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FDDC DC-DC Converter

The FDDC is a DC-DC converter which powers a Shugart-style 8" floppy disk drive from a PC power supply. It uses switch-mode converters to translate the PSU's +12V rail to the +24V needed by 8" drives, as well as the -5V low-current supply used by some early models. The PSU's +5V rail is passed directly through to the drive.

Wiring instructions

- Mount the supplied 6-32 stand-offs to the corners of the PC board with hex nuts. The board is 3" (76 mm) square and may be mounted to the inside of the drive cabinet with holes drilled on 2.6" (66 mm) centers, positioned for the best available ventilation.
- Plug a spare IDE power connector from the PC's power supply into J1, provided the PC has enough spare capacity to power the drive in addition to the rest of the PC (keep in mind that the DC-DC conversion is only about 80% efficient so the current drawn at +12 VDC is about 2.5 times the current supplied at +24 VDC).
- OR -
- Plug the 20- or 24-pin plug from a dedicated ATX power supply into J2. In this case the power supply's "power on" signal is driven by the FDDC, based on any one of the following inputs:
 - A normally-open momentary pushbutton attached to the headers marked "PB1".
 - A normally-open toggle or slide switch attached to the headers marked "SW".
 - The tiny pushbutton on the PC board, which is intended only for checkout before you build that magnificent cabinet, since it would be wrong to keep the drive and FDDC and PSU scattered all over a desk indefinitely ... right?

N.B. use either J1 or J2 but not both

- Plug the 6-pin AMP Mate-N-Lok connector into the floppy drive.
- Some drives have AC spindle motors, which must be externally connected to 110/220 VAC. This wiring should be done only by someone with experience working safely with line voltages. The FDDC has solder pads for driving an external user-supplied relay (or SSR) with a 5 VDC or 12 VDC coil, so that the spindle motor will power on only when the drive has DC power.

Specifications

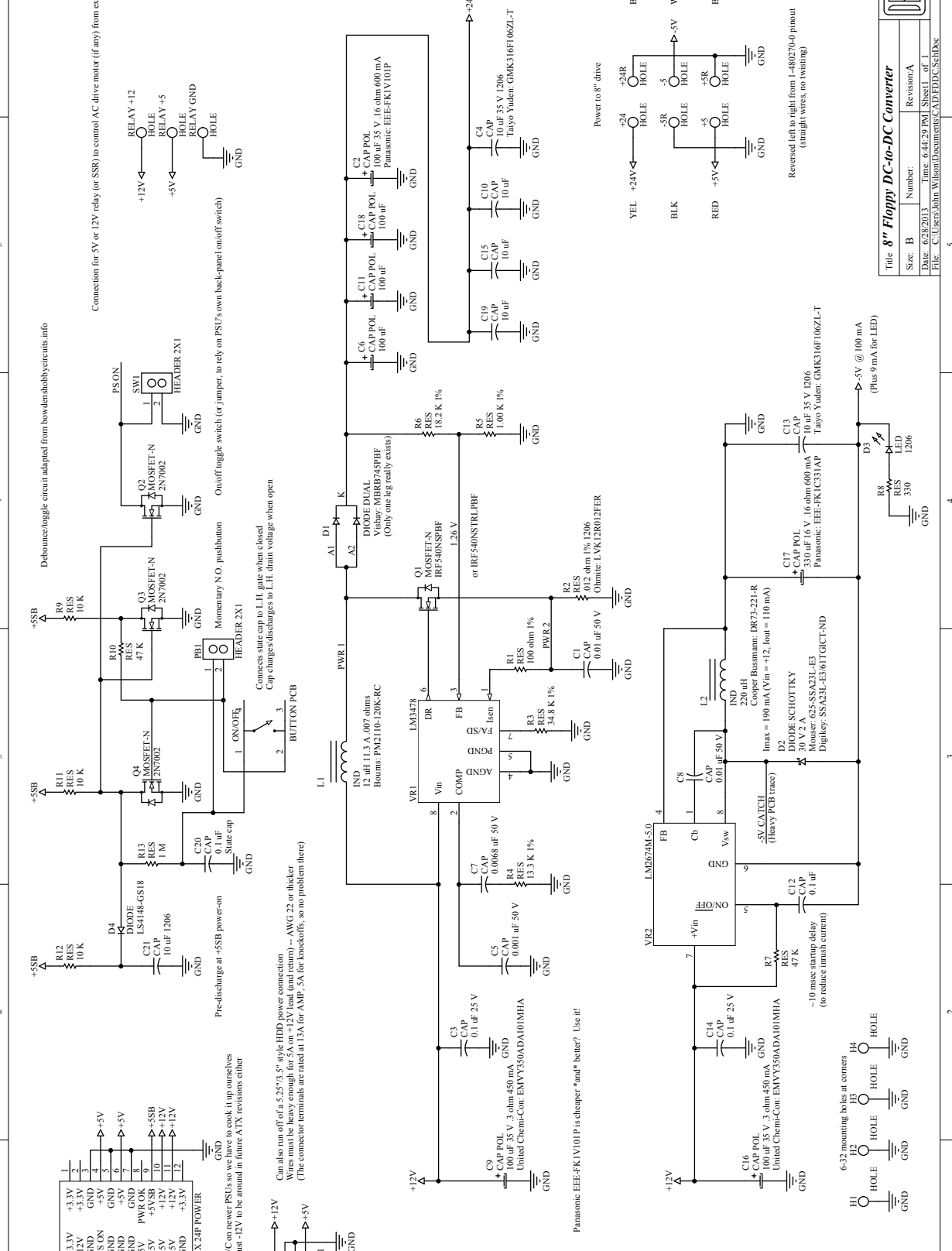
Inputs:

- +12V 5A
- +5V (current as needed by drive)

Outputs:

- +24V 2A (2.5A surge)
- 5V 100mA
- +5V (passed through from PC power supply)

Schematic (on next page)



Panasonic EEE-FK1V101P is cheaper *and* better! Use it!
 Can also run off of a 5.25" 3.5" style HDD power connection
 (The connector terminals are rated at 13A for AMP, 5A for Amps, so no problem there)
 Pre-discharge at -55B power-on
 State cap
 Momentary N.O. pushbutton
 On/off toggle switch (or jumper, to rely on PSU's own back-panel on/off switch)
 Debouncer/circuit adapted from bowdenshobbycircuits.info
 Connection for 5V or 12V relay (or SSR) to control AC drive motor (if any) from external AC source
 6-32 mounting holes at corners
 DBIT LOGO
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 Title: 8" Floppy DC-to-DC Converter
 Size: B Number: Revision: A
 Date: 6/28/2013 Time: 6:44:29 PM Sheet: 1 of 1
 File: C:\Users\John.Wilson\Documents\CAD\FDDC-SchDoc