

दूरभाष :
TELEPHONE :
तार : चार्क-मुंबई, चेम्बूर.
TELEGRAMS : BARC-MUMBAI, CHEMBUR.
फेक्स संख्या : ९१-२२-२५५० ५१५१
FAX NUMBER : 91-22-2550 5151



भारत सरकार
GOVERNMENT OF INDIA

भाभा परमाणु अनुसंधान केन्द्र
BHABHA ATOMIC RESEARCH CENTRE
URANIUM EXTRACTION DIVISION

ट्रॉम्बे,
मुंबई-४०० ०८५.
TROMBAY,
MUMBAI-400 085

South Site,
Trombay,
Mumbai - 85

Ref: UED/PI.13/17/833

Date: 27/04/2017

TENDER No: BARC/UED/BR/17011
TENDER DUE DATE: 17th May, 2017

Sub: Fabrication, testing, inspection and supply of Power cum control panel for Mixer Settler motors as per specification

Dear Sir/ Madam,

Quotations are invited on behalf of Head, Uranium Extraction Division in sealed envelope for "Fabrication, testing, inspection and supply of Power cum control panel for Mixer Settler motors as per specification". Interested bidder may contact the undersigned for any further clarification.

1. **Scope of Work and Quantity:** The scope of work includes the followings:

Sr no	Scope of work	Technical Specification	Quantity
1	Fabrication, testing, inspection and supply of Power cum control panel for Mixer Settler motors as per specification	As per Annexure A and Annexure B and Annexure C	1 set

2. Technical Specification, Drawings and Bill of materials:

See attached Annexure A and Annexure B and Annexure C

The vendor should submit make and part no of all materials as listed in BOM along with the offer.
The final circuit design is subjected to purchaser's approval

3. **Materials:** All materials for are to be purchased and used by the supplier as per supply and install quantity. No Free Issue of Material (FIM).

TERMS AND CONDITIONS

A. Note: [Reference: (2/Misc-9/Lgl/2001/92 dated April 30, 2001, BARC)]

- I. Confidentiality: No party shall disclose any information to any third party concerning the matters under this contract generally. In particular, any information identified as "Propriety" in nature by the disclosing party shall be kept strictly confidential by the receiving party and shall not be disclosed to any third party without the prior

written consent of the original disclosing party. This clause shall apply to the sub-contractors, consultants, advisers or the employees engaged by a party with equal force.

- II. “Restricted information” categories under Section 18 of the Atomic Energy Act, 1962 and “Official Secrets” under Section 5 of the Official Secrets Act, 1923:- Any contravention of the above –mentioned provisions by any contractor, sub-contractor, consultant, adviser or the employees of a contractor will invite penal consequences under the aforesaid legislation.
- III. Prohibition against use of BARC’s name without permission for publicity purposes: The contractor or sub-contractor, consultant, adviser or the employees engaged by the contractor shall not use BARC’s name for any publicity purpose through any public media like Press, Radio, TV or Internet without the prior written approval of BARC.
- B. PRICE:** Offered cost should be including the entire scope of work (materials, fabrication, testing, documentation, taxes, packing & forwarding etc). Maximum possible price break-up and unit rates should be mentioned in the offer. Extra job, if any, will be on pro rata basis only.
- C. VALIDITY:** Price should be valid throughout the currency of the contract.
- D. TAX:** As applicable, should be clearly indicated in the offer. Octroi and Excise duty should be separately mentioned.
- E. Warranty:** The complete work should be warranted against any defect for a period 2 years from the date of installation.
- F. JOB COMPLETION:** 50 days from the day of issue of work order.
- G. PAYMENT:** 100% including taxes after receipt of the unit at our site and submission of the following documents:
1. Delivery challan. 2. Advance Stamped Receipt. 3. Original Bill, 4. Guarantee certificate, 5. Filled up Form for ECS payment (Ask purchaser to get the form), 6. Cancelled cheque.
- H. Inspection & Testing:** All items in 100% quantity shall be inspected and successfully tested in presence of BARC engineer before delivery to the site.
- I. Preparation for shipment:** The items shall be and packed in wooden/Corrugated packing . The supplier is responsible for preserving and packing of the items and safe delivery to purchaser’s stores in accordance with this specification. Any charges related to transit insurance will not be paid by the purchaser.
- J. SAFETY:** The vendor should abide by all industrial safety rules and safety instruction imposed by BARC. The vendor should not perform any unsafe work and BARC will not be responsible for any loss/damage arising due to unsafe working procedure.
- K. LABOUR DISPUTE:** The contractor should take care of all deals and disputes related to workers BARC will not be responsible for any loss/damage/delay due to any arising labor conflict.
- L. Delivery:** The item after successful inspection should be delivered to Uranium Extraction Division, Bhabha Atomic research Centre, Trombay Mumbai-400085. Vendor will be responsible for any damage related to freight and handling. However purchaser will provide necessary labour and machinery support for unloading at purchaser’s site. The supplier should communicate at least two days prior to delivery for arranging necessary formalities.

