

Note 1.1: Possible alternative AU1RFR5305, SUD19P06-60, SPD30P06P or other with similar or lower input capacitance  
 Note 1.2: WE 7447709330, WE 7443551331, Coilcraft MSS1210-333, Coilcraft XAL1510-333, Vishay IHLP4040DZER470M11, etc.  
 Note 1.3: Use 240K for 30 VAC main transformer  
 Note 1.4: Install 0R only if 100% Duty cycle feature for Low Ripple mode is not needed  
 Note 1.5: Use R020 for 0-3.12 A or R015 for 0-4.16 A range  
 Note 1.6: Replace ZD1 and C3, C5, C6 if Vin is above 50 V

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SMPS power pre-regulator with 100% duty cycle

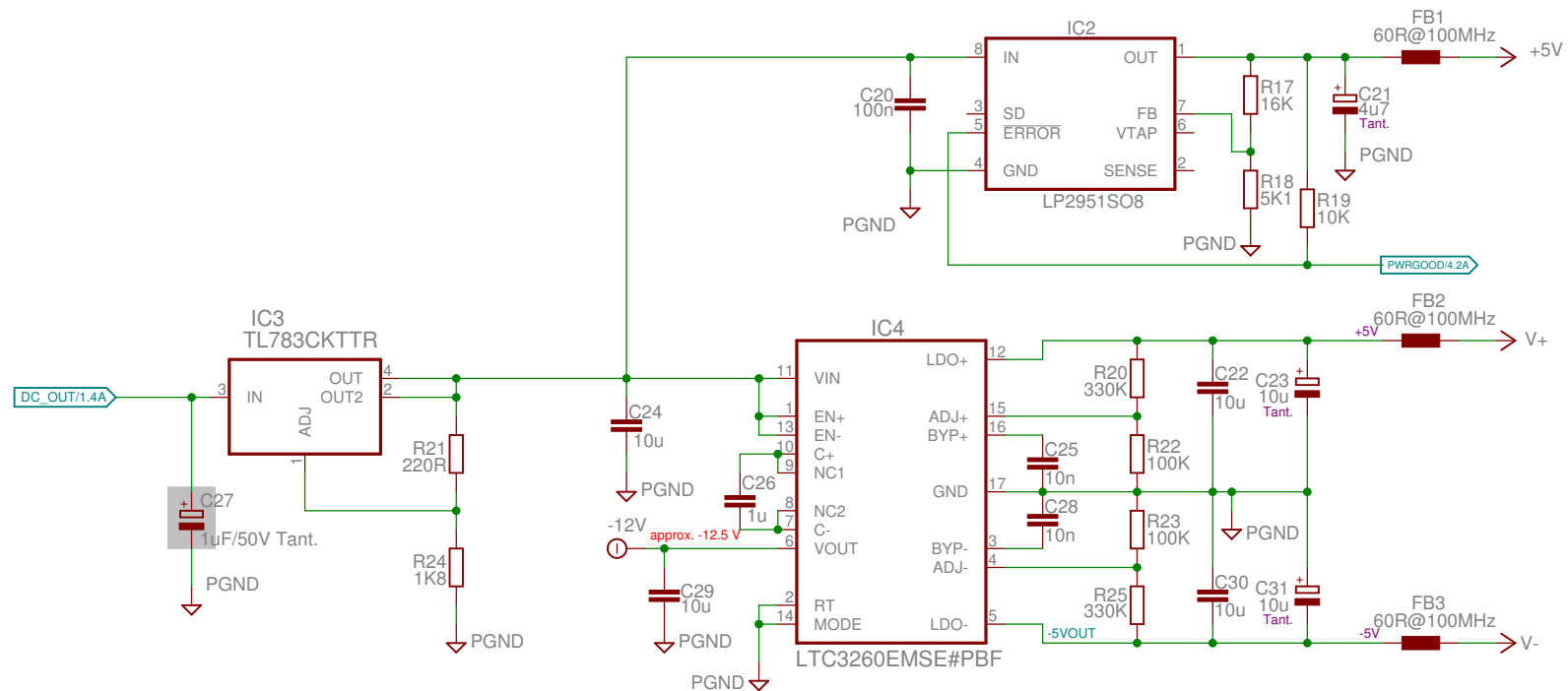
TITLE: EEZ PSU consolidated r5B12

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Bias power supply (+/-5V, +5V, -12V)  
Powergood signal

