

CERTIFICATE OF COMPLIANCE

Certificate Number UL-US-2012429-0
Report Reference E28476-20210105
Date 16-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:
2019-08-07

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.



Bruce Mahrenholz, Director North American Certification Program

UL LLC

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CERTIFICATE OF COMPLIANCE

Certificate Number UL-US-2012429-0
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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
2292906-1	Connectors
2292937-1	Connectors
2292937-2	Connectors
2293085-1	Connectors
2293085-2	Connectors
2294062-1	Connectors
2296802-1	Connectors
2296802-2	Connectors
2296802-3	Connectors



Bruce Mahrenholz, Director North American Certification Program

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File E28476
Project 4789516926

January 5, 2021

REPORT

on

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

TYCO Electronics Corp
Middletown, PA

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DESCRIPTION

PRODUCT COVERED:

Connectors

Model(s): 2292906-1, 2292937-1, 2292937-2, 2293085-1, 2293085-2, 2294062-1,
2296802-1, 2296802-2, 2296802-3

GENERAL:

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

System generated descriptive report

Model: 2292906-1

<u>Certification Information</u>	
CCN	ECBT2
USR	Yes
CNR	No
USR Standard	UL 1977 3rd Ed.
CNR Standard	None
<u>Ratings</u>	
Connector Classification	Multipole
Type	Type 2 (8.3 A < 31 A, 30 V to 600 V ac or dc, or both)
Voltage AC	33 Vac
Voltage DC	33 Vdc
Current Interrupt USR	Yes
Wire size min	22
Wire size min units	AWG
Wire size max	18
Wire size max units	AWG
Maximum Poles	2
Document Reference	Ill. 1
<u>USR Current Carrying Capabilities</u>	
Temperature	Yes
Current during Temperature Test	10 A
Max Temperature	12.7 C
Temperature	Yes
Current during Temperature Test	7 A
Max Temperature	7.3 C
Temperature	Yes
Current during Temperature Test	5 A
Max Temperature	6 C
Construction Details	Suitability of spacing has been determined by the Dielectric Voltage-Withstand Test
<u>Conditions of Acceptability</u>	
The suitability of the insulating materials shall be determined in the end-use.	Yes
An original equipment manufacturer's installed device employing these crimp-type terminal connectors shall be assembled in accordance with the component connector manufacturer's specifications.	Yes
The product is molded of insulating material with an electrical RTI of xx °C. Mold Stress testing was performed at xx °C for 7 hours with acceptable results.	Required
Electrical RTI	130 C

Model: 2292937-1

<u>Certification Information</u>	
CCN	ECBT2
USR	Yes
CNR	No
USR Standard	UL 1977 3rd Ed.
CNR Standard	None
<u>Ratings</u>	
Connector Classification	Multipole
Type	Type 2 (8.3 A < 31 A, 30 V to 600 V ac or dc, or both)
Voltage AC	33 Vac
Voltage DC	33 Vdc
Current Interrupt USR	Yes
Wire size min	22
Wire size min units	AWG
Wire size max	18
Wire size max units	AWG
Maximum Poles	2
Document Reference	Ill. 2
<u>USR Current Carrying Capabilities</u>	
Temperature	Yes
Current during Temperature Test	10 A
Max Temperature	14.2 C
Temperature	Yes
Current during Temperature Test	7 A
Max Temperature	8.1 C
Temperature	Yes
Current during Temperature Test	5 A
Max Temperature	6.4 C
Construction Details	Suitability of spacing has been determined by the Dielectric Voltage-Withstand Test
<u>Conditions of Acceptability</u>	
The suitability of the insulating materials shall be determined in the end-use.	Yes
An original equipment manufacturer's installed device employing these crimp-type terminal connectors shall be assembled in accordance with the component connector manufacturer's specifications.	Yes
The product is molded of insulating material with an electrical RTI of xx °C. Mold Stress testing was performed at xx °C for 7 hours with acceptable results.	Required
Electrical RTI	130 C

