



POWER SYSTEMS, INC.



## Design Test Report

### Electrical Tests

#### Series Combinations of Insulators

**PDI-15 Catalog Number 401015**

**PDI-25 Catalog Number 401025**

This test report records the electrical tests made to various series combinations of Ohio Brass Veri\*Lite Type PDI-15 and PDI-25 distribution insulators.

The tests performed were:

- 1) 60 Hz Dry and Wet Flashover and Withstand
- 2) Impulse Critical Flashover and Withstand

Test procedures are those shown in IEEE 1024-1988 and ANSI C29.

All other Design Tests per IEEE 1024-1988 and ANSI C29 where applicable, can be found in Ohio Brass publication EU1242-H

No combinations of PDI-15 or PDI-25 are recommended for use at system voltages greater than 46kV.

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**60 Hz DRY AND WET FLASHOVER AND WITHSTAND TESTS  
 SERIES COMBINATIONS OF INSULATORS  
 PDI-15 CATALOG NUMBER 401015 / PDI-25 CATALOG NUMBER 401025**

Tests were performed in accordance with ANSI C29.1, Sections 4.2 - 4.5. One sample of each combination was tested. Results, adjusted for standard atmospheric conditions according to ANSI C29.1 are summarized in the following table.

THE SERIES COMBINATION OF INSULATORS TESTED ARE:

FIG #1 Two PDI-15

FIG #2 One PDI-15 (ground end) and One PDI-25 (line end)

FIG #3 Three PDI-15

FIG #4 Two PDI-25

FIG	#1	#2	#3	#4
DRY FLASHOVER (kV)	194	245	297	286
DRY WITHSTAND (kV)	189	237	279	278
WET FLASHOVER (kV)	153	204	218	233
WET WITHSTAND (kV)	136	186	202	227

**IMPULSE CRITICAL FLASHOVER AND WITHSTAND TESTS  
 SERIES COMBINATIONS OF INSULATORS  
 PDI-15 CATALOG NUMBER 401015 / PDI-25 CATALOG NUMBER 401025**

Tests were performed in accordance with ANSI C29.1, Sections 4.8. One sample of each combination was tested. Results, adjusted for standard atmospheric conditions according to ANSI C29.1 are summarized in the following table.

THE SERIES COMBINATION OF INSULATORS TESTED ARE:

