ULI-341TC BB-USOPTL4
ULI-341TCK BB-USOPTL4-LS
ULI-341DC BB-USO9ML4
ULI-342TC BB-USOPTL4DR-2
ULI-344TC BB-USOPTL4-4P
ULI-344DC BB-USR604

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
ULI-344DC	(4) DB9 male	921.6 kbps	2 kV	±0.5k Vdc ports. ±1kV signal ports.	Modbus	-	TD, RD, PWR

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 *
ULI-344DC		1.5, 12,480 Mbps	1.1. 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			
ULI-344DC	-40 to +85 °C		

Power

Model #:	Source:	Input Voltage:	Consumption:
ULI-341TC	USB port	5 Vdc	<100 mA (low power device)
ULI-341TCK			
ULI-341DC			
ULI-342TC			>500 mA (high power device) 2.5W
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)
ULI-344DC	External PSU (not included, sold separately) Dual Inputs - terminal block, locking barrel plug	10-48 Vdc	4.5W

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		181.44
ULI-344TC	IP30 metal, Panel	191 x 71 x 29.3	1.8 m	272.16
ULI-344DC	IP30 metal, DIN rail or Panel	203 x 35 x 120		748.04

Software

Model #:	Windows O/S (driver CD):
ULI-341TC	8.1 (32/64 bit), 10 (32/64 bit), 2008-r2 (32/64 bit), 2012 Server-r2 (32/64 bit)
ULI-341TCK	
ULI-341DC	
ULI-342TC	
ULI-344TC	
ULI-344DC	Windows 10 (32/64 bit), Server 2016, Server 2019

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	380,087
ULI-342TC	79,551
ULI-344TC	51,098
ULI-344DC	72,749

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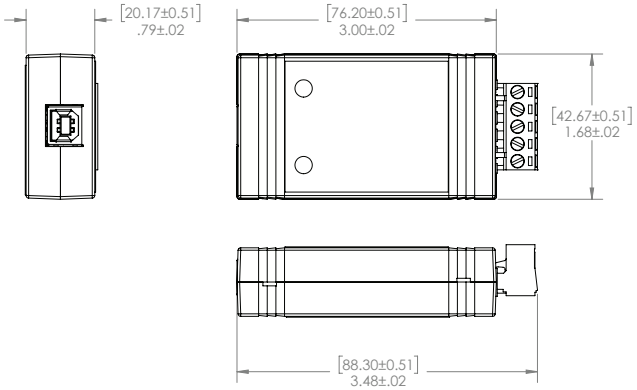
Regulatory/Approvals/Certifications

Model #:		CE Directives:	CE Standards:
ULI-341TC	FCC, UL 508 (E#222870)	2014/30/EU – Electromagnetic Compatibility 2011/65/EU amended by (EU) 2015/863 Reduction of Hazardous Substances (RoHS) 2012/19/EU – Waste Electrical & Electronic Equipment (WEEE)	EN 55032 Class B – Electromagnetic Compatibility of Multimedia Equipment – Emission Requirements EN 55024 – Information Technology Equipment - Immunity Characteristics EN 61000-6-1 – Generic Immunity for Residential, Commercial, Light-Industrial Environments EN 61000-6-3 A1 – Generic Emissions for Residential, Commercial, Light-Industrial Environments (Class B)
ULI-341TCK	FCC		
ULI-341DC	FCC		EN 55032 Class B – Information Technology Equipment – RF Emissions EN 55024 – Information Technology Equipment – Immunity Characteristics EN 61000-6-1 – Generic Standards – Residential, Commercial, Light-Industrial Environments
ULI-342TC	FCC Class B, CISPR Class B (EN55022)		EN 55032 Class B – Electromagnetic Compatibility of Multimedia Equipment – Emission Requirements EN 55024 – Information Technology Equipment - Immunity Characteristics EN 61000-6-1 – Generic Immunity for Residential, Commercial, Light-Industrial Environments EN 61000-6-3 A1 – Generic Emissions for Residential, Commercial, Light-Industrial Environments (Class B)
ULI-344TC	FCC Class B, CISPR Class B (EN55022)		EN 55032 Class B – Electromagnetic Compatibility of Multimedia Equipment – Emission Requirements EN 55024 – Information Technology Equipment – Immunity Characteristics – Limits and Methods of Measurement
ULI-344DC	FCC, UL C1/D2 #E245458		EN 55032 Class A – Electromagnetic Compatibility of Multimedia Equipment – Emission Requirements EN 55024 – Information Technology Equipment – Immunity Characteristics – Limits and Methods of Measurement EN 61000-6-4 A1 – Generic Emission Standard for (heavy) Industrial Environments (Class A) EN 61000-6-2 – Generic Immunity Standards for (heavy) Industrial Environments

