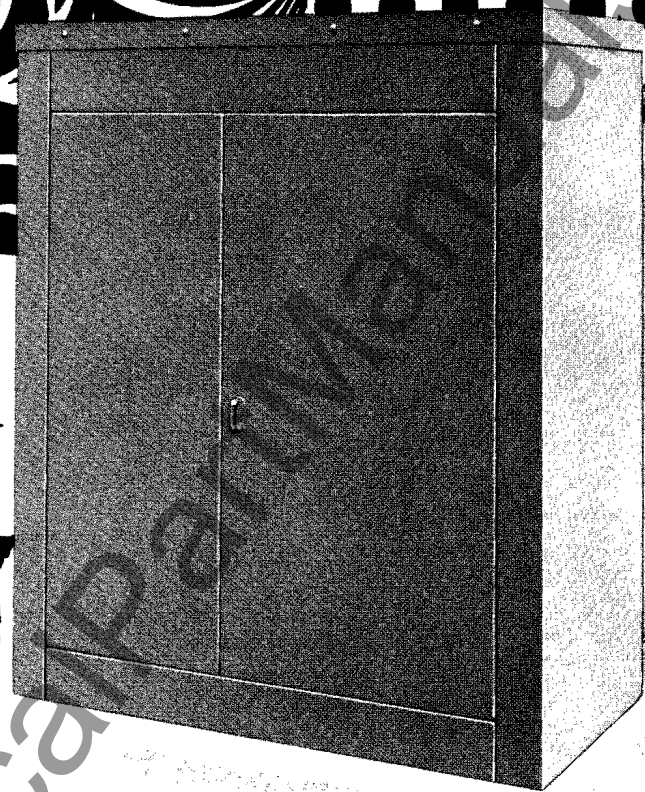


Westinghouse



Plazatran™ Network Pad Mounted Transformer



**Application**

The Westinghouse Plazatran pad mounted network transformer, as pictured, is designed to provide the reliability of spot network service with the convenience of above ground pad mounting in those areas where the conventional underground network grid system is not practical.

**General Information**

The Plazatran network pad mounted transformer is a completely enclosed, tamperproof unit for outdoor surface pad mounting. The high voltage entrance and switch, low voltage network protector and all gauges, valves and fittings are enclosed in an outdoor, weatherproof housing connected to the transformer. It is designed for installation outdoors, above ground, on a concrete pad where high voltage and low voltage cables are underground and where the installation is accessible to the public.

**Standard Electrical Characteristics**

Phase: Three-Phase Construction  
 Frequency: 60 Hertz  
 Kva Ratings: 500, 750, 1000, 1500, 2000, 2500

Impedance: 1000 Kva and Below – 5%  
 1500 Kva and Above – 7%

Prices effective November 14, 1972; subject to change without notice. For standard terms and conditions of sale, refer to Selling Policy 47-000.

**High Voltages**

Rated Voltage (Volts)	BIL (KV)	Insulation Class (KV)
2400	45	2.5
4160	60	5.0
4800	60	5.0
7200	75	8.7
12000	95	15.0
12470	95	15.0
13200	95	15.0
13800	95	15.0
16340Y/9430	95	15.0
22860Y/13200	125	18.0
23900Y/13800	125	18.0
24940Y/14400	125	18.0
34500Y/19920	125	18.0
34500Y/19920	150	25.0
22900	150	25.0
27060	200	34.5
34400	200	34.5

Taps: Two 2½% full capacity above and below or – Four 2½% full capacity below rated voltage.

**Low Voltages**

Rated Voltage (Volts)	BIL (KV)	Insulation Class (KV)
208Y120Ⓞ	30	1.2
216Y/125Ⓞ	30	1.2
480Y/277	30	1.2

Note: Taps are not available on low voltages.  
 Ⓞ Not available above 1000 KVA.

**Electrical Tests**

Electrical tests are performed as standard in accordance with ANSI Standard Test Code for transformers.

