File E28476
Project 11ME03071

May 28, 2011

REPORT

on

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

Tyco Electronics Corp
Harrisburg, PA

DESCRIPTION

PRODUCT COVERED:

USR Component Connector Economy Power II Series

USR, CNR - Component Connector Economy Power II Series – Cat. Nos. 1744416-2 and 1744416-3. Series 2213738, 1877285.

* USR, CNR - Component Connector Economy Power II Series, assembled with contact 1744201, **2356981, X-2377130-Y, 2367724-X, X-2375553-Y, 2374787-X, X-2375558-Y, and X-2371377-Y.**

USR, CNR – Component Connector Economy Power Socket Terminal, 2377991-1 and 2377997-1

GENERAL:

All devices except for Series 2213738 are multi-pole connectors intended for factory assembly to No. 18-22 AWG stranded copper conductors where the acceptability of combinations is determined by UL LLC. Series 2213738, **1877285, 2367724-X, X-2375553-Y, 2374787-X, X-2375558-Y** are multi-pole connectors intended for factory assembly on printed wiring boards where the acceptability of combinations is determined by UL LLC. The devices are identified as follows:

USR indicates investigation to United States Standards, UL 1977.
CNR indicates investigation to Canadian National Standards, C22.2 No. 182.3.

RATINGS:

Economy Power II Series (except for Series 2213738, 1877285)

Wire Range (AWG)	Ampere (A)- USR	Ampere (A)- CNR (1)	Voltage (V ac/dc)
18	10	3	600
20	9	3	600
22	9	3	600

Note: Limited to Cat. Nos. 1744416-2 and 1744416-3

Economy Power II Series when assembled with contact 1744201 and 2356981

Contact P/N	Wire Range (AWG)	Ampere (A)-USR	Ampere (A)-CNR	Voltage (V ac/dc)
1744201	16-20	11	3	600
2356981	24-26	3	3	600

Series 2213738 – No electrical ratings

Economy Power II Series models assembled with contact X-2377130-Y and X-2371377-Y

Contact P/N	Wire Range (AWG)	Ampere (A)-USR	Ampere (A)-CNR	Voltage (V ac/dc)
2177991-1 (Note 1)	18-20	10	3	600
2377997-1 (Note 1)	20-22	9	3	600
2177991-9 (Note 2)	20	6	3	600
2377997-9(Note 2)	20	6	3	600

Note 1: Limited to Cat. Nos. 1-2377130-2 and 1-2377130-3
Note 2: Limited to Cat. Nos. 1-2377130-9

Economy Power II Series models assembled with contact 2367724-X, X-2375553-Y, 2374787-X, and X-2375558-Y

Ampere (A)-USR	Ampere (A)-CNR (1)	Voltage (V ac/dc)
10	3	600

Economy Power II Series, series 1877285

Ampere (A)-USR(@)	Ampere (A)-CNR	Voltage (V ac/dc)
11	3	600

(@) Note: Limited to series 1877285, up to 3 position.

* Disconnecting Use - see Sec Gen for required marking.

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 UL LLC.

*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 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 temperature rise and recorded temperature) values tabulated below:

Series	Current, A		Maximum Temperature , °C – USR	Maximum Temperature, °C – CNR	
	USR(1)	CNR(2)		Rise	Recorded Temperature
Economy Power II with contact 1744144 mated to Economy Power header x-1744057-x with a 1.14 mm by 1.14 mm pin with 18 AWG conductors.	10	3	67.3	0.7	25.7
Economy Power II with contact 1744144 mated to Economy Power header x-1744057-x with a 1.14 mm by 1.14 mm pin with 22 AWG conductors. (Represents assembly with 20 AWG wire)	9	3	77.4	1.0	26.0
Economy Power II with contact 1744144 mated to Economy Power header x-1744057-x with a 1.14 mm by 1.14 mm pin with 22 AWG conductors.	--	3	--	1.3	26.3

Note: (1) – Cat. No 1744416-12 tested to represent all devices.
(2) – Cat. No. 1744416-2 tested to represent 1744416-3. 1744416-3 is identical to 1744416-2 except the middle pole is not populated for the former.

