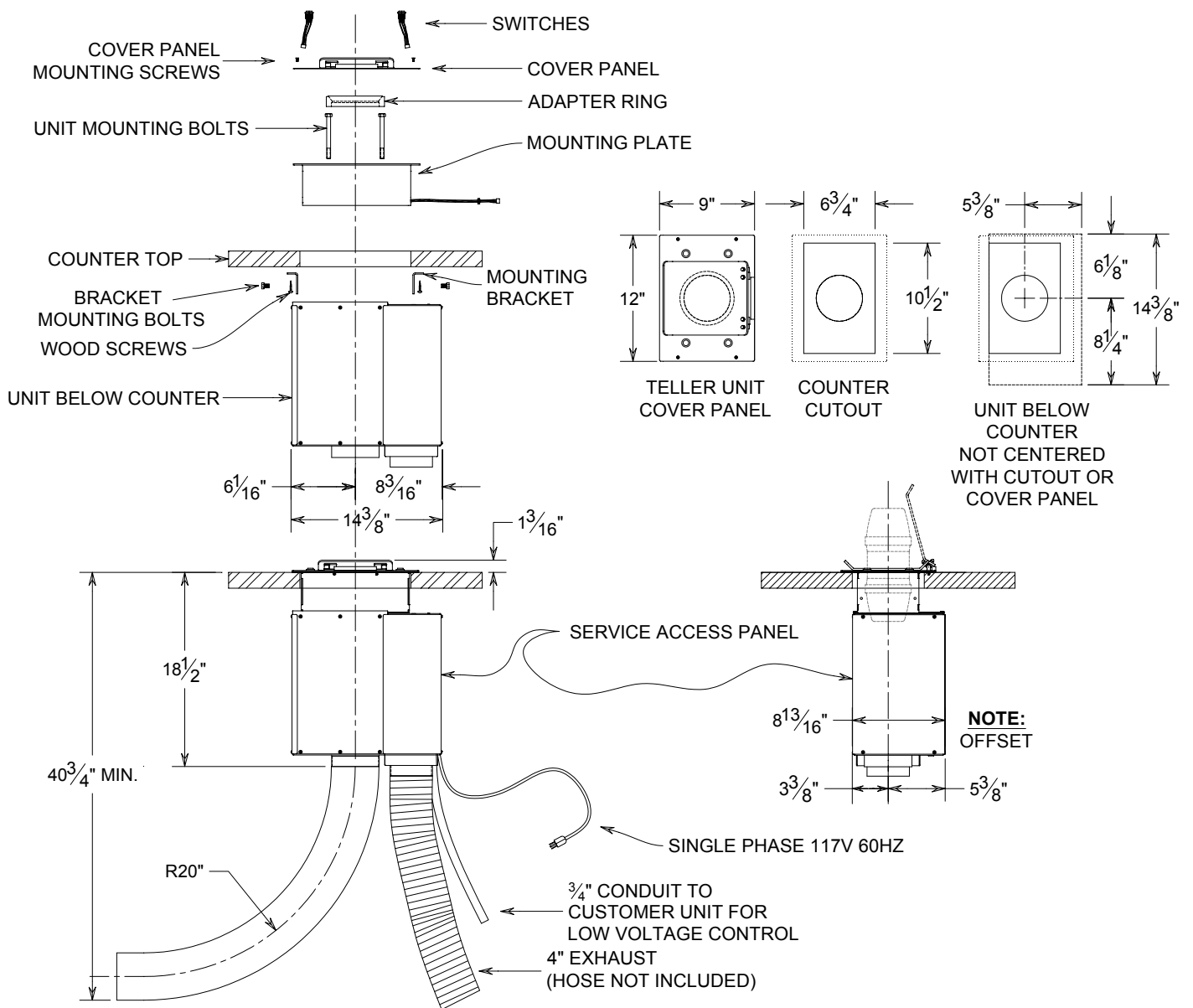


# HAMILTON AIR®

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

## Model Counter Teller 2G - 99-1028

### Installation and Service Manual



## Preoperational settings and inspections

The I/O control board requires jumpers and switches to be properly set before operation. See Section below.

All **Micro-Switches** should be inspected for proper adjustment and operation by manually moving the belt motor, doors, and safety bars before operating system. Switches should be set to allow for variations in the set-points due to temperature changes and/or vibrations. This will insure that all adjustments and operations are satisfactory.

