



# WESTERN COALFIELDS LIMITED

MATERIALS MANAGEMENT WING  
COAL ESTATE, CIVIL LINES, NAGPUR-440001  
CIN : U10100MH1975GO1018626

Phone : (0712) 2510501, 2510691 [EPBAX, Extn :5587] Fax : 0712 - 2510284  
Website : www.westerncoal.gov.in

ORDER NO. 21000112917201

DT : 28.03.2018

BY REGISTERED POST

To.  
M/s MARUTI SALES AND TUBES  
331, Anand Nagar, Handewardi Road  
Hadapsar  
PUNE - 412028

Vendor Code :616973  
Vendor Type: NON MSE  
Tel No.-09371985195  
Mobile: 9371985195

Dear Sir,

Sub : Supply of Centrifugal Pumps of M/s Flowmore make

Ref : 1. Our Tender No. WCL-hq-pur-sp-ra-e061-2017-18, opened on 18.10.2017  
(Tender Id : 2017\_WCL\_78284\_1)

2. Your offer against the tender and subsequent correspondences on Portal(Bid Id : 230760 dated 15.10.2017).

With reference to above, we are pleased to place formal order on you for Supply of the Complete Centrifugal Pump set with electricals at the rates, terms and conditions stipulated hereunder and technical specifications and General terms & conditions enclosed :-

NIT SN	Item description	Unit	Quantity	Rate per unit in Rs.	GST @ 12%	Extended Value in Rs.	Total Amount in Rs.
2	Centrifugal Pump-80LPS, 200Meter Head CI Construction with Electricals (Detail Technical specification as per Annexure-A enclosed)	set	2	12,62,400.00	1,51,488.00	14,13,888.00	28,27,776.00
3	Centrifugal Pump-200LPS, 150Meter Head CI Construction with Electricals (Detail Technical specification as per Annexure-A enclosed)	set	2	16,79,550.00	2,01,546.00	18,81,096.00	37,62,192.00
Total							65,89,968.00
Pre dispatch Inspection Charges @ 1%							65,899.68
Grand Total							66,55,867.68

[Rupees Sixty Six lakhs Fifty Five Thousand Eight Hundred Sixty Seven Paise Sixty Eight Only.]

### TERMS & CONDITIONS

- PRICE** :The above prices are firm and on F.O.R. destination supply basis inclusive of Packing & forwarding and freight charges. Safe arrival of the consignment upto the destination shall be your responsibility.
- Goods & Service Tax** : Shall be payable extra as applicable within the stipulated delivery period of the supply order. The present applicable rate of GST is @ 12 %. Input Tax Credit on GST shall be availed by WCL as per GST rules. You shall submit GST complaint invoice enabling WCL to avail Input Tax Credit (ITC) under GST. In case of any failure on your account, the penalty including interest, if any borne by WCL on ITC, shall be recovered from you..
- Other levies** : Nil

*Handwritten signature and date: 08/03/18*



4. **Delivery** : Delivery of the complete pump set shall be completed within Three (03) months. The delivery period shall be reckoned from 7<sup>th</sup> (Seven) day of the order date. You may improve upon delivery and expedite the supplies.
5. **Transportation & e-way Bill**: By road on freight paid basis. As the delivery of goods by you is on F.O.R. Destination basis, the movement of the goods is to be initiated by you and issue e-Way Bill.
6. **Pre-dispatch Inspection & Test : Inspection Clause** : a) Pre-dispatch inspection – The materials shall be inspected by CMPDIL at manufacturer's works before dispatch. The inspection fee as applicable at the time of inspection ( presently Inspection charge is @ 1 % with applicable GST @ 12% (being Composite supply) on landed value of the material shall be initially paid by you to the inspection agency. Inspection charges shall be subsequently reimbursed by the paying authority to you along with payment against documentary evidence. However, the GST paid on inspection charges shall not be claimed by you from WCL and vis-à-vis will not be reimbursed by WCL.