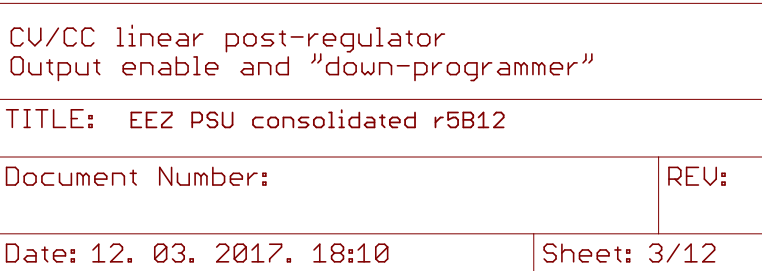
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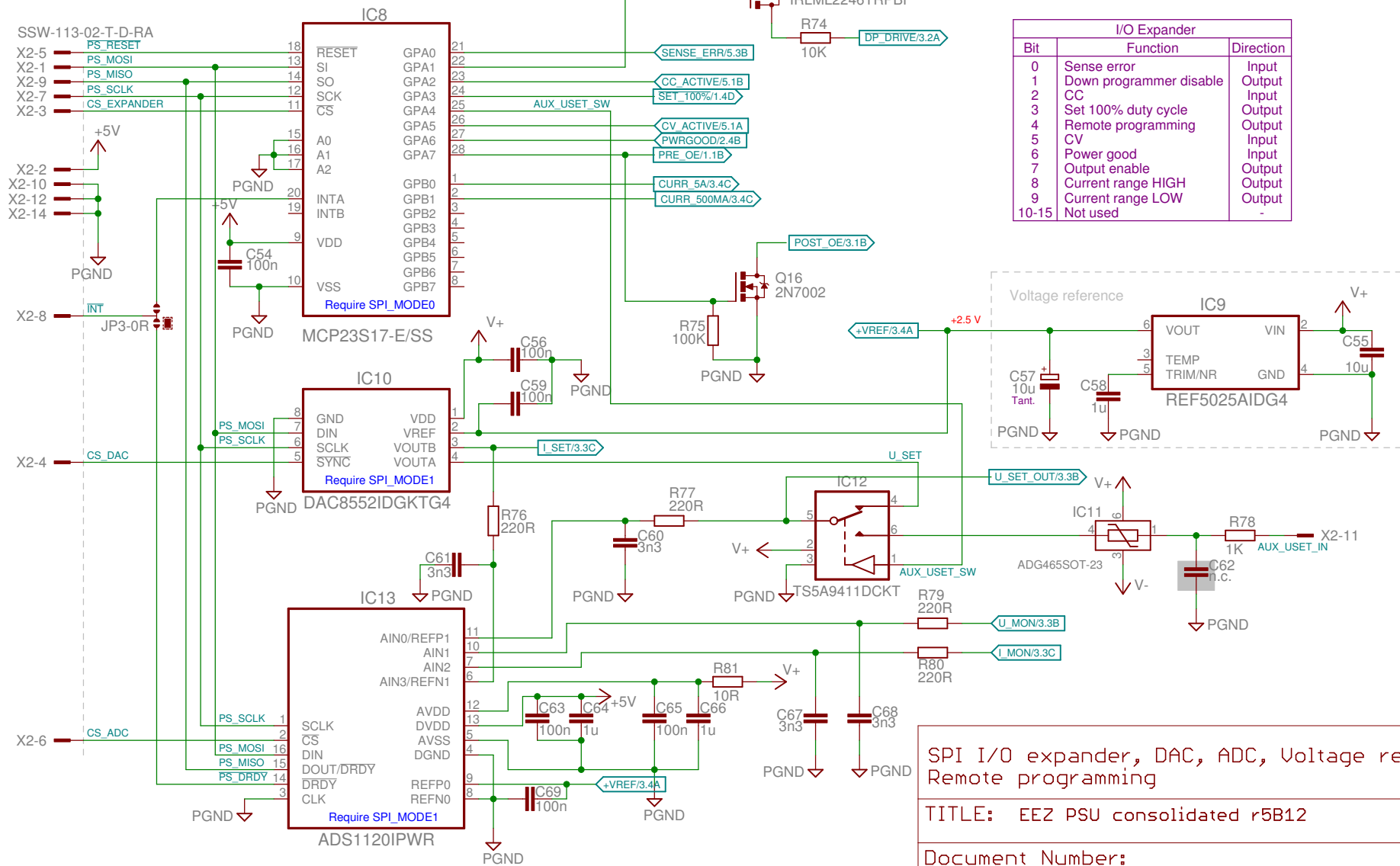
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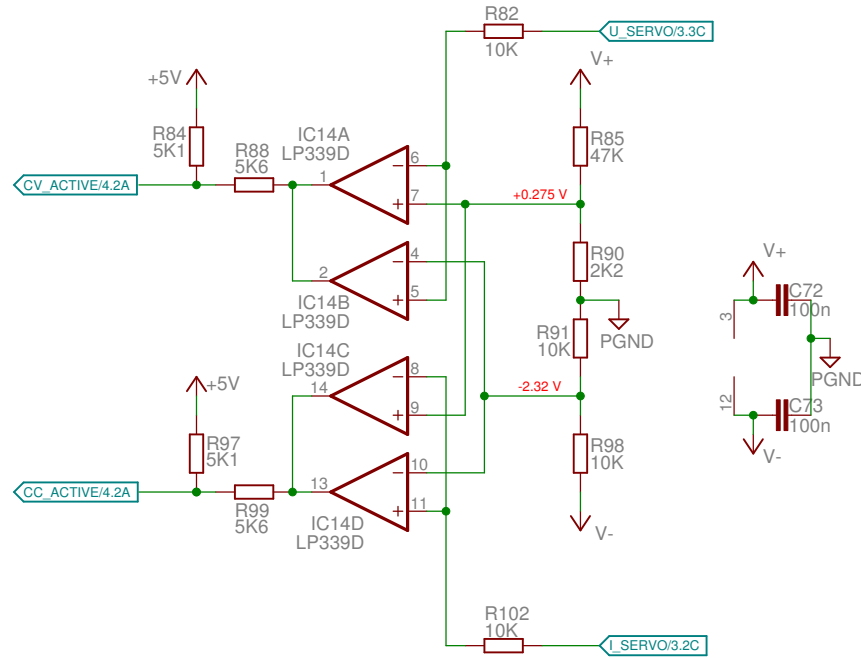
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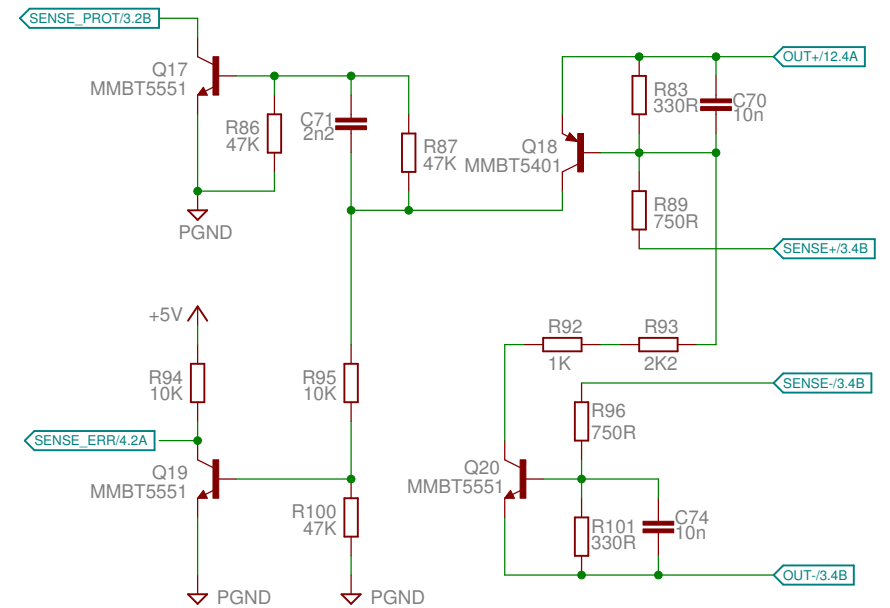
# Digital control (SPI)



