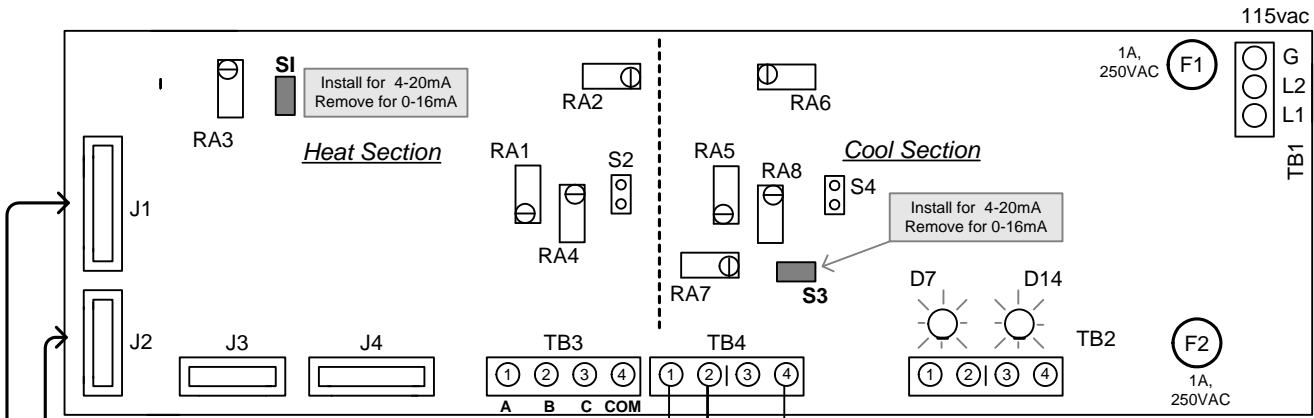


A2336 Dual Loop Fast Analog Output PCB (& Dual Sync)



TB2 Pin: (see note 1)

- 1 - Cool 4-20mA
- 2 - Cool Gnd.
- 3 - Heat 4-20mA
- 4 - Heat Gnd.

NOTE 1:

Cool output TB2 1 & 2 is operational ONLY when the Model 620A/600A, Loop 1 is configured for DUAL action. All other Loop 1 output configurations provide an output on TB2 3 & 4 (Heat). (Reverse, Direct, 12mA null, Setpoint Retransmit and Process Retransmit)

D7 - Cool LED & D14 - Heat LED:

Changes in intensity with increase of output. If 4-20mA is selected (S1 & S2) LED will dimly glow with 0% output.

OUTPUT TEST:

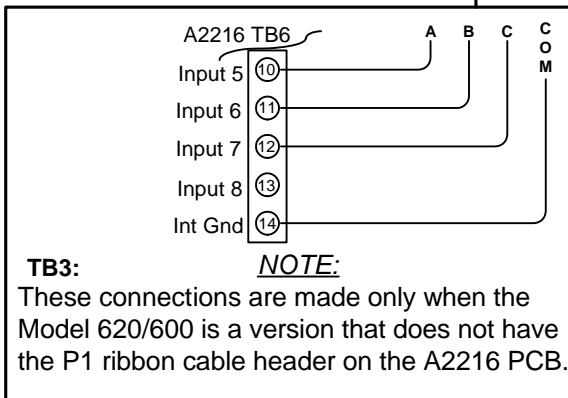
Remove connections from TB2 - 1 & 2 and 3 & 4. Either jumper or place current meter across 1 & 2 and 3 & 4.

Disconnect ribbon cable from J1.

The outputs will go to 100% (16mA or 20mA)
The associated LED, D7 or D14 will turn on.

If the output device does not operate and the LED does not turn on when reconnected the output circuit is open.

If the output tests correctly and the output device does not operate properly check the Loop configuration.



TB3:

These connections are made only when the Model 620/600 is a version that does not have the P1 ribbon cable header on the A2216 PCB.

NOTE:

J3 & J4: Connect to second Model 620A/600A for Sync operation.

