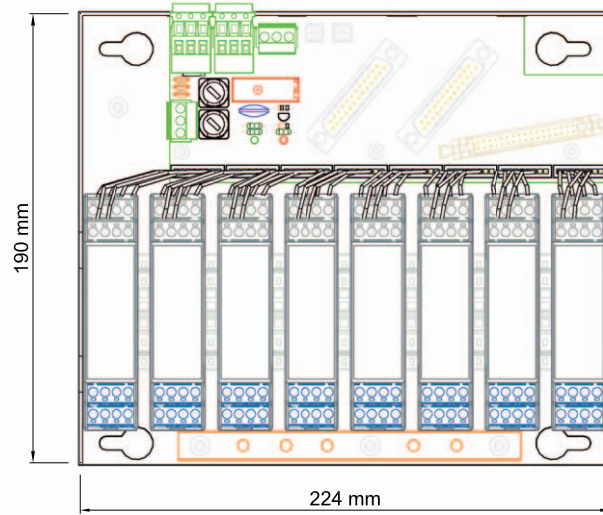


Termination Board Description:

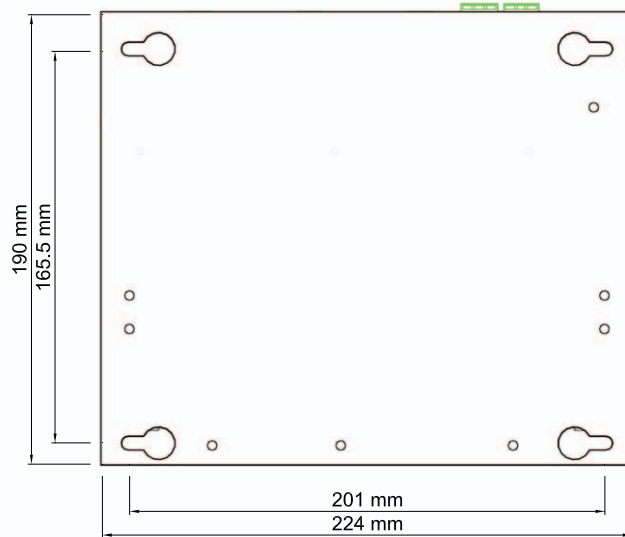


Dimensions:

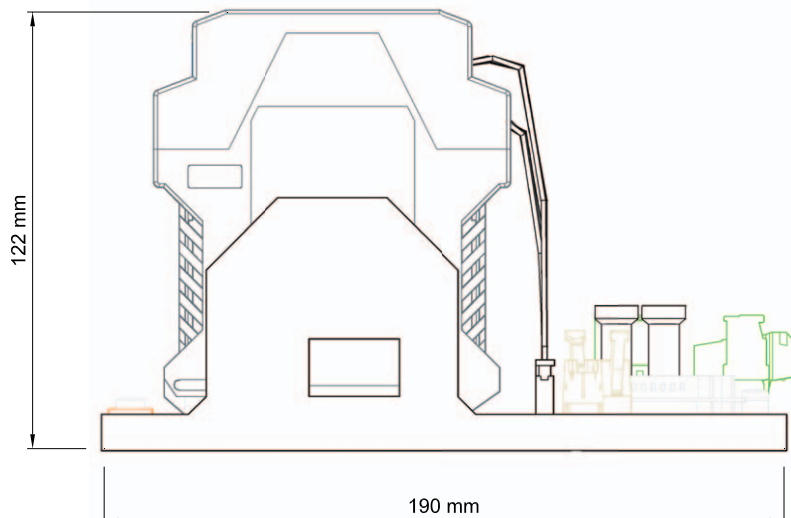
Top-view






Bottom-view



Side-view




Connections table to FBM201 (8AI) Interface Card:

FIELD DEVICE	MODULE TYPE	MODULE TERMINAL BLOCK	TERMINATION BOARD CONNECTOR PIN NUMBER	MODULE FUNCTION	MODULE POSITION	INTERFACE CARD CHANNEL NUMBER	INTERFACE CARD CONNECTOR PIN NUMBER	INTERFACE CARD REDUNDANT CONNECTOR PIN NAME	NOTE						
  	D1010D	1	1	4-20 mA OUT	1	1	12 (CON4)								
		2	2				13 (CON4)								
		5	5				23 (CON4)								
		6	6				24 (CON4)								
		1	1				9 (CON4)								
		2	2				10 (CON4)								
	D1014D	5	5	4-20 mA OUT	2	3	20 (CON4)								
		6	6				21 (CON4)								
		1	1				4-20 mA OUT			3	5	6 (CON4)			
		2	2									7 (CON4)			
		5	5									17 (CON4)			
		6	6									18 (CON4)			
	1	1	4-20 mA OUT	4	7	3 (CON4)									
	2	2				4 (CON4)									
	5	5				14 (CON4)									
	6	6				15 (CON4)									
	D1052D	1				1	4-20 mA OUT			5	1	12 (CON5)			
		2				2						13 (CON5)			
		5	5	23 (CON5)											
		6	6	24 (CON5)											
		D1072D	1	1	4-20 mA OUT	6		3	9 (CON5)						
			2	2					10 (CON5)						
	5		5	20 (CON5)											
	6		6	21 (CON5)											
1	1		4-20 mA OUT	7			5		6 (CON5)						
2	2								7 (CON5)						
5	5	17 (CON5)													
6	6	18 (CON5)													
1	1	4-20 mA OUT			8	7		3 (CON5)							
2	2							4 (CON5)							
5	5		14 (CON5)												
6	6		15 (CON5)												





