भारत सरकार
Government of India
भाभा परमाणु अनुसंधान केंद्र
BHABHA ATOMIC RESEARCH CENTRE
नाभिकीय पुनःचक्रण बोर्ड
NUCLEAR RECYCLE BOARD
समेकित नाभिकीय पुनःचक्रण संयंत्र (निर्माण)
INTEGRATED NUCLEAR RECYCLE PLANT (CONSTRUCTION)

TECHNOLOGIES FOR NEW INDIA@75
आज़ादी का अमृत महोत्सव

BARC (T)/NRB/INRPC/PD/2026/863 Dt: 14/05/2026

Minutes of Pre-Bid meeting (MOM)

Ref. NIT:- BARC(T)/NRB/INRPC/PD/MPT- 556/2026/754 Dt: 28/04/2026
Name of work:- Procurement, Supply, Delivery, Fabrication, Installation, Erection, Testing and Commissioning of Ventilation system in Block-108A, 108B & 108D at INRPC Site, BARC, Tarapur.

Pre-Bid meeting was conducted on 12-05-2026 (14:00 Hrs.) at INRP Conference room. The reply to received Pre-Bid queries are as follows:

Sr.No.	Bid query	Reply
1	Tender Described that it cover 3 nos block but in tender only one building is described, Kindly Clarify/Rectify the same	All three blocks are described in the tender document.
2	Thickness of damper plate is different in Spec/ Drawing/QAP, Kindly Clarify the Same	It is same, if found any discrepancy, kindly follow tender drawings.
3	Price Variation Clause/Early completion is not Clear, Kindly Clarify the Same	As per tender document
4	QAP For Ducting not provided in tender, Kindly Clarify the Same	All QAPs provided in the tender document are sample QAPs, Detailed QAPs for each work including ducting will be submitted by contractor after award of the contract for NRB approval.
5	We have our manufacturing unit in Haryana and need permanent QA/TPI for speed the work, Request you to add the provision for the same.	In addition to QA/QC staff of contractor for this contract, TPI will be hired by the contractor at his own cost as mentioned in tender document and inspections will be as per approved QAP.
6	80% of the amount due towards the completion of all activities of respective items shall be paid on pro rata basis after required inspection and acceptance by the engineer. Kindly Provide the inspection details. We request 75% Payment on Receipt of material at site	As per the financial terms of the tender document.
7	10% of the amount due towards the completion of the activities of respective items shall be paid after testing as applicable on pro rata basis. Kindly Provide the Testing Details. We request 15 % Payment on Installation and 10 % on testing and Commissioning	As per the financial terms of the tender document

8	Functional testing of B-108D Ventilation System as per tender technical specification. Kindly Clarify Only for this Block or for all ?	BOQ Item No. 25 is valid for only Block 108D.
9	SS filter retainer frame (5x3 module) for Pre-Filter & HEPA filter (size:-610x610x300) as per approved drawing, Kindly Clarify rate is for 1nos bank or set	Total 16 Nos. (8 Nos. are for Pre Filter & 8 Nos. are for HEPA Filter) as mentioned in BOQ.
10	SS 304L, 3 mm thick, ducting along with SS 304L....(However, MS support material & its fabrication cost will be paid separately as per item no.2).	Supports will be as per the BOQ. MS support will be used with poison plate of SS.
11	Length of Cable and Sizes are missing, Kindly provide SLD or BOQ /Egg details	The SLD and cable size is given in Annexure -1 attached.
12	Estimation is Lower side as prices of all material increase due to situation in Middle east, Kindly revise as estimate is be lower side s per current situation and also add price escalation clause	Cost mentioned in NIT and tender conditions prevails.
13	Item no. 1.01, 1.02, 1.03 of Price Schedule: Centrifugal type Ventilation Fans It is understood that the fans along with motor and panel shall be supplied by you as a Free issue material. However, the bidder shall be responsible for installation of fans as well as for supply of consumables like grease, bearings, flexible connections, mortar and V-belts. Kindly confirm. We request you to keep the consumables in your scope, since it is not possible to identify and procure matching bearings and V-belts for the fans already supplied in the past.	Supply of consumables as per BOQ is in the scope of contractor.
14	Item no. 17 of Price Schedule: MS Filter retainer frame for HDPE filter The BOQ specifies 5 x 3 module while Pg no. 43 of technical specifications of Block 108D specifies 4 x 3 module. Kindly clarify.	Item No: 17:- MS Filter retainer frame has module size of (4 x 3).
15	Item no. 36 of Price Schedule: Emergency Spare Motor control centres It is understood that there are only 2 nos. Motor control centres in our scope comprising 1 no. Incoming MCCB and 1 no. 160 KW VFD starter each. However, there is no SLD available in the Tender documents as mentioned in the Price schedule. Kindly provide the SLD for our better understanding.	The details are given in Annexure -1 attached.
16	We did not find any approved make list in the tender documents. Kindly let us have a preferred/ approved make list for our reference.	Items should be of reputed make and prior approval of EIC is required before purchase of items.

