

# 300 SERIES UNIFORM STRENGTH SWITCH & BUS INSULATORS

## A30 STRENGTH CLASS

### USE:

300 Series Uniform Strength Switch and Bus Insulators are available for outdoor and non UV exposed (enclosed) applications. 300 Series insulators are available for 5 kV through 46 kV voltage classes and are suitable for temperature applications from -50°C to 155°C. 300 Series insulators are used primarily as bus supports in switchgear applications, dry type transformers and other custom applications.

### CONSTRUCTION:

300 Series Uniform Strength Switch and Bus Insulators are precision engineered to ANSI C29.1-1988 specifications using state of the art Finite Element Analysis (FEA) software.

300 Series insulators are of cast epoxy construction with metallic mounting inserts integrally cast into the unit. Through use of an integrally cast insert, the need for metallic end caps fixed with adhesives is eliminated. Adhesives tend to deteriorate over time causing future partial discharge concerns. This problem is most often associated with porcelain insulator designs. 300 Series insulators' conical design provides mechanical loading characteristics superior to most polymer insulator designs in the market today. Mounting configurations are NEMA standard and may comprise of up to 100 different variations. The deep shed design offers generous creep distances. The epoxy material is lightweight compared to porcelain, and is self extinguishing when exposed to continuous arcing or constant heating. Units at 95 kV BIL or greater, with more than two mounting inserts per end, are tied internally to prevent floating of inserts not used.



## ELECTRICAL/MECHANICAL DATA

Identification No.	Dimensions		Strength Class (NEMA)	Creep Distance (in)	Electrical Ratings, kV			Mechanical Ratings		
	Dia. (in)	Height (in)			Highest System Voltage (kV)	Impulse Voltage (kV)	60 HZ Withstand 1 min (kV)	Cantilever (lbs)	Tension (lbs)	Compression (lbs)
03-001	5.00	4.50	A30	7.75	8.3	75	26	4500	5000	60000
03-002		6.00		11.25	15.0	95	36	3500		
03-003		7.50		14.75	20.0	110	50	2800		
03-004		8.75		17.75	25.0	125	60	2400		
03-005		10.50		21.75	38.0	150	80	2000		
03-006		11.00		22.25	38.0	150	80	1900		
03-007		12.75		27.00	38.0	170	80	1700		
03-008		14.00		29.00	48.3	200	100	1500		

Uniform Strength Switch & Bus Insulators are tested in accordance with ANSI C29.1-1988. Mechanical ratings, based on static loading applied in a practically stepless variation, are provided for design purposes and are considered safe for all insert configurations.

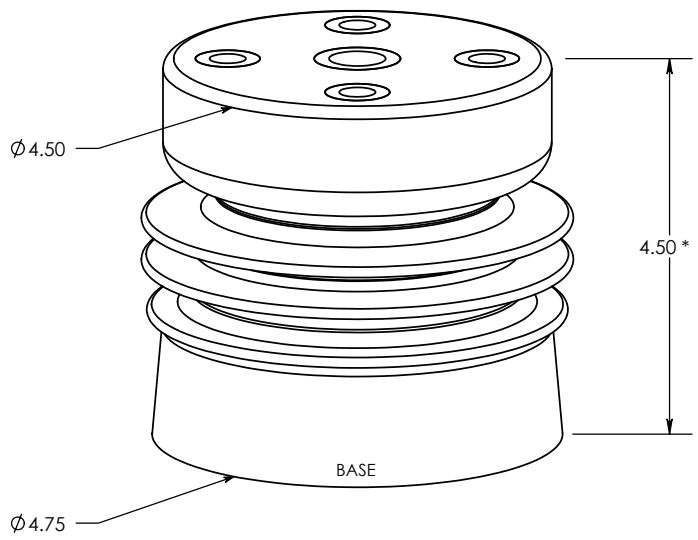
Actual values attainable will vary with each application and type of loading condition.

Impulse wave 1.2 x 50 µS.  
Frequency 60 Hz.

8 7 6 5 4 3 2 1

REV. 1  
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CAD FILE: 300 SERIES  
 DWG. NO. 03-001-000

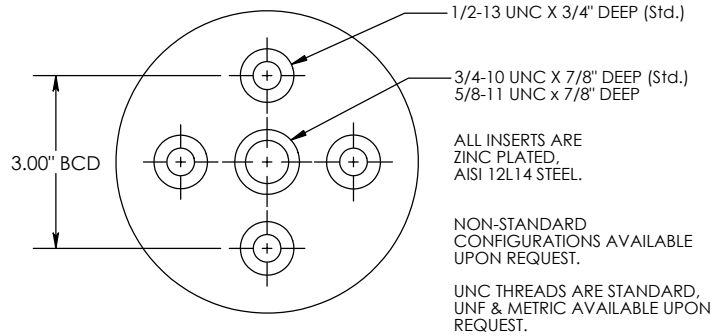


IDENTIFICATION NO. : 03-001

INSULATOR SHOWN WITH 5 INSERTS EACH END: PART NUMBER 03-001-028  
 MATERIAL: E01 - BISPENOL-A (GREY)  
 E07 - CYCLOALIPHATIC  
 FOR CUSTOM INSERT CONFIGURATIONS PLEASE CONTACT OUR SALES DEPT.

TOP							
BOTTOM							
	000	001	SEE 001	002	SEE 002	003	004
	005	006	007	008	009	010	011
	012	013	014	015	016	017	018
	019	020	SEE 020	021	SEE 021	022	023
	024	025	SEE 025	026	SEE 026	027	028

MOUNTING INSERT CONFIGURATIONS ( NEMA STANDARD)  
 TOP OR BOTTOM



FOR B.I.L. RATINGS 95KV AND HIGHER, ALL INSERT CONFIGURATIONS WITH 3 OR MORE INSERTS EITHER END, WILL BE INTERNALLY CONNECTED (COMMON), ALLOWING FOR SELECTIVE APPLICATIONS.

