

HAMILTON AIR

3143 Production Drive • Fairfield, Ohio 45014 • 513-874-3733

Model **HA-47**

Serial #1046 to 1227

Installation and Service Manual

Important Notice:

HA-47 Units

Make sure all electrical components and connectors are secure in their sockets.

All Micro-Switches should be checked for proper adjustment and operation by manually moving the door and safety bar before operating unit. This will insure that all adjustments and operations are satisfactory.

Vibrations created from shipping can cause relays to become loose in their sockets. Check all relays and timer for proper fit in their sockets.

Check the wiring details sheet for the proper field connections.

HA47 Operation

The Hamilton Model HA-47 was designed to accommodate large heavy transactions typically required by commercial customers. It uses 4" by 7" inch Diameter steel tubing and tube bends with a centerline radius of 48 inches.

Operation:

The teller station has two operator controls:

1. Teller Send (operated by opening and closing the teller door)
2. Teller Recall

The teller closes the teller unit door to send the carrier to the customer station.

AUTO DOOR CLOSE OPTION:

If enabled the customer door will close automatically after 3 minutes of inactivity.

To enable this feature, open the teller door then press and hold the recall switch for 15 seconds or longer.

To disable this feature remove power from the PLC Controller for a few seconds.

In the event of power failure this feature will be disabled and can be enabled again.

When the customer door has closed after a three-minute period of no activity, opening and then closing the teller door will reopen the customer door and present the carrier to the customer. Also if either the customer send or call teller switch is pressed the customer door will open.

The teller can press the recall switch to bring the carrier to the teller station. The teller recall switch will stop the carrier if it is in transit to the customer and return it to the teller station.

The customer station has two operator controls:

1. Send Carrier
2. Teller Call

The customer presses the Send switch to return the carrier to the teller.

The customer presses the Call switch to ring the teller call tone on the intercom system.

The Customer Send switch is disabled when the carrier is in the teller station.

There is a safety plate on the customer unit which if operated will reopen the door and canceling the send function. The obstruction can be removed and the send button can be press to start the procedure.

Motor run timers

The HA-47 has a maximum run time on each motor to prevent system damage. The system stops if any motor exceeds a preset time. The times exceed the normal time required to operate properly.

Maximum Run Times:

Door Motors 15 seconds

Turbine 90 seconds

After the system shuts down due to maximum run time it can be reset by opening and closing the teller door.

HA47 Serial #1046 and Higher

HA47 Service

A Programmable Logic Controller controls the HA 47. Each control switch provides 24 Volts DC to the PLC to signal an event. Door Open; Door Closed; carrier present ... etc.
The switches on the HA 47 are as follows

Teller Unit

Operators Control

Teller Send
Teller Recall

Operational Control

Door Open
Door Closed
Carrier Present
Door Safety

Customer Unit

Operators Control

Customer Send
Call Teller

Operational Control

Door Open
Door Closed
Carrier Present
Door Safety

The PLC has an input from each of the above switches. When the switch is operated it signal the PLC and a light corresponding to the input is lighted.

The PLC has outputs to control external devices these outputs are relay closure and when an output is active a corresponding light is lighted

Troubleshooting is greatly aided by observing the input/output lights.

The following is a list of the input and outputs used in the HA 33.

Inputs are numbered 0 thru 9

Outputs are numbered 0 through 5

<u>Input #</u>	<u>Condition when Lighted</u>
0	Teller Send Pressed
1	Customer Send Pressed
2	Teller Recall
3	Customer Door is Closed
4	Customer Door is Open
5	Customer Door Safety is operated
6	Teller Carrier Present switch is operated
7	Customer Carrier Present is operated
8	Teller Call Button Pressed
9	Door Test

Output #	Operation
0	Mute microphone on turbine run
1	Teller Call Tone to audio matrix
2	Start Vacuum Motor
3	Start Pressure Motor
4	Open Customer Door
5	Close Customer Door

The Control Board in the Customer Unit has the following components installed

Component	Function
Motor Contactor V1	Vacuum turbine Motors
Motor Contactor P1	Pressure turbine Motors
Motor Contactor M1	Open Customer Door
Motor Contactor M2	Close Customer Door
Terminal Strips	See Drawing 99-852 for details
Fuses F1 and F2	20 amp slow blow for pressure & vacuum motors
Fuse 3	3 amp
Motor Capacitor	Run capacitor for Door Motor

PLC Control Box located in teller area

Component	Function
PLC	Programmable Controller
24 Volt transformer	Low voltage control power
Bridge rectifier	24 Volts AC for relay coils 24 volt DC for PLC power & Signal for switches to PLC inputs
Test Switch	Allows the customer send and recall Switches to open & close customer door.
Fuse	3 amp for 24 volt Transformer
Terminal Strips	See Drawing 99-852 for details

