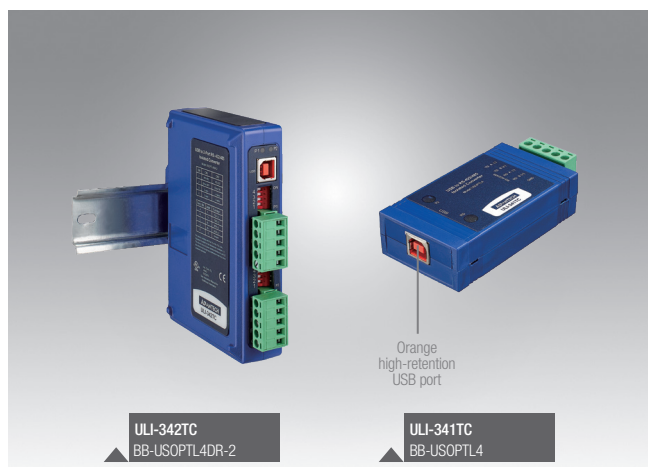


BB-USOPTL4  
BB-USOPTL4-LS  
BB-USO9ML4  
BB-USOPTL4DR-2  
BB-USOPTL4-4P

## High Retention USB to RS-422/485 Converters



### Features

- Converts USB to RS-422/485 adding 1 or 4 ports to PCs
- Optical isolation protection from voltage spikes and ground loops
- High retention USB ports hold connections securely (by model)
- USB 2.0 (backward compatible)
- Up to 921.6 kbps serial data rate (by model)
- Up to 12 Mbps USB data rate (by model)
- Inline, panel and DIN rail mount options
- USB port or external powering options
- USB cable included with all models

## Introduction

Advantech industrial features and specifications support USB convenience on the factory floor: "High-Retention USB Ports" are 50% stronger than regular USB ports to securely grip standard USB cables in demanding applications. "Port-to-Port isolation" protects the upstream device from downstream devices and downstream devices from each other ensuring ground loops or surges cannot be transferred through Port 1 to a device connected to Port 2. "Locked Serial Number" uses the same serial number associated with the converter model so, if the converter is shared by field service laptops, a locked serial number lets you plug-and-play without matching.

## Specifications

### Serial & Isolation Technology

- Modes RS-422 4-wire, RS-485 2 & 4-wire

Model #:	Connector:	Data Rate:	Isolation:	Surge Protection:	Industrial Bus:	Locked Serial#:	LEDs:
ULI-341TC	(1) Terminal block	460.8 kbps	2 kV	-	Modbus	-	TD, RD
ULI-341TCK	(1) Terminal block	460.8 kbps	2 kV	-	Modbus	Yes	TD, RD
ULI-341DC	(1) DB9 male	460.8 kbps	2 kV	-	Modbus	-	TD, RD
ULI-342TC	(2) Terminal blocks	921.6 kbps	3 kV	-	-	-	TD, RD
ULI-344TC	(4) Terminal blocks	921.6 kbps	2 kV	-	-	-	TD, RD

### USB Technology

Model #:	USB Port Connector:	Data Rate:	Standard:
ULI-341TC	USB Type B female, high retention - 3.4 lb (15N) pull force	1.5, 12 Mbps	1.1, 2.0
ULI-341TCK		1.5, 12 Mbps	2.0 *
ULI-341DC		1.5, 12 Mbps	1.1, 2.0
ULI-342TC		12 Mbps	1.1, 2.0
ULI-344TC		2.0 *	2.0 *

\* Backward compatible

### Environmental

Model #:	Operating Temperature:	Storage Temperature:	Operating Humidity:
ULI-341TC	0 to +70 °C	-40 to +85 °C	95%, non-condensing
ULI-341TCK			
ULI-341DC			
ULI-342TC			
ULI-344TC			

### Power

Model #:	Source:	Input Voltage:	Consumption:
ULI-341TC	USB port	5 Vdc	<100 mA (low power device)
ULI-341TCK			
ULI-341DC			>500 mA (high power device) 2.5W
ULI-342TC			
ULI-344TC	USB port or external PSU (not included, sold separately)	5 Vdc (USB port) (10-30 Vdc external PSU)	>100 mA (high power device) (5W, PSU)

