

File E28476  
Project 01ME05381

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REPORT

On

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

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Harrisburg, PA

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D E S C R I P T I O NPRODUCT COVERED:

USR/CNR Component Connector, Series Micro Mate-N-Lok.

Cat. Nos. 0-2008571-2, 0-2008571-3, 0-2008571-4, 0-2008571-5, 0-2008571-6, 1-2008571-2, 1-2008571-3, 1-2008571-4, 1-2008571-5, 1-2008571-6, 794616, 2-794616-4, 794617, 2-794617-4, 794608, 794608-1, 794608-2, 794608-3, 1-794608-0, 1-794608-1, 1-794608-2, 794606, 794606-1, 794606-2, 794606-3, 1-794606-1, 1-794606-2, 1-794606-3, 2315758, 2315758-2, 2315758-4, 2315759, 2315759-2, 2315759-4, 2315785, 2315785-2, 2315785-3, 2315785-4, 2315786, 2315786-2, 2315786-3, 2315786-4, 2315744, 2315744-2, 2315744-4, 2315752, 2315752-2, 2315752-3, 2315752-4, 794609, 1-794609-0, 1-794609-1, 1-794609-2, 794607, 1-794607-1, 1-794607-2, 2421777-2, 2425486-1, 2425487-1

GENERAL:

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

RATINGS:

5 Amps, 250 Volts except as noted below.

Cat Nos.	Current (Amps)	Voltage
0-2008571-2, 0-2008571-3, 0-2008571-4, 0-2008571-5, 0-2008571-6, 1-2008571-2, 1-2008571-3, 1-2008571-4, 1-2008571-6	9 (18AWG)	250
1-2008571-5, 1-2008571-3, 1-2008571-4, 1-2008571-6	5 (20AWG)	
1-2008571-2, 1-2008571-3, 1-2008571-4, 1-2008571-6	3 (22AWG)	
	2 (24AWG)	
	1 (26AWG)	
	0.7 (28AWG)	
	0.5 (30AWG)	

USR - Products designated USR have been investigated using US requirements as noted in the Test Record.

CNR - Products designated CNR have been investigated using Canadian requirements as noted in the Test Record.

ENGINEERING 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 current.

Current-Carrying Capability and Current Ratings -

2. These devices have been subjected to the Temperature test described in UL 1977 (the Standard for Component Connectors for Use in Data, Signal, Control and Power Applications) and CSA C22.2 No. 182.3M-198 (Standard Special Use Attachment Plugs, Receptacles, and Connectors), with the rated currents and maximum temperature rise values tabulated below (using 20 AWG wire only). The use of any other wire AWGs is to be reviewed in the end-use.

<u>Connector</u>	<u>Contact</u>	<u>Current (A)</u>	maximum	
			<u>Temp. Rise °C</u>	<u>Wire AWG</u>
6 pin	794606-1	5	20.9	20
24 pin	794606-1	5	22.8	20
24 pin	794606-1	5.5	30	20

Series	Current, A	Wire Size (AWG - Cu str)	Maximum Temperature °C	
			Rise	Recorded Temperature
PLUG HOUSING CAT. NO. 2-794616-4 with contact Cat. No. 794608-2	5	20	21.2	51.2
RECEPTACLE HOUSING CAT. NO. 2-794617-4 with contact Cat. No. 1-794606-2	5		22.5	52.5
2421777-2	5	-	13.0	38.0
PLUG HOUSING CAT. NO. 2425486-1 with contact CAT. NO. 794606-1	5	20	19.4	44.4
CAP HOUSING CAT. NO. 2425487-1 with contact CAT. NO. 1-794608-0	5	20	20.1	45.1
PLUG HOUSING CAT. NO. 2425486-1 with contact CAT. NO. 794606-1	2	24	6.5	31.5

Series	Current, A	Wire Size (AWG - Cu str)	Maximum Temperature °C	
			Rise	Recorded Temperature
CAP HOUSING CAT. NO. 2425487-1 with contact CAT. NO. 1-794608-0	2	24	5.9	30.9
PLUG HOUSING CAT. NO. 2425486-1 with contact CAT. NO. 794607-1	1	26	2.6	27.6
CAP HOUSING CAT. NO. 2425487-1 with contact CAT. NO. 1-794609-0	1		2.8	27.8

Series	Current, A	Wire Size (AWG - Cu str)	Maximum Temperature °C	
			Rise	Recorded Temperature
Representative RECEPTACLE HOUSING Cat No. X-2008571-6 with contact Cat. No. 794606-1	5	20	22.7	47.7
Representative RECEPTACLE HOUSING Cat No. X-2008571-6 with contact Cat. No. 794607-1	0.5	30	1.5	26.5
Representative RECEPTACLE HOUSING Cat No. X-2008571-6 with contact Cat. No. 794606-1	3	22	12.8	37.8
Representative RECEPTACLE HOUSING Cat No. X-2008571-6 with contact Cat. No. 794607-1	0.7	28	3.2	28.2
Representative RECEPTACLE HOUSING Cat No. X-2008571-6 with contact 2008625-1, for ways 1, 3 and 6, (18AWG) and contact 794606-1 for ways 2, 4 and 5 (20AWG) (max Config)	9 (18 AWG) 5 (20 AWG)	18, 20, 18, 20, 20, 18	29.5	54.5

