

File E28476
Project 4787128076

October 23, 2015

REPORT

On

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

Tyco Electronics Corp
Middletown, PA

Copyright © 2015 UL LLC

UL LLC authorizes the above named company to reproduce this Report only for purposes as described in the Conclusion. The Report should be reproduced in its entirety; however to protect confidential product information, the Construction Details Descriptive pages may be excluded.

DESCRIPTION

PRODUCT COVERED:

USR, CNR Component Connector, Mid Board Copper receptacle Cat. Nos. 2291316-1, 2291316-2, 2293921-1, 2293921-2, 2293818-1, 2292096-1, 2292096-2, 2292055-1, 2292069-1, 2294186-1, 2294190-1, 2297117-1, 2297117-2, 2314572-1, 2314572-2, 2324869-1, 2324869-2, 2324869-3, 2324869-4, 2324787-1, 2324787-2, 2324734-1, 2323321-1, 2344064-1, 2344064-2, 2344064-3, 2344064-4.

USR, Component Connector, Sliver 2.0 Straddle Mount connector Cat. Nos. x-2340321-x, x-2340324-x, x-2340326-x, x-2340331-x

USR, Component Connector, Sliver 2.0 Receptacle Vertical connector Cat. Nos. x-2327678-x, x-2327677-x, x-2327679-x, x-2328461-x, x-2333799-x, **x-2338718-x**

USR, Component Connector, Sliver 2.0 Receptacle Right Angle connector Cat. Nos. x-2327670-x, x-2327671-x, x-2327672-x, x-2336568-x

"x" can be any one digit, 0 thru 9, different combinations mean different plating thickness, nut quantity, PCB thickness, hold down length, and packaging style.

GENERAL:

*These devices are multi-pole connectors intended for factory assembly on printed wiring boards where the acceptability of combinations is determined by UL LLC.

RATINGS:

Cat. No.	CNR RATING		USR RATING
	Voltage Vac/Vdc	Ampere (A)	
2291316-1	Less than 30V	Less than 1	--
2291316-2			
2293921-1			
2293921-2			
2293818-1			
2292096-1			
2292096-2			
2292055-1			
2292069-1			
2294186-1			
2294190-1			
2297117-1			
2297117-2			
2314572-1			
2314572-2			
2324869-1			
2324869-2			
2324869-3			
2324869-4			
2324787-1			
2324787-2			
2324734-1			
2323321-1			
2344064-1			
2344064-2			
2344064-3			
2344064-4			

Cat. No.	Rating	
	Voltage Vac/Vdc	Ampere (A)
x-2340321-x	Less than 30V	--
x-2340324-x		
x-2340331-x		
x-2327678-x		
x-2327677-x		
x-2327679-x		
x-2328461-x		
x-2327670-x		
x-2327671-x		
x-2327672-x		
x-2333799-x		
x-2336568-x		
x-2338718-x signal pins		
x-2338718-1, -3 power pins		
	12V	--

Disconnecting Use - see Sec Gen for required marking

Cat. No.	Position	Rating	
		Voltage Vac/Vdc	Ampere (A)
x-2340326-x	One specified Pin (see below note A)	55	0.5
	adjacent to the specified pin	--	--
	Other Pin	Less than 30	--

Note A: The specified pin can be on the left side, in the middle , or on the right side.

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 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 of models 2291316-1, 2291316-2, 2293921-1, 2293921-2, 2293818-1, 2292096-1, 2292096-2, 2292055-1, 2292069-1, 2294186-1, 2294190-1, 2297117-1, 2297117-2, 2314572-1, 2314572-2, 2324869-1, 2324869-2, 2324869-3, 2324869-4, 2324787-1, 2324787-2, 2324734-1, 2323321-1, 2344064-1, 2344064-2, 2344064-3, 2344064-4 have not been subjected to the Temperature test and as a result do not have an assigned current rating for USR. For CNR, the device is rated less than 1 A. 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.