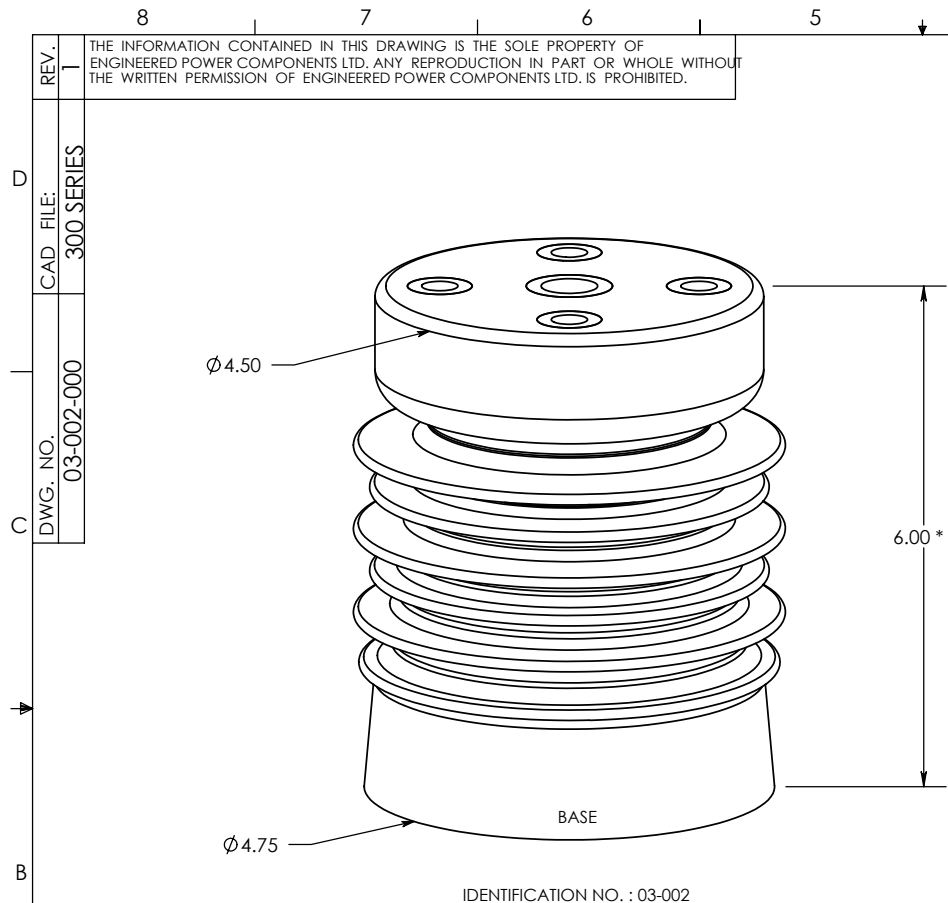
REVISIONS	0	1
		ADDED E07 EPOXY RM 22/08/2002 DB 22/08/2002
REF.		

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ARE:  
 ONE PLACE MM ±0.50  
 TWO PLACE MM ±0.25  
 TWO PLACE DEC. ±0.020  
 THREE PLACE DEC. ±0.010  
 ANGLES 1°  
 TEMPERATURE ±5°C  
 VOLTAGE ±5%  
 AMPERAGE ±5%  
 RESISTANCE ±5%

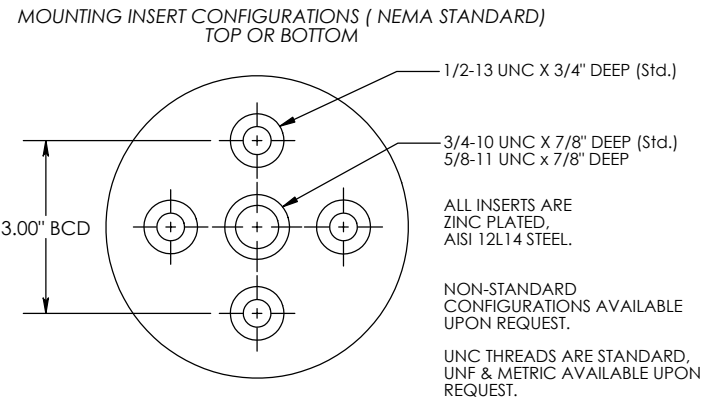
CAD GENERATED DRAWING, DO NOT MANUALLY UPDATE.  
 APPROVALS: DB 02/06/1999  
 DRAWN BY: DB 02/06/1999  
 CHECKED BY: RM 05/06/1999  
 ENGINEERING: DB 05/06/1999  
 TOOLING REF. T03-001  
 PRODUCT GROUP 300 SERIES

8kV INDOOR/OUTDOOR INSULATOR  
 A30 UNIFORM STRENGTH CLASS  
 75kV BIL  
 SIZE A DWG. NO. 03-001-000  
 SCALE: 2 CAD FILE: 300 SERIES SHEET 1 OF 1

8 7 6 5 4 3 2 1



	8	7	6	5	4	3	2	1
REV.	1							
CAD FILE:	300 SERIES							
DWG. NO.	03-002-000							
TOP								
BOTTOM								
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	005	006	007	008	009	010	011	
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	024	025	SEE 025	026	SEE 026	027	028	