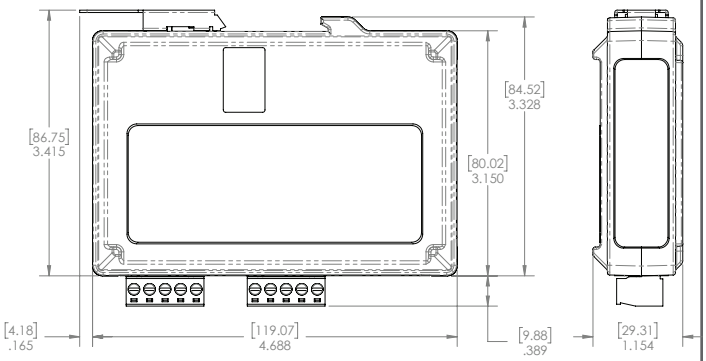
Dimensions - ULI-341TC, ULI-341-TCK

Unit = mm / in



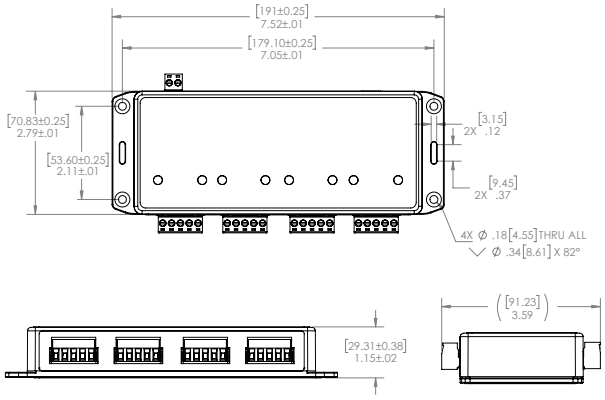
Dimensions - ULI-342TC

Unit = mm / in



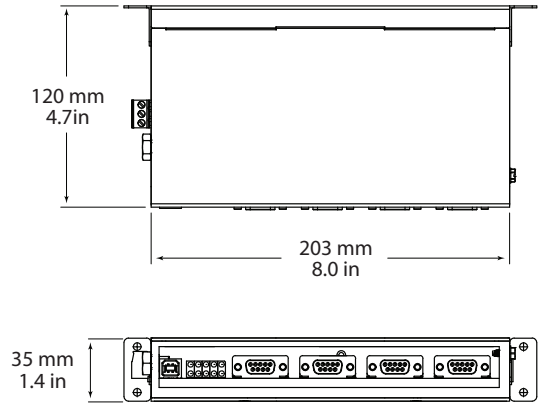
Dimensions - ULI-344TC

Unit = mm / in



Dimensions - ULI-344DC

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-344DC	BB-USR604	USB to RS-422/485 Converter – 2 kV Isolation, High-retention USB to (4) Serial DB9 male, UL C1/D2

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-342TCK	ULI-341DC	ULI-342TC	ULI-344TC	ULI-344DC
Part Number to Order	BB-USOPTL4	BB-USOPTL4-LS	BB-USO9ML4	BB-USOPTL4DR-2	BB-USOPTL4-4P	BB-USR604
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**	**Isolated, 4 Serial, UL C1/ D2, Panel or DIN Rail**
USB Port Count	1			1	1	1
USB Connector	Type B					
High Retention Connector	✓					
USB Data Rate, max.	1.5, 12 Mbps			12 Mbps		1.5, 12, 480 Mbps
USB Standard	1.1 and 2.0			2.0	1.1 and 2.0	1.1 and 2.0
Serial Port Count	1			2	4	4
Serial Connector	Terminal block		DB9 male	Terminal blocks	Terminal blocks	DB9 male
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					-40 to +80 °C
Power Source	USB port-powered				USB port or external PSU	External PSU required
Power Input	5 Vdc				5 Vdc (USB port) 10-30 Vdc (external PSU)	10-48 Vdc external PSU (TB or barrel plug)
Enclosure	IP30, plastic			Plastic	Plastic	IP30, metal
Mounting Installation	In-line			DIN rail	In-line	Panel or DIN rail (hardware included)
Dimensions, mm	88 x 43 x 20			85 x 119 x 29	191 x 71 x 29	203 x 35 x 120
MTBF (MIL217F), hours	1318809		380087	79551	72749	51098
Regulatory / Approvals	FCC, CE					
	UL 508 #222870, EN55032/B, EN55024, EN61000-6-1, EN61000-6-3/A1	EN55032/B, EN55024, EN61000-6-1, EN61000-6-3/A1	EN55032/B, EN61000-6-1	EN55032/B, EN55024, EN61000-6-1, EN61000-63/A1	EN55032/B, EN55024	**UL C1/D2 #E245458***, EN55032/A, EN55024, EN61000-6-4/A1, EN61000-6-2

* UL C1/D2 #E245458

All product specifications are subject to change without notice.

Last updated: 6-Jan-2022