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|----------------|--|-------------|
| <b>TOSHIBA</b> | Toshiba Transmission & Distribution Systems (India) Pvt.Ltd.<br>Distribution Transformers Division | Engineering |
|                |  | Unit-10     |

| GUARANTEED TECHNICAL PARTICULARS<br>THREE PHASE DISTRIBUTION TRANSFORMER |   |   |  |                |                      |
|--|---|---|--|----------------|----------------------|
| Tender No :<br>09921-12  |   | Customer :- KKM Power OY<br>Tender No :- DTR; SUPPLY TO SWEDEN THROUGH KKM, FINLAND |  |                |                      |
| kVA : 315  | kV :22/0.42                                   | Phase : 3   | Freq. : 50Hz   | Cooling : ONAN | Doc No:<br>EGT 39625 |
| Sl. No.  | Description                                   | UNIT  | 315 kVA  |                |                      |
| 1)   | Make  |   | Toshiba Transmission & Distribution Systems (India) Pvt. Ltd |                |                      |
| 2)   | Type  |   | Hermitically Sealed  |                |                      |
| 3)   | Phases  | No.   | Three  |                |                      |
| 4)   | Rating  | kVA   | 315 kVA  |                |                      |
| 5)a)   | Rated Voltage:                                |   |  |                |                      |
|  | HV  | V   | 22000  |                |                      |
|  | LV  | V   | 420  |                |                      |
| b)   | Highest voltage for equipment                 |   |  |                |                      |
|  | HV  | kV  | 24   |                |                      |
|  | LV  | kV  | 1  |                |                      |
| 6)   | Tapping                                       |   | Yes, +5% to -5% insteps of 2.5%                              |                |                      |
| 7)   | Frequency                                     | Hz  | 50   |                |                      |
| 8)   | Vector Group                                  |   | Dyn11  |                |                      |
| 9)   | Insulation Level                              |   |  |                |                      |
|  | HV  | kV peak   | 125  |                |                      |
|  | LV  | kV peak   | Not Applicable   |                |                      |
| 10)  | Power Frequency Level                         |   |  |                |                      |
|  | HV  | kV rms  | 50   |                |                      |
|  | LV  | kV rms  | 3  |                |                      |
| 11)  | Winding material                              |   | Aluminum   |                |                      |
| 12)  | Core Material                                 |   | CRGO   |                |                      |
| 13)  | Temperature Rise:                             |   |  |                |                      |
|  | Oil   | °C  | 60   |                |                      |
|  | Winding                                       | °C  | 65   |                |                      |
| 14)  | Losses  |   |  |                |                      |
|  | No Load Losses at rated Voltage and Frequency | Watt  | 360 (MAX)-A0   |                |                      |

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|                |                             |  |                                   | Unit-10     |
|                | Load Losses at 75 °C        | Watt   | 3900 (MAX)-Ck                     |             |
| 15)            | Impedance Voltage           | %  | 4% (+/- IEC Tolerance Applicable) |             |
| 16)            | Percentage Resistance       | %  | 1.24                              |             |
| 17)            | Regulation at:              |  |                                   |             |
|                | Full Load UPF               | %  | 1.31                              |             |
|                | Full Load 0.8 PF            | %  | 3.30                              |             |
| 18)            | Efficiency at 0.8 PF:       |  |                                   |             |
|                | Full Load                   | %  | 98.34                             |             |
|                | ¾ Full Load                 | %  | 98.67                             |             |
|                | ½ Full Load                 | %  | 98.95                             |             |
| 19)            | Terminal Arrangement:       |  |                                   |             |
|                | HV                          |  | Bare Bushings -Porcelain          |             |
|                | LV                          |  | Bare Bushings -Porcelain          |             |
| 20)            | Maximum Overall Dimensions: |  |                                   |             |
|                | Length                      | mm   | 1510                              |             |
|                | Width                       | mm   | 900                               |             |
|                | Height                      | mm   | 1855                              |             |
| 21)            | Overall Weight              |  |                                   |             |
|                | Total Weight                | Kg.  | 1650                              |             |
| 22)            | Noise Level                 | LwA dB (A )  | 49                                |             |

Note:

1. Actual overall dimensions and weights are subjected to +/-10% Tolerance, provided that the tolerance is not exceeded the maximum value defined.
2. All the efficiencies and regulations are calculated at the nominal values of NLL, LL AT 75 Deg C and % Z at 75 Deg C.