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Test Report Summary

HT06702

Gecko-SL Series (G125)
Torque and Retention Testing of Male Cable Housing with Panel Mount Screws

gecko

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1. Introduction

1.1. Description and Purpose

The following mechanical tests were performed on the 16-contact Gecko-SL panel mount male cable connector (G125-3241696M2):

- Assembly of male connector to PCB panel cut out.
- Assembly and disassembly of mating connector.
- Panel mount screw-lock retention forces in housing.

The screw-lock retention must withstand the withdrawal force required to disassemble the connector and separate the contacts. Assembly and disassembly operations must cause no significant damage to the connector.

1.2. Conclusion

The following data has been taken from Harwin Test Report 1733. All samples met the specified requirements.

2. Test Method, Requirements and Results

2.1. Specification Parameters

The testing was conducted in accordance with the detailed product specification (C125). The products were required to meet the following mechanical specifications:

- Screw-Lock Retention Force = 20.0N min
- Screw-Lock Torque = 16 to 18 cmN

2.2. List of Test Samples

- 20 x G125-2241696F1 – female cable housing with screw-lock
- 90 x G125-3241696M2 – male cable housing with panel mount
- 40 x G125-4510000B – M2 round slotted nut

G125-2241696F1 and G125-4510000B products were re-used for the duration of testing.

2.3. Test Method and Results

2.3.1. Assembly of male connector to PCB panel cut out

Methodology: 90 samples of G125-3241696M2 male connectors were assembled to PCB panel cut outs using M2 round slotted nuts (G125-4510000B) to a torque of 18cmN. The samples were visually inspected for indications of damage to the housing and to ensure intended fixing.

Result	Judgement
Assembly Operation	PASS

2.3.2. Assembly and Disassembly Cycling

Methodology: 90 samples of G125-3241696M2 male connectors (with PCB panel cut outs) were assembled to G125-2241696F1 female connectors to a torque of 18cmN. 5 assembly and disassembly operations were conducted on the samples to determine whether mating under typical conditions has any effect on the screw-lock retention within the housings.

Result	Judgement
Assembly Operations	PASS
Disassembly Operations	PASS

2.3.3. Panel mount screw-lock retention forces

Methodology: Panel mount retention force tests were performed on 90 x G125-3241696M2 male connectors using an auto-cycling force gauge. The push out pin was aligned against the front face of the screw and force applied at a speed of 25.4mm/min until the screw is removed or the housing breaks.

Figure 1: Auto cycling force gauge machine

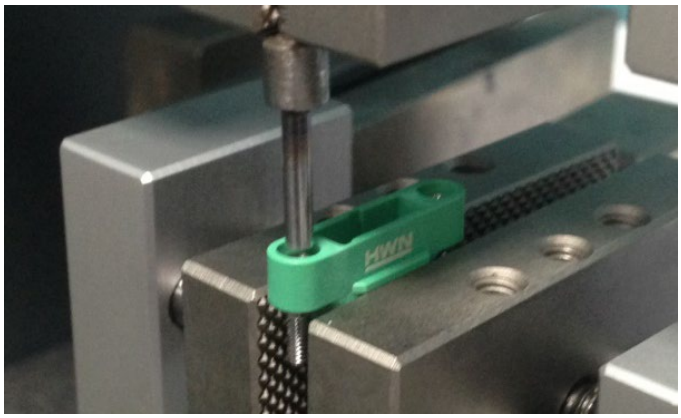

Figure 2: Testing set up with push out pin locating into the male connector

Result	Removal Force
Maximum Result	80.54N
Minimum Result	29.66N
Average Result	55.39N

In all cases the screw was pushed out of the connector. No housing breakages were observed.

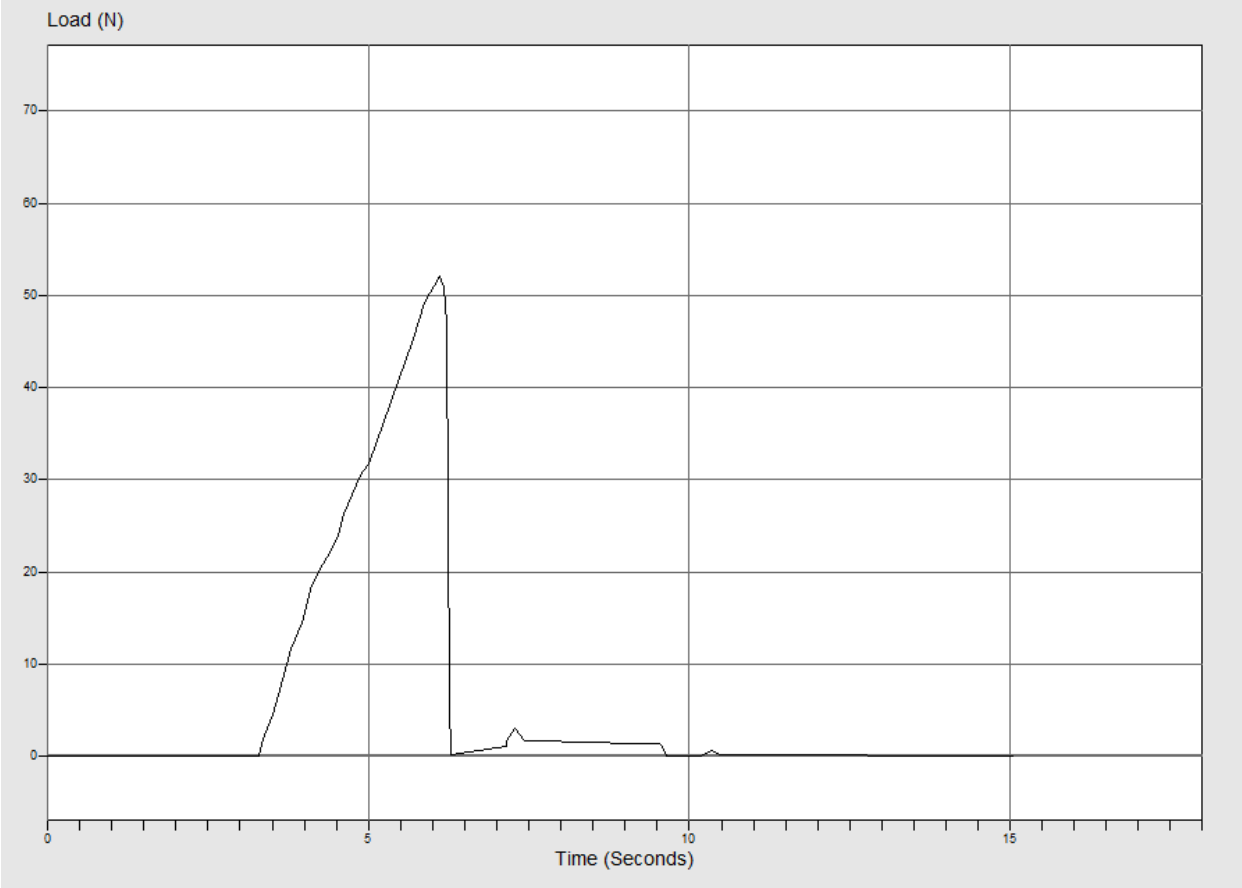

Figure 3: Graph illustrating the screw retention force