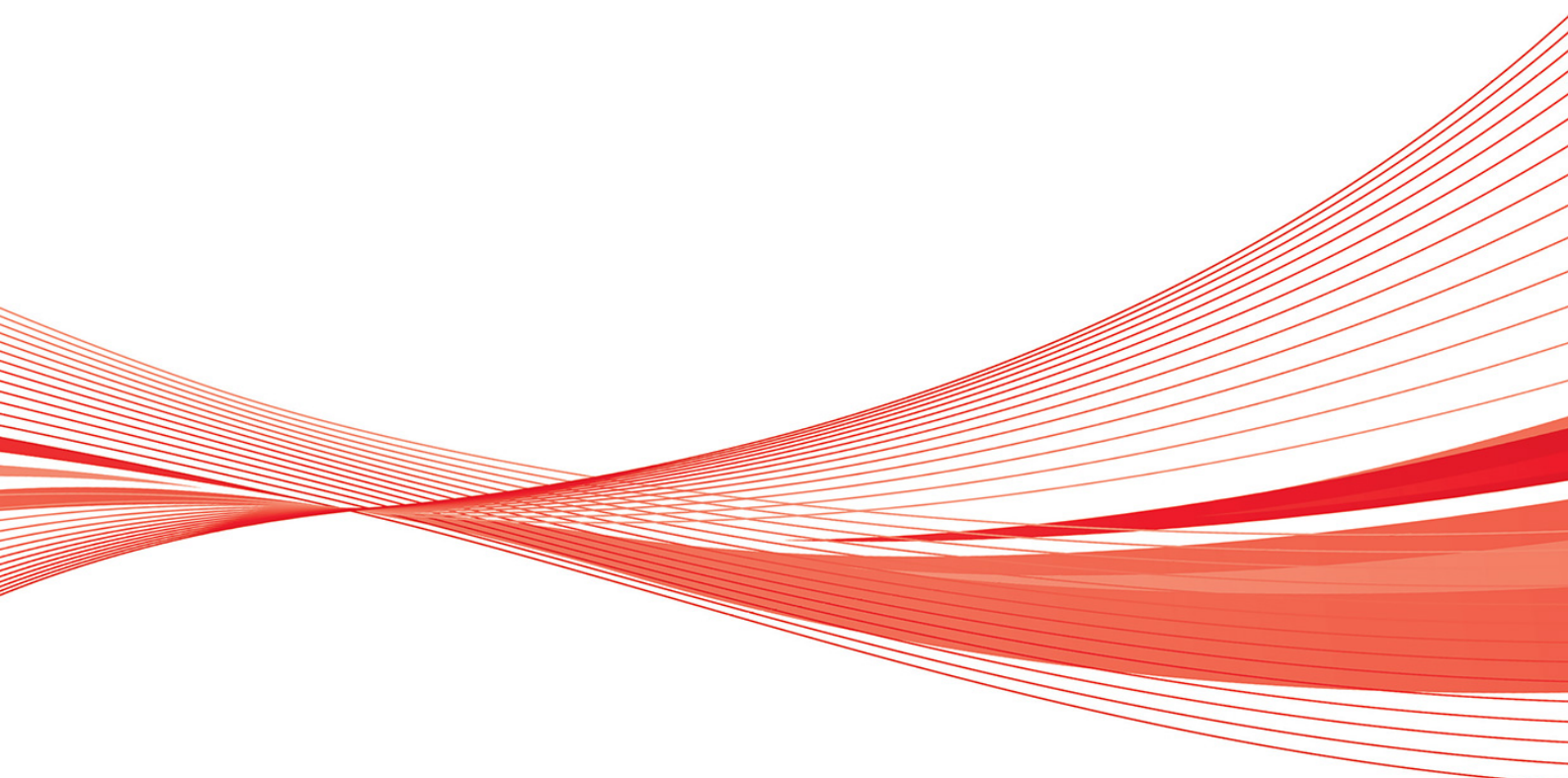




Harwin Test Report Summary

HT03501

**Mechanical and Electrical testing of
M80 Power Contacts and Connectors**



1. **Introduction.**

1.1. **Description and Purpose.**

The following Mechanical and Electrical tests were performed on the mating pair of M80-400000000-02-325-00-000 and M80-500000000-02-331-00-000 mix tek connectors with power contacts only, to test for:

- Engaging/Insertion Force over 500 cycles
- Separating/Withdrawal Force over 500 cycles
- Contact Resistance over 500 cycles
- Voltage Proof (dielectric withstanding voltage) over 500 cycles

The following test data has been collated from Harwin Test Report 624.

1.2. **Conclusion.**

All tests were conducted in accordance with the detailed product specification.

Result: All samples met the requirements.

2. **Test Method, Requirements and Results.**

2.1. **List of Test Samples.**

Two pairs of current M80-400000000-02-325-00-000 and M80-500000000-02-331-00-000 samples were used for the Mechanical and Electrical testing.

2.2. **Specification Parameters.**

a) Mechanical:

1. Engaging/Insertion Force = 8N Max per contact
2. Separation/Withdrawal Force = 0.5N Min per contact

b) Electrical:

1. Contact Resistance = 6mΩ Max
2. Voltage Proof = No breakdown to occur at 0.5mA maximum leakage setting, with an applied voltage of 1200V DC.

2.3. **Test Method and Results.**

a) Mechanical:

The mating pairs were set up on an automating cycling machine for engaging and separation. Forces were measured by the machine.

Engaging and Separating forces were measured for the whole connector, which had two contacts.

Therefore the results show the forces recorded for two contacts within the connectors. To get the individual Engaging and Separating Force per contact you need to divide the result in the table by two. (see table on next page for results).

b) Electrical:

1. Contact Resistance.

The contact resistance testing was performed at each stage of the cycling; each contact pair within the connectors was measured separately.

2. Voltage Proof.

1200V DC was passed through the contacts at each stage of the cycling; no evidence of breakdown or flashover was apparent.

Test Results						
Cycle No.	Sample Pair	Engaging Force (N)	Seperating Force (N)	Contact Resistance (mΩ)		Voltage Proof
				Contact 1	Contact 2	
Initial	1	12.34	10.50	2.00	3.00	PASS
	2	14.18	11.54	1.00	3.00	
x 50	1	11.92	8.92	3.00	4.00	PASS
	2	11.34	10.90	2.00	4.00	
x 100	1	11.56	8.64	4.00	4.00	PASS
	2	12.64	11.52	1.00	2.00	
x 250	1	10.90	9.14	* 7.00	3.00	PASS
	2	13.14	12.04	1.00	1.00	
x 500	1	13.12	10.12	4.00	4.00	PASS
	2	11.72	9.62	1.00	1.00	
x 750	1	12.60	8.44	* 7.00	* 7.00	PASS
	2	12.12	9.92	2.00	2.00	
x 1000	1	14.12	10.72	4.00	4.00	PASS
	2	10.86	9.02	2.00	2.00	
	MAX	14.18N	12.04N	4.00mΩ		
	MIN	10.86N	8.44N	1.00mΩ		
	AVERAGE	12.33N	10.07N	2.56mΩ		

* Three results were not consistent with the other results taken before or afterwards and are therefore considered spurious.