CERTIFICATE OF COMPLIANCE

Certificate Number	E353372
Report Reference	E353372-20030912
Issue Date	2020-AUGUST-24
Issued to:	TYCO Electronics Corp 2901 Fulling Mill Rd Middletown PA 17057
This certificate confirms that representative samples of	COMPONENT - CONNECTORS FOR USE IN PHOTOVOLTAIC SYSTEMS See Addendum 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 6703 & CAN/CSA-C22.2 No 65-03, Wire Connectors
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 the UL Follow-Up Services Procedure provides authorization to apply the UL 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 Number	E353372
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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 Connector Cat. Series 1394461,1394462 and 2120382-w,
where w may be 1, 2, 3, 4, 5 or 6.

T-Branch Connector Cat. Nos. 0-1534611-1, 0-1534611-2, 0-1740277-1, and 0-1740277-2.

Flange mounted connector, Cat. No. 1971634-1.

Component - Locking Collar, Solarlok Locking Collar Cat. No. 2106207-1 for use with Series 1394461 and 1394462 connectors.

Bruce Mahrenholz, Director North American Certification Program

UL LLC

DESCRIPTION

PRODUCT COVERED:

USR/CNR Component Connector Cat. Series 1394461,1394462 and 2120382-w, where w may be 1, 2, 3, 4, 5 or 6.

T-Branch Connector Cat. Nos. 0-1534611-1, 0-1534611-2, 0-1740277-1, and 0-1740277-2.

USR/CNR **Flange mounted connector, Cat. No. 1971634-1.**

USR/CNR Component - Locking Collar, Solarlok Locking Collar Cat. No. 2106207-1 for use with Series 1394461 and 1394462 connectors.

RATINGS:

Type	Maximum Voltage (V dc)	Maximum Current (A dc)	Series
Male Connector with Cable	600	25	1394461
Female Connector with Cable	600	25	1394462
Male Connector with Cable	600	20	2120382-w
T-Branch Connector	600	25	0-1534611-1, 0-1534611-2, 0-1740277-1, and 0-1740277-2
Flange mounted Connector (male)	**600**	**25**	**1971634-1**
Locking Collar	NA	NA	2106207-1

Where w may be 1, 2, 3, 4, 5 or 6

Conductor –

Connector Sealing	Intended Conductor	Description	Outside Diameter, mm
Seal: 1394465-x, 1740380-1 With Pinch Ring: 1418677-x, 1740381-1	Type USE-2, 6mm^2/No. 10 AWG	Tinned copper, Class 5 – 7 or 104 strands	5.33±0.6
	Type USE-2, 4mm^2/No. 12 AWG	Tinned copper, Class 5 – 7 or 65 strands	4.83±0.4
	Type USE-2, 2.5mm^2/No. 14 AWG	Tinned copper, Class 5 – 7 or 41 strands	4.57±0.4
Pinch Ring/Seal: 1987056-y	Type PV, 4mm^2/No. 12 AWG	Tinned copper, Class 5 – 52 or 56 strands	6.8-7.3
	Type PV or USE-2, 4mm^2/No. 12 AWG	Tinned copper, Class 5 – 52 or 56 strands	6.8-7.3
Pinch Ring/Seal: 1987981-1	Type PV or USE-2, 6mm^2/No. 10 AWG	Tinned copper, Class 5 – 78 or 84 strands	7.1-7.8
	Type PV or USE-2, 4mm^2/No. 12 AWG	Tinned copper, Class 5 – 52 or 56 strands	6.8-7.3
	Type PV or USE-2, 2.5mm^2/No. 14 AWG	Tinned copper, Class 5 – 45 or 50 strands	6.3-6.8
	Type PV, 4mm^2/No. 12 AWG	Tinned copper, Class 5 – 56 strands	6.6-7.0

GENERAL:

* USR **indicates investigation to United States Standard Subject 6703, Outline of Investigation for Connectors for use in Photovoltaic Systems..**

CNR indicates investigation to ULC/ORD-C1703-01, Flat-Plate Photovoltaic Modules and Panels and CAN/CSA-C22.2 No.65-03, the Standard for Wire Connectors.

The Male and Female Connectors are single-pole connectors employing contacts of the crimp termination and the T-Branch Connectors are single-pole male to double-pole male connectors for use in electrical equipment where the acceptability of the combination is determined by Underwriters Laboratories Inc. Please see tables 1 and 2 for acceptable combinations.

The Male and Female Connectors may be fully assembled, crimped to Listed Type USE-2 or PV cable, Nos. 10, 12. or 14 AWG, where acceptable. Alternatively, these devices may be supplied in pieces, consisting of the outer insulator and conductor pin or receptacle for factory assembly elsewhere.

The Solarlok Locking Collar is intended for use with Cat. Nos. 1394461 and 1394462, where the acceptability of the combination shall be determined by Underwriters Laboratories Inc.