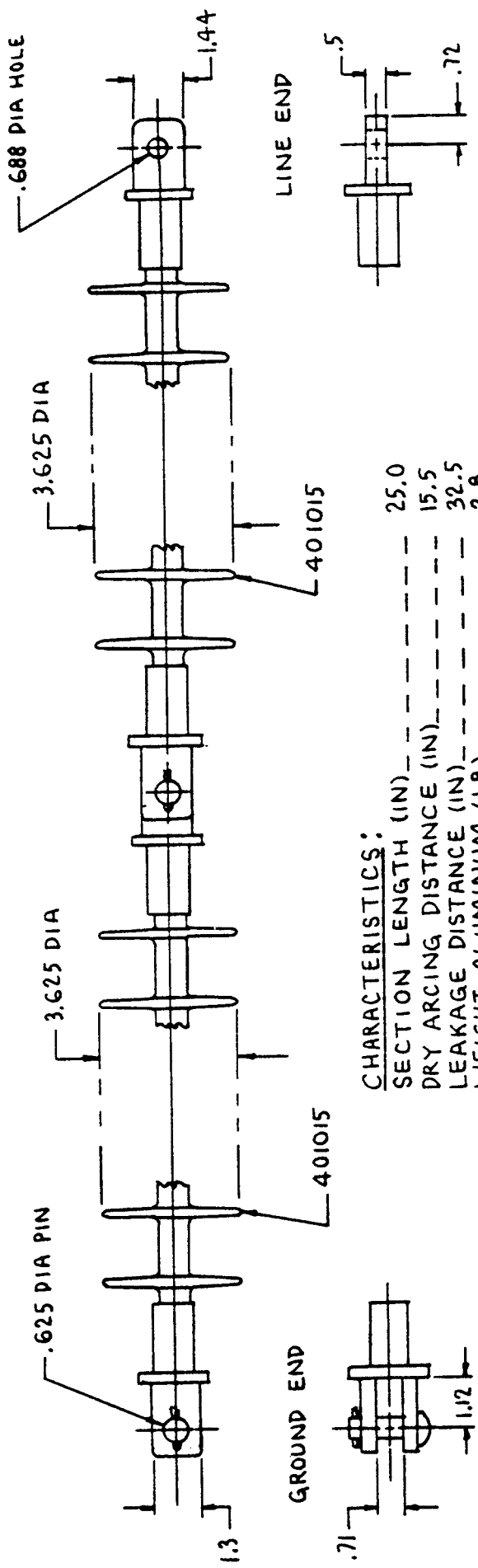
FIG #1 Two PDI-15

FIG #2 One PDI-15 (ground end) and One PDI-25 (line end)

FIG #3 Three PDI-15

FIG #4 Two PDI-25

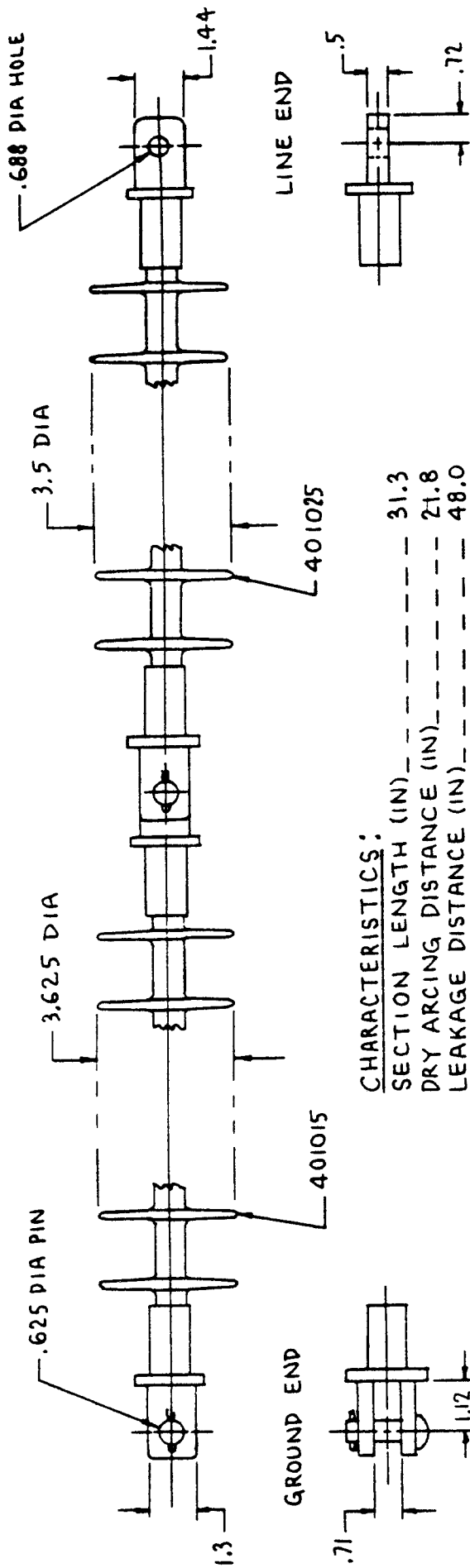
FIG	#1	#2	#3	#4
POSITIVE FLASHOVER (kV)	327	429	491	517
POSITIVE WITHSTAND (kV)	286	398	468	491
NEGATIVE FLASHOVER (kV)	376	494	528	598
NEGATIVE WITHSTAND (kV)	354	455	470	567



**CHARACTERISTICS:**

SECTION LENGTH (IN)	25.0
DRY ARCING DISTANCE (IN)	15.5
LEAKAGE DISTANCE (IN)	32.5
WEIGHT ALUMINUM (LB)	2.8
WEIGHT FERROUS (LB)	4.8
60 HZ DRY FLASHOVER (KV)	194
60 HZ DRY WITHSTAND (KV)	189
60 HZ WET FLASHOVER (KV)	153
60 HZ WET WITHSTAND (KV)	136
IMPULSE CRITICAL POSITIVE (KV)	327
IMPULSE WITHSTAND POSITIVE (KV)	286
IMPULSE CRITICAL NEGATIVE (KV)	376
IMPULSE WITHSTAND NEGATIVE (KV)	354
MAX RIV @ 1000 KHZ (MICROV)	10
RIV TEST VOLTAGE (KV)	35