Constant Voltage (CV) and Constant Current (CC) mode indicator



Remote sense reverse polarity detection



CC/CV indicators, Sense error detection

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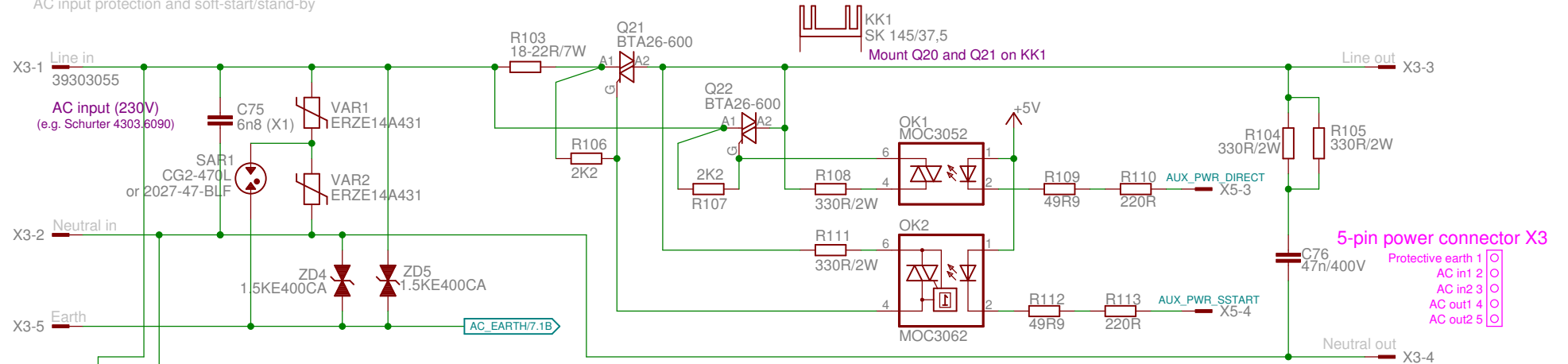
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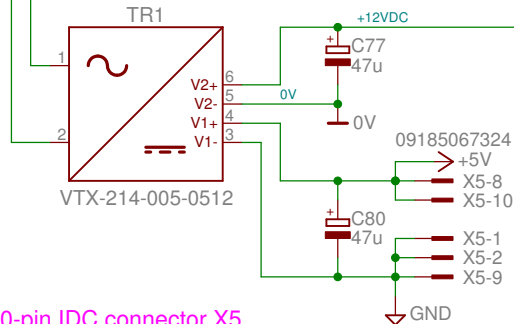
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# AC input protection and soft-start/stand-by



