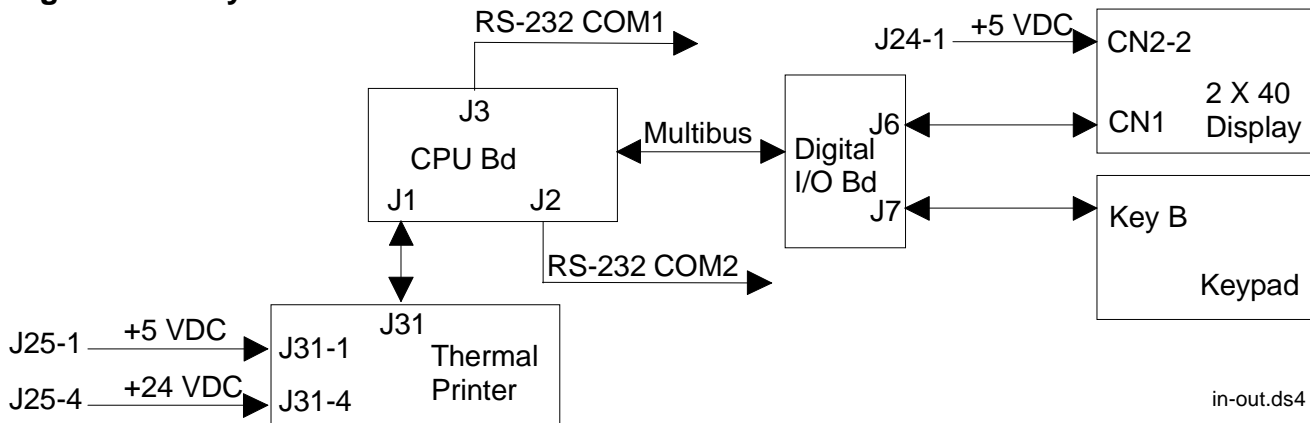


## Digital I/O Board (pg 1 of 8)

### Signal Pathway

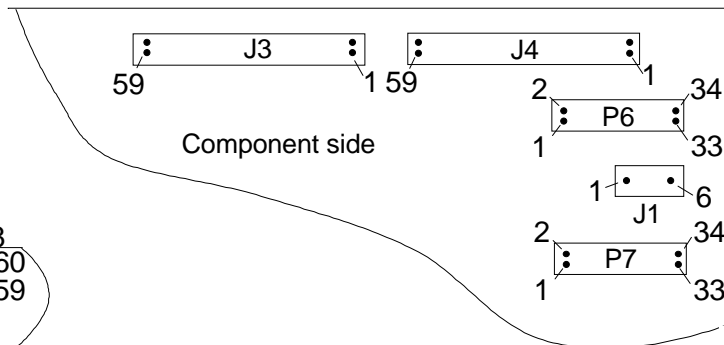
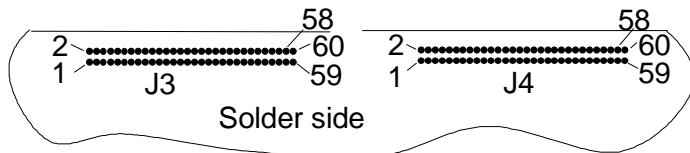


|      |              |         |
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| PL-7 | Board Layout | Pinouts |
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## Digital I/O Board (pg 2 of 8)

### Board Layout



dig-iobd.ds4

|                   |         |
|-------------------|---------|
| Signal<br>Pathway | Pinouts |
|-------------------|---------|

|                      |                    |                   |       |
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## Digital I/O Board (pg 3 of 8)

### Connector Pin Callouts

#### Digital I/O (Dig I/O) to Display

| From Dig I/O Bd | To Display | Remarks |
|-----------------|------------|---------|
| J6 - 1          | CN1 - 1    | D7      |
| J6 - 2          | CN1 - 2    | DGND    |
| J6 - 3          | CN1 - 3    | D6      |
| J6 - 4          | CN1 - 4    | DGND    |
| J6 - 5          | CN1 - 5    | D5      |
| J6 - 6          | CN1 - 6    | DGND    |
| J6 - 7          | CN1 - 7    | D4      |
| J6 - 8          | CN1 - 8    | DGND    |
| J6 - 9          | CN1 - 9    | D3      |
| J6 - 10         | CN1 - 10   | DGND    |
| J6 - 11         | CN1 - 11   | D2      |

