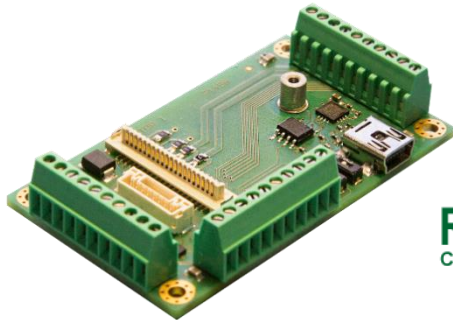


Evaluation Board for TEC Controller



Features

Input Characteristics:

- DC Input Voltage: 5 to 12 V

Main Features:

- USB connector to interface the TEC-1092
- Interface for TEC-1092
- ESD protection
- Screw connectors

Special Requirements / More Information:

- Please contact us for additional information or customization.

General Description:

The EVL-1093 is an evaluation board for the TEC-1092 TEC controller and provides easy connectivity for it.

The TEC-1092 is not included with the EVL-1093.

It has exactly the same size and pinout as the TEC-1091. (Except the additional connector X5)

Please refer to the datasheet of the TEC-1092 (document 5208) for more information.

Absolute Maximum Ratings

Supply voltage (DC)	20 V
---------------------	------

Operating Ratings

Temperature	-40 – 90°C
Humidity	5 – 95%, non-condensing

Electrical Characteristics

Unless otherwise noted: $T_A = 25\text{ °C}$, $V_{IN} = 12\text{ V}$

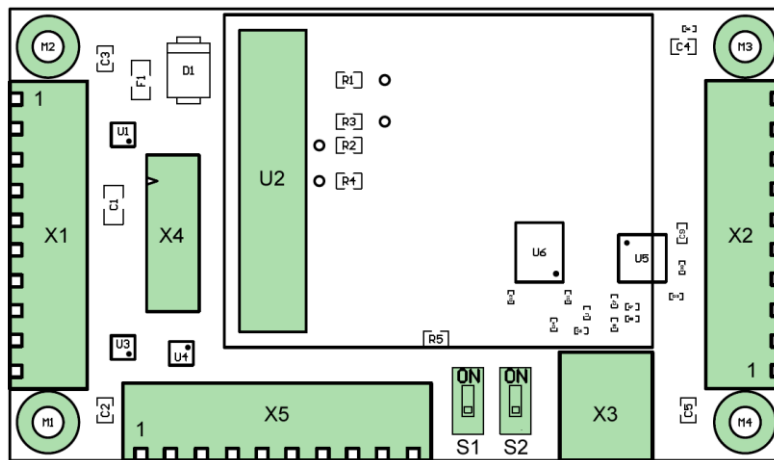
Symbol	Parameter	Test Conditions	Min	Typ	Max	Units
DC Power Supply Input:						
V_{IN}	Supply voltage		4.9		12	V
USB:						
U_{PP}	Electrical isolation				1	kV

RS232 TTL and General Purpose Digital I/O Characteristics (GPIO1 ... GPIO8, RX, TX)

Unless otherwise noted: $T_A = 25\text{ °C}$, $U_{IN} = 12\text{ V}$

Symbol	Parameter	Comments	Min	Typ	Max	Units
ESD Protection: (Between TEC-1092 and Connector)						
U_{PP}	ESD discharge	IEC61000-4-2			100	kV
R_A	Series resistance		170	200	230	Ω

Pin Configuration and Mechanical Data



Top view

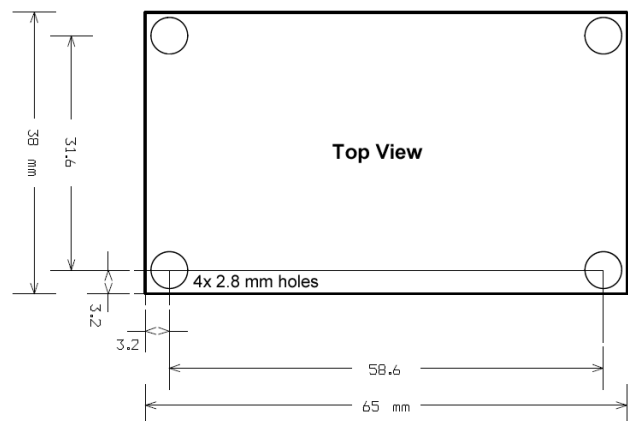
Pin Description:

X1	1	Power VIN
	2	Power GND
	3	GPIO1
	4	GPIO2
	5	GPIO3
	6	GPIO4
	7	RS232 TTL RX
	8	RS232 TTL TX
	9	RS485 A2 (D+)
	10	RS485 B2 (D-)
X2	1	Object temperature sensor IA
	2	Object temperature sensor IB
	3	Object temperature sensor UA
	4	Object temperature sensor UB
	5	Shield
	6	Sink temperature sensor A
	7	Sink temperature sensor B
	8	GND
	9	Out- (Peltier element minus)
	10	Out+ (Peltier element plus)
X5	1	GPIO5
	2	GPIO6
	3	GPIO7
	4	GPIO8
	5	NC
	6	NC
	7	NC
	8	NC
	9	3.3 V
	10	5 V
X3	USB mini B	
X4	Status Display Kit DPY-1113 connector	
U2	TEC-1092 connector	

U2	TEC-1092 connector
S1	On: 120 Ω RS485 termination enabled
S2	On: USB connectivity enabled Off: RS232 TTL connectivity enabled

Dimensions:

65 mm × 38 mm × 14 mm

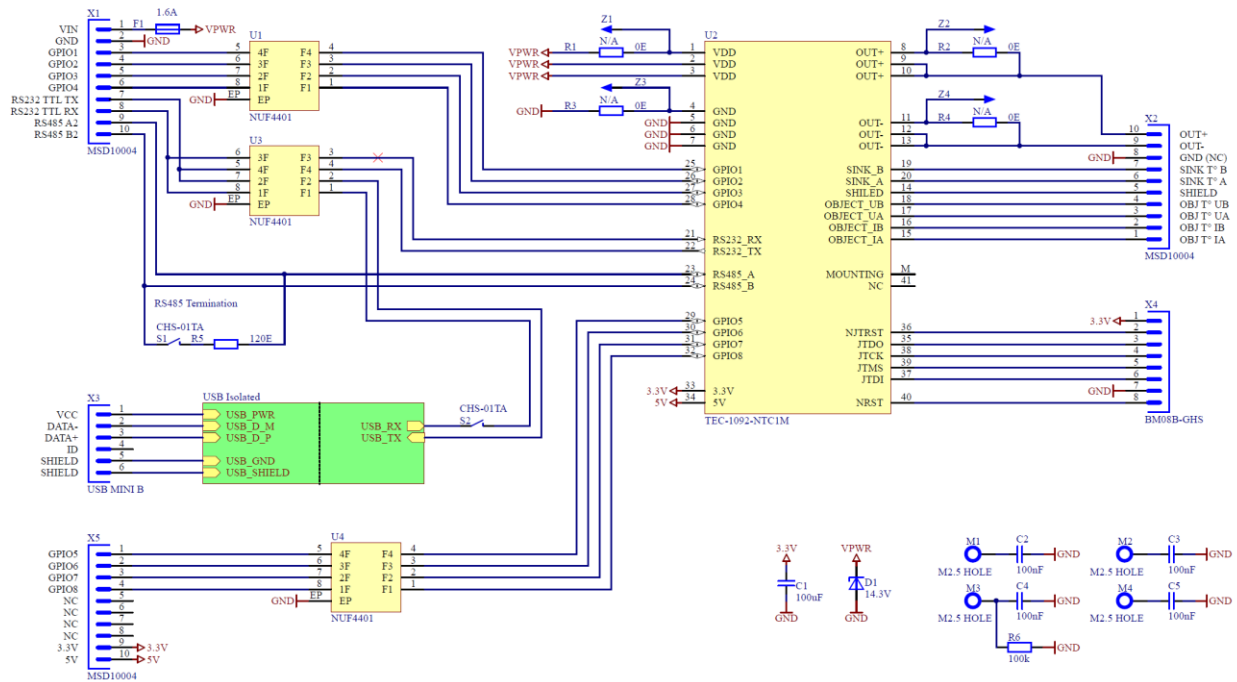


Operation-Modes / Theory of Operation

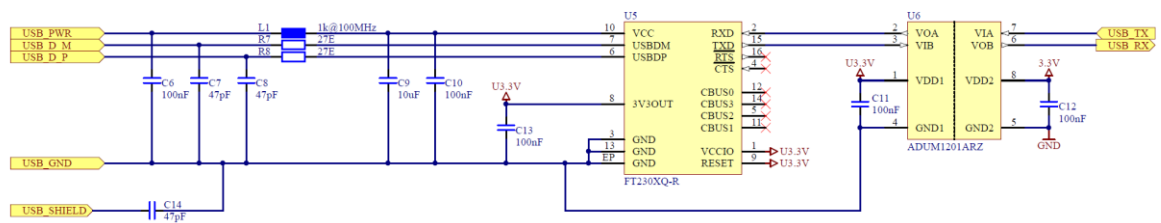
The EVL-1093 allows the evaluation and simple connection of a TEC-1092 to a host system using USB. Further, a DPY-1113 TEC Status Display Kit can be connected.



Schematic



Confidential		EVL-1093 TOP.SchDoc	
Meerstetter Engineering GmbH Schulhausgasse 12 CH-3113 Rügglen Phone: +41 31 712 01 01		Revision: Unknown revision Layout: 7149B Designed: 16.09.16 ML Modified: 09.10.17 ML	4147B 1 / 2



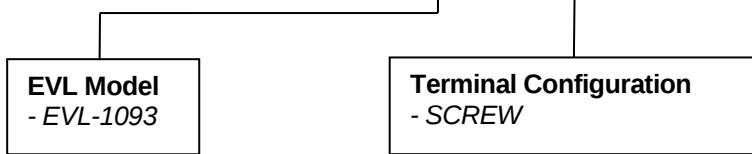
Confidential		EVL-1093 USB.SchDoc	
Meerstetter Engineering GmbH Schulhausgasse 12 CH-3113 Rügglen Phone: +41 31 712 01 01		Revision: Unknown revision Layout: 7149B Designed: 16.09.16 ML Modified: 09.10.17 ML	4147B 2 / 2

Please contact Meerstetter Engineering if you need the whole Altium Project inclusive layout.

EVL-1093 Ordering Information, Hardware Configuration

Example Configuration:

EVL-1093 - SCREW



Display Unit:

It is possible to connect an OLED Display 2x16 char directly to X4 of the EVL-1093. Please visit the DPY-1113 product web page for further information.

Customization:

Many hardware and software features of the EVL-1093 are customizable upon request. Please contact Meerstetter Engineering with your enquiry.

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