### Jumper Settings

**NOTE:** The jumpers located in both the customer unit and this counter teller unit must be set properly prior to applying power to the system. Failure to set jumpers properly prior to applying power may result in damage to the unit(s).

#### Counter Teller Jumper Settings

|                 |     |
|-----------------|-----|
| Jumper #1 (JP1) | OFF |
| Jumper #2 (JP2) | ON  |
| Jumper #3 (JP3) | ON  |

#### Customer Unit Jumper Settings

|                 |     |
|-----------------|-----|
| Jumper #1 (JP1) | OFF |
| Jumper #2 (JP2) | OFF |
| Jumper #3 (JP3) | ON  |

### Switch Settings

The switches on the control boards are used to set functions and test operations. There are three slide switches and one pushbutton switch located on each control board. The three slide switches are labeled #1, #2, and #3 while the fourth pushbutton switch (SW4) is labeled "Carrier Recall". Momentarily pressing SW4 recalls the carrier to this end of the tube system.

#### Counter Teller Unit Standard Switch Settings

- SW1 Switch 1: **Diagnostic Mode.** "Off" is normal setting. See also "Belt Motor Test"
- SW2 Switch 2: **Turbine Mode.** "Off" is normal setting.
- SW3 Switch 3: **Unit Selection.** "On" is normal setting for board mounted in a teller unit.

#### Customer Unit Standard Switch Settings

- SW1 Switch 1: **Blower Run Time Set.** "Off" is normal setting. See also "Blower Run Time Set", "Turbine Test Mode", and "Customer Door Test"
- SW2 Switch 2: **Turbine Mode.** "Off" is normal setting.
- SW3 Switch 3: **Unit Selection.** "Off" is normal setting for board mounted in a customer unit.

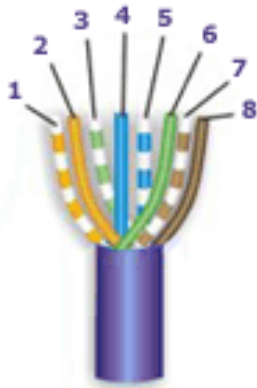
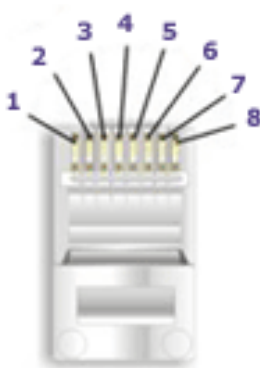
## CAT5 Interconnect Cable

Models with the I/O control boards (E0873) are interconnected from customer to teller unit with a single **CAT5 cable** (E0889). This replaces the multi-conductor cable used on previous versions.

**Audio** connections remain similar to previous models requiring a separate multi-conductor cable (E0680) connected between the customer unit and audio matrix.

The I/O control board system requires an interconnect cable to connect the counter top teller unit control board to the customer unit control board. This cable is a standard category 5 (CAT5) cable, Hamilton part number E0889, and terminated with male RJ-45 connectors on both ends. The connectors should be wired in the T568B straight through design as shown below on both ends. There are commercially available testers that can be used to verify correct connector installation and function.

Shown with clip down



| Wire         | Pin # | Connections |
|--------------|-------|-------------|
| White/Orange | 1     | --          |
| Orange       | 2     | --          |
| White/Green  | 3     | --          |
| Blue         | 4     | --          |
| White/Blue   | 5     | --          |
| Green        | 6     | --          |
| White/Brown  | 7     | RS485 A     |
| Brown        | 8     | RS485 B     |

## **Blower Run-Time Set Procedure**

The “blower run time” is set using switch number one (SW1), which is located on the control board in the customer unit. The unit is shipped with a default time stored of about 3 seconds. This procedure will overwrite any existing times set in system. This time can be reset as often as necessary. **Power failure will NOT affect the times stored.**

### **To restore default blower run times:**

- 1) Turn power “OFF” to unit.
- 2) Turn SW1 “ON”.
- 3) Turn power “ON” to unit.
- 4) Return SW1 to “OFF”.
- 5) Default blower run time is restored.

The blower run time can be set with both directions of carrier travel using the same time or in a three stage cycle. The three stage cycle includes individual times for the two directions of carrier travel along with a third time for the carrier to free fall in the clear acrylic tube after the blowers stop and before the customer door opens.