J2: Connect to first Model 620A/600 when second unit is used in Sync operation.

J1: Fast Analog board input connection from Model 620A/600A, A2216 PCB connector P3.
Fast Analog Output from 620A/600A provided only by loop 1.

TB4 Pin:

- 1 - Cool Enable
- 2 - Heat Enable
- 3 - NC
- 4 - Gnd.

Relay contacts can be used to enable and disable heat and cool outputs.

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CONFIGURING THE MODEL 620A/600A FOR FAST ANALOG OPERATION:

Only Loop 1 of the Model 620A/600A provides output information to the A2336 PCB.

Loop 1 must be assigned to the appropriate controller Channel in use (CH1 or CH2).

Selecting 4-20mA or 0-16mA from the programmer configuration has no effect on the output to the A2336 board. This output selection is made on the A2336 board with jumpers S1 and S3.

From the Main Menu of the Model 620A/600A:

Select Item # 4	CONFIG_TUNE_CALIB	button <4>	
# 2	CONFIG.CNTRLS/TUNE	<2>	
# 1	CONFIGURE CHANNEL 1	<1>	
PAGE DOWN	OUTPUT CURRENT LOOP1	<PG. DN.>	
SELECT	ASSIGNED TO CHANNEL "X"	<SEL>	(Choose CH1 or CH2)
DN. ARROW	TWICE TO CONTROL ACTION	<V>, <V>	
SELECT	OUTPUT ACTION	<SEL>	(Choose desired output action)
RESET	TO STOP SCREEN	<RESET>	(Return to STOP screen)

ADJUSTMENT POTS

(Do NOT adjust pots - factory calibrated):

COOL: RA1 - Slope
 RA2 - Balance
 RA3 - 4mA adj.
 RA4 - Slew

HEAT: RA5 - Slope
 RA6 - Balance
 RA7 - 4mA adj.
 RA8 - Slew

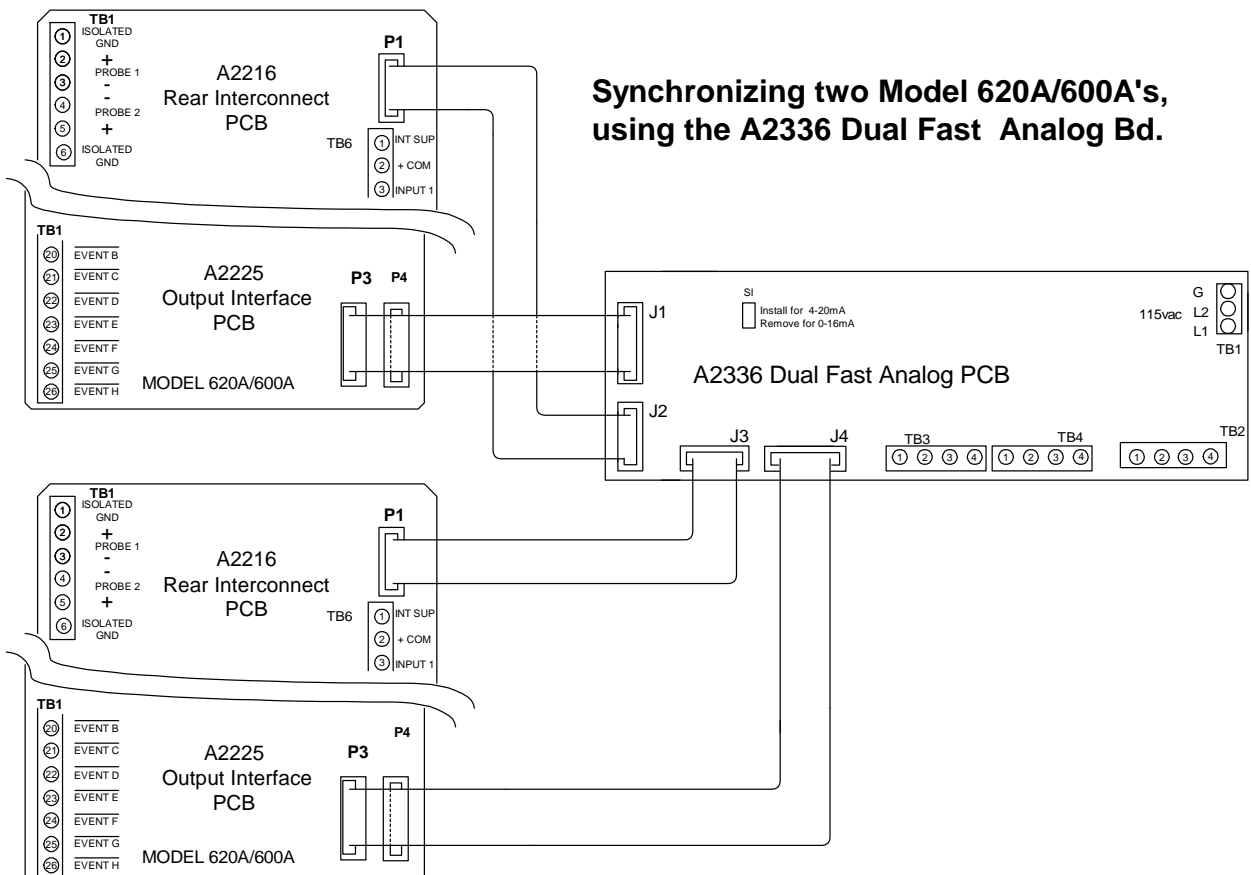
JUMPERS: S1, S2, S3 & S4:

