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May 24, 2016

Re: Input Terminal Change

Tentative implementation date: August 1, 2016.

Products affected: NV350, NV700, & Vega Series (Vega models with customer air cooling).

TDK-Lambda is changing the input terminals used for NV350, NV700, & Vega units with customer air cooling.

The current version input terminal is manufactured by TE Connectivity.

The new version is manufactured by Tianli.

The main reasons for this change are:

- 1) An improvement in over-torque survival (if the TE screws are over-tightened, the screws may shear).
- 2) Moving to a superior connector clamping method.
This is especially relevant to customer connections which use a very thin crimp terminal.

Please reference the attached report 14-6095 by our component engineering department who investigated the change.

We do not foresee that this will cause any issues with customer applications, however details are being provided for other situations of concern, such as where customers keep a golden sample for incoming goods inspection.

Sincerely,

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COMPONENT ENGINEERING REPORT 14-6095

INTRODUCTION

The following report details the approval of some sample 3 way barrier strip connectors, to replace part number 18053, manufactured by Tianli as B825-01-03P, to be used as an alternative for the Tyco Connectors part 4-1546468-4.

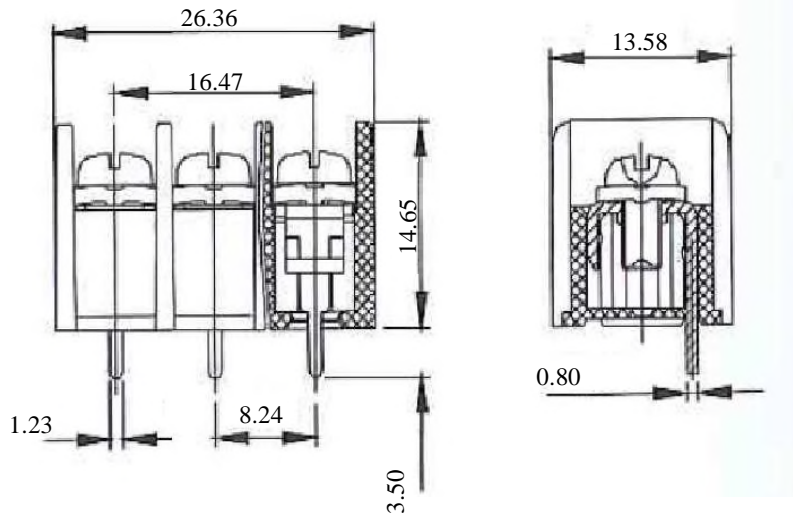


APPROVAL METHOD

The Approval considered: -

- A full visual inspection of a representative sample.
- Full dimensional assessment presented below, achieved by using calibrated Mitutoyo Verniers.
- Form & Fit Test.
- Highlight of major changes.
- RoHS test.
- Torque and Hardness tests.
- Solder fill test.

DIMENSIONAL ASSESSMENT



FORM & FIT TEST

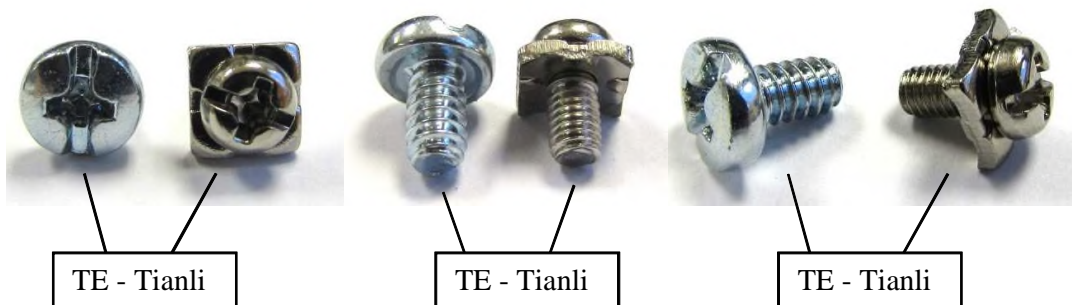
A sample component was fitted to a typical application and no issues were found.



HIGHLIGHT OF MAJOR CHANGES

Dimensionally the parts are very similar and have a matching footprint, the main area of change is the screw head and wire retainer type.

- Both screws have a cross / slot combination head.
- The TE screw is zinc plated steel, where the Tianli part uses nickel plated steel.
- The TE terminal has a larger pan head screw with a binder type thread for retention.
- The Tianli terminal has a smaller head with a captive terminal clamp for retention.
- The thread on the TE part is 6/32 where the Tianli part is m3.



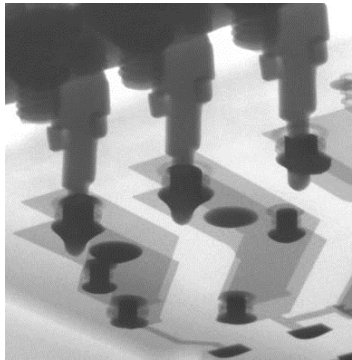
TORQUE AND HARDNESS TESTS

Some sample parts were tightened to 1Nm, beyond the maximum rated limit of 0.5Nm, there was no shearing or binding of threads, the screws unscrewed easily after being torqued down.

The hardness testing gave a much superior result comparing the Tianli part against the TE part. The TE part gave a result of 25 to 35 RC where the Tianli part gave a result of 79 to 88 RC.

SOLDER FILL TEST

Four sample parts were flow soldered to a PCB and then x-rayed to view the lead out protrusion and solder fill. Although the top side of the board did show some sagging or lack of fill, total solder fill was always greater than 75% with well filled via's and good meniscus on the bottom side. A sample picture is shown below.



FINDINGS

- Dimensionally, the samples inspected conformed to the drawing in all aspects.
- The material passed RoHS testing using the energy dispersive x-ray spectrometer EDX700HS
- The Tianli captive terminal clamp is considered a preferable form of screw retention.
- The Tianli component is a standard part whilst the TE component is custom.

CONCLUSION

Based upon the findings of the evaluation of sample 3 way barrier strip connectors, manufactured by Tianli as B825-01-03P, to be used as an alternative for the Tyco Connectors part 4-1546468-4;

- B825-01-03P manufactured by Tianli is acceptable and approved.
- In January 2015, the UL file shall have been updated to include this part and a MOD will be raised to use it under a new TLU part number.
- Customers with a CCC file will not be affected without their formal approval.

Dan Massey
18th November 2014

Distribution

Richard Kenshole
File