

**Setup and Operating Instructions**  
**For**  
**Registration Control Type 1/4 DIN II**  
**With Out-of-Registration Alarm**

**1. Components:** this registration control equipment consists of four parts:  
1/4 DIN II Control # 707T-QT4  
CX Series scanner  
1/4 DIN Selector Switch  
12 VDC Relays (Mechanical or Solid State)

**2. Power Requirements**  
110 VAC Single Phase 60 Hz

**3. Input/Output Devices**  
Mechanical Relays:  
12VDC Coil, 250 mA maximum load.  
Contact rating 10 Amp Resistive load  
Solid State Switches: 12 VDC input, 3 Amp Maximum switching current.

**4. Operation**

The scanner detects a mark by contrast between the mark and background. Adjust the scanner so that its output is on when the mark is in view. For a light mark on dark background, select “Light” Operation. For a dark mark on a light background, select “Dark” Operation (see description of Scanner Light/Dark switch under controls below).

The gating Selector Switch is interrogated when the scanner detects the registration mark. If the forward gate is covered by the rotating flag, a forward correction is generated for the period of time set in the forward dial. If the reverse gate is covered by the rotating flag, a reverse correction is generated for the period of time set in the reverse dial. If the flag is between the forward and reverse gates, no correction is required.

If the flag has not yet reached the forward gate or has exited the reverse gate, the process is out of registration and no correction is made. If five consecutive out-of-registration cycles occur and the out-of-registration alarm is enabled, the out-of-registration relay is energized and front panel lights blink to call attention to the situation.

#### 4. Controls:

**Auto/Manual Switch:** When in the manual position, the scanner is inhibited and no control action occurs. Manual corrections can be made using the JOG switches. When in the auto position, the scanner is not inhibited and control action occurs.

**Jog Switch:** Produces manual forward and reverse corrections. If the auto/manual switch is in the auto position, the control output overrides the JOG switch.

**Time Controls:** The time setting dials (timing potentiometers) control the forward and reverse correction times. Turn clockwise to increase the duration of the correction output.

**Registration Switch:** Switch to the right (on) enables the Out-of-Registration Monitor and the Out-of-Registration alarm relay. The switch to the left (Off) disables the Monitor and Clears the out-of-registration alarm condition.

**Out-of-Registration LED's:** The LED's will light when no registration mark is detected within the registration zone (beginning of forward gate to end of reverse gate). If five consecutive out-of-registration conditions occur, the LED's will flash and the Out-of-Registration relay will energize.

**Light/Dark Switch:** This switch is located on the rear of the scanner will select the conditions under which the scanner will turn its output on. For a light mark on dark background, select "Light" Operation. For a dark mark on a light background, select "Dark" Operation.

**Sensitivity Adjustment:** This dial is located on the rear of the scanner and adjusts the switching point between light and dark. See scanner instructions for sensitivity adjustment.

Forward Gate: Green light indicates that the flag is in the forward gate.

Forward Output: Green light indicates that a forward correction is underway.

Reverse Gate: Red light indicates that the flag is in the reverse gate.

Reverse Output: Red light indicates that a forward correction is underway.

#### 5. Installation Instructions

**Mounting** - The Quarter-DIN-II should be firmly mounted away from dirt and excessive vibration.

Electrical – If possible, use a lighting circuit for the 110 VAC supply.

Scanner – Mount the scanner so that the lens is 3/8" away from the web. Use the mounting holes and a rigid bracket. Avoid using a cable clamp as the scanner may be inadvertently defeated by movement. Select a location where web flutter is at a minimum such as over a roller.

Gating Selector – mount the selector so that it will rotate one revolution per repeat. In high-speed applications, a two-to-one ratio is acceptable (will produce output on every other repeat).

Correction Motor – Connect the correction motor to the control through the output relays.

Alarm Enable – If the Out-of-Registration alarm is to be enabled, provide a feed/no-feed switch that is closed when labels are being fed, open when no labels are being fed. This contact prevents alarm

activation if the labeler is running without labels. Wire this contact between terminals 4 and 18.

If a feed/no feed switch is not available, install a jumper wire (or a manual switch, on to enable) between terminals 4 and 15 to enable the out-of-registration alarm.

Wire Connections:

Upper Terminal Strip, Left to Right as viewed from the back of the control unit:

1. Forward Relay – octal socket pin #7
2. Relay Power supply, 12 VDC – octal socket pin #2 on both relays
3. Reverse Relay – octal socket pin #7
4. Label Feed Input – contact or jumper to pin 18 to enable
5. Scanner + 24 VDC supply (red)
6. Scanner Output (white)
7. Scanner Common (black)

Lower Terminal Strip, Left to Right as viewed from the back of the control unit:

*For Selector Switch counter-clockwise Rotation*

8. Selector Switch (Red)
9. Selector Switch (Orange)

*For Selector Switch clockwise Rotation*

8. Selector Switch (Orange)
9. Selector Switch (Red)
10. Selector Switch (Black & White, 2 leads)
11. Selector Switch (Blue & Green, 2 leads)
12. AC Ground
13. AC Neutral
14. AC 110 Volts

Vertical Terminal Strip, Top to Bottom

15. Label Feed Contact (shipped with jumper from 4 to 15)
16. Out of Registration Relay – Normally Open
17. Out of Registration Relay – Common
18. Out of Registration Relay – Normally Closed

**IMPORTANT** – After you have installed the control unit, determine the sequence of the gate lights for your application: Green/Red or Red/Green?