17	Bid Validity Period:- As per the NIT, the bid validity has been specified as 180 days from the last date of online submission. We respectfully submit that this duration is exceptionally long. In line with standard practice followed by most Government departments, the bid validity period is generally limited to 120 days. We therefore request you to kindly review and revise the validity period accordingly.	Tender conditions prevail.
18	Price Escalation — Clause 1OCC: -We note that the NIT specifies Not applicable against Clause 1OCC. Kindly note that for completion period exceeding 12 months, Clause 1OCC is always applicable for government contracts. We request you to make the same applicable clearly specifying the base date for applicability of Clause 1OCC as the date of submission of the bid for calculating price escalation.	Tender conditions prevail.
19	Clarify capacity of Fans mention in BOQ Item 1.01	Each individual fans having capacity of 120000 m3/hr @ static pressure 300 mm WG (Total Nos. of Fans = 18)
20	Clarify capacity of Fans mention in BOQ Item 1.02	Each individual fans capacity having capacity of 120000 m3/hr @ static pressure 300 mm WG (Total Nos. of Fans = 12).
21	Clarify capacity of Fans mention in BOQ Item 1.03	Each individual fans having capacity of 40000 m3/hr @ static pressure 80 mm WG (Qty -2 Nos.) & 80000 m3/hr @ static pressure 275 mm WG (Qty -3 Nos.)
22	Clarify Supply and FIM in BOQ Item No 16 & 17	Procurement, supply of filter retaining frames are in the scope of contractor as mentioned in BOQ and the pre and HEPA filters are provided as FIM (Free issue material) for testing.

V K Singh

Project Director
INRPC BARC
14-05-2026

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Annexure -1

VFD panel shall be of rating 90 kW (1 No) and 160 kW (1 No) against 2 Nos of 160 kW as per the BOQ

For 90 kW VFD panel (For Block 108 D)

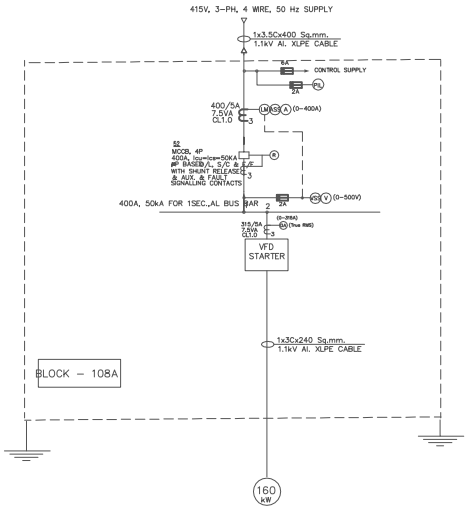
1. Supply and laying of outgoing cable along with VFD is in the scope of contractor and size and length of the cable shall be of "**1 run of 3C x 120 Sq. mm, Type: A2XWY**" and " **50 metres** "
2. Successful bidder shall submit GA, Power and Control wiring diagram as per the **attached SLD** for approval.

