

**TECHNICAL SPECIFICATIONS  
OF  
750 KVA 11/0.415KV ELECTRICAL SUB- STATION**

**1. DROP OUT FUSE CUTOUT**

Rated voltage (Nominal)	11KV
Rated maximum voltage	15KV
Rated current (cont.) RMS	100A
Rated fuse rating	50A
Rated frequency	50Hz
BIL	75KV
Interrupt. current RMS	10KA
Withstand test voltage Dry 1 minute	35KV
Wet 10 sec	30KV

**2. LIGHTNING ARRESTER**

Type	LA9
Rated voltage	11KV
Rated maximum voltage	12KV
Rated arrested voltage	9KV (rms)
Rated frequency	50Hz
Maximum spark over	14KV (rms)
Maximum spark over	40KV (rms)
Maximum impulse spark (crest) Withstand test voltage	45KV (peak)
Power frequency Dry 1 minute	28KV
Power frequency Wet 10 sec	24KV
Discharge 33KV (crest)	14KA
Impulse current withstand	14KA

### **3. 750 KVA OIL IMMERSED TRANSFORMER**

Three phase transformer ground mounted, oil immersed, with standard accessories, Indoor use, Designed manufactured and tested in accordance with NEMA/IEC/VDE/BS/BSS standard with 3 H.T Bushings and 4 LT Bushings arranged on tank top, conservator, Oil level indicator, drain and filling valves, lifting lugs, bi-directional rollers, with first filling of oil in Transformer.

#### **Technical Data :**

Capacity	:	750 KVA
Voltage ratio at no load	:	11000/415/230 V
vector group	:	DYN11
Temperature rise	:	55 <sup>0</sup> C
Insulation Oil	:	60 <sup>0</sup> C
Rated voltage	:	11KV
BIL	:	75KV
Inter Phase connection	:	Delta
Di-electric strength	:	28 KV (for 1 min).
winding Rated Voltage	:	415/230 KV
Star Natural	:	Fully insulated
Dielectric strength	:	3 KV (for 1 min)
No load Loss (iron loss)	:	1120w
Full load loss (copper loss)	:	5800w
Impedance voltage	:	6%
Wheels	:	1- set

#### **Routing Tests:-**

Routine tests are carried out on each transformer before dispatching in our well equipped factory. Each transformer is issued with an official test certificate

<b>ORIGIN</b> :	<b>Silicon Steel Sheet (Core) : EU , Copper Strip: MRS (BRB Group),</b>
	<b>Tap Changer: Italy, Transformer Oil: Sabita, India,</b>
<b>Super Enameled Copper Wire: MRS BRB Group)</b>	
<b>Transformer will be assembled in Bangladesh by UNIKO Power Engineering Company Limited.</b>	

#### **4. 11KV HT SWITCH GEAR WITH VCB:**

Floor mounting indoor switchgear with 1000A hard drawn electrolytic copper bus bars equipped with:

1 No. 1000A, 11 KV, breaking current 20KA, (3 sec.) with first shunt release voltage of 1st shunt release DC 24V making current 50 KA, 50 Hz, TP Vacuum Circuit Breaker with motor operated mechanism with closing solenoid shunt releases, auxiliary switch 6 NO+ 6 NC with mechanical interlocking motor and release wired on/off/trip indicator.

**Origin : ABB ( Germany )/Hyundai (KOREA)**

2 - Cast resin insulated, double pole, Potential Transformer, ratio:

11/.11 KV Class 0.5, 50 VA, (in open delta connection)

1- 25A, 10K TP MCCB for PT secondary protection

**Origin : SIEMENS , GERMANY**

3 - Cast resin insulated, 11 KV dry type CT with ratio: 50/5/5A, 1st core for metering 2nd for protection.

Core 1 :10 VA, Class 0.5 MS

Core 2 : 15 VA, Class 10 P 10

**Origin : SIEMENS , GERMANY**

1- Ammeter, 0-50A With 3 Way selector switch

1 - Voltmeter, 0-15 KV, with 3 Way selector switch.