### **Setting procedure for blower run time. (Single time for both directions)**

- 1) Restore default times as described above.
- 2) Before beginning, the carrier must be in customer unit with customer door open.
- 3) Turn SW1 to the “ON” position. (LED indicator will light)
- 4) Push and hold either “Customer Send” or “Teller Recall” button until carrier arrives in the teller unit. Releasing button stores the time for this cycle.
  - Note:** For systems with carrier arrival switches at both ends, when the carrier arrives at the teller unit and activates the carrier arrival switch, the blowers will automatically turn off.
- 5) Turn SW1 to the “OFF” position to store the cycle time for both directions.
  - Note:** For systems with carrier arrival switches at both ends, the system will now run until it arrives and activates the carrier arrival switches at both customer and teller.

### **Setting procedure for blower run time. (Three stage cycle time)**

- 1) Before beginning, the carrier must be in customer unit with customer door open.
- 2) Turn SW1 to the “ON” position. (LED indicator will light)
- 3) Push and hold either “Customer Send” or “Teller Recall” button until carrier arrives in the teller unit. Releasing button stores the time for this cycle.
- 4) Push and hold either “Teller Send” or “Teller Call” button until carrier arrives in the clear acrylic tube on the customer unit. Releasing the button stores the time held for this cycle. (Turbines will shut off, customer door stays closed)
- 5) When carrier lands in customer unit, press and release “Teller Call” button to open the door. This stores a third time for carrier free fall time in the clear acrylic tubing.  
Turn SW1 to the “Off” position for normal operation.

## **Counter Teller Belt Motor Test**

### **Belt Motor Test (Automatic):**

- 1) Disconnect the interconnection cable from the board.
- 2) If the belts are up, turn SW3 “ON”, if belts are down, turn SW3 “OFF”.
- 3) Cycle power “OFF” and back “ON”.
- 4) Belts should run up or down depending on the setting of SW3.
- 5) Repeat test in both directions.

### **Belt Motor Test (Manual):**

- 1) Turn SW3 “ON” if not already “ON”
- 2) Turn SW1 “ON”
- 3) Send and Recall activates the belt motor manually. Releasing the button stops the belts as well as tripping the limit switches.
- 4) Turn SW1 “OFF” and leave SW3 “ON” for teller normal operation.

## **Counter Teller Operation**

The counter teller unit has three operator control buttons, Send, Recall, and Night Lock. The tube opening is covered by a plastic door which will be lifted automatically when a carrier arrives from the customer station. The door must be lifted to place carrier into the tube before dispatch.

## **Night Lock Operation**

The night lock function is used to turn the lane off for the night or whenever the lane will not be used. Pressing and latching the night lock button will close the customer unit door and recall the carrier inside if needed to prevent outside use of the lane. If there is a video monitor connected to the customer control circuit using Hamilton cable #E10036, the night lock function will also turn the video monitor off for this lane. Note, if multiple lanes are installed, each lane will have its own separate night lock switch. To return the lane to normal operation, press the night lock button so it releases out.

## **Teller Send Operation**

Lift the plastic counter teller door and place carrier into tube. Press Send button on counter teller unit. The carrier will lower down into the tube closing the plastic door behind it. After the carrier has been dropped into the tubing, pneumatic blowers will move the carrier to the outside customer unit. The carrier will arrive in the customer unit and the customer door will open.

## **Teller Recall Operation**

With carrier outside in the customer unit, pressing Recall will bring the carrier inside to this counter teller unit. The customer door will close if needed and the pneumatic blowers will activate to move the carrier to the counter teller unit. After the carrier has reached the counter teller belts, the pneumatic blowers will turn off and the counter teller belts will run to lift the carrier opening the plastic door on the counter teller unit.