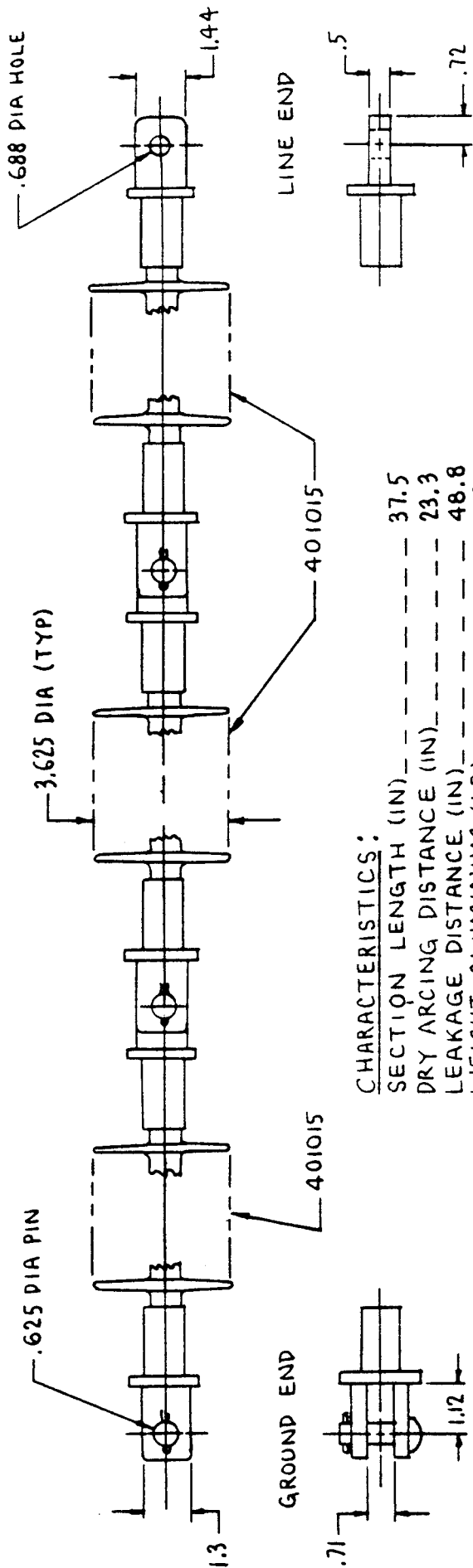
FIG # 1  
TWO PDI-15



CHARACTERISTICS:

SECTION LENGTH (IN)	31.3
DRY ARCING DISTANCE (IN)	21.8
LEAKAGE DISTANCE (IN)	48.0
WEIGHT ALUMINUM (LB)	3.3
WEIGHT FERROUS (LB)	5.2
60 HZ DRY FLASHOVER (KV)	245
60 HZ DRY WITHSTAND (KV)	237
60 HZ WET FLASHOVER (KV)	204
60 HZ WET WITHSTAND (KV)	186
IMPULSE CRITICAL POSITIVE (KV)	429
IMPULSE WITHSTAND POSITIVE (KV)	398
IMPULSE CRITICAL NEGATIVE (KV)	494
IMPULSE WITHSTAND NEGATIVE (KV)	455
MAX RIV @ 1000 KHZ (MICROV)	10
RIV TEST VOLTAGE (KV)	35