Carrier Arrival Sensor located in bend above teller station

Sensor	turns turbines off when carrier passes on the inbound direction. Connects to PLC control Box See Drawing 99-862
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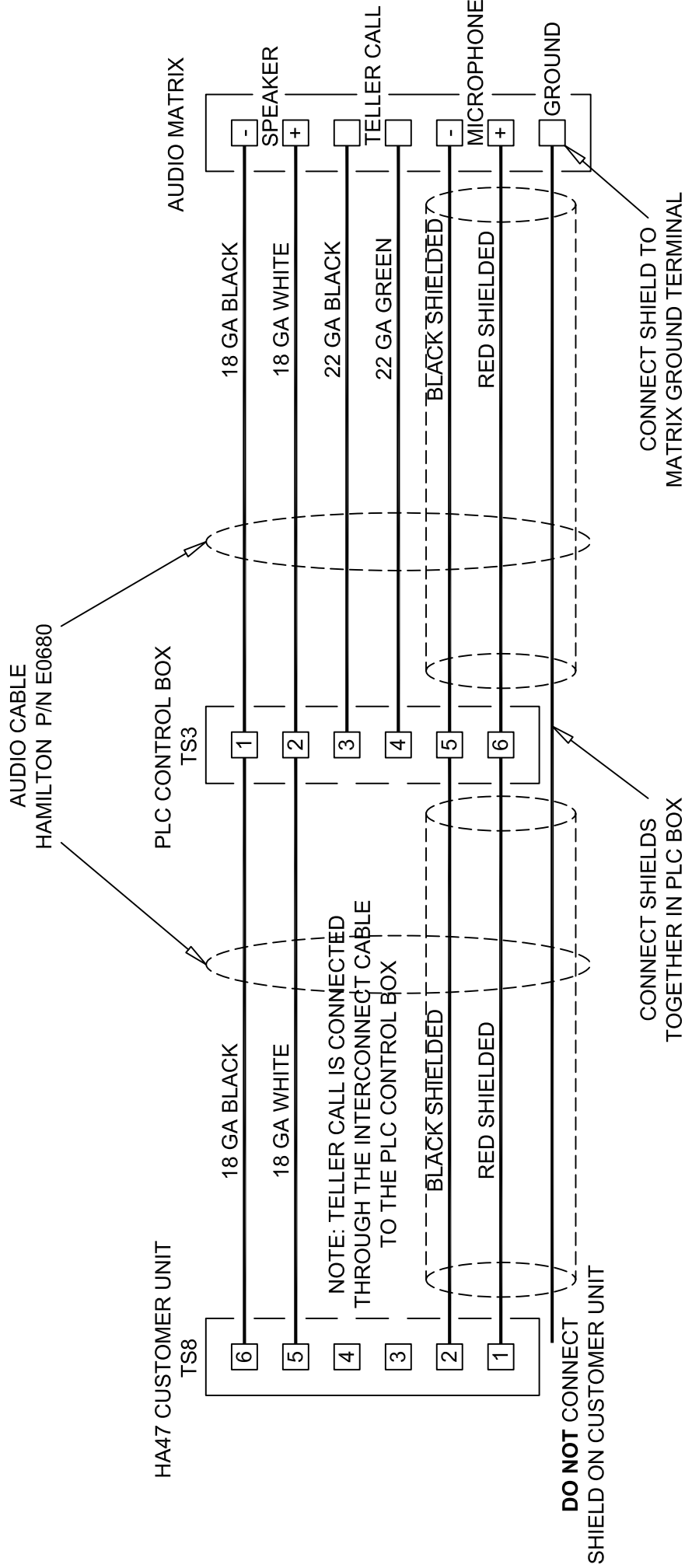
HA47 Teller carrier arrival sensor installation instructions.

- 1) Mount the sensor to a ½ inch depth in the threaded bung located on the elbow above the teller unit using the supplied nuts to lock it in place.(Note: ½” depth will prevent the sensor from protruding into the tube)
- 2) Plug the sensor into the wiring assembly from the teller unit.
- 3) Make all inter-connect connections between teller, control box, and remote units.

