

~~Request No. 6002705 dt. 16.02.2024~~

## Technical Specification for Air Cooled multi operator welding rectifier with six operators.

### Description :-

Air cooled, multi operated type six operator copper wounded DC rectifier with 87 KVA Rated capacity. Welding current regulators with one no. 6 way welding current distribution box and 6 nos. current regulators range 06 Amperes to 393 Amperes.

### 1. Scope of Supply:-

The specification covers supply and commissioning. "Multi operated Air cooled copper wounded welding Rectifier with six operator's type"

### 2. Special features : Rectifier type welding power source.

- 2.1 ON-OFF Switch.
- 2.2 Primary and Secondary coils are wound from Insulated Electrolyte copper condition.
- 2.3 Earthing terminals.
- 2.4 Rating plate and diagram plate.
- 2.5 MCCB with thermal protection against overloading and short circulating.
- 2.6 It draws balanced load on three phases.
- 2.7 The power source has digital display voltmeter and ammeter for output.
- 2.8 High efficiency and power factor.

### Special features for current Regulators (06 Operators)

- 2.9 Current range 06 Amperes to 393 Amperes.
- 2.10 Suitable lifting arrangement to be provided.
- 2.11 Current setting are selected by two rotary switches. An extra step Position is provided to switch off the output.
- 2.12 Current regulator is provided to regulate the welding current in 63 steps.

(4)

### Technical Specification Main Rectifier

- (a) Power Source - DC Rectifier.
  - (b) Input Supply Voltage = 380-415-440V.
  - (c) Phase = 3 phase.
  - (d) Frequency - 50Hz.
  - (e) Welding Current = 1500Amp@60% duty cycle.
  - (f) Welding line voltage = 60Volts.
  - (g) Rated output - 87KVA.
  - (h) Efficiency = 95%.
  - (i) Power factor = 0.93.
  - (j) Class of insulation - H.
  - (k) Method of cooling = Forced Air Cooled.
  - (l) Winding = Copper.
  - (m) No. of operators - 06 (six nos.)
  - (n) No. of operators per phase = 02 nos.
  - (o) Output voltage = 60 volts (Welding line voltage)
  - (p) Max. Continuous hand welding Current at 60% duty cycle per operate = 1500 Amperes for power sources.
  - (q) Recommended rating for insulate switch on the input-side = 250 Amp.
  - (r) Dimensions - As per makers design.
  - (s) Weight Kg.(Approx) = As per makers design.
  - (t) Current Regulators = 06 (six).
  - (u) Current range = 06 Amperes to 393 Amperes.
  - (v) No. of Current selector = 07 (seven).
  - (w) Setting for each regulator = 06 amperes to 393 amperes in 63 steps.
  - (x) Cooling - Air Cooled
  - (y) Portability = Each regulator mounted on rubber tired wheels.
- The above parameters are approximate and minor deviation can be accepted.

#### 4. Electrical specifications:-

- 4.1 All equipments and materials shall comply with latest Indian Standards.
- 4.2 Adequate protection to motors, controls and other electrical equipments should be provided in order to protect the welding plants and the operator.
- 4.3 The supply voltage may vary +10% and its frequency upto 3%. The welding plant should operate satisfactory even on these variable parameters.

- 4.4 All winding should be copper with H class or better insulation.
- 4.5 The ambient temperature at site may vary from 4 degree centigrade to 45 degree centigrade and the relative humidity may be as high as 95%. The atmosphere is expected to be dusty.

**5. Standard Accessories:-**

The price of plant should include the cost of following standard accessories.

- 5.1 06 nos. hand screens of glass filled nylon material with white and colour glass 13A1DIN German make.
- 5.2 06 Pairs. Hand gloves.
- 5.3 06 nos. chipping hammers.
- 5.4 06 nos. wire brush.
- 5.5 06 nos. fully insulated electrode holder and 03 meter flexible copper cable with an earth clamp.
- 5.6 6 X 5 M long copper cable (50sq mm) for inter connection between main power transformer to distribution box.
- 5.7 6 X 5 M long copper cable (50sq mm) for inter connection between distribution box to six nos. current regulators input.
- 5.8 6 X 5 M long copper cable (50sq mm) welding cable to be connected from the output of the current regulator.
- 5.9 6 X 5 M long copper cable (50sq mm) as earthing cable fitted with suitable-copper long.
- 5.10 01 No. 6 way welding current distribution box.

**6. Spares:-**

Complete catalogues and assembly drawing should be provided in duplicate electrical circuit diagram should be provided with plant.

**7. Deviations:-**

The tenderer may propose minor deviations from this specifications in order to reduce initial or recurring cost or to improve reliability, quality and safety of operations.

The tenderer should clearly indicate details of deviations and the reason there of in a deviations list.

**8. Inspection of Equipment:-**

A load end functional test will be carried out at the manufactures works. Rigidity of the machine should be demonstrated to the satisfaction of the appointed inspector or inspection agency.

**9. Warranty:-**

The welding plant should be guaranteed to give a satisfactory performance for a minimum period of 24 months after commissioning. All replacement and repairs that the purchase shall upon the supplier to deliver or to perform under warranty shall be done promptly and satisfactory on free of cost.

**10. Manuals:-**

The supplier shall be required to submit 3 copies of operation and maintenance manuals and trouble hooting guide and also a complete catalogue giving part list number of each component and assembly drawings all the electrical circuit diagram should be provided clearly indicating the model/make of each equipment, value model no. of different IC's etc, should be printed clearly visible on IC's and also on circuit diagram.

**11. THE INFORMATION TO BE FURNISHED BY THE SUCESSFUL BIDDER.**

The manufacturers should furnished the following information on the name plate of the welding set.

Makers Name/Trade Mark:

Makers Serial number and model:

Range of welding current minimum and maximum:

Minimum continuous and welding current:

Input Amperes at rated Voltage:

Input Voltage:

Open circuit Voltage(Range):

Frequency and Phase:

Type of cooling:

Class of Insulation:

Total weight of the welding set:

Overall dimension of the welding set:

Testing for routine and type test should be indicated

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**Annexure-II**

To be submitted by the firm along with offer.

Tender specification	Specification quoted by the firm	Deviation if any with clarification