

# DL-480

## Adjusting Ticket Dispenser

### Owners Manual

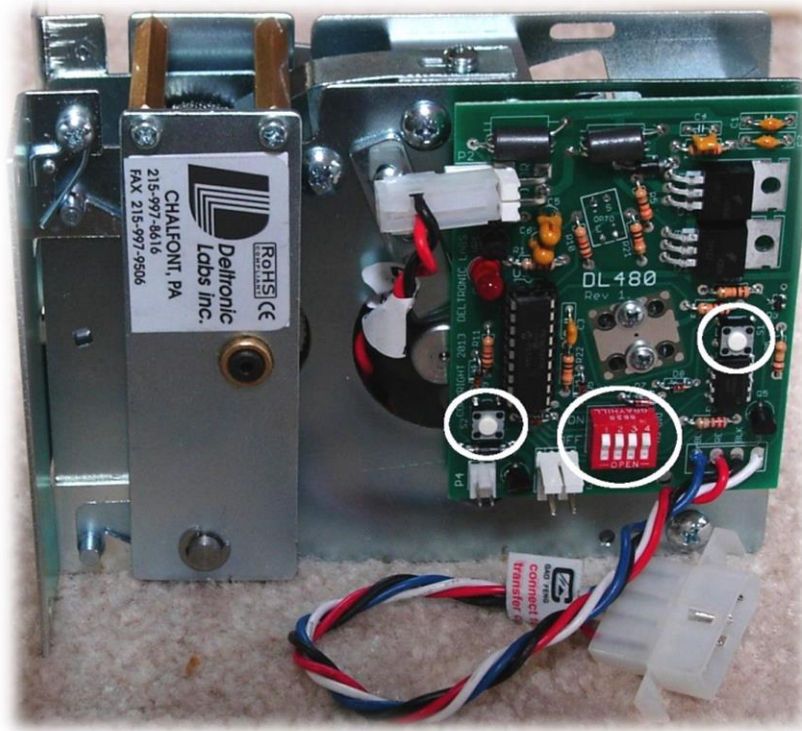
The DL-480 is a versatile ticket dispenser. It has both a 4 wire DL-1275 style input and a 6 pin DL-4 style input. Each input can be independently configured to adjust the ticket payout. The inputs can be configured to either multiply or divide the payout by a set factor, or to give a fixed quantity of tickets instead of the normal payout.

Pins 3 and 4 of the DL-4 input can be connected to a coin switch to dispense “mercy tickets” while also using the DL-1275 input to dispense earned tickets.

The DL-480 inputs and outputs can also be individually configured to use standard or inverted polarity.

### Configuration

The DL-480 has 2 push buttons and a set of 4 DIP switches that are used to configure it. Configuration settings are not changed until the entire procedure is completed. If you make a mistake, remove and reapply power, and then start over.



1. Connect the DL-480 to the game. Then apply power.
2. To enter programming mode. Press both buttons the same time. The LED will come on.
3. Set the DIP switches for the motor speed as seen by the game and the adjustment mode for the DL-1275 style input (see Table 1). Most games can use high speed, but some older games may require standard speed.

**Table 1: Adjustment Mode for DL-1275 Input**

1	2	3	4	Mode	Motor Speed
OFF	OFF	OFF	OFF	MULTIPLY	High
<i>on</i>	OFF	OFF	OFF	DIVIDE – round down (drop remainder)	High
OFF	<i>on</i>	OFF	OFF	DIVIDE – keeps remainder	High
OFF	OFF	<i>on</i>	OFF	DIVIDE – round up	High
<i>on</i>	<i>on</i>	OFF	OFF	FIXED	High
OFF	OFF	OFF	<i>on</i>	MULTIPLY	Standard
<i>on</i>	OFF	OFF	<i>on</i>	DIVIDE – round down (drop remainder)	Standard
OFF	<i>on</i>	OFF	<i>on</i>	DIVIDE – keeps remainder	Standard
OFF	OFF	<i>on</i>	<i>on</i>	DIVIDE – round up	Standard
<i>on</i>	<i>on</i>	OFF	<i>on</i>	FIXED	Standard

OFF = switch open, *on* = switch closed.

- Press either button to read the DIP switches. If the switch setting is valid the LED starts slowly blinking. If it does not start blinking check the switches and press the button again.
- Set the DIP switches for the adjustment mode for the DL-4 style input.

**Table 2: Adjustment Mode for DL-4 Input**

1	2	3	4	Mode
OFF	OFF	OFF	x	MULTIPLY
<i>on</i>	OFF	OFF	x	DIVIDE – round down (drop remainder)
OFF	<i>on</i>	OFF	x	DIVIDE – keeps remainder
OFF	OFF	<i>on</i>	x	DIVIDE – round up
<i>on</i>	<i>on</i>	OFF	x	FIXED

OFF = switch open, *on* = switch closed, x = either (not used).