## +5 V, +12 V power supply (max. 5W)



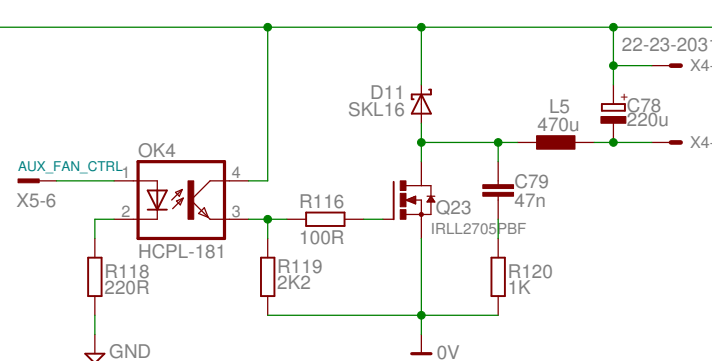
## 10-pin IDC connector X5

|                      |   |                      |
|----------------------|---|----------------------|
| 10 +5V (Output)      | ○ | Gnd 9                |
| 8 +5V (Output)       | ○ | DOUT2 (Output) 7     |
| 6 FAN_PWM (Input)    | ○ | FAN_SENSE (Output) 5 |
| 4 PWR_SSTART (Input) | ○ | PWR_DIRECT (Input) 3 |
| 2 Gnd                | ○ | Gnd 1                |

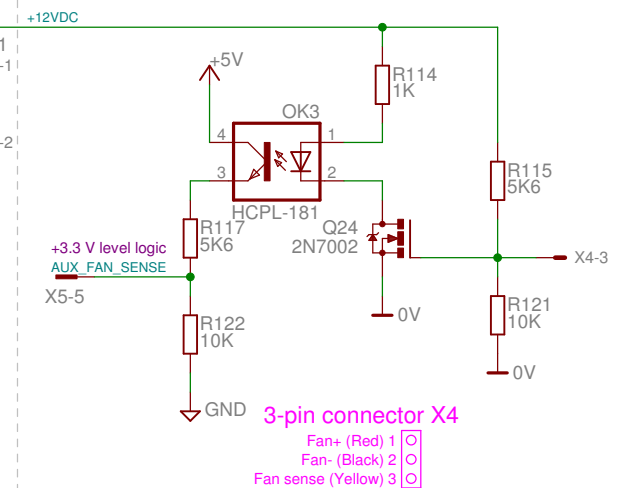
## 115VAC option:

| Name       | Value                          | Code   |
|------------|--------------------------------|--|
| SAR1       | 2027-23-BLF                    | Farnell: 1780455, TME: CG2-230L                                  |
| TR2        | VPP24-210                      | Digikey: 237-1085-ND<br>Mouser: 553-VPP24-210<br>Newark: 93F8764 |
| VAR1, VAR2 | or AC/DC module<br>Myrra 47202 | Farnell: 2469211   |
| ZD1, ZD2   | S20K140                        | Farnell: 1004387, TME: SIOV-S20K140                              |
|            | 1.5KE200CA                     | Farnell: 1837117, TME: 1.5KE200CA                                |

## +12VDC fan control



## Fan sense (tacho out)



AC input protection, in-rush current limiter  
+5V/+12V 5W power supply, fan control