1. Resistance measurements.
2. Ratio tests.
3. Polarity and phase relation.
4. No load loss.
5. Exciting current.
6. Impedance and load loss.
7. Applied potential test.
8. Induced potential test.
9. Temperature test or tests will be made on one unit only of an order covering one or more units of a given rating. Tests will be made only when there is not available a record of a temperature test, made in accordance with ANSI Standards, on a duplicate or essentially duplicate unit.

**Standard Finish**

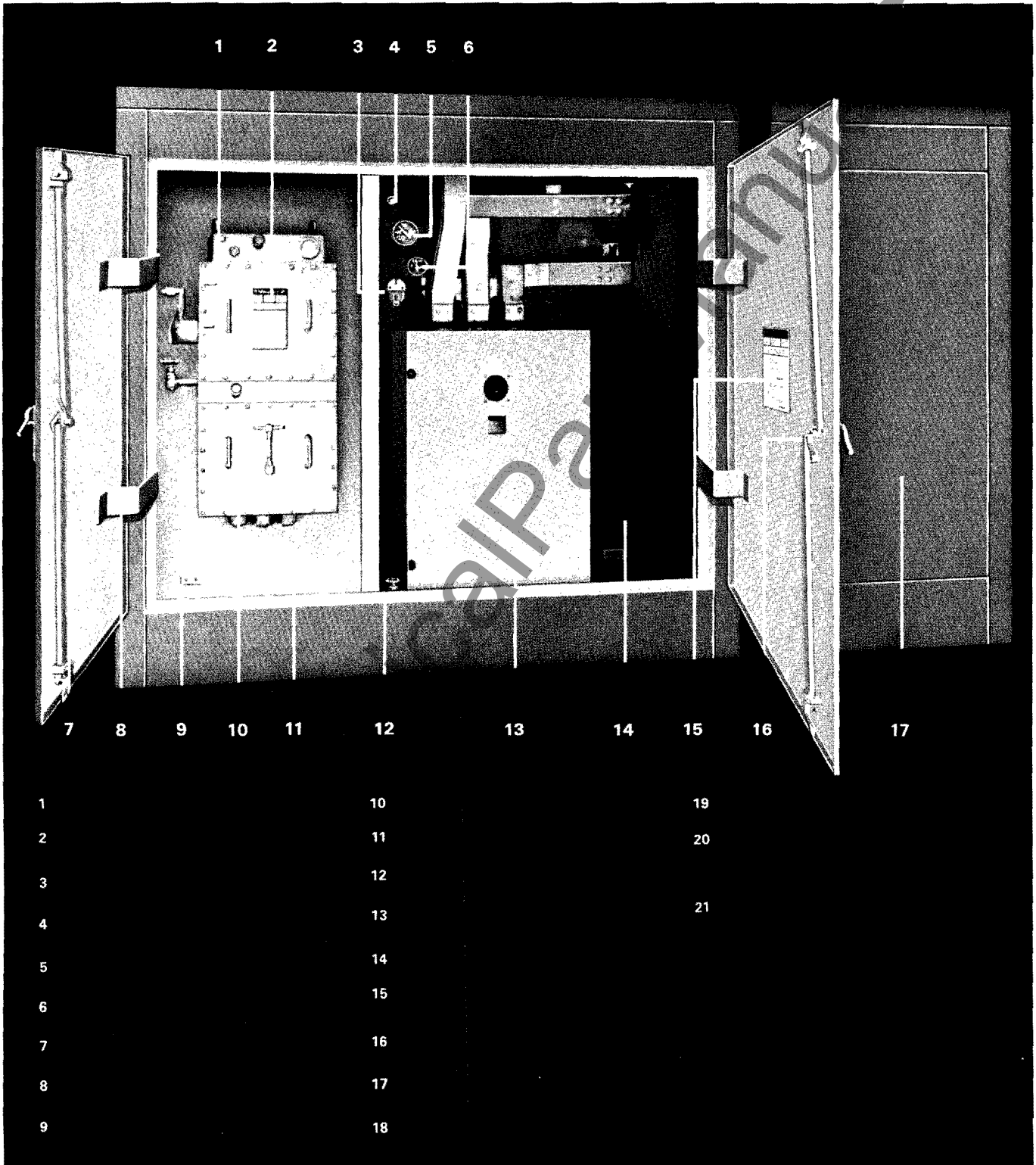
Standard finish is Bell Telephone Green (Munsell No. 7GY3.29/1.5).

