HV – Powersupply V0.9.9
Test Version – DOES WORK NOW!
But again: At your own Risk:

! High voltage may be lethal !

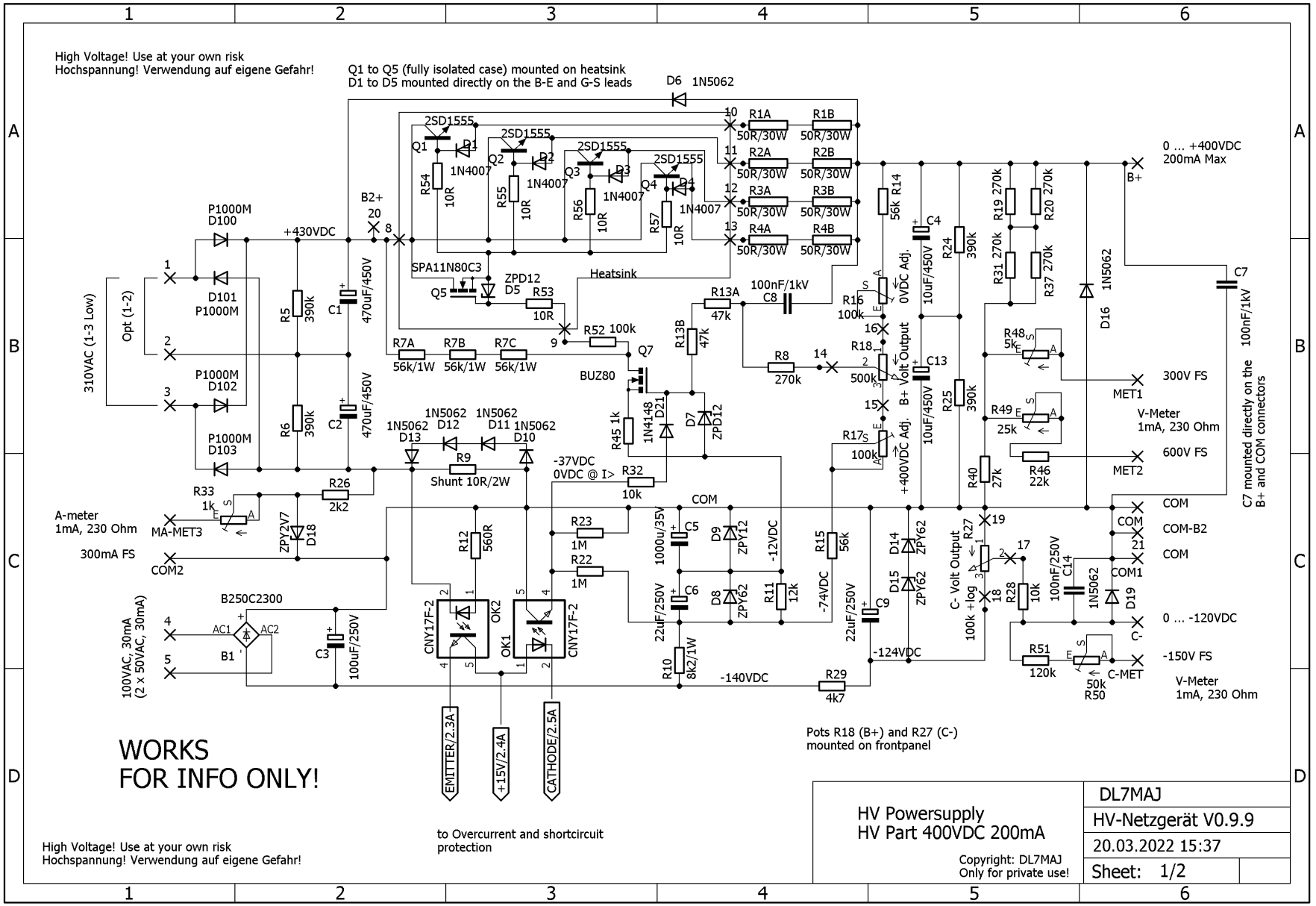
More Infos on my YT-Channel
Look for DL7MAJ

https://www.youtube.com/channel/UC_JA332s2MwQ98P1aEojkBg?view_as=subscriber

See videos #113 to #120

Infos about availabilty of professionally made PCBs on my website or in my YT channel when the time has come – please be patient!

I´m not an express train. It´s only a hobby for me without commercial background.