The mode of payment of the Pre dispatch inspection fee shall be made as under:

1. State Bank of India has made an arrangement for payment of Pre Despatch Inspection Fee through "State Bank collect" and a hyperlink has already been created on CMPDI website i.e. [www.cmpdi.cb.in](http://www.cmpdi.cb.in) for payment of the same.
2. e-money receipt generated online by State Bank collect to be treated as the official money receipt issued by CMPDI to the respective firm.

b) **FINAL INSPECTION**: Final Inspection of the consignment shall be carried out at the destination stores, which will be arranged by the consignee on receipt of stores.

7. **Consignee** : Depot Officer, Central Stores, Tadali, Western Coalfields Limited

At Urjagram, PO: Tadali, Dist: Chandrapur (MS)- 442406  
 Phone no: 07172- 237076, Fax no: 07172- 237295  
 TIN NO: 27780000004V dt. 01-04-2006  
 CST NO: 27780000004C dt. 01-04-2006  
 CE Registration No.: AAACW1578LEM080  
 (Range- V, Division- I, Commissionerate- Nagpur)

8. **Payment Terms** : 80% value of the equipment and accessories and 100% taxes and duties and other charges shall be made within 21 days after receipt and acceptance of material at site by the consignee or from the date of submission of bill whichever is later. Balance 20% payment shall be made after successful completion of erection, testing, commissioning and final acceptance of the equipment (along with the accessories) upon presentation of certificates from the Area GM/HOD(Tech) of WCL HQ to the effect that the equipment has been erected and commissioned to their entire satisfaction. However, if the equipment is not put to use by the project within 120 days from the date of receipt and acceptance at consignee's end, the balance 20% shall be released.

9. **Paying Authority** : General Manager(Finance), Western Coalfields Limited, Coal Estate, Civil Lines, Nagpur 440 001 (M.S.)

10. **Submission of Bills** : For 80% Payment.

- (i) GST compliant Invoice enabling WCL to avail ITC on GST paid.
- (ii) Packing list in original giving details of bill of materials, if applicable.
- (iii) Consignment note / RR/ LR in original.
- (iv) Manufacturer's Warranty / Guarantee certificate.
- (v) Manufacturer's test certificate.
- (vi) Pre dispatch inspection certificates
- (viii) Any other document indicated elsewhere in the order.

For 20% payment:

- Pre-receipted and stamped Invoice for 20% value of the equipment and accessories along with the commissioning certificate from the technical department.
- However, if the item is not put to use by the project within 120 days from the date of receipt and acceptance, balance payment of 20% amount will be released on submission of Pre-receipted and stamped Invoice for 20% value of the equipment and accessories.



11. **Guarantee/Warranty** : You shall give Manufacturer's warranty of satisfactory operation and performance of the items supplied by you for a period of 12 months from the date of commissioning or 18 months from the date of receipt and acceptance of materials, at the consignee end by WCL, whichever is earlier. You shall be responsible for any defects that they develop under the conditions provided for by the contract and under proper use, arising from faulty materials, design or workmanship and shall remedy such defects at his own cost when called upon to do so, If it become necessary for you to replace or renew any defective portion of the goods, such replacement or renewal should be made by you without any extra cost to WCL.

12. **Security Deposit** : You shall furnish a security deposit in the form of Demand Draft or Bank Guarantee of any scheduled bank for 10% value of the awarded contract(Landed value before ITC) Rs. 6,65,587.00 (Rs. Six Lakhs Sixty Five Thousand Five Hundred Eighty Seven only ) within 15 days time from the date of supply order. Security deposit money will be refunded to you within 30 days from the date of satisfactory execution of the contract. Security deposit may be converted into Performance Bank Guarantee (PBG) as per NIT provisions.

The Bank Guarantee issued by the issuing bank on behalf of the supplier in the favour of Western Coalfields Ltd shall be in paper form as well as issued under "Structured financial messaging system". The details of beneficiary for issue of BG under SFMS platform is furnished below:

## Name of beneficiary and details

Name	Western Coalfields Ltd
Area	Head Quarter
Bank A/c No: / Cust ID of beneficiary	ICICI Bank Ltd, Vishnu Vaibhav, 222, Palm Road, Civil Lines, Nagpur
IFSC code	ICIC0000059
Bank Manager Name & Ph no:	Hrushikesh Sakalkale Ph n: +91-9923202096

The original bank guarantee issued by the issuing bank shall be sent by the issuing bank to the following address by Registered post /AD.

