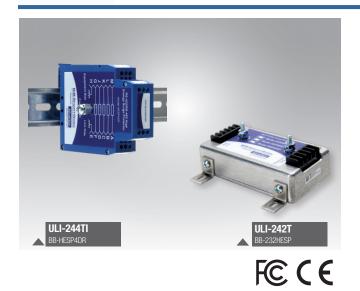
#### ULI-242T ULI-244TI ULI-244TI ULI-244T ULI-246T BB-485HESP

## **3-Stage RS-232/422/485** Serial Surge Suppressors



## **Features**

- Three stages of protection on every data line: 1) Gas discharge tube 2) Series resistor
- 3) Transient voltage suppressor
- Protected signal ground connection
- Rugged terminal block connections
- Dedicated chassis ground lugs

## Introduction

These three-stage surge suppressors protect against lightning strikes and other voltage disturbances with three stages of protection for each line: a gas discharge tube followed by a series resistor and finally a Transient Voltage Suppresser (TVS). The devices are housed in rugged cases with a protected signal ground connection and dedicated chassis ground lugs. In order to work properly, it is important to have a good connection between the #10 screws and a solid earth ground.

# **Specifications**

#### Serial Interface

Model:	Line Connectors:	Equipment Connectors:	Interfaces:	
ULI-242T			RS-232	
ULI-244TI	Terminal blocks	Terminal blocks	RS-422, RS-485	
ULI-244T	Terminal Diocks	TEITIIIIdi DIUCKS		
ULI-246T			RS-485	

#### **Isolation & Surge Suppression**

	Clamping Voltage	Series Resistance	Clamping Voltage	Clamping	Lines
Model:	- Stage 1:	- Stage 2:	- Stage 3:	Time:	Protected:
ULI-242T*		2.7 Ohms	14.3 Vdc, min.	< 5 x10 <sup>9</sup> seconds	5
			15.8 Vdc, max.		
ULI-244TI#	72 Vdc, min.				
ULI-244T*	108 Vdc, max.		6.45 Vdc, min. 7.14 Vdc, max.		
ULI-246T*	7		7.14 VUC, IIIAX.		3

\*2 terminal posts and 2 metal mounting brackets provide a good ground connection. #1 terminal post provides a good ground connection.

#### Mechanical

Model:	Enclosure:	Dimensions, mm:	Mounting:	Weight, gm
ULI-242T	Metal	114 x 84 x 46	Panel	190
ULI-244TI	Plastic	35.5 x 78.8 x 105.3	DIN rail	114
ULI-244T	Matal	114 × 04 × 46	Danal	100
ULI-246T	Metal	114 x 84 x 46	Panel	190

#### **Environmental**

Model:	Operating Temperature:	Storage Temperature:	Operating Humidity:	
ULI-242T	0 to +70 °C			
ULI-244TI	-40 to +80 °C	40 to . 05 00		
ULI-244T	0 45 . 70 00	-40 to +85 °C	0 to 95%, non-condensing	
ULI-246T	0 to +70 °C			

#### **Meantime Between Failures (MTBF)**

Calculation Method MIL217F Parts Count Reliability Prediction

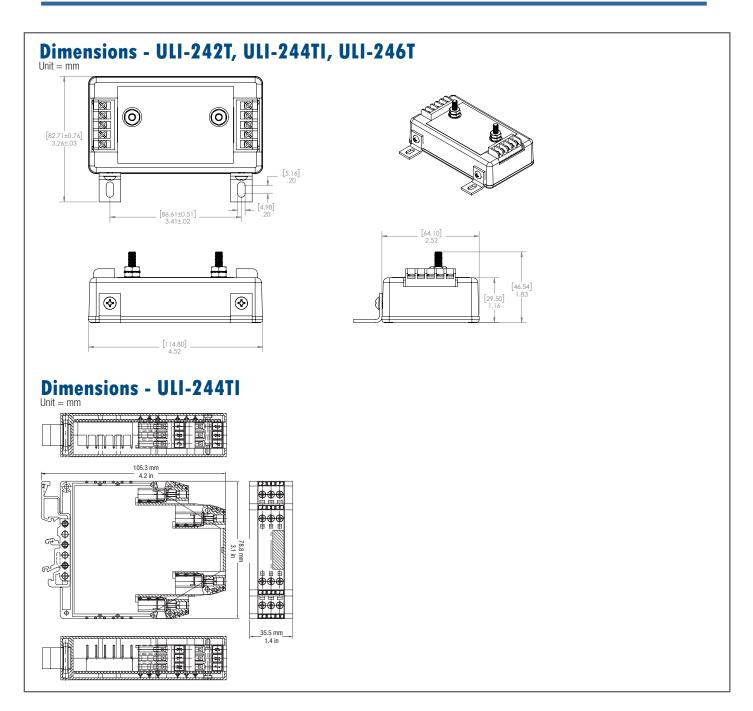
Model:	Hours:
ULI-242T	7522077
ULI-244TI	862813
ULI-244T	6976322
ULI-246T	4664831

