

January 25, 2011

1

SUBJECT 497E

OUTLINE OF INVESTIGATION

FOR

PROTECTORS FOR ANTENNA LEAD-IN CONDUCTORS

Issue No. 4

January 25, 2011

Summary of Topics

This is the Fourth issue of the Outline of Investigation for Protectors for Antenna Lead-In Conductors, Subject 497E, which covers devices that are used to limit surges on the cable that connects the antenna to the receiver/transmitter electronics and are connected between the conductors and the grounded shield or other ground connection.

COPYRIGHT © 2011 UNDERWRITERS LABORATORIES INC.

No Text on This Page

CONTENTS

INTRODUCTION

1 Scope	5
2 Components	6
3 Units of Measurement	6
4 Undated References	7
5 Glossary	7

CONSTRUCTION

6 General	8
7 Enclosures	8
7.1 General	8
7.2 Sheet metal	9
7.3 Nonmetallic	9
8 Protection Against Corrosion	9
9 Wiring Connections	9
9.1 Coaxial connections	9
9.2 Grounding	9
10 Components	10
10.1 General	10
10.2 Arrester assemblies	11
10.3 Electrical insulation material	11
10.4 Polymeric materials	11

PERFORMANCE

11 General	11
12 Performance Verification Tests	14
12.1 General	14
12.2 Impulse sparkover voltage measurement test (not applicable to dc shorting type protectors)	15
12.3 Insulation resistance test (not applicable to dc shorting type protectors)	16
12.4 Breakdown voltage measurement test (not applicable to dc shorting type protectors)	16
12.5 Residual voltage measurement test (dc shorting type protectors)	17
12.6 Combination devices	18
13 Maximum Discharge Current ($I_{\max}$) Test	18
14 Nominal Discharge Current (I_n) Test (Optional)	19
15 Discharge Test	20
16 Conditioning Tests	22
16.1 Impulse endurance conditioning test	22
16.2 Drop test	22
16.3 Thermal cycling test	22
16.4 Humidity conditioning test	23
16.5 Indoor corrosion tests	23
16.6 Outdoor corrosion tests	23
17 Capacitor Thermal Aging Test	24
18 Component Temperature Test	25
19 Dielectric Voltage-Withstand Test	26
20 Distortion Test	26