December 19, 1972  
 Supersedes PL 47-121, dated November 3, 1967  
 E. D. C/2081/PL. DB

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1 2 3 4 5 6

7 8 9 10 11 12 13 14 15 16 17

1	10	19
2	11	20
3	12	
4	13	21
5	14	
6	15	
7	16	
8	17	
9	18	

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## Plazatran™ Network Pad Mounted Transformer

### Rectangular Core and Coils WSS Tap Changer

The Westinghouse externally operated WSS tap changer provides positive sequence line voltage changes under no-load conditions. An in-line assembly, the WSS features through-type stationary contact studs rigidly supported by a molded plastic channel. Moving contacts are spring loaded, silver plated copper which move along the stationary line by means of a rack and pinion.

This design has no rivets, bolts or nuts, thus assures the proper contact of current carrying parts when taps are changed. With **no** reported outages, the WSS benefits the user through a reduction of repair or replacement costs by eliminating faulty tap changer operation, the cause of failure in 20% of all power transformers.

### Rectangular Aluminum Wound Coils

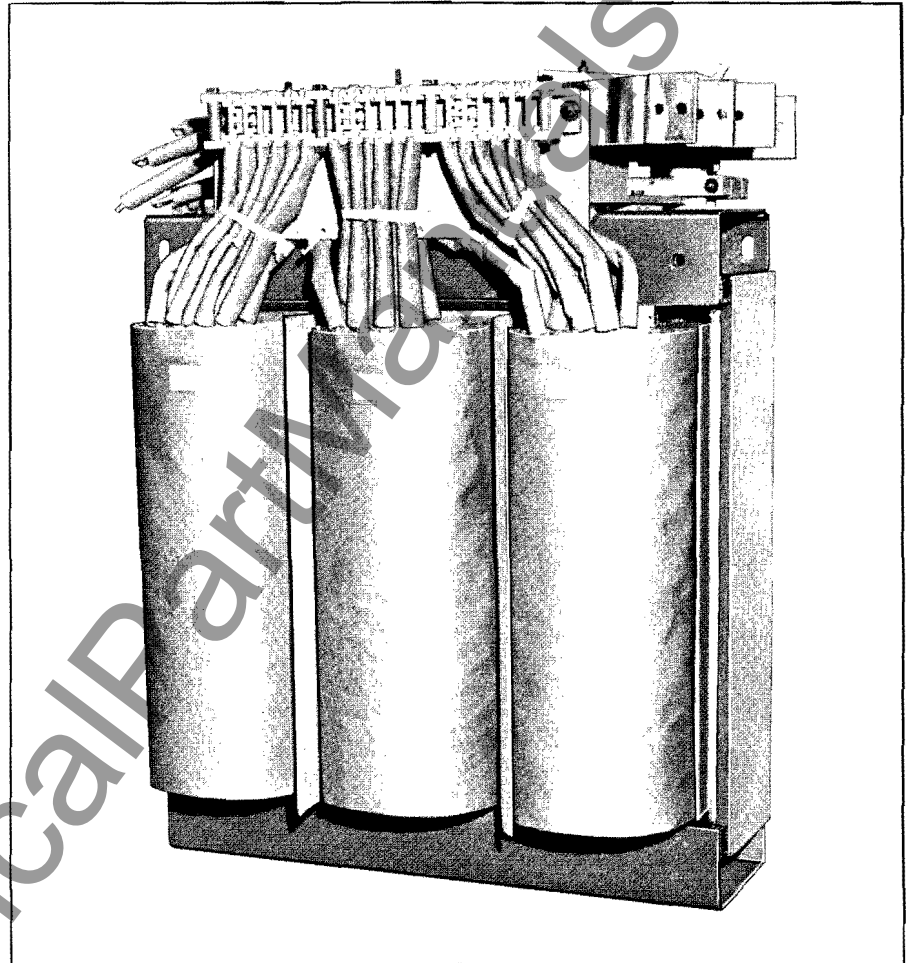
The Westinghouse rectangular wound coil features aluminum conductor in both high and low voltage windings. The low voltage winding is accomplished on a constant tension machine and consists of full width sheet aluminum extending the full height of the coil. High voltage strap aluminum is wound directly over the low voltage winding on a constant tension traversing machine. Layer to layer and high to low insulation is diamond epoxy paper which when heat treated bonds the complete coil into a solid configuration.