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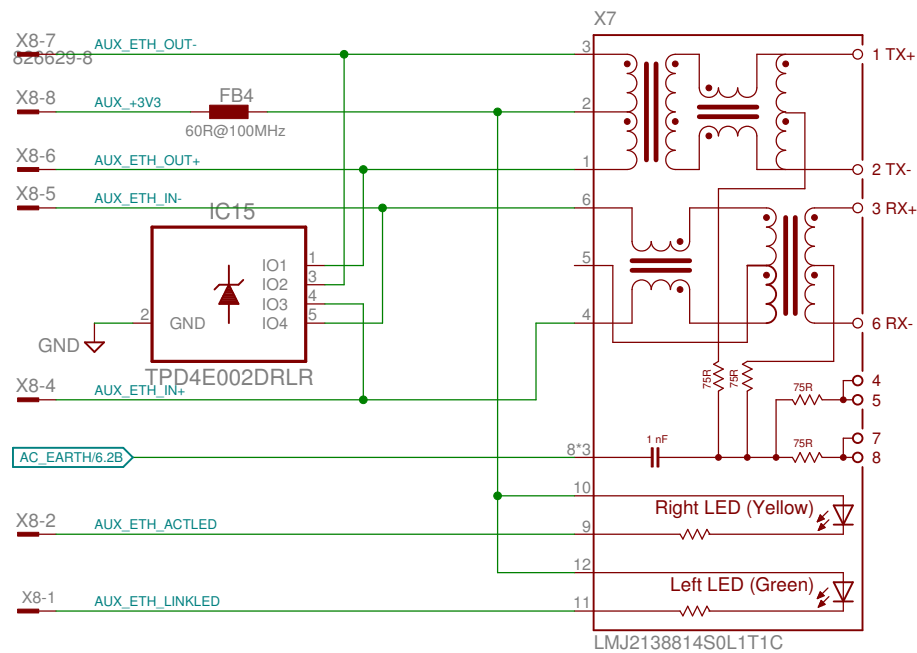
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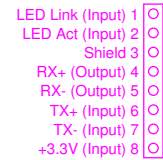
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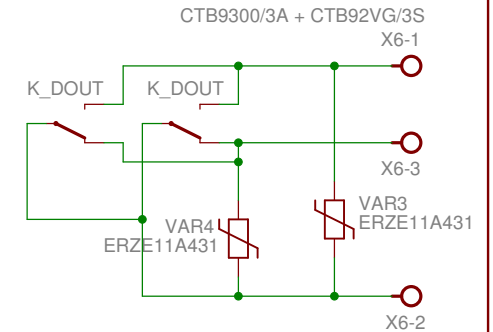
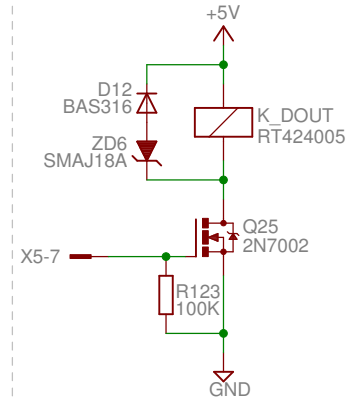
# Ethernet connector with optional surge protection



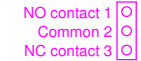
8-pin connector X8



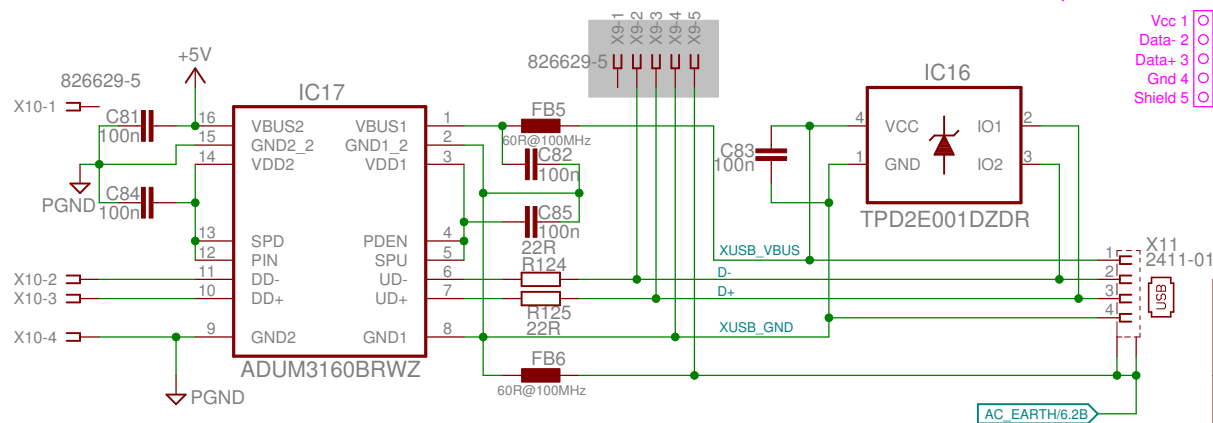
## Digital OUT2 relay



3-pin connector X6



# USB connector with optional isolator and surge protection



5-pin connector X9, X10



Note 7.1: Mount X4 and X8 on the opposite (top) side of the PCB. Use 14 mm (e.g. Bossard B3X14/BN3320) for enclosure with 3 mm rear panel

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Ethernet and USB PCB connectors

