

Contact retention test for MDMA connectors

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CNES Information

For additional technical information relating to this alert:

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MANUFACTURER / PART

C&K CONNECT CONNECT
2, RUE BERTHOLLET – 39100 DOLE
(FRANCE)

FAMILY : CONNECTOR
SUB-FAMILY : MICRO MINIATURE
TYPE : MDMA
DETAILED SPEC. : 3401/077
LOT DATE CODE : ALL DATE CODE SINCE 1601

OCCURRENCE AND FAILURE DESCRIPTION

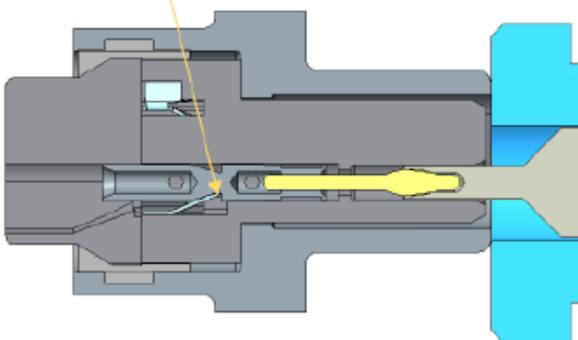
An electrical anomaly (open circuit) was revealed on a mated pair of MDMA connectors.

After inspection a contact was observed not well in place in its connector's cavity in spite the harness was declared successfully tested (continuity and insulation check) and successfully inspected (contact retention test, visual inspection) by harness manufacturer.

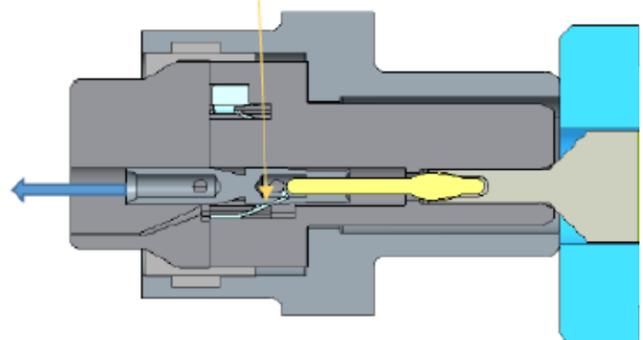
No non-conformity or quality issue were observed with the contact retention clip of the connector.

All contacts were considered correctly installed and locked by harness manufacturer but it was not the case because the retention test failed to detect the bad retention.

Correctly restrained contact in insulator.



Not correctly restrained contact in insulator



PROGRESS

The following root cause has been identified:

- In 01/2016, a design modification of MDMA insulator occurs. The rear side length of the insulator part was increased by 1.7mm according to C&K CONNECT PCN-15-08-MDMA.
- Since this design evolution the use of the retention test tool with nominal procedure is not 100% efficient to detect a non-locked contact when the control is done by visual inspection only because the recoil of an unlocked contact is hidden by insulator.
- Before the design modification, the recoil of an unlocked contact during retention test was systematically detected by visual inspection only.

A new instruction for retention test is proposed by C&K CONNECT. They recommend to perform a gentle pull test on cable to confirm retention. "Pull back lightly on wire to be sure contact is locked securely"

A new retention tool is also under development at C&K CONNECT but is not yet available.

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RECOMMENDATIONS

In view of elements described above, we recommend to perform a pull test on the cable for each use of an MDMA connector from date code January 2016. Maximum tensile strength on cable shall be limited to 10N.

When using the new tool it will no longer be necessary to carry out this pull test.

RELEASE BY CNES EEE ALERT COMMITTEE

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