ENGINEERING CONSIDERATIONS (FOR ENGINEERING USE ONLY):

Use - For use only 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:

1. These devices should be used only where they will not interrupt current. In addition, the need to include specific instructions in the end-use equipment's manual describing the method of achieving disconnect while not under load should be considered.

*2. The connectors as mated pairs, without the Solarlok Locking **Collar** in place, have been investigated for a current of 25 A dc with a maximum temperature rise as shown below:

Wire Size	Maximum Temperature Rise
12 AWG	32 °C

3. The operating ambient temperature of the connectors should not exceed 75 °C.

4. The placement of these devices within the equipment enclosure should be such that spacings between live parts and the equipment are suitable for the particular application.

*5. A temperature test should be conducted in the end-use equipment. Consideration should be given to have the Solarlok Locking Collar in place.

6. The factory assembled male pins and female sockets to copper stranded wire were subjected to a Mechanical Pull Test for the following wire ranges and maximum tensile forces:

Wire Range	Tensile Force (lb) (kg)
14 AWG	50 (22.68)
12 AWG	70 (31.75)
10 AWG	80 (36.29)

7. Polarity markings shall be considered in the end-use equipment.

8. These components have been evaluated for use in outdoor locations.

9. These components use a material which has an RTI for mechanical with impact which is less than that required for unrestricted listing. Consideration should be given to require mechanical protection in the end-use.

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11. When Seal model 1740380-1 and Pinch Ring model 1740381-1 are used together in an assembly the combination of these two components may be replaced with Seal Assembly model 1740379.

12. Pinch ring seal inmolded assembly, pn 1987056-1 or 1987056-4, may replace the Pinch ring and Seal combination when assembled to 12 AWG PV conductor.

13. These connectors may be field assembled only with Tyco Crimp Tool Models 2-1579005-2 and 0-1579004-9. Please see Ills. 1 and 1A for assembly instructions. Please see Ill. 2 for the crimp tool instruction sheet.

    When provided as assembled pieces, the UL mark is applied to the Sleeve of each connector. When provided in separate pieces the UL mark may be applied to the overall container, as well as the Sleeve on each connector.

14. The connectors with the Solarlok Locking Collar in place has been investigated for disassembly without the use of a tool.

15. Environmental tests were not conducted with the Solarlok Locking Collar in place and shall be considered in the end use equipment.

16. The Solarlok Locking Collar material has been evaluated for long-term exposure to UV radiation and moisture. Additional end-product testing may need to be conducted to certify use in outdoor location.

17. For model 2120382-w, end product consideration must be given for the open end of the connector to be enclosed within a sealed container.

SPECIFIC MODEL INFORMATION:

Each Recognized connector model described in this section contains the following:

a. Socket or Pin Housing
b. Socket or Pin Contact
c. Seal
d. Cable Screw Joint
e. O-ring (female connectors)
f. Cable (optional)
g. Pinch Ring (Not for type 2120382-w)

The part numbers as detailed below are contained for each model listed below.

Only the following female connector assemblies have been evaluated by Underwriters laboratories Inc.

Table 1

Connector Model	Polarity Marking	Socket Housing	O-Ring	Socket Contact	Seal	Pinch Ring	Cable Nut	AWG Wire
*0-1394462-1	+	1394464-5	1394467-3	4-1105301-1 or 2058454-3	**1740380-1**	1740381-1	1394466-1	14
*0-1394462-2	-	1394464-6	1394467-2	4-1105301-1 or 2058454-3	1740380-1	1740381-1	1394466-1	14
*0-1394462-3	+	1394464-5	1394467-3	5-1105301-1 or 2058454-3	1740380-1	1740381-1	1394466-1	12
*0-1394462-4	-	1394464-6	1394467-2	5-1105301-1 or 2058454-3	1740380-1	1740381-1	1394466-1	12
*0-1394462-7	+	1394464-5	1394467-3	7-1105301-2 or 2106356-1	1394465-2	1418677-1	1394466-1	10
*0-1394462-8	+	1394464-6	1394467-2	7-1105301-2 or 2106356-1	1394465-2	1418677-1	1394466-1	10
1-1394462-8	+	1394464-5	1394467-3	4-1105301-1 or 2058454-3	1394465-1	1418677-1	1394466-1	14
2-1394462-2	-	1394464-6	1394467-2	4-1105301-1 or 2058454-3	1394465-1	1418677-1	1394466-1	14
2-1394462-6	+	1394464-5	1394467-3	5-1105301-1 or 2058454-3	1394465-1	1418677-1	1394466-1	12
3-1394462-0	-	1394464-6	1394467-2	5-1105301-1 or 2058454-3	1394465-1	1418677-1	1394466-1	12
4-1394462-6	+	1394464-5	1394467-3	4-1105301-1 or 2058454-3	1394465-2	1418677-1	1394466-1	14
4-1394462-7	-	1394464-6	1394467-2	4-1105301-1 or 2058454-3	1394465-2	1418677-1	1394466-1	14
4-1394462-8	+	1394464-5	1394467-3	5-1105301-1 or 2058454-3	1394465-4 or 1394465-2	1418677-1 and 1418677-2	1394466-1	12
4-1394462-9	-	1394464-6	1394467-2	5-1105301-1 or 2058454-3	1394465-4 or 1394465-2	1418677-1 and 1418677-2	1394466-1	12
5-1394462-2	+	1394464-5	1394467-3	7-1105301-2 or 2106356-1	1394465-2	1418677-1	1394466-1	10
5-1394462-3	+	1394464-6	1394467-2	7-1105301-2 or 2106356-1	1394465-2	1418677-1	1394466-1	10
5-1394462-5	+	1394464-5	1394467-3	7-1105301-2 or 2106356-1	1740380-1	1740381-1	1394466-1	10
5-1394462-6	-	1394464-6	1394467-2	7-1105301-2 or 2106356-1	1740380-1	1740381-1	1394466-1	10

