CERTIFICATE OF COMPLIANCE

Certificate Number	20160114-E28476
Report Reference	E28476-20151209
Issue Date	2016-JANUARY-14

Issued to: TYCO ELECTRONICS CORP
2901 FULLING MILL RD
MIDDLETOWN PA 17057

This is to certify that representative samples of COMPONENT - CONNECTORS FOR USE IN DATA, SIGNAL, CONTROL AND POWER APPLICATIONS
Connector, Series Forge

Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.

Standard(s) for Safety: UL 1977, Component Connectors for Use in Data, Signal, Control and Power Applications
CAN/CSA C22.2 No. 182.3-M1987, Special Use Attachment Plugs, Receptacles, and Connectors

Additional Information: See the UL Online Certifications Directory at www.ul.com/database for additional information

Only those products bearing the UL Certification Mark should be considered as being covered by UL's Certification and Follow-Up Service.

Recognized components are incomplete in certain constructional features or restricted in performance capabilities and are intended for use as components of complete equipment submitted for investigation rather than for direct separate installation in the field. The final acceptance of the component is dependent upon its installation and use in complete equipment submitted to UL LLC.

Look for the UL Certification Mark on the product.

Bruce Mahrenholz, Director North American Certification Program

UL LLC

DESCRIPTION

PRODUCT COVERED:

USR, CNR Component Connector, Series Forge.

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 indicates investigation to United States Standards, UL 1977.

CNR indicates investigation to Canadian National Standards, C22.2 No. 182.3.

RATINGS:

Contacts	Wire Size, AWG - Cu str	Maximum No. of Poles	Maximum Rating (A)	Voltage
Size 0	No. 1/0	6	130	250V
Size 0	No. 1/0	2	145	
Size 4	No. 4	4	78	
Size 4	No. 4	2	90	
Size 8	No. 8	4	33	
Size 12	No. 12	8	22	
Size 22	No. 22	44	N/A	

The following Table details the connector PNs and contact types. Since this is a Partnumberless report, the part numbers identified below are solely for information purposes to reflect the maximum range of contact fills.			Configuration No.
Housing PN	No. of Contacts	Type	
2212339-1	2(Size 12), 2(Size 22)	Pin	1
2212341-1	2(Size 12), 2(Size 22)	Socket	1
2212339-2	2(Size 0),2(Size 4),2(Size 8)	Pin	2
2212341-2	2(Size 0),2(Size 4),2(Size 8)	Socket	2
2212367-1	4(Size 4), 2(Size 12)	Pin	3
2212369-1	4(Size 4), 2(Size 12)	Socket	3
2212170-1	6(Size 0), 4(Size 4)	Pin	4
2212169-1	6(Size 0), 4(4 Size 4)	Socket	4

Flammability - V0
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 and recorded temperature (adjusted to 25°C ambient) values tabulated below:

Forge Series Configuration	Pin/Socket Contact PNs	Loading - No. Contacts and wire Size - AWG Cu str	Current, A	Maximum Temperature °C	
				Rise	Recorded Temperature
2 x 5 - Small size and least Power Load (CONFIGURATION 1)	Pin 2212339-1/ Socket 2212341-1	2 x No 12 AWG (Size 12 contact) and 2 x No 22AWG (Size 22 contact)	22A (Size 12 contact only)	25.8	50.8
2x5 - Low/Mid Power - Load (CONFIGURATION 2)	Pin 2212339-2/ Socket 2212341-2	2 x No 1/0 AWG (Size 0 contact) and 2 x No 4 AWG (Size 4 contact) and 2 x No 8 AWG (Size 8 contact)	145A (Size 0 contact)	29.2	54.2
			90A (Type 4 contact)	29.2	54.2
			33A (Type 8 contact)	29.2	54.2

(Cont'd on next Page)

Forge Series Configuration	Pin/Socket Contact PNs	Loading - No. Contacts and wire Size - AWG Cu str	Current, A	Maximum Temperature °C	
				Rise	Recorded Temperature
2x5 - Mid/High Power - Load (CONFIGURATION 3)	Pin 2212367-1/Socket 2212369-1	4 x No 4 AWG (Size 4 contact) and 2 x No 12 AWG (Size 12 contact) and 1 x No. 22 AWG (Size 22 contact)	78A (Size 4 contact)	28.2	53.2
			22A (Size 12 contact)	28.2	53.2
2x5 - Largest Size and Most Power - Load (CONFIGURATION 4)	Pin 2212170-1/ Socket 2212169-1	6 x No 1/0 AWG (Size 0 contact) and 4 x No 4 AWG (Size 4 contact)	130A (Size 0 contact)	26.4	51.4
			78A (Size 4 contact)	23.2	48.2

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 (mm)	Flame Class	HWI	HAI	RTI Elec	Max Operating Temp, ^{0}C
Housing	A	0.75	V0	4	1	120	120
Insert	B	0.71	V0	4	0	130	130

Note:

(#) – Code for Insulating Body Material.

A. Tyco RM No. 1573755
   1. Dielectric strength (kV/mm): 22
   2. CTI: 3

B. Tyco RM No. 26864
   1. Dielectric strength (kV/mm): 27
   2. CTI: 2

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. Conductor Secureness Testing on contact 6648405-1 assembled onto 1 ft 1/0 AWG wire was conducted in accordance with the Standard for Plugs, Receptacles, and Cable Connectors of the Pin and Sleeve Type, CSA C22.2 No. 182.1 Update No. 1 dated February 2014.