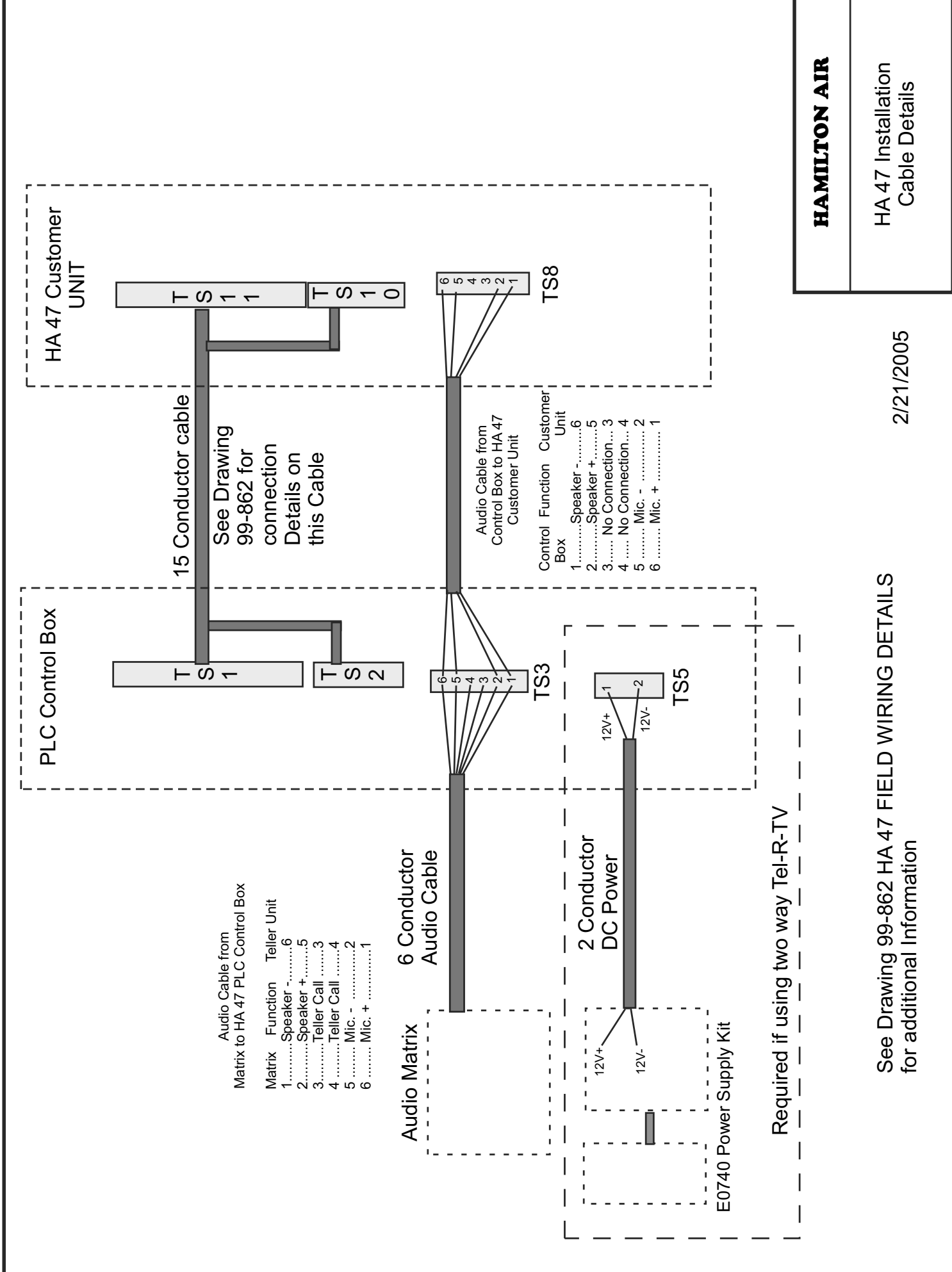
Adjusting the carrier arrival sensor.

- 1) With the sensor mounted in the tube and power supplied to unit, the sensor should have at least a green light on.
- 2) Press and hold the button located on the sensor, a pen or small object will be required, until the green light goes out.
- 3) Release the button and wait for the green light to return.

The sensor is now ready to use.



DATE:
DATE:
HAMILTON AIR	
MODEL HA-47	
AUDIO CABLE CONNECTIONS	
Drawing Number : 99-945	Date : 07/27/07

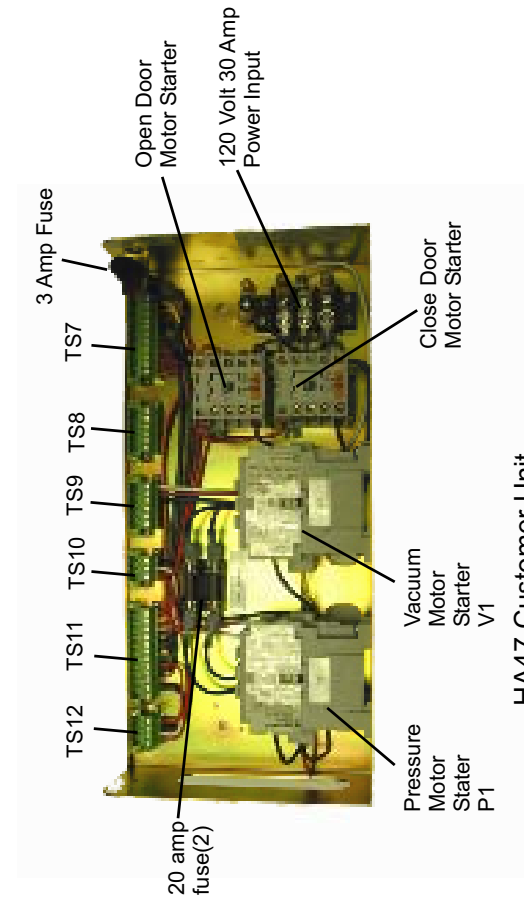


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HA 47 Installation
Cable Details

