

PFC control card testing process

Testing Point PFC Card :-

1. Remove microcontroller IC and apply input isolation supply (0-20 VAC) & (20-0-20 VAC) at CON1 & CON9 and check led L4 (5V) , L2(-9V) & L3(15V) glow , it means power supply ok and check 5 v supply at pin 1 & 20 of microcontroller ic if ok , switch off power supply than put microcontroller ic,
20. ON power supply . L1 led glow check G pulse with respect E on CON4 if ok than connection of G, E& C at IGBT and L1 led glow off . if even L1 led glow may be fault in igbt , driver & back to back zener diode short (D9 & D10).
3. R28 are using for input voltage window (max 100 vac) like for 160v to 260v ac.
using resistance if isolation ac power supply at CON9 .
20-0-20V - R28 = 6.8K 1/4 w
4. R20 (10k trimpot) use for charging current adjustment .
5. R21 for maximum current limit for charging like 4.7k for 6 amp.(using R20 can adjust maximum current 6 amp).
6. CON3 to Shunt for charging current sensing .
7. CON2 to for input over current sensing
8. CON8 Battery feedback voltage

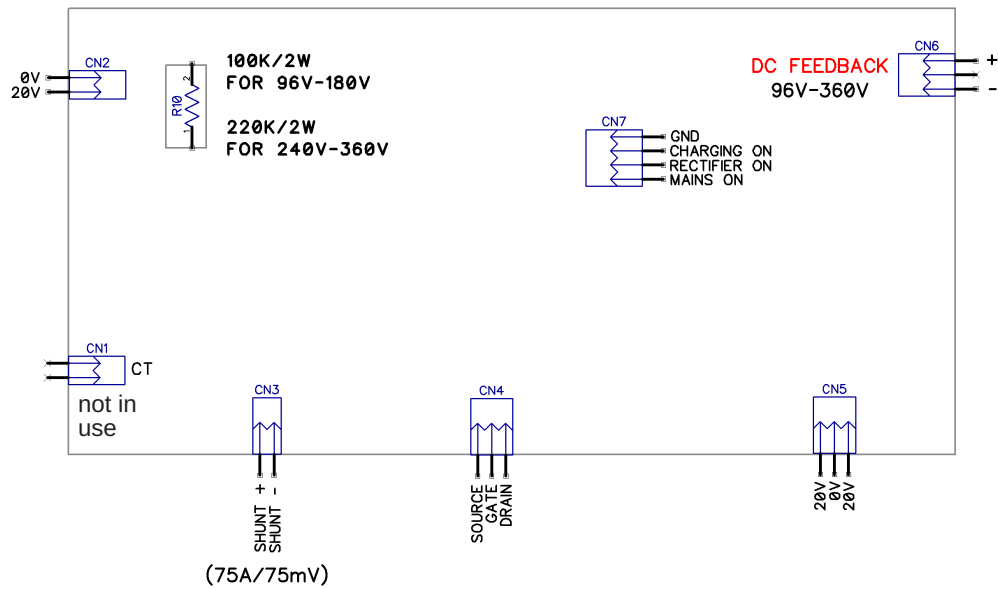
8. Battery voltage Resistance R4 & R3 are give below table

Battery voltage for 1 phase 48v to 240v dc

Batt.v/g	Batt.no.	Batt.13.8V	Batt.14.2V	R3	R4 (K)13.8V	R4(K) 14.2 V
24	2	27.6	28.4	2K2	23	23
48	4	55.2	56.8	2K2	46	46
72	6	82.8	85.2	2K2	69	69
96	8	110.4	113.6	2K2	92	92
120	10	138	142	2K2	115	115
144	12	165.6	170.4	2K2	138	138
168	14	193.2	198.8	2K2	161	161
180	15	207	213	2K2	172	172
192	16	220.8	227.2	2K2	184	184
240	20	276	284	2K2	230	230
360	30	414	426	2K2	345	345