S1 - Cool Output select. ON = 4-20ma, OFF = 0-16mA.
 (Only when Loop1 is selected for DUAL action)

S2 - Cool Slew. This function is not used.
 Jumper is not installed at factory.

S3 - Heat Output select. ON = 4-20ma, OFF = 0-16mA.
 (For all other selections - Reverse, Direct, 12mA null,
 Setpoint & Process retransmit)

S4 - Heat Slew. This function is not used.
 Jumper is not installed at factory.



All outputs are open collector logic type limited to 50 mA and 50 Vdc maximum. The Model 620(A) as shipped is configured to supply the Output Interface Board from the internal +9V source.

CONNECT SYNCHRONIZED PROGRAMMERS: (Models 620, 600, 620A & 600A)

Two Model 620(A) units can be synchronized using the external A2336 Dual Fast Analog PCB as shown below, or the A2336 M382 Two Unit Sync Board. The M382 does not have the fast analog circuitry installed.

To operate two units in sync the function must be enabled from the units programmer configuration. The sync function must be enabled on both units and connected as shown below. Both units will start together after the Run button has been pushed on both units. Stopping (STP) one unit will place the second in Hold (HLD). Pushing the Run button on the unit in STP will restart both units.

NOTE:

If a Model 620(A) is not connected to another unit as shown below the Sync function in the programmer configuration must be disabled or the unit will not run.
(See write-up on "Front Panel Lockout in Sync Mode")

You MUST remove power from the Model 620(A)'s and Sync board when connecting or disconnecting the sync cabling.