2/21/2005

See Drawing 99-862 HA 47 FIELD WIRING DETAILS
for additional Information



HA47 Customer Unit
Terminal Strip Identification

- TS1 interconnect to Customer Unit TS11
- TS2 interconnect to Customer Unit TS10
- TS3 Audio Connections to Audio Matrix and TS8
- TS4 interconnect to Teller Unit TS13 and carrier arrival sensor
- TS5 12 volt DC input for optional Tel-R-TV
- TS6 24VAC input/output to 24 volt transformer
- TS7 Customer Unit Switches
- TS9 Customer Unit Door Motor
- TS12 Power connections for optional Tel-R-TV unit (12VDC (monitor) 24VAC (Camera))



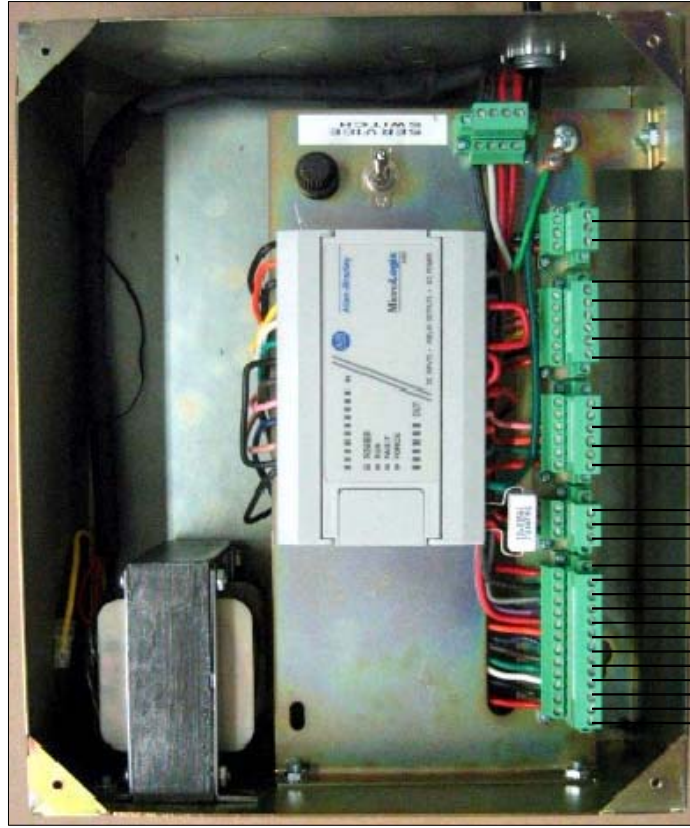
HA47 Control unit
Connector identification

HAMILTON AIR
HA47 Connection Points
2/21/2005

Connection on HA 47 using small PLC Controller
Units Shipped February 21, 2005 or later Serial # 1046 and higher

REV-1	DATE: 7/13/04	ADDED TELL-R-TV CONNECTIONS
REV-2	DATE: 2/21/05	MADE CHANGES TO SHOW 16 I/O PLC
REV-3	DATE:	

PLC CONTROL BOX



TELL-R-TV MONITOR
POWER 12VDC INPUT
FROM VIDEO
POWER KIT E0740

NOTE:
USE ONLY REGULATED 12VDC POWER SUPPLY
WITH VOLTAGE DEVIATION OF ±0.5 VOLTS.
RECOMMENDED POWER SUPPLY IS
HAMILTON PART E0736 USED IN THE
VIDEO POWER KIT E0740.
USING A DIFFERENT POWER SUPPLY
MAY CAUSE DAMAGE TO MONITOR.

