

# Company Profile

# ARS TRANSFORMER

www.ars-transformer.af



# **PROPOSAL SUBMISSION FORM**

[Kabul, ] To:[ ]

Dear Sirs:

We, ARS Transformer Manufacturing Company provide the [oil immersed distribution transformers] in accordance with your Request for Proposal dated [\_\_\_\_] and our Proposal. We are hereby submitting our Proposal, which includes this Technical Proposal, and a Financial Proposal sealed under an envelope. We hereby declare that all the information and statements made in this Proposal are true and accept that any misinterpretation contained in it may lead to our disqualification.

We undertake, if our Proposal is accepted, to initiate the producing services related to the assignment of contract.

We remain, Yours sincerely, Authorized Signature: President () ARS Transformer Manufacturing Company



# About Company

Abdul Rahim Saleh Zada transformer manufacturing company with license number (34311) form Ministry of Commerce and Industry of Afghanistan and Fortunately, it officially started by the state of senior government Authorities in 2016, Abdul Rahim Saleh Zada transformer manufacturing company is the first and biggest production company in Afghanistan at medium voltage transformer, which is working under head of professional Turkish engineers and already has 21 employee in deferent field according to attached list. Abdul Rahim Saleh Zada transformer manufacturing company is certified by ISO license 9001:2015 and 45001:2018, and also has membership in Kabul Industry Association.







The ARS Transformer Company office and factory base is located in the heart of the Kabul Afghanistan. This facility is approximately 3500sqm.

- Transformer Manufacturing Section.
- Administration, Procurement, Design and Quality Assurance Office.
- Main Store.
- Main Workshops.
- Transformer oil treatment and filtration.

### **Quality Assurance**

ARS Transformer manufacturing have developed and certified a quality management system complying with IEC/ISO 9001:2015 & ISO 45001:2018, we never compromise quality for price, our quality assurance certification ensures the clients get exactly what they want.





### **OIL IMMERSED DISTRIBUTION AND POWER TRANSFORMERS**

We are manufacturing and repairing distribution conservator and hermetically sealed oil transformers with rated power capacities ranging between 25KVA-2500KVA and having 6-10-15-20---36KV as upper limit and 400/231v other LV voltages according to request. So all the transformers are manufacturing as a copper windings, low losses, and Low temperature rise options, using of special insulation classes, off load tap changer with various tapping combinations and with necessary accessories like bochloz, thermometer protection relays, cable box, wheels and pressure valves.



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We can apply routine tests on each of our transformer manufactured in accordance with IEC standards within our facilities before dispatching to customers.

#### Routine tests

- Winding resistances measurement
- Turns ratio measurement.
- Polarity or check of polarities and connections.
- Short-circuit voltage and measurement of load losses.
- No-load current and no-load loss measurement.
- Induced voltage test.
- Applied voltage tests.
- Measurement of insulation resistances.

#### <u>Type test</u>

• Temperature rise test of oil and windings.

The transformers are designed in such a way that, at rated operation, the limit values permitted by National and International Standard for temperature rise under normal operating conditions will not be exceeded.

Maximum temperature rise in transformer oil 60C



Maximum winding temperature rise 65C



#### STANDARDS AND SPECIFICATIONS

Applicable standards for Oil Immersed Transformers. Turkey and International Standards: TurkeyTS InternationalIEC

#### SHORT CIRCUIT IMPEDANS VOLTAGE:

The rated impedance voltage is the Standards are unitarily set down as 4 %, 4, 5 %, 5 % and 6 %. Other impedance voltages available on enquiry.

#### TAPPINGS RANGES:

High voltage tapping are provided at the HV winding to allow adjustment for voltage variations on HV side. Hand operated external off-circuit tap changer switches are normally provided on HV side. The tapping range has been set down with:

+/-5%; +/-2x2, 5% and other tapping ranges available on enquiry.

On same applications, on load tap changers are also provided for winding taps under on load Conditions.





#### VECTOR GROUPS:

Nominal ratings are allocated to the following vector groups:

• Vector group Dyn5 or Dyn11

#### PRODUCTION RATED POWER CAPACITY:

Rated Power: 25 up to 2500 KVA

- LV = 400/231 V
- HV = 6 up to 36 kV

#### FREQUENCY:

The transformers are designed for rated frequency of 50 Hz. Other frequencies upon enquiry

# **ACTIVE PART AND COVER**

#### CORE:

All cores are built from cold reduced grain oriented electrical steel low loss lamination insulated On both sides. Limbs and yokes are of multistep circular cross-section. The cutting angles are 45o. Standard thicknesses of the silicon core laminations are between 0.23 mm and 0.30 mm. The core is assembled on a special horizontal building fixture which enables the laminations to be clamped with even pressure. When the core is completed, it is lifted into vertical position.

#### LOW VOLTAGE WINDINGS:

Generally LV winding is placed next to the core. The material of LV coils is flat wire copper or foil copper coils are constructed to withstand forces due to short circuit condition. Axial forces have no effects in the conductors. In order to control the radial forces, the winding insulation is made by pressboard material.

#### HIGH VOLTAGE WINDINGS:

The round wire enamel insulated conductors or flat wire paper insulated conductors are wound with constant force directly on to a pressboard cylinder.

