

LOCATION : TECHNICAL SERVICES DEPARTMENT

**SPECIFICATION FOR DIGITAL DEW POINT METER**

**1. REQUIREMENT / FUNCTION**

**Automatic Portable Digital Dew Point Meter**

To determine moisture content of Dry air, Nitrogen, Carbon dioxide, Argon and Transformer tank during dry out process. For this we require Automatic Portable Digital Dew Point Meter instrument which is easy to carry at various sites and shops of BHEL for measurement of Dew point / Moisture content of Nitrogen filled gas in transformer and cylinders like N<sub>2</sub>, SF<sub>6</sub>, CO<sub>2</sub> Argon and Compressed air.

**2. SPECIFICATION / FEATURES**

- |  |   |   |
|--|---|---|
| 2.1. Operating Principle                         | : | Electrical Impedance to measure in absolute units<br>Use ceramic sensors and signal converted in absolute units, resulting display of values in Dew point, ppm by volume                                    |
| 2.2 Accuracy                                     | : | ±2°C from +20°C to -59°C d/f point<br>±3°C from -60°C to -100°C d/f point   |
| 2.3 Range  | : | -100 / + 20°C Dew point and reading to -120/+30°C   |
| 2.4 Range selection                              | : | Automatic   |
| 2.5 Display                                      | : | Programmable Digital Display  |
| 2.6 Repeatability                                | : | 0.5°C from 60°C to -110°C d/f point   |
| 2.7 Power supply                                 | : | 90/220 V, 50 – 60 HZ, 24 VCD with rechargeable battery system   |
| 2.8 Accessories / Spares                         | : | All necessities / spares required for at least 2 years trouble free service to meet the measuring requirement and 4 copies of booklet operation manual and reference book for comparing dew point and temp. |
| 2.9 Calibration certificate and its traceability | : | Provide the original calibration certificate from NIST  |
| 2.10 Temperature                                 | : | Operating 0°C to 60°C<br>Storage -20°C to 70°C  |
| 2.11 Display                                     | : | 240 X 64 dot matrix, LCD 6 – digit  |
| 2.12 Display functions                           | : | Dew / frost point temperature °C or °F PPMw, RH.  |
| 2.13 Configurations                              | : | Panel (front panel meets NE MA 12 equivalent and IP65 requirements).  |
| 2.14 Dew / frost point                           | : | Calibration from -100 °C to +20°C dew point<br>Reading to -120°C and ÷ 30°C dew point   |
| 2.15 Moisture measurement: (Sensor)              | : | Ceramic moisture Sensor   |

- 2.16 Resolution : 0.1°C dew point.
- 2.17 Operating pressure : 30 Mpa Max.
- 2.18 Data storage : Primary and Secondary variable samples upto 10,000, time and date stamp and indent No and may be downloaded to a PC.
- 2.19 Flow rate : 0.5 to 5N/min.

### 3 SCOPE OF SUPPLY

• The equipment should consist of the following: ( Here all items & consumables required for satisfactory commissioning should be mentioned including standard & optional accessories etc).

- 3.1 Equipment should meet our specification from para 2.1 to 2.19
- 3.2 Sensor probe.
- 3.3 Essential commissioning spares and tools kit.
- 3.4 Installation and commission at working place.
- 3.5** Set of instruction and maintenance manuals along with circuit diagrams.
- 3.6** Calibration certificate and its traceability.
- 3.7 Pressure tube of 2 meters length for inlet and outlet during purging of gas of standard size.
- 3.8 Special 2 core armoured cable about 3 meters.
- 3.9 Sample Handling System.
- 4 Quoted equipment should be proven equipment and suppliers should furnish lists of Customers where quoted equipment has been supplied earlier with necessary certificate for good performance and after sales services.
- 5** Equipment should be suitable to operate on BHEL power supply 230 V  $\pm$  15% **50** HZ  $\pm$  3% single phase AC supply and suitable voltage stabiliser / CIV if recommended by supplier should be supplied with the equipment.
- 5.1** Any other facility / service required for equipment like :- civil works, compressor, Air and gasses etc.
- 6 Supplier must quote all material / facility / service required for satisfactory installation and commissioning of equipment. BHEL scope if any to mentioned specifically. Anything not mentioned specifically but required for satisfactory commissioning/proving of equipment will have to arranged by supplier.
- 7 Equipment should meet all our general clauses enclosed and bidders must furnish point to point replies against all the points of our above specification and general clauses enclosed failing which their offer may not be considered.

\*\*\*\*\*