2A. These devices of models x-2340321-x, x-2340324-x, x-2340331-x, x-2327678-x, x-2327677-x, x-2327679-x, x-2328461-x, x-2327670-x, x-2327671-x, x-2327672-x, x-2333799-x, x-2336568-x, **x-2338718-x** have not been subjected to the Temperature test and as a result do not have an assigned current rating for USR and CNR. 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.

2B. 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. No.	Current A	Maximum Temperature °C		Represent Cat. Nos.
		Recorded Temperature	Rise	
2340326-1	(specified pin in the middle) 0.5	29.1	4.1	x-2340326-x
	(specified pin on the left side) 0.5	30.5	5.5	

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. Please note the values specified in the table when multiple materials are indicated represent the minimum values for the group of materials.

Mid Board Copper receptacle

Cat. No.	Insulating Material (#)	Measured Minimum Thickness	Flame Class	HWI	HAI	RTI Elec	Max Operating Temp, °C
2291316-1 2291316-2 2293921-1 2293921-2 2293818-1 2292096-1 2292096-2 2292055-1 2292069-1 2294186-1 2294190-1 2297117-1 2297117-2 2314572-1 2314572-2 2324869-1 2324869-2 2324869-3 2324869-4 2324787-1 2324787-2 2324734-1 2323321-1 2344064-1 2344064-2 2344064-3 2344064-4	A	0.35 mm	(+)	2 (++)	0 (++)	240 (++)	130

Cat. No.	Insulating Material (#)	Measured Minimum Thickness	Flame Class	HWI	HAI	RTI Elec	Max Operating Temp, °C
2344064-1 2344064-2 2344064-3 2344064-4	C	0.35 mm	(+)	3 (++)	4 (++)	130 (++)	130

Sliver 2.0 straddle mount connector

Cat. No.	Insulating Material (#)	Measured Minimum Thickness	Flame Class	HWI	HAI	RTI Elec	Max Operating Temp, °C
x-2340321-x x-2340324-x x-2340331-x	B	0.18 mm	(+)	-(++)	-(++)	130(++)	130

Cat. No.	Insulating Material (#)	Measured Minimum Thickness	Flame Class	HWI	HAI	RTI Elec	Max Operating Temp, °C
x-2340326-x	B	0.18 mm	HB(++)	-	-	130	130

(++) - Bar sample testing was completed to determine HB flame class at the minimum 0.4 mm thickness.

Sliver 2.0 Vertical Receptacle Connector

Cat. No.	Insulating Material (#)	Measured Minimum Thickness	Flame Class	HWI	HAI	RTI Elec	Max Operating Temp, °C
x-2327678-x x-2327677-x x-2327679-x x-2328461-x x-2333799-x	A	0.18 mm	(+)	2(++)	0(++)	240(++)	130

Cat. No.	Insulating Material (#)	Measured Minimum Thickness	Flame Class	HWI	HAI	RTI Elec	Max Operating Temp, °C
x-2338718-x	B	0.18	(+)	-	-	130(++)	130

Sliver 2.0 Right Angle Receptacle Connector

Cat. No.	Insulating Material (#)	Measured Minimum Thickness	Flame Class	HWI	HAI	RTI Elec	Max Operating Temp, °C
x-2327670-x x-2327671-x x-2327672-x x-2336568-x	A	0.18 mm	(+)	2(++)	0(++)	240(++)	130

Note:

(#) - Code for Insulating Body Material.

*(+): Thickness is less than the minimum Recognized material thickness, as such no assigned Flame class.

(++) PLCs based upon min Recognized thickness of the material.

- A. TYCO RM No. 1573878
 - 1. Dielectric strength (kV/mm): 39
 - 2. CTI: 4

- B. TYCO RM No. 1573013
 - 1. Dielectric strength (kV/mm): -
 - 2. CTI: -

- C. TYCO RM No. 1573462-1
 - 1. Dielectric strength (kV/mm): -
 - 2. CTI: 3

Terminations

4. The suitability of the solder terminal for grounding shall be determined in the end-use.