## **Customer Send Operation**

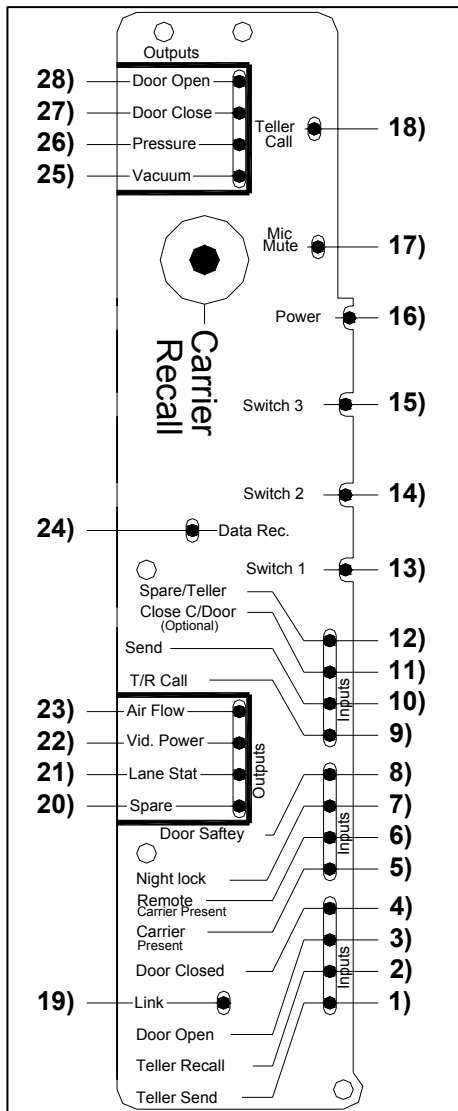
With carrier outside in the customer unit, pressing Customer Send will bring the carrier inside to this counter teller unit. The customer door will close and the pneumatic blowers will activate to move the carrier to the counter teller unit. After the carrier has reached the counter teller belts, the pneumatic blowers will turn off and the counter teller belts will run to lift the carrier opening the plastic door on the counter teller unit.

## **Customer Auto-Door Close Operation**

If the auto-door close option is set ON in the customer unit, the customer door will close automatically after three minutes of no activity with the lane. The customer can press Send or Call on the customer unit to reopen the door. If Call is pressed, the call teller circuit is activated along with opening the customer door.

## Troubleshooting

### Counter Teller LED Identification



- 1) Teller Send – Not used on counter teller.
- 2) Teller Recall – Not used on counter teller.
- 3) Door Open – Lights when belts are NOT up, off when belts have ran completely up.
- 4) Door Closed – Lights when belts are NOT down, off when belts have ran completely down.
- 5) Carrier Present – Not used on counter teller.
- 6) Remote Carrier Present – Not used on counter teller.
- 7) Nightlock – Lights when teller night lock button is pressed.
- 8) Door Safety – Lights constantly with jumper on counter teller.
- 9) T/R Call – Lights when teller recall button is pressed.
- 10) Send – Lights when teller send is pressed.
- 11) Close C/Door (Optional) – Not used on counter teller.
- 12) Spare/Teller – Lights when spare teller input is activated.
- 13) Switch #1 – Lights when Switch #1 is on. OFF is normal setting.
- 14) Switch #2 – Lights when Switch #2 is on. OFF is normal setting.
- 15) Switch #3 – Lights when Switch #3 is on. ON is normal setting.
- 16) Power – Lights when counter teller power is on.
- 17) Mic Mute – Not used on counter teller.
- 18) Teller Call – Not used on counter teller.
- 19) Link – Lights when customer and teller boards are connected and communicating properly.
- 20) Spare – Not used on counter teller.
- 21) Lane Stat – Lights when lane status output is activated.
- 22) Vid. Power – Not used on counter teller.
- 23) Air Flow – Not used on counter teller.
- 24) Data Rec. – Lights on and off as boards communicate between customer to teller unit.
- 25) Vacuum – Output lights when vacuum motor is running.
- 26) Pressure – Output lights when pressure motor is running.
- 27) Door Close – Output lights when teller belt motor is running down.
- 28) Door Open – Output lights when teller belt motor is running up.