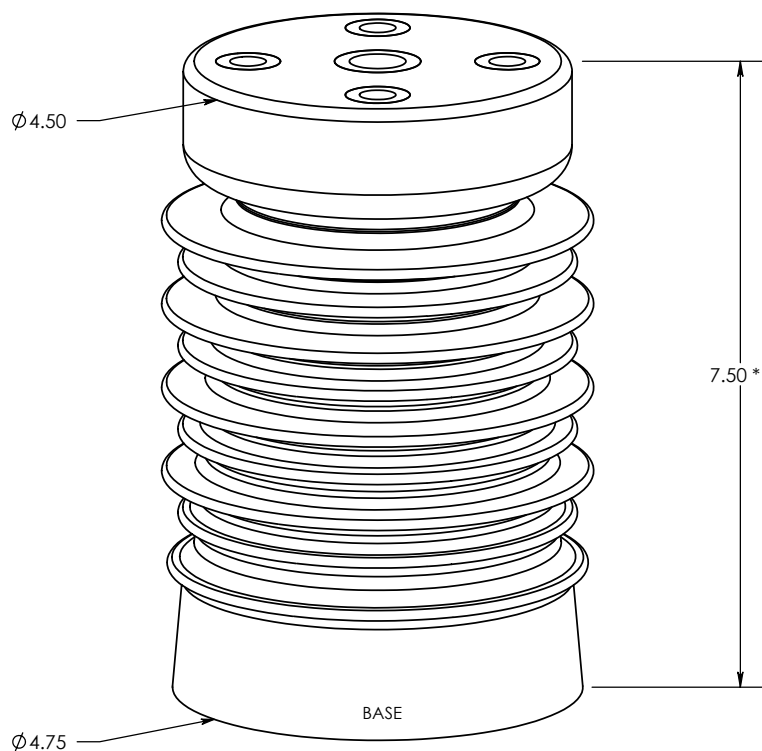
FOR B.I.L. RATINGS 95KV AND HIGHER, ALL INSERT CONFIGURATIONS WITH 3 OR MORE INSERTS EITHER END, WILL BE INTERNALLY CONNECTED (COMMON), ALLOWING FOR SELECTIVE APPLICATIONS.

A	0	1	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ARE: ONE PLACE MM ±0.50 TWO PLACE MM ±0.25 TWO PLACE DEC. ±0.020 THREE PLACE DEC. ±0.010 ANGLES 1° TEMPERATURE ±5°C VOLTAGE ±5% AMPERAGE ±5% RESISTANCE ±5%	CAD GENERATED DRAWING, DO NOT MANUALLY UPDATE. APPROVALS _____ DATE _____ DRAWN BY: DB 02/06/1999 CHECKED BY: RM 05/06/1999 ENGINEERING DB 05/06/1999		15KV INDOOR/OUTDOOR INSULATOR A30 UNIFORM STRENGTH CLASS 95KV BIL
	REVISIONS	ADDED E07 EPOXY RM 22/08/2002 DB 22/08/2002				
REF.	* STATISTICAL DIMENSION NO. OF SAMPLES [ 1 ]			TOOLING REF. T03-002 PRODUCT GROUP 300 SERIES	SIZE A DWG. NO. 03-002-000 SCALE: 2 CAD FILE: 300 SERIES SHEET 1 OF 1	

8 7 6 5 4 3 2 1

REV. 1  
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DWG. NO. 03-003-000  
 CAD FILE: 300 SERIES

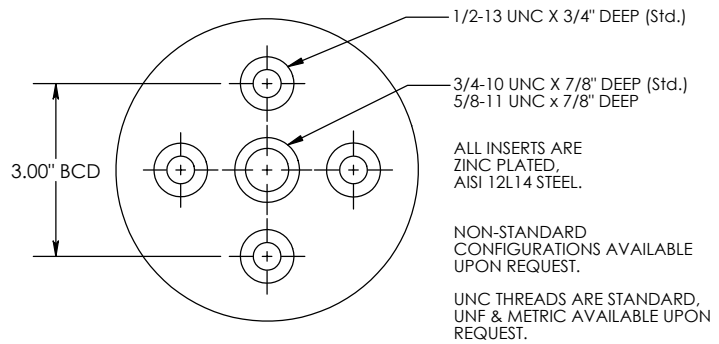


IDENTIFICATION NO. : 03-003

INSULATOR SHOWN WITH 5 INSERTS EACH END: PART NUMBER 03-003-028  
 MATERIAL: E01 - BISPENOL-A (GREY)  
 E07 - CYCLOALIPHATIC (GREY)  
 FOR CUSTOM INSERT CONFIGURATIONS PLEASE CONTACT OUR SALES DEPT.

TOP							
BOTTOM							
	000	001	SEE 001	002	SEE 002	003	004
	005	006	007	008	009	010	011
	012	013	014	015	016	017	018
	019	020	SEE 020	021	SEE 021	022	023
	024	025	SEE 025	026	SEE 026	027	028

MOUNTING INSERT CONFIGURATIONS ( NEMA STANDARD)  
 TOP OR BOTTOM



FOR B.I.L. RATINGS 95KV AND HIGHER, ALL INSERT CONFIGURATIONS WITH 3 OR MORE INSERTS EITHER END, WILL BE INTERNALLY CONNECTED (COMMON), ALLOWING FOR SELECTIVE APPLICATIONS.

