	ForumElectrical.Com	**Doc No:**
	STARTER PANEL CHECKLIST	**Sheet 1 of 5**

Sl. No.	Description	Yes/No	Remarks
1	**General Record/Drawing Required**		
1.	The following documents and drawings are required:		
a.	Panel for starters Internal GA drawing and general layout of the technical details		
b.	Starter panel single-line diagram		
c.	Starting panel power wiring diagram		
d.	Starter panel control wiring diagram		
e.	Diagram of the VFD terminal block (if any)		
f.	Material Bill		
g.	Fill out test reports (If any)		
1.a	**Panel General Arrangement and Internal GA Drawings**		
1.	Check the panel type (Simplex/Duplex) according to the specifications.		
2.	Check whether the panel's dimensions (width x -depth x height) are indicated.		
3.	Check the type of door--in the case of an outdoor panel, a double door with front access is given.		
4.	Check for the following information provided in the notes: • Panel thickness • Degree of protection suitable for indoor or outdoor • Paint shade • Texture finish • Sheet steel thickness • Cable entry/exit • Cable gland & Mounting plate / thickness • Earthing terminals / bus bar sizes		
5.	Verify whether the mounting plate for the equipment and cable gland is for the panel mounting, name plate, earthing bolt, lovers, lock, or filters.		
6.	Check all of the MCBs, relays, contractors (power and control), push buttons, VFDs, switches, meters, terminal blocks and indication lamps to make sure they are all in line with SLD and BOM.		

		Supervisor	**Electrical Engineer**	**Manager**
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	Check Legend and Notes are provided with GA.		
7.	Verify that all electrical equipment dimensions in relation to the necessary rated capacity are feasible in the panel and are adequate.		
8.	Verify the cable trays that GA provides for reaching and terminating the cables.		
9.	Title block information must contain the following: • Project Name: • Client (OR) Consultant: • LOA No: • Drawing no.:		
1.b & c	**Diagram: Single Line (or) Three Line (Power Wiring)**		
1	Check client/consultant SLD and specification feeder count.		
2	Indicate bus voltage, continuous current rating, frequency, S.C ratings (kA, Sec), and bus bar material (if applicable).		
3.	Check cable size, number of runs, material, voltage grade, and insulation material for each incomer and outgoing feeder. Check incoming/outgoing resources.		
4.	Determine the necessary starter system and arrangements based on the customer SLD, such as the DOL starter system. • DOL starter system. • Voltage frequency drive (VFD) starter system. • Star Delta starter system. • VFD/S-D bypass system.		
5.	Check to see if the control transformer feeder is needed. (For wiring, door limit switch, cooling fan, thermostat, tube lamp, sockets, space heater, and SMPS control using internal AC supply)		

6.	Analyzing the specifics of electrical equipment		
6.1	Mention the following for the VFD, power contractors, circuit breaker, and circuit isolating device as appropriate.- Incoming / Outgoing		
a	Appropriate feeder rating for the attached load and AHU motor		
b	Verify whether the CB is an ACB, MCCB, MCB, FSU, SFU, or fuse. VFD: GA70, J1000 series, etc.		
c	Four-pole, three-pole, or three-pole and neutral units		
e	Verify that the equipment's ratings, legends, and other accessories - which are listed in the SLD - are in accordance with the BOM.		
6.2	Verify the metering requirements in relation to the Incomer, Bus, and Outgoing specifications (if the Metering Feeder is appropriate).		
a	According to the SAS specification, the type of meter is electromechanical with selector switches and transducers.		
b	Digital - with or without communication		
c	Verify that the meter's range is defined.		
d	Check if auto transfer is necessary in relation to the specification. If so, please indicate.		
6.3	Verify the CT information below (if the metering feeder is applicable).		
a	Number of cores needed for protection and metering		
b	A suitable ratio should be chosen based on the feeder, transformer rating, relay sensitivity, and connected meter.		
c	CT ratio for all taps and the selected tap underlined for the total number of cores and all cores.		
d	Metering core: Accuracy class, burden, and ISF value for a chosen tap or all taps		
e	Protective core: 5P class; burden and ALF for all or a selected tap		

f	Knee Point Voltage and Magnetizing Current for the Selected Taps or All Taps Protection Core: PS Class		
6.4	Check the information below about VT (if metering feeder is relevant).		
a	Number of windings needed for safety, synchronization, and metering		
b	Determine the vector group (open delta, delta, or star).		
c	Indicate which MCB or fuse is available in the VT secondary circuit.		
d	Show the VT primary protection if any		
e	Clearly indicate the draw out type VT.		
6.5	Check the following information about the control transformer (if the control transformer feeder is relevant).		
a	Type: Oil or Dry		
b	Primary/secondary voltage ratio and its corresponding rating (kVA/VA)		
c	The type of cooling & the kVA/VA rating that goes with it.		
1.d	**Starter panel control wiring diagram**		
1.	Verify the 230V auxiliary supply demand to see if it comes straight from the I/C phase or via a control transformer.		
2.	Check the scheme to determine whether auxiliary contactors (NO & NC contact) are needed for the VFD/S-D bypass starting system, DOL, S-D, and VFD. (See the document on standardization.)		
3.	Verify the selector switch's consideration when choosing the starting system mode and remote or local start.		
4.	Check the electrical and mechanical interlock mechanism.		
5.	Power circuit details for the space heater with thermostat, lightbulb, and outlet that will be provided.		
6.	Check that every component listed in the bill of materials is present.		
7.	A legend identifying each object must be included in the drawing.		

8.	I/P terminals for an auxiliary supply, an external interlock, a fire damper, and an LPBS start/stop are required on the terminal block.		
9.	Potential free contacts will have access to a terminal block (feedback to BMS)		
1.e	**Diagram of the VFD terminal block (if any)**		
1.	Verify that the chosen drive satisfies our customers' needs and provide the block diagram.		
2.	Terminal block should be supplied to PLC for VDF panel.		
3.	A legend identifying each object must be included in the drawing.		
1.f	**Material Bill**		
1.	All components' rating, make, material, and quantity are mentioned.		
2.	Check the number of each component as stated in the wiring diagram, SLD, and GA once or twice in relation to the supply scope.		
3.	Once or twice, confirm that each component's rating and catalogue number match the SLD, GA, and wiring schematic (for example, the colors of the push button and indicator lamp should match the catalogue number).		
	Common Points		
1.	Check that the total number of feeders and their rating fall within the parameters of the tender.		

Note: If appropriate, all of the points mentioned above should be verified in relation to the clients' or customers' specifications, standards, and statutory bodies.

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