Require hardware

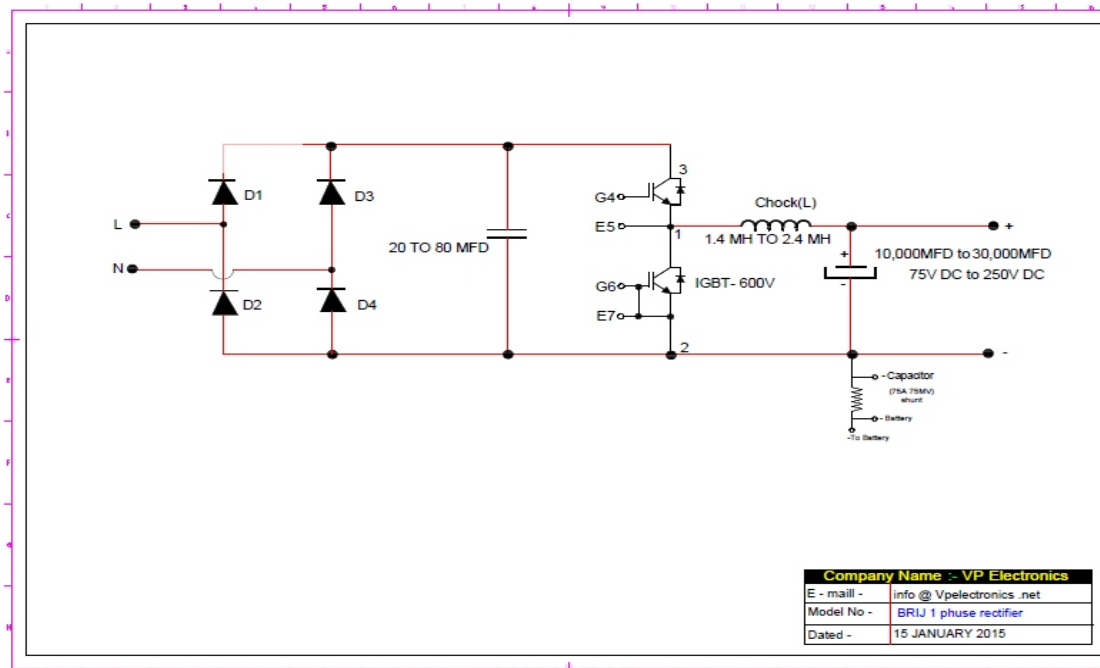
1. After rectifier for 1kva to 5 kva (40mfd 800vdc 30 amp ripple current according to input current) and 7.5kva to 15kva (60-80 mfd 800vdc 30-70 amp ripple current according to input current) for improve Power factor.
- 2, Chock require 2miliH for 1kva amp to 5kva 45 amp , 7.5kva to 10 kva 60 amp , 15 kva 90 amp.
3. Electrolytic cap. as per capacity .



PFC PCB CONNECTOR

Capacitor selection according to rating

sr.no	Rating	Batt. V	C2	C3	L /2mh
1	1kva	48v	40mfd800vdc	10000mfd75V X 2 pcs	45 amp
2	2kva	72v	40mfd800vdc	10000mfd100V X 2 pcs	45 amp
3	3kva	96v	40mfd800vdc	10000mfd150V X 2 pcs	45 amp
4	5kva	96v	40mfd800vdc	10000mfd150V X 2 pcs	45 amp
5	5kva	120v	40mfd800vdc	10000mfd150V X 2 pcs	45 amp
6	5kva	180v	40mfd800vdc	10000mfd250v X 2 pcs	45 amp
7	7.5kva	180v	40mfd800vdc	10000mfd250vx3pcs or 10000mfdx2 ,40mfd800vdc x1 pcs	60amp
8	10kva	180v	40mfd800vdc	10000mfd250vx3pcs or 10000mfdx2 ,40mfd800vd X1 pcs	60amp



PFC WIRING DIGRAM (1 PHASE)