#### **Regulatory / Approvals / Certifications**

#### FCC, CE (all models)

100, OL	(all models)		
Model:	CE Standards	CE Directives	
ULI-242T	2014/30/EU – Electromagnetic	EMC:	
ULI-244TI	Compatibility Directive	EN 55032 Class B – Electromagnetic Compatibility of	
UI I-244T	2011/65/EU - amended by (EU)	Multimedia Equipment – Emission Requirements	
	2015/863 Reduction of Hazardous		
	Substance Directive (RoHS)	EN 55024 – Information Technology Equipment –	
ULI-246T	2012/19/EUWaste Electrical and	Immunity Characteristics – Limits and Methods of	
	Electronic Equipment (WEEE)	Measurement	

ULI-242T	BB-232HESP
ULI-244TI	<b>BB-HESP4DR</b>
ULI-244T	BB-422HESP
ULI-246T	BB-485HESP



# **Ordering Information**

Model	Part Number to Order	Description
ULI-242T	BB-232HESP	3-stage RS-232 Surge Suppressor, 5 Protected Lines, Panel Mount.
ULI-244TI	BB-HESP4DR	3-stage RS-422/485 Surge Suppressor, 5 Protected Lines, Wide Temperature, DIN Rail Mount.
ULI-244T	BB-422HESP	3-stage RS-422/485 Surge Suppressor, 5 Protected Lines, Panel Mount.
ULI-246T	BB-485HESP	3-stage RS-485 Surge Suppressor, 3 Protected Lines, Panel Mount.

# **ULI-240 Series Selection Guide**

**3-Stage RS-232/422/485** Serial Surge Suppressors



## **Common Features**

- Three stages of protection on every data line:
  1) Gas discharge tube
  2) Series resistor
  - 3) Transient voltage suppressor
- Protected signal ground connection
- Rugged terminal block connections
- Dedicated chassis ground lugs

# Surge Suppressor Comparison Table

Model Number	ULI-242T	ULI-244T	ULI-244TI	ULI-246T	
Part Number to Order	BB-232HESP	BB-422HESP	BB-HESP4DR	BB-485HESP	
Description	3-Stage Surge Suppressors				
Key Features	Rugged Metal Case, Panel Mount DIN Rail Mount, Plastic Case, Rugged Metal Case, Wide Operating Temperature Panel Mount			Rugged Metal Case, Panel Mount	
Serial Protocol	RS-232	RS-4	422/485	RS-485	
Serial Line Connectors		Termin	al blocks		
Equipment Line Connectors		Termin	al blocks		
Stage 1: Clamping Voltage	72 to 108 Vdc (min./max.)				
Stage 2: Series Resistance	2.7 Ohms				
Stage 3: Clamping Voltage	14.3 - 15.8 Vdc (min./max.) 6.45 - 7.14 Vdc (min./max.)				
Clamping Time	Less than 5 x10 <sup>9</sup> seconds				
Lines Protected	5 3			3	
Enclosure	Me	tal	Plastic	Metal	
Dimensions, mm	114 x 8	4 x 46	35.5 x 78.8 x 105.3	114 x 84 x 46	
Mounting Installation	Par	iel	DIN rail	Panel	
Operating Temperature	0 to +	70 °C	-40 to +80 °C	0 to +70 °C	
MTBF (MIL217F), hours	7522077	6976322	862813	4664831	
	FCC, CE, ECD, RoHS, WEEE 2014/30/EU – Electromagnetic Compatibility Directive				
Regulatory/Approvals/	2011/65/EU – amended by (EU) 2015/863 Reduction of Hazardous Substance Directive (RoHS)				
Certifications	2012/19/EUWaste Electrical and Electronic Equipment (WEEE)				
	EN 55032 Class B - Electromagnetic Compatibility of Multimedia Equipment - Emission Requirements				
	EN 55024 - Information Technology Equipment - Immunity Characteristics - Limits and Methods of Measurement				