For 160 kW VFD panel (For Block 108A and 108B)

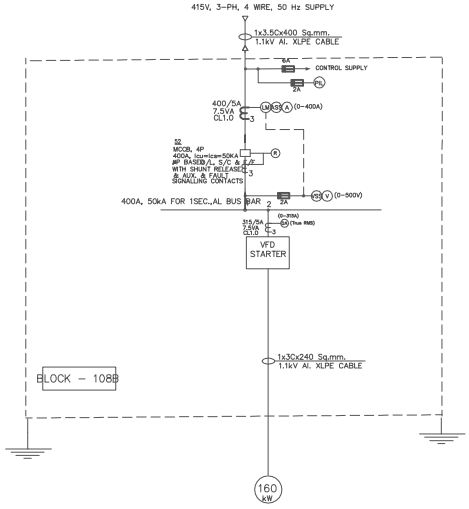
1. Supply and laying of outgoing cable along with VFD is in the scope of contractor and **Size and Length** of the outgoing cable shall be of **" 2 runs of 3C x 300 Sq.mm, Type: A2XW**Y " and "**150 metres**".
2. Successful bidder shall submit GA, Power and Control wiring diagram as per the **attached SLD** for approval.
3. The scope of shifting of the VFD panels and associated power cables after testing of all the motors installed in the block 108A to block 108B or vice versa is in the scope of contractor.

SLD FOR FIXED TYPE SPARE MCC FOR EXHAUST FANS IN AREA NO. 106 BLOCK NO. 108A & 108B

CABLE ENTRY/EXIT	BOTTOM



PANEL NAME TAG: 108A-E-S MCC-EXHAUST FAN



PANEL NAME TAG: 108B-E-S MCC-EXHAUST FAN

GENERAL NOTES FOR PANELS

1. THE MOTOR RATINGS ARE SUBJECT TO MINOR CHANGES BASED ON THE FINAL RATING OF THE DRIVEN EQUIPMENT, WHICH SHALL BE PROVIDED DURING THE DRAWING APPROVAL STAGE. CONSEQUENTLY, STARTER SHALL BE SELECTED AS PER THE FINAL MOTOR RATING.

2. MCCB (250A & ABOVE) SHALL HAVE MICROPROCESSOR BASED ADJUSTABLE RELEASES FOR OVERLOAD, SHORT CIRCUIT & EARTH FAULT PROTECTIONS (LSIG) WITH SHUNT RELEASE AND SHALL BE MODBUS RTU/TCP COMMUNICATION CAPABLE. MODULES FOR COMMUNICATION, METERING & DISPLAY SHALL BE PROVIDED. MCCB (<250A) SHALL HAVE ADJUSTABLE THERMAL & FIXED MAGNETIC RELEASES FOR OVERLOAD & SHORT CIRCUIT FAULT PROTECTIONS ALONG WITH SHUNT RELEASE. INTER-PHASE BARRIER, SPREADER LINKS, AUXILIARY & TRIP CONTACTS SHALL BE PROVIDED IN THE MCCB.

3. CONTROL WIRING INSIDE THE PANEL SHALL BE DONE WITH 1.1 kV FRLS PVC INSULATED COPPER WIRES.

4. THE CONSTRUCTION OF PANEL SHALL BE FIXED TYPE, INTERNAL FORM OF SEGREGATION OF THE PANEL SHALL BE FORM-4B.

5. SPACE HEATERS, UTILITY POWER SOCKETS AND LED LAMPS SHALL BE PROVIDED IN EACH OF THE CABLE ALLEYS OF THE PANEL.

6. THE RATING OF FUSES & VA BURDEN OF CTs SHOWN IN THE SLD ARE TENTATIVE AND SHALL BE FINALIZED BY THE CONTRACTOR DURING DETAILED ENGINEERING.

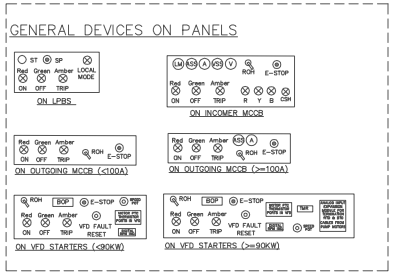
7. LOAD MANAGER SHALL BE DIGITAL COMMUNICATION CAPABLE (MODBUS TCP/RTU).

