



## 1336 PLUS II Analog Interface Option Board Installation

This publication will guide you through installation (including mounting and setup) of the 1336 PLUS II Analog Interface Option Board(s).

### Option Board Installation



**ATTENTION:** This drive contains ESD (Electrostatic Discharge) sensitive parts and assemblies. Static control precautions are required when installing, testing, servicing or repairing this assembly. Component damage may result if ESD control procedures are not followed. If you are not familiar with static control procedures, reference A-B publication 8000-4.5.2, “Guarding Against Electrostatic Damage” or any other applicable ESD protection handbook.



**ATTENTION:** To avoid a shock hazard, assure that all power to the drive has been removed before proceeding. In addition, verify that the DC bus has discharged by measuring across the “+DC” and “-DC” terminals of TB1 with a voltmeter. The voltage should be 0.0VDC.

1. Remove and lock-out all incoming power to the drive. Remove/open the drive cover.
2. Using the following table, verify that you have the correct option board and note the slot designation for installation.

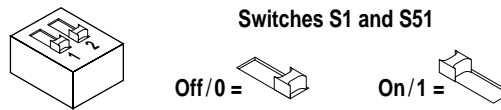
Catalog Number	Description	Must be Installed in . . .
1336F-LA2	Two Isolated Configurable Inputs	Slot A
1336F-LA6	One Isolated Bi-polar Input ( $\pm 10V$ or $\pm 20mA$ ) and One Isolated Thermistor Input	
1336F-LA7	One Isolated Bi-polar Input ( $\pm 10V$ or $\pm 20mA$ ) and One Isolated Configurable Input	
1336F-LA1	Single-ended, Non-isolated Configurable (including Pot) Input & 2 Single-ended, Non-isolated Outputs (1 - Configurable, 1 - 20mA)	Slot B
1336F-LA3	Two Isolated Configurable Outputs	
1336F-LA4	One Isolated Configurable Input & Output	
1336F-LA5	Isolated Pulse Input, Non-isolated Pulse Output & Single-ended, Non-isolated Configurable Output	

### 3. Set the DIP switches for desired configuration.

Each board will have one or two DIP switches depending on the option selected. The first function (input or output) is configured with the S1 DIP switch – the second function is configured with S51. Using the table below, set the switch(es) for correct operation.

**Important:** Due to different switch manufacturers, the individual switches will be designated “A or 1” and “B or 2.” In addition, switch positions will be indicated as “Off or 0” and “On or 1.”

#### S1 and S51 Configuration Settings



Option	DIP Switch S1				DIP Switch S51			
	Function	Mode	Switch Setting		Function	Mode	Switch Setting	
			A/1	B/2			A/1	B/2
LA1	Output 0	10V 20mA	Off/"0" On/"1"	Off/"0" On/"1"	<i>Configure Standard Analog Input 2 with J11. Refer to User Manual for further information.</i>			
LA2	Input 0	10V	Off/"0"	On/"1"	Input 1	10V	Off/"0"	On/"1"
		20mA	On/"1"	Off/"0"		20mA	On/"1"	Off/"0"
LA3	Output 0	10V	Off/"0"	On/"1"	Output 1	10V	Off/"0"	Off/"0"
		20mA	On/"1"	On/"1"		20mA	On/"1"	On/"1"
LA4	Input 2	10V	Off/"0"	On/"1"	Output 1	10V	Off/"0"	Off/"0"
		20mA	On/"1"	Off/"0"		20mA	On/"1"	On/"1"
LA5	Output 0	10V	Off/"0"	On/"1"				
		20mA	On/"1"	On/"1"				
LA6	Input 0	10V	Off/"0"	On/"1"				
		20mA	On/"1"	Off/"0"				
LA7	Input 0	10V	Off/"0"	On/"1"	Input 1	10V	Off/"0"	On/"1"
		20mA	On/"1"	Off/"0"		20mA	On/"1"	Off/"0"

