

# Certificate of Compliance

## Certificate Number:

UL-US-L28476-1125-  
71709002-3

## Report Reference:

E28476-20090717

## Issue Date:

2024-09-04

Issued to:

**TYCO Electronics Corp**  
**2901 Fulling Mill Rd Middletown, PA 17057**  
**United States**

This certificate confirms 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 evaluated 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.

**UL 1977, Edition 4, Issue Date 2022-12-07**

Additional Information:

See UL Product iQ® at <https://iq.ulprospector.com> for additional information.

This Certificate of Compliance indicates that representative samples of the product described in the certification report have met the requirements for UL certification. It does not provide authorization to apply the UL Recognized Component Mark. Only the Authorization Page that references the Follow-Up Services Procedure for ongoing surveillance 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.



David Piecuch  
UL Mark Certification Program Manager



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# CERTIFICATE OF COMPLIANCE

**Certificate number** UL-US-L28476-1125-71709002-3  
**Report reference** 42TE28476-20090717  
**Date** 2024-09-04

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

Model	Product Description
<b>20090717</b> , Series HD16, followed by 3, 4, 5, 6 or 9, followed by 12, 16, 96 or 1939, followed by S, followed by blank or E, followed by four alphanumeric characters	Connectors
<b>20090717</b> , Series HD17, followed by 9-, followed by 1939, followed by S, followed by blank or E, followed by four alphanumeric characters	Connectors
<b>20090717</b> , Series HD10 or YHD10, followed by 3, 4, 5, 6 or 9, followed by 4, 12, 16, 96 or 1939, followed by P, followed by blank or E followed by four alphanumeric characters	Connectors
<b>20090717</b> , Series HD14, followed by 3, 4, 5, 6 or 9, followed by 4, 12, 16, 96 or 1939, followed by P, followed by blank or E followed by four alphanumeric characters	Connectors



David Piecuch  
UL Mark Certification Program Manager

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File E28476  
Service Request: 1181364

July 17, 2009

REPORT

on

COMPONENT - Connectors for Use in Data, Signal, Control and Power Applications  
- Component

TYCO ELECTRONICS CORP  
MIDDLETOWN, PA

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## DESCRIPTION

## PRODUCT COVERED:

\* **USR Component Connectors, Series HD10- or YHD10- or HD14-, followed by 3, 4, 5, 6 or 9, followed by 4, 12, 16, 96 or 1939, followed by P, followed by blank or E; HD16-, followed by 3, 4, 5, 6 or 9, followed by 12, 16, 96 or 1939, followed by S, followed by blank or E; HD17-, followed by 9-, followed by 1939, followed by S, followed by blank or E; followed by four alphanumeric characters**

\*

## GENERAL:

These devices are multi-pole connectors intended for factory assembly on stranded copper conductors where the acceptability of combinations is determined by Underwriters Laboratories Inc. The devices are identified as follows:

**\*USR - Products designated USR have been investigated using US requirements as noted in the Test Record.**

## RATING:

No current or voltage rating.

Disconnecting Use - see Sec Gen for required marking

## NOMENCLATURE:

<u>Y</u>	<u>HD</u>	<u>1</u>	<u>0</u>	<u>9</u>	<u>96</u>	<u>PE</u>	-	<u>XXXX</u>
<u>A</u>	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>	<u>V</u>	<u>VI</u>		<u>VII</u>

**A. (Optional) - indicates an identical construction Cat. No.**

\* I. Designates Deutsch **Heavy Duty Connector**

\*II. **May only be 1 - Indicates Type, Bulk Packaged without Contacts or Accessories**

III. Indicates Connector Style

\* 0 = **Receptacle (female) - Square Flange Mount**

\* 4 = **Receptacle (female) - In-Line**

\* 6 = **Plug (male) - With Coupling ring**

7 = **Plug (male) - Without Coupling ring**

IV. Indicates Shell Size and Insert Arrangements

3 = 3 pole

5 = 5 pole

6 = 6 pole

9 = 9 pole

\*

V. **Indicates Shell Configuration**

12 = **Size 12 contact, Threaded Rear, 6 pole**

16 = **Size 16 contact, Non-threaded Rear, 3, 5, and 9 poles**

96 = **Size 16 contact, Threaded Rear, 3, 6, and 9 poles**

1939 = **Size 16 contact, Threaded Rear, 9 pole**

VI. Indicates Contact Type and Wire Sealing Options

**Blank = Normal wire seal**

\* S = Socket (**female**)

\* P = Pin (**male**)

**E = Extra thin wall wire seal**

VII. Special Modifications

**Four Alphanumeric Characters - Assigned for Commercial Purposes only.**

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 Underwriters Laboratories Inc.

