



Westinghouse Electric Corporation
T&D Components Division
Bloomington, Indiana 47401

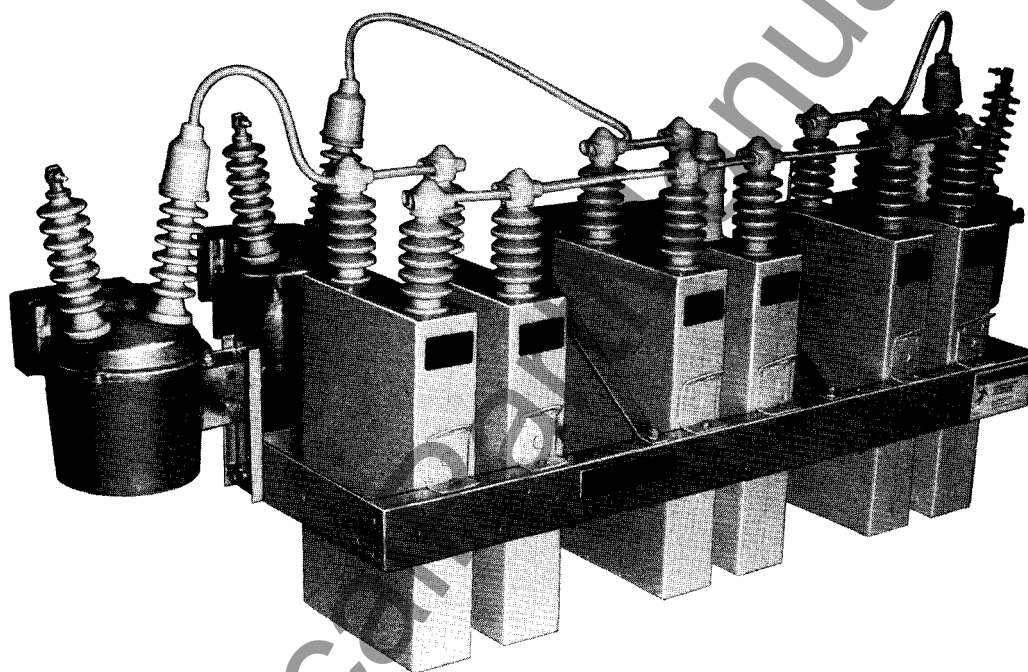
Descriptive Bulletin
39-361

Page 1

December, 1985
Supersedes DB 39-361, pages 1-12
dated April, 1980.
Mailed to: E, D, C/39-000A, 39-000B

34.5/19.9 kV and Below
Grounded Wye Connected
3, 6, & 9 Unit Frames

Pole-Mounted Capacitor Equipments



Typical 6 Unit, Switched Equipment

Factory Assembled Pole-Mounted Capacitor Equipments

Westinghouse factory-assembled pole mounted capacitor equipments are shipped complete and ready for pole installation, including the following components:

- FILM-VAR low-loss, all-film, single phase capacitors connected in three phase grounded wye configuration. (For further information on FILM-VAR, refer to PL 39-310 and DB 39-312).
- In-line, welded, aluminum mounting frames with galvanized steel mounting bracket. Frames are available in 3, 6, and 9 unit capacities.
- Galvanized steel mounting hardware and #2 solid copper wire with insulating tubing for capacitor unit phase and ground connections.
- **Optional:** 3 – Westinghouse type CSR single phase oil switches, 14.4 or 19.9 KV, 125 KV BIL, 120 vac secondary 5 – pin male receptacle, and a frame-mounted junction box/cable assembly.
- **Optional:** 1 – Westinghouse type CBT single phase control power transformer connected for line-to-ground (neutral) primary voltage and 120 vac secondary 5-pin male receptacle.
- **Optional:** 3 – Westinghouse type LV distribution class lightning arresters.



Pole-Mounted Capacitor Equipments

Catalog Number System

To describe a pole mounted capacitor equipment with a 10 digit catalog number, select the catalog number digit from the following bill of material listing. The resulting 10 digit catalog number describes a GROUNDED WYE connected bank using single phase capacitors with voltage rating for line-to-ground system voltage, and standard equipment as described in the bill of material. Refer to PL 39-360 for pricing information. For non-standard frames, ungrounded wye and delta-connected banks, non-standard voltage ratings, three phase capacitor units, special testing, components of other manufacturers, etc., specify "Similar to (catalog number), except . . . etc." and/or by complete description and refer to the Capacitor Department for pricing.