Model: 2292937-2

<u>Certification Information</u>	
CCN	ECBT2
USR	Yes
CNR	No
USR Standard	UL 1977 3rd Ed.
CNR Standard	None
<u>Ratings</u>	
Connector Classification	Multipole
Type	Type 2 (8.3 A < 31 A, 30 V to 600 V ac or dc, or both)
Voltage AC	33 Vac
Voltage DC	33 Vdc
Current Interrupt USR	Yes
Wire size min	22
Wire size min units	AWG
Wire size max	18
Wire size max units	AWG
Maximum Poles	2
Document Reference	Ill. 2
<u>USR Current Carrying Capabilities</u>	
Temperature	Yes
Current during Temperature Test	10 A
Max Temperature	14.2 C
Temperature	Yes
Current during Temperature Test	7 A
Max Temperature	8.1 C
Temperature	Yes
Current during Temperature Test	5 A
Max Temperature	6.4 C
Construction Details	Suitability of spacing has been determined by the Dielectric Voltage-Withstand Test
<u>Conditions of Acceptability</u>	
The suitability of the insulating materials shall be determined in the end-use.	Yes
An original equipment manufacturer's installed device employing these crimp-type terminal connectors shall be assembled in accordance with the component connector manufacturer's specifications.	Yes
The product is molded of insulating material with an electrical RTI of xx °C. Mold Stress testing was performed at xx °C for 7 hours with acceptable results.	Required
Electrical RTI	130 C

Model: 2293085-1

<u>Certification Information</u>	
CCN	ECBT2
USR	Yes
CNR	No
USR Standard	UL 1977 3rd Ed.
CNR Standard	None
<u>Ratings</u>	
Connector Classification	Multipole
Type	Type 2 (8.3 A < 31 A, 30 V to 600 V ac or dc, or both)
Voltage AC	33 Vac
Voltage DC	33 Vdc
Current Interrupt USR	Yes
Maximum Poles	2
Document Reference	Ill. 3
<u>USR Current Carrying Capabilities</u>	
Temperature	Yes
Current during Temperature Test	10 A
Max Temperature	15.3 C
Construction Details	Suitability of spacing has been determined by the Dielectric Voltage-Withstand Test
<u>Conditions of Acceptability</u>	
The suitability of the insulating materials shall be determined in the end-use.	Yes
The product is molded of insulating material with an electrical RTI of xx °C. Mold Stress testing was performed at xx °C for 7 hours with acceptable results.	Required
Electrical RTI	130 C
Mold Stress Testing Temperature	135 C
Specific Condition of Acceptability	These connectors complied with IP53 enclosure testing as per IEC 60529, Edition 2.2, dated August 2018 when mated to Cat. No. 2296802
Specific Condition of Acceptability	 of the solder terminals. This material shall be evaluated in the end product.

Model: 2293085-2

<u>Certification Information</u>	
CCN	ECBT2
USR	Yes
CNR	No
USR Standard	UL 1977 3rd Ed.
CNR Standard	None
<u>Ratings</u>	
Connector Classification	Multipole
Type	Type 2 (8.3 A < 31 A, 30 V to 600 V ac or dc, or both)
Voltage AC	33 Vac
Voltage DC	33 Vdc
Current Interrupt USR	Yes
Maximum Poles	2
Document Reference	Ill. 3
<u>USR Current Carrying Capabilities</u>	
Temperature	Yes
Current during Temperature Test	10 A
Max Temperature	15.4 C
Construction Details	Suitability of spacing has been determined by the Dielectric Voltage-Withstand Test
<u>Conditions of Acceptability</u>	
The suitability of the insulating materials shall be determined in the end-use.	Yes
The product is molded of insulating material with an electrical RTI of xx °C. Mold Stress testing was performed at xx °C for 7 hours with acceptable results.	Required
Electrical RTI	130 C
Mold Stress Testing Temperature	135 C
Specific Condition of Acceptability	These connectors complied with IP53 enclosure testing as per IEC 60529, Edition 2.2, dated August 2018 when mated to Cat. No. 2296802
Specific Condition of Acceptability	 of the solder terminals. This material shall be evaluated in the end product.

Model: 2294062-1

<u>Certification Information</u>	
CCN	ECBT2
USR	Yes
CNR	No
USR Standard	UL 1977 3rd Ed.
CNR Standard	None
<u>Ratings</u>	
Connector Classification	Multipole
Type	Type 2 (8.3 A < 31 A, 30 V to 600 V ac or dc, or both)
Voltage AC	33 Vac
Voltage DC	33 Vdc
Current Interrupt USR	Yes
Maximum Poles	2
Document Reference	Ill. 4
<u>USR Current Carrying Capabilities</u>	
Temperature	Yes
Current during Temperature Test	10 A
Max Temperature	17.2 C
Construction Details	Suitability of spacing has been determined by the Dielectric Voltage-Withstand Test
<u>Conditions of Acceptability</u>	
The suitability of the insulating materials shall be determined in the end-use.	Yes
The product is molded of insulating material with an electrical RTI of xx °C. Mold Stress testing was performed at xx °C for 7 hours with acceptable results.	Required
Electrical RTI	130 C
Mold Stress Testing Temperature	135 C
Specific Condition of Acceptability	These connectors complied with IP53 enclosure testing as per IEC 60529, Edition 2.2, dated August 2018 when mated to Cat. No. 2296802
Specific Condition of Acceptability	 of the solder terminals. This material shall be evaluated in the end product.