J. NOTE TO THE BIDDER: Party should clearly mention the tender no, due date, party’s name and subject on the top of the envelope duly sealed and addressed to Head, Uranium Extraction Division BARC, Trombay, Mumbai – 400 085.

Quotation from vendors/ fabricator having prior work experience in similar job will be accepted. Proof of prior work (PO/ work order copy) should be attached with quotation.

Note: Please mention your PAN No, S.T. No & VAT TIN No with the offer. Otherwise the offer is liable for rejection.


Bikram Roy,
Scientific officer D, UED, BARC
Extension- 022 2559 6422
वैज्ञानिक अधिकारी / Scientific Officer
युरेनियम विभाग / Uranium Division
Email: bikram@barc.gov.in
भारत सरकार / Government of India
भभा परमाणु अनुसंधान केंद्र / Bhabha Atomic Research Centre
अणे, मुम्बई - 400085 / Trombay, Mumbai - 400085

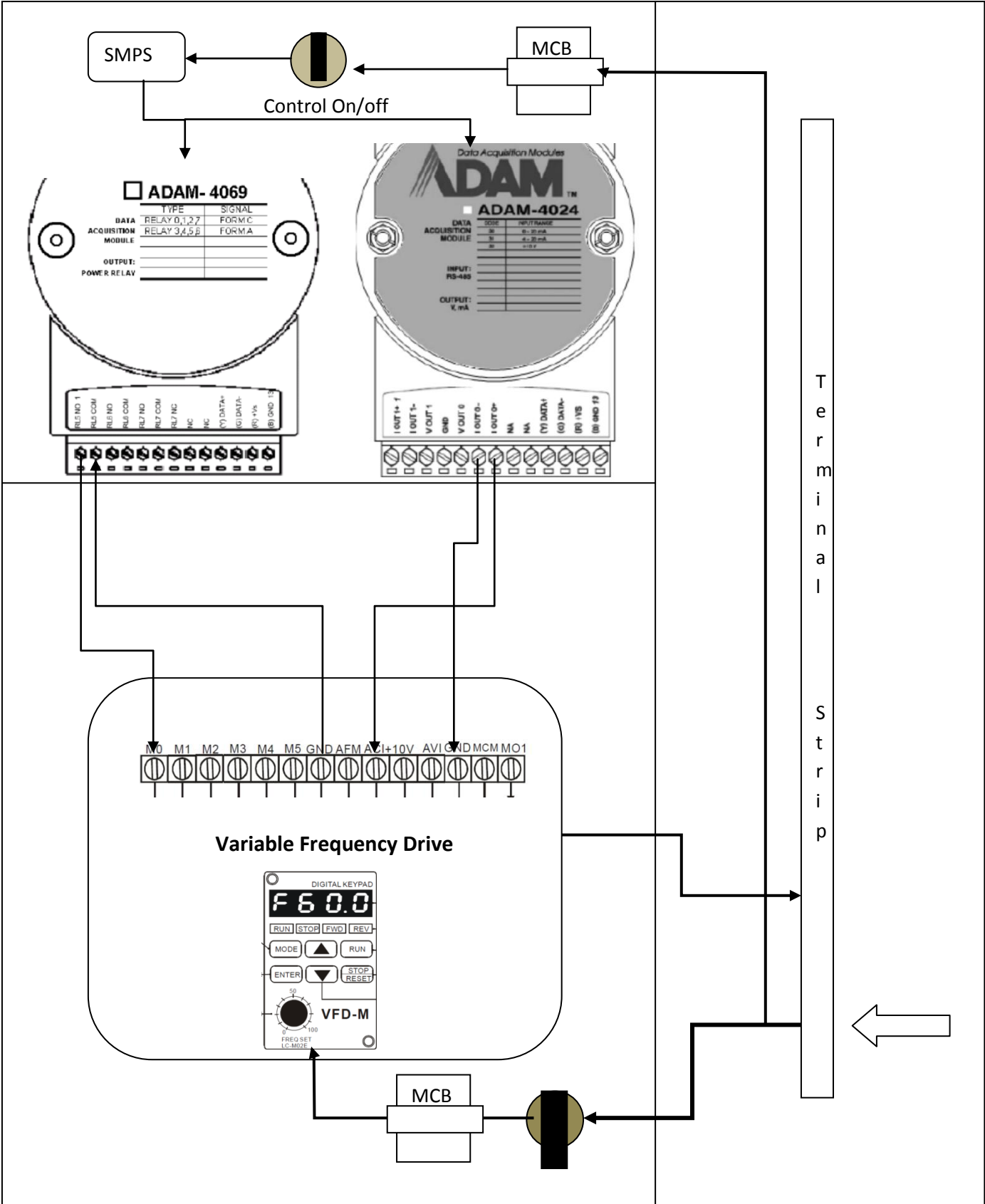
इस निविदा जांच का हिंदी संस्करण प्राप्त करने के लिए कृपया ईमेल आईडी पर
संपर्क कर: bikram@barc.gov.in या 022-25596422 पर कॉल कर