Connector Cat. No. 1744416-9 molded of RM No. 1573697 was tested with header Cat. No. 1744428-9 also molded of RM No. 1573697 for the following electrical ratings.

Cat. Nos.	Wire size, AWG	Ampere (A)- USR	Ampere (A)- CNR (1)	Maximum Temperature Rise, °C	Voltage (V ac/dc)
1744416-9 with 1744428-9	**20**	**6**	**6**	**21.6**	**600**

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

Series	Current A	Wire Size AWG	Maximum Recorded Temperature °C
Economy Power II with contact 1744201 mated to Economy Power header x-1744057-x with a 1.14 mm by 1.14 mm pin	11	20	92.6
Economy Power II with contact 2356981 mated to Economy Power header x-1744057-x with a 1.14 mm by 1.14 mm pin	3	26	38.0
Economy Power II Series, Cat. No. 1877285-3	**11**	**16**	**40.3**

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

Series	Current A	Wire Size AWG	Maximum Temperature °C	
			Rise	Recorded Temperature
Economy Power II with contact 1744201 mated to Economy Power header x-1744057-x with a 1.14 mm by 1.14 mm pin	3	20	6.5	31.5
Economy Power II with contact 2356981 mated to Economy Power header x-1744057-x with a 1.14 mm by 1.14 mm pin	3	26	13.0	38.0
Economy Power II Series, Cat. No. 1-1877285-2	**3**	**16**	**2.0**	**27.0**

3. Adjacent poles may be used at potentials not exceeding 600 V based on the results of a Dielectric Voltage Withstand Test performed at 2200 Vac.

4. Connectors, Cat. Nos. x-1744416-y, where x is either “1” or omitted and y can be any number from 0-9, and 2344117-3 shall only be molded of Tyco Raw Material P/N 1573697.

Insulating Materials

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.

Series No.	Insulating Material (#)	Measured Minimum Thickness	Flame Class	HWI	HAI	RTI Elec	Max Operating Temp, °C
Economy Power II	A	0.56 mm	V-0	5	1	95	95
Economy Power II	B	0.56 mm	V2	4	0	130	130
Economy Power II	C	0.56 mm	V0	4	0	140	130
Economy Power II	D	0.56 mm	V0	4	1	130	130
2213738	E	0.56 mm	V0	4	0	130	130
1877285	H	1.00 mm	V0	3	0	130	130
Economy Power II	F	0.56 mm	V0	4	0	150	130
Economy Power II	G	0.56 mm	V0	0	0	130	130
Cat. Nos X-2377130-Y	**I**	**0.56 mm**	**V-0**	**4**	**2**	**120**	**120**
Cat. Nos. 2367724-X, X-2375553-Y, 2374787-X, X-2375558-Y,	**J**	**0.30 mm**	**V-0**	**4**	**3**	**130**	**130**
Cat. Nos. X-2371377-Y	**K**	**0.40 mm**	**V-0**	**-**	**-**	**130**	**130**

(#) – Code for Insulating Body Material.

A. Tyco 703762-1
   1. Dielectric strength (kV/mm): 31
   2. CTI: 0

B. Tyco 705304
   1. Dielectric strength (kV/mm): -
   2. CTI: 2

C. Tyco 1573697

1. Dielectric strength (kV/mm): -
2. CTI: 2

D. Tyco 2136278
1. Dielectric strength (kV/mm): 25
2. CTI: 0

E. Tyco 1573878
1. Dielectric strength (kV/mm): 39
2. CTI: 4

F. Tyco 2136682
1.Dielectric strength (kV/mm): 20
2. CTI: 0

G. Tyco 2136488
1.Dielectric strength (kV/mm): 8
2. CTI: 1

H. Tyco 2-1573755-1
1.Dielectric strength (kV/mm): 27
2. CTI: 3

I. Tyco Raw Material P/N 2136578-1
1. Dielectric strength (kV/mm): 17
2. CTI: 0

J. Tyco Raw Material P/N 2401706-1
1. Dielectric strength (kV/mm): - 28
2. CTI: 2

K. Tyco Raw Material P/N 1573789-1
1. Dielectric strength (kV/mm):
2. CTI: 2