1-Micro processor operated Auto IDMT relay for over current , short circuit & earth fault protection

3-ON/OFF/TRIP push button for Electrical operation

1 No. Panel Heater with Thermostat and Indicating Lamps ON/OFF/. TRIP

**All above components will be assembled in Bangladesh by UNIKO Power Engineering Company Limited.**

## **5. LT SWITCHGEAR:**

Sheet steel fabricated , floor mounting, tropicalized design, indoor type, low tension switchgear for 3 phase, 4 wire, 50Hz, 380/415V AC system and shall be supplied complete with TP +N suitable sized & properly insulated arrange to withstand & short current of 50 KA for 1 sec. The boards are designed & constructed in accordance with BS5486/IEC439 Bus bars and other live parts are spaced & insulated in accordance with European standards IEC158, UTEC 20-040, VEE-C110 for 660V.

All MCCB and MCB units & panel boards shall fully comply regulations of the 15<sup>th</sup> Edition IEE Writing regulation for isolation & switching.

**a) Incoming:**

1× 1200A, 50KA, TP 415V, MCCB with adjustable thermal overload and magnetic short- circuit releases.

3, Nos. Cast resin insulated. 440V dry type CT with ratio 1000/5A with suitable accuracy and burden.

3 Nos. Ammeter, 0-1000/5A

1-No. Voltmeter, 0-600V, With selector switch.

3. Nos. Indicating Lamps(ON/OFF/TRIP)

**b) Outgoing :**

01 × 600A, 50KA, TP 415V, MCCB with adjustable thermal overload and magnetic short- circuit releases.

4 × 200A, 25KA, TP 415V, MCCB - Do -

2 × 160A, 25KA, TP 415V, MCCB - Do -

1 × 125A, 25KA, TP 415V, MCCB - Do -

3 × 100A, 25KA, TP 415V, MCCB - Do -

2 × 50A, 25KA, SP 415V, MCB - Do -

**ORIGIN:** All above Circuit Breaker's(TP MCCB & MCB ) are ABB , Italy  
Assembled by **UNIKO Power Engineering Company Limited.**

## **6. 450 KVAR PFI PLANT:**

Automatic power factor improvement plant, 450 KVAR in 8 steps. Sheet steel fabricated, floor mounting, tropicalized design, indoor type, low-tension switch-gear for 3 phase. 4 wire, 50 Hz, 415V AC system and shall be supplied complete with TP+N bus-bars suitably sized & properly insulated arrange to withstand & short current of 50 KA for 1 second. The boards are designed & constructed in accordance with BS54486/IEC439.

### **THE PANEL COMPRISING OF:**

1 x 75 KVAR TP Power capacitor bank, rated 415V, 50Hz, with built in discharge resistor or separate discharge coil.

3 x 50 KVAR TP power Capacitor bank, rated 415 V, 50Hz -do-

4 x 25 KVAR TP power Capacitor bank, rated 415 V, 50Hz -do-

3 x 10 KVAR TP power Capacitor bank, rated 415 V, 50Hz -do-

2 x 7.5 KVAR TP power Capacitor bank, rated 415 V, 50Hz -do-

4 x 2.5 KVAR TP power Capacitor bank, rated 415 V, 50Hz -do-

1-Automatic power factor correction relay with digital PFI reading display.

3 x 150Amps, 220V, triple pole magnetic contractor.

2 x 100Amps, 220V, triple pole magnetic contractor.

1 x 50 Amps, 220V, triple pole magnetic contractor.

1 x 32 Amps, 220V, triple pole magnetic contractor

6 - Set HRC fuse with base.

1 - Set control fuse

2 - Nos. Auxiliary Contractor.

6 - Set On / Off Push Butto

1 - Auto / Manual selector switch.

**ORIGIN:** All Capacitors are of Donga(Korea)/Havel's (India)

Assembled by **UNIKO Power Engineering Company Limited.**

## **WARRANTY CERTIFICATE**

We stand warranty for trouble free operation of our supplied equipment and we undertake warranty for free replacement of any parts failing due to manufacturing defects, which shall Not Normal operational wear and tear, for a period of Transformer **30 (Thirty)** months, LT switchgear and PFI plant **12 (Twelve)** months from the date of delivery.

Thanking you,  
Yours faithfully

**Uniko Power Engineering Company Limited.**