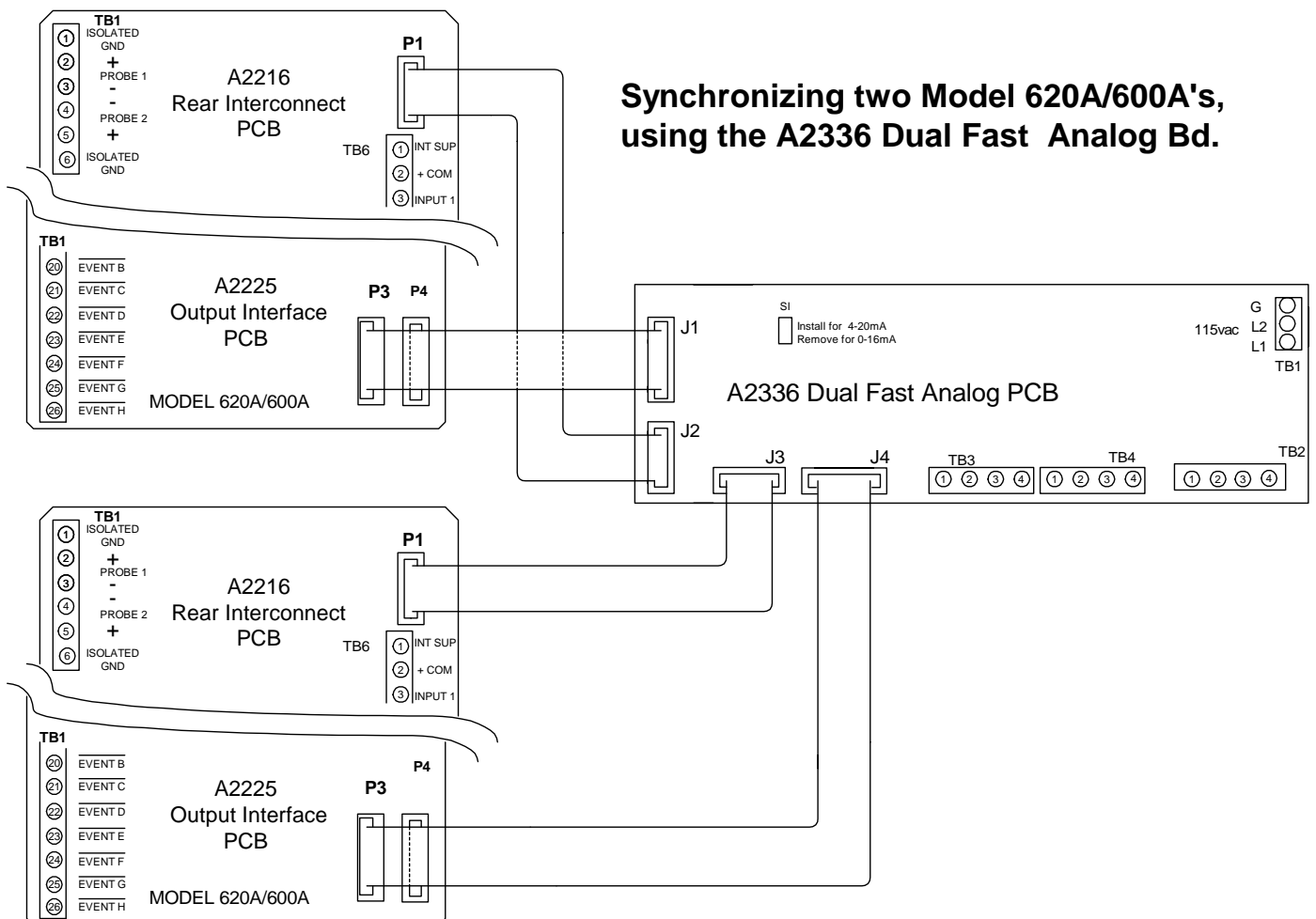
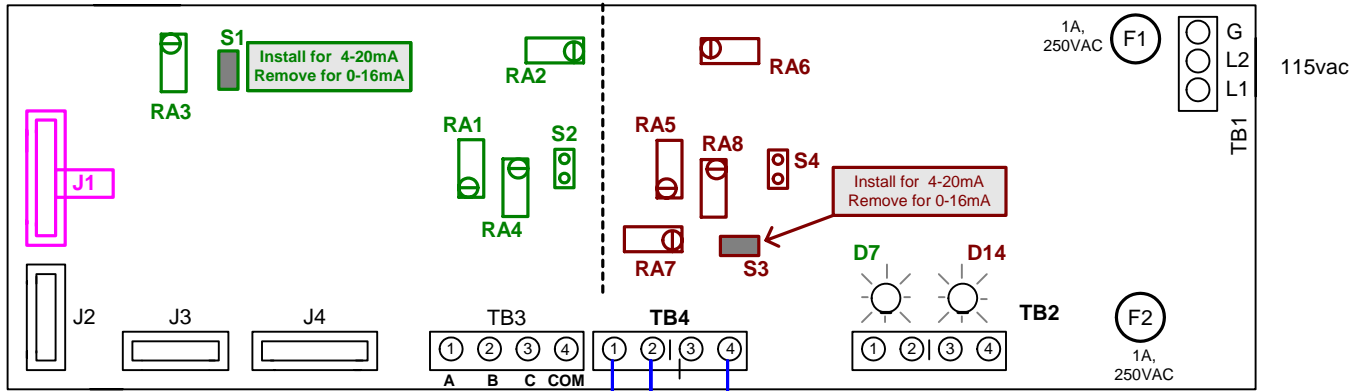


