

File E28476  
Project 02ME09905

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REPORT

on

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

Tyco Electronics  
Harrisburg, PA

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## DESCRIPTION

## PRODUCT COVERED:

USR/CNR Component Connector, I/O Through Connector Series.

USR/CNR Component Connector, Series 2368182-x and 0-1376477-y.

Note: "x" can be 3 through 9, means different position numbers

"y" can be 2 through 9, means different position numbers

**Cat. Nos. 1376477, 0-1376477-4, 2-1376477-4, 1473585, 1473585-1, 1376476, 2318468, 2318468-1, 2368182, 2368182-3, 2368182-4, 2368182-5, 2368182-7, 2368182-9, 1376477-2, 1376477-3, 1376477-4, 1376477-5, 1376477-6, 1376477-7, 1-1376477-6, 1376477-9**

## GENERAL:

These devices are multi-pole connectors intended for factory assembly with stranded copper conductors and printed wiring boards where the acceptability of combinations is determined by Underwriters Laboratories Inc.

## Ratings

| Series No.                         | Wire Size<br>(AWG) | Max. Voltage (V) | Max. Current<br>(A) |
|------------------------------------|--------------------|------------------|---------------------|
| I/O Through<br>Connector<br>Series | 22                 | 50               | 2.5                 |
|                                    | 24                 | 50               | 2.2                 |
|                                    | 26                 | 50               | 2.0                 |
|                                    | -                  | 50               | 2.5                 |
| 2368182                            | -                  | 50               | 2.2                 |
|                                    | -                  | 50               | 2.0                 |
|                                    | 22                 | 50               | 2.5                 |
| 1376477                            | 24                 | 50               | 2.2                 |
|                                    | 26                 | 50               | 2.0                 |

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

CNR - Products designated CNR have been investigated using Canadian requirements as noted in the Test Record.

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**ENGINEERING CONSIDERATIONS (NOT FOR UL REPRESENTATIVE 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 - In order to be judged acceptable as a component of electrical equipment, the following conditions should be met.**

1. **These devices have not been tested for interrupting the flow of current by connecting or disconnecting the mating connector. These devices should be used only where they will not interrupt the current.**

2. When subjected to the Temperature test described in UL 1977, Cat. No. 1376477-1 with contact Cat. No. 1376476-1 and mating connector Cat no. 1473585-1 exhibited results as tabulated below. The conductors terminated by the device and other associated components are to be reviewed in the end-use to determine whether they temperature rise from the connector exceeds their maximum operating temperature ratings.

| <u>Max. Current (A)</u> | <u>Wire Size (AWG)</u> | <u>Max. Temp (°C)</u> | <u>Max. Rise (°C)</u> |
|-------------------------|------------------------|-----------------------|-----------------------|
| 2.5                     | 22                     | 35.0                  | 15.6                  |
| 2.2                     | 24                     | 34.2                  | 12.7                  |
| 2.0                     | 26                     | 33.7                  | 12.7                  |

\*

2A. These devices have been subjected to the Temperature test with the rated currents and maximum temperature rise and recorded temperature (adjusted to 25°C ambient) values tabulated below:

| Cat. Nos.                      | Wire Size AWG | Current, A | Maximum Temperature °C |                      | Represent Series   |
|--------------------------------|---------------|------------|------------------------|----------------------|--|
|                                |               |            | Rise                   | Recorded Temperature |  |
| 2368182-9                      | 22            | 2.5        | 19.2                   | 44.2                 | 2368182  |
| 1376477-9 (terminal 1376476-1) | 22            | 2.5        | 16.3                   | 41.3                 | 1376477 (terminal 1376476-1)<br>1376477 (terminal 2318468-1) |
| 2368182-9                      | 24            | 2.2        | 20.7                   | 45.7                 | 2368182  |
| 1376477-9 (terminal 1376476-1) | 24            | 2.2        | 22.2                   | 47.2                 | 1376477 (terminal 1376476-1)<br>1376477 (terminal 2318468-1) |
| 2368182-9                      | 26            | 2.0        | 16.7                   | 41.7                 | 2368182  |
| 1376477-9 (terminal 1376476-1) | 26            | 2.0        | 16.2                   | 41.2                 | 1376477 (terminal 1376476-1)<br>1376477 (terminal 2318468-1) |

3. All devices except for connector Assembly Cat. No. 1473585-1 may be used at potentials not exceeding 50 V based on Dielectric Voltage-Withstand testing conducted at 1100 V ac in accordance with UL 1977, the Standard for Component Connectors for Use in Data, Signal, Control and Power Applications. Connector Assembly Cat. No. 1473585-1 may be used at potentials not exceeding 300 V based on Dielectric Voltage-Withstand testing conducted at 1600 V ac.

4. The insulating materials used in these devices comply with the requirements of UL 1977, the Standard for Component Connectors for Use in Data, Signal, Control and Power Applications.

5. The operating temperature of these devices shall not exceed 65° C based upon the minimum thermal index ratings of the insulating materials.

6. These devices employ terminals which are not suitable for field wiring.

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7. The factory assembled contacts have been subjected to the Conductor Secureness test from UL 1977, the Standard for Component Connectors for Use in Data, Signal, Control and Power Applications, at the maximum tensile forces indicated when wired by the connector manufacturer on the following wire ranges. These values are to be reviewed to determine whether they are sufficient to represent actual forces exerted on the connection in the end-use equipment.

| <u>Part No.</u> | <u>Wire Range (AWG)</u> | <u>Tensile Force (lb)</u> |
|-----------------|-------------------------|---------------------------|
| 1376476-1       | 22                      | 8                         |
| 1376476-1       | 24                      | 8                         |
| 1376476-1       | 26                      | 6.6                       |

8. The printed-wiring-board terminals have not been evaluated for mechanical secureness. The construction of the connector is to be reviewed when it is assembled to the particular printed wiring board used in the end-use application.

9. These devices employ leads which are not suitable for field wiring.

10. The suitability of the mounting means shall be determined in the end use.

11. The placement of these devices within the equipment enclosure should be such that spacings between the live parts and the equipment are suitable for the particular application.

12. The electrical and mechanical contact between the connector and the printed wiring board is to be judged in the end-use equipment.

13. The need to provide additional mounting hardware to mechanically secure the connector to the printed wiring board is to be determined in the end-use.