General Manager (MM) I/c, Materials Management Wing  
Western coalfields ltd HQ, Coal Estate, Civil lines  
Nagpur - 440001, Maharashtra

Any extension / amendments to the BG shall be done following the same procedure as above.

13. **Performance Bank Guarantee** :You shall furnish PBG valid for 18 months from the date of receipt and acceptance of the items to cover the Guarantee / Warranty period for 10% of the order value of the equipment(along with accessories) i.e., FOR destination price of the materials on the order ,i.e., for Rs. 6,65,587.00 (Rs. Six Lakhs Sixty Five Thousand Five Hundred Eighty Seven only ) to this office. No payment will be made without submission of the confirmed performance bank Guarantee.

14. **Liquidated Damages Clause :**

In the event of failure to deliver the stores within the stipulated date / period in accordance with the samples and / or specifications mentioned in the supply order and in the event of breach of any of the terms and conditions mentioned in the supply order, Coal India Limited and / or its subsidiary Companies should have the right :-

- To recover from successful tenderer, as agreed liquidated damages, a sum not less than 0.5% of the price of the store which successful tenderer has not been able to supply (for this purpose part of a unit supplied will not be considered) as aforesaid for each week or part of a week during which the delivery of such stores may be in Arrears limited to 10 %. Where felt necessary the limit of 10% can be increased to 15% at the discretion of Head of the Materials Management Division.
- To purchase from elsewhere, after due notice to the successful tenderer, on the account and at the risk of the defaulting supplier the stores not supplied or others of a similar description without canceling the supply order in respect of consignment not yet due for supply or
- To cancel the supply order or a portion thereof, and if so desired, to purchase the store at the risk and cost of the defaulting supplier and also-
- To extend the delivery period with or without imposition of Liquidated Damages as may be considered fit and proper. The penalty if imposed shall not be more than the agreed liquidated damages referred to clause a above.
- To forfeit security deposit in full or part.
- Whenever under the contract a sum of money is recoverable from and payable by the supplier, Western Coalfields Limited, shall be entitled to recover such sum by appropriating, in part or in whole by deducting any

Handwritten signature and date: 28/3/18



sum or which at any time thereafter, may become due to the successful tenderer in this or any other contract, with Western Coalfields Limited. Should this sum be not sufficient to cover the full amount recoverable, the successful tenderer shall pay to Western Coalfields Limited, on demand the remaining balance. The supplier shall not be entitled to any gain on any such purchase.

**15. Risk Purchase Clause:**

In the event of failure of the supplier to deliver or dispatch within the stipulated date/period of the supply order or in the event of breach of any of the terms and conditions mentioned in the supply order, Coal India Ltd. or its Subsidiary Companies have the right to purchase the stores from elsewhere after due notice to the defaulting supplier at the risk and cost of the defaulting supplier. In the event of failure of the supplier as detailed above, the cost as per risk purchase exercise may be recovered from the bills against any other supplies pending in the same Subsidiary Co. and also in any other Subsidiary Companies/CIL.

Risk purchase action may be initiated under any of the following conditions:

- When the supplier fails to deliver the materials even after the delivery period is extended on several occasions, on request from the supplier.
- When the supplier fails to respond to purchaser's request for supply of the materials and fails to provide any reason which is considered to be genuine, for the delay in supply.
- When in the judgment of the purchaser the supplier is unable to execute the order due to various reasons.
- When the materials are urgently required and the supplier fails to deliver the materials within the extended/original delivery schedule.

When the supplier breaches any of the terms and conditions of the supply order and as a result fails to execute the order satisfactorily

**16. Price Certificate:** As undertaken by you in your offer you have to certify on the supplies bill that "we have not offered the same products at a price lower than that offered in the present bid in respect of any other ministry/department of the Govt. of India or a PSU. In case we offer the lower prices for same items under similar terms within the validity of this offer to ministry/department of the Govt. of India or a PSU, we undertake to notify such reduction to the buyer and the same will also be applicable against this offer."