- Press either button to read the DIP switches. If the switch setting is valid the LED will stop blinking. If it does not stop, check the switches and press the button again.
- Set the DIP switches for the adjustment value to use for the DL-1275 input (see Table 3). Be sure to use the column in that corresponds to the adjustment mode you selected in step 3.

**Table 3: Adjustment Value for DL-1275 Input**

1	2	3	4	Multiply Mode	Divide Modes	Fixed Mode
OFF	OFF	OFF	OFF	0	2	1
<i>on</i>	OFF	OFF	OFF	1	3	2
OFF	<i>on</i>	OFF	OFF	2	4	3
<i>on</i>	<i>on</i>	OFF	OFF	3	5	4
OFF	OFF	<i>on</i>	OFF	4	6	5
<i>on</i>	OFF	<i>on</i>	OFF	5	7	6
OFF	<i>on</i>	<i>on</i>	OFF	6	8	7
<i>on</i>	<i>on</i>	<i>on</i>	OFF	7	9	8
OFF	OFF	OFF	<i>on</i>	8	10	9
<i>on</i>	OFF	OFF	<i>on</i>	9	11	10
OFF	<i>on</i>	OFF	<i>on</i>	10	12	11
<i>on</i>	<i>on</i>	OFF	<i>on</i>	11	13	12
OFF	OFF	<i>on</i>	<i>on</i>	12	14	13
<i>on</i>	OFF	<i>on</i>	<i>on</i>	13	15	14
OFF	<i>on</i>	<i>on</i>	<i>on</i>	14	16	15
<i>on</i>	<i>on</i>	<i>on</i>	<i>on</i>	15	17	16

OFF = switch open, *on* = switch closed.

- Press either button to read the DIP switches. The LED will start blinking slowly.
- Set the DIP switches for the adjustment value to use for the DL-4 input (see Table 4). Be sure to use the column in that corresponds to the adjustment mode you selected in step 5.

**Table 4: Adjustment Value for DL-4 Input**

1	2	3	4	Multiply Mode	Divide Modes	Fixed Mode
OFF	OFF	OFF	OFF	0	2	1
<i>on</i>	OFF	OFF	OFF	1	3	2
OFF	<i>on</i>	OFF	OFF	2	4	3
<i>on</i>	<i>on</i>	OFF	OFF	3	5	4
OFF	OFF	<i>on</i>	OFF	4	6	5
<i>on</i>	OFF	<i>on</i>	OFF	5	7	6
OFF	<i>on</i>	<i>on</i>	OFF	6	8	7
<i>on</i>	<i>on</i>	<i>on</i>	OFF	7	9	8
OFF	OFF	OFF	<i>on</i>	8	10	9
<i>on</i>	OFF	OFF	<i>on</i>	9	11	10
OFF	<i>on</i>	OFF	<i>on</i>	10	12	11
<i>on</i>	<i>on</i>	OFF	<i>on</i>	11	13	12
OFF	OFF	<i>on</i>	<i>on</i>	12	14	13
<i>on</i>	OFF	<i>on</i>	<i>on</i>	13	15	14
OFF	<i>on</i>	<i>on</i>	<i>on</i>	14	16	15
<i>on</i>	<i>on</i>	<i>on</i>	<i>on</i>	15	17	16

OFF = switch open, *on* = switch closed.

10. Press either button to read the DIP switches. The LED will blink faster.
11. Set the DIP switches for signal polarities and security (see Table 5). Then press either button to read the DIP switches. The polarities feature allows the DL-480 to be used with games which use non-standard signal polarities to prevent their use with standard ticket dispensers.

**Table 5: Polarities and Security**

Function	DIP Switch	OFF (open)	ON (closed)
Enable Signal Polarity	1	Standard	Reverse
Notch Signal Polarity	2	Standard	Reverse
DL-4 Polarity	3	Standard (N.O.)	Reverse (N.C.)
Ticket Feed Security	4	Inactive	Active

Pressing either button runs the motor to aid in loading tickets. In some applications this is a security problem. Creative thieves have found a way to reach the buttons and use them to dispense unearned tickets. When ticket feed security is active, the buttons do not work for feeding tickets. See the description of Help mode for the exception to this.

