

TECHNICAL SPECIFICATIONS
500 KVA 11/0.415KV ELECTRICAL SUB- STATION
(1) 500KVA 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	:	500 KVA
Voltage ratio at no load	:	11000/415/230 V
vector group	:	DYN11
Temperature rise	:	55 ° C
Insulation Oil	:	60 ° 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)	:	820w
Full load loss (copper loss)	:	4000w
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. Transformer will be assembled by UNIKO POWER

ORIGI:	Silicon Steel Sheet (Core): EU, Copper Strip: MRS (BRB Group),
	Tap Changer: Italy, Transformer Oil: Sabita, India.
	Super Enameled Copper Wire: MRS BRB Group)

(2) 11KV HT SWITCH GEAR WITH LBS

**Floor Mounting Indoor Switch-Gear With 630A Hard Drawn Electrolytic
800A Copper Bus-Bars Equipped With:**

**1 - No. 630A, 11 KV, 20KA, 350 MVA Rated Short Time Current, 50 Hz
TP Spring Charged" Stored Energy Mechanism Triple Pole LBS Having
Automatic Tripping Mechanism Whenever Any of the Fuse's Blow.**

Origin: ABB Italy.

**2 - Nos. Cast Resin Insulated, Double Pole, Potential Transformer, Ratio:
11/11 KV Class, 0.5, 50 VA, (In Open Delta Connection)**

Origin: SIEMENS, GERMANY.

1 - No MCB Of Adequate Rating for PT Secondary Protection

**3 - Nos. Cast Resin Insulated, 11 KV Dry Type CT With Ratio: 30/5/5A,
For Meter with Suitable Accuracy Class & Burden.**

Origin: ABB Italy.

3 - Nos. Ammeter, 0-30A

1 - No. Voltmeter, 0-15 KV, With Selector Switch.

3 - Nos. 63A HRC Fuses.

2- Nos. On And Off/TRIP Push Button

3 - Nos. Indicating Lamps ON & OFF/TRIP

1- No. Panel Heater.

ASSEMBLED BY

UNIKO POWER ENGINEERING COMPANY LIMITED.

(3) 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 15th Edition IEE Wiring regulation for isolation & switching.

a) **Incoming:**

1× 800A, 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 × 500A, 50KA, TP 415V, MCCB with adjustable thermal overload and magnetic short- circuit releases.

1× 250A, 25KA, TP 415V, MCCB

ORIGIN: All above Circuit Breaker's (TP MCCB & MCB) are ABB, Italy / Hyundai, Korea.

Assembled by UNIKO POWER ENGINEERING COMPANY LIMITED

(4)300 KVAR PFI PLANT

Automatic power factor improvement plant, 380 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:

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

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

2 x 20 KVAR TP power Capacitor bank, rated 415 V, 50Hz -do-

4 x 15 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-

1 x 5 KVAR TP power Capacitor bank, rated 415 V, 50Hz -do-

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

2 x 80Amps, 220V, triple pole magnetic contractor.

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

4 x 40 Amps, 220V, triple pole magnetic contractor.

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

6 - Set HRC fuse with base.

1 Nos 12Sts Relay

1 - Set control fuse

ORIGIN: All Magnetic Contractor Hyundai, Korea/ Capacitors are Havel's (India) and will be assembled in Bangladesh by UNIKO Power Engineering Company Ltd.

(5) 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

(6) 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

07. EARTHING OF SUB-STATION:

Supply and Installation of Sub-station earthing as per Specification with the followings:-

- (a) Earthing of Sub-station and equipment with 1" dia G.I pipe 10' each Top and bottom up to a depth of 100 ft. in four pits using Copper Conductor of 4 SWG HDBC excluding making of inspection pits.**
- (b) Earthing of using 4 SWG Copper conductors (04 Nos*100').**
- (c) Supply Installation testing and Commissioning of 2 Nos Copper earthing block with required Nos of 1/4" hole for Elec Connection Size-25*4*300mm for transformer neutral and another for all Sub-station equipment's ECC Connection.**
- (d) The earth electrode shall be Driven into the ground by tube well sinking method. The Top/head of the GI pipe after Completing all Connection shall be covered with Hessian cloth soaked in bitumen**

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.