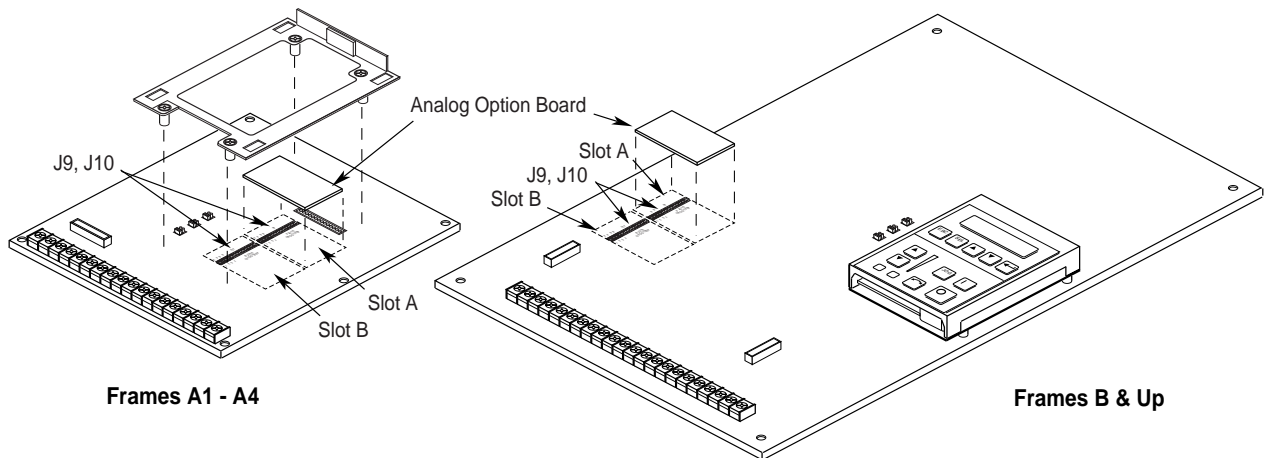
### 4. Install board using appropriate instructions for your drive.

#### A1 - A4 Frame Drives

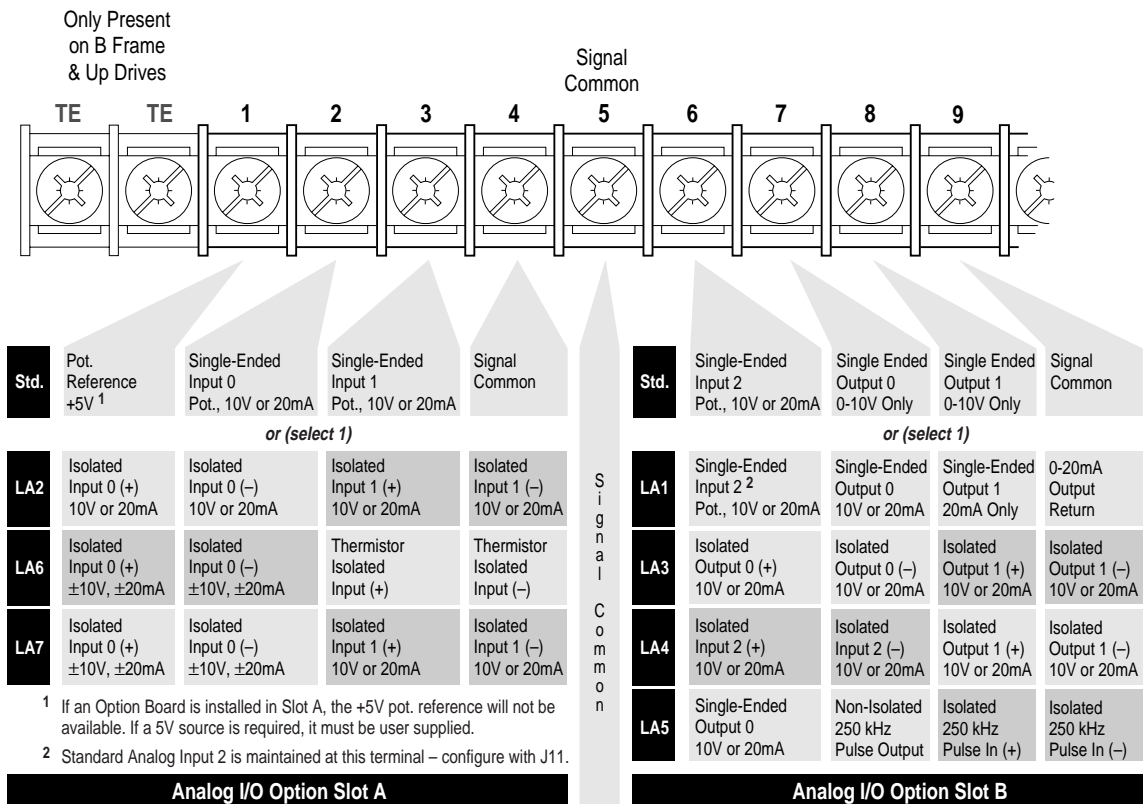
- A. Remove the HIM (or other option). Remove the four screws securing the HIM mounting cradle.
- B. Using the following figure, locate the appropriate slot for installation. Remove any jumpers (from J9 or J10) present for that slot.
- C. Carefully align the option board (connector side down) mounting holes with the standoffs. Press the board into position until the mounting posts lock onto the board.
- D. Replace the mounting cradle and any devices previously removed. Replace drive cover.
- E. Apply power and verify board presence by checking [Slot A Option] or [Slot B Option] in the Analog I/O Group. The board type should be indicated in the appropriate parameter.

