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SPECIFICATION FOR TRANSFORMER

1. TYPE ONAN : self cooled / in / out door use / step-up / step-down / hermetically sealed distribution transformer

2. SERVICE CONDITION : The transformer will be installed at the altitudes below **1.000** meters and the maximum ambient temperature does not exceed **40** °C

3. STANDARD : The transformer is designed, manufactured tested and tolerance in accordance with : **IEC 60076**

4. RATING

| | | | | | | | |
|-------|-------------------------------------|----------------|---|-------|--------------------|--------------|------|
| 4 - 1 | Number of Phase | : 3 | phase | 4 - 2 | Frequency | : 50 | Hz |
| 4 - 3 | Primary Voltage | : 11 | kV | 4 - 4 | Secondary Voltage | : 415 | Volt |
| | Winding Connection | : DELTA | | | Winding Connection | : WYE | |
| 4 - 5 | Rated Capacity (total) | : 2.500 | kVA | | | | |
| | Incase of double primary voltage, | | | | Capacity will be : | | |
| | at : | - | kV | | Rated Capacity | : - | kVA |
| | | | | | Rated Capacity | : - | kVA |
| | Incase of double secondary voltage, | | | | Capacity will be : | | |
| | at : | - | V | | Rated Capacity | : - | kVA |
| | | | | | Rated Capacity | : - | kVA |
| 4 - 6 | Additional Taps on High Voltage | : | +/- 2.5 % & +/- 5 % (5 Taps) | | | | |

5. POLARITY AND PHASOR RELATIONSHIP : The transformer will be subtractive polarity and phasor relationship will be : **Dyn-11**

6. ELECTRIC PERFORMANCE :

| | Primary Voltage | Secondary Voltage |
|--------|--|--|
| 6 - 1 | Highest System Voltage : 12 kV | : 1,1 kV |
| 6 - 2 | Impulse Test Voltage : 95 kV | : - kV |
| 6 - 3 | Applied Test Voltage During 1 Minute : 28 kV | : 3 kV |
| 6 - 4 | Induced Voltage Test : Apply 2 times of the rate voltage at 350 cycles per second for 18 second | |
| 6 - 5 | Temperature Rise : The winding temperature rise measured by resistance method will not exceed and the oil temperature rise will not exceed | : 65 °C 60 °C |
| 6 - 6 | Losses at Rated Voltage | Primary Side : 11 kV Secondary Side : 0,415 kV |
| | No Load Losses : 2.700 Watt | |
| | Load Losses (at 75 °C) : 31.500 Watt | |
| | Total Losses : 34.200 Watt | |
| 6 - 7 | Efficiency at % Rated Capacity | |
| | at P.F. = 1.0 | 100 75 50 25 % |
| | at P.F. = 0.8 | 98,65 98,92 99,16 99,26 % |
| | | 98,32 98,66 98,95 99,07 % |
| 6 - 8 | Exciting Current / Off load Current at Nominal Voltage | : 2,00 % |
| 6 - 9 | Percent Impedance | : 7,00 % |
| 6 - 10 | Voltage Regulation at P.F. = 1.0 | : 1,50 % |
| | Voltage Regulation at P.F. = 0.8 | : 5,25 % |

To. _____ Date. **3 DECEMBER 2019**
 Spec No. _____

7. ACCESSORIES : The transformer will be furnished with all necessary accessories as follow :

| GENERAL ACCESSORIES | | SPECIAL ACCESSORIES | |
|---------------------|--|---------------------|---|
| √ | HV Porcelain Bushing on Cover | - | Plug in Bushing mm2 c/w straight connector on cover |
| √ | LV Porcelain Bushing on Cover | √ | Integrated Safety Device c/w Contact |
| - | Oil Level Indicator w/o Contact | - | Oil Level Indicator c/w Alarm Contact |
| - | Oil Temperature Indicator w/o Contact | - | Oil Temperature Indicator c/w Alarm & Trip Contact |
| - | Pressure Relief Valve w/o Contact | - | Pressure Relief Device c/w Alarm Contact |
| √ | Name Plate | - | Winding Temperature Indicator c/w Alarm & Trip Contact |
| √ | Earth Terminal | - | CT for Winding Temperature Indicator |
| √ | Manual Off-Load Tap Changer c/w Padlock (10mm) | - | Sudden Pressure Rise Relay + Seal in Relay c/w Alarm & Trip Contact |
| - | Voltage Change Over Board | - | Buchholz Relay c/w Alarm & Trip Contact |
| √ | Radiator | - | Conservator c/w Sampling Valve |
| √ | Lifting Lug | - | Breather c/w Silicagel |
| √ | Oil Filter Valve | - | Valve for Buchholz Relay |
| √ | Drain Valve | - | Pressure Vacuum Gauge c/w Bleeder |
| √ | Roller c/w Earthing Pad | - | N2 Filling Valve |
| - | Skid Base (Pad Mounted) | - | Air-filled LV Junction Box |
| - | Jacking Lug | √ | HV/LV Cable Box |
| - | Sampling Valve | - | Terminal Control Box |
| - | Ladder | - | Radiator Fans |
| | | - | Radiator Valves |
| | | - | Neutral CT |
| | | - | Thermometer Pocket |

9. ADDITIONAL INFO :

| DESCRIPTION |
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| Note : - Winding AL-AL - Shell Diala S4-ZXI - Cable Support - Additional Grounding Bar HV/LV - Additional Shock Indicator - Phase Marking Color (Brown "U", Black "V", Grey "W", Blue "N") |
| PROPOSER : _____ Date of Approval : _____ |
| hp |

