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REPORT

on

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

APPLICANT: Tyco Electronics Corp
City and State Harrisburg, PA

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DESCRIPTION

PRODUCT COVERED:

USR and CNR Component Connector, 2 Position Power Connector.

Cat Nos. 1982295-x, 1982299-x, 2367772-x, 2042274-x, 2246068-x assembled with 1241818-x.

USR **and CNR** Component Connector, 3 Position Power Connector, Cat Nos. 2204529, 2204535, 2204585.

USR and CNR - Component Connector, 2 Position Cable Connector, Cat. No. 2178186-x

USR **and CNR** - Component Connector, 3**/6** Position Cable Connector, Cat. No. 2204534 assembled with 1241818, 927837, 927831 **or 2366837.**

NOTE: For Model 2178186-x, -x can be **-1**, -2, -3, -4, represent the location of the **detective** contact with relation to the contact location.

Note: For model 1982295-x, -x can be -1, -2, -4, -5, -6. Different dash (-) number can represent the location of the **detective** contact with relation to the contact location and different plating.

For model 1982299-x, -x can be -1, -2, -3, -4, -6, -8. Different dash (-) number can represent the location of the **detective** contact with relation to the contact location and different plating.

For model 2042274-x, -x can be -1, -2. Different dash (-) number can represent the location of the **detective** contact with relation to the contact location and different plating.

For model 2246068-x, -x can be -1. For model 1241818-x, -x can be -5. Different dash (-) number can represent the location of the **detective** contact with relation to the contact location and different plating. For model 2367772-x, -x can be -1, -2, -3, -4, -5, -6, -7, -8, -9. Different dash (-) number can represent different plating and the quantity of coding contact.

GENERAL:

These devices are multi-pole connectors employing contacts of the crimp type intended for factory assembly where the acceptability of this combination is to be determined by Underwriters Laboratories Inc. The devices are identified as follows:

USR indicates investigation to United States Standards, UL 1977.

CNR indicates investigation to United States Standards, CSA C22.2 No. 182.3

Ratings:

Electrical Ratings:

Cat. Nos.	Wire Size (mm^2)	No. Poles	CNR Current (A)	USR Current (A)	Voltage **V**
1982295-1, -2, -4, 5, 6, 1982299-1, -2, -3, -4, -6, -8, 2042274-1, -2, 2367772-x	2.5 - 3.0	2	20	20	60 DC
1982295-1, -2, -4, 1982299-1, -2, -3, -4, -6, -8, 2042274-1, -2, 2367772-x	4.0	2	-	26	500 AC/DC
2178186-1,-2,-3,-4	6	-	35	35	500 AC/DC
2246068-1 assembled with 1241818-5	4.0	2	26	26	60 DC
	6	2	35	35	60 DC
*2204529, 2204585, 2204535, 2204534 assembled with 1241818, 927837, 927831 **or 2366837**	6	3	**35**	35	400 AC/DC
	4	3	-	26	400 AC/DC
	2.5	3	**20**	20	400 AC/DC
	0.8	3	**10**	10	400 AC/DC

For model 2367772-x, -x can be -1, -2, -3, -4, -5, -6, -7, -8, -9. Different dash (-) number can represent different plating and the quantity of coding contact.

TECHNICAL 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.

Interruption of Current

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 flow of current.

Current-Carrying Capability and Current Ratings

2. These devices have been subjected to the Temperature test with the rated currents and maximum recorded temperature value tabulated below, adjusted to a 25°C ambient. The conductors terminated by the device and other associated components are to be reviewed in the end-use to determine whether the temperature rise from the connector exceeds their maximum operating temperature ratings.

The **DetectiveDetective** Contacts in model 2042274-1, 1982299-1 through -2, 1982299-6, and 2042274-1 have not been subjected to the Temperature test and as a result do not have an assigned current rating. These contacts' 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.

Cat. Nos. (+)	Wire Size, (mm^2)	Current, A USR	Current, A CNR	Maximum Temperature °C (USR)
1982295-1, 1982299-3	2.5	20	20	39.8
1982295-1, 1982299-3	4.0	26A	-	69.9
2178186-1, -2,-3,-4	6	35	35	52
2246068-1 assembled with 1241818-5(@)	4.0	26	26	44.2
	6	35	35	53.7

(+) – Cat. No. 1982295-1 represented Cat. Nos. 1982295-2, 1982295-4, 1982295-5, 1982295-6, 1982295-8, 2367772-x, 2042274-1 and -2 in testing.
(@) - Cat. No. 2246068-1 assembled with 1241818-5 was subjected to the Temperature Test with mating model 1982295-1.