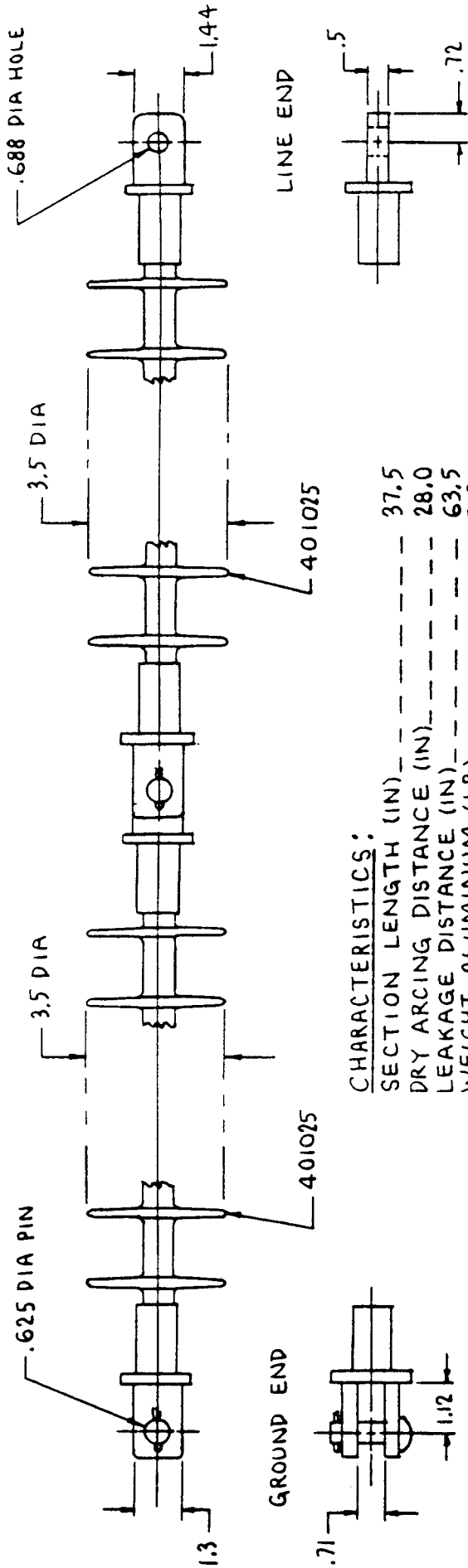
FIG #2  
 ONE PDI-15 GROUND END  
 ONE PDI-25 LINE END



CHARACTERISTICS:

SECTION LENGTH (IN)	37.5
DRY ARCING DISTANCE (IN)	23.3
LEAKAGE DISTANCE (IN)	48.8
WEIGHT ALUMINUM (LB)	4.2
WEIGHT FERROUS (LB)	7.2
60 HZ DRY FLASHOVER (KV)	297
60 HZ DRY WITHSTAND (KV)	279
60 HZ WET FLASHOVER (KV)	218
60 HZ WET WITHSTAND (KV)	202
IMPULSE CRITICAL POSITIVE (KV)	491
IMPULSE WITHSTAND POSITIVE (KV)	468
IMPULSE CRITICAL NEGATIVE (KV)	528
IMPULSE WITHSTAND NEGATIVE (KV)	470
MAX RIV @ 1000 KHZ (MICROV)	10
RIV TEST VOLTAGE (KV)	35

FIG #3  
THREE PDI-15



CHARACTERISTICS:

SECTION LENGTH (IN)	37.5
DRY ARCING DISTANCE (IN)	28.0
LEAKAGE DISTANCE (IN)	63.5
WEIGHT ALUMINUM (LB)	3.8
WEIGHT FERROUS (LB)	5.6
60 HZ DRY FLASHOVER (KV)	286
60 HZ DRY WITHSTAND (KV)	278
60 HZ WET FLASHOVER (KV)	233
60 HZ WET WITHSTAND (KV)	227
IMPULSE CRITICAL POSITIVE (KV)	517
IMPULSE WITHSTAND POSITIVE (KV)	491
IMPULSE CRITICAL NEGATIVE (KV)	578
IMPULSE WITHSTAND NEGATIVE (KV)	567
MAX RIV @ 1000 KHZ (MICROV)	10
RIV TEST VOLTAGE (KV)	35

FIG #4  
TWO PDI-25

NOTE: Because Ohio Brass has a policy of continuous product improvement, we reserve the right to change design and specifications without notice.



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