

HAMILTON AIR

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

Model **HA-47**
Below Serial #1046

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 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 10

Outputs are numbered 0 through 11

<u>Input #</u>	<u>Condition when Lighted</u>
0	Teller Send Pressed
1	Customer Send Pressed
2	Teller Recall
3	Not used
4	Not used
5	Customer Door is Closed
6	Customer Door is Open
7	Not used
8	Not used
9	Customer Door Safety is operated
10	Teller Carrier Present switch is operated
11	Customer Carrier Present is operated
12	Teller Call Button Pressed
13	Not Used
14	Not Used
15	Not Used
16	Not Used
17	Auto door close Enable (call factory)
18	Auto run enable (call factory)
19	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	Not used
5	Not used
6	Open Customer Door
7	Close Customer Door
8	Not used
9	Not used
10	Not used
11	Not used

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 24 Volts AC for relay coils
Bridge rectifier	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.

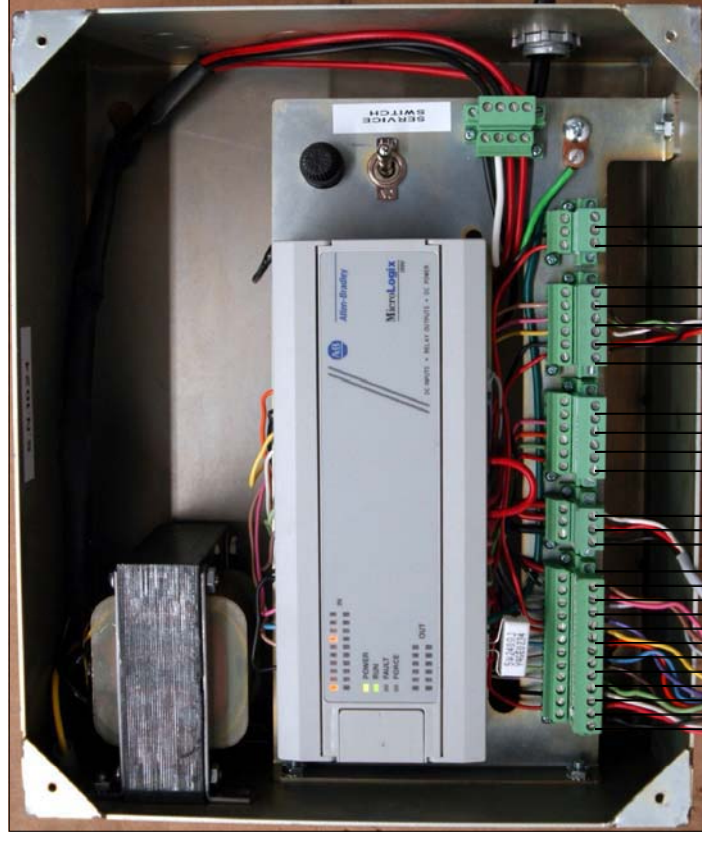
Adjusting the carrier arrival sensor.

- 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.

REV-1	DATE: 7/13/04	ADDED TELL-R-TV CONNECTIONS
REV-2	DATE:	
REV-3	DATE:	

PLC CONTROL BOX



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

12VDC NEGATIVE INPUT
12VDC POSITIVE INPUT

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.

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

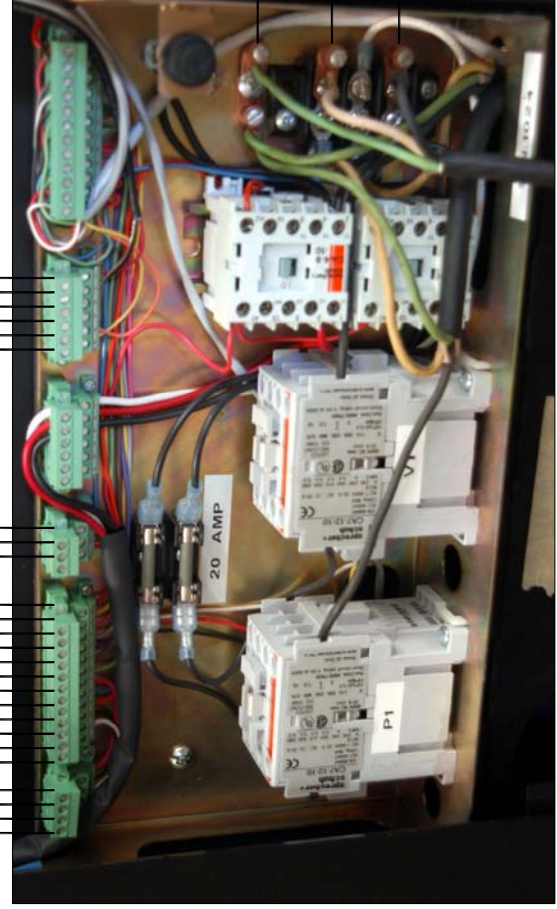
HAMILTON AIR
HA47
FIELD WIRING DIAGRAM HA47 Below Serial #1046
Drawing Number : 99-862 Date : 1/7/04