- Interface Card Connector CON4, CON5: SUB D 25 poles male
- Shield terminal block provided on pin number 1
- Hart ability when used with D1010D or D1014D modules

Connections table to FBM237 (8AO) Interface Card:

FIELD DEVICE	MODULE TYPE	MODULE TERMINAL BLOCK	TERMINATION BOARD CONNECTOR PIN NUMBER	MODULE FUNCTION	MODULE POSITION	INTERFACE CARD CHANNEL NUMBER	INTERFACE CARD CONNECTOR PIN NUMBER	INTERFACE CARD REDUNDANT CONNECTOR PIN NAME	NOTE
	D1020D	1	1	4-20 mA IN	1	1	12 (CON4)		
		2	2				13 (CON4)		
		5	5				23 (CON4)		
		6	6				24 (CON4)		
		1	1	4-20 mA IN	2	3	9 (CON4)		
		2	2				10 (CON4)		
		5	5				20 (CON4)		
		6	6				21 (CON4)		
		1	1	4-20 mA IN	3	5	6 (CON4)		
		2	2				7 (CON4)		
		5	5				17 (CON4)		
		6	6				18 (CON4)		
		1	1	4-20 mA IN	4	7	3 (CON4)		
		2	2				4 (CON4)		
		5	5				14 (CON4)		
		6	6				15 (CON4)		
		1	1	4-20 mA IN	5	1	12 (CON5)		
		2	2				13 (CON5)		
		5	5				23 (CON5)		
		6	6				24 (CON5)		
		1	1	4-20 mA IN	6	3	9 (CON5)		
		2	2				10 (CON5)		
		5	5				20 (CON5)		
		6	6				21 (CON5)		
		1	1	4-20 mA IN	7	5	6 (CON5)		
		2	2				7 (CON5)		
		5	5				17 (CON5)		
		6	6				18 (CON5)		
		1	1	4-20 mA IN	8	7	3 (CON5)		
		2	2				4 (CON5)		
		5	5				14 (CON5)		
		6	6				15 (CON5)		

- Interface Card Connector CON4, CON5: SUB D 25 poles male
- Shield terminal block provided on pin number 1
- Hart ability when used with D1020D modules

Connections table to FBM204 (4AO+4AI) or FBM205 (4AO+4AI) Interface Card:

FIELD DEVICE	MODULE TYPE	MODULE TERMINAL BLOCK	TERMINATION BOARD CONNECTOR PIN NUMBER	MODULE FUNCTION	MODULE POSITION	INTERFACE CARD CHANNEL NUMBER	INTERFACE CARD CONNECTOR PIN NUMBER	INTERFACE CARD REDUNDANT CONNECTOR PIN NAME	NOTE				
   	D1010D	1	1	4-20 mA IN	1	1	12 (CON4)						
		2	2				13 (CON4)						
		5	5				23 (CON4)						
		6	6				24 (CON4)						
		1	1				9 (CON4)						
		2	2				10 (CON4)						
	D1014D	5	5	4-20 mA IN	2	3	20 (CON4)						
		6	6				21 (CON4)						
		1	1				4-20 mA OUT	3	5	6 (CON4)			
		2	2							7 (CON4)			
		5	5							4-20 mA IN	5	6	17 (CON4)
		6	6										18 (CON4)
	1	1	4-20 mA OUT	4	7	3 (CON4)							
	2	2				4 (CON4)							
	5	5				14 (CON4)							
	6	6				15 (CON4)							
	1	1				4-20 mA IN	5	1	12 (CON5)				
	2	2							13 (CON5)				
	5	5	23 (CON5)										
	6	6	24 (CON5)										
	1	1	4-20 mA IN	6	3				9 (CON5)				
	2	2							10 (CON5)				
	5	5				20 (CON5)							
	6	6				21 (CON5)							
1	1	4-20 mA OUT				7	5	6 (CON5)					
2	2							7 (CON5)					
5	5		17 (CON5)										
6	6		18 (CON5)										
1	1		4-20 mA OUT	8	7			3 (CON5)					
2	2							4 (CON5)					
5	5	14 (CON5)											
6	6	15 (CON5)											

- Interface Card Connector CON4, CON5: SUB D 25 poles male
- Shield terminal block provided on pin number 1
- Hart ability when used with D1010D, D1014D or D1020D modules