Catalog Number Example

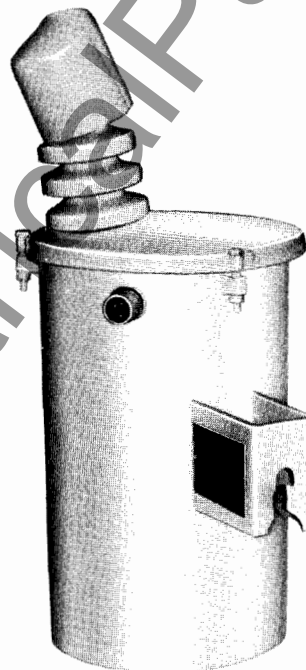
	Z	Z	A	A	A	1	2	2	1	0
Westinghouse Type CBT Control Power Transformer Not Required	(1st Digit)									
Westinghouse Distribution Class Lightning Arresters Not Required	(2nd Digit)									
3 each 14.4 KV, 125 KV BIL CSR Oil Switches	(3rd and 4th Digit)									
3 Unit Aluminum In-line frame for Single Phase Capacitors	(5th Digit)									
3 Capacitor Units to be Mounted in the Frame	(6th Digit)									
200 KVAR Single Phase Film-Var Capacitor, Standard Creep per PL 39-310	(7th and 8th Digit)									
7200 Volt, 2 Bushing, 95 KV BIL Capacitor (9th & 10th Digit of Capacitor Unit Style Number Per PL 39-310)	(9th and 10th Digit)									

(1st Digit)

CBT Control Power Transformer

Westinghouse CBT oil filled control power transformer, one fused high voltage bushing with protective terminal cap, suitable for line-to-ground connection, and 120 vac secondary five pin male receptacle.

1st Digit CBT	CBT Primary Voltage (Line-to-Ground)
Z	None required
A	2400
B	4160
C	4800
D	7200
E	7620
F	7960
G	8300
H	12000
J	12470
K	13200
L	13800
M	14400
N	16340
P	19920
Q*	Provisions Only*



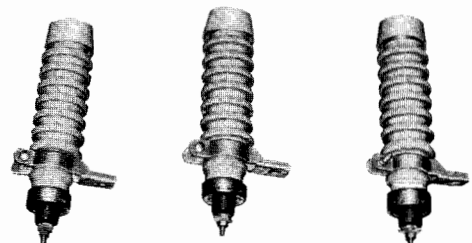
*Provisions Only include mounting bracket and mounting hardware. (Does Not Include Junction Box or Wiring)

(2nd Digit)

Westinghouse Distribution Lightning Arresters

One set of 3 Westinghouse type LV small block distribution class lightning arresters. **Note:** The letter designation for arresters is different, depending on whether or not oil switches are required (from 3rd & 4th Digits).

2nd Digit Arresters		Arrester KV Rating
No Switches	Switches	
Z	Z	None Required
A	H	3
B	J	6
D	L	9
E	M	12
F	N	15
G	P	18





Pole-Mounted Capacitor Equipments

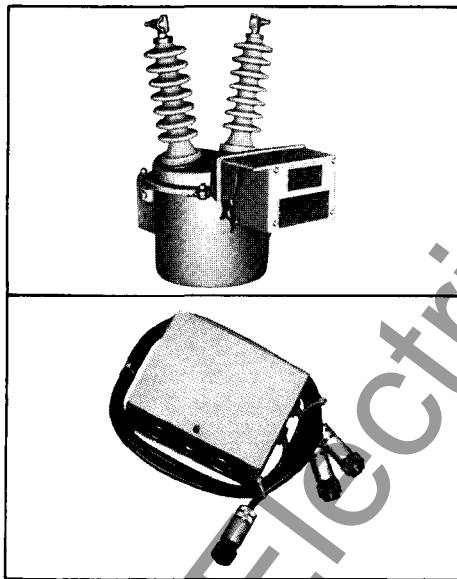
(3rd and 4th Digits)

3-CSR Oil Switches

One set of 3 Westinghouse type CSR single pole oil switches rated 125KV BIL, 120 vac control, and including junction box and wiring. **Note:** The letter designation for CSR switches is different, depending on whether or not CBT control power transformers are required (from 1st Digit).