**HA47 TELLER UNIT AND
CARRIER ARRIVAL SENSOR**

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

24VAC OUTPUT
TO CAMERA
24VAC OUTPUT
TO CAMERA
12VDC NEGATIVE OUTPUT
FROM VIDEO POWER KIT E0740
12VDC POSITIVE OUTPUT
FROM VIDEO POWER KIT E0740

15 CONDUCTOR INTERCONNECT CABLE



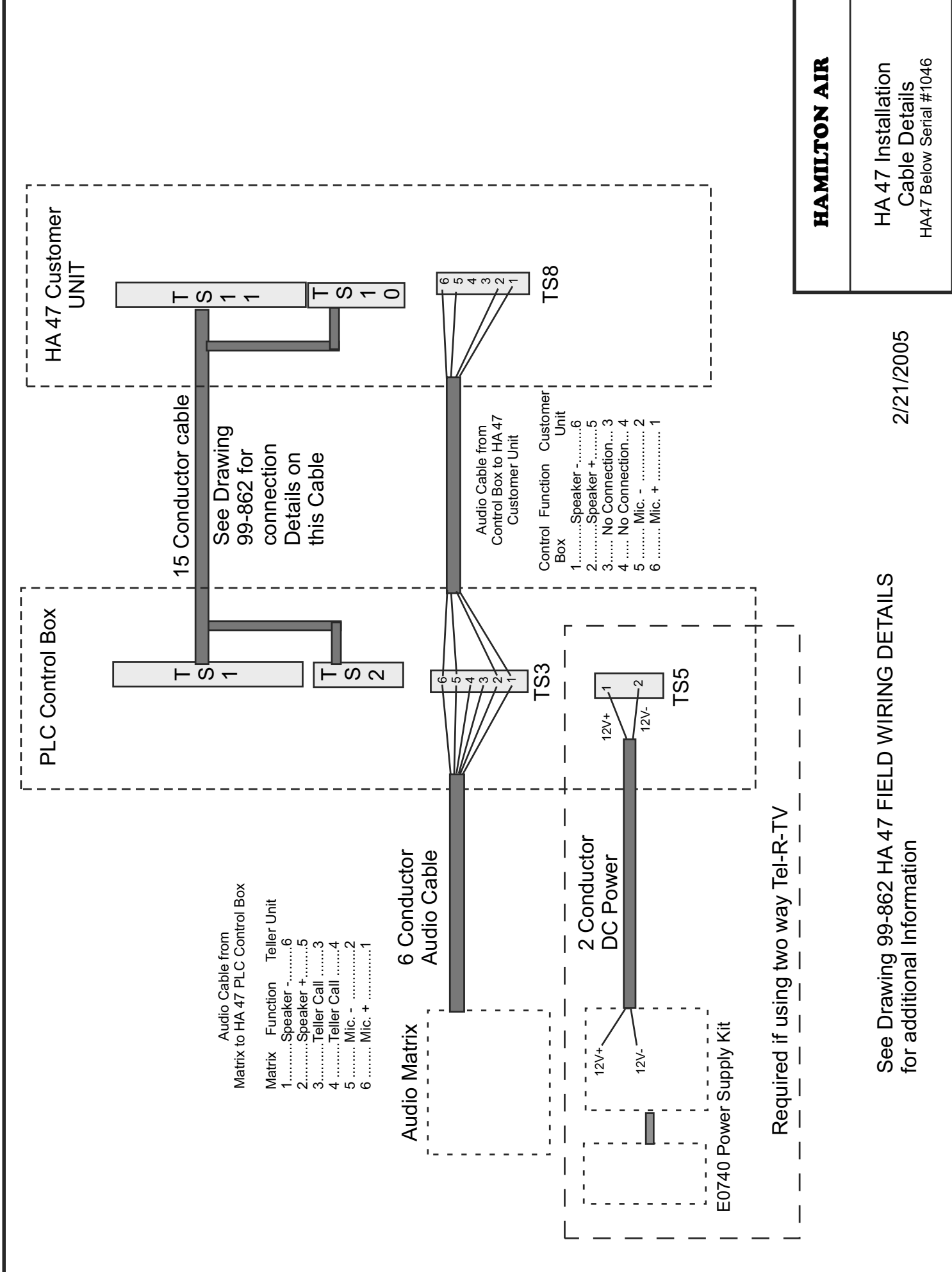
HA47 CUSTOMER UNIT

120VAC 30AMP LINE
FULL LOAD 22 AMPS
COMMON
GND

PLC INPUTS AND OUTPUTS

INPUTS	OUTPUTS
0 TELLER SEND	0 CUSTOMER MICROPHONE MUTE
1 CUSTOMER SEND	1 TELLER CALL
2 TELLER RECALL	2 VACUUM CONTACT
3 NOT USED	3 PRESSURE CONTACT
4 NOT USED	4 NOT USED
5 CUSTOMER DOOR CLOSED SWITCH	5 NOT USED
6 CUSTOMER DOOR OPENED SWITCH	6 CUSTOMER DOOR CLOSE CONTACT
7 NOT USED	7 CUSTOMER DOOR OPEN CONTACT
8 NOT USED	8 NOT USED
9 SAFETY BAR	9 NOT USED
10 TELLER ARRIVAL SWITCH	10 NOT USED
11 CUSTOMER ARRIVAL SWITCH	11 NOT USED
12 TELLER CALL	
13 NOT USED	
14 NOT USED	
15 NOT USED	
16 NOT USED	
17 NOT USED	
18 NOT USED	
19 TEST SWITCH	