12VDC NEGATIVE INPUT
12VDC POSITIVE INPUT

BLACK TO TELLER UNIT SEND (NO)
WHITE TO TELLER UNIT RECALL (NO)
BLACK TO CA SENSOR SWITCH (NO)
BLUE TO CA SENSOR 24VDC-
RED TO TELLER UNIT BROWN TO CA SENSOR 24VDC+

MIC MUTE ON TURBINE RUN TO AUDIO MATRIX
TELLER CALL TO AUDIO MATRIX

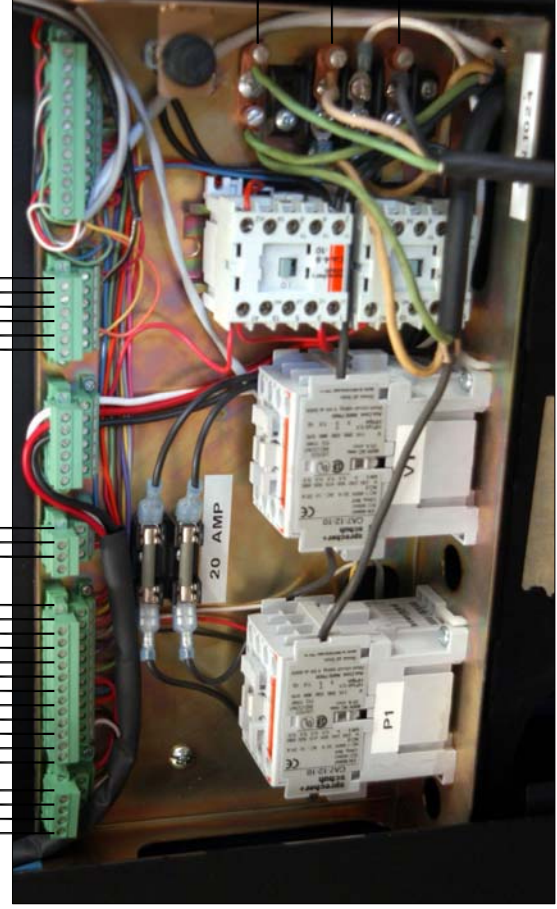
15 CONDUCTOR INTERCONNECT CABLE

TELL-R-TV MONITOR POWER
12VDC OUTPUT FROM VIDEO POWER KIT E0740
CONNECTED THROUGH THE PLC CONTROL BOX

MICROPHONE TO AUDIO MATRIX

SPEAKER TO AUDIO MATRIX

HA47 CUSTOMER UNIT



120VAC 30AMP LINE FULL LOAD 22 AMPS
COMMON
GND

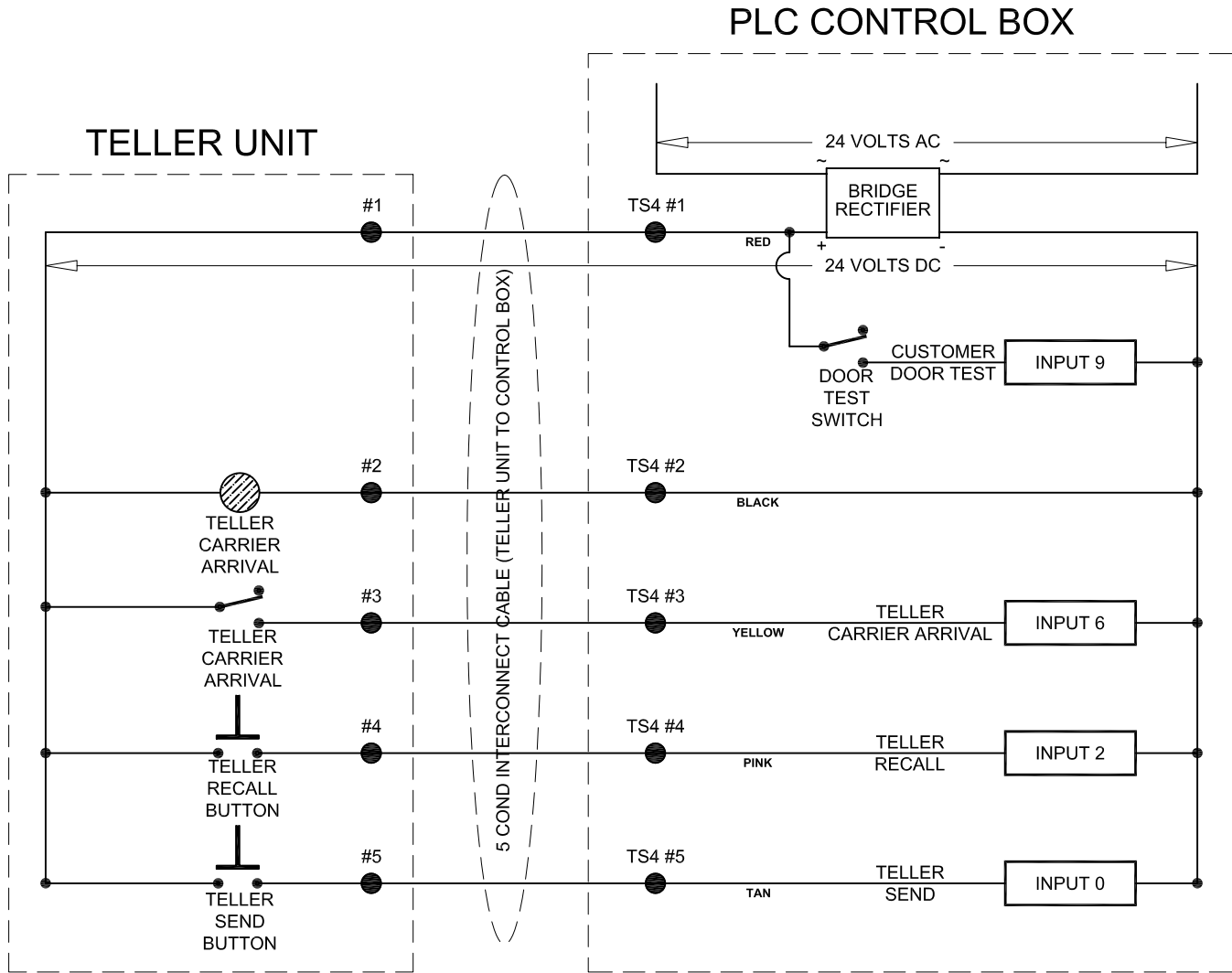
PLC INPUTS AND OUTPUTS

INPUTS	OUTPUTS
0 TELLER DOOR CLOSED	0 CUSTOMER MICROPHONE MUTE ON TURBINE RUN
1 CUSTOMER SEND	1 TELLER CALL TONE TO AUDIO MATRIX
2 TELLER RECALL	2 VACUUM CONTACT
3 CUSTOMER DOOR CLOSED	3 PRESSURE CONTACT
4 CUSTOMER DOOR OPEN	4 OPEN CUSTOMER DOOR
5 CUSTOMER DOOR SAFETY	5 CLOSE CUSTOMER DOOR
6 TELLER CARRIER ARRIVAL SWITCH	
7 CUSTOMER CARRIER ARRIVAL SWITCH	
8 TELLER CALL BUTTON	
9 DOOR TEST	

AUDIO MATRIX NOTE:
TELLER CALL RUNS THROUGH 15 COND INTERCONNECT CABLE AND THROUGH THE PLC

HAMILTON AIR
HA47
FIELD WIRING DIAGRAM
HA47 Serial #1046 and Higher
Drawing Number : 99-862 Date : 1/7/04