8. MCCB, LINE CHOKE & OUTPUT CHOKE SHALL BE PROVIDED FOR ALL VFDs. THE TYPE & RATING OF WHICH SHALL BE AS PER VFD MANUFACTURER'S RECOMMENDATION. HIGH-SPEED SEMI-CONDUCTOR FUSES SHALL BE PROVIDED BEFORE VFDs OF RATING 30 KW & ABOVE ONLY. HIGH-SPEED SEMI-CONDUCTOR FUSES SHALL ALSO BE PROVIDED FOR SOFT-STARTERS. VFD/SOFT-STARTER OF RATING 15KW & ABOVE SHALL BE SUITABLE FOR TERMINATION OF PTC THERMISTOR PROBES EMBEDDED IN MOTOR WINDINGS FOR OVER-TEMPERATURE PROTECTION OF MOTORS. ALL VFD STARTERS SHALL BE PROVIDED WITH SPEED POTENTIOMETER & DIGITAL RPM INDICATOR. VFD/SOFT-STARTER SELECTED BY THE CONTRACTOR MUST COMPLY WITH THE TECHNICAL SPECIFICATIONS GIVEN IN THE TENDER DOCUMENT AND MODEL & RATING OF SELECTED VFD/SOFT-STARTER SHALL BE SUBJECT TO APPROVAL FROM THE PURCHASER.

9. FOR MOTORS OF RATING 90KW & ABOVE, VFD/SOFT-STARTER SHALL BE COMPATIBLE FOR DIRECT TERMINATION OF 3-WIRE (PT-100) RTD & BTD SENSOR CABLES FROM MOTOR WINDINGS INTO VFD/SOFT-STARTER. IN CASE, VFD/SOFT-STARTER IS NOT COMPATIBLE FOR DIRECT TERMINATION, THEN AI EXPANSION MODULES SHALL BE CONSIDERED FOR TERMINATION OF RTD & BTD CABLES FROM MOTOR OTHERWISE SEPARATE MOTOR WINDING & BEARING TEMPERATURE MONITORING RELAY (MICROPROCESSOR BASED WITH LED DISPLAY) SUITABLE FOR 3-WIRE PT-100 SENSOR CABLES FROM MOTOR HAVING AUTO/MANUAL RESETTING FACILITY & WITH TRIP CONTACTS SHALL BE PROVIDED.

10. LOCAL PUSHBUTTON STATIONS (LPBS) IS INCLUDED IN THE SCOPE OF CONTRACTOR. CONTRACTOR SHALL MAKE NECESSARY PROVISION IN THE PANEL FOR TERMINATION OF LPBS CONTROL CABLES FROM FIELD TO THE PANEL.

