# Certificate of Compliance

**Certificate Number:**
UL-US-2428895-0

**Report Reference:**
E28476-20090715

**Issue Date:**
2024-07-26

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

# CERTIFICATE OF COMPLIANCE

**Certificate number** UL-US-2428895-0
**Report reference** E28476-20090715
**Date** 2024-07-26

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 |
|---|---|
| **20090715**, DRC1 | Connectors |
| DRC10-24PX-XXXX | Connectors |
| DRC10-40P-XXXX | Connectors |
| DRC12-24PXZ-XXXX | Connectors |
| DRC12-40PXZ-XXXX | Connectors |
| DRC12-70PXZ-XXXX | Connectors |
| DRC13-24PX-XXXX | Connectors |
| DRC13-40PX-XXXX | Connectors |
| DRC14-24PXZ-XXXX | Connectors |
| DRC14-40PXZ-XXXX | Connectors |
| DRC14-70PXZ-XXXX | Connectors |
| DRC16-24SXZ-XXXX | Connectors |
| DRC16-40SZ-XXXX | Connectors |
| DRC16-70SXZ-XXXX | Connectors |
| **20090715**, DRC18 | Connectors |
| DRC18-40SXZ-XXXX | Connectors |
| DRC20-50PX-XXXX | Connectors |
| DRC20-60PX-XXXX | Connectors |
| DRC20-75PXX-XXXX | Connectors |
| DRC22-40PX-XXXX | Connectors |
| DRC22-50PX-XXXX | Connectors |
| DRC23-24PX-XXXX | Connectors |
| DRC23-40PX-XXXX | Connectors |
| DRC23-64PX-XXXX | Connectors |
| DRC23-80P | Connectors |
| **20090715**, DRC26 | Connectors |
| DRC26-24SX-XXXX | Connectors |
| DRC26-38SX-XXXX | Connectors |
| DRC26-40SX-XXXX | Connectors |
| DRC26-50SX-XXXX | Connectors |
| DRC26-60SX-XXXX | Connectors |

David Piecuch
UL Mark Certification Program Manager

# Certificate of Compliance

**Certificate Number:**

UL-US-L28476-1125-51709002-6

**Report Reference:**

E28476-20090715

**Issue Date:**

2024-07-26

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

UL Solutions

# CERTIFICATE OF COMPLIANCE

**Certificate number** UL-US-L28476-1125-51709002-6
**Report reference** E28476-20090715
**Date** 2024-07-26

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 |
|---|---|
| **20090715**, DRC1 | Connectors |
| DRC10-24PX-XXXX | Connectors |
| DRC10-40P-XXXX | Connectors |
| DRC12-24PXZ-XXXX | Connectors |
| DRC12-40PXZ-XXXX | Connectors |
| DRC12-70PXZ-XXXX | Connectors |
| DRC13-24PX-XXXX | Connectors |
| DRC13-40PX-XXXX | Connectors |
| DRC14-24PXZ-XXXX | Connectors |
| DRC14-40PXZ-XXXX | Connectors |
| DRC14-70PXZ-XXXX | Connectors |
| DRC16-24SXZ-XXXX | Connectors |
| DRC16-40SZ-XXXX | Connectors |
| DRC16-70SXZ-XXXX | Connectors |
| **20090715**, DRC18 | Connectors |
| DRC18-40SXZ-XXXX | Connectors |
| DRC20-50PX-XXXX | Connectors |
| DRC20-60PX-XXXX | Connectors |
| DRC20-75PXX-XXXX | Connectors |
| DRC22-40PX-XXXX | Connectors |
| DRC22-50PX-XXXX | Connectors |
| DRC23-24PX-XXXX | Connectors |
| DRC23-40PX-XXXX | Connectors |
| DRC23-64PX-XXXX | Connectors |
| DRC23-80P | Connectors |
| **20090715**, DRC26 | Connectors |
| DRC26-24SX-XXXX | Connectors |
| DRC26-38SX-XXXX | Connectors |
| DRC26-40SX-XXXX | Connectors |
| DRC26-50SX-XXXX | Connectors |
| DRC26-60SX-XXXX | Connectors |

David Piecuch
UL Mark Certification Program Manager

File E28476
Service Request: 1181364

July 15, 2009

REPORT

on

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

TYCO ELECTRONICS CORP
MIDDLETOWN, PA

DESCRIPTION

PRODUCT COVERED:

USR Component Connectors, Series DRC1, DRC18, DRC26.