3rd and 4th Digits 3 CSR Switches		Frame Size	Switch KV
No CBT Transformer	CBT Transformer		
BA	BA	None Req'd	...
AJ	AN	3	15.5
AK	AP	6	15.5
AL	AQ	9	15.5
AS	AW	3	19.9
AT	AX	6	19.9
AU	AY	9	19.9
AZ*	AZ*	Provisions Only*	...

*Provisions Only include 3 switch mounting brackets and mounting hardware. (Does Not Include Junction Box or Wiring).



(5th Digit)

Aluminum In-Line Frames

Westinghouse standard welded aluminum in-line mounting frames with galvanized steel pole mounting bracket. Frames are suitable for mounting single phase capacitor units.

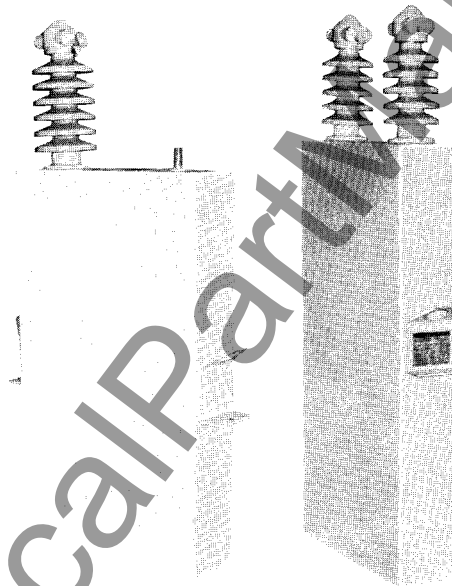
5th Digit Aluminum Frame	Maximum Number of Capacitors
A	3
B	6
C	9

(6th Digit)

Number of Capacitors

Number of single phase capacitors to be mounted and wired in the frame.

6th Digit	Number of Capacitors
1	3
2	6
3	9



(7th and 8th Digits)

Capacitor KVAR Rating

KVAR rating of single phase FILM-VAR capacitor units. **Note:** The numeric designation for KVAR rating is for capacitors with standard ratings of voltage, bushing creep, and BIL KV as defined in capacitor unit price list PL 39-310.

7th and 8th Digits Standard Capacitors	KVAR Rating
07	50
12	100
17	150
22	200
34	300
44	400

(9th and 10th Digits)

Capacitor Voltage Rating and Number of Bushings

Nameplate voltage rating and number of bushings of single phase FILM-VAR capacitor. The 9th and 10th digits are obtained from the last two digits of the capacitor unit style number, from PL 39-310.

9th and 10th Digits Voltage/Bushings

01 through 35

For further information, refer to PL 39-360, PL 39-310, DB 39-312.

Components For Fixed Only (Unswitched) Pole Mounted Equipments For Field Assembly.

Mounting Frames

Unassembled galvanized steel mounting frames suitable for single phase capacitor units. (Frames do not have provisions for oil switches, control power transformer, or lightning arresters).

Direct Pole Mtg. Frame Style No.	Maximum Unit Capacity
6005C82G04	3
6005C82G01	6*

*G01 is suitable for capacitors with a maximum width of 8.000 in.

Note: When using 50 KVAR capacitor units, also order style no. 3893A10H07 elevating brackets, 2 required per capacitor unit.

Hardware/Wiring Kit

Capacitor unit mounting hardware, #2 copper wire for capacitor unit phase and ground connections; insulating tubing for capacitor unit phase connections, and instruction sheet. Kit will accommodate a maximum of 6 capacitor units wired in wye.

Style No. 6482A17G02 Hardware/Wiring Kit

Capacitor Terminal Covers

Insulator caps for capacitor unit terminals, one required per capacitor bushing.

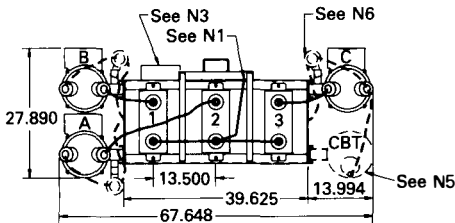
Style No. 791C206H02 Terminal Covers
(See PL 39-310)