Rev - 1	8/10/07 Added Input 9, Input 2 was Input 5
Rev - 2	--



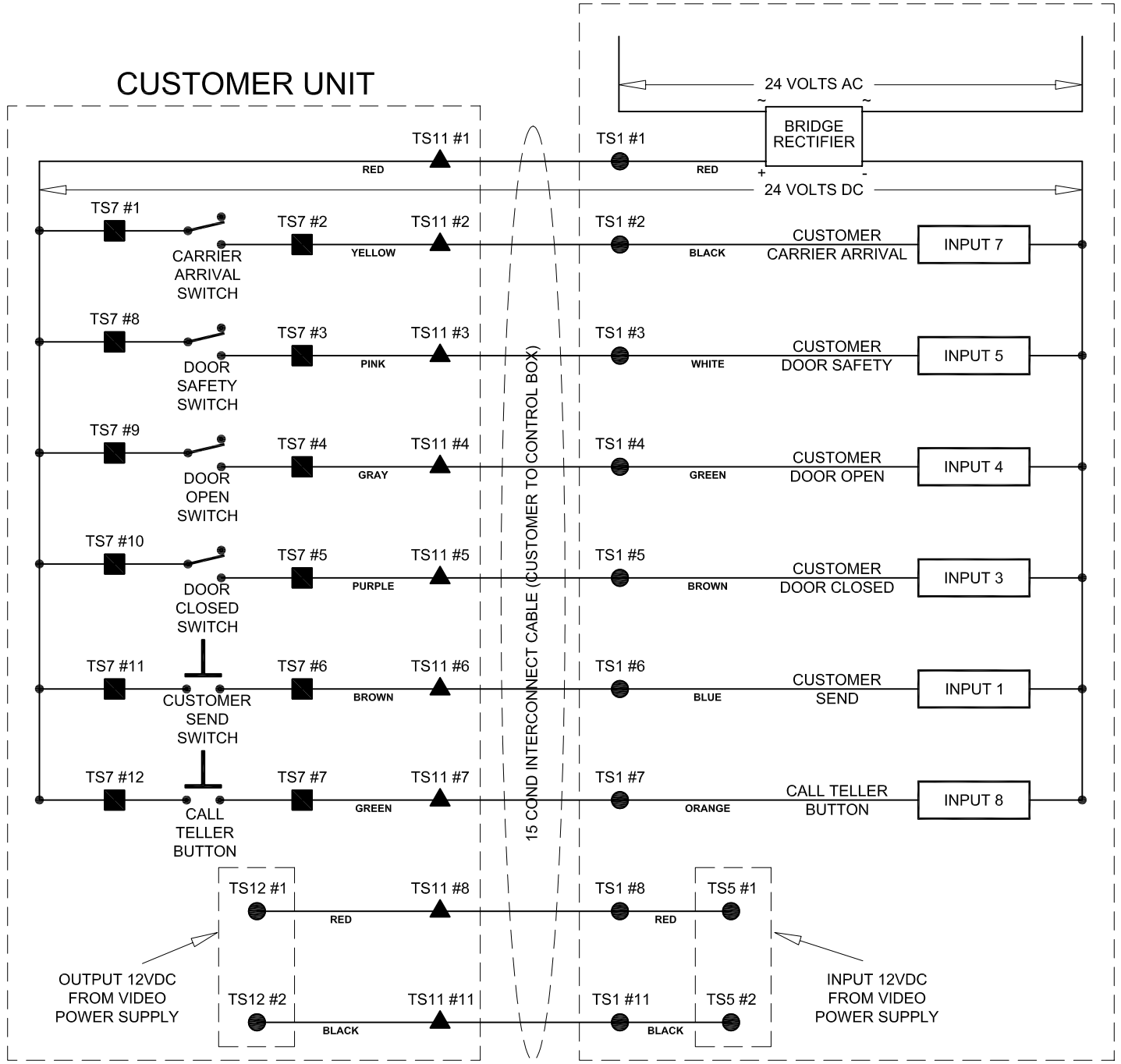
HA47 Serial #1046 and Higher

HAMILTON AIR	
MODEL HA-47 WIRING DIAGRAM TELLER "INPUT" CONNECTIONS	
Drawing Number :	99-944
Date :	8/4/04