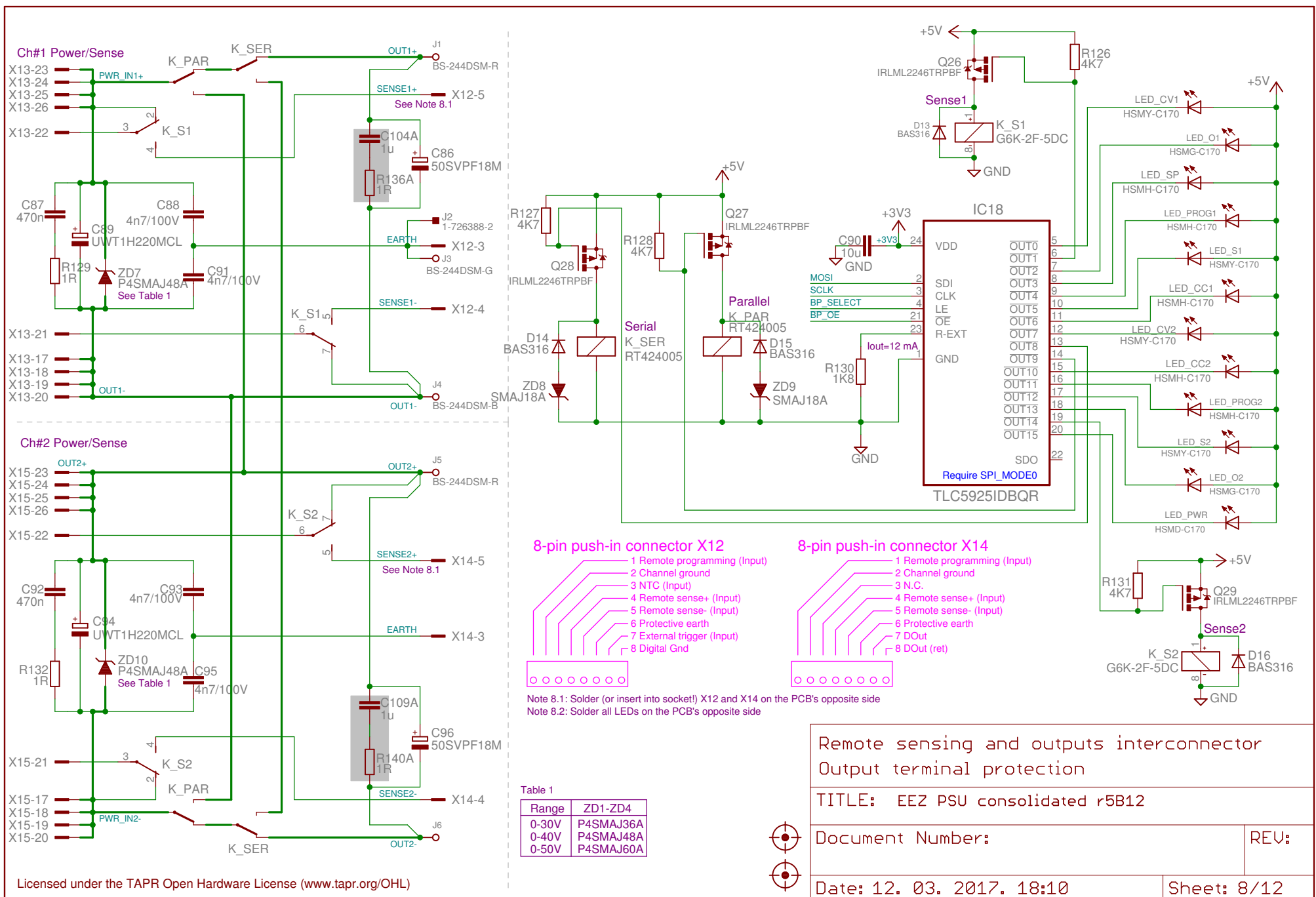
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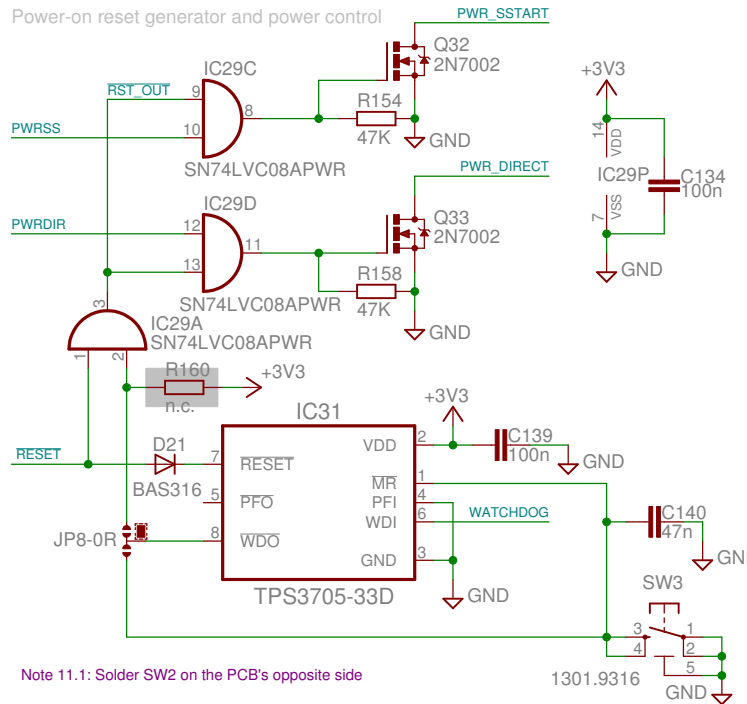




