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REPORT

on

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

TYCO ELECTRONICS CORP
MIDDLETOWN PA 17057-3170

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DESCRIPTION

PRODUCT COVERED:

USR, CNR Component Connector, Grace Inertia Connector (GIC) Series, Cat. Nos. GIC 6.2W, GIC 6.5, GIC 7.92, and GIC 6.0.

USR Component Connector, Grace Inertia Connector (GIC) Series, Cat. No. GIC 5.8.

* **USR, CNR Component Connector**, Cat Nos. 1903683, 3-1903684-4, 2-1903684-3, 1-1903684-2, 1903684-1, 3-1903683-4, 2-1903683-3, 1-1903683-2, 1903683-1, 3-1903684-4, 7-1903683-4, 1746975, 1746975-1, 1871867, 1871867-1, 1746978-1, 1746971, 1746971-1, 1746972, 1746972-1, 1903684, , 1746977, 1746977-1, 1746978, 1746978-1, 1746973, 1746973-1, 1746974, 1746974-1, 1747047, 3-1747047-4, 2-1747047-3, 1-1747047-2, 1747047-1, 3-1747049-4, 2-1747049-3, 1-1747049-2, 1747049-1, 1376347, 1376347-1, 1376348, 1376348-2, 1376348-1, 1747049, 1747050, 3-1747050-5, 3-1747050-4, 3-1747050-3, 3-1747050-2, 3-1747050-1, 2-1747050-5, 2-1747050-4, 2-1747050-3, 2-1747050-2, 2-1747050-1, 1-1747050-5, 1-1747050-4, 1-1747050-3, 1-1747050-2, 1-1747050-1, 1747050-6, 1747050-5, 1747050-4, 1747050-3, 1747050-2, 1747050-1, 3-1747052-5, 3-1747052-4, 3-1747052-3, 3-1747052-2, 3-1747052-1, 2-1747052-5, 2-1747052-4, 2-1747052-3, 2-1747052-2, 2-1747052-1, 1-1747052-5, 1-1747052-4, 1-1747052-3, 1-1747052-2, 1-1747052-1, 1747052-6, 1747052-5, 1747052-4, 1747052-3, 1747052-2, 1747052-1, 1747052, 2232876, 2-2232876-1, 2-2232876-2, 2-2232876-3, 2-2232876-4, 3-2232876-1, 3-2232876-2, 3-2232876-3, 3-2232876-4, 2-2232875-1, 2-2232875-2, 2-2232875-3, 2-2232875-4, 3-2232876-1, 3-2232876-2, 3-2232876-3, 3-2232876-4, 2232876, 2232564, **1-2232564-1, 2-1747047-1, 2-1747049-1, 4-1903683-1, 4-1871867-1, 4-1746978-1.**

GENERAL:

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

Cat. Nos.	Housing Part Nos.	Voltage (Vac/Vdc)	Ampere (A)	Contact Part Nos.	Conductor Sizes, AWG (Cu, Str)
GIC 6.2W	x-1903683-x (1 Pole Plug)	600	12	1746971-1	16
			15	1746971-1 1746972-1	14
			20	1746972-1	12
	x-1903684-x (1 Pole Receptacle)	600	12	1746973-1	16
			15	1746973-1 1746974-1	14
			20	1746974-1	12
	x-1746975-x (2 Poles Plug)	600	12	1746971-1	16
			14	1746972-1 1746971-1	14
			20	1746972-1	12
	x-1746977-x (2 Poles Receptacle)	600	12	1746973-1	16
			14	1746973-1 1746974-1	14
			20	1746974-1	12
	x-1871867-x (3 Poles Plug)	600	8	1746971-1	16
			12	1746971-1 1746972-1	14
			18	1746972-1	12
	x-1746978-x (3 Poles Receptacle)	600	8	1746973-1	16
			12	1746973-1 1746974-1	14
			18	1746974-1	12

Disconnecting Use - see Sec Gen for required marking

RATINGS: (CONT'D)

Cat. Nos.	Housing Part Nos.	Voltage (Vac/Vdc)	Ampere (A)	Contact Part Nos.	Conductor Sizes, AWG (Cu, Str)
GIC 6.5	x-1747047-x (3 Poles Plug)	300	2	1376348-1, -2	24
			4	1376348-1, -2	22
			6	1376348-1, -2 1376347-1	20
			7	1376347-1	18
			9	1376347-1	16
	x-1747049-x (Header)	300	9	-	(+)
GIC 7.92	x-1747050-x (2 Poles Plug)	300	3	1376348-1, -2	24
			5	1376348-1, -2	22
			7	1376348-1, -2 1376347-1	20
			8	1376347-1	18
			10	1376347-1	16
	x-1747052-x (Header)	300	10	-	(+)
GIC 6.0	2-2232875-x (2 Poles Plug)	300	3	1376348-1, -2	24
			5	1376348-1, -2	22
			7	1376348-1, -2 1376347-1	20
			8	1376347-1	18
			10	1376347-1	16
	2-2232876-x (2 Poles Header)	300	10	-	(+)
	3-2232875-x (3 Poles Plug)	300	2	1376348-1, -2	24
			4	1376348-1, -2	22
			6	1376348-1, -2 1376347-1	20
			7	1376347-1	18
			9	1376347-1	16
	3-2232876-x (3 Poles Header)	300	9	-	(+)

RATINGS: (CONT'D)

Cat. Nos.	Housing Part Nos.	Voltage (Vac/Vdc)	Ampere (A)	Contact Part Nos.	Conductor Sizes, AWG (Cu, Str)
GIC 5.8	2365950-x (3 Poles Plug, with optional TPA 2365951)	600	12	2365991-y	16
			15		14
	2365949-x (3 Poles Cap, with optional TPA 2365951)	600	12	2365990-y	16
			15		14

Note:

x - can be 0 thru 9, means different color or package.

y - can be 0 thru 9, means different plating or package.

