# CircuitWerkes

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# DC-232D
# 9600B Serial Data Delay

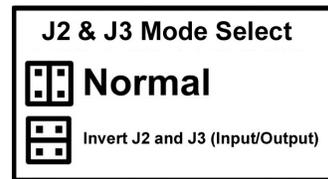# Quick Setup Guide

# Introduction:

The DC-232D is a serial data delay for data sync to profanity delays and RDS data sync for HD. It features a user adjustable delay time in 100ms increments up to 108 seconds and has an external dump trigger to reset and clear the delay.  Delay time is set via front panel controls.  The delay can also be dumped and reset from the front panel.  The data baud rate is 9600 N,8,1.  Only the serial transmit (TX) line is active in the DC-232D. No peripheral signals are routed from the input to output connectors.

# Connecting to your DC-232D for the first time:

The DC-232 has one female D-9 and one male D-9 connector.  Typically, the female connector is considered the input and th emale is the output, however, it is possible to reverse the connectors as needed to satisfy your situation.  You may also choose to use normal serial cables or null modem cables.   It is even possible to mix normal and null cables.

The configuration for delaying serial data between two computers will usually be different than between a computer and a peripheral hardware device or between two peripheral hardware devices.   Computer to computer connections will often use two normal serial cables.   When connected to the DC-232D, the TX signal is delayed and outputted on the RX line of the other machine.  In other words, the incoming data is crossed over from pin 3 of the send (input) connector to pin 2 (receive) line of the output connector.    The DC-232D has two sets of jumpers JP6 and JP7.

JP6 is used to invert the input and output connectors.  They must always be operated as a pair.  If you select inverted operation, then the male connector becomes the input with the female being the output.  Note that this may affect your jumper or cabling choices.
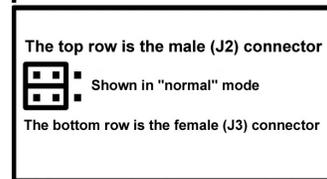


JP7 lets you select the type of cable that you are using.  Normal cables are straight through so that pins are the same on both ends.  In other words, pin 2 is always pin 2 and pin 3 is still pin 3 on the other end.    Null modem cables invert pins 2 and 3.  In other words, a null modem cable is a crossover so that TX is tied to RX on the other end.  We have labelled the lines are normal/null, but  before selecting the cable type,
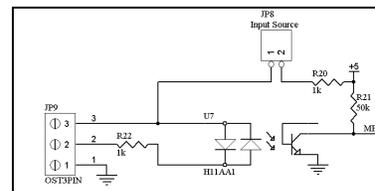
we should define that normal and null usually work differently depending upon if the devices are computers or if they are peripheral devices.    In the case of JP7, we assume that two peripherals are talking, so if you were connecting two such devices via a pair of normal cables, you would select the normal mode.  If you were connecting *two computer ports* via the same NORMAL CABLES you would need to select the "Null-Modem" mode for both jumpers.
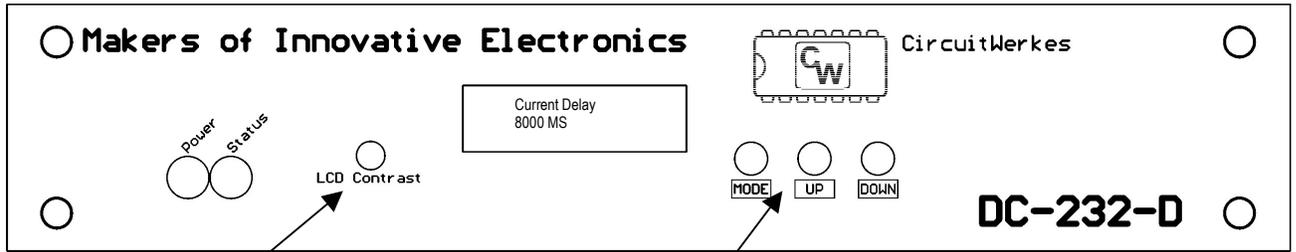


If a computer is talking to a peripheral, then the bottom jumper would normally be set for null mode and the top jumper for normal mode.  Again, this depends somewhat on the peripheral's configuration.  You may have to experiment, especially with the top jumper.

JP9, a 3 position depluggable screw terminal is used as an external dump trigger. This input is optocoupled and is associated with jumper JP8.  JP8 internally pulls the dump trigger input up so that you need only ground the connection to dump the memory.  The connections, from left to right  are ground, trigger and source voltage. If jumpered for internal pullup (J8=on) then ground and trigger are the only to connections necessary.  If you are supplying your own source (JP8=off), then the source voltage pin is where that is applied.

# Controlling the DC-232D:

The front panel control and LCD let you set the delay time of the DC-232D.  The delay is continuously variable, so it works like a volume control.  When you are in the delay set mode, any change that you set is effective as soon as you see it on the LCD.   You can also clear the memory.



Adjust this pot for proper contrast in your lighting environment.

Controls:  Mode selects between delay adjust, reset memory and view buffer items.



DC-232D Version 1.1   Block Diagram