High Voltage! Use at your own risk
Hochspannung! Verwendung auf eigene Gefahr!
Q1 to Q5 (fully isolated case) mounted on heatsink
D1 to D5 mounted directly on the B-E and G-S leads
D6 1N5062
2SD1555
Q1
Q2
Q3
Q4
D1
D2
D3
D4
1N4007
R54 10R
R55 10R
R56 10R
R57 10R
R1A 50R/30W
R1B 50R/30W
R2A 50R/30W
R2B 50R/30W
R3A 50R/30W
R3B 50R/30W
R4A 50R/30W
R4B 50R/30W
B2+
20
8
+430VDC
P1000M D100
310VAC (1-3 Low)
Opt (1-2)
D101 P1000M
P1000M D102
P1000M D103
R5 390k
R6 390k
C1 470uF/450V
C2 470uF/450V
SPA11N80C3
ZPD12 D5
Q5
R53 10R
Heatsink
R52 100k
R7A 56k/1W
R7B 56k/1W
R7C 56k/1W
Q7
BUZ80
R13A 47k
R13B 47k
100nF/1kV C8
R8 270k
R16 100k
0VDC Adj.
R18 500k
B+ Volt Output
R17 100k
+400VDC Adj.
C4 10uF/450V
C13 10uF/450V
R14 56k
R24 390k
R25 390k
R40 27k
R46 22k
R48 5k
R49 25k
R19 270k
R20 270k
R31 270k
R37 270k
D16 1N5062
B+
0 ... +400VDC
200mA Max
C7
100nF/1kV
C7 mounted directly on the B+ and COM connectors
MET1
300V FS
V-Meter
1mA, 230 Ohm
MET2
600V FS
1N5062 D12
1N5062 D13
1N5062 D11
1N5062 D10
R9 Shunt 10R/2W
-37VDC
0VDC @ I>
R32 10k
R45 1k
1N4148 D21
D7 ZPD12
R33 1k
R26 2k2
A-meter
1mA, 230 Ohm
MA-MET3
300mA FS
COM2
ZPY2V7 D18
COM
COM
COM-B2
COM
COM1
B250C2300
100VAC, 30mA
(2 x 50VAC, 30mA)
C3 100uF/250V
CNY17F-2
OK2
OK1
R12 560R
R23 1M
R22 1M
1000u/35V C5
C6 22uF/250V
C9 22uF/250V
D9 ZPY12
D8 ZPY62
R11 12k
-12VDC
-74VDC
R15 56k
D14 ZPY62
D15 ZPY62
C- Volt Output
100k +log
R27
R28 10k
100nF/250V C14
1N5062 D19
C-
0 ... -120VDC
-150V FS
C-MET
R50 50k
R51 120k
V-Meter
1mA, 230 Ohm
R10 8k2/1W
-140VDC
R29 4k7
-124VDC
Pots R18 (B+) and R27 (C-)
mounted on frontpanel
WORKS
FOR INFO ONLY!
EMITTER/2.3A
+15V/2.4A
CATHODE/2.5A
to Overcurrent and shortcircuit
protection
High Voltage! Use at your own risk
Hochspannung! Verwendung auf eigene Gefahr!
HV Powersupply
HV Part 400VDC 200mA
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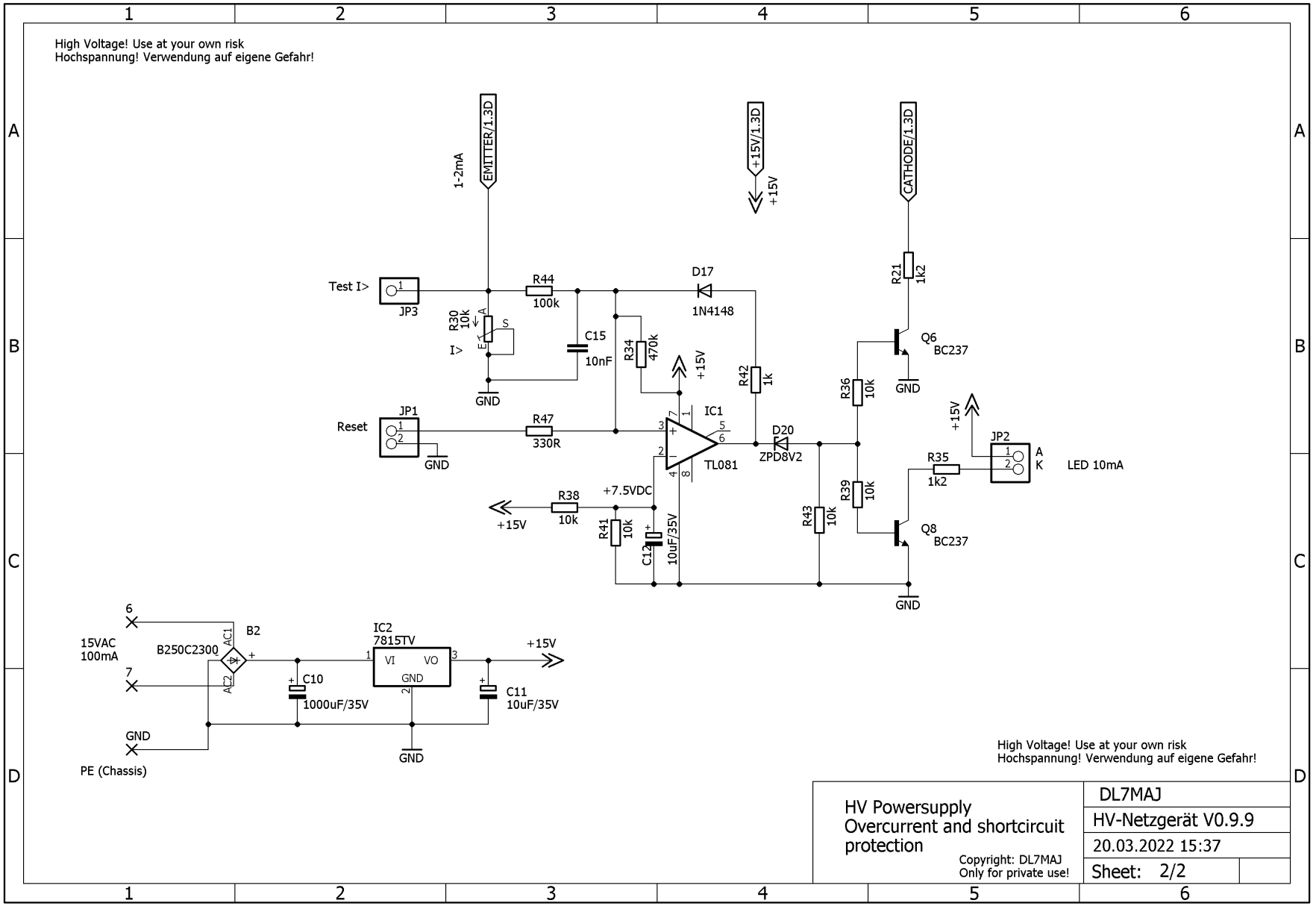
DL7MAJ
HV-Netzgerät V0.9.9
20.03.2022 15:37
Sheet: 1/2