Model: 2296802-1

<u>Certification Information</u>	
CCN	ECBT2
USR	Yes
CNR	No
USR Standard	UL 1977 3rd Ed.
CNR Standard	None

Ratings

Connector Classification	Multipole
Type	Type 2 (8.3 A < 31 A, 30 V to 600 V ac or dc, or both)
Voltage AC	33 Vac
Voltage DC	33 Vdc
Current Interrupt USR	Yes
Maximum Poles	2
Document Reference	Ill. 5

USR Current Carrying Capabilities

Temperature	Yes
Current during Temperature Test	10 A
Max Temperature	12.9 C
Construction Details	Suitability of spacing has been determined by the Dielectric Voltage-Withstand Test

Conditions of Acceptability

The suitability of the insulating materials shall be determined in the end-use.	Yes
The product is molded of insulating material with an electrical RTI of xx °C. Mold Stress testing was performed at xx °C for 7 hours with acceptable results.	Required
Electrical RTI	130 C
Mold Stress Testing Temperature	135 C
Specific Condition of Acceptability	These connectors complied with IP53 enclosure testing as per IEC 60529, Edition 2.2, dated August 2018 when mated to Cat. No. 2296802-X.

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Model: 2296802-2

<u>Certification Information</u>	
CCN	ECBT2
USR	Yes
CNR	No
USR Standard	UL 1977 3rd Ed.
CNR Standard	None

Ratings

Connector Classification	Multipole
Type	Type 2 (8.3 A < 31 A, 30 V to 600 V ac or dc, or both)
Voltage AC	33 Vac
Voltage DC	33 Vdc
Current Interrupt USR	Yes
Maximum Poles	2
Document Reference	Ill. 5

USR Current Carrying Capabilities

Temperature	Yes
Current during Temperature Test	10 A
Max Temperature	12.9 C
Construction Details	Suitability of spacing has been determined by the Dielectric Voltage-Withstand Test

Conditions of Acceptability

The suitability of the insulating materials shall be determined in the end-use.	Yes
The product is molded of insulating material with an electrical RTI of xx °C. Mold Stress testing was performed at xx °C for 7 hours with acceptable results.	Required
Electrical RTI	130 C
Mold Stress Testing Temperature	135 C
Specific Condition of Acceptability	These connectors complied with IP53 enclosure testing as per IEC 60529, Edition 2.2, dated August 2018 when mated to Cat. No. 2296802-X.

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Model: 2296802-3

<u>Certification Information</u>	
CCN	ECBT2
USR	Yes
CNR	No
USR Standard	UL 1977 3rd Ed.
CNR Standard	None
<u>Ratings</u>	
Connector Classification	Multipole
Type	Type 2 (8.3 A < 31 A, 30 V to 600 V ac or dc, or both)
Voltage AC	33 Vac
Voltage DC	33 Vdc
Current Interrupt USR	Yes
Maximum Poles	2
Document Reference	Ill. 5
<u>USR Current Carrying Capabilities</u>	
Temperature	Yes
Current during Temperature Test	10 A
Max Temperature	12.9 C
Construction Details	Suitability of spacing has been determined by the Dielectric Voltage-Withstand Test
<u>Conditions of Acceptability</u>	
These devices are suitable for interrupting the flow of current by connecting or disconnecting the mating connector	Yes
These devices have been tested for make-and-break cycles of interrupting a current by connecting and disconnecting the mating connector.	Yes
The suitability of the insulating materials shall be determined in the end-use.	Yes
The product is molded of insulating material with an electrical RTI of xx °C. Mold Stress testing was performed at xx °C for 7 hours with acceptable results.	Required
Electrical RTI	130 C
Mold Stress Testing Temperature	135 C
Specific Condition of Acceptability	These connectors complied with IP53 enclosure testing as per IEC 60529, Edition 2.2, dated August 2018 when mated to Cat. No. 2296802