* Cat Nos. **DRC10-24PX-XXXX, DRC10-40P-XXXX, DRC12-24PXZ-XXXX, DRC12-40PXZ-XXXX, DRC12-70PXZ-XXXX, DRC13-24PX-XXXX, DRC13-40PX-XXXX, DRC14-24PXZ-XXXX, DRC14-40PXZ-XXXX, DRC14-70PXZ-XXXX, DRC16-24SXZ-XXXX, DRC16-40SZ-XXXX, DRC16-70SXZ-XXXX, DRC18-40SXZ-XXXX, DRC20-50PX-XXXX, DRC20-60PX-XXXX, DRC20-75PXX-XXXX, DRC22-40PX-XXXX, DRC22-50PX-XXXX, DRC23-24PX-XXXX**
***DRC23-40PX-XXXX, DRC23-64PX-XXXX, DRC23-80P, DRC26-24SX-XXXX, DRC26-38SX-XXXX, DRC26-40SX-XXXX, DRC26-50SX-XXXX, DRC26-60SX-XXXX.**

Refer to Nomenclature portion of report for Cat. Nos.
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 indicates investigation to United States Standards **referenced in the Test Records.**

RATING:

No current or voltage

Flammability –

Disconnecting Use - see Sec Gen for required marking

NOMENCLATURE:

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| * | DRC | 1 | 4 | - | 40 | P | **X** | **Z** | - XXXX |
| | I | II | III | | IV | V | VI | VII | VIII |

I. Designates Deutsch Rectangular Connector Bulk Packaged without Contacts or Accessories.

II. Indicates Contact Type

1 = Accepts Size 16 Terminals
2 = Accepts Size 20 Terminals

III. Indicates Connector Style

* 0 = **180° Receptacle PCB Termination**
2 = Receptacle – Flange Mount
* 3 = 90° Receptacle PCB Termination
4 = Receptacle – Inline
* 6 = Plug
8 = Keyed Plug 40 Pin Size 16 Only

IV. Indicates Shell Size and Insert Layout

24 = 24 poles
38 = 38 poles
40 = 40 poles
50 = 50 poles
60 = 60 poles
70 = 70 poles
**75 = 75 poles**
**76 = 76 poles**
**80 = 80 poles**

V. Indicates Contact Style

* S = Socket **(Plug)**
* P = Pin **(Receptacle)**

* VI. Keying Position

Blank **= No Key**
**A, B, C, D or 01 through 10**
*

VII. Wire Seals

* Blank = **Normal** Wire Insulation Seal
* T = Thin Wall Wire Insulation Seal
* E = Extra Thin Wire Insulation Wall Seal

VIII. Special Modifications

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.** 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 | TE RM # Insulating Material # | Manufacture | Min Thickness (mm) | Flame Class | HWI | HAI | RTI Elec | Max Operating Temp °C |
|---|---|---|---|---|---|---|---|---|
| Plug/Rcpt Housing Size 16 | **703360 or 021811-0174-I (A)** [redacted] | [redacted] | 1.78 | V-0 | 4 | 1 | 130 | 125 |
| | 703307 (E) [redacted] | [redacted] | 1.78 | V-0 | - | - | 130 | 125 |
| Plug/Rcpt Housing Size 20 | **703360 or 021811-0174-I** (A) [redacted] | [redacted] | 1.40 | V-0 | 4 | 1 | 130 | 125 |
| | 703570 **or CR025111-0218-I** (D) [redacted] | [redacted] | 1.40 | V-0 | 0 | 0 | 140 | 125 |
| | 703307 (E) [redacted] | [redacted] | 1.40 | V-0 | - | - | 130 | 125 |
| Header Housing Size 16 | **703360 or 021811-0174-I (A)** [redacted] | [redacted] | 1.27 | V-0 | 4 | 1 | 130 | 125 |
| | 703307 (E) [redacted] | [redacted] | 1.27 | V-0 | - | - | 130 | 125 |
| Header Housing Size 20 | **703360 or 021811-0174-I (A)** [redacted] | [redacted] | 1.02 | V-0 | 4 | 1 | 130 | 125 |
| | 703570 **or CR025111-0218-I** (D) [redacted] | [redacted] | 1.02 | V-0 | 0 | 0 | 140 | 125 |
| | 703307 (E) [redacted] | [redacted] | 1.02 | V-0 | - | - | 130 | 125 |
| Retainer Size 16 | 704987 **or CR024811-0175-I** (B) [redacted] | [redacted] | 1.14 | V-0 | 2 | 4 | 170 | 125 |
| | 703554 **or CR025111-0231-I** (C) [redacted] | [redacted] | 1.14 | HB | 3 | 0 | - - | 65 |
| | 703570 **or CR025111-0218-I** (D) [redacted] | [redacted] | 1.14 | V-0 | 0 | 0 | 140 | 125 |
| Retainer Size 20 | **704987 or CR024811-0175-I** (B) [redacted] | [redacted] | 0.98 | V-0 | 2 | 4 | 170 | 125 |