High Voltage! Use at your own risk
Hochspannung! Verwendung auf eigene Gefahr!
1-2mA
EMITTER/1.3D
+15V/1.3D
+15V
CATHODE/1.3D
Test I>
JP3
R44
100k
D17
1N4148
R21
1k2
R30
10k
I>
C15
10nF
R34
470k
Q6
BC237
GND
R42
1k
R36
10k
JP1
Reset
R47
330R
IC1
TL081
D20
ZPD8V2
JP2
A
K
LED 10mA
R35
1k2
+7.5VDC
R38
10k
R41
10k
C12
10uF/35V
R43
10k
R39
10k
Q8
BC237
6
15VAC
100mA
7
B2
B250C2300
AC1
AC2
IC2
7815TV
VI
VO
GND
C10
1000uF/35V
C11
10uF/35V
PE (Chassis)
HV Powersupply
Overcurrent and shortcircuit
protection
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HV-Netzgerät V0.9.9
20.03.2022 15:37
Sheet: 2/2

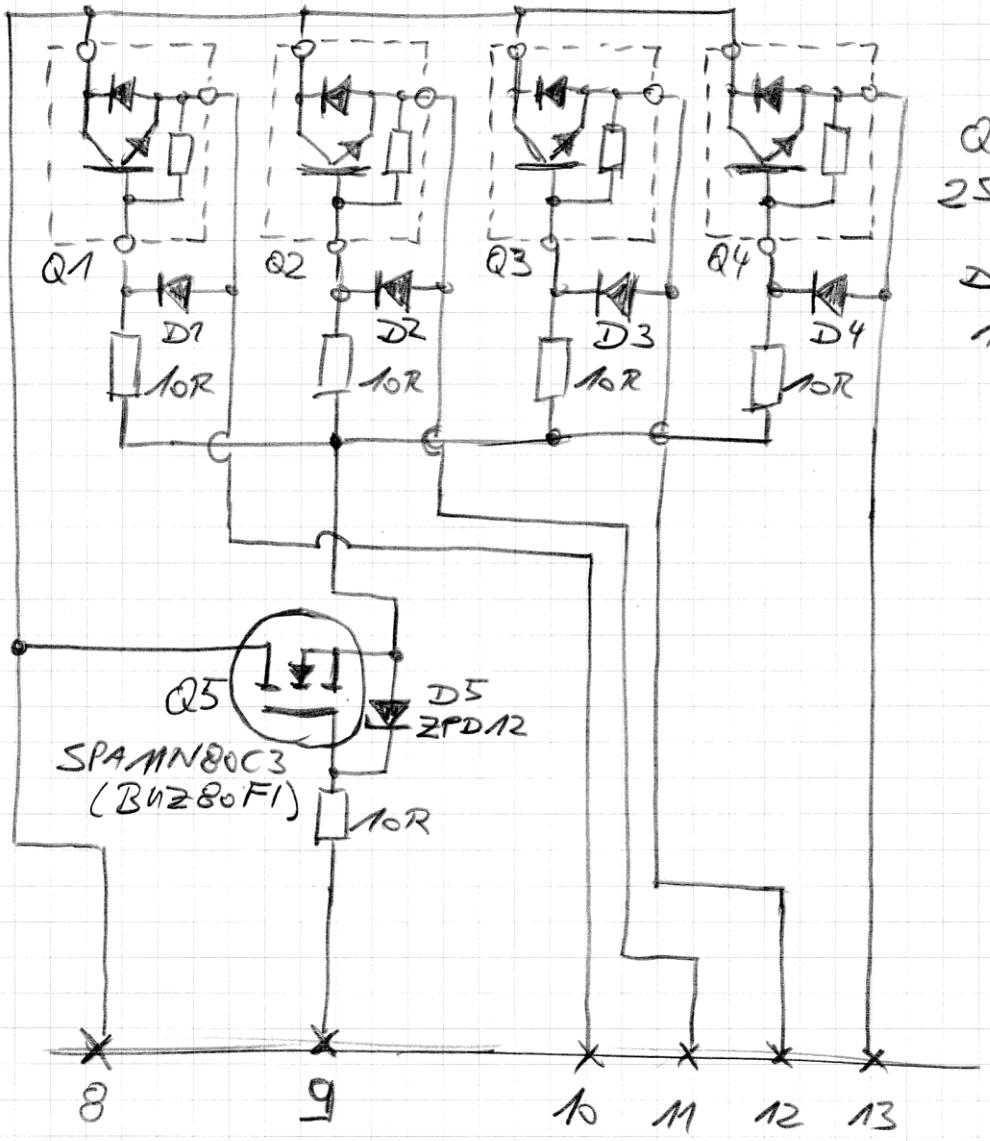
Part		Value	Package	Sheet	Remarks	
B1		B250C2300	SKB	1		
B2		B250C2300	SKB	2		
C1		470uF/450V	EB30D	1		
C2		470uF/450V	EB30D	1		
C3		100uF/250V	E7,5-16	1		
C4		10uF/450V	E5-10,5	1		
C5		1000u/35V	E7,5-16	1		
C6		22uF/250V	E5-10,5	1		
C7		100nF/1kV	C102-054X133	1	Mounted at Connectors	
C8		100nF/1kV	C102-054X133	1		
C9		22uF/250V	E5-10,5	1		
C10		1000uF/35V	E7,5-16	2		
C11		10uF/35V	E2,5-5	2		
C12		10uF/35V	E2,5-5	2		
C13		10uF/450V	E5-10,5	1		
C14		100nF/250V	C102-043X133	1		
C15		10nF	C025-025X050	2		
D1		1N4007	SOD57-10	1	Mounted on heatsink	
D2		1N4007	SOD57-10	1	Mounted on heatsink	
D3		1N4007	SOD57-10	1	Mounted on heatsink	
D4		1N4007	SOD57-10	1	Mounted on heatsink	
D5		ZPD12	DO41Z10	1	Mounted on heatsink	
D6		1N5062	SOD57-10	1		
D7		ZPD12	DO41Z10	1		
D8		ZPY62	DO41Z10	1		
D9		ZPY12	DO41Z10	1		
D10		1N5062	SOD57-10	1		
D11		1N5062	SOD57-10	1		
D12		1N5062	SOD57-10	1		
D13		1N5062	SOD57-10	1		
D14		ZPY62	DO41Z10	1		
D15		ZPY62	DO41Z10	1		
D16		1N5062	SOD57-10	1		
D17		1N4148	DO35-10	2		
D18		ZPY2V7	DO41Z10	1		
D19		1N5062	SOD57-10	1		
D20		ZPD8V2	DO35Z10	2		
D21		1N4148	DO35-10	1		
D100		P1000M	P6-15	1		
D101		P1000M	P6-15	1		