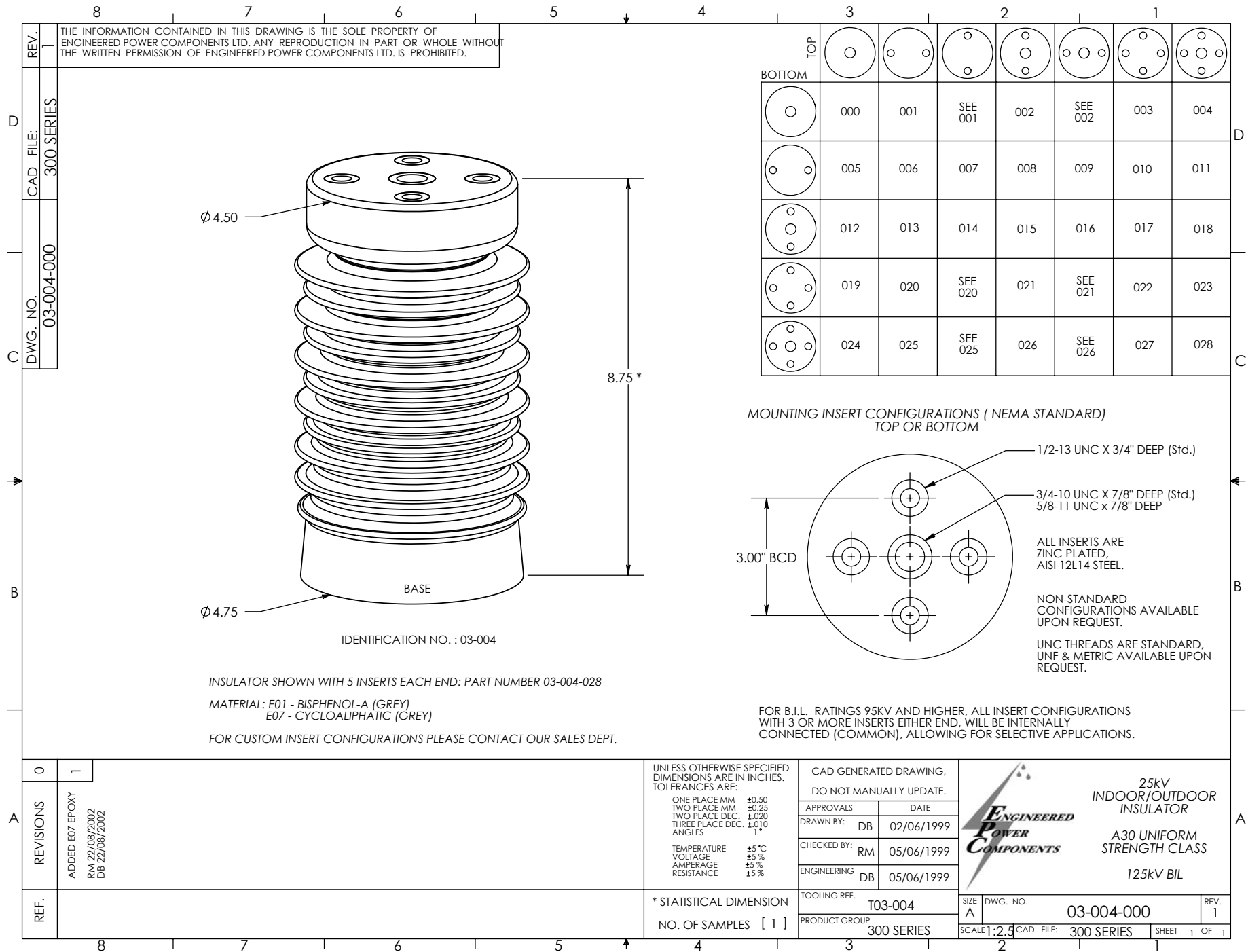
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REVISIONS	ADDED E07 EPOXY RM 22/08/2002 DB 22/08/2002
REF.	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ARE:  
 ONE PLACE MM ±0.50  
 TWO PLACE MM ±0.25  
 TWO PLACE DEC. ±0.020  
 THREE PLACE DEC. ±0.010  
 ANGLES 1°  
 TEMPERATURE ±5 °C  
 VOLTAGE ±5 %  
 AMPERAGE ±5 %  
 RESISTANCE ±5 %

CAD GENERATED DRAWING, DO NOT MANUALLY UPDATE.	
APPROVALS	DATE
DRAWN BY: DB	02/06/1999
CHECKED BY: RM	05/06/1999
ENGINEERING DB	05/06/1999
TOOLING REF.	T03-003
PRODUCT GROUP	300 SERIES

20kV  
 INDOOR/OUTDOOR  
 INSULATOR  
 A30 UNIFORM  
 STRENGTH CLASS  
 110kV BIL

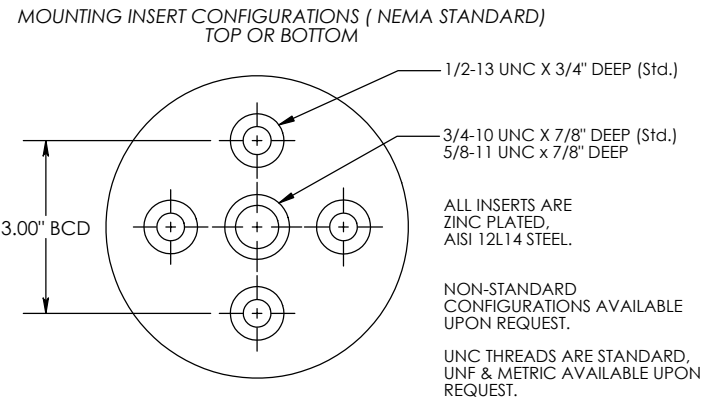
SIZE A DWG. NO. 03-003-000  
 SCALE: 2 CAD FILE: 300 SERIES SHEET 1 OF 1



REV. 1  
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CAD FILE: 300 SERIES  
 DWG. NO. 03-004-000

TOP							
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012	013	014	015	016	017	018	
019	020	SEE 020	021	SEE 021	022	023	
024	025	SEE 025	026	SEE 026	027	028	



INSULATOR SHOWN WITH 5 INSERTS EACH END: PART NUMBER 03-004-028  
 MATERIAL: E01 - BISPENOL-A (GREY)  
 E07 - CYCLOALIPHATIC (GREY)  
 FOR CUSTOM INSERT CONFIGURATIONS PLEASE CONTACT OUR SALES DEPT.