Rev - 1	--
Rev - 2	--

PLC CONTROL BOX

CUSTOMER UNIT

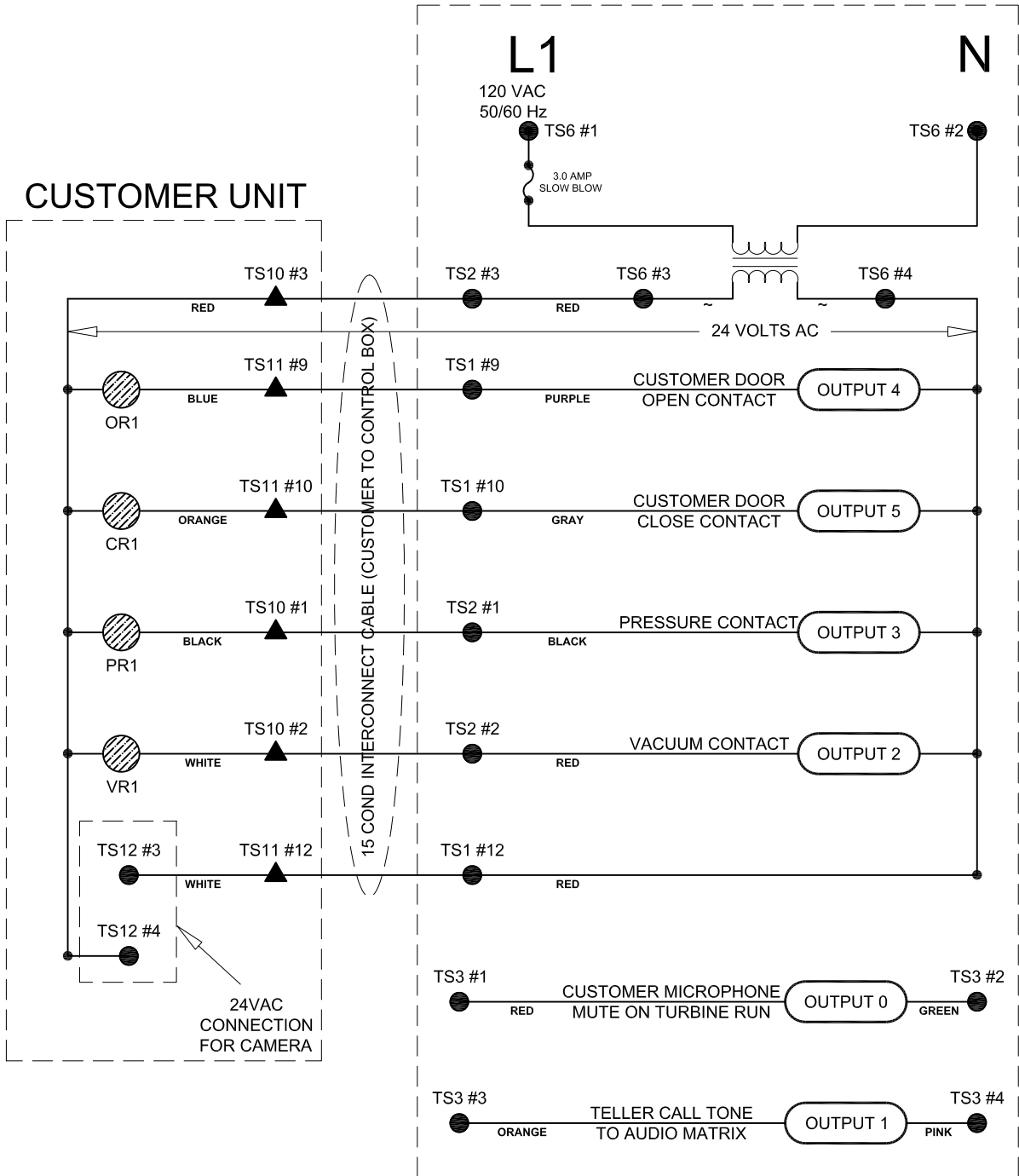


HA47 Serial #1046 and Higher

HAMILTON AIR	
MODEL HA-47 WIRING DIAGRAM CUSTOMER "INPUT" CONNECTIONS	
Drawing Number :	99-943
Date :	8/4/04

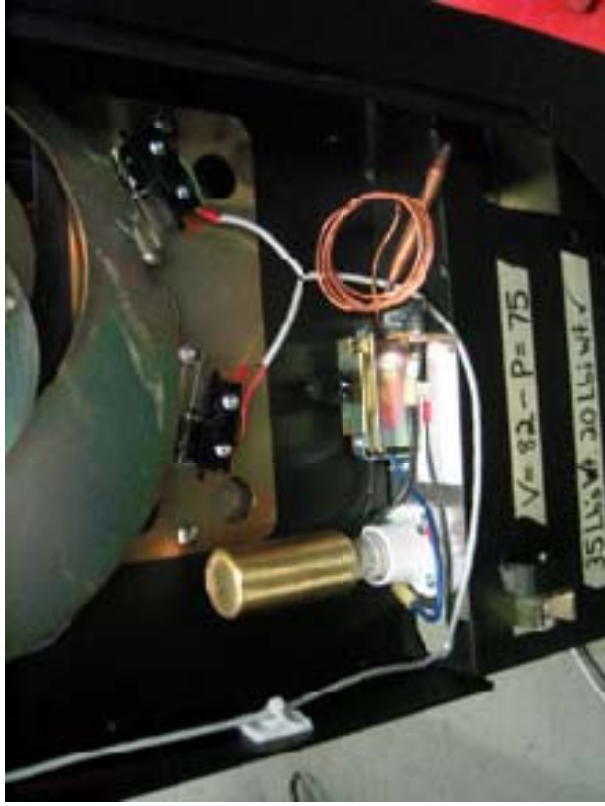
Rev - 1	--
Rev - 2	--

PLC CONTROL BOX

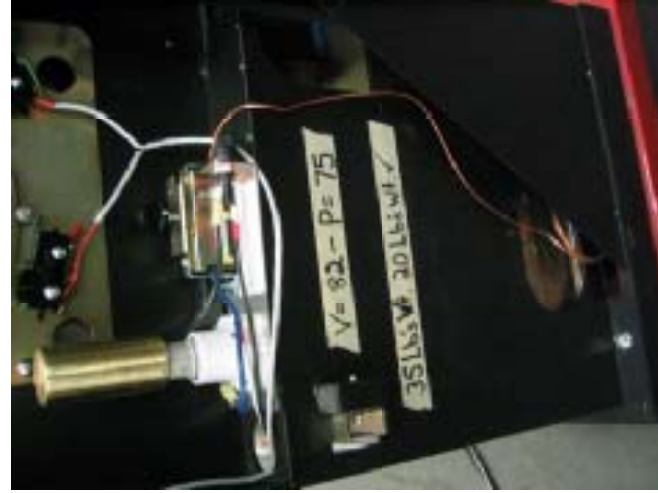


HA47 Serial #1046 and Higher

HAMILTON AIR	
MODEL HA-47 WIRING DIAGRAM PLC "OUTPUT" CONNECTIONS	
Drawing Number :	99-942
Date :	8/4/04



Peel paper off mounting tape and place heater as shown
Dress existing wires away from heater element



Uncoil thermostat tube and position thermostat along side the turbine box as shown. Set thermostat control to 40 degrees.



Connect black wire from heater to contactor V1 terminal L1 as shown

Connect white wire from heater to neutral terminal strip as shown

HAMILTON AIR

HA47 heater installation

2/15/2004