D102		P1000M	P6-15	1		
D103		P1000M	P6-15	1		
IC1		TL081	DIL08	2		
IC2		7815TV	TO220V	2		
OK1		CNY17F-2	DIL06	1		
OK2		CNY17F-2	DIL06	1		
Q1		2SD1555	TO3A	1	Mounted on heatsink	
Q2		2SD1555	TO3A	1	Mounted on heatsink	
Q3		2SD1555	TO3A	1	Mounted on heatsink	
Q4		2SD1555	TO3A	1	Mounted on heatsink	
Q5		SPA11N80C3	TO220BV	1	Mounted on heatsink	
Q6		BC237	TO92	2		
Q7		BUZ80	0BV-ISO TO220BV	1		
Q8		BC237	TO92	2		
R1A		50R/30W	TO-220V	1	Caddock MP930	
R1B		50R/30W	TO-220V	1	Caddock MP930	
R2A		50R/30W	TO-220V	1	Caddock MP930	
R2B		50R/30W	TO-220V	1	Caddock MP930	
R3A		50R/30W	TO-220V	1	Caddock MP930	
R3B		50R/30W	TO-220V	1	Caddock MP930	
R4A		50R/30W	TO-220V	1	Caddock MP930	
R4B		50R/30W	TO-220V	1	Caddock MP930	
R5		390k	0207/10	1		
R6		390k	0207/10	1		
R7A		56k/1W	0207/12	1		
R7B		56k/1W	0207/12	1		
R7C		56k/1W	0207/12	1		
R8		270k	0207/10	1		
R9		Shunt 10R/	0411/15	1		
R10		8k2/1W	0207/12	1		
R11		12k	0207/10	1		
R12		560R	0207/10	1		
R13A		47k	0207/10	1		
R13B		47k	0207/10	1		
R14		56k	0207/10	1		
R15		56k	0207/10	1		
R16		100k	ST15	1	vertical Trimpot	
R17		100k	ST15	1	vertical Trimpot	
R18		500k	3RP/1610N	1	Mounted on Frontpanel	
R19		270k	0207/10	1		
R20		270k	0207/10	1		
R21		1k2	0204/7	2		
R22		1M	0207/10	1		