FOR B.I.L. RATINGS 95KV AND HIGHER, ALL INSERT CONFIGURATIONS WITH 3 OR MORE INSERTS EITHER END, WILL BE INTERNALLY CONNECTED (COMMON), ALLOWING FOR SELECTIVE APPLICATIONS.

REVISIONS	0	1
ADDED E07 EPOXY RM 22/08/2002 DB 22/08/2002		
REF.		

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ARE:  
 ONE PLACE MM ±0.50  
 TWO PLACE MM ±0.25  
 TWO PLACE DEC. ±0.20  
 THREE PLACE DEC. ±0.10  
 ANGLES 1°  
 TEMPERATURE ±5 °C  
 VOLTAGE ±5 %  
 AMPERAGE ±5 %  
 RESISTANCE ±5 %

\* STATISTICAL DIMENSION  
 NO. OF SAMPLES [ 1 ]

CAD GENERATED DRAWING, DO NOT MANUALLY UPDATE.  
 APPROVALS: [ ] DATE: [ ]  
 DRAWN BY: DB 02/06/1999  
 CHECKED BY: RM 05/06/1999  
 ENGINEERING: DB 05/06/1999

TOOLING REF. T03-004  
 PRODUCT GROUP 300 SERIES

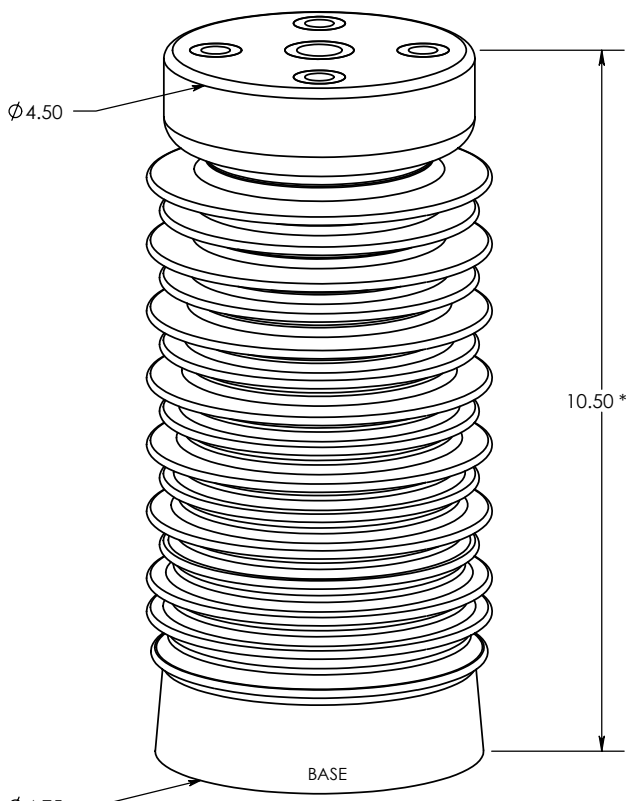
25kV  
 INDOOR/OUTDOOR  
 INSULATOR  
 A30 UNIFORM  
 STRENGTH CLASS  
 125kV BIL

SIZE A DWG. NO. 03-004-000  
 SCALE: 1:2.5 CAD FILE: 300 SERIES SHEET 1 OF 1

8 7 6 5 4 3 2 1

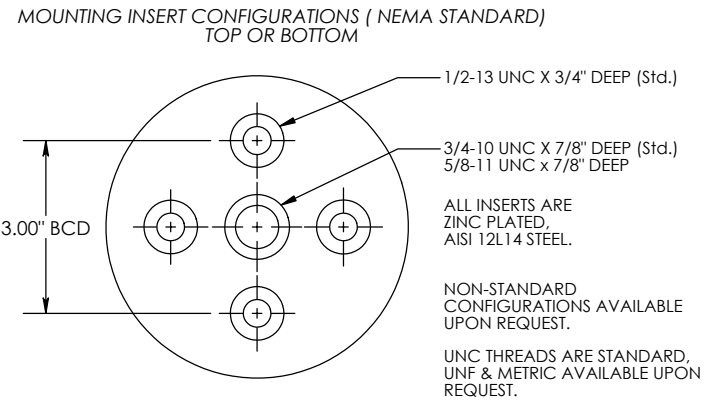
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DWG. NO. 03-005-000  
 CAD FILE: 300 SERIES



IDENTIFICATION NO. : 03-005  
 INSULATOR SHOWN WITH 5 INSERTS EACH END: PART NUMBER 03-005-028  
 MATERIAL: E01 - BISPHENOL-A (GREY)  
 E07 - CYCLOALIPHATIC (GREY)  
 FOR CUSTOM INSERT CONFIGURATIONS PLEASE CONTACT OUR SALES DEPT.

TOP							
BOTTOM							
	000	001	SEE 001	002	SEE 002	003	004
	005	006	007	008	009	010	011
	012	013	014	015	016	017	018
	019	020	SEE 020	021	SEE 021	022	023
	024	025	SEE 025	026	SEE 026	027	028



FOR B.I.L. RATINGS 95KV AND HIGHER, ALL INSERT CONFIGURATIONS WITH 3 OR MORE INSERTS EITHER END, WILL BE INTERNALLY CONNECTED (COMMON), ALLOWING FOR SELECTIVE APPLICATIONS.

