Certificate Number UL-US-2012230-0
Report Reference E28476-20180913

Date 15-Jan-2021

Issued to: TYCO Electronics Corp

2901 Fulling Mill Rd Middletown, PA

United States 17057

This is to certify that representative samples of

ECBT2 - Connectors for Use in Data, Signal, Control and

Power Applications - Component

See Addendum Page for Product Designation(s).

Have been investigated by UL in accordance with the component requirements in the Standard(s) indicated on this Certificate. UL Recognized components are incomplete

in certain constructional features or restricted in

performance capabilities and are intended for installation in complete equipment submitted for investigation to UL LLC.

Standard(s) for Safety: UL 1977, 3rd Ed., Issue Date: 2016-01-07, Revision Date:

2020-11-17

Additional Information: See the UL Online Certifications Directory at

https://ig.ulprospector.com for additional information

This *Certificate of Compliance* does not provide authorization to apply the UL Recognized Component Mark. Only the UL Follow-Up Services Procedure provides authorization to apply the UL Mark.

Only those products bearing the UL Recognized Component Mark should be considered as being UL Certified and covered under UL's Follow-Up Services.

Look for the UL Recognized Component Mark on the product.





Certificate Number UL-US-2012230-0
Report Reference E28476-20180913
Date 15-Jan-2021

This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements

Model	Category Description		
ELCON Micro Power Connector	Connectors		

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Bruce Mahrenholz, Director North American Certification Program

UL LLC



Certificate Number UL-US-L28476-151-31908102-2

Report Reference E28476-20180913

Date 15-Jan-2021

Issued to: TYCO Electronics Corp

2901 Fulling Mill Rd Middletown, PA

United States 17057

This is to certify that ECBT2 - Corepresentative samples of Power App

ECBT2 - Connectors for Use in Data, Signal, Control and

Power Applications - Component

See Addendum Page for Product Designation(s).

Have been investigated by UL in accordance with the component requirements in the Standard(s) indicated on this Certificate. UL Recognized components are incomplete

in certain constructional features or restricted in

performance capabilities and are intended for installation in complete equipment submitted for investigation to UL LLC.

Standard(s) for Safety: UL 1977, 3rd Ed., Issue Date: 2016-01-07, Revision Date:

2020-11-17

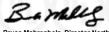
Additional Information: See the UL Online Certifications Directory at

https://ig.ulprospector.com for additional information

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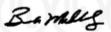
Certificate Number UL-US-L28476-151-31908102-2

**Report Reference** E28476-20180913

Date 15-Jan-2021

This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements

Model	Category Description		
ELCON Micro Power Connector	Connectors		





UL LLC



Certificate Number Report Reference

UL-CA-2009573-0 E28476-20180913

**Date** 

15-Jan-2021

Issued to:

TYCO Electronics Corp

2901 Fulling Mill Rd Middletown, PA

United States 17057

This is to certify that representative samples of

ECBT8 - Connectors for Use in Data, Signal, Control and Power Applications Certified for Canada - Component

See Addendum Page for Product Designation(s).

Have been investigated by UL in accordance with the component requirements in the Standard(s) indicated on this Certificate. UL Recognized components are incomplete

in certain constructional features or restricted in

performance capabilities and are intended for installation in complete equipment submitted for investigation to UL LLC.

Standard(s) for Safety:

CSA C22.2 NO. 182.3, 2nd Ed., Issue Date: 2016-07-01,

Revision Date: 2019-01-01

**Additional Information:** 

See the UL Online Certifications Directory at

https://iq.ulprospector.com for additional information

This *Certificate of Compliance* does not provide authorization to apply the UL Recognized Component Mark. Only the UL Follow-Up Services Procedure provides authorization to apply the UL Mark.

Only those products bearing the UL Recognized Component Mark should be considered as being UL Certified and covered under UL's Follow-Up Services.

Look for the UL Recognized Component Mark on the product.





Certificate Number UL-CA-2009573-0

Report Reference E28476-20180913

Date 15-Jan-2021

This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements

Model	Category Description		
ELCON Micro Power Connector	Connectors		



Bruce Mahrenholz, Director North American Certification Program

UL LLC



Certificate Number Report Reference

UL-CA-2009574-0 E28476-20180913

Date 15-Jan-2021

Issued to:

TYCO Electronics Corp

2901 Fulling Mill Rd Middletown, PA

United States 17057

This is to certify that representative samples of

ECBT8 - Connectors for Use in Data, Signal, Control and Power Applications Certified for Canada - Component

See Addendum Page for Product Designation(s).

Have been investigated by UL in accordance with the component requirements in the Standard(s) indicated on this Certificate. UL Recognized components are incomplete

in certain constructional features or restricted in

performance capabilities and are intended for installation in complete equipment submitted for investigation to UL LLC.