### B Frame & Up Drives

- A. Locate the appropriate slot for installation. Remove any jumpers (from J9 or J10) present for that slot.
- B. Carefully align the option board (connector side down) mounting holes with the standoffs. Press the board into position until the mounting posts lock onto the board.
- C. Apply power and verify board presence by checking [Slot A Option] or [Slot B Option] in the Analog I/O Group. The board type should be indicated in the appropriate parameter.



The terminal designations of TB2 change based on the option board(s) installed – refer to the diagram below.



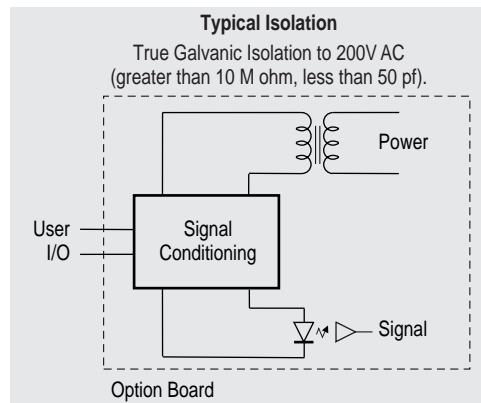
## I/O Specifications

Specifications for the various inputs and outputs are provided below.

I/O Type	Configuration	Specification	Ref.
Standard	0-10V Input	100k ohm input impedance.	TB2-4 <sup>1</sup>
	0-10V Output	Can drive a 10k ohm load (60 mA short circuit current limit).	TB2-9 <sup>1</sup>
	0-20 mA Input	200 ohm input impedance.	TB2-4 <sup>1</sup>
	10k Ohm Pot. Input	760k ohm input impedance. Pot. source = 5V through 2.67k ohms to TB2-1.	TB2-4 <sup>1</sup>
Option Board <sup>2</sup>	0-10V Input	100k ohm input impedance.	TB2-5
	0-10V Output	Can drive 3.3k ohms (3 - parallel 10k ohm loads).	TB2-5
	0-20 mA Input	100 ohm input impedance.	TB2-5
	0-20 mA Output	Can drive 400 ohms (3 - series 0-20 mA inputs).	TB2-5
	Pulse Input	250 ohms in series with an opto LED. Pulse high is greater than 8 mA or 3.6V, while pulse low is less than 0.8V or 0.2 mA. Absolute maximum continuous input level is 12V or 50 mA.	TB2-9
	Pulse Output	Provides a current limited 4.5V square wave. This output can drive one PLUS or three PLUS II pulse inputs.	TB2-5
	Thermistor Input	5V across 3.3k ohms in series with the thermistor. This arrangement limits the measuring voltage to less than 2.5V (no self-heating).	TB2-4

<sup>1</sup> Use TB2-5 for shield connection.

<sup>2</sup> Refer to Typical Isolation diagram below.



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