0	1
REVISIONS	ADDED E07 EPOXY RM 22/08/2002 DB 22/08/2002
REF.	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ARE:  
 ONE PLACE MM ±0.50  
 TWO PLACE MM ±0.25  
 TWO PLACE DEC. ±0.020  
 THREE PLACE DEC. ±0.010  
 ANGLES 1°

TEMPERATURE ±5 °C  
 VOLTAGE ±5 %  
 AMPERAGE ±5 %  
 RESISTANCE ±5 %

\* STATISTICAL DIMENSION  
 NO. OF SAMPLES [ 1 ]

CAD GENERATED DRAWING, DO NOT MANUALLY UPDATE.

APPROVALS	DATE
DRAWN BY: DB	02/06/1999
CHECKED BY: RM	05/06/1999
ENGINEERING DB	05/06/1999

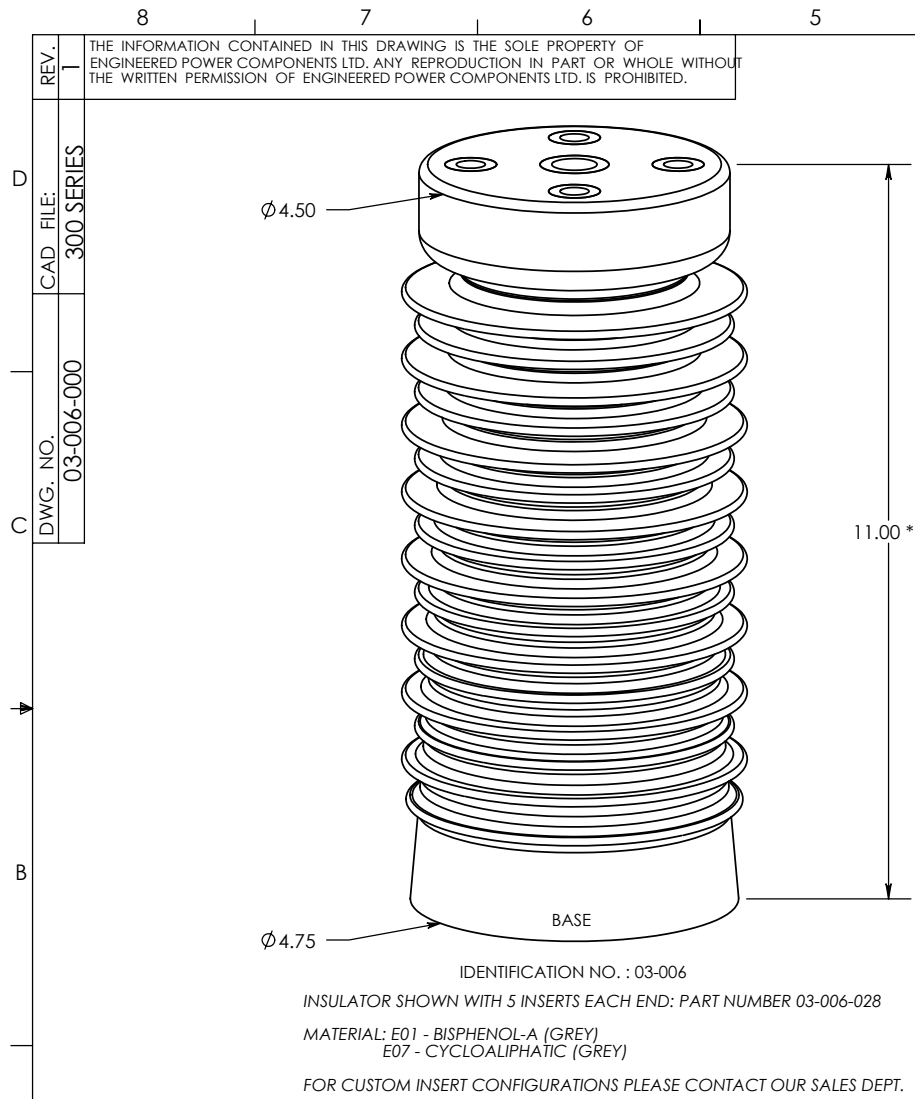
TOOLING REF. T03-005  
 PRODUCT GROUP 300 SERIES