The advantage of low voltage sheet aluminum is a continuous cross section of conductor that allows the electrical centers of high and low voltage windings to easily align themselves, virtually eliminating the vertical component of short circuit force.

The benefit is a coil so uniform and compact, the chance of windings overlapping during short circuit is minimized, reducing failure rate, repair and/or replacement cost.

### Welded Frame

The Westinghouse exclusive welded frame provides a superior six piece supporting structure for the core and coils. End plates are thick steel slabs that are assembled in a mechanical and pressure jig around the core and coils, then welded to top and bottom plates to form a rigid structure that will not loosen during assembly, shipment, or in service. To determine the thickness of members used (even the thickness of welds), a short circuit calculation is made for each unit to determine the forces of short circuit.



The result is an assembly that restrains more effectively vertical and horizontal components of force, decreasing the probability of failure during severe short circuits.

This benefits the user by a reduction in repair or replacement costs and a reduction in downtime that means loss of service or lost production.

### Step-Lap Core

The Westinghouse exclusive stacked core provides a superior flux path by utilizing the patented step-lap joining of core legs to top and bottom yokes. Hand stacked Hypersil steel punchings with interlocking laminations can be more uniformly and rigidly braced to prevent shifting during service.

The user can benefit through reduced sound levels, lowered iron and total losses, and decreased exciting current to lower total operating cost.

On wye-wye units a fourth leg is added to provide a path for circulating third harmonic flux during unbalance condition.

### Super Insuldur Insulation

The Westinghouse Super Insuldur Insulation effectively upgrades cellulose insulating materials thermally for increased load and overload capability. Retarding insulation breakdown under severe temperature conditions, the chemical stabilizers in the insuldur process minimize dimensional changes in the insulating materials insuring a tighter structure, contributing to greater strength and coil integrity throughout the life of the transformer.

The user benefit is a coil that better withstands short circuit and allows an operation at 10°C higher temperature on a 55°C rated unit with a 12% increase in KVA capacity.

# Plazatran™ Network Pad Mounted Transformer

## Conditions of Sale

Standard Conditions of Sale – The product covered by this catalog is sold subject to the discount schedules, policies, terms, warranties and other conditions contained in the latest issue of Selling Policy 47-000.

Special Conditions of Sale – Refer to Selling Policy 47-000 for the price additions for F.O.B. destination, delayed payments, special warranty and extended warranty.

Exchange Allowance – An exchange allowance for old transformers in connection with the purchase of new transformers is not permitted.

## Negotiation Data and Ordering Information

– When corresponding on negotiations or entering orders, the following minimum information, a copy of purchaser's specifications and other information that could influence requirements, must be included.

1. Number of Units
2. Kva Rating
3. Cooling (Oil or Inerteen)
4. High Voltage, Connection (Delta or Wye) and taps.
5. Low Voltage and Connection (Delta or Wye)
6. High Voltage Termination
7. Low Voltage Termination

## Pricing

Prices determined from these pricing instructions may be used for estimating purposes. All final prices must be obtained from the Small Power Transformer Division.

