

# CERTIFICATE OF COMPLIANCE

**Certificate Number** 20181206-E28476  
**Report Reference** E28476-20141121  
**Issue Date** 2018-December-06

**Issued to:** TYCO Electronics Corp  
2901 Fulling Mill Rd  
Middletown PA 17057

**This certificate confirms that  
representative samples of**

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

See next page for models

Have been investigated by UL in accordance with the component requirements in the Standard(s) indicated on this Certificate. UL Recognized components are incomplete in certain constructional features or restricted in performance capabilities and are intended for installation in complete equipment submitted for investigation to UL LLC.

**Standard(s) for Safety:**

UL 1977, Component Connectors for Use in Data, Signal, Control and Power Applications,  
CAN/CSA C22.2 No. 182.3-16 Special Use Attachment Plugs, Receptacles and Connectors and IEC 60529


**Additional Information:**

See the UL Online Certifications Directory at <https://iq.ulprospector.com> for additional information.

This *Certificate of Compliance* does not provide authorization to apply the UL Recognized Component Mark.

Only those products bearing the UL Recognized Component Mark should be considered as being UL Certified and covered under UL's Follow-Up Services.

Look for the UL Recognized Component Mark on the product.



Bruce Mahrenholz, Director North American Certification Program

UL LLC

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# CERTIFICATE OF COMPLIANCE


**Certificate Number** 20181206-E28476  
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This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements.

Component Connectors, NECTOR M Series Sealed and Unsealed, Types Panel Mount, Free Hanging, T-splitter, Printed Circuit Board Mount.

USR, CNR - Component Connectors, NECTOR M 7P Sealed Series

USR/CNR – Component Connectors, Cat. Nos. 2331869-1 and 2331869-2.



Bruce Mahrenholz, Director North American Certification Program

UL LLC

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## DESCRIPTION

## PRODUCT COVERED:

USR, CNR - Component Connectors, NECTOR M Series Sealed and Unsealed, Types Panel Mount, Free Hanging, T-splitter, Printed Circuit Board Mount.

USR, CNR - Component Connectors, NECTOR M 7P Sealed Series

**USR/CNR - Component Connectors, Cat. Nos. 2331869-1 and 2331869-2.**

Refer to Index to Illustration Tabulation for Specific Part Nos.

## GENERAL:

These devices are multi-pole connectors intended for factory assembly on flexible cord 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:

Electrical -

Non-Current Interrupt:

600VAC, Sealed and Unsealed (**Except for NECTOR M 7P Sealed Series**)

Type	Wire Size (AWG) - Cu str (1)	No. of Poles (2)	Current, A
All	18	3	9
	18	5, 6, 7	7 (power), 2 (signal)
	16	3, 5	10
	14		15

**600VAC, Sealed - NECTOR M 7P Sealed Series**

Wire Size (AWG) - Cu str	No. of Poles (2)	Current, A
18	7	7 (power), 2 (signal)

Current Interrupt:

300VAC, Sealed and Unsealed (**Except for NECTOR M 7P Sealed Series**)

Type	Wire Size (AWG) - Cu str (1)	No. of Poles (2)	Current, A
All	18	3, 5, 6, 7	7
	18, 16, 14	3, 5, 6, 7	7

277VAC, Sealed and Unsealed (**Except for NECTOR M 7P Sealed Series**)

Type	Wire Size (AWG) - Cu str. (1)	No. of Poles (2)	Current, A	
All	16	3, 5	USR	CNR
			10	9
	14	3, 5	10	9

**277VAC, Sealed - NECTOR M 7P Sealed Series**

Wire Size (AWG) - Cu str.	No. of Poles (2)	Current, A	
18	7	USR	CNR
		7	7

480VAC, Sealed and Unsealed (**Except for NECTOR M 7P Sealed Series**)

Type	Wire Size (AWG) - Cu str. (1)	No. of Poles (2)	Current, A
All	18	3	5
	18	5, 6, 7	5
	16	3, 5	5
	14		5

**480VAC, Sealed - NECTOR M 7P Sealed Series**

Wire Size (AWG) - Cu str. (1)	No. of Poles (2)	Current, A
18	7	5

## Note:

(1) T-splitter device has no assigned wire range

(2) 3 position loading consists of 2 power + 1 ground, 5 position loading consists of 4 power + 1 ground, 7 position loading consists of 4 power + 2 signal (not loaded for current interrupt) + 1 ground.

(3) 3 position loading consists of 2 power + 1 ground, 5 position loading consists of 4 power + 1 ground, 6 position loading consists of 4 power + 2 signal (not loaded for current interrupt), 7 position loading consists of 4 power + 2 signal (not loaded for current interrupt) + 1 ground.