GENERAL DEVICES ON PANELS

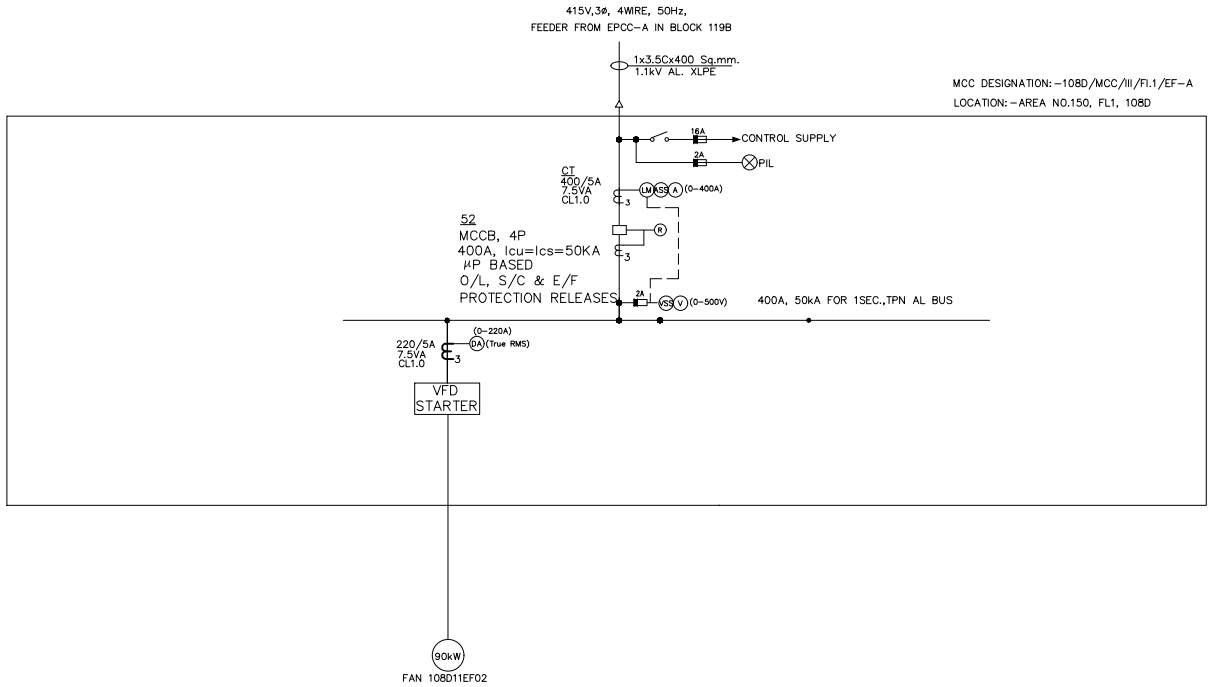


GENERAL LEGEND FOR PANELS

VFD STARTER	VFD WITH SHORT CIRCUIT PROTECTIVE DEVICE(MCCB), LINE CHOKES, OUTPUT CHOKES (AFTER VFD) & HIGH SPEED SEMICONDUCTOR FUSES (BEFORE VFD) (IF APPLICABLE)	MPCB	MOTOR PROTECTION CIRCUIT BREAKER
			POWER CABLE
			CONTROL CABLE
		S/C	SHORT CIRCUIT
R	CIRCUIT-BREAKER (MCCB/ACB) WITH MICROPROCESSOR BASED RELEASES FOR O/L, S/C & E/F PROTECTIONS ALONG WITH SHUNT RELEASE	O/L	OVER LOAD
		E/F	EARTH FAULT
			FUSE
		XX	MOTOR-XX INDICATES RATING IN kW
	CIRCUIT-BREAKER (MCCB) WITH THERMAL-MAGNETIC BASED ADJUSTABLE RELEASES FOR O/L & S/C PROTECTIONS ALONG WITH SHUNT RELEASE	R Y B	INDICATING LAMPS-GREEN, AMBER & RED
		SC	SPRING CHARGED INDICATION
		ST	START P.B. ON LPBS (SPRING RETURN TYPE)
		SP	STOP P.B. ON LPBS (STAYPUT TYPE)
		E-STOP	EMERGENCY STOP P.B. ON MCC PANEL (RED MUSHROOM STAYPUT TYPE WITH YELLOW BORDER & SHROUDS TO PREVENT INADVERTENT OPERATION)
3	CURRENT TRANSFORMER (CT) 3 INDICATES NOS. OF CTs		
	POWER CONTACTOR (AC-3 DUTY)	TCH	TRIP CIRCUIT HEALTHY
		CSH	CONTROL SUPPLY HEALHY
PTCR	PTC THERMISTOR RELAY FOR MOTOR	CMPR	COMPACT MOTOR PROTECTION RELAY (WITH INTEGRAL CTs)

A	ANALOG TYPE AMMETER
V	ANALOG TYPE VOLTMETER
LM	DIGITAL LOAD MANAGER
SS	AMMETER SELECTOR SWITCH
VS	VOLTMETER SELECTOR SWITCH
PIL	POTENTIAL INDICATING LAMPS (R, Y, B)
	ROTARY OPERATING HANDLE (ROH) OF BREAKER
LPBS	LOCAL PUSHBUTTON STATION
MCCB	MOULDED CASE CIRCUIT BREAKER
BOPB	ASIC OPERATING PANEL (VFD/SOFT STARTER)
T-N-C	BREAKER CONTROL SWITCH (TRIP-NEUTRAL-CLOSE)
TMR	TEMPERATURE MONITORING RELAY SUITABLE FOR PT-100 (3-WIRE) RTD SENSOR CABLES FROM MOTOR
DA	DIGITAL AMMETER (WITH TRUE RMS MEASUREMENT)

SLD FOR MOTOR CONTROL CENTRE CLASS-III MCC (GROUP-A) FOR AREA NO. 150, FL.1, BLOCK 108D



NOTES

1. THE MOTOR RATINGS ARE SUBJECT TO MINOR CHANGES BASED ON THE FINAL RATING OF THE DRIVEN EQUIPMENT, WHICH SHALL BE PROVIDED DURING THE DRAWING APPROVAL STAGE. CONSEQUENTLY, STARTER SHALL BE SELECTED AS PER THE FINAL MOTOR RATING.