# **Troubleshooting**

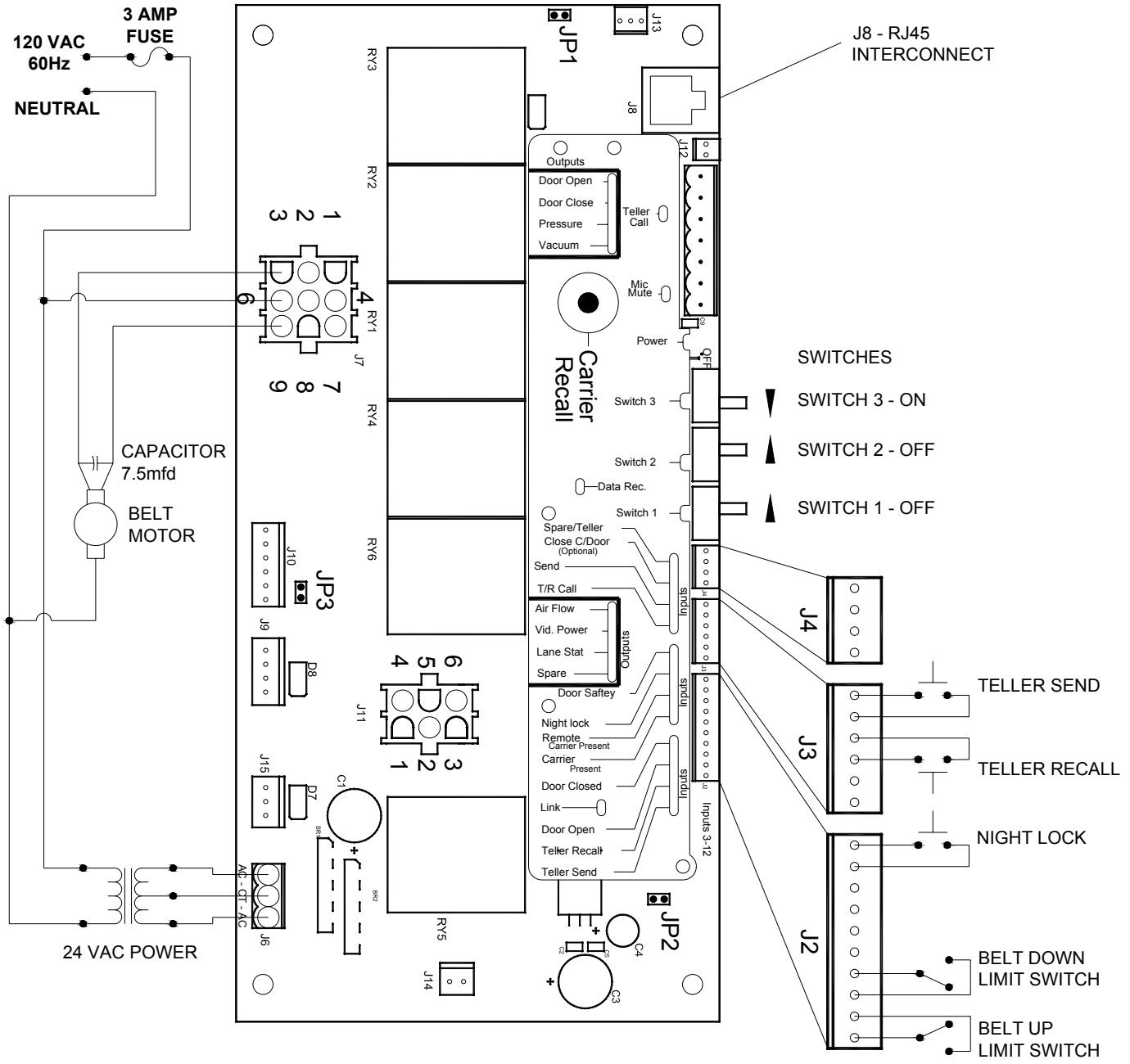
## **Counter Teller LED Status**

Normal light status for counter teller board with the teller belts down.

- 1) Link
- 2) Door Open
- 3) Switch #3
- 4) Door Safety
- 5) Power
- 6) Data Rec. may or may not be lit at idle, but should flash when button or switch changes.

| <b>LED Lights</b> | <b>Possible Problems</b>  | <b>Possible Solutions</b>   |
|-------------------|---|---|
| Link              | Bad CAT5 cable or connections, mismatched firmware in teller and customer, poor communication between teller and customer                   | Test and repair CAT5 cable, Connect CAT5 cable, change firmware chip to latest available in both customer and teller units                                    |
| Door Open         | Teller belts in fully up position, belt up limit switch misadjusted or bad  | Test and adjust belt up limit switch  |
| Door Closed       | Teller belts not in fully down position, belt down limit switch not on cam, bad switch, switch misadjusted                                  | Test and adjust belt down limit switch  |
| Switch #3         | Switch #3 in OFF position   | Move Switch #3 to ON position   |
| Door Safety       | Door safety jumper wire lose, broken, or missing  | Attached jumper wire to trigger door safety input constantly  |
| Power             | No power to teller unit, no power from transformer, transformer unplugged from board J6   | Test and restore power to teller unit, test and replace transformer, connect transformer to board J6  |
| Data Rec.         | Light flashes or flickers when teller and customer boards are communicating. This may result in the LED being ON or OFF when system is idle | If LED does not flash or flicker when buttons are pressed or switches are moved, check: power to both units, CAT5 communication cable, firmware in both units |

# Logic Wiring Detail



Model 99-1028 Counter Teller 2G with I/O controls.  
 Installation and Service Manual