**17. Force Majeure Condition**

If the execution of the contract/supply order is delayed beyond the period stipulated in the contract supply order as a result of outbreak of hostilities, declaration of an embargo or blockade or fire, flood, acts of nature or any other contingency beyond the supplier's control due to act of God then Western Coalfields Limited may allow such additional time by extending the delivery period, as it considers to be justified by the circumstances of the case and its decision shall be final. If and when additional time is granted by the Coal India Limited and its subsidiary companies, the contract/supply order shall be read and understood as if it had contained from its inception the delivery date as extended.

**18. EFT Details : As confirmed by you in your offer**

Name of Bank	State Bank of India
Branch Name & Location	Wardhaman Nagar, PI no. 268, Satriami Layout, Central Avenue, Nagpur
Account Number	36943608760
Type of Account	Current
IFS Code of the Branch	SBIN0030425

The supply order is issued with this acceptance. You are requested to acknowledge receipt of this order and arrange immediate supply.

(Sanjay Pawar)  
Sr. Manager(MM)

Yours faithfully,

(C.R. Samantray)  
Chief Manager (MM)

ORDER NO. 21000112917201

DT : 28.03.2018

- Encl : 1. Technical Specification - Annexure - "A"  
2. General Terms & Conditions - Annexure - "B"  
3. Security Deposit /Performance Bank Guarantee format - Annexure - "C"  
Budget Certification No. FAWCL/CAP/BC/OPM/443 dtd. 27.03.2018 for Rs.95,33,414.00  
Indent Ref: NIT SN.2 - Juna Kunada, Majri Area.(Indent No. 3600694 dt. 30.01.2017)  
NIT SN 3- Gauri Deep Ballarpur (Indent No. 3600771 dated 18.03.2017)

Copy to : M/s Flowmore Limited, 443,Udyog Vihar Phase-III, Gurugram - 122016 . This has the reference to your Letter no. FP/RK/WCL/MST/01 dt. 17.01.2018 & no. FP/RK/QKGV17101252 dt.19.01.2018

Copy to :

1. GM(E&M)HOD, / GM(Finance)I/C, WCL(HQ), Nagpur.
2. Depot Officer, Central Stores Tadali.
3. CGM(P&P), WCL(HQ), Nagpur.
4. SO(E&M) Majri / Ballarpur Area
5. Sr. Manager (Finance)CB, WCL(HQ), Nagpur.
6. Chief Manager(Finance)Exp. , WCL(HQ), Nagpur
7. Sr. Manager(Cash/CP), WCL(HQ), Nagpur
8. GM(E&M)HOD, CMPDIL Ranchi - with a request to inspect the items as per Pre dispatch Inspection clause.
9. Sr. Manager(MM/Admn.), WCL(HQ), Nagpur - The total value of the order is Rs.66,55,868/-

(Sanjay Pawar)  
Sr. Manager(MM)

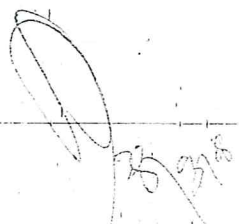
(C.R.Samantray)  
Chief Manager (MM)