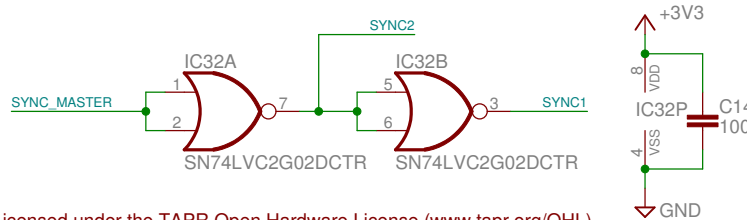
# Remote programming inputs



# Power-on reset generator and power control

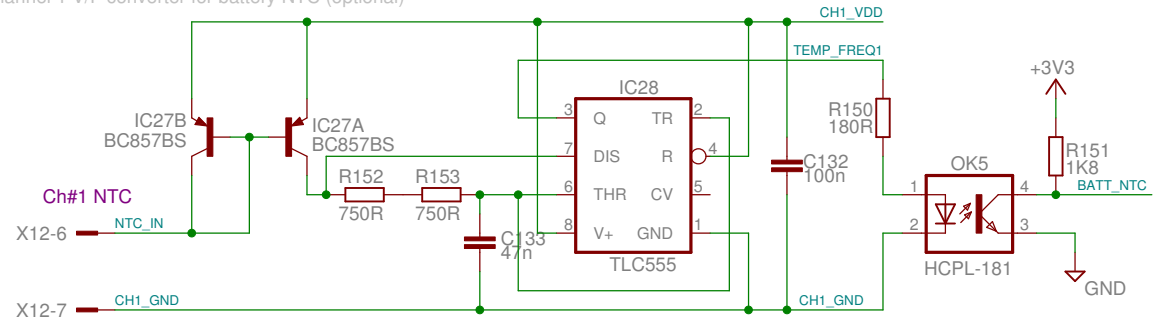


# Master sync signal phase shifting

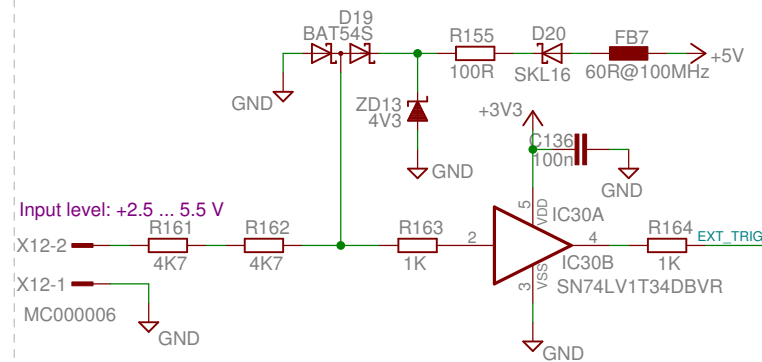


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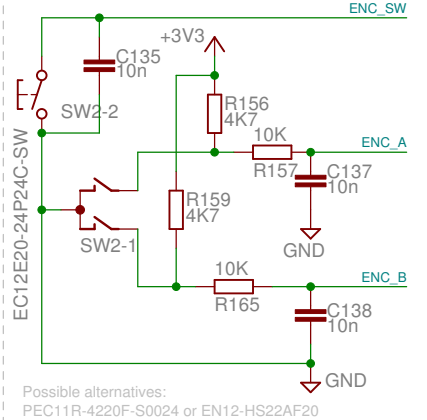
# Channel 1 V/F converter for battery NTC (optional)



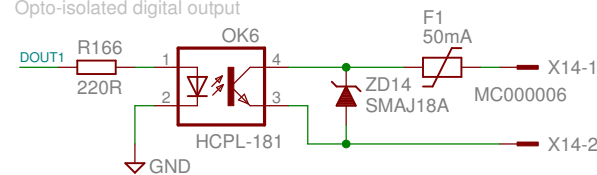
# External trigger protection and level shifter/buffer



