File E28476
SR9481720-T001

October 31, 2012

REPORT

On

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

TYCO ELECTRONICS CORP
HARRISBURG PA 17111

DESCRIPTION

PRODUCT COVERED:

USR, CNR Component Connector, Model Next Generation Grace Inertia Connector 3.3 and GI3.0.

Cat Nos. 1971905, 4-1971905-7, 3-1971905-7, 2-1971905-7, 1-1971905-7, 4-1971905-6, 3-1971905-6, 2-1971905-6, 1-1971905-6, 4-1971905-5, 3-1971905-5, 2-1971905-5, 1-1971905-5, 4-1971905-5, 3-1971905-5, 2-1971905-5, 1-1971905-5, 4-1971905-4, 3-1971905-4, 2-1971905-4, 1-1971905-4, 4-1971905-3, 3-1971905-3, 2-1971905-3, 1-1971905-3, 4-1971905-2, 3-1971905-2, 2-1971905-2, 1-1971905-2, 4-1971906-7, 3-1971906-7, 2-1971906-7, 6-1971906-7, 1-1971906-7, 5-1971906-7, 4-1971906-6, 3-1971906-6, 2-1971906-6, 1-1971906-6, 4-1971906-5, 3-1971906-5, 2-1971906-5, 1-1971906-5, 4-1971906-4, 3-1971906-4, 2-1971906-4, 1-1971906-4, 4-1971906-3, 3-1971906-3, 2-1971906-3, 1-1971906-3, 4-1971906-2, 3-1971906-2, 2-1971906-2, 1-1971906-2, 1983780, 1983780-1, 1971904, 2-1971904-2, 2-1971904-3, 2-1971904-4, 2-1971904-5, 2-1971904-6, 2-1971904-7, 1971906, 6-1971906-5, 5-1971906-5, 5-1971906-3, 1971908, 6-1971908-7, 5-1971908-7, 4-1971908-7, 3-1971908-7, 2-1971908-7, 1-1971908-7, 4-1971908-6, 3-1971908-6, 2-1971908-6, 1-1971908-6, 4-1971908-5, 3-1971908-5, 2-1971908-5, 1-1971908-5, 4-1971908-4, 3-1971908-4, 2-1971908-4, 1-1971908-4, 4-1971908-3, 3-1971908-3, 2-1971908-3, 1-1971908-3, 4-1971908-2, 3-1971908-2, 2-1971908-2, 1-1971908-2, 1971907, 1971907-1, 1971904, 4-1971904-3, 4-1971904-2, 1971795, 1971795-1, 1971904, 4-1971904-4, 4-1971904-5, 4-1971904-6, 4-1971904-7, 2318950, 2318950-1.

USR, CNR Component Connector, Grace Inertia Connector Series GI3.0

***Cat Nos. 2389261-X, 2389268-X, 2389270-X (where X= 1 to 9).**
2374433-Y, 2374434-Y, 2374437-Y (Where Y= 1 to 9)

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 – 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.
*

RATINGS:

Series No.	Next Generation Grace Inertia Connector 3.3				
Header Connector	Header Assembly 1971906, Include Header Housing 1971908 with Post Contact 1971907-1				
Plug Connector	Plug Housing 1971905 with Receptacle Contact 1983780-1; Plug Housing 1971905 with Receptacle Contact 2318950-1			Plug Housing 1971905 with Receptacle Contact 1971795-1	
Contact Number	Rated Current, A				
	AWG #20	AWG #22	AWG #24	AWG #26	AWG #28
4	4	2.5	2.2	2	1.5
6	4	2.5	2.2	2	1.5
8	4	2.5	2.2	-	-
10	4	2.5	2.2	-	-
12	4	2.5	2.2	-	-
14	3	2.2	2	-	-
Rated Voltage	250 Vac/dc				

GI3.0			
Part. Nos.	**2374433-Y, 2374434-Y, 2374437-Y, 2389261-X, 2389268-X, 2389270-X**		
Voltage [Vac/Vdc]	**250**		
Position / **Wire Size**	**Current Capacity / A**		
	14P	**26P**	**28P**
22AWG	**3.0**	**2.0**	**2.0**
24AWG	**2.5**	**2.0**	**2.0**
26AWG	**2.5**	**2.0**	**2.0**
28AWG	**1.5**	**1.5**	**1.5**

*

Disconnecting Use – See Sec Gen for required marking.

