

## ANNEXURE TO PI: 240770002

1No Wall mounted Field Panel along-with accessories to the following Specification.

### GENERAL

The field panel will be installed in a semi-enclosed room near the rectifier equipment. The environment is dusty and chlorinated. The field panel will be displaying rectifier output voltage and current and for transmitting the field signals to control room.

### SCOPE OF SUPPLY

This enquiry calls for supply of 1No wall mounted field panel fully assembled, wired and tested as per BOM enclosed in later section. The schematic of the panel will be forwarded after PO placement.

### CONSTRUCTIONAL FEATURES

The panel should be constructed with 2mm tk Electro-galvanised -cold rolled steel (180gsm) and other details as follows:

Overall size (w/o plinth) 700mm wide \* 650mm height \* 450mm depth

Lifting arrangement -suitable lifting arrangement-eye bolts at all corners.

Paint shade Epoxy based primer with glossy white inside and shade 631 as per IS-5 exterior. Thickness of paint >80µ. anticorrosive

Ventilation suitable louver with filter on side, one louver shall have fan for cooling

Doors 3mm thick **single leaf front** door doors on front side of cubicle with standard locking arrangement and left side hinges. Door hinges shall be of zinc alloy casting. Door opening will be not less than 120°. The doors shall have neoprene rubber or polyurethane foam gasketing. Door switch shall be provided with front door.

Construction suitable arrangement for wall mounting, Zinc plated channels shall be provided on the inside periphery of each cubicle to ease mounting of internal equipment (details of internal channel layout shall be furnished by bhel after order placement)

Gland plate 3mm thick Removable gland plate

Degree of protection **IP42**

### BILL OF MATERIAL

The tentative bill of material is as below. The final BOM will be furnished alongwith the order.

| S.N | DESCRIPTION  | MAKE                                | QTY |
|-----|--|-------------------------------------|-----|
| 1.  | Cubicle size 700mm wide * 650mm height * 450mm depth, wall mounting, front single door, gland plate, 4Nos eye bolts & other details mentioned above.   | Rittal/Pyrotek/ Popular             | 1No |
| 2.  | Digital Current Indicator type flush door mounting, input: 4-20mA DC, Display: 7 segment LED, Display size: 4" height, 3 <sup>1/2</sup> Digits, suitable fibre/steel casing Auxiliary supply: 230V AC ±10%, calibration range: 4-20mA will corresponds to <b>0-120KA</b> DC accuracy class: 0.2% | Pyrotek/Yokogawa/ ABB/PR/Weidmuller | 1No |

## ANNEXURE TO PI: 240770002

|    |   |                                     |     |
|----|---|-------------------------------------|-----|
| 3. | Digital Voltage Indicator type flush door mounting, input: 4-20mA DC, Display: 7 segment LED, Display size: 4" height, 3 <sup>1/2</sup> Digits, suitable fibre/steel casing Auxiliary supply: 230V AC $\pm 10\%$ , calibration range: 4-20mA will corresponds to 0-250V DC accuracy class: 0.2% | Pyrotek/Yokogawa/ ABB/PR/Weidmuller | 1No |
| 4. | MCBS & accessories as per scheme  |                                     |     |

Cubicle should be equipped with following standard items such as CFL: 11Watts, 1No 5A three pin Socket, Bus bar for earthing, Cooling fan.

All the items to be wired as per scheme (will be submitted with PO) WITH 1.5 sq.mm PVC wire and all the wire will be terminated on 2.5Sq.mm TBs. Vendor should provide 20% spare TBs.

9Nos temperature transmitter along with 1No power supply will be issued by BHEL to vendor. Vendor to make suitable mounting arrangement for din-rail and TBs for wiring of these items. These items will also be wired as BHEL scheme.

230V AC  $\pm 10\%$  will be provided as input to the field panel. Vendor may use suitable MCBs required for various transducer/meters. Vendor may use suitable bus-bar for earthing of panel. Vendor may use cooling fan if required.

Vendor to furnish a guarantee for 5 years for all items supplied with the panel.

Item-2 Qty: 4nos

Current transducer type 4-wire, converter, input: 4-20mA DC, zero & span adjustment through trip pots, Output:: dual 4-20mA, Isolation: optical and galvanic isolation, mounting on DIN rail. Auxiliary supply: 110V DC  $\pm 10\%$  accuracy class: 0.2%, makes: Pyrotek/Yokogawa/ ABB/PR/Weidmuller

Item-3 3Nos

Voltage transducer type 4-wire, converter, input: 250V DC, zero & span adjustment through trip pots, Output:: dual 4-20mA, Isolation: optical and galvanic isolation, mounting on DIN rail. Auxiliary supply: 110V DC  $\pm 10\%$  accuracy class: 0.2%, makes: Pyrotek/Yokogawa/ ABB/PR/Weidmuller

Item-4 3Nos

Summing amplifier input: dual 4-20mA, Output: **dual 4-20mA (dual averaged)**, Isolation: optical and galvanic isolation, mounting on DIN rail. Auxiliary supply: 110V DC  $\pm 10\%$  accuracy class: 0.2%, makes: Pyrotek/Yokogawa/ ABB/PR/Weidmuller

Item-5

KAH Indicator: Input: dual 4-20mA 4-20mA Output: **dual 4-20mA (dual averaged)**, Isolation: optical and galvanic isolation, mounting on DIN rail. Auxiliary supply: 230V AC  $\pm 10\%$  accuracy class: 0.2%

### DOCUMENTATION

The following documents shall be submitted during the course of execution of the order as listed below:

Cubicle dimensional drgs and sub-assemblies drgs will be approved by BHEL.

## **ANNEXURE TO PI: 240770002**

Test certificate and operating manual of transducers/meters will be submitted alongwith supply.

2 copies of TC of Field panel alongwith supply.

### **NOTES TO THE SUPPLIER:**

Cubicle must be identical to earlier supply vide BHEL PO: 4685509

- The cubicles will be inspected at supplier's works prior to despatch. Ten-day advance intimation shall be given to BHEL for deputation of representative.
- 2 copies of test certificates shall be furnished along with the consignment.
- Vendor to arrange various voltage/current source for testing of the panel.