T-splitter device has no assigned wire range

Flammability - V0

Disconnecting Use - See Section General 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 been tested for 250 make-and-break cycles of interrupting a current of 10.5 A (power) at 300V AC by connecting and disconnecting the mating connector. The Sealed versions of Types Panel-mount have been tested for 250 make-and-break cycles of interrupting a current of 7.5 A (power) at 480V AC by connecting and disconnecting the mating connector; and a current of 15 A (power) at 277V AC by connecting and 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 temperatures tabulated below, adjusted to a 25°C ambient.

Type	Construction	No. of Poles	AWG - Cu Str	Current, A	Maximum Temperature, °C
Non-Current Interrupt:					
Panel Mount Pin and Free Hanging Socket Connectors	Crimp type Contact	3	18	7	10.8
			16	10	11.5
			14	15	14.9
	7 (representing 5, 6 pole devices)	18	7 (power), 2 (signal)	39.0 (power), 32.2 (signal)	
		5	16	10	21.5
			14	15	25.6
<b>NECTOR M 7P Sealed Series</b>	<b>Crimp type Contact</b>	<b>7</b>	<b>18</b>	<b>7 (power), 2 (signal)</b>	<b>29.4 (power), 29.6 (signal)</b>

Continued:

Type	Construction	No. of Poles	AWG - Cu Str	Current, A	Maximum Temperature, °C
Free Hanging and T-splitter	Wire Binding Screw type Contact	3	18	7	9.2
			16	10	11.5
			14	15	14.5
		5 (representing 6, 7 pole devices)	18	7 (power), 2 (signal)	28.3 (power), 32.2 (signal)
		5	16	10	18.2
			14	15	23.8
Current Interrupt:					
Free Hanging and T-splitter	Wire Binding Screw type Contact	5 (representing 3 pole devices)	18	7	33.8
Panel Mount Pin and Free Hanging Socket Connectors	Crimp type Contact	7	18 (representing 16-14 AWG)	7	39.0

Type (sealed versions)	Construction	No. of Poles	AWG - Cu Str	Current (A)		Maximum Temperature, °C
				Power	Signal	
Panel Mount	Crimp type Contact	3	18	5	--	32.1
		3	16	9	--	47.1 (1)
		7	18	5	2	32.1 (P) / 31.9 (S)
		7	16	9	--	56.8 (1), 54.8 (2)

Type (sealed versions)	Construction	No. of Poles	AWG - Cu Str	Current, A	Maximum Temperature, °C
<b>NECTOR M 7P Sealed Series</b>	<b>Crimp type Contact</b>	<b>7</b>	<b>18</b>	<b>7 (at 277VAC)</b>	<b>32.2</b>
<b>NECTOR M 7P Sealed Series</b>	<b>Crimp type Contact</b>	<b>7</b>	<b>18</b>	<b>5 (at 480VAC)</b>	<b>30.1</b>

Note (1): Based on a test current of 10A.

(2): Based on a test current of 9A.

## 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.

Part	Insulating Material (#)	Measured Minimum Thickness	Flame Class	HWI	HAI	RTI Elec	Max Operating Temp, °C
Positioner for the Unsealed Models, 5P T-Splitter	A	0.8	V0	0	0	120	105
Sealed Device Housings	B	0.8	V0	2	3	130	105

(#) - Code for Insulating Body Material.

- A. Tyco Raw Material No. 1573739 **(UV (f1) rated material)**  
 1. Dielectric strength (kV/mm): 11  
 2. CTI: 0
- B. Tyco Raw Material No. 2136421 **(UV (f1) rated material)**  
 1. Dielectric strength (kV/mm): --  
 2. CTI: 2



## Terminations

4. All devices except for the T-splitter are suitable for use with Type SEOW or similar flexible cord.

## Mating Connectors

5. 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.

## Miscellaneous

\*6. Testing per The Standard for Fire Test for Heat and Visible Smoke Release for Discrete Products and Their Accessories Installed in Air-Handling Spaces, UL 2043, 4<sup>th</sup> edition dated 2013-10-02 has been performed on a sample set of **NECTOR** M Series connectors, constituting a maximum mix of devices that fit into a 2 ft by 10 ft long air duct. The mix consisted of the following free standing independent samplings:

## Sealed Devices:

1. 4 panel mount to Free Hanging mated pairs (7P)
2. 4 panel mount to Free Hanging mated pairs (3P)
3. 4 splitter + mating parts (3P only)

## Unsealed Devices:

1. 2 T-splitter + mating parts (5P)
2. 4 Panel mount to Free Hanging mated pairs (5/6/7P)
3. 4 T-splitter + mating parts (3P only)
4. 4 Panel mount to Free Hanging mated pairs (3P)

7. The suitability of the interface seals shall be determined in the end-product.

8. The grounding terminal employed shall be an end product consideration.

9. The T-splitter is intended for mating with the Free Hanging connector.

**10. Cat. Nos. 2331869-1 and 2331869-2 have been additionally evaluated for an IP67 rating.**