

POWER PACK FOR KIOSK

1) **APPLICATION:** This will be mounted inside the mechanism box of breaker. There will be vibration (<1g) during the close/open operation of the breaker. All components mounting should be suitable for the same.

2) **TECHNICAL PARAMETERS:**

Description		BHEL Mandatory Technical Requirement	Vendor to give compliance in Yes/ No
1	Input Supply	230V±10% AC, 50HZ, 1-Phase, 2-wire	
2	DC Output Supply	110VDC (+10% -15%) Dual output, Galvanic isolation between two outputs.	
3	Max no load voltage	121 VDC	
4	Connected burden	300W -sec (each output)	
5	Charge storage time (No load)	> 60 min	
6	Terminals	Stud type, suitable for 2.5sqmm PVC cable	
7	H.V. withstand	2kV, 50Hz for 1min. (Each terminals shall individually withstand this test)	
8	Max dimension	Drg No. 35210055547_R01 attached	
9	Housing	Pre-treated, powder-coated metal cabinet, suitable for base mounting (min thickness as per drg)	
10	Terminal details	1, 2: 1 Phase, 230VAC, input supply. 5,6 & 7,8: 110VDC output (2 O/P)	
11	Ambient condition	50°C at 97±3% relative humidity.	

3) **TECHNICAL PARAMETERS TO BE FURNISHED BY VENDOR:**

Description		BHEL REQUIREMENT		Vendor to give compliance	
		Closing	Tripping		
1	Capacitance Value	10500MFD	10500MFD		
2	Stored Energy	63.5 JOULES	63.5 JOULES		
3	Charging Time	Maximum 20 SEC	Maximum 20 SEC		
4	No. Of Operations	3 Nos.	3 Nos.		

4) **Bill Of Material/ Legend:**

Description		Rating	Qty	Make (Vendor to provide)
1	R core/ EI transformer (Isolation type)/ Toroidal	250VA continuous 1-Ph	1	
2	Full Wave rectifier	10A, 600V PIV	1	
3	Low-leakage capacitors	10,500MFD/200V	2	
4	LEDs as per Table-I		3	
5	Push Button as per Table-I		4	
6	Resistors for discharging ckt		2	
7	Transient voltage suppressor diodes to be used at both the outputs	1.5KE160A	2	

TABLE-I

S.No.	Device ID	Label/COLOR	Description
1	IL1	CLOSING CAP HEALTHY (GREEN)	Checking Healthiness of Closing capacitor. Energized with PB1
2	IL2	TRIPPING CAP HEALTHY (GREEN)	Checking Healthiness of Tripping capacitor. Energized with PB2
3	IL3	AC ON (RED)	Energized when AC supply is available.
4	PB1	CLOSING CAP. TEST (GREEN)	For checking healthiness of Closing capacitor. Glows IL1 if Closing capacitor is charged.
5	PB2	TRIPPING CAP. TEST (GREEN)	For checking healthiness of Tripping capacitor. Glows IL2 if Tripping capacitor is charged.
6	PB3	DISCHARGE CLOSING CAP (RED)	Discharge circuit through suitable resistor to be provided for closing capacitor.
7	PB4	DISCHARGE TRIPPING CAP. (RED)	Discharge circuit through suitable resistor to be provided for tripping capacitor.
8	TB1/2	AC	Terminals for AC supply
9	TB5/6	CLOSING CKT	Power Pack output for closing ckt
10	TB7/8	TRIPPING CKT	Power Pack output for tripping ckt

- a. Ratio of transformer should be decided by supplier on the basis of formula for DC output voltage for 1 phase rectifier connected to 1 no. single phase transformer. However, turns correction can be employed for keeping output voltage within specified range given above.
- b. RC circuit may be provided for delay on drop off during changeover of input sources.
- c. Earthing terminal of housing shall be provided.
- d. TB's shall be suitable for inserting 2 nos. ring-type lugs of M-5 size.
- e. TB's shall be supplied with removable top transparent cover to protect TB's against any shorting while maintenance.

4.1 RED CAUTION LABELS:

Following Labels are to be provided in power pack:

PB3/4: DO NOT PRESS UNLESS MAINTAINENCE IS REQRUED.

TB5/6 & TB7/8: DO NOT SHORT THE TERMINALS IN ANY CASE.

5) ROUTINE TEST: Routine test report shall include:

- i) Dimensional verification as per clause 2.8
- ii) 2kV withstand test as per clause 2.7
- iii) Functional test as per clause 2

6) APPROVAL FROM INDENTER:

- i) Vendor has to submit schematic drawing & dimensional drawing for approval.
- ii) Vendor to submit 1 no. sample power pack for testing before bulk manufacturing to avoid bulk rejection as per clause 7-iv).

7) ACCEPTANCE CRITERIA:

i)	Visual checks for cracks and surface finish.
ii)	Availability of all routine test certificates, equipment catalogues and O&M manual with each item.
iii)	Model as per PO annexure
iv)	Power Pack must provide at least 3 tripping & 3 closing commands after mounting in panel, failing to which power pack shall be rejected.
v)	Compliance to spec clause 2.0 & 3.0
vi)	Capacitance value as per the offer
vii)	Make of equipment as per clause 4.0
viii)	Availability of Guarantee Certificate as per clause 8.0

8) PERFORMANCE GUARANTEE:

The supplier shall guarantee satisfactory performance of the power pack for a period of 5 ¹/₂ years from the date of receipt at BHEL Bhopal or 5 years from the date of commissioning whichever, is earlier.

9) DEVIATIONS:

Deviations, if any from the specification above has to be clearly brought in table-II below, any deviation outside this table are not permitted.

TABLE-II

<u>S.No.</u>	<u>Deviation</u>	<u>Remarks</u>

Prepared by: Sarita Mohapatra

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Approved by: R K Madrey

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