Figure 2-3 Connecting Synchronized Units

A2336 Dual Loop Fast Analog Calibration Procedure

This procedure is for dual control. CH1 Loop 1 must be configured for Dual Action.



TB4 Pin:

1 - Cool Enable, 2 - Heat Enable, 3 - NC, 4 - Gnd.

NOTE: TB4 Pins 1 & 2 MUST be shorted to pin 4 as shown to enable heat and cool outputs.

TB2 Pin: 1 - Cool 4-20mA 2 - Cool Gnd.
3 - Heat 4-20mA 4 - Heat Gnd.

NOTE 1: Cool output TB2 1 & 2 is operational ONLY when the Model 620A/600A, Loop 1 is configured for DUAL action.

D7 - Cool LED & D14 - Heat LED: If 4-20mA is selected (S1 & S2) LED will dimly glow with 0% output.

Switches (push/pull) S1 - S4

S1 - Cool Out - Dn 4-20mA, Up - 0-16mA (TB2: 1 & 2)

S2 - Cool Slew - Up ON, Dn OFF (leave up - open)

S3 - Heat Out - Dn 4-20mA, Up - 0-16mA (TB2: 3 & 4)

S4 - Heat Slew - Up ON, Dn OFF (leave up - open)

Adjustment Pots - RA1 - RA8

Cool - RA1 - Slope, RA2 - Balance, RA3 - 4mA adj, RA4 - Slew - adj and leave full CCW

Heat - RA5 - Slope, RA6 - Balance, RA7 - 4mA adj, RA8 - Slew - adj and leave full CCW

CALIBRATION: Note: The chamber Heat/Cool outputs must be disabled.

COOL CALIBRATION

- 1- Connect mA meter to TB2 - 1 (+), 2 (-) Cool.
- 2 - Enter a setpoint that produces 0% Cool output
Adjust pots, RA1, RA2, RA3 & RA4 fully CCW
- 3 - Remove Jumpers, or pull tab "up" on S1 and S2
- 4 - Adjust Bal Pot RA2 - Cool for a reading of 0.0001mA
- 5 - Install (push down) jumper on S1 - Cool
- 6 - Adjust 4mA pot RA3 - Cool for a reading of 4.000mA
- 7 - Enter a setpoint that produces 100% Cool output .
- 8 - Adjust Slope Pot RA1 - Cool for a reading of 20mA
- 9 - Repeat steps 6 - 9 until both readings are +/- 0.001mA

HEAT CALIBRATION

- 1- Connect mA meter to TB2 - 3 (+) 4 (-) Heat.
- 2 - Enter a setpoint that produces 0% HEAT output
Adjust pots, RA5, RA6, RA7 & RA8 fully CCW
- 3 - Remove Jumpers, or pull tab "up" on S3 and S4
- 4 - Adjust Bal Pot RA6 - Heat for a reading of 0.0001mA
- 5 - Install (push down) jumper on S3 - Heat.
- 6 - Adjust 4mA pot RA7 - Heat for a reading of 4.000mA
- 7 - Enter a setpoint that produces 100% Heat output .
- 8 - Adjust Slope Pot RA5 - Heat for a reading of 20mA
- 9 - Repeat steps 6 - 9 until both readings are +/- 0.001mA

Calibration is complete.

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