## Technical Specification. - Annexure - "A"

NIT ITEM Sl.No.	Specification Parameter	Value
2	Centrifugal Pump-80LPS,200Meter Head CI Construction with Electricals	2 Set
	<b>1.20-PUMP CONSTRUCTION MATERIAL</b>	
	a-Pump casing /body	- CI grade FG-260 of IS:210
	b-Impeller	Bronze as per LTB2 of IS:318
	c-Pump	Shaft -C S 40-C-8 of IS:1570-II/1979
	d-Shaft sleeve	-SS-410
	e-Neck Ring	Bronze as per LTB2 of 6-IS:318
	f-Lantern Ring	CI grade FG-260 of IS:210
	g-Gland and bush	Bronze as per LTB2 of IS:318
	<b>1.2.1-PUMP DETAILS TO BE INDICATED BY BIDDER :</b>	
	a-Make of the pump	FLOWMORE
	b-Model of the pump	M590/BD-200x150(4-Stgae)
	c-Type of arrangement provided for neutralizing axial hydraulic thrust.	Thrust taken care by bearing
	d-Efficiency at duty point	77%
	e-Maximum efficiency	80%
	f-Power in KW required at duty point	209.9 KW
	g-Discharge at duty point	80 LPS
	h-NPSHR at duty point	5 Mtrs
	<b>1.2.2-MOTOR DETAILS :</b>	
	a-Operating voltage system:	3.3 kV,3 ph,50 Hz
	b-Kilo Watt Rating:	240 kW(Min.)
	c-Motor RPM (Syn.):	1500
	d-Type of starting:	DOL
	<b>1.2.3-MOTOR DETAILS TO BE INDICATED BY BIDDER :</b>	
	a-Make of the motor	ABB/BHEL/CGL/Marathon/TMEIC
	c-Full Load RPM	1485 rpm
	e-Temperature rise on continuous Operation in Stator and rotor:	As per below
	(i) In core by thermometer.	Limited to class B
	(ii) In winding by resistance	Limited to class B
	f-Pull out torque	More than 200% of FLT
	g-Insulation resistance.	(Rated Kw+1)mΩ as per IS
	<b>1.2.4-STARTER DETAILS :</b>	
	a-Type of Starter	: DOL
	b-Voltage system:	3.3 kV,3 ph,50 Hz
	c-Kilo Watt Rating:	250 kW(Min.)
	<b>1.2.5-STARTER DETAILS :</b>	
	a-Starter make and Model	Prabhu/SMPL and NSHT- DOL/3H-DOL
	b-Make and Nominal current rating of contactors	Prabhu/SMPL and 400A
	c-Operating voltage of relay	12V/110V/220V
	<b>1.2.7 - STANDARDS</b>	

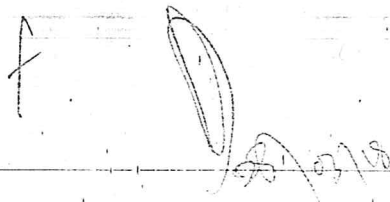

  
 28/3/18



	a- pumps :IS:5120-1977	
	b- Motors: IS:325-1996	
	c-Starters: IS:12661-1988	
3	Centrifugal Pump-200LPS,150Meter Head CI Construction with Electricals	Set 2
	<b>1.30-PUMP CONSTRUCTION MATERIAL</b>	
	a-Pump casing /body-	CI grade FG-260 of IS:210
	b-Impeller	Bronze as per LTB2 of IS:318
	c-Pump Shaft	C S 40-C-8 of IS:1570-II/1979
	d-Shaft sleeve	SS-410
	e-Neck Ring	Bronze as per LTB2 of 6-IS:318
	f-Lantern Ring	CI grade FG-260 of IS:210
	g-Gland and bush	Bronze as per LTB2. of IS:318
	<b>1.3.1-PUMP DETAILS TO BE INDICATED BY BIDDER :</b>	
	a-Make of the pump	FLOWMORE
	b-Model of the pump	P5922A-300x250(2-Stage)
	c-Type of arrangement provided for neutralizing axial hydraulic thrust.	Thrust taken care by bearing
	d-Efficiency at duty point	% 79.5
	e-Maximum efficiency	% 82
	f-Power in KW required at duty point	KW 381.1
	g-Discharge at duty point	LPS 200
	h-NPSHR at duty point	Mtrs 5
	<b>1.3.2-MOTOR DETAILS :</b>	
	a-Operating voltage system:	3.3 kV,3 ph,50 Hz
	b-Kilo Watt Rating:	450 kW(Min.)
	c-Motor RPM (Syn.):	1500
	d-Type of starting:	DOL
	<b>1.2.3-MOTOR DETAILS TO BE INDICATED BY BIDDER :</b>	
	a-Make of the motor	ABB/BHEL/CGL/Marathon/TMEIC
	c-Full Load RPM	1485 rpm
	e-Temperature rise on continuous Operation in Stator and rotor:	As per below
	(i) In core by thermometer.	Limited to class B
	(ii) In winding by resistance	Limited to class B
	f-Pull out torque	More than 200% of FLT
	g-Insulation resistance.	(Rated Kw+1)mΩ as per IS
	<b>1.3.4-STARTER DETAILS :</b>	
	a-Type of Starter:	DOL
	b-Voltage system:	3.3 kV,3 ph,50 Hz
	c-Kilo Watt Rating:	475 kW(Min.)
	<b>1.3.5-STARTER DETAILS :</b>	
	a-Starter make and Model	Prabhu/SMPL and NSHT-DOL/3H-DOL
	b-Make and Nominal current rating of contactors	Prabhu/SMPL and 400A
	c-Operating voltage of relay	12V/110V/220V
	<b>1.3.7 - STANDARDS</b>	
	a- pumps :	IS:5120-1977
	b- Motors:	IS:325-1996
	c-Starters	IS:12661-1988
<b>COMMON PARAMETERS</b>		



