

File E28476
Project 4786793293

February 13, 2015

REPORT

on

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

Tyco Electronics Corp
MIDDLETOWN PA 17057

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 Component Connector, Number 4 wire and board connector, Part Number 2204526, 2204564 and 2204539, 2204600, **2364125** may incorporate prefix and/or suffix number.

USR, CNR Component Connector, Rack bus bar power connector, Part Number 2204866, may incorporate prefix and/or suffix number.

USR, CNR Component Connector, Number 4 wire and board connector, Part Number 2204095, 2204562, 2204288, 2204563 may incorporate prefix and/or suffix number.

USR, CNR Component Connector, Mating connector, Part Number 2204265, may incorporate prefix and/or suffix number.

GENERAL:

These devices are multi-pole connectors intended for factory assembly on copper wire sizes as indicated in Ratings table below 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:

Cat. No	Contact	Voltage V	Ampere (A)	Conductor Sizes, AWG Str
2204095, 2204562	Power	54.5	50	8
	Return			
	Ground		-	18
	Sense			
2204265	Power	54.5	50	-
	Return			
	Ground			
2204288, 2204563	Power	54.5	50	-
	Return			
	Ground		-	
	Sense			
2204526, 2204564	Power	54.5	25	12
	Return			
	Ground		-	16
	Sense			
2204539	Power	60	25	-
	Return			
	Ground		-	
	Sense			

Cat. No	Contact	Voltage V	Ampere (A)	Conductor Sizes, AWG Str
2204600	Power	300	125	-
	Return			
	Ground		-	
	Sense			
2204866	Power	80	250	-
	Signal	-	-	
2364125	Power	100	80	6
	Return			
	Ground		-	
	Sense			

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

Cat No.	Contact	Current, A	Wire Size, AWG	Maximum Temperature °C		Represent Cat No.
				Rise	Recorded Temperature	
2204564	Power	25	12	-	42.7	2204526
	Ground			-	44.2	
	Return			-	40.4	
2204539	Power	25	-	-	36.4	-
	Ground			-	41.4	
	Return			-	40.9	
2204600	Power	125	-	-	60.3	-
	Ground			-	67.0	
	Return			-	60.5	
2204866	Power	250	-	24.8	49.8	-
2204265	Power/Ground/Return	50	-	13.4	38.4	-
2204095	Power/Ground/Return	50	8	13.4	41.9	2204288, 2204562, 2204563
2364125	Power	80	6	38.3	63.3	-
	Ground			44.2	69.2	
	Return			36.1	61.1	
	Sense	-	-			

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.

Cat. No.	Insulating Material (#)	Measured Minimum Thickness	Flame Class	HWI (++)	HAI (++)	RTI Elec (++)	Max Operating Temp, °C
2204095, 2204562	A	1.05 mm	V-0	-	-	110	110
2204288, 2204563	A	0.95 mm	V-0	-	-	110	110
2204526, 2204564	B	1.00 mm	V-0	2	4	240	125
2204539	B for panel housing C for insert housing	0.75 mm	V-0	2	0	130	125
2204600	B for panel and insert latch housing D for over molding housing	1.0 mm	V-0	3	0	130	125
2204866	B	1.0 mm	V-0	2	0	240	105
2204265	E	0.80mm	V-0	0	0	140	125
2364125	F	0.4 mm	V-0	4	0	130	125

(#) - Code for Insulating Body Material.

(++): These PLCs are based on the minimum Recognized material thickness.

- A. Tyco Raw Material (R/M) PN 1573144-1.
1. Dielectric strength (kV/mm): -
2. CTI: 1
- B. Tyco Raw Material (R/M) PN 1573878-2.
1. Dielectric strength (kV/mm): 39
2. CTI: 4
- C. Tyco Raw Material (R/M) PN 704924-2.
1. Dielectric strength (kV/mm): -
2. CTI: 2

- D. Tyco Raw Material (R/M) PN 1573755-1.
1. Dielectric strength (kV/mm): 27
2. CTI: 3
- E. Tyco Raw Material (R/M) PN 1573543.
1. Dielectric strength (kV/mm): -
2. CTI: 0
- F. Tyco Raw Material (R/M) PN 1573878.**
1. Dielectric strength (kV/mm): 39
2. CTI: 4

Terminations

4. Crimp contacts of Cat. No. as tabulated below are intended for crimp termination on stranded copper conductor using the tooling shown in ILL. 13 for information purpose only.

Cat. No	Conductor Sizes, AWG
2204095, 2204562	8, 18
2204526, 2204564	12, 16
2364125	6

5. These devices have been assessed with the mating connectors as tabulated below.

Cat. No	Mating Connector Cat No.	Mating Connector Manufacturer
2204095, 2204562	Bus Bar	Shanghai ZhenRan Electronics Co.,Ltd
2204526, 2204564	Bus Bar	Shanghai ZhenRan Electronics Co.,Ltd
2204539	PDBB Test Bus Bar	Shanghai ZhenRan Electronics Co.,Ltd
2204600	PDBB Test Bus Bar	Shanghai ZhenRan Electronics Co.,Ltd
2204866	Bus Bar	Tyco Guangdong
2204095	2204265	Tyco Zhuhai
2364125	Bus Bar	Tyco Zhuhai

Miscellaneous

6. The enclosure of the device has live parts that may be exposed to user contact when the connector is energized. The device is suitable for use only within an acceptable enclosure.

*

7. Part number 2204095 has been conducted by temperature test at 100 A for 3 minutes, and the power, return, ground contact of five connectors has been conducted in series for this test. The test result has no representation of any part number.

8. Six samples of part number 2364125 have been subjected to the temperature test as per UL 1977 with a current of 160 A for 3 minutes. After 3 minutes, the following temperatures were recorded. Note these devices did not obtain thermal equilibrium. These results are not part of the UL Recognition of this connector and are for informational purposes only. For temperature results relating to this connectors Recognition, please see Condition of Acceptability #2

Cat No.	Contact	Current, A	Wire Size, AWG	Maximum Temperature °C	
				Rise	Recorded Temperature
2364125	Power	160	6	76.3*	101.3*
	Ground			92.3*	117.3*
	Return			65.7*	90.7*
	Sense	-	-	-	-

*These results are not part of the UL Recognition of this connector and are for informational purposes only