R23		1M	0207/10	1		
R24		390k	0207/10	1		
R25		390k	0207/10	1		
R26		2k2	0207/10	1		
R27		100k +log	3RP/1610N	1	Mounted on Frontpanel	
R28		10k	0207/10	1		
R29		4k7	0207/10	1		
R30		10k	ST10	2	vertical Trimpot	
R31		270k	0207/10	1		
R32		10k	0207/10	1		
R33		1k	ST10	1	vertical Trimpot	
R34		470k	0204/7	2		
R35		1k2	0204/7	2		
R36		10k	0204/7	2		
R37		270k	0207/10	1		
R38		10k	0204/7	2		
R39		10k	0204/7	2		
R40		27k	0207/10	1		
R41		10k	0204/7	2		
R42		1k	0204/7	2		
R43		10k	0204/7	2		
R44		100k	0204/7	2		
R45		1k	0207/10	1		
R46		22k	0207/10	1		
R47		330R	0204/7	2		
R48		5k	T10 ST10	1	vertical Trimpot	
R49		25k	T10 ST10	1	vertical Trimpot	
R50		50k	T10 ST10	1	vertical Trimpot	
R51		120k	0207/10	1		
R52		100k	0207/10	1		
R53		10R	0207/10	1	Mounted on heatsink	
R54		10R	0207/10	1	Mounted on heatsink	
R55		10R	0207/10	1	Mounted on heatsink	
R56		10R	0207/10	1	Mounted on heatsink	
R57		10R	0207/10	1	Mounted on heatsink	

Wiring Power BJTs and FET

Q1 ... Q5 on Heatsink ⊛ (isolated case)



Q1 ... Q4
2SD1555

D1 ... D4
1N4007

⊛ Heatsink connected to Chassis and grounded

OLMA
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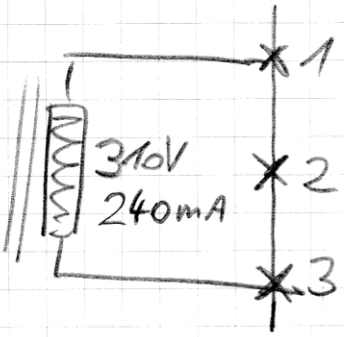
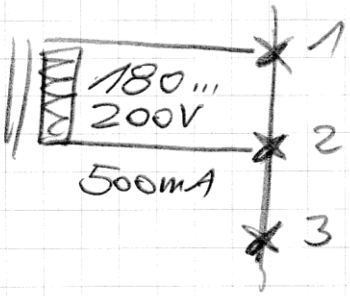
Wiring Transformer 1 (2)



⇒ 430 VDC

OR



⇒ 500 VDC ...
560 VDC

230V ⇒ 645 VDC !!

Abs. Limit !!

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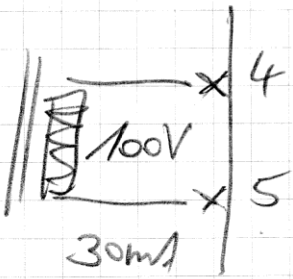
Wiring Transformer 2 (2)

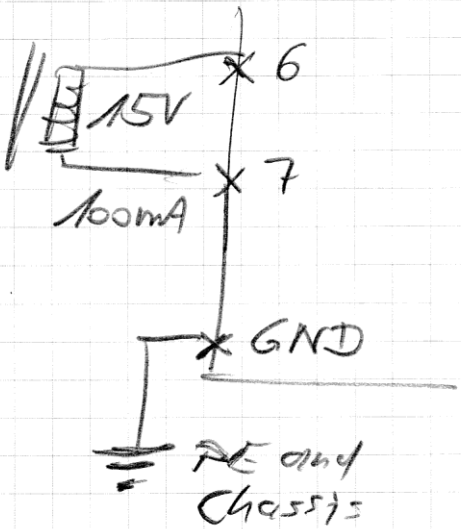


$\Rightarrow$ -160 VDC

115V $\Rightarrow$ -160 VDC !