## Pricing Procedure:

1. Select the base list price from the table according to low voltage and Kva.
2. Select the percentage additions that apply. The sum of the percentage additions times the base list price added to the base list price gives the developed price.
3. Select the dollar additions that apply and add the sum to the developed price to get the total list price.
4. Select the percentage additions from Selling Policy 47-000 that apply. The sum of these percentages times the total list price added to the total list price gives the final list price.
5. If export packing is required, make the addition to the final list price.
6. Determine the user discount multiplier from the latest issue of Selling Policy 47-000. This multiplier times the final list price gives the final net price.

## Base Prices

Kva	Sound Level DB	Losses		Low Voltage	
		No Load	Total	208Y/120 216Y/125	480Y/277
<b>5 Kv Class – 60 Kv BIL 100 Kva and Below</b>					
<b>8.33 Kv Class – 75 Kv BIL, 15 Kv Class – 95 Kv BIL</b>					
500	56	1500	5800	\$ 9135	\$ 8354
750	58	2350	7500	9943	9187
1000	58	2650	9900	10775	10019
1500	60	3500	14600	.....	12102
2000	61	4000	18500	.....	13511
2500	62	4500	22500	.....	14891
<b>25 Kv Class – 150 Kv BIL</b>					
500	56	1950	6300	11957	11246
750	58	2650	8750	12837	12063
1000	58	3300	10500	13929	13092
1500	60	4300	15400	.....	15003
2000	61	5500	19400	.....	16978
2500	62	6200	23900	.....	19138
<b>35 Kv Class – 200 Kv BIL</b>					
500	56	2180	6880	12649	11888
750	58	2900	9400	13564	12737
1000	58	3650	11500	14713	13821
1500	60	4800	16300	.....	15833
2000	61	5800	19900	.....	17911
2500	62	6400	24700	.....	20099

## Optional Accessories

### Percentage Additions

55*/65°C Rise, add.....	5%
Inerteen – 15 Kv and Below, add.....	25%
25 and 35 Kv, add.....	35%
Y-Y Connected Units, add.....	5%
Taps – Omission of taps, deduct.....	2%
Additional taps or for greater than 10% tap range.....	.....

### Refer to Westinghouse

Special Finish, add.....	\$ 667
Radiator Guards, add.....	200
Pressure Vacuum Gauge, add.....	64
Pressure Relief Device in Tamperproof Housing (Standard on Inerteen Filled Units), add.....	195
Special Tests – Quality Control Impulse Tests, add.....	225
Temperature Tests, add.....	225
Sound Level Tests, add.....	150

<b>High Voltage Termination with Switch</b>	
15 Kv and Below, add.....	\$1930
25 Kv, add.....	2660
35 Kv, add.....	3890

If switch is to be Mag-Break with second interlock to prevent operation when protector is closed, add.....	230
Phase-out pipe outlet, add.....	86
Peep-hole lenses, add.....	86
Key interlock on grounding switch handle, add.....	132

<b>High Voltage Termination without Switch</b>	
Liquid filled terminal chamber without provisions for switch, add.....	640
Cast resin bushing mounted on tank wall, add.....	175

200 Ampere universal bushing wells (15 Kv only), add.....	175
Inserts – load-break or non load-break bushings (Set of 3), add.....	70
200 Ampere non load-break bushings (or loadbreak), add.....	175
600 Ampere non load-break bushings, add.....	300

## Low Voltage Terminations

1. Network Protector  
Provision only..... **No Charge**  
Mounted..... **Refer to Westinghouse**
2. Bus Throat  
Opening in side of compartment..... **No Charge**  
Flanged throat, add..... \$ 65
3. Low Voltage Cabling Compartment  
A third throat connected compartment with bus extended across the top for cable connections, add..... **1000**
4. Balancing Coils..... **Refer to Westinghouse**

## Further Information

SA-10099 – Westinghouse Rectangular Core Form Transformers.

M7205 – Why Westinghouse Rectangular Core Form Transformers Without Stand Short Circuits

Descriptive Bulletin 47-150 – Westinghouse Spacemiser Liquid Immersed Network Transformers

The Westinghouse policy of continuous improvement in its products may result in changes in these specifications without notice.