If Green/Red, skip the next five steps.

For Red/Green sequence:

1. Turn AC Power OFF.
2. Depress & hold the JOG switch in the reverse/right direction.
3. Turn AC Power ON.
4. Verify that the RED Output LED IS ON.
5. Release the JOG switch.

Proceed with setup instructions.

### **Setup Instructions**

Remember that this system will respond to only one registration mark for each revolution of the selector switch.

Loosen the thumb screw on the gating selector switch and rotate the flag through both gates. Observe that the appropriate LED's go on.

Make sure the Auto/Manual switch is in the Auto position.

Set both time control dials to "10".

Place the flag under one gate and flip the light/dark switch on the scanner off and on. The correction motor should run.

Determine if the correction motor is running in the proper direction. If not, reverse the motor wires you connected to the forward and reverse relays.

Activate the JOG switch to determine if the motor runs in both directions. Place the registration mark under the scanner, position the flag at top-dead-center between the gates and tighten the thumb screw. The dead band or window may be adjusted by pushing in the adjustment knob and separating the gates. Make sure the adjustment knob springs out when the adjustment is complete.

Set the time control dials to "4" and start running. Move the position by turning the adjustment knob on the selector switch and watching the function move.

For problems, comments or concerns about installing and setting up the Quarter-DIN-II, contact Scanning Devices for help:

Toll free: 800-486-3311

Direct: 781-272-5135

Fax: 781-272-4856

Email: [mail@scanningdevices.com](mailto:mail@scanningdevices.com)

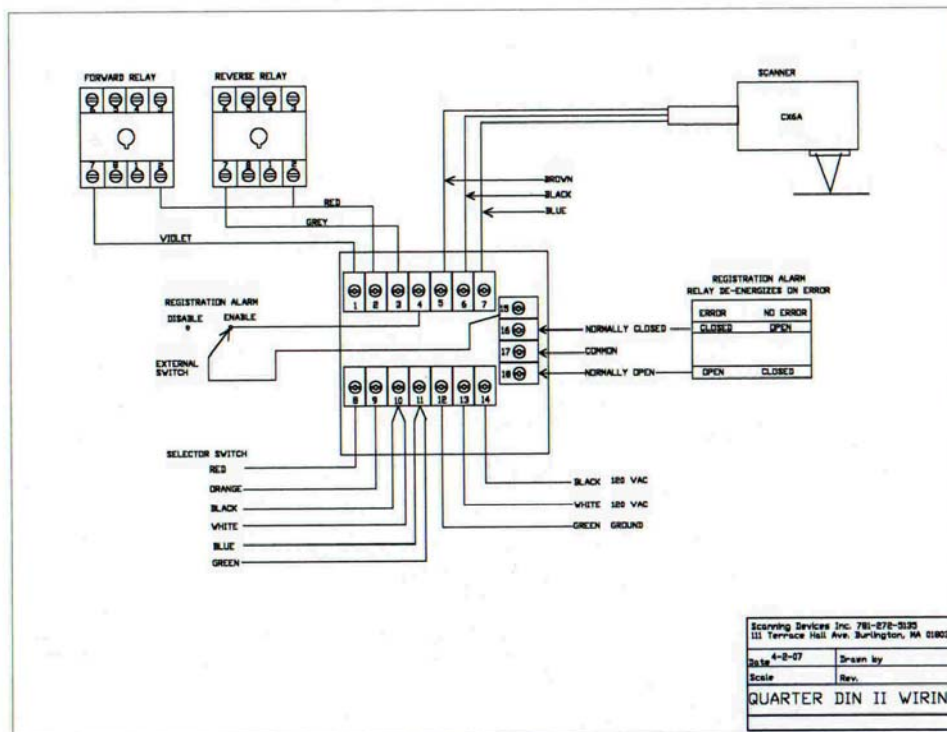


Figure 1: Quarter-DIN II Wiring Diagram

1. Forward Relay – octal socket pin #7
  2. Relay Power supply, 12 VDC – octal socket pin #2 on both relays
  3. Reverse Relay – octal socket pin #7
  4. Label Feed Input – switch or jumper to pin 18 to enable
  5. Scanner + 24 VDC supply (brown for CX6A)
  6. Scanner Output (black for CX6A)
  7. Scanner Common (blue for CX6A)
- For Selector Switch counter-clockwise Rotation*
8. Selector Switch (Red)
  9. Selector Switch (Orange)
- For Selector Switch clockwise Rotation*
8. Selector Switch (Orange)
  9. Selector Switch (Red)
10. Selector Switch (Black & White, 2 leads)
  11. Selector Switch (Blue & Green, 2 leads)
  12. AC Ground
  13. AC Neutral
  14. AC 110 Volts
  15. Label Feed Contact (shipped with jumper from 4 to 15)
  16. Out of Registration Relay – Normally Open
  17. Out of Registration Relay – Common
  18. Out of Registration Relay – Normally Closed