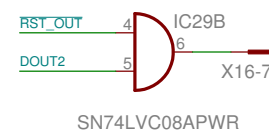
# Rotary encoder



# Opto-isolated digital output



# DOUT2 driver



Reset control, soft-start driver, encoder  
V/F converter for battery NTC, External trigger

TITLE: EEZ PSU consolidated r5B12

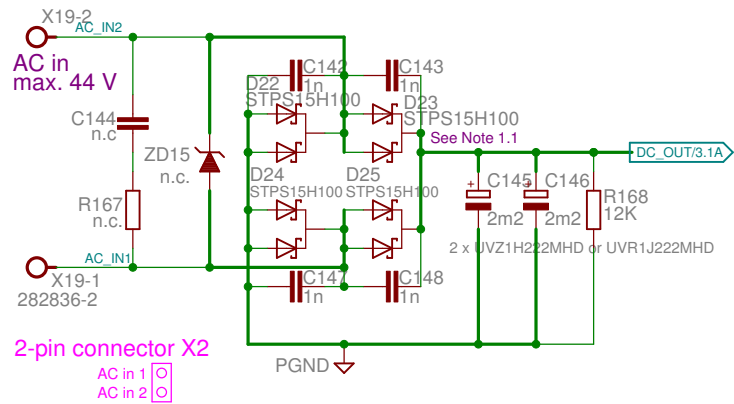
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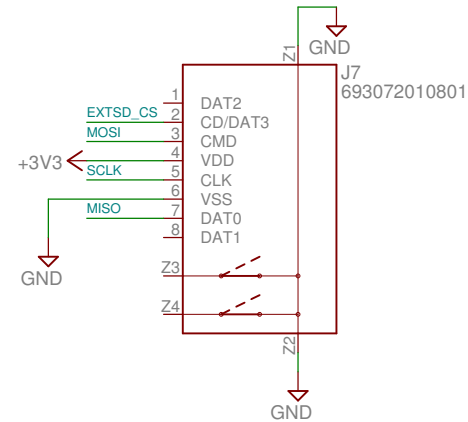
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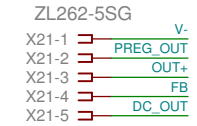
### AC input option



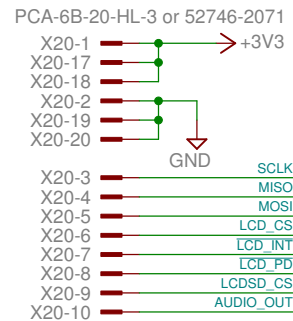
### Micro SD card (optional)



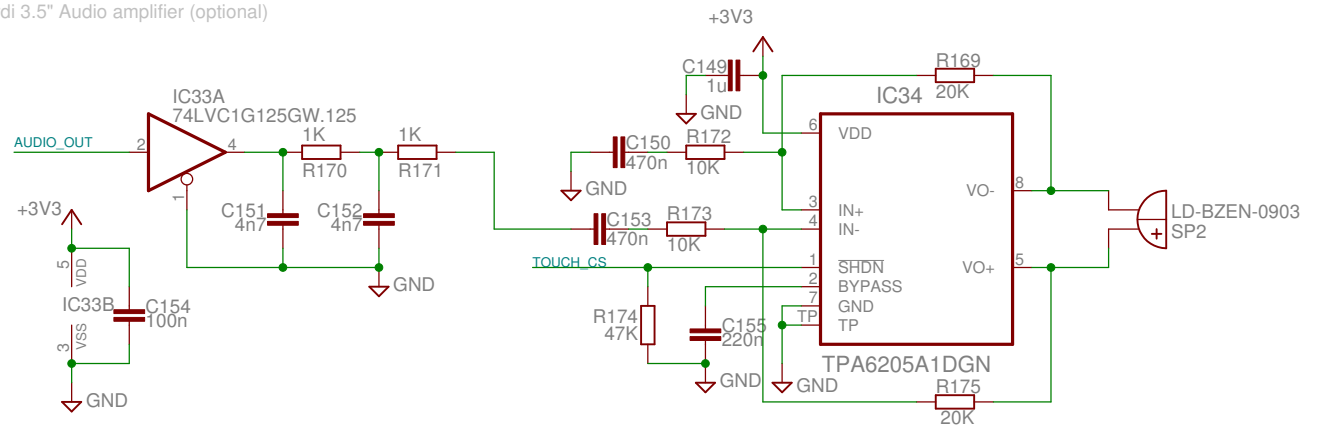
### Pre-regulator tracking (optional)



### Riverdi 3.5" LCD (optional)



### Riverdi 3.5" Audio amplifier (optional)



Optional sections: AC input, 20-pin 3.5" TFT display  
Audio amplifier for 3.5" TFT display, Micro SD card

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