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. These devices have not been subjected to the Temperature test and as a result do not have an assigned current rating. The device's current carrying capability is to be reviewed in the end-use by measuring temperatures on the connector housing and/or terminals when current is flowing through the connector under conditions of normal use.

Insulating Materials

3. The insulating materials used in these devices comply with the direct support and enclosure requirements of UL 746C, the Standard for Polymeric Materials - Use in Electrical Equipment Evaluations.

4. **Deleted**


5. 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.

\*

Part	Insulating Material (#)	Measured Minimum Thickness	Flame Class	HWI	HAI	RTI Elec	Max Operating Temp, °C
Plug / Receptacle Housing	A	-	V-0	0	0	120	105
	A (+)	0.6 mm	(++)				
Contact Retainer Insert	B	-	V-2	-	-	105	105
		0.3 mm	(++)				
Header Housing	C	0.6 mm	V-0	0	0	220	125
Coupling Ring	D	-	V-0	0	0	130	105
	D (+)	0.8 mm	(++)				




**Note:**

(+) - These materials will use QMOS2 Recognized Color Concentrates at the let-down ratios specified in the table below.

Component	Insulating Material	Colorant TE PN, Color	Maximum LDR
Plug / Receptacle Housing	A	 GRY	1:20
			BLK
			GRN
Coupling Ring	D		1:20

(++) - The measured thickness is less than the minimum Recognized material thickness, as such no assigned Flame class

(#) - Code for Insulating Body Material.

- A. TE RM No.   
Color: Gray, Black, Green  
1. Dielectric strength (kV/mm): -  
2. CTI: 4
- B. TE RM No.   
Color: Black  
1. Dielectric strength (kV/mm): 32  
2. CTI: 4
- C. TE RM No.   
Color: Black  
1. Dielectric strength (kV/mm): 17  
2. CTI: 4

- D.     TE RM No. [REDACTED]  
Color: Black  
1. Dielectric strength (kV/mm): -  
2. CTI: 3



6. The Maximum Operating Temperature of these devices should not exceed the temperature ratings of the insulating materials.

7. These devices have been evaluated for a 20 mm Flame Test per applicant request. The Series HD 10 housing molded from RYTON R-4 02 XT has not been evaluated for 20 mm Flame Test. The suitability of the insulating materials shall be determined in the end-use application.

#### Terminations

8. The following crimp contacts have been evaluated for the wire sizes as tabulated below:

\*

#### Stamped and Formed Type

Pin/Contact (@)	Contact Size	Wire Size, AWG	Force, lbf
1060-14-01XX / 1062-14-01XX	16	14 - 18	20
1060-16-06XX / 1062-16-06XX	16	16 - 18	20
1060-16-06XX / 1062-16-06XX	16	20	8
1060-16-01XX / 1062-16-01XX	16	12 - 16	20
1060-12-02XX / 1062-12-02XX	12	10	20
1060-12-01XX / 1062-12-01XX	12	12 - 14	20
1060-16-12XX / 1062-16-12XX	16	12 - 16	20
1062-16-14XX	16	12 - 16	20

#### Note:

(@)- XX denotes the plating material as follows:

XX = 22 for Nickel

XX = 44 for Gold

XX = 66 for Nickel

XX = 77 for Tin

XX = 88 for Palladium - Nickel - Gold

#### Solid Type

Pin/Contact (@@)	Contact Size	Wire Size, AWG	Force, lbf
0460-202-16XXX / 0462-201-16XXX	16	16, 18	20
0460-202-16XXX / 0462-201-16XXX	16	20	
0460-215-16XXX / 0462-209-16XXX	14	14	20
0460-204-04XXX / 0462-203-04XXX	4	6	20
0460-204-12XXX / 0462-203-12XXX	12	12, 14	20

#### Note:

(@)- XXX denotes the plating material as follows:

XXX = 31 for Gold

XXX = 90 for Nickel

XXX = 141 for Nickel

XXX = 324 for Tin