Representative RECEPTACLE HOUSING Cat No. X-2008571-6 with contact 2008625- 1, for ways 1, 3 and 6, (22AWG) and contact 794606-1 for ways 2, 4 and 5 (22AWG) (Min Config)	3	22,22,22,22,22,22	10.8	35.8
Representative RECEPTACLE HOUSING Cat No. X-2008571-6 with contact 2008625- 1, for ways 1, 3 and 6 (20AWG), and contact 794606-1 for ways 2, 4 and 5 (20AWG) (Mid Config 1)	5	20,20,20,20,20,20	21.7	46.7
Representative RECEPTACLE HOUSING Cat No. X-2008571-6 with contact 2008625- 1, for ways 1, 3 and 6, (18AWG) and contact 794606-1 for ways 2, 4 and 5 (22AWG) (mid Config 2)	9 (No. 18 AWG) 3 (No. 22 AWG)	18,22,18,22,22,18	25.8	50.8
Representative RECEPTACLE HOUSING Cat No. X-2008571-6 with contact 794606-1	2	24	7.1	32.1
Representative RECEPTACLE HOUSING Cat No. X-2008571-6 with contact 794607-1	1	26	2.9	27.9

INTERRUPTION OF CURRENT: Cont'd.Spacings and Voltage Ratings -

3. These devices may be used at potentials not exceeding 250 V based on Dielectric Voltage-Withstand testing conducted at 1500 V dc in accordance with UL 1977, the Standard for Component Connectors for Use in Data, Signal, Control and Power Applications and CSA Standard C22.2 No. 182.3-M1987.

Insulating Materials -

4. The insulating materials used in these devices comply with the requirements of UL 1977, the Standard for Component Connectors for Use in Data, Signal, Control and Power Applications and CSA Standard C22.2 No. 182.3-M1987. The operating temperature of these devices shall not exceed 120°C based upon the minimum thermal index ratings of the insulating materials.

Cat. No.	Insulating Material (#)	Measured Minimum Thickness (mm)	Flame Class	HWI	HAI	RTI Elec	Max Operating Temp, °C
*PLUG HOUSING CAT. NO. 2-794616-4 and RECEPTACLE HOUSING CAT. NO. 2-794617-4	A	0.38	V0	4	0	120	120
*CAP HOUSING CAT. NO. 2425487-1	D	0.40	V-0	4	0	130	130
*PLUG HOUSING CAT. NO. 2425486-1	D	0.30	- (##)	4 (+)	0 (+)	130	130
	E	0.30	- (##)	4 (+)	3 (+)	130	130
*RECEPTACLE HOUSING Cat No. X-2008571- Y with contact Cat. No. 794606-1, 794607-1, 2008625-1  (X is 1 or 2, Y is 2-6 incl)	A	0.48	V-0	4	0	120	105

Note:

(#) - Code for Insulating Body Material.

(##) - Thickness is less than the minimum Recognized material thickness, as such has no assigned Flame class. UL746C 12mm Flammability test conducted.

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

A. TE RM 705287  
1. Dielectric strength (kV/mm): --  
2. CTI: 0

D. TE RM 2136597  
1. Dielectric strength (kV/mm): 13  
2. CTI: 0

E. TE RM 1573672  
1. Dielectric strength (kV/mm): --  
2. CTI: 0

\*



4A. 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
PLUG HOUSING CAT. NO. 2315758, 2315759, 2315785, 2315786 RECEPTACLE HOUSING CAT. NO. 2315744, 2315752	B	0.38mm	V-0	0	0	130	105
2421777-2	C	0.38mm	V-0	0	2	130	130

Note:

(#) - Code for Insulating Body Material.

- B. TE RM 2136700  
 1. Dielectric strength (kV/mm): 17  
 2. CTI: 2
- C. TE RM 1573851  
 1. Dielectric strength (kV/mm): -  
 2. CTI: 0

5. Deleted

Terminations -

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

7. The factory assembled contacts have been subjected to the Conductor Secureness test from UL 1977, the Standard for Component Connectors for Use in Data, Signal, Control and Power Applications, at the maximum tensile forces indicated when wired by the connector manufacturer on the following wire ranges. These values are to be reviewed to determine whether they are sufficient to represent actual forces exerted on the connection in the end-use equipment.

<u>Part No.</u>	<u>Wire Range AWG</u>	<u>Tensile Force (lb)</u>
794606-1	20	10
794606-1	24	8.0
794607-1	26	7.7
794607-1	28	5.3
794607-1	30	4.6

8. The printed-wiring-board terminals have not been evaluated for mechanical secureness. The construction of the connector is to be reviewed when it is assembled to the particular printed wiring board used in the end-use application.

INTERRUPTION OF CURRENT: Cont'd.

Mounting -

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

10. 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.

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

12. The need to provide additional mounting hardware to mechanically secure the connector to the printed wiring board is to be determined in the end-use.

Mating Connectors

13. These devices have only been assessed for use with specific types of connectors within their product family. They have not been assessed to operate with any other similar devices from any other manufacturer.