2A. These devices have been subjected to the **USR** 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, (mm^2)	Current, A USR	Current, A CNR	Maximum Temperature °C (USR)
2204534(++)	6	35	-	46.44
	4	26	-	58.07
	2.5	20	-	53.05
	0.8	10	-	37.03
2204534(+++)	6	35	-	43.90
	4	26	-	52.19
	2.5	20	-	47.36
	0.8	10	-	33.30
2204529(+++)	6	35	-	44.7
	4	26	-	52.15
	2.5	20	-	44.88
	0.8	10	-	36.2
2204535(++)	6	35	-	45.14
	4	26	-	58.10
	2.5	20	-	53.85
	0.8	10	-	36.62
2204585(++++)	6	35	-	51.4
	4	26	-	47.5
	2.5	20	-	40.4
	0.8	10	-	50.7

*(++) – 2 pcs of Cat. No. 2204534 **(3 Position Cable Connector)**, assembled with 1241818-5, 927837-5 or 927831-5 was subjected to the temperature test with 1 pcs of mating model 2204535.

(+++) – Cat. No. 2204534 **(3 Position Cable Connector)** assembled with 1241818-5, 927837-5 or 927831-5 was subjected to the temperature test with mating model 2204529.

(++++) – Cat. No. 2204585was subjected to the temperature test with mating model 2204534 **(3 Position Cable Connector)** assembled with 1241818-5, 927837-5 or 927831-5.

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

Cat. No.	Current A	Wire Size (mm^2)	Maximum Temperature °C	
			Rise	Recorded Temperature
2204534(++)	35	6	21.44	46.44
	20	2.5	28.05	53.05
	10	0.8	12.03	37.03
2204534(+++)	35	6	18.9	43.90
	20	2.5	22.36	47.36
	10	0.8	8.3	33.30
2204529(+++)	35	6	19.7	44.7
	20	2.5	19.88	44.88
	10	0.8	11.2	36.2
2204535(++)	35	6	20.14	45.14
	20	2.5	28.85	53.85
	10	0.8	11.62	36.62
2204585(++++)	35	6	26.4	51.4
	20	2.5	15.4	40.4
	10	0.8	25.7	50.7

*(++) – 2 pcs of Cat. No. 2204534 (3 Position Cable Connector), assembled with 1241818-5, 927837-5 or 927831-5 was subjected to the temperature test with 1 pcs of mating model 2204535.

(+++) – Cat. No. 2204534 (3 Position Cable Connector) assembled with 1241818-5, 927837-5 or 927831-5 was subjected to the temperature test with mating model 2204529.

(++++) – Cat. No. 2204585was subjected to the temperature test with mating model 2204534 (3 Position Cable Connector) assembled with 1241818-5, 927837-5 or 927831-5.

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.

Cat. No.	Insulating Material (#)	Measured Minimum Thickness	Flame Class	HWI	HAI	RTI Elec	RTI Str	Max Operating Temp, ^{0}C
1982295-1,-2,-4, 5, 6 2042274-1, 2042274-2	A	0.45 mm	V-0	**4**	**0**	130	130	130
1982299-1, 1982299-2, 1982299-3,-4,-6, -8	B	0.45 mm	(+)	4	0	130	130	130
2178186-1, -2, -3,-4	B	0.45 mm	(+)	-	-	130	130	130
2246068-1 assembled with 1241818-5	C	0.6 mm	V-0	4	4	130	130	130
2204534 assembled with 1241818, 927837, 927831 **or 2366837**	A	0.45 mm	V-0	**4**	**0**	130	130	130
2204529 2204535	A	0.35 mm	V-0	**4**	**0**	130	130	130
2204585	A	0.3 mm	V-0	**4**	**0**	130	130	130
2367772-x	D	0.45 mm	V-0	4	3	130	130	130

(+) – Indicates an UL746C end-product 20mm Flame test was conducted.
(#) – Code for Insulating Body Material.

A. Tyco Electronics raw material Part No. 1573878
   1. Dielectric strength (kV/mm): 39
   2. CTI: 4

B. Tyco Electronics raw material Part No. 704032 in a black coloration only.
   1. Dielectric strength (kV/mm): -
   2. CTI: 2

C. Tyco Electronics raw material Part No. 704129
   1. Dielectric strength (kV/mm): 39
   2. CTI: 4

D. Tyco Electronics raw material Part No. 2136903
   1. Dielectric strength (kV/mm): -
   2. CTI: 2

Terminations

4. These devices employ terminals that are not suitable for field wiring.

Mounting

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

6. 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.

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

8. The factory assembled contacts have been investigated for the following wire ranges and maximum tensile forces.

Contact Cat. No.	Wire Size (mm^2)	Tensile Force, lbf (N)
927829-5	2.5 - 4.0	20 (89)
963714-5	6	40 (178)
1241818-5	4.0	20 (89)
	6	20 (89)
927831-5	0.8	20 (89)

Miscellaneous

9. 2204534 (6 Position Cable Connector) mating with 2 pieces of 2204585, has not been evaluated in Temperature Test.