#### Digital I/O to Display (cont)

| From Dig I/O Bd | To Display | Remarks |
|-----------------|------------|---------|
| J6 - 12         | CN1 - 12   | DGND    |
| J6 - 13         | CN1 - 13   | D1      |
| J6 - 14         | CN1 - 14   | DGND    |
| J6 - 15         | CN1 - 15   | D0      |
| J6 - 16         | CN1 - 16   | DGND    |
| J6 - 17         | CN1 - 17   | IOW     |
| J6 - 18         | CN1 - 18   | DGND    |
| J6 - 19         | CN1 - 19   | NC      |
| J6 - 20         | CN1 - 20   | DGND    |
| J6 - 21         | CN1 - 21   | NC      |
| J6 - 22         | CN1 - 22   | DGND    |

## Digital I/O Board (pg 4 of 8)

### Connector Pin Callouts (cont)

#### Digital I/O to Display (cont)

| From Dig I/O Bd | To Display | Remarks    |
|-----------------|------------|------------|
| J6 - 23         | CN1 - 23   | DISPLAY CS |
| J6 - 24         | CN1 - 24   | DGND       |
| J6 - 25         | CN1 - 25   | NC         |
| J6 - 26         | CN1 - 26   | DGND       |
| J6 - 27         | CN1 - 27   | BUSY       |
| J6 - 28         | CN1 - 28   | DGND       |
| J6 - 29         | CN1 - 29   | NC         |
| J6 - 30         | CN1 - 30   | DGND       |
| J6 - 31         | CN1 - 31   | NC         |
| J6 - 32         | CN1 - 32   | DGND       |
| J6 - 33         | CN1 - 33   | NC         |
| J6 - 34         | CN1 - 34   | DGND       |

#### Digital I/O to Keyboard

| From Dig I/O Bd | To Keyboard | Remarks    |
|-----------------|-------------|------------|
| J7 - 1          | KEYB - 1    | NC         |
| J7 - 2          | KEYB - 2    | NC         |
| J7 - 3          | KEYB - 3    | NC         |
| J7 - 4          | KEYB - 4    | NC         |
| J7 - 5          | KEYB - 5    | NC         |
| J7 - 6          | KEYB - 6    | NC         |
| J7 - 7          | KEYB - 7    | NC         |
| J7 - 8          | KEYB - 8    | (S) ARROW1 |
| J7 - 9          | KEYB - 9    | (R) ARROW1 |
| J7 - 10         | KEYB - 10   | (S) ARROW2 |
| J7 - 11         | KEYB - 11   | (R) ARROW2 |
| J7 - 12         | KEYB - 12   | (S) ARROW3 |

|                                |                              |
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## Digital I/O Board (pg 5 of 8)

### Connector Pin Callouts (cont)

#### Digital I/O to Keyboard (cont)

| From Dig I/O Bd | To Keyboard | Remarks    |
|-----------------|-------------|------------|
| J7 - 13         | KEYB - 13   | (R) ARROW3 |
| J7 - 14         | KEYB - 14   | (S) ARROW4 |
| J7 - 15         | KEYB - 15   | (R) ARROW4 |
| J7 - 16         | KEYB - 16   | (S) RUN    |
| J7 - 17         | KEYB - 17   | (R) RUN    |
| J7 - 18         | KEYB - 18   | (S) CAL    |
| J7 - 19         | KEYB - 19   | (R) CAL    |
| J7 - 20         | KEYB - 20   | (S) MODE1  |
| J7 - 21         | KEYB - 21   | (R) MODE1  |
| J7 - 22         | KEYB - 22   | (S) MODE2  |
| J7 - 23         | KEYB - 23   | (R) MODE2  |

#### Digital I/O to Keyboard (cont)

| From Dig I/O Bd | To Keyboard | Remarks |
|-----------------|-------------|---------|
| J7 - 24         | KEYB - 24   | KY2     |
| J7 - 25         | KEYB - 25   | KX3     |
| J7 - 26         | KEYB - 26   | KX1     |
| J7 - 27         | KEYB - 27   | KY6     |
| J7 - 28         | KEYB - 28   | KY5     |
| J7 - 29         | KEYB - 29   | KY0     |
| J7 - 30         | KEYB - 30   | KX0     |
| J7 - 31         | KEYB - 31   | KY1     |
| J7 - 32         | KEYB - 32   | KX2     |
| J7 - 33         | KEYB - 33   | KY3     |
| J7 - 34         | KEYB - 34   | KY4     |

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## Digital I/O Board (pg 6 of 8)

### Connector Pin Callouts (cont)

#### Digital I/O to Motor Driver

| From Dig I/O | To Motor Driver | Remarks              |
|--------------|-----------------|----------------------|
| J3 - 1       | P1 - 1          | DGND                 |
| J3 - 2       | P1 - 2          | DIGCONN              |
| J3 - 3       | P1 - 3          | R-Boom Home Sense    |
| J3 - 4       | P1 - 4          | DGND                 |
| J3 - 5       | P1 - 5          | Spare Home Sensor    |
| J3 - 6       | P1 - 6          | DGND                 |
| J3 - 7       | P1 - 7          | Carousel Home Sensor |
| J3 - 8       | P1 - 8          | DGND                 |
| J3 - 9       | P1 - 9          | Z-Boom Home Sense    |
| J3 - 10      | P1 - 10         | DGND                 |