### Mechanical

Model #:	Enclosure, Mounting:	Dimensions, mm:	USB Cable, included, length:	Weight, gm, w/cable:
ULI-341TC	IP30 plastic, in-line	88.3 x 42.7 x 20.2	0.9 m	90.72
ULI-341TCK	IP30 plastic, in-line	88.3 x 42.7 x 20.2		90.72
ULI-341DC	IP30 plastic, in-line	88.3 x 42.7 x 20.2		90.72
ULI-342TC	Plastic, DIN rail	84.5 x 119.1 x 29.3	1.8 m	181.44
ULI-344TC	IP30 metal, Panel	191 x 71 x 29.3		272.16

### Software

Model #:	Drivers:	Windows O/S:	Linux:
ULI-341TC	FTDI Virtual COM Port (VCP) Driver	Windows 7/8/10/11	Ubuntu 11.10, Kernel version 3.0.0
ULI-341TCK			
ULI-341DC			
ULI-342TC		Windows 8/10	-
ULI-344TC			

### Meantime Between Failures (MTBF)

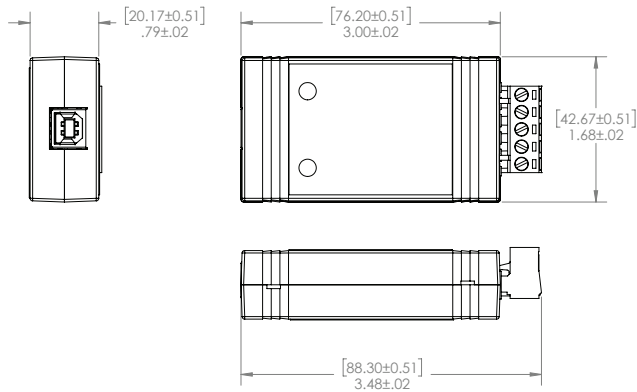
- Calculation Method MIL217F Parts Count Reliability Prediction

Model #:	Hours:
ULI-341TC	1,318,809
ULI-341TCK	1,318,809
ULI-341DC	3,333,587
ULI-342TC	672,351
ULI-344TC	489,211

**ULI-341TC**    **BB-USOPTL4**  
**ULI-341TCK**    **BB-USOPTL4-LS**  
**ULI-341DC**    **BB-USO9ML4**  
**ULI-342TC**    **BB-USOPTL4DR-2**  
**ULI-344TC**    **BB-USOPTL4-4P**