Annexure A: Technical Specification and Bill of Material

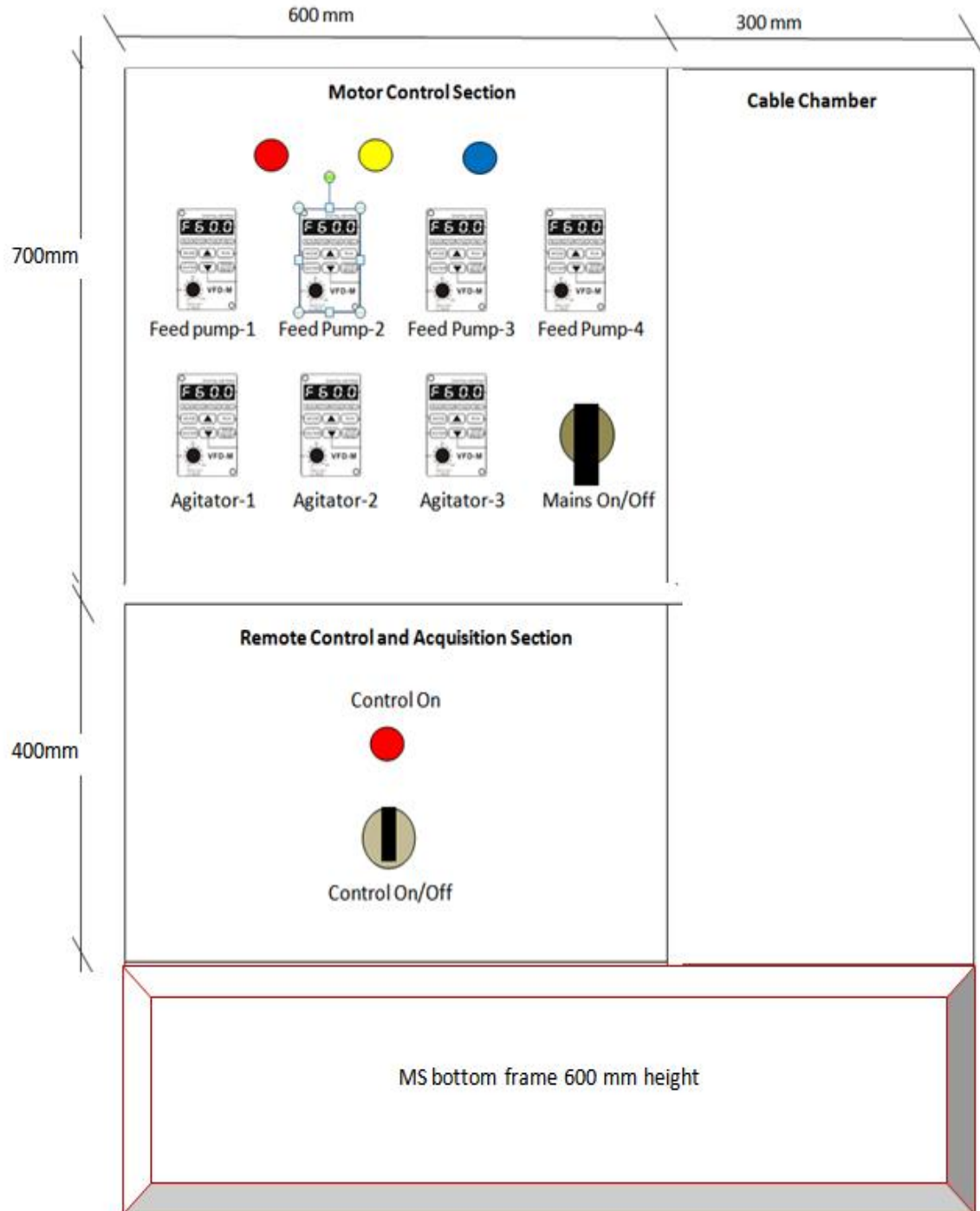
Sr No	Item	Technical Specification	Quantity
1	SFU	16 A, 3Pole+Nutral Switch fuse unit. Switch Disconnecter fuse from 3P+N Versions. Suitable for applications up to 690V AC. Temperature- Ambient Switched neutral pole. Protection- IP20 Fuse Covers and terminal cover. Suitable for Isolation as per IEC 60947. Positive OFF indication to indicate the true position of contacts. Type 2 Coordinated combination available for the entire range. Telescopic adjustable length shaft with rotary handle Make- Siemens	1
2	VFD	Variable frequency drive Input: 400-460 V, 3 Phase, 3.0 Amp, 50 Hz Output: 0- input V, 3 phase, 3.0 Amp, 0-400 Hz (approx) Motor: 1HP Display for parameter adjustment Make: Delta VFD M or equivalent Special Feature: Detachable keypad for Panel-door mounting	7
3	LED	Panel mount 22.5 mm LED indicator, supply voltage 230VAC. Make- Teknic or equivalent Red-2, Green- 1, Blue-1	4
4	Selector switch	Type : SPDT with 'Off' position Large size	1 No
5	MCB	3 Pole- 6 AMP, Legrand make- 7 nos 2 Pole- 2AMP, Legrand make- 1 no Glass Fuse with Holder- 500mA- 5 nos	1 Set as specified
6	Contactator	Control contactor 230VAC AC coil 3NO+1NC	7 nos
7	Transformer	50VA 1ph CONTROL Transformer	1 no
8	Data acquisition card	Analog input card- Advantech ADAM-4019+ 8 differential channels for individual input type wit Modbus. Installation- Mounting plate to be installed inside panel compartment. Only 24VDC power wiring to be done. Rest control wiring is in user's scope.	1 no
9	Output card	Digital power relay output card Advantech ADAM-4069 with modbus. Installation- Mounting plate to be installed inside panel compartment. Complete 24VDC power wiring and control wiring as per attached control scheme lies is supplier's scope.	1 no
10	Output Card	Analog output card Advantech ADAM-4024 , 4 channel analog output with modbus. Installation- Mounting plate to be installed inside panel compartment. . Complete 24VDC power wiring and control wiring as per attached control	2 nos

