jw Electronics

OBM-1 Output Booster Module
For MIDI-to-Parallel Converters

Installation Instructions

Product Description

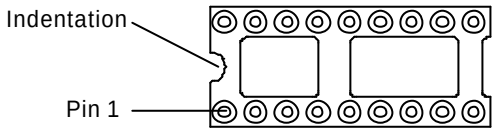
The OBM-1 from j-Omega Electronics is an accessory that allows higher than normal currents to be switched by parallel-output circuits such as the MTP series MIDI-to-Parallel converters. The module is a drop-in replacement for the industry-standard 18-pin ULN2803 octal transistor array.

Installation

Carefully remove the OBM-1 circuit from its protective packaging, handling the board by its edges only and paying particular attention to the projecting pins that can easily be bent out of alignment.

Before installing the OBM-1 in an MTP circuit, the original ULN2803 device must be removed from the socket where the OBM-1 is to go. The ULN2803 can be removed by inserting a screwdriver at each end between the socket and the base of the ULN2803 then levering the device upwards and out of the socket. Take care to lift the ULN2803 squarely relative to the socket such that its pins do not get bent. Once removed, the ULN2803 should be stored in electrostatic safe packaging if it is to be kept for further use.

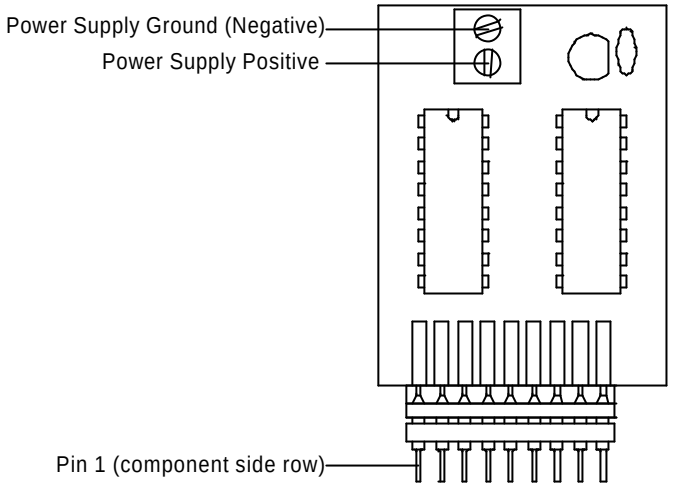
To install the OBM-1 into an 18-pin socket on the MTP circuit board, first identify the pin 1 position of the socket looking down onto the circuit board. Pin 1 will be at the lower left corner when the semi-circular indentation at the end of the socket is on your left (see illustration below). Note that in the MTP-7 and MTP-8 circuits, the lower row of sockets is arranged in the opposite sense to the upper row, but the position of pin 1 in relation to the socket is the same in all cases.



Pin 1 of the OBM-1 is the leftmost pin of the front row when looking at the component side of the OBM-1 circuit board. Ensuring that pin 1 of the OBM-1 corresponds to pin 1 of the MTP socket, press the OBM-1 down squarely into the socket until it is fully seated.

Connection

All the input and output connections for the OBM-1 are provided via the plug-in pins. However, the OBM-1 also requires a low voltage power supply to operate its internal circuitry. Additionally, an extra Power Supply Ground connection must be made between the OBM-1 and the MTP circuit to handle the high load current that may flow during use. These two power connections are made via the screw terminals at the top of the OBM-1.



The OBM-1 requires a DC supply in the range 8 to 35 Volts between its 'Power Supply Positive' and 'Power Supply Ground' terminals to power its on-board circuitry. This supply must share the same ground potential as the MTP circuit on which it is fitted. This supply must be adequately smoothed to maintain a minimum voltage of 8V at all times. In most cases, the same supply which powers the MTP circuit logic can be used to also power one or more OBM-1 circuits.

Electrical Specifications

Supply voltage: 8 to 35 V DC
Supply current: 12mA maximum
Output voltage switching capability: 35 V DC maximum
Output current capability: 1.5 A maximum continuous per output at 25 °C

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