<b>2.0-DUTY PARAMETERS</b>	
2.1-Application -	Mine dewatering
2.2-Altitude of working site	300 M
2.3-Relative humidity	Upto 100%
2.4-Ambient temperature	50 deg.C.maximum
2.5-Sp. Gravity of liquid	1.03
2.6-Working Hrs./day	24 Hrs.
2.7-NPSHA	5.0 Mtrs
<b>3.0-MANDATORY CONSIDERATIONS :</b>	
a-Since the required pump is meant for mine dewatering application, the offered pumps should have wider operating head range with minimum variation in discharge, i.e. the pumps must have continuously descending H-Q curve.	
b-The shut off head of the pump should be 10% more than the duty point head.	
<b>4.0-SCOPE OF SUPPLY: Each pump set will consists of</b>	
a- Pump with accessories-1	1 set
b-Motor with coupling- 1	1 set
c-Starter -1	1 No.
d-Base plate fabricated from structural steel with coupling guard-1 No	1 No.
e-Cast Steel Foot valve suitable for suction of the pump-1 No	1 No.
f-Cast Steel Seluice valve suitable for delivery size of the pump.-1 No	1 No.
g-Cast Steel Non Return Valve suitable for delivery size of the pump.-1 No	1 No.
<b>5.0-PUMP DETAILS :</b>	
5.1-Type	Centrifugal
5.2-RPM	1480 (Nominal)
5.3-Impeller : Dynamically balanced (Note : Drilling of holes on impeller for balancing the hydraulic axial thrust is not acceptable).	
5.4-Pump bearing : Deep groove ball / roller bearing/ Bush bearing..	
5.5-Working life of bearing	Not less than 10,000 hrs
5.6-Construction	SPLIT CASING
<b>6.0-MOTOR SPECIFICATIONS</b>	
6.1-Type of motor:	Squirrel Cage Induction
6.2-Class of duty:	CONTINUOUS
6.3-Class of insulation:.	Class 'F' with temperature rise limited to Class 'B'
6.4-Winding material:Copper	Copper
6.5-Direction of rotation:	Bi-directional
6.6-Shaft extension:	Standard
6.7-Starting torque:	120% of normal torque
6.8-No. of hot starts per hour	2
6.9-Type of enclosure;	TEFC
6.10-Degree of protection of :	IP 55
6.11-No. of earthing points:	Two
6.12-Cable entry:	Suitable for PVC DWA mining cable of required size
6.13-Terminals:	All winding leads shall be terminated in terminal box.
6.14-Type coupling (To be used with motor):	Direct flexible coupling