Increase R10 → 10k

R29 → 5k6



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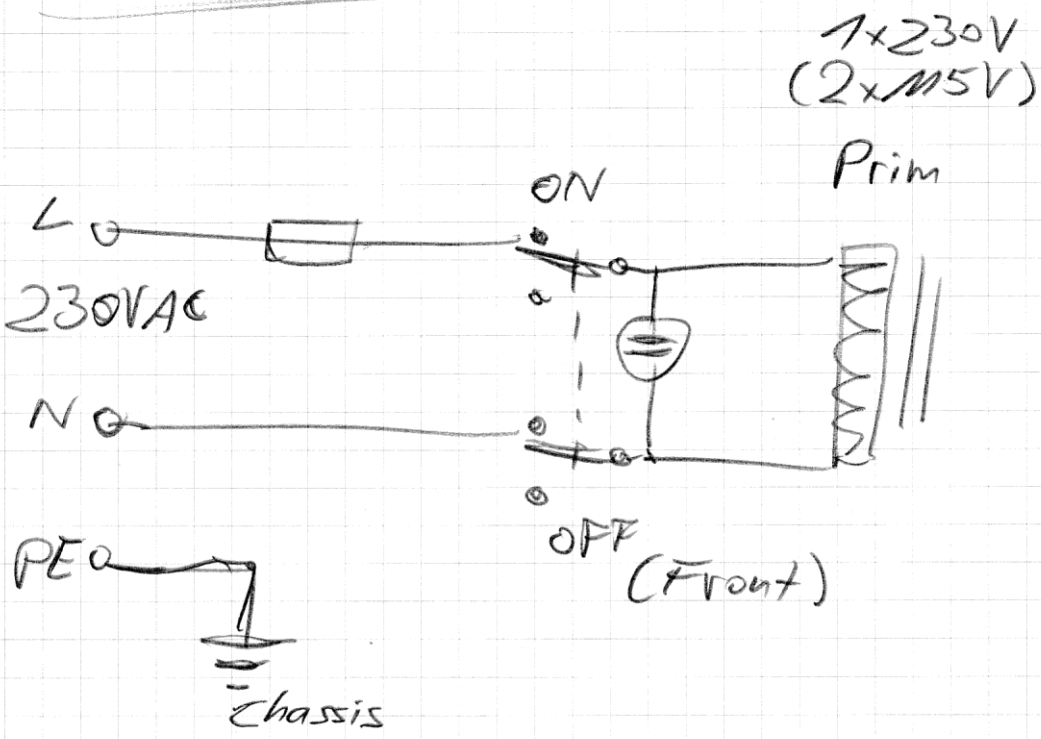
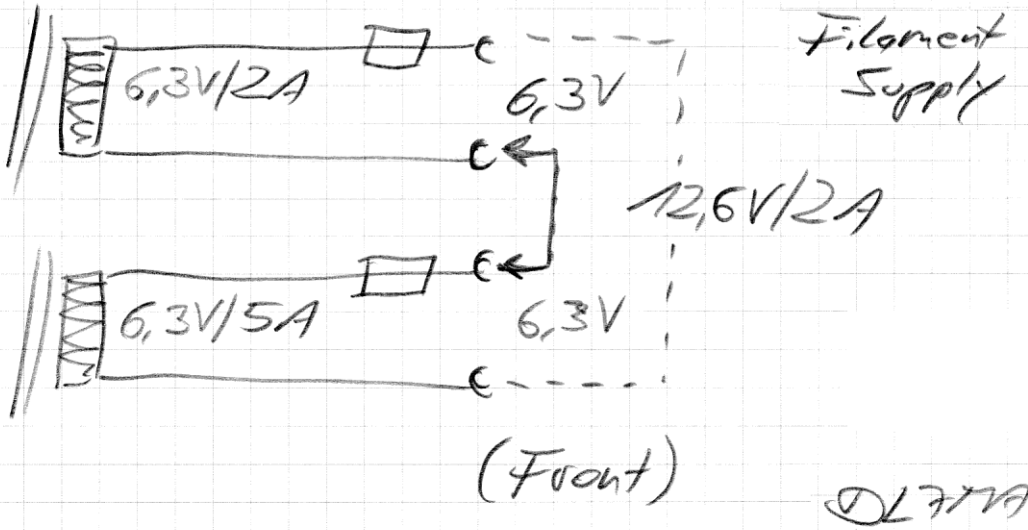
11. Feb 22

Wiring Transformer
Power Switch
Fuse/s





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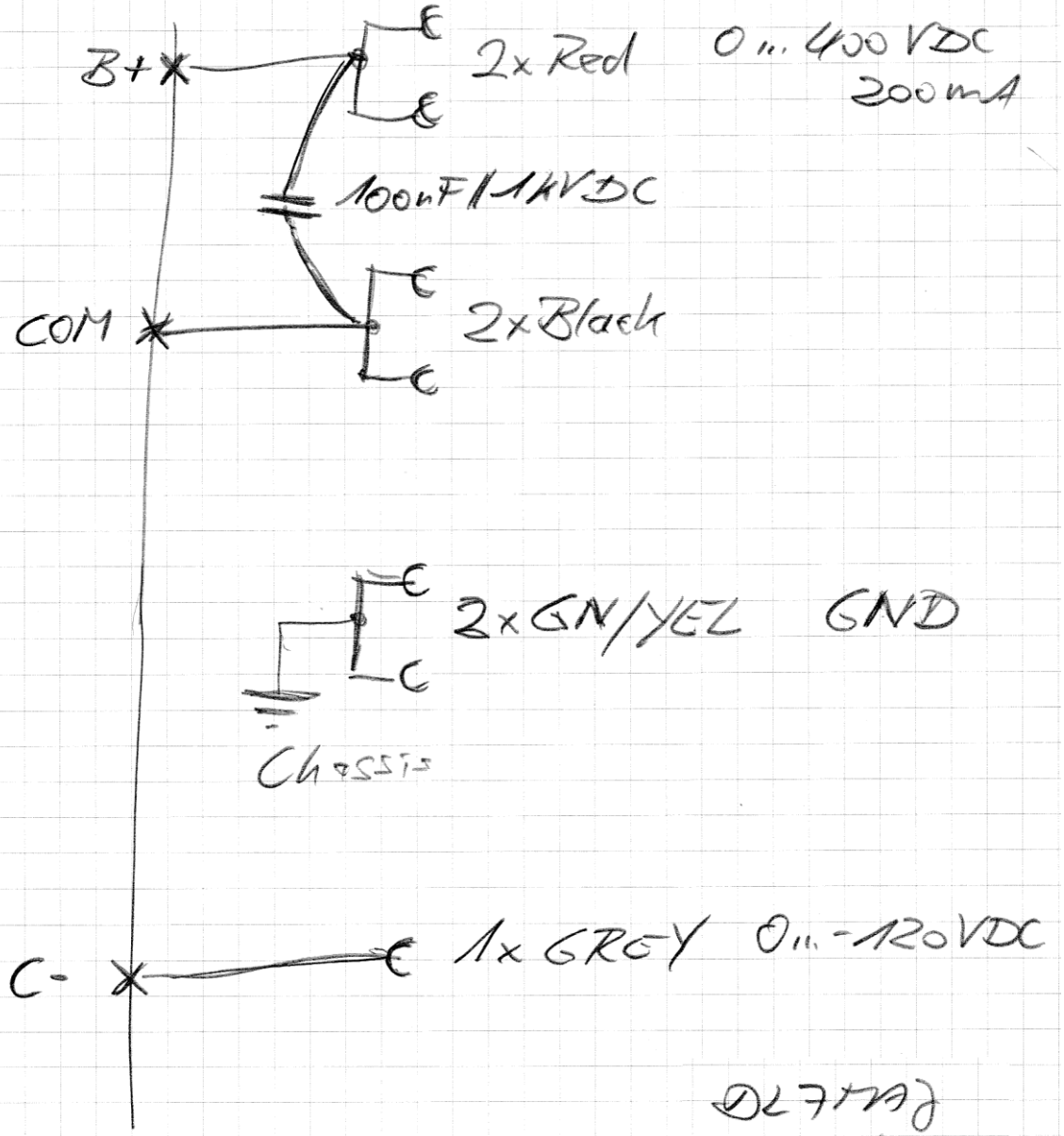
Wiring B+, C-, GND/PE



