File E28476
Project 11ME08009

December 15, 2011

REPORT

On

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

TYCO ELECTRONICS CORP
HARRISBURG, PA 17111

DESCRIPTION

PRODUCT COVERED:

USR, CNR Component Connectors, Economy Power 2.5, Single Row.
USR, CNR Component Connectors, Economy Power 2.5, Dual Row.
USR, CNR Component Connectors, Wire to Wire Series.

GENERAL:

These devices are multi-pole connectors intended for factory assembly on printed wiring boards where the acceptability of combinations is determined by Underwriters Laboratories Inc. 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 2.5, Single Row

Voltage, V	Ampere (A)	Conductor Sizes, AWG Str	Contacts Part No.
250	4.5	No. 22	2110989-1, 2232905-1
250	4	No. 24	2110989-1, 2232905-1
250	3	No. 26	2110989-1, 2232905-1

RATINGS: Economy Power 2.5, Dual Row

Voltage, V	Ampere (A)	Conductor Sizes, AWG Str	Contacts Part No.
250	3.3	No. 20	1744423-1, **2232983-1**
250	3.0	No. 22	1744423-1, **2232983-1**, 2110989-1, 2232905-1
250	2.8	No. 24	1744423-1, **2232983-1**, 2110989-1, 2232905-1
250	2.5	No. 26	2110989-1, 2232905-1

RATINGS: Wire to Wire Series

Voltage, V	Ampere(A)		Conductor Sizes, AWG Str	Contact Part No.
	USR	CNR		
250	3.3	3.3	No. 20	2238008
	3	3	No. 22	2238008
	2.8	2.8	No. 24	2238008
	3	3	No. 22	2238007
	2.8	2.8	No. 24	2238007
	2.5	2.5	No. 26	2238007

Flammability - V-0(When marked with Raw Material 2136278)
V-2(When marked with Raw Material 705304)

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 been subjected to the Temperature test with the rated currents and maximum temperature rise values tabulated below.

Series	Wire Size (AWG)	Current, A	Maximum Temperature Rise, °C
Economy Power 2.5, Single Row	No. 22	4.5	28.8
	No. 24	4	25.5
	No. 26	3	17.3

2a. These devices have been subjected to the Temperature test with the rated currents and maximum temperature rise values tabulated below using contacts 1744423-1.

Series	Wire Size (AWG)	Current, A	Maximum Temperature Rise, °C
Economy Power 2.5, Dual Row	No. 20	3.3	22.4
	No. 22	3.0	18.1
	No. 24	2.8	28.4

2b. These devices have been subjected to the Temperature test with the rated currents and maximum temperature rise values tabulated below using contacts 2110989-1.

Series	Wire Size (AWG)	Current, A	Maximum Temperature Rise, °C
Economy Power 2.5, Dual Row	No. 22	3.0	20.4
	No. 24	2.8	26.0
	No. 26	2.5	26.9

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2c. These devices have been subjected to the Temperature test with the rated currents and maximum temperature rise values tabulated below using contact 2238007.

Series	Wire Size (AWG)	Current, A		Maximum Temperature, °C	Maximum Temperature Rise, °C
		USR	CNR	USR	CNR
*Wire to Wire	No. 22	3	**3**	83.7	**20.4**
	No. 24	2.8	**2.8**	58.6	**20.4**
	No. 26	2.5	**2.5**	64.1	**26.8**

2d. These devices have been subjected to the Temperature test with the rated currents and maximum temperature rise values tabulated below using contact 2238008.

Series	Wire Size (AWG)	Current, A		Maximum Temperature, °C	Maximum Temperature Rise, °C
		USR	CNR	USR	CNR
Wire to Wire	No. 20	3.3	3.3	42.9	17.9
	No. 22	3	3	53.8	28.8
	No. 24	2.8	2.8	53.4	28.4

3. These devices have been evaluated at potentials of 250 V based on the results of a Dielectric Voltage Withstand Test performed at 1500 Vac.

Insulating Materials

4. 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	Insulating Material (#)	Measured Minimum Thickness	Flame Class	HWI	HAI	RTI Elec	Max Operating Temp, ^{0}C
EP 2.5 – Single Row	A	0.38 mm	V-0	4	1	130	130
	B	0.38 mm	V-2	4	0	130	130
	C	0.38 mm	(+)	4(++)	0(++)	140 (++)	130
	D	0.3 mm	V-0	4	3	130	130
	E	0.3 mm	V-0	-	-	130	130
	F	**0.4 mm**	**V-0**	**4**	**0**	**130**	**130**
	G	**0.4 mm**	**V-0**	**0**	**0**	**150**	**130**
EP 2.5 - Dual Row	C	0.38 mm	V-0	4 (++)	1 (++)	130 (++)	130
	A	0.38 mm	V-0	4	1	130	130
Wire to Wire (PNs 1969588, 1969590, 1969592, 1969593, 1969572)	A	0.38 mm	V-0	4	1	130	130
Wire to Wire (PNs 1969589, 1969591, 1969594, 1969595, 1969574)	C	0.38 mm	V-0	4 (++)	1 (++)	130 (++)	130

(#) – Code for Insulating Body Material.
(+): Thickness is less than the minimum Recognized material thickness, as such no assigned Flame class. UL746C 12mm Flammability test conducted.
(++): These PLCs are based on the minimum Recognized material thickness.

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A. Tyco Raw Material No. 2136278
Dielectric strength (kV/mm): 25
CTI: 0

B. Tyco Raw Material No. 705304
Dielectric Strength (kV/mm): -
CTI: 2

C. Tyco Raw Material No. 1573697
Dielectric Strength (kV/mm): -
CTI: 2

D. Tyco Raw Material No. 1573551
Dielectric Strength (kV/mm): -
CTI: 2

E. Tyco Raw Material No. 704924
Dielectric Strength (kV/mm): -
CTI: 2

F. Tyco Raw Material No. 2136488
Dielectric Strength (kV/mm): 20
CTI: 0

G. Tyco Raw Material No. 2136682
Dielectric Strength (kV/mm): 8
CTI: 1

5. The suitability of the accessory retainer and male connector positioning peg shall be an end product consideration.