NOMENCLATURE:

The Series is designated as follows:

Example:

$$\frac{1}{A} - \frac{1971906}{B} - \frac{2}{C}$$

A - Color Code, may be 0 thru 6.
B - Series Name, may be 1971905-, 1971906-, and 1971908-.
C - Contact Number, may be 2 thru 7, 2 means 4 poles, 3 means 6 poles and so on.

Example:

2374433	-Y
A	B

A – Part No.:

Plug: 2389261-X (2-pole)
2389268-X (4-pole)
2389270-X (6-pole)

Receptacle: 2374433-Y (14-pole)
2374434-Y (26-pole)
2374437-Y (28-pole)

B – Keying Code: X – number from 1 to 9 for Plugs
Y – number from 1 to 9 for **Header**

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, and with the USR rated currents and maximum temperature values tabulated below. The mating with any other connector will need to be evaluated.

Cat Nos.	Wire, AWG	Current, A	Maximum Temperature Rise, °C
Next Generation Grace Inertia Connector 3.3 with Receptacle Connect 1971795-1, max contact number 6	26	2	9.6
	28	1.5	5.7
Next Generation Grace Inertia Connector 3.3 with Receptacle Connect 1983780-1, max contact number 14	20	3	12.5
	22	2.2	12.4
	24	2	13.5
Next Generation Grace Inertia Connector 3.3 with Receptacle Connect 1983780-1, max contact number 12	20	4	28.8
	22	2.5	15.7
	24	2.2	24.2

Part Nos.	Wire, AWG	Current, A	Maximum Temperature °C	
			Rise	Recorded Temperature
2374433-Y with 2389261-X, 2389268-X, 2389270-X	22	3	17.1	42.1
2374433-Y with 2389261-X, 2389268-X, 2389270-X	26	2.5	19.3	44.3
2374437-Y with 2389261-X, 2389268-X, 2389270-X	26	2	15.8	40.8
2374437-Y with 2389261-X, 2389268-X, 2389270-X	28	1.5	13.4	38.4

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, ^{0}C
Next Generation Grace Inertia Connector 3.3	A	0.4 mm	V-0	0	0	130	105
2374433-Y, 2374434-Y, 2374437-Y	**B**	**0.34 mm**	**V-0**	**0**	**0**	**130**	**105**
2389261-X, 2389268-X, 2389270-X	**C**	**0.35 mm**	**V-0**	**0**	**0**	**130**	**105**

(#) – Code for Insulating Body Material.

A. Tyco Raw Material # 704924
1. Dielectric strength (kV/mm): N/A
2. CTI: 2

B. Tyco Raw Material # 2401706
1. Dielectric strength (kV/mm): 25
2. CTI: 2

C. Tyco Raw Material # 2136919
1. Dielectric strength (kV/mm): 18
2. CTI: 1

Mating Connectors

4. These device Next Generation Grace Inertia Connector 3.3 has 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.

Cat. No.	Mating Connector
Header Assembly 1971906, Include Header Housing 1971908 with Post Contact 1971907-1	Plug Housing 1971905 with Receptacle Contact 1983780-1
	Plug Housing 1971905 with Receptacle Contact 1971795-1
	Plug Housing 1971905 with Receptacle Contact 2318950-1

Terminations

*

5. Crimp contacts are intended for crimp termination on stranded copper conductor using the tooling shown in Fig. 1 and Fig. 2 for information purpose only.

Crimp Contact Part No.	Connector Part No.	Wire Range, (AWG)	Illustration No.
2401417-1	**2389261-X, 2389268-X, 2389270-X**	**22-26**	**19**
2415838-1	**2389261-X, 2389268-X, 2389270-X**	**26-28**	**18**