TELLER CALL RUNS THROUGH 15 COND
INTERCONNECT CABLE AND THROUGH THE PLC

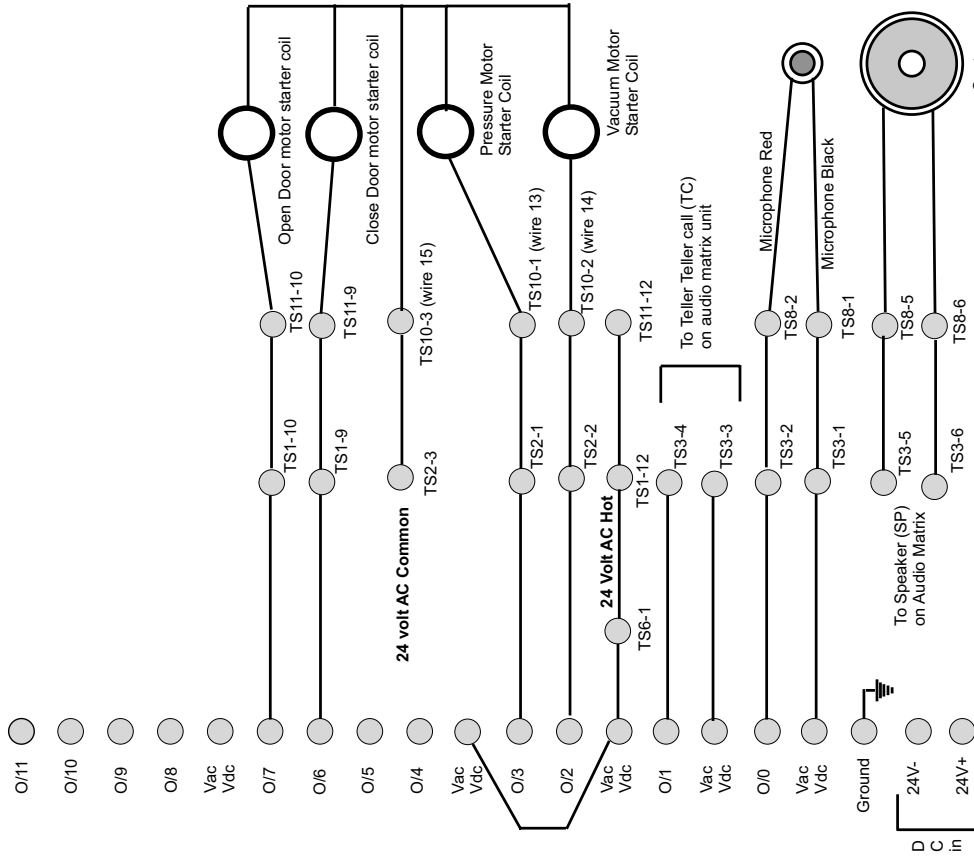


HAMILTON AIR

HA 47 Installation
Cable Details
HA47 Below Serial #1046

2/21/2005

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



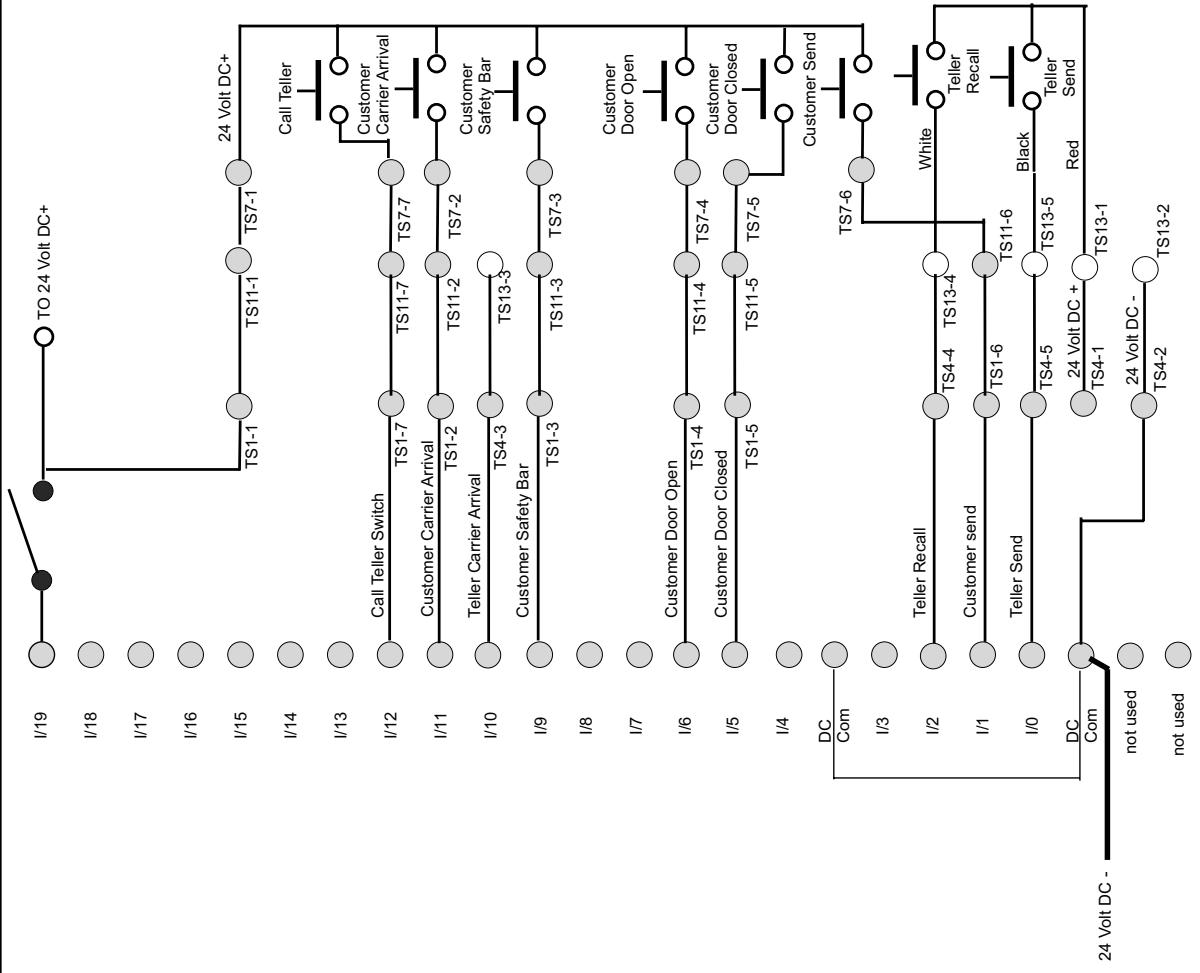
Note Call teller is not connected to the customer unit. Teller Call from the Audio Matrix is connected to control panel TS3-4 and TS3-3

Field Wiring:

- 1 each 15 Conductor 18 ga. from Control Unit in teller area (TS1) to Customer Unit (TS11)
 - 1 each 6 Conductor 18 ga. from Control Unit in teller area (TS4) to Teller Unit (TS13)
 - 1 each 6 Conductor shielded from Control Unit in teller area (TS3) to Customer Unit (TS8)
 - 1 each 6 Conductor shielded from Control Unit in teller area TS3 to audio matrix
- Note on shielded from Control unit to the customer unit only 4 wires are used all 6 wires are used from the Control unit to the audio matrix.

High Voltage:

- 120 volt AC 60Hz 30 amp (22 amp Full load) connected to customer unit (dedicated service required)
- 120 volt AC 60Hz 15 amp Duplex outlet (5 amp full load) next to control unit location



TS13-X is located on the Teller Unit See drawing 99-862 for connections

Controller(PLC) Connections
HA-47 with 32 I/O PLC
 HA47 Below Serial #1046