#### Digital I/O to Motor Driver (cont)

| From Dig I/O | To Motor Driver | Remarks                  |
|--------------|-----------------|--------------------------|
| J3 - 11      | P1 - 11         | Valve B Home Sense       |
| J3 - 12      | P1 - 12         | DGND                     |
| J3 - 13      | P1 - 13         | Valve A Home Sense       |
| J3 - 14      | P1 - 14         | DGND                     |
| J3 - 15      | P1 - 15         | Left Syringe Home Sense  |
| J3 - 16      | P1 - 16         | DGND                     |
| J3 - 17      | P1 - 17         | Right Syringe Home Sense |
| J3 - 18      | P1 - 18         | DGND                     |
| J3 - 19      | P1 - 19         | DGND                     |
| J3 - 20      | P1 - 20         | DGND                     |
| J3 - 21      | P1 - 21         | DIR3                     |

|                                |                              |
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## Digital I/O Board (pg 7 of 8)

### Connector Pin Callouts (cont)

#### Digital I/O to Motor Driver (cont)

| From Dig I/O | To Motor Driver | Remarks    |
|--------------|-----------------|------------|
| J3 - 22      | P1 - 22         | DIR2       |
| J3 - 23      | P1 - 23         | DIR1       |
| J3 - 24      | P1 - 24         | DIR0       |
| J3 - 25      | P1 - 25         | NC         |
| J3 - 26      | P1 - 26         | NC         |
| J3 - 27      | P1 - 27         | HALF/FULL2 |
| J3 - 28      | P1 - 28         | MSEL2      |
| J3 - 29      | P1 - 29         | PULSE2     |
| J3 - 30      | P1 - 30         | FULL PWR2  |
| J3 - 31      | P1 - 31         | DGND       |

#### Digital I/O to Motor Driver (cont)

| From Dig I/O | To Motor Driver | Remarks    |
|--------------|-----------------|------------|
| J3 - 32      | P1 - 32         | DGND       |
| J3 - 33      | P1 - 33         | HALF/FULL3 |
| J3 - 34      | P1 - 34         | MSEL3      |
| J3 - 35      | P1 - 35         | PULSE3     |
| J3 - 36      | P1 - 36         | FULL-PWR3  |
| J3 - 37      | P1 - 37         | DGND       |
| J3 - 38      | P1 - 38         | DGND       |
| J3 - 39      | P1 - 39         | HALF/FULL0 |
| J3 - 40      | P1 - 40         | MSEL0      |
| J3 - 41      | P1 - 41         | PULSE0     |

|                                |                              |
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## Digital I/O Board (pg 8 of 8)

### Connector Pin Callouts (cont)

#### Digital I/O to Motor Driver (cont)

| From Dig I/O | To Motor Driver | Remarks    |
|--------------|-----------------|------------|
| J3 - 42      | P1 - 42         | FULL PWR0  |
| J3 - 43      | P1 - 43         | DGND       |
| J3 - 44      | P1 - 44         | DGND       |
| J3 - 45      | P1 - 45         | MSEL1      |
| J3 - 46      | P1 - 46         | FULL PWR1  |
| J3 - 47      | P1 - 47         | HALF/FULL1 |
| J3 - 48      | P1 - 48         | PULSE1     |
| J3 - 49      | P1 - 49         | Beeper     |
| J3 - 50      | P1 - 50         | DGND       |
| J3 - 51      | P1 - 51         | AH-CNTRL   |

#### Digital I/O to Motor Driver (cont)

| From Dig I/O | To Motor Driver | Remarks             |
|--------------|-----------------|---------------------|
| J3 - 52      | P1 - 52         | MAIN DOOR1          |
| J3 - 53      | P1 - 53         | OH-CNTRL            |
| J3 - 54      | P1 - 54         | Heater#1 (spare)    |
| J3 - 55      | P1 - 55         | Reagent Pack Heater |
| J3 - 56      | P1 - 56         | POR /OR CALLED INIT |
| J3 - 57      | P1 - 57         | LH-CNTRL            |
| J3 - 58      | P1 - 58         | LOCKUP /OR WATCHDOG |
| J3 - 59      | P1 - 59         | DOOR2               |
| J3 - 60      | P1 - 60         | TIMER INTERRUPT     |

|                                |                              |
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