  
 28/3/18

6.15-Name Plate:	Non fading type, properly secured till the life of the motor. In addition to the information as per IS:325, the name plate shall also carry the bearing details.
6.16-Type of construction and mounting:	Horizontal, Foot mounted
<b>7.0-STARTER SPECIFICATION :</b>	
7.1-Degree of protection :	IPH-6
7.2-Utilization category of Starter:	AC-3
7.3-Type of enclosure:	NFLP
<b>7.4-CONSTRUCTION :</b>	
a-Shall be in two compartments.	
b-One shall house through going bus bars and off load isolator.	
c-2nd compartment shall house contactors and protective devices.	
d-In case of auto transformer starter, the auto transformer shall also be accommodated in 2nd compartment and shall be accessible from rear side of the enclosure for maintenance.	
e-Door of 2nd compartment shall be interlocked with isolator in such a way that the door can be opened only when the isolator is in 'OFF' position.	
f-Cable terminal boxes with sealing boxes shall be provided for both incoming and out going terminals suitable for PVC/DWA mining cables of required size.	
g-Through going terminals of bus bar shall be provided with bus trunking box with blanking cover.	
h-Mounting -	Skid mounted
<b>7.5-BUS BAR &amp; ISOLATOR :</b>	
a-BUS BAR REQUIREMENT: Made of Electrolytic copper of cross section not less than 240 Sq.mm covered with heat shrunk PVC sleeves.	
b-ISOLATOR REQUIREMENT: Off load, triple pole reversing type	
c-Rating of Isolator: Not less than 300 A	
<b>7.6-CONTACTORS (ONLY Govt./Govt. test house tested make contactors shall be used) :</b>	
a-Operation : Electromagnetic	
b-OPERATING LIMITS OF CONTACTOR: As per IS:13947 (Part 4/Sec.I)/IS:9046. However the drop out voltage shall not be more than 50% of rated control supply voltage	
NOMINAL CURRENT RATING OF CONTACTORS (FOR AC-3 DUTY): Not less than 2.0 times the full load current. Note : In case of star/delta starters, all the three contactors shall be of same rating.	
c-Type of contactor (whether air break or vacuum break)	
<b>7.7-PROTECTIONS :</b>	
a-OVER LOAD PROTECTION: Thermal Over Load relay with. Range of current adjustment : 75% to 100%	
b-E L protection Type of E.L. Relay. The relay shall be as per the relevant Indian Standard or IEC.: CBCT operated E.L. Relay	

A



c-Minimum value of leakage current (on primary) to operate:0.5 A – 2 A (Max.) in steps of 0.5 A
d-Time delay setting range for Earth leakage protection 0 – 1 Sec in steps or 0.1 Sec
e-Testing and resetting of the relay:By means of push buttons on front cover of the panel.
f-Indication of E.L. trip:By means of indicating lamps on front cover.
g-P.T. and coils of the relay:Epoxy resin sealed
h-Short circuit:Through back up HRC fuses
i-Instruments:Amp. Meter of suitable range
j-Printed circuit diagram:On a brass plate shall be affixed on inside the cover.

**8.0-PRE-DESPATCH INSPECTION & TESTS:**

8.1-The pump set will be inspected and tested by CMPDI at manufacturer's works before dispatch of the equipment to ascertain the conformity of the pump set to order specifications, relevant ISS. The pump will be tested as per IS:9137-1978 and IS:5120.

8.2-The manufacturer shall make available to the inspector, the required test facilities with necessary support for conducting the tests as per the ISS and supply order.

8.3-The manufacturer shall make available to the inspector the following during the inspection.

(a) Copies of relevant ISSs.

(b)Material test certificate of the pump.

(c) All records of quality checks under QAP

(d) Manufacturers test certificates for bought-out items.

**10.0-DOCUMENTS TO BE SUBMITTED WITH SUPPLY**

10.1-Dimensional drawing of offered pump indicating total weight in KG.

10.2-Assly drawings of the offered model pumps showing all the parts.

10.3-Characteristic curves of the offered pump at 1480 RPM between.

(i) discharge Vs head

(ii) discharge Vs KW absorbed

(iii) discharge Vs efficiency

(iv) discharge Vs NPSH

10.4-Technical leaflets

10.5-Material test certificate of the pump.

10.6-Performance test report/pre-despatch inspection report of the pump set.

10.7-Installation, operation and maintenance instructions and spare parts catalogue.

10.8- General arrangement drawing of the offered starter showing overall dimensions.

(Sanjay Pawar)  
Sr. Manager(MM)

(C.R. Samantray)  
Chief Manager (MM)

