

## 1.0 SCOPE

1.1 Instructions for the installation of the Model 3984 Isolated Interface Module on an existing furnace with a Bodine Electric drive motor and Model 3911 Motor Speed Board.

## 2.0 EQUIPMENT AFFECTED

- 2.1 Motor Speed Board Model 3911
- 2.2 Isolated Interface Module Model 3984

## 3.0 ADJUST MOTOR SPEED BOARD MODEL 3911

- 3.1 Start furnace. On Furnace program Process Screen, set belt speed to zero.
- 3.2 Using a nonconductive adjustment tool, adjust the each of the pots at the top of the motor speed board:
  - 3.2.1 Set zero. Turn Min pot to full counter clockwise (CCW). Adjust clockwise (CW) until motor starts. Turn CCW until motor stops.
  - 3.2.2 Set Max pot full CW and turn back ¼ turn.
  - 3.2.3 Set Acceleration at between full CCW and midpoint.
  - 3.2.4 Set Deceleration at between full CCW and midpoint.
  - 3.2.5 Set Torque to full CW, adjust slightly CCW.
- 3.3 For reference, the pots to be adjusted are located from left to right as in the following table.

3911 POTS	MAX	MIN	ACCEL	DECEL	TORQ
Preferred Settings:	just CCW from Full CW	turn CW until motor stops	midway bet CCW and midpoint	midway bet CCW and midpoint	just CCW from Full CW

## 4.0 INSTALL 3984 ISOLATED INTERFACE MODULE

- 4.1 Inspect 3984 Board and verify that DS1 dip switches are all in OFF positions.
- 4.2 Make sure furnace is DISCONNECTED from facility power.
- 4.3 Remove panels to enable access to drive motor at the exit end of the furnace.
- 4.4 Using the supplied Mounting Template for the 3984 Isolated Interface Module, mark for 4 holes. Drill using 4 mm (5/32 inch) drill bit. In a convenient place on the motor control panel. (see Figure 1)
- 4.5 Mount the 3984 Isolated Interface Module using the supplied #8 machine screw fasteners.



Figure 1 Motor control Panel Layout

- 4.6 Disconnect the spade wire connections from S1 and S2 on the 3911 Motor Speed board.
- 4.7 Take these same wires and Plug black S1 into ICOM and white S2 into VIN1 connectors on the 3984 Isolated Interface Module. (see Figure 1)
- 4.8 Plug connectors coming from the VOUT & COM on the 3984 Isolated Interface Module black S1 and white S2 wires into the 3911 Motor Speed board spade connectors labeled S1 and S2 respectively.



Figure 2 Power connect from 3984 module

- 4.9 Connect power (see Figure 2). Loosen screws on the 3911 Motor Speed board terminal block marked L and N. Slip the brown power wire terminal into the L screw then tighten. Slip the blue wire terminal into the N screw then tighten. Snap the two fuse blocks onto the DIN rail next to the existing fuse block.

## 5.0 CALIBRATE ISOLATED INTERFACE MODULE MODEL 3984

- 5.1 Set zero. Using a small flat screwdriver and a DC Voltmeter + on VOUT and – on COM, turn the Min pot CCW until motor stops and Voltmeter reads 0.120 to 0.130. If DC Volts will not go under 0.200 re-adjust MIN pot on the 3911 board until the Volts drop to 0.120-0.130. Adjust 3984 min pot CW until motor starts again. Turn 3984 min pot CCW again until motor stops and DC volts are within range.
- 5.2 Go to Furnace Calibration screen and click Transport Belt 1 Calibration checkbox to “Set 50% output to calibrate”.
- 5.3 Adjust Max pot until voltage across Vout and Com equals 5.0 Vdc.
- 5.4 For reference, the pots to be adjusted are labeled Min and Max as in the following table.

3984 POTS	MIN	MAX
Field Adjustment	turn CW until motor stops	3984 $V_{out-com} = 5 \text{ Vdc}$ or 3911 $V_{S1-S2} = 5.0 \text{ Vdc}$

## 6.0 REPLACE FURNACE PANELS

- 6.1 Replace all panels and fasteners.

## 7.0 CALIBRATE BELT SPEED

- 7.1 Use standard procedure for belt speed calibration.