Note:
(#) – Code for Insulating Body Material.

A. TE RM No. 703360 **or 021811-0174-I**
Color: Black
1. Dielectric strength (kV/mm): 17
2. CTI: 4

B. TE RM No. 704987 **or CR024811-0175-I**
Color: Black
1. Dielectric strength (kV/mm): 32
2. CTI: 4

C. TE RM No. 703554 **or CR025111-0231-I**
1. Dielectric strength (kV/mm):--
2. CTI: --

D. TE RM No. 703570 **or CR025111-0218-I**
Color: Black
1. Dielectric strength (kV/mm): 23
2. CTI: 2

E. TE RM No. 703307
Color: Black
1. Dielectric Strength (kV/mm): - -
2. CTI: 4

4. The Maximum Operating Temperature of these devices should not exceed the temperature ratings of the insulating materials. These materials may be used interchangeably at a maximum temperature of 65°C for the Size 16 Connectors and 125°C for the Size 20 Connectors.

5. These devices have been evaluated for a 20 mm Flame Test per applicant request. The suitability of the insulating materials shall be determined in the end-use application. Devices employing housings molded from [redacted] have not been subjected to the 20 mm Flame Test.

Terminations

7. 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 |
|---|---|---|---|
| | | | |
| 1060-12-0166 / 1062-12-0166 | **12** | 12, 14 | 20 |
| | | | |
| 1060-12-0222 / 1062-12-0222 | **12** | 10 | 20 |
| | | | |
| 1060-14-0122 / 1062-14-0122 | **16** | 14 - 18 | 20 |
| | | | |
| 1060-16-0122 / 1062-16-0122 | **16** | 14 - 18 | 20 |
| | | | |
| 1060-16-0622 / 1062-16-0622 | **16** | 16, 18 | 20 |
| 1060-16-0622 / 1062-16-0622 | **16** | 20 | 8 |
| | | | |
| 1060-16-1222 / 1062-16-1222 | **16** | 12, 16 | 20 |
| | | | |
| **1062-16-14xx** | **16** | **12 – 16** | **20** |
| | | | |
| 1060-20-0122 / 1062-20-0122 | **20** | 16, 18 | 20 |
| 1060-20-0122 / 1062-20-0122 | | 20 | 8 |
| **1060-20-01xx / 1062-20-01xx** | **20** | **22** | **8** |
| | **20** | | |
| 1060-20-0222 / 1062-20-0222 | **20** | 16, 18 | 20 |
| 1060-20-0222 / 1062-20-0222 | **20** | 20 | 8 |
| **1060-20-02xx / 1062-20-02xx** | **20** | **22** | **8** |
| | | | |
| 1060-20-0144 | **20** | 16 | 20 |
| | **20** | 18 | 20 |
| | **20** | 20 | 8 |
| | | | |
| **1062-20-03xx** | **20** | **16 18** | **20** |
| **1062-20-03xx** | **20** | **20** | **8** |
| **1062-20-03xx** | **20** | **22** | **8** |

Solid Type -

| Pin/Contact | **Contact Size** | Wire Size, AWG | Force, lbf |
|---|---|---|---|
| | | | |
| 0460-202-20141 | **20** | 20 | 8 |
| | | | |
| 0462-201-20141 | **20** | 20 | 8 |
| **0460-202-20XXX / 0462 201 20XXX** | **16** | **22** | **8** |
| | | | |
| 0460-215-16141 / 0462-209-16141 | **16** | 14 | 20 |
| | | | |
| 0460-204-12141 / 0462-203-12141 | **12** | 12, 14 | 20 |
| | | | |
| 0460-202-16141 / 0462-201-16141 | **16** | 16, 18 | 20 |
| 0460-202-16141 / 0462-201-16141 | **16** | 20 | 8 |