



HARWIN

Test Report Summary

HT03502

Mechanical and Electrical Testing of
Datamate Power (M80 Series)
Contacts and Connectors

1. Introduction

1.1. Description and Purpose

The following tests were performed on a mating pair of M80-400000000-02-325-00-000 and M80-500000000-02-331-00-000 Datamate Power connectors, to confirm that the products met the specification for:

- Insertion Force per contact over 500 cycles
- Withdrawal Force per contact over 500 cycles
- Contact Resistance over 500 cycles
- Voltage Proof (Dielectric Withstanding Voltage) over 500 cycles

1.2. Conclusion

The following test data has been collated from Harwin Test Report 624. All tests were conducted in accordance with the detailed product specification. All samples met the requirements.

2. Test Method, Requirements and Results

2.1. Specification Parameters

- Contact Resistance: 6m Ω max
- Voltage Proof: No breakdown to occur at 0.5mA maximum leakage setting, with an applied voltage of 1,200V DC.
- Insertion Force: 8N max per contact
- Withdrawal Force: 0.5N min per contact

2.2. List of Test Samples

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

2.3. Test Method and Results

Methodology:

- Contact Resistance: performed at each stage of the cycling; each contact pair within the connectors was measured separately.
- Voltage Proof: 1,200V DC was passed through the contacts at each stage of the cycling;
- Mechanical: the mating pairs were set up on an automating cycling machine. Forces were measured by the machine. Engaging and separating forces were measured for the whole connector, which had two contacts. "Per contact" values were calculated by dividing the connector value by two.

Results:

- Voltage Proof test: no evidence of breakdown or flashover was apparent.
- Three results (marked ‡) were not consistent with the other results taken before or afterwards and are therefore considered spurious and not included in the summary results.

No. of cycles	Sample Pair	Connector Engaging Force (N)	Contact Insertion Force (N)	Connector Separating Force (N)	Contact Withdrawal Force (N)	Contact Resistance (mΩ)		Voltage Proof
						Contact 1	Contact 2	
Initial	1	12.34	6.17	10.50	5.25	2.00	3.00	PASS
	2	14.18	7.09	11.54	5.77	1.00	3.00	
50	1	11.92	5.96	8.92	4.46	3.00	4.00	PASS
	2	11.34	5.67	10.90	5.45	2.00	4.00	
100	1	11.56	5.78	8.64	4.32	4.00	4.00	PASS
	2	12.64	6.32	11.52	5.76	1.00	2.00	
250	1	10.90	5.45	9.14	4.57	7.00 ‡	3.00	PASS
	2	13.14	6.57	12.04	6.02	1.00	1.00	
500	1	13.12	6.56	10.12	5.06	4.00	4.00	PASS
	2	11.72	5.86	9.62	4.81	1.00	1.00	
750	1	12.60	6.30	8.44	4.22	7.00 ‡	7.00 ‡	PASS
	2	12.12	6.06	9.92	4.96	2.00	2.00	
1,000	1	14.12	7.06	10.72	5.36	4.00	4.00	PASS
	2	10.86	5.43	9.02	4.51	2.00	2.00	
Maximum		14.18	7.09	12.04	6.02	4.00		PASS
Minimum		10.86	5.43	8.44	4.22	1.00		
Average		12.33	6.17	10.07	5.04	2.56		