(+) Mounted on printed wiring boards.

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 rise values tabulated below.

Cat Nos.	Wire Size, AWG	Current, A	Maximum Temperature Rise, °C
GIC 6.2W (1 Pole Plug/Receptacle)	16	12	10.8
	14	15	12.9
	12	20	15.8
GIC 6.2W (2 Poles Plug/Receptacle)	16	12	17.5
	14	14	16.1
	12	20	21.6
GIC 6.2W (3 Poles Plug/Receptacle)	16	8	9.8
	14	12	13.6
	12	18	22.0
GIC 6.5 (3 Poles Plug/Header)	24	2	4.0
	22	4	7.9
	20	6	14.1
	18	7	12.1
	16	9	20.6
GIC 7.92 (2 Poles Plug/Header)	24	3	4.4
	22	5	9.4
	20	7	14.6
	18	8	13.6
	16	10	19.9

2. Maximum temperature rise values (CONT' D)

Cat Nos.	Wire Size, AWG	Current, A	Maximum Temperature Rise, °C
GIC 6.0 (2 Poles Plug/Header)	24	3	5.8
	22	5	9.3
	20	7	12.1
	18	8	10.9
	16	10	13.6
GIC 6.0 (3 Poles Plug/Header)	24	2	2.8
	22	4	8.1
	20	6	12.7
	18	7	11.9
	16	9	13.2
GIC 5.8 (3 Poles Plug, 2365950-1 with contact 2365991-1)	16	12	20.9
	14	15	24.9
GIC 5.8 (3 Poles Cap, 2365949-1 with contact 2365990-1)	16	12	22.1
	14	15	23.4

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, °C
GIC 6.2W, Plug	A or D or E	0.6 mm	V-0	N/A	N/A	115	105
GIC 6.2W, Plug, PN 4-1746978-1	Body: E TPA: G	0.5 mm	V-0	4	3	120	105
GIC 6.2W, Receptacle	A or D or E	0.6 mm	V-0	N/A	N/A	115	105
GIC 6.2W, Receptacle, PN 4-1871867-1	Body: E TPA: G	0.5 mm	V-0	4	3	120	105
GIC 6.5, Plug	B or C or F	0.5 mm	V-0	0	0	130	105
GIC 6.5, Header	B or C or F	0.7 mm	V-0	0	0	130	105
GIC 7.92, Plug	B or C or F	0.5 mm	V-0	0	0	130	105
GIC 7.92, Header	B or C or F	0.7 mm	V-0	0	0	130	105
GIC 6.0, Plug	B	0.4 mm	V-0	N/A	N/A	130	105
GIC 6.0, Header	B	0.7 mm	V-0	0	0	130	105
GIC 6.0, Plug	C	0.4 mm	V-0	0	0	130	105
GIC 6.0, Header	C	0.7 mm	V-0	0	0	130	105
GIC 5.8, Plug	H	0.65 mm	V-0	0	0	130	105
GIC 5.8, Cap	H	0.65 mm	V-0	0	0	130	105
GIC 6.5: 3 position Series 1747047, 1747049	H	0.5 mm	V-0	0	0	130	130
GIC 7.92: 2 position Series 1747050, 1747052	H	0.5 mm	V-0	0	0	130	130

(#) - Code for Insulating Body Material.

- A. Tyco Raw Material # 703883
 1. Dielectric strength (kV/mm): N/A
 2. CTI: 0
- B. Tyco Raw Material # 704924 [See Note 1]
 1. Dielectric strength (kV/mm): N/A
 2. CTI: 2
- C. Tyco Raw Material # 2136488
 1. Dielectric strength (kV/mm): 8
 2. CTI: 1
- D. Tyco Raw Material # 704588
 1. Dielectric strength (kV/mm): 13
 2. CTI: 0

- E. Tyco Raw Material # 1573672 [See Note 2]
 - 1. Dielectric strength (kV/mm): -
 - 2. CTI: 0
- F. Tyco Raw Material # 705999
 - 1. Dielectric strength (kV/mm): 8
 - 2. CTI: 1
- G. Tyco Raw Material # 2136578
 - 1. Dielectric strength (kV/mm): 17
 - 2. CTI: 0
- H. Tyco Raw Material # **2136919**
 - 1. Dielectric strength (kV/mm): 18
 - 2. CTI: 1

Note 1:

R/C (QMOS2) [REDACTED] - TE RM No. 702901) can be used with [REDACTED] (TE RM# 704924) in accordance with the Performance Level Characteristics (PLCs) identified under the colorant Recognition. Colors: Black, Red, Blue, Green and Yellow.

Note 2:

R/C (QMOS2) Colorant Grade [REDACTED] Colorants USA LLC [REDACTED] - TE RM No. 1573811) can be used with [REDACTED] (TE RM No. 1573672) in accordance with the PLCs identified under the colorant Recognition.

Mating Connectors

4. 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

5. 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.

Cat. No. Variations:

Cat. Nos. 2-1747047-1, 2-1747049-1, 4-1903683-1 are identical to Cat. Nos. 1747047-1, 1747049-1, 1903683-1 respectively except for Cat. No. designation. Assigned for commercial purposes only.