2. THE PANEL SHALL BE PROVIDED WITH A MARSHALLING COMPARTMENT WHICH SHALL HOUSE THE 24V DC INTERPOSING RELAYS (DIN-RAIL MOUNTING TYPE WITH MINIMUM 2 C/O TYPE CONTACTS OF RATING 230VAC, 6A) REQUIRED FOR REMOTE CONTROL OF MOTORS FROM PLC (AS PER MOTOR CONTROL SCHEMES PROVIDED IN TENDER DOCUMENT). THE MARSHALLING COMPARTMENT SHALL ALSO HOUSE THE POTENTIAL FREE CONTACTS OF ALL RELAYS/ DEVICES & LOOPED MODBUS COMMUNICATION PORTS OF ALL COMMUNICABLE DEVICES REQUIRED FOR PLC FEEDBACK.

3. MCCB (250A & ABOVE) SHALL HAVE MICROPROCESSOR BASED ADJUSTABLE RELEASES FOR OVERLOAD, SHORT CIRCUIT & EARTH FAULT PROTECTIONS (LSIG) AND SHALL BE MODBUS RTU/TCP COMMUNICATION CAPABLE. MODULES FOR COMMUNICATION, METERING & DISPLAY SHALL BE PROVIDED. MCCB (<250A) SHALL HAVE ADJUSTABLE THERMAL & FIXED MAGNETIC RELEASES FOR OVERLOAD & SHORT CIRCUIT FAULT PROTECTIONS. INTER-PHASE BARRIER, SPREADER LINKS, AUXILIARY & TRIP CONTACTS SHALL BE PROVIDED IN THE MCCB.

4. CONTROL WIRING INSIDE THE PANEL SHALL BE DONE WITH 1.1 kV FRLS PVC INSULATED COPPER WIRES.

5. THE CONSTRUCTION OF PANEL SHALL BE FIXED TYPE. INTERNAL FORM OF SEGREGATION OF THE PANEL SHALL BE FORM-4B. PANEL SHALL BE SUITABLE FOR TOP CABLE ENTRY.

6. SPACE HEATERS, UTILITY POWER SOCKETS AND LED LAMPS SHALL BE PROVIDED IN EACH OF THE CABLE ALLEYS OF THE PANEL.

7. THE RATING OF FUSES & VA BURDEN OF CTs SHOWN IN THE SLD ARE TENTATIVE AND SHALL BE FINALIZED BY THE CONTRACTOR DURING DETAILED ENGINEERING.

8. LOAD MANAGER SHALL BE DIGITAL COMMUNICATION CAPABLE (MODBUS TCP/RTU).

9. LOCAL PUSHBUTTON STATIONS (LPBS) IS NOT INCLUDED IN THE SCOPE OF CONTRACTOR. HOWEVER, CONTRACTOR SHALL MAKE NECESSARY PROVISION IN THE PANEL FOR FUTURE TERMINATION OF LPBS CONTROL CABLES ROM FIELD TO THE PANEL.

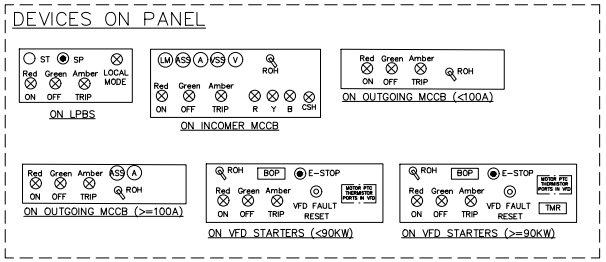
10. SCPD, LINE CHOKE, OUTPUT CHOKE & HIGH SPEED SEMICONDUCTOR FUSES SHALL BE PROVIDED FOR ALL VFDs (IRRESPECTIVE OF RATING), THE TYPE & RATING OF WHICH SHALL BE AS PER VFD MANUFACTURER'S RECOMMENDATION. VFD OF RATING 15KW & ABOVE SHALL BE SUITABLE FOR TERMINATION OF PTC THERMISTOR PROBES EMBEDDED IN MOTOR WINDINGS FOR OVER-TEMPERATURE PROTECTION. VFD SELECTED BY THE CONTRACTOR MUST COMPLY WITH THE TECHNICAL SPECIFICATIONS GIVEN IN THE TENDER DOCUMENT AND MODEL & RATING OF SELECTED VFD SHALL BE SUBJECT TO APPROVAL FROM THE PURCHASER.