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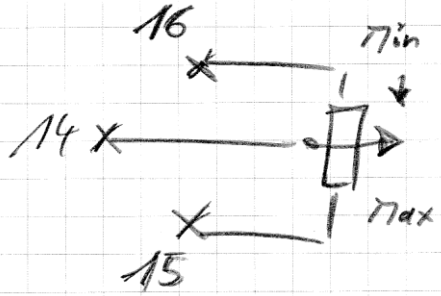
M. Feb. 22

Wiring Pots

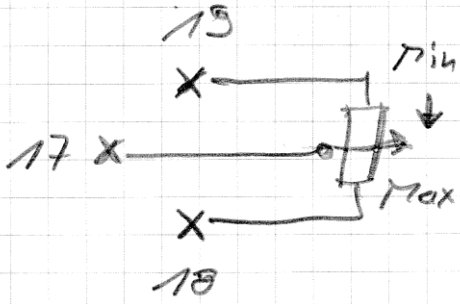


500k lin

B+

0...400 VDC

(Front)



100k + log

0 ... -120 VDC

C-

(Front)

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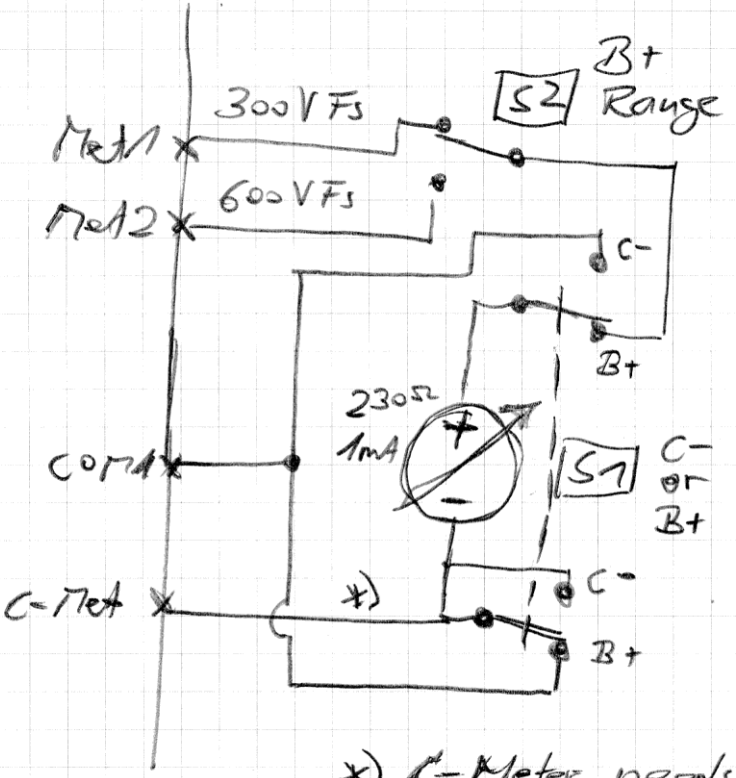
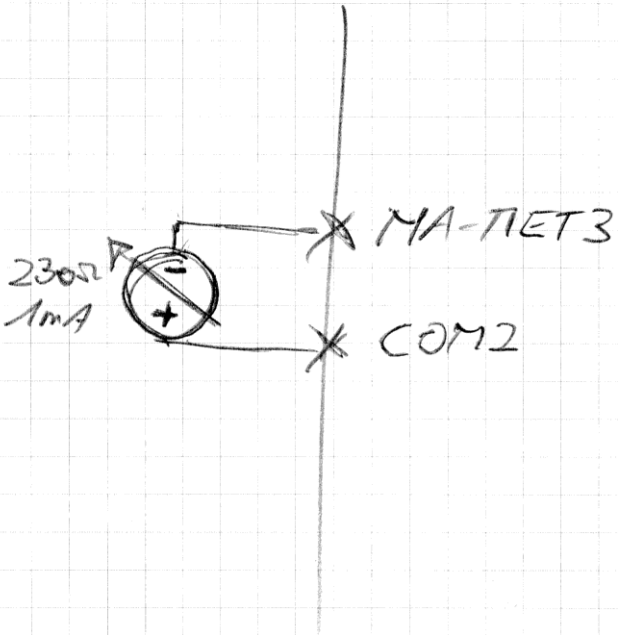
M. Feb. '22

Metering





*) C-Meter needs always load for constant output at C- Voltage.