Standard(s) for Safety:

CSA C22.2 NO. 182.3, 2nd Ed., Issue Date: 2016-07-01,

Revision Date: 2019-01-01

**Additional Information:** 

See the UL Online Certifications Directory at

https://ig.ulprospector.com for additional information

This *Certificate of Compliance* does not provide authorization to apply the UL Recognized Component Mark. Only the UL Follow-Up Services Procedure provides authorization to apply the UL Mark.

Only those products bearing the UL Recognized Component Mark should be considered as being UL Certified and covered under UL's Follow-Up Services.

Look for the UL Recognized Component Mark on the product.



Bruce Mahrenholz, Director North American Certification Program







Certificate Number UL-CA-2009574-0
Report Reference E28476-20180913
Date 15-Jan-2021

This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements

Model	Category Description		
ELCON Micro Power Connector	Connectors		

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(UL)

Bruce Mahrenholz, Director North American Certification Program

File E28476 Project 4788473903

September 13, 2018

REPORT

on

COMPONENT - CONNECTORS FOR USE IN DATA, SIGNAL, CONTROL AND POWER APPLICATIONS

Tyco Electronics Corp Middletown, PA

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File E28476 Vol. 51 Sec. 12 Page 1 Issued: 2018-09-13 Vol. 57 Sec. 21 Revised: 2020-12-23 and Report

#### DESCRIPTION

#### PRODUCT COVERED:

\* USR, CNR Component Connector, Series ELCON Micro Power Connector.

### GENERAL:

These devices are multi-pole connectors intended for factory assembly on copper wire sizes as indicated in Ratings table below where the acceptability of combinations is determined by UL LLC. The devices are identified as follows:

USR indicates investigation to United States Standards, UL 1977.

CNR indicates investigation to Canadian National Standards, C22.2 No. 182.3.

#### RATINGS:

Cat. No	Pin numbers	Voltage V	USR Ampere (A)	CNR Ampere (A)
*ELCON Micro	2, 4		12	12
	6, 8	600	10.5	10.5
Power Connector	10, 12, 14, 16		8.5	8.5

Disconnecting Use - see Sec Gen for required marking

File E28476 Vol. 51 Sec. 12 Page 2 Issued: 2018-09-13

Vol. 57 Sec. 21 and Report

TECHNICAL CONSIDERATIONS (NOT FOR FIELD REPRESENTATIVE'S USE):

Use - For use only in or with complete equipment where the acceptability of the combination is determined by UL LLC.

Conditions of Acceptability - The following are among the considerations to be made when evaluating the device in the end-use product.

Interruption of Current

1. These devices are not suitable for interrupting the flow of current by connecting or disconnecting the mating connector.

Current-Carrying Capability and Current Ratings

2. This device has been subjected to the Temperature test, and with the CNR rated currents and maximum temperature (Adjusted to 25°C ambient) values tabulated below. The mating with any other connector will need to be evaluated.

				Maximum Temperature °C		
Cat No.	Pin numbers	Current, A	Wire Size, AWG	Rise	Recorded Temperature	
	4	12	16	26.3	51.3	
2204801	8	10.5	18	29.1	54.1	
	16	8.5	16	26.9	51.9	

3. This device has been subjected to the Temperature test, and with the USR rated currents and maximum temperature (Adjusted to 25°C ambient) values tabulated below. The mating with any other connector will need to be evaluated.

Cat No.	Pin numbers	Current, A	Wire Size, AWG	Maximum Temperature °C
	4	12	16	60.5
2204801	8	10.5	18	58.8
	16	8.5	20	102.3

File E28476 Vol. 51 Sec. 12 Page 3 Issued: 2018-09-13 Vol. 57 Sec. 21 Revised: 2020-12-23 and Report

#### Insulating Materials

4. These devices employ insulating materials with properties as tabulated below at the minimum thickness employed in the connector housing, the suitability of the insulating materials based on the documented values shall be determined in the end-use application. Please note the values specified in the table when multiple materials are indicated represent the minimum values for the group of materials.

Cat. No.	Insulating Material (#)	Measured Minimum Thickness	Flame Class	HWI (++)	HAI(++)	RTI Elec(++)	Max Operating Temp, <sup>0</sup> C
*ELCON Micro Power Connector	A	0.38 mm	V-0	4	1	130	105

(#) - Code for Insulating Body Material.

(++): These PLCs are based on the minimum Recognized material thickness.

- A. Tyco Raw Material (R/M) PN 1573235.
  - 1. Dielectric strength (kV/mm): -
  - 2. CTI: 3
- 5. The device has only been assessed for use with specific types of connectors within their product family. They have not been assessed to operate with any other similar devices from any other manufacturer.

Cat. No	Mating Connector Cat No.	ILL for reference only
*ELCON Micro Power Connector	ELCON Micro Power Connector, Receptacle	4

### Miscellaneous

6. The enclosure of the device has live parts that may be exposed to user contact when the connector is energized. The device is suitable for use only within an acceptable enclosure.