11. IN VFD STARTERS OF RATING 90KW & ABOVE, SEPARATE TEMPERATURE MONITORING RELAY (SUITABLE FOR 3-WIRE PT-100 RTD SENSORS FROM MOTOR) WITH TWO TRIP CONTACTS SHALL BE PROVIDED. CONTRACTOR SHALL MAKE NECESSARY PROVISION IN THE PANEL FOR FUTURE TERMINATION OF RTD SENSOR CABLES FROM MOTOR TO THE RELAY.

12. UNDERVOLTAGE CONTACTOR COIL (U/V) SHALL BE CONNECTED BETWEEN PHASE & NEUTRAL MAIN BUSBARS FOR REMOTE INDICATION OF PANEL BUSBAR ENERGIZATION STATUS TO MAIN CONTROL ROOM OF THE PLANT. THE COIL SHALL HAVE ONE PAIR OF CHANGEOVER TYPE CONTACTS OR 2NO+2NC CONTACTS WHICH SHALL BE WIRED UPTO A SEPARATE TERMINAL BLOCK OF THE MARSHALLING COMPARTMENT OF THE PANEL.

13. FOR VFD STARTERS OF RATING 15kW & ABOVE, DIGITAL TRUE RMS AMMETER SHALL BE PROVIDED IN THE STARTER COMPARTMENT/ MODULE OF THE PANEL.

DEVICES ON PANEL



LEGEND

VFD STARTER	VFD WITH SHORT CIRCUIT PROTECTIVE DEVICE(SCPD), LINE CHOKES, OUTPUT CHOKES (AFTER VFD) & HIGH SPEED SEMICONDUCTOR FUSES (BEFORE VFD)
R	CIRCUIT-BREAKER (MCCB/ACB) WITH MICROPROCESSOR BASED RELEASES FOR O/L, S/C & E/F PROTECTIONS
	CIRCUIT-BREAKER (MCCB) WITH THERMAL-MAGNETIC BASED ADJUSTABLE RELEASES FOR O/L & S/C PROTECTIONS
3	CURRENT TRANSFORMER (CT) 3 INDICATES NOS. OF CTs
MPCB	MOTOR PROTECTION CIRCUIT BREAKER
	POWER CABLE
	CONTROL CABLE
S/C	SHORT CIRCUIT
O/L	OVER LOAD
E/F	EARTH FAULT
	FUSE
XX	MOTOR-XX INDICATES RATING IN kW
G A R	INDICATING LAMPS-GREEN, AMBER & RED
SC	SPRING CHARGED INDICATION
ST	START P.B. ON LPBS (SPRING RETURN TYPE)
SP	STOP P.B. ON LPBS (STAYPUT TYPE)
E-STOP	EMERGENCY STOP P.B. ON MCC PANEL (RED MUSHROOM STAYPUT TYPE WITH YELLOW BORDER & SHROUDS TO PREVENT INADVERTENT OPERATION)
U/V	UNDERVOLTAGE COIL WITH EITHER 2NO+2NC CONTACTS OR ONE PAIR OF CHANGEOVER TYPE CONTACTS
A	ANALOG TYPE AMMETER
V	ANALOG TYPE VOLTMETER
LM	DIGITAL LOAD MANAGER
ASS	AMMETER SELECTOR SWITCH
VSS	VOLTMETER SELECTOR SWITCH
PIL	POTENTIAL INDICATING LAMPS (R, Y, B)
	ROTARY OPERATING HANDLE (ROH) OF BREAKER
LPBS	LOCAL PUSHBUTTON STATION
MCCB	MOULDED CASE CIRCUIT BREAKER
BOP	BASIC OPERATING PANEL (VFD)
CSH	CONTROL SUPPLY HEALTHY
TMR	TEMPERATURE MONITORING RELAY SUITABLE FOR PT-100 (3-WIRE) RTD SENSOR CABLES FROM MOTOR
DA	DIGITAL AMMETER (WITH TRUE RMS MEASUREMENT)

SIZE : A3