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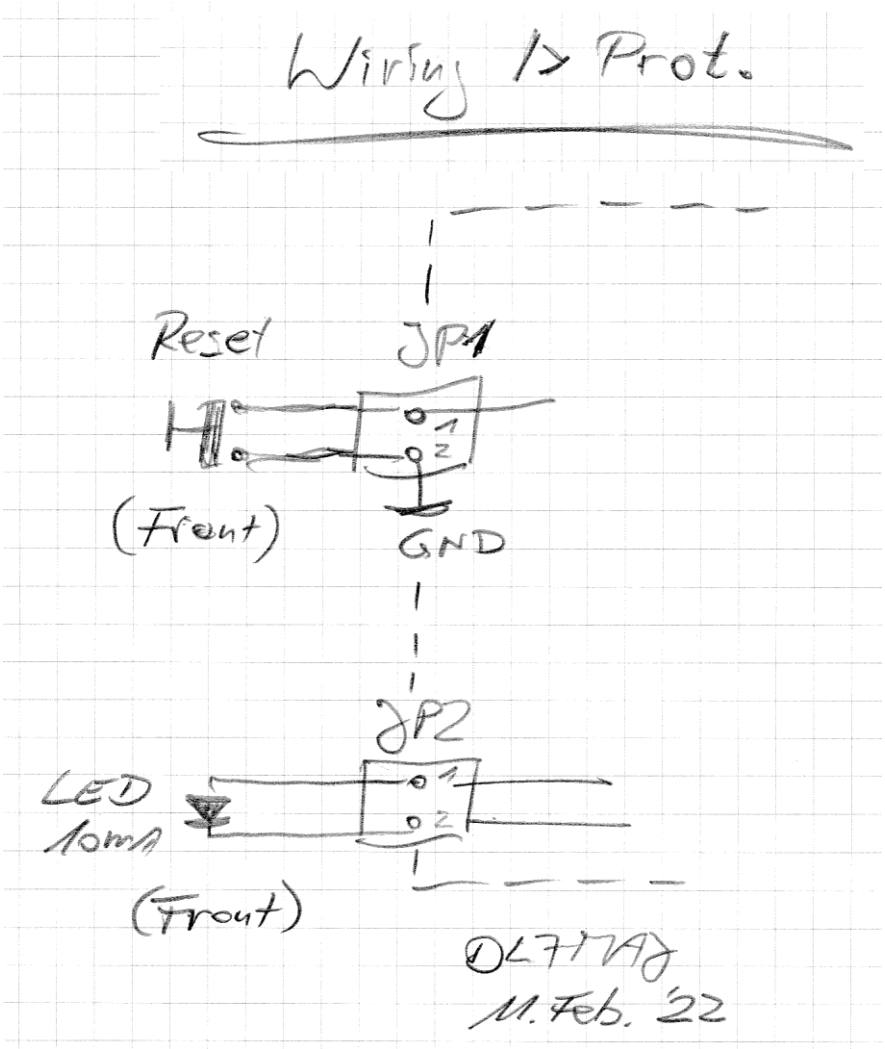
Wiring I> Prot.



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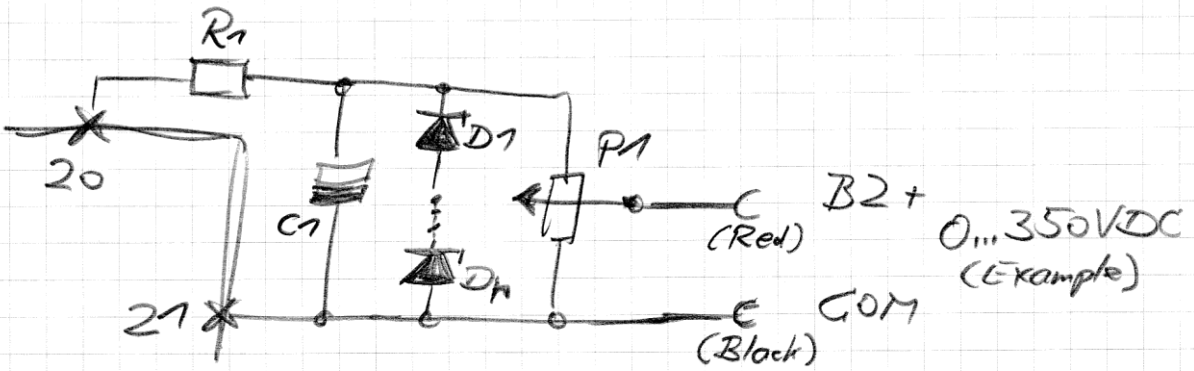
OPTIONAL: B2+

Usage: Supply Screengrid



R1, C1, D1...Dn, P1

acc. Requirements

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