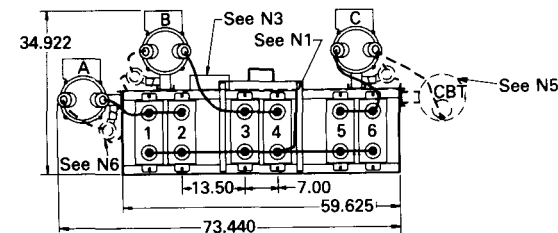
Pole-Mounted Capacitor Equipments

Weights and Dimensions

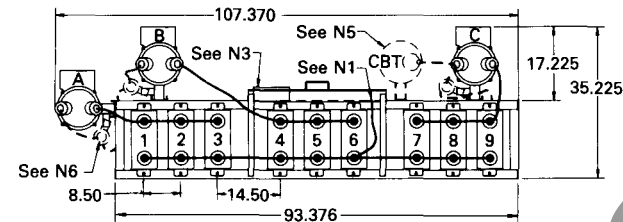
(Dimensions Typical of Standard Arrangements, Weights Approximate)



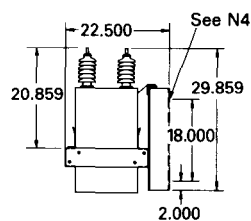
3 Unit



6 Unit



9 Unit



Side View

Approximate Weights

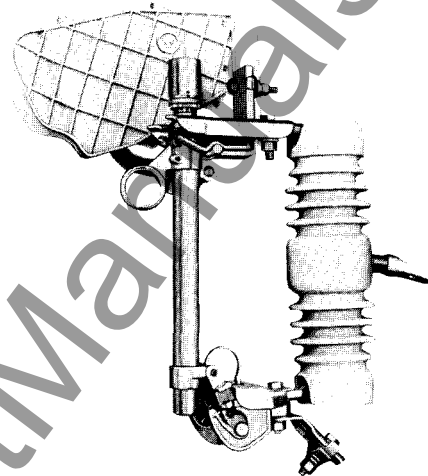
Frame Size	CBT Transf.	Alum. Frame	Cap (Each)	SW. (3)	Junct. Box
3	80	81	*	120	5
6	80	91	*	120	5
9	80	104	*	120	5

*For estimating purposes, use weight per capacitor as follows: 50 KVAR, 31 lbs; 100 KVAR, 45 lbs; 150 KVAR, 64 lbs; 200 KVAR, 75 lbs; 300 KVAR, 100 lbs; 400 KVAR, 131 lbs.

- N1 = Frame must be grounded when switches are used. For safety, frame should be grounded. Gnd conn. #8 to #1 str. cond.
- N2 = Clamp type conn. for incoming line - #8 to 2/0 solid.
- N3 = Junction box with double K.O.'s for .750 & 1.000 conduit.
- N4 = Provision for (2) .750 dia. Mtg. bolts (Mtg. bolts to be supplied by cust., length of bolts to be equal to pole dia. + 4.000 max).
- N5 = Operating trans. (when specified)
- N6 = Lightning arresters (when specified)
- N7 = Cpcr. & switch terminals protected by ins. caps

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Westinghouse suggests the use of Type LBU-II Open Type, Loadbreak Fuse Cutout for either switched or unswitched capacitor banks.



Fault protection must be provided for any type of pole mounted capacitor bank. The following table is provided as a guide for users when selecting fuse link ratings:

Suggested Fuse Link Ratings for Group Fusing

KVAR	2.4	4.2	4.8	12.5	13.2	13.8	16.5	23.0	24.9	34.5
Ungrounded Banks System Kv (line to line)										
150	40K	20K	20K	8T	8T	6T	6T	6T	6T	8T
300	80K	40K	40K	12T	12T	12T	10T	8T	8T	8T
450		65K	50K	20T	20T	20T	15T	10T	10T	10T
600			80K	25K	25K	25K	20T	15T	12T	10T
900				40K	40K	40K	30K	20T	20T	15T
1200				50K	50K	50K	40K	30T	25T	20T
1500				65K	65K	65K	50K	40K	30T	25T
Grounded Banks System Kv (line to line)										
150	40K	20K	20K	8T	8T	6T	6T	6T	6T	8T
300		40K	40K	15T	12T	12T	10T	8T	8T	8T
450		65K	50K	20T	20T	20T	15T	12T	10T	10T
600				25K	25K	25K	20T	15T	15T	10T
900				40K	40K	40K	30K	25K	20T	15T
1200				50K	50K	50K	40K	30T	30K	20T
1500				80K	65K	65K	50K	40K	40K	25T

Refer to PL 38-660 to obtain fuse link style numbers and prices.

Refer to PL 38-650 to obtain LBU II cutout style numbers and prices.