HV winding is generally layer type for distribution transformer. The layer insulation made of high Quality paper which is adapted to respective electrical demands. This yields a compact winding with short circuit resistance and optimal impulse voltage distribution.



#### WINDING INSULATION:

All the insulation materials used in the winding to form the required insulation and oil cooling ducts within the winding are made of high quality electrical pressboard intended for in transformer. The insulation, between the windings and between winding to the core is of oil + pressboard barrier system.

#### ASSEMBLY OF CORE WINDINGS:

Core and windings are climbed with climbing iron material from upper and lower yokes.

U - Shaped steel clamping's strongly joins the upper and lower yokes.

#### **DRYING AND OIL FILLING:**

Completed assembly core – windings are dried in special ovens with vacuum in need time. This operation is very important for transformer insulation.

Later, the transformer active part to installation into the transformer tank, and filled with special transformer oil under the vacuum. The transformer is ready for test after determinant time.

#### TANK:

The walls of the transformer tanks are manufactured generally from corrugated steel. The thickness of the corrugated steel is 1.25 mm or 1.50mm at the lower part of the tank oil drain valve and two cross skids carrying the wheels are located. The wheels are 90 o rotatable in order to push the transformer at both directions. After completion of welding the first leakage test is per-formed on the tank.

#### PAINT:

Transformer are in the color of RAL 7033 as a standard transformer tanks are painted by the method of dipping or spraying. Method of painting is chosen in accordance with customer requests and working conditions of the transformer ARS transformer offers different applications, different thickness of film or transformer with different colures as per customer requests. Also, if requested, hot dip galvanized tanks can be produced.

#### COVER:

Cover is assembled to the upper frame of frame of the tank with bolts, nuts and gasket. On top of cover there are HV and LV bushings, conservator, thermometer pocket and filling pipe etc. for breathing transformer. The off-load tap changer is assembled over the cover. The conservator has suitable flange for the mounting of magnetic oil level indicator.

Hermetically sealed transformer are also available on request.



# MAIN MACHINERIES AND EQUIPMENT LIST'S ARE USED IN THE TRANSFORMER INDUSTRY

#### **OIL TREATMENT MACHINE:**

- Oil Treatment Machines 500, 1000, 2000, 4000 dm3 / Hour.
- Oil Filling Facilities with maxeigroup machine.

#### WINDING MACHINES:

- Automatic HV Winding Machines for Round Wires.
- Automatic LV Winding Machines for Flat Wires.

#### VACUMED AND DRYING OVEN:

• Vacuumed Drying Furnace and Oil Filling Facilities.

#### **MISCELLANEOUS MACHINES**

- Woodworking machine for preparing of transformer insulation
- Machine for preparing of iron of transformer.
- Welding machine.
- Automatic Delve machine for irons.
- Painting machine for transformer cover.

#### **ROUTINE TESTS:**

- Device for Measurement of winding resistance
- Device for Measurement of voltage ratio.
- Analyzer of short circuit impedance and load losses.
- Analyzer of no-load current and load losses.
- Dielectric routine tests.
  - DIELECTRIC TEST 100KV
  - Hypto TESTER 3.2KV
- Device for Check of core and frame insulation for liquid immersed transformer with core or frame insulation.
- Device for checking to transformer temperature point.



#### **PRODUCTION CAPACITY:**

Abdul Rahim Saleh Zada Transformer Manufacturing Company which has the facilities available in one year capacity producing is about 400 transformer. From Rated Power of 25 up to 2500 KVA, LV = 400 V, HV = 6 up to 20 kV.

#### **COMPANY SIMILAR CONTRACTS AND WORK EXPERIENCE:**

ARS Transformer Manufacturing Company was established on 22-08-1395 and up to now has successfully completed three contract indirectly with DABS organization.

51 Pcs Transformer for HAMKAR HERVI BROTHERS Ltd.Co, according to bidding number NPA/DABS/95/NCB/G-1351, From 20-04-1396 up to 20-07-1396.

<u>30</u> Pcs Transformer for ABDUL RAHIM SALIH ZADA Ltd.Co, according to bidding number DABS/96/NCB/G-013, from 01-09-1396 up to 15-11-1396.

<u>216</u> Pcs Transformer for ABDUL RAHIM SALIH ZADA Ltd.Co, according to bidding number NPA/DABS/96/NCB/G-1780- Rebid, from 23-10-1396 up to 10-04-1397.

<u>10</u> Pcs Transformer for ABDUL RAHIM SALIH ZADA Ltd.Co, according to bidding number NPA/DABS/96/NCB/G-1780- Rebid, from 23-10-1396 up to 10-04-1397.

<u>10</u> Pcs Transformer for ABDUL RAHIM SALIH ZADA Ltd.Co, according to bidding number NPA/DABS/96/NCB/G-1780- Rebid, from 23-10-1396 up to 10-04-1397.



#### CERTIFICATION

- ISO 9001:2015 (Quality Management System).
- OHSAS 18001:2007 (occupational Health and safety management system).









# YOU'RE PARTNER IN TRANSFORMER SECTOR

# **OUR ADDRESS**

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