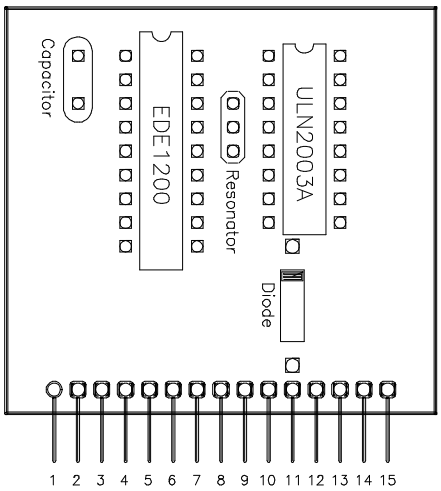
Stepper Motor Control Module



This 15-pin, 1¾" square module provides convenient control for any unipolar (5 or 6 wire) stepper motor. The following components are included with the Stepper Module Kit:

1 Pre-drilled Circuit Board
1 EDE1200 Stepper Controller IC with datasheet
1 ULN2003A Power IC with datasheet
1 4 MHz Resonator
1 Zener Diode
1 Capacitor
1 18 Pin IC Socket
1 16 Pin IC Socket
1 15 Pin Right-Angle Header

Pinout for the Stepper Module is as follows:

Pin 1: +5VDC
Pin 2: Ground (Logic AND Motor Supplies)
Pin 3: Free Spin Select (EDE1200 Pin 6)
Pin 4: Direction Select (EDE1200 Pin 7)
Pin 5: Half-Step Select (EDE1200 Pin 8)
Pin 6: Step Input (EDE1200 Pin 9)
Pin 7: Mode Select (EDE1200 Pin 10)
Pin 8: Speed Control A (EDE1200 Pin 11)
Pin 9: Speed Control B (EDE1200 Pin 12)
Pin 10: Speed Control C (EDE1200 Pin 13)
Pin 11: Motor Positive Supply Connect
Pin 12: Phase Four Drive
Pin 13: Phase Three Drive
Pin 14: Phase Two Drive
Pin 15: Phase One Drive

For a full explanation of the EDE1200 Stepper Motor IC's operation and usage, see the EDE1200 Stepper Motor IC datasheet. Maximum allowed power dissipation is specified in the ULN2003A datasheet.

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Stepper Motor Control Module Assembly

To assemble the Stepper Module, follow these steps in order:

1. Identify all components listed on previous page.
2. Insert right-angle header so that the black plastic touches the front of the circuit board and the longer pins extend downward. Solder all 15 connections on back of circuit board.
3. Insert both IC sockets into proper positions on circuit board with notched ends toward the top, away from the 15-pin header. Bend corner pins of both sockets outward once inserted to hold socket in place. Solder all socket connections.
4. Bend leads of diode and insert into position labeled 'Diode' on previous page. MAKE SURE THAT THE STRIPE ON THE DIODE IS NEARER THE ULN2003 IC SOCKET THAN THE HEADER. Bend leads outward to secure diode. Clip leads and solder both ends.
5. Insert capacitor into holes on top-left corner of the circuit board. Notice that there are three holes there to accommodate various sizes of capacitors; Use the top two holes. The capacitor can be inserted either way into the top two holes. Bend leads slightly outward to secure the capacitor, clip leads, and solder.
6. Insert the resonator into the three holes in between the IC sockets. It does not matter which direction it is inserted. Bend outer two leads slightly to hold resonator in place. Solder all three leads.
7. Inspect all solder connections for shorts (solder between two pads or traces). Make sure all connections are soldered (except extra hole below capacitor).
8. Gently insert the EDE1200 into the left-hand socket. The notch on the end of the EDE1200 goes toward the top (away from the 15-pin header).
9. Gently insert the ULN2003A into the right-hand socket. The notch on the end of the ULN2003A goes toward the top (away from the 15-pin header).

The stepper control module is now fully assembled. Refer to the pinout on the previous page as well as the EDE1200 Stepper Motor Controller datasheet for proper usage instructions. This module's schematic is nearly identical to the last schematic in the EDE1200 Datasheet, "*Implementation via ULN2003A IC*".

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