38kV  
 INDOOR/OUTDOOR  
 INSULATOR

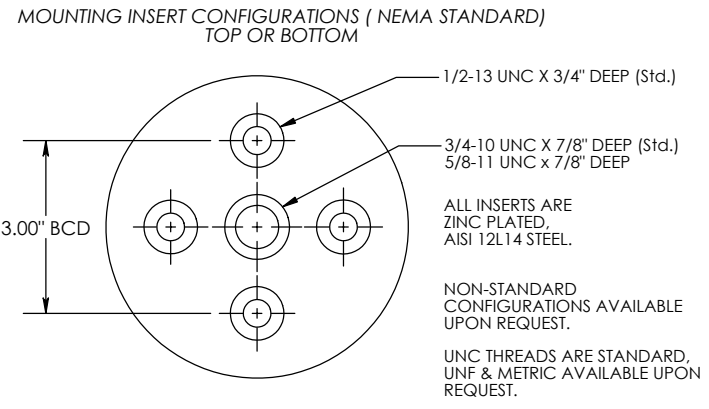
A30 UNIFORM  
 STRENGTH CLASS

150KV BIL

SIZE A	DWG. NO. 03-005-000	REV. 1
SCALE: 1:2.5	CAD FILE: 300 SERIES	SHEET 1 OF 1

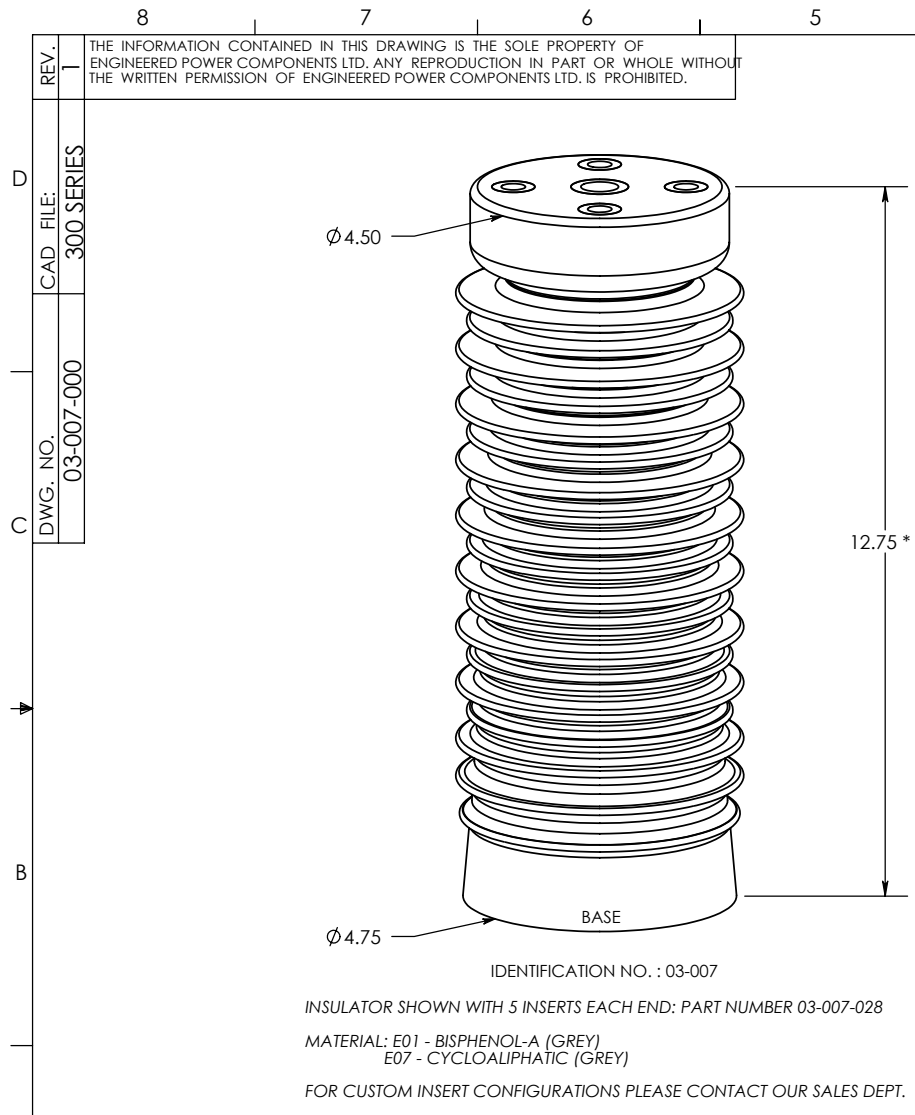


	8	7	6	5	4	3	2	1
TOP								
BOTTOM								
	000	001	SEE 001	002	SEE 002	003	004	
	005	006	007	008	009	010	011	
	012	013	014	015	016	017	018	
	019	020	SEE 020	021	SEE 021	022	023	
	024	025	SEE 025	026	SEE 026	027	028	

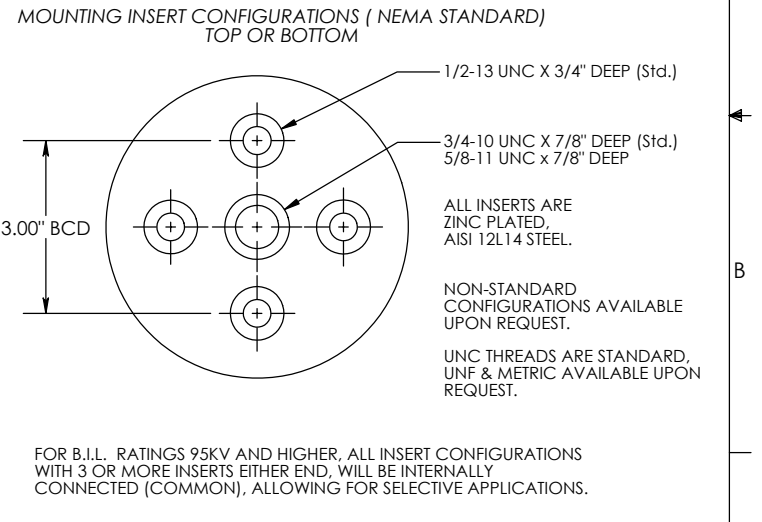


FOR B.I.L. RATINGS 95KV AND HIGHER, ALL INSERT CONFIGURATIONS WITH 3 OR MORE INSERTS EITHER END, WILL BE INTERNALLY CONNECTED (COMMON), ALLOWING FOR SELECTIVE APPLICATIONS.

A	REVISIONS	0	1	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ARE: ONE PLACE MM ±0.50 TWO PLACE MM ±0.25 TWO PLACE DEC. ±0.020 THREE PLACE DEC. ±0.010 ANGLES 1° TEMPERATURE ±5 °C VOLTAGE ±5 % AMPERAGE ±5 % RESISTANCE ±5 %	CAD GENERATED DRAWING, DO NOT MANUALLY UPDATE. APPROVALS DATE DRAWN BY: DB 02/06/1999 CHECKED BY: RM 05/06/1999 ENGINEERING DB 05/06/1999		38kV INDOOR/OUTDOOR INSULATOR A30 UNIFORM STRENGTH CLASS 150kV BIL
	ADDED E07 EPOXY RM 22/08/2002 DB 22/08/2002						
	REF.			* STATISTICAL DIMENSION NO. OF SAMPLES [ 1 ]			SHEET 1 OF 1



