CERTIFICATE OF COMPLIANCE

Certificate Number Report Reference Date	UL-US-2012429-0 E28476-20210105 16-Jan-2021
Issued to:	TYCO Electronics Corp 2901 Fulling Mill Rd Middletown, PA United States 17057
This is to certify that epresentative 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.

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Bruce Mahrenholz, Director North American Certification Program

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CERTIFICATE OF COMPLIANCE

Certificate Number Report Reference Date UL-US-2012429-0 E28476-20210105 16-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

C DO	Model	Category Description
~ /	2292906-1	Connectors
CHCMC1	2292937-1	Connectors
CLA.	2292937-2	Connectors
1	2293085-1	Connectors
ALC: VA	2293085-2	Connectors
	2294062-1	Connectors
~	2296802-1	Connectors
0	2296802-2	Connectors
KUL YE	2296802-3	Connectors

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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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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

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Model: 2292906-1

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

Ratings

Connector Classification	Multipole
Туре	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

USR Current Carrying Capabilities

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

Conditions of Acceptability

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

Mold Stress Testing Temperature135 0Specific Condition of AcceptabilityThese with testi Editi 2018 Nos. 22940Specific Condition of AcceptabilityThese provi	c e connectors complied IP53 enclosure .ng as per IEC 60529, .on 2.2, dated August when mated to Cat. 2292937, 2293085, 062, or 2296802
Specific Condition of AcceptabilityThese with testi Editi 2018 Nos. 22940Specific Condition of AcceptabilityThese provi	e connectors complied IP53 enclosure ng as per IEC 60529, on 2.2, dated August when mated to Cat. 2292937, 2293085, 062, or 2296802
Specific Condition of Acceptability These provi	-
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Model: 2292937-1

Certification Information	
CCN	ECBT2
USR	Yes
CNR	No
USR Standard	UL 1977 3rd Ed.
CNR Standard	None
Ratings	
Connector Classification	Multipole
Туре	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

Document Reference	T11 2
Document Kererence	
TAD Generate Generation Generation	
USR Current Carrying Capabilities	
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 Dotails	Quitability of grading
Construction Details	bag 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
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

Conditions of Acceptability	
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



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Model: 2292937-2

Maximum Poles

Certification Information	
CCN	ECBT2
USR	Yes
CNR	No
USR Standard	UL 1977 3rd Ed.
CNR Standard	None
Ratings	
Connector Classification	Multipole
Туре	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

Document Reference	Ill. 2
USR Current Carrying Capabilities	
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

2

Conditions of Acceptability	
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

Conditions of Acceptability	
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



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Model: 2293085-1

Maximum Poles

Document Reference

Certification Information	
CCN	ECBT2
USR	Yes
CNR	No
USR Standard	UL 1977 3rd Ed.
CNR Standard	None
Ratings	
Connector Classification	Multipole
Туре	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

USR Current Carrying Capabilities	
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

2 Ill. 3

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
Specific Condition of Acceptability	of the solder terminals. This material shall be evaluated in the end product.

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Model: 2293085-2

Certification Information	
CCN	ECBT2
USR	Yes
CNR	No
USR Standard	UL 1977 3rd Ed.
CNR Standard	None
Ratings	
Connector Classification	Multipole
Туре	Type 2 (8.3 A < 31 A, 30
	V to 600 V ac or dc, or
	DOTN)
Voltage AC	33 Vac
Voltage DC	33 Vdc
Current Interrupt USR	Yes
Maximum Poles	2
Document Reference	Ill. 3

USR Current Carrying Capabilities	
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

Conditions of Acceptability	
The suitability of the insulating materials	Yes
shall be determined in the end-use.	
The product is molded of insulating material	Required
with an electrical RTI of xx °C. Mold Stress	
testing was performed at xx °C for 7 hours with	
acceptable results.	
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.

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Model: 2294062-1

Document Reference

Certification Information	
CCN	ECBT2
USR	Yes
CNR	No
USR Standard	UL 1977 3rd Ed.
CNR Standard	None
Ratings	
Connector Classification	Multipole
Туре	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

USR Current Carrying Capabilities	
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

Ill. 4

Conditions of Acceptability

The suitability of the insulating materials	Vec
The suitability of the insulating materials	IES
shall be determined in the end-use.	
The product is molded of insulating material	Required
with an electrical RTI of xx °C. Mold Stress	
testing was performed at xx °C for 7 hours with	
acceptable results.	
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 Accontability	
Specific condition of Acceptability	
	of the solder terminals.
	This material shall be
	evaluated in the end
	product.

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Model: 2296802-1

Maximum Poles

Document Reference

Certification Information	
CCN	ECBT2
USR	Yes
CNR	No
USR Standard	UL 1977 3rd Ed.
CNR Standard	None
Ratings	
Connector Classification	Multipole
Туре	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

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

2

I11. 5

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

Maximum Poles

Document Reference

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

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

2

Ill. 5

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

Certification Information				
CCN	ECBT2			
USR	Yes			
CNR	No			
USR Standard	UL 1977 3rd Ed.			
CNR Standard	None			
Ratings				
Connector Classification	Multipole			
Туре	Type 2 (8.3 A < 31 A, 30			

JAbe	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	
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