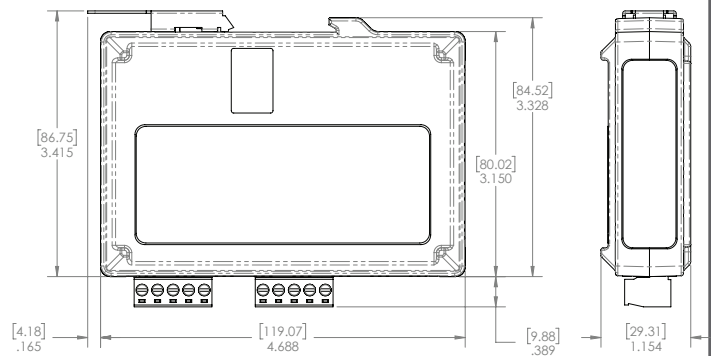
## Dimensions - ULI-341TC, ULI-341-TCK

Unit = mm / in



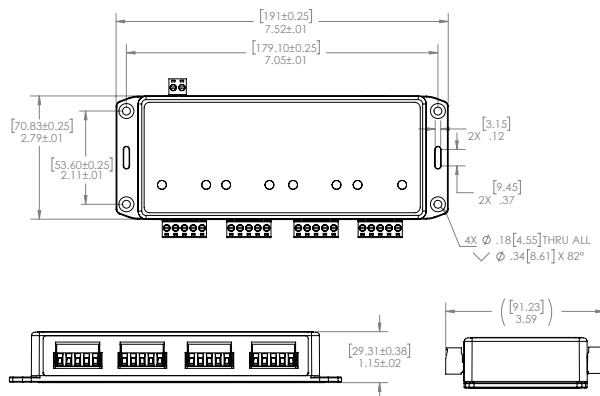
## Dimensions - ULI-342TC

Unit = mm / in



## Dimensions - ULI-344TC

Unit = mm / in

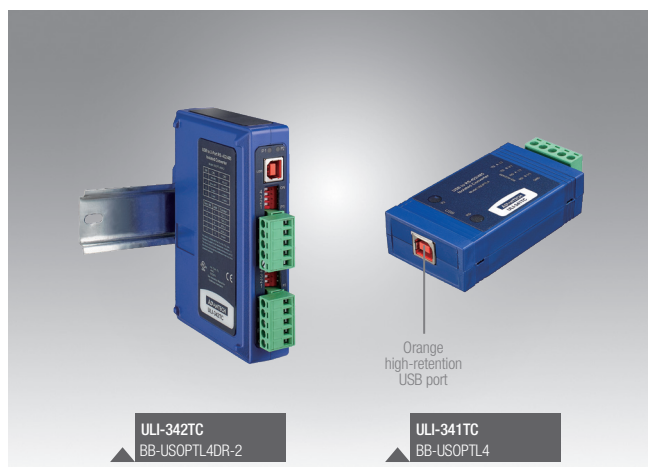


## Ordering Information

Model Number	Part Number to Order	Description
ULI-341TC	BB-USOPTL4	USB to RS-422/485 Converter – 2 kV Isolation, High-retention USB to (1) Serial TB, UL 508
ULI-341TCK	BB-USOPTL4-LS	USB to RS-422/485 Converter – 2 kV Isolation, High-retention USB to (1) Serial TB, Locked Serial# (shared serial# & COM port)
ULI-341DC	BB-USO9ML4	USB to RS-422/485 Converter – 2 kV Isolation, High-retention USB to (1) Serial DB9 male
ULI-342TC	BB-USOPTL4DR-2	USB to RS-422/485 Converter – 3 kV Isolation, High-retention USB to (2) Serial TB
ULI-344TC	BB-USOPTL4-4P	USB to RS-422/485 Converter – 2 kV Isolation, High-retention USB to (4) Serial TB

# ULI-340 Series Selection Guide

## High Retention USB to RS-422/485 Converters



### Common Features

- Converts USB to RS-422/485
- Optical isolation protection
- High retention USB ports hold connections securely
- USB 2.0 (backward compatible)
- Up to 921.6 kbps serial data rate (by model)
- Up to 480 Mbps USB data rate (by model)
- Inline, panel and DIN rail mount options
- USB port or external powering options
- USB cable included with all models

## USB to RS-422/485 Converters Comparison Table

Model Number	ULI-341TC	ULI-341TCK	ULI-341DC	ULI-342TC	ULI-344TC
Part Number to Order	BB-USOPTL4	BB-USOPTL4-LS	BB-USO9ML4	BB-USOPTL4DR-2	BB-USOPTL4-4P
Description	Isolated, High-retention USB to 1 Serial, Inline			Isolated, High-retention USB to 2 Serial, DIN Rail	Isolated, High-retention USB to 4 Serial, Panel
USB Port Count	1			1	1
USB Connector	Type B				
High Retention Connector	✓				
USB Data Rate, max.	1.5, 12 Mbps			12 Mbps	
USB Standard	1.1 and 2.0			2.0	1.1 and 2.0
Serial Port Count	1			2	4
Serial Connector	Terminal block		DB9 male	Terminal blocks	Terminal blocks
Serial Interface	RS-422 4-wire, RS-485 2 & 4-wire				
Serial Data Rate, max.	460.8 kbps			921.6 kbps	
Isolation	2 kV			3 kV	2 kV
Locked Serial Number	-	✓		-	
Operating Temperature	0 to +70 °C				
Power Source	USB port-powered				USB port or external PSU
Power Input	5 Vdc				5 Vdc (USB port) 10-30 Vdc (external PSU)
Enclosure	IP30, plastic			Plastic	Plastic
Mounting Installation	In-line			DIN rail	Panel
Dimensions, mm	88 x 43 x 20			85 x 119 x 29	191 x 71 x 29
MTBF (MIL217F), hours	1318809		3333587	672351	489211
Regulatory / Approvals	FCC, CE, RoHS, WEEE				
	EMC: EN 55011:2016+A2:2021 Class A Group 1 BS EN 55011:2016+A2:2021 Class A Group 1 CISPR 11:2015+AMD1:2016+AMD2:2019 Ed 6.2 Class A Group 1 EN 55032:2015+A1:2020 Class A / BS EN 55032:2015+A1:2020 Class A CISPR 32:2015+AMD1:2019 Class A EN IEC 61000-6-4:2019 / BS EN IEC 61000-6-4:2019 EN 55035:2017+A11:2020 / BS EN 55035:2017+A11:2020 EN IEC 61000-6-2:2019 / BS EN IEC 61000-6-2:2019 EN 61000-4-2:2009 / EN IEC 61000-4-3:2020 / EN 61000-4-8:2010				EN55032/B, EN55024
	UL 508 #222870	-	-	-	-