	8	7	6	5	4	3	2	1
TOP								
BOTTOM								
	000	001	SEE 001	002	SEE 002	003	004	
	005	006	007	008	009	010	011	
	012	013	014	015	016	017	018	
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	024	025	SEE 025	026	SEE 026	027	028	

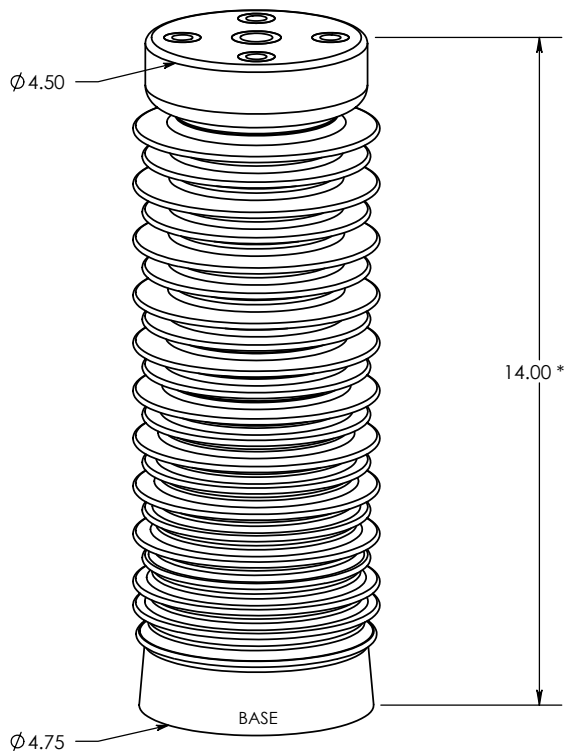


A	0	1	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ARE: ONE PLACE MM ±0.50 TWO PLACE MM ±0.25 TWO PLACE DEC. ±0.020 THREE PLACE DEC. ±0.010 ANGLES 1° TEMPERATURE ±5°C VOLTAGE ±5% AMPERAGE ±5% RESISTANCE ±5%	CAD GENERATED DRAWING, DO NOT MANUALLY UPDATE. APPROVALS DATE DRAWN BY: DB 02/06/1999 CHECKED BY: RM 05/06/1999 ENGINEERING DB 05/06/1999	<p>38kV INDOOR/OUTDOOR INSULATOR</p> <p>A30 UNIFORM STRENGTH CLASS</p> <p>170kV BIL</p>
	REVISIONS	ADDED E07 EPOXY RM 22/08/2002 DB 22/08/2002			
	REF.		* STATISTICAL DIMENSION NO. OF SAMPLES [ 1 ]		REV. 1

8 7 6 5 4 3 2 1

REV. 1  
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CAD FILE: 300 SERIES  
 DWG. NO. 03-008-000

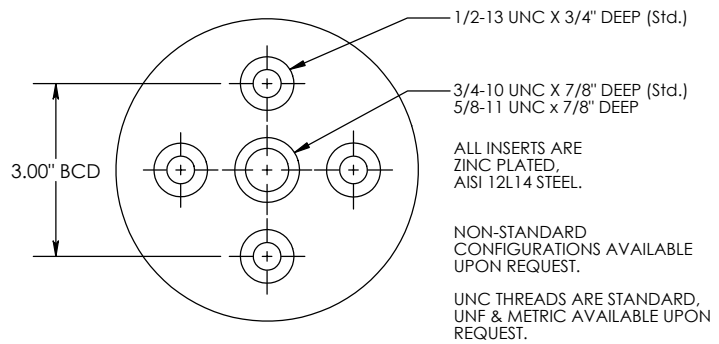


IDENTIFICATION NO. : 03-008

INSULATOR SHOWN WITH 5 INSERTS EACH END: PART NUMBER 03-008-028  
 MATERIAL: E01 - BISPHENOL-A (GREY)  
 E07 - CYCLOALIPHATIC (GREY)  
 FOR CUSTOM INSERT CONFIGURATIONS PLEASE CONTACT OUR SALES DEPT.

TOP						
BOTTOM						
	000	001	SEE 001	002	SEE 002	003
	005	006	007	008	009	010
	012	013	014	015	016	017
	019	020	SEE 020	021	SEE 021	022
	024	025	SEE 025	026	SEE 026	027
						028

MOUNTING INSERT CONFIGURATIONS ( NEMA STANDARD)  
 TOP OR BOTTOM



FOR B.I.L. RATINGS 95KV AND HIGHER, ALL INSERT CONFIGURATIONS WITH 3 OR MORE INSERTS EITHER END, WILL BE INTERNALLY CONNECTED (COMMON), ALLOWING FOR SELECTIVE APPLICATIONS.

0	1
REVISIONS	ADDED E07 EPOXY RM 22/08/2002 DB 22/08/2002
REF.	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ARE: ONE PLACE MM ±0.50 TWO PLACE MM ±0.25 TWO PLACE DEC. ±0.020 THREE PLACE DEC. ±0.010 ANGLES 1° TEMPERATURE ±5 °C VOLTAGE ±5 % AMPERAGE ±5 % RESISTANCE ±5 %	CAD GENERATED DRAWING, DO NOT MANUALLY UPDATE. APPROVALS: DB 02/06/1999 DRAWN BY: DB 02/06/1999 CHECKED BY: RM 05/06/1999 ENGINEERING: DB 05/06/1999 TOOLING REF. T03-008 PRODUCT GROUP 300 SERIES
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48kV INDOOR/OUTDOOR INSULATOR  
**ENGINEERED POWER COMPONENTS**  
 A30 UNIFORM STRENGTH CLASS  
 200kV BIL

SIZE A DWG. NO. 03-008-000  
 SCALE: 3.9 CAD FILE: 300 SERIES SHEET 1 OF 1

8 7 6 5 4 3 2 1