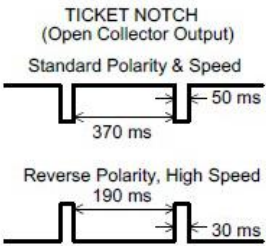
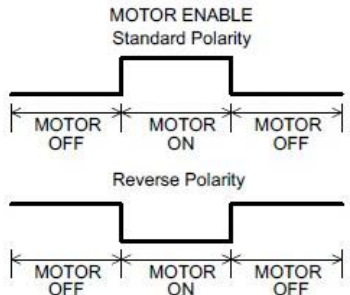
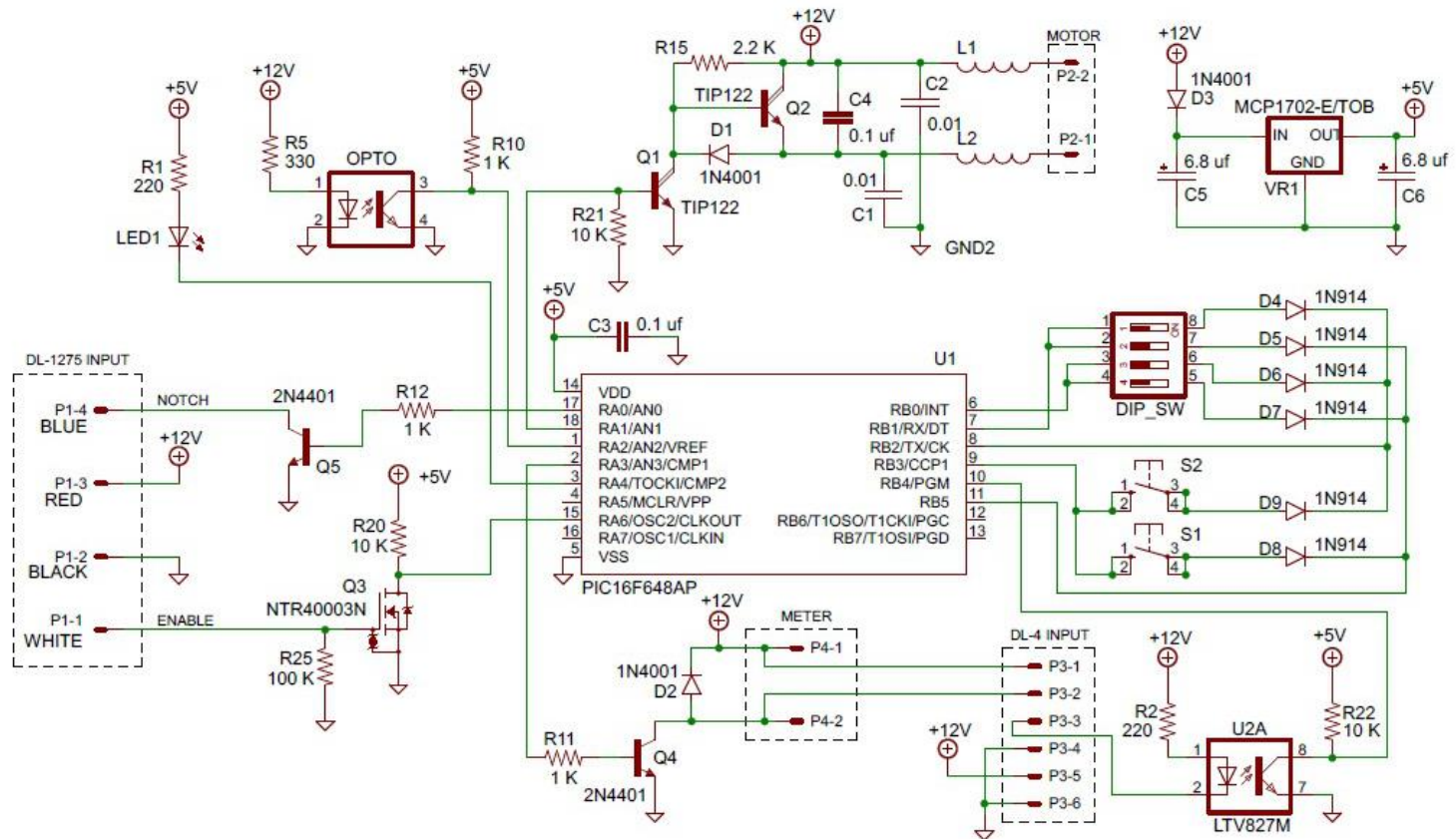
## Help Mode

If the DL-480 detects a problem it enters Help mode. In Help mode the LED blinks quickly. The most common problem is running out of tickets. After fixing the problem, press either button. As long as power to the game was not removed the DL-480 will then dispense any tickets that are owed.

Ticket feed security is overridden when in Help mode so that tickets can be easily reloaded. This override expires two minutes after the first button press.

While in Help mode the DL-480 returns signals to the game so that the game does not enter an error mode. If the game does detect an error then the DL-480 is hooked up incorrectly.

For technical help call (215) 997-8616.



	MIN.	TYP.	MAX.
Supply Voltage	11 V	12 V	13 V
I (Start)	1.3 A	1.5 A	1.7 A
I (Run)		0.4 A	0.85 A
I (Standby)			30 ma
Enable On Volt	1.5 V		12 V
Enable Off Volt	0 V		1.0 V
Notch I Sink			50 ma
Notch V Pullup			30 V

### Adjuster & TD Control Board

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