		scheme lies is supplier's scope.	
11	Connectors	2.5sq mm Elmex T-type Din rail mount connector=80 nos 4.0sq mm Elmex T-type Din rail mount connector= 4 nos	1 set as specified
12	SMPS	Switch mode power supply. Input- 230VAC. Output- 24VDC at 5A. output power- 120W. Fanless model with short circuit protection and adjustable output..	2 nos
13	Panel	2mm CRCA sheet powder coated panel of specified dimension. Cable entry – from bottom and top of cable chamber through removable gland plate. Internal cable routing through PVC duct with provision for inter-compartment cable routes. Mounting: MS Stand/Frame made of ISA50 with primer coating. (Drawing subject to approval) Indoor Type Floor Mounted Dust And Vermin Proof Fabricated Out Of CRCA Sheet Metal in IP 52 Compartmental Fixed Type duly powder coated after pretreatment in 7 Tank for removing dust, grease & rust	1 set
14	Wiring	Control wiring: 1. Between VFD-Current input terminal and ADAM-4024-Current output terminal- 7 pairs of wiring in 22 AWG copper gray FRLS wire with proper ferrules and pin type lugs 2. Between ADAM-4069-Output relay contact and VFD-Control inputs- 7 pairs of wiring in 22 AWG copper gray FRLS wire with proper ferrules and pin type lugs Power wiring 1. Between Main incomer-SFU-VFD-Output connector- 7 sets of wiring in 2.5sqmm copper black FRLS wire with proper ferrules and pin type lugs.	1 set as specified
15	Accessories	Cable- 2.5sqmm 3 core PVC insulated 1100V grade flexible cable- 1000 metre Cable Tie- 250 mm PVC cable tie- 1000 nos PG 13.5 Polyamide Cable Gland- 100 nos	1 set
16	Documentation	Two sets of complete documentation along with test reports, as-built drawing, circuit diagram should be submitted.	

Annexure B: Control Scheme



Annexure C: GA Drawing of power cum control panel



General Notes:

1. System Voltage- 415v(+)/(-) 10% 3 Ph,3wire, 50 Hz(+)/(-)5%
2. Control Supply- a) 240 V AC Aux. Bus for Space Heater Circuit
3. Fault level- 25KA(rms) for 1 Sec
4. Design Ambient- 50 deg Cent
5. Switch Board conforms to Degree of protection IP 52
6. Foundation Bolts are not in SAMCON scope
8. Finish- Electro statically powder coated, RAL 7032 Siemens Grey Colour.
9. Internal Wiring will be carried out using 1100 V grade PVC FRLS insulated stranded copper wires of following sizes- Current transformer circuit- 2.5 sq mm, PT circuit- 1.5 sq mm, Control Circuit- 1.5 sq mm
Green/Yellow Green Wire for Earth circuit
10. Thickness of Panel- Load bearing-2.0 mm
Door & Non load bearing members 1.6 sq mm. Feeder Doors bigger than 600mm-2 mm
11. Current Transformers are of Resin body
12. Name plates will be laser printed on anodized aluminum strips. Letter Height 5mm. Individual Component will be identified with yellow PVC stickers with black letters. PVC stickers shall be provided on base plates & device also.
13. The Busbars are of high conductivity **Aluminum current density of 0.8A / Sq.mm**. The bus bars will be sleeved using heat shrinkable PVC sleeves of R-Y-B- BLk color. Busbar joints & first tap off points shall be shrouded.
14. Earth Busbar will be Suitable Al extended at both ends of the switchboard.
15. The control bus bar will be of rectangular copper of size 8x4 sq mm in following order
Control Bus I- 240 V AC EB /110V DC/110VAC.
16. Connections- Top/Bottom Cable Entry as per required.
17. Terminal Block will be disconnecting type for CT circuit in all feeders. Control terminal block will be 2.5 sq mm. 10 % spare terminals based on space shall be provided. All Power Terminals will be of STUD type. All connectors will be made up of Polyamide.
18. Temperature rise of Main Busbars will be limited to 40 deg over an ambient of 50 deg.
19. Power wiring will be done in Gray color multi strand copper cables provided with identification sleeves at both ends. Control wiring shall be carried out with insulated sleeves & proper lugs. White Printed ferruls shall be used to identify wires
20. Feeder doors will be separately earthed through 2.5 sq. mm Yellow green \ Green colored wire
21. Minimum Air clearance between Horizontal Busbars:
Phase to Phase : 25.0 mm
Phase to Earth : 19.0 mm
22. EDPM/Neoprene rubberized gaskets will be provided between adjacent panels, doors and removable covers / gland plates.
23. Access for cable termination will be from front for MCC feeders and rear for ACB feeders.
24. Space heater with thermostat, cubical illumination lamp will be provided one set per vertical section & Hand Lamp socket will be provided per shipping section.
25. Operating Height for operating drives for PCC/MCC shall be 300mm. (Min.) & 1850mm (Max.) from the floor level.