Only the following male connector assemblies have been evaluated by Underwriters laboratories Inc.

Table 2

Connector Model	Polarity Marking	Pin Housing	Pin Contact	Seal	Pinch Ring	Cable Nut	AWG Wire
0-1394461-1	+	1394463-5	4-1105300-1 or 2058453-3	1740380-1	1740381-1	1394466-1	14
0-1394461-2	-	1394463-6	4-1105300-1 or 2058453-3	1740380-1	1740381-1	1394466-1	14
0-1394461-3	+	1394463-5	5-1105300-1 or 2058453-3	1740380-1	1740381-1	1394466-1	12
0-1394461-4	-	1394463-6	5-1105300-1 or 2058453-3	1740380-1	1740381-1	1394466-1	12
*0-1394461-7	+	1394463-5	**7-1105300-2** or 2106355-1	1394465-2	1418677-1	1394466-1	10
*0-1394461-8	+	1394463-6	**7-1105300-2** or 2106355-1	1394465-2	1418677-1	1394466-1	10
1-1394461-8	+	1394463-5	4-1105300-1 or 2058453-3	1394465-1	1418677-1	1394466-1	14
2-1394461-2	-	1394463-6	4-1105300-1 or 2058453-3	1394465-1	1418677-1	1394466-1	14
2-1394461-6	+	1394463-5	5-1105300-1 or 2058453-3	1394465-1	1418677-1	1394466-1	12
3-1394461-0	+	1394463-6	5-1105300-1 or 2058453-3	1394465-1	1418677-1	1394466-1	12
4-1394461-6	+	1394463-5	4-1105300-1 or 2058453-3	1394465-1 and 1394465-2	1418677-1	1394466-1	14
4-1394461-7	-	1394463-6	4-1105300-1 or 2058453-3	1394465-1 and 1394465-2	1418677-1	1394466-1	14
4-1394461-8	+	1394463-5	5-1105300-1 or 2058453-3	1394465-2 and 1394465-4	1418677-1 and 1418677-2	1394466-1	12
4-1394461-9	+	1394463-6	5-1105300-1 or 2058453-3	1394465-2 and 1394465-4	1418677-1 and 1418677-2	1394466-1	12
5-1394461-2	+	1394463-5	7-1105300-2 or 2106355-1	1394465-2	1418677-1	1394466-1	10
5-1394461-3	+	1394463-6	7-1105300-2 or 2106355-1	1394465-2	1418677-1	1394466-1	10
6-1394461-1	Neutral	1394463-7	4-1105300-1 or 2058453-3	1740380-1	1740381-1	1394466-1	14
6-1394461-2	Neutral	1394463-7	5-1105300-1 or 2058453-3	1740380-1	1740381-1	1394466-1	12
6-1394461-4	Neutral	1394463-7	7-1105300-2 or 2106355-1	1740380-1	1740381-1	1394466-1	10
6-1394461-5	+	1394463-5	7-1105300-2 or 2106355-1	1740380-1	1740381-1	1394466-1	10
6-1394461-6	-	1394463-6	7-1105300-2 or 2106355-1	1740380-1	1740381-1	1394466-1	10

Only the following connector assemblies have been evaluated by Underwriters laboratories Inc.

Table 3

Connector Model	Polarity Marking	Pin Housing	Pin Contact	Seal	Nut	AWG Wire
2120382-1	+	1394468-1	7-1105300-2 or 1987280-4 or 5-1987280-4	2152132-1	1394469-1	10
2120382-2	+	1394468-1	5-1105300-1 or 1987280-2 or 5-1987280-2	2152132-1	1394469-1	12
2120382-3	+	1394468-1	4-1105300-1 or 1987280-1 or 5-1987280-1	2152132-1	1394469-1	14
2120382-4	-	1394468-2	7-1105300-2 or 1987280-4 or 5-1987280-4	2152132-1	1394469-1	10
2120382-5	-	1394468-2	5-1105300-1 or 1987280-2 or 5-1987280-2	2152132-1	1394469-1	12
2120382-6	-	1394468-2	4-1105300-1 or 1987280-1 or 5-1987280-1	2152132-1	1394469-1	14