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Test Report Summary

HT01102

Mechanical Testing of
High Temperature Plastic Housings for
Datamate (M80 Series) Crimp Sockets

Introduction

1.1. Description and Purpose

The Harwin Datamate (M80 Series) connector is manufactured to the requirements of BS9525-F0033. The following tests were carried out on M80-844XX42 Datamate L-Tek crimp socket assemblies, to confirm that the use of the high-temperature moulding material Nylon/Polyamide 46 (commercial grade Stanyl TE250F6) would perform to the same standard as the original lower temperature PBT mould material.

1.2. Conclusion

The following data has been collated from Harwin test reports 185, 195, 238 and 239. For all three of the tests performed, the M80-844 connectors met the required standards of BS9525-F0033, and is therefore approved as an acceptable material for use in the Datamate range.

2. Test Method, Requirements and Results

2.1. Specification Parameters

The requirements of BS9525-F0033 are:

	Insertion Force	Withdrawal Force	Contact Resistance
10 contact	28.0N max, 5.0N min	18.0N max, 2.0N min	20mΩ max per contact
12 contact	33.6N max, 6.0N min	21.6N max, 2.4N min	
14 contact	39.2N max, 7.0N min	25.2N max, 2.8N min	
16 contact	44.8N max, 8.0N min	28.8N max, 3.2N min	

2.2. List of Test Samples

13 test pairs were used, with applicable male connectors:

- M80-8441042 – 10-way female crimp connector
- M80-8441242 – 12-way female crimp connector
- M80-8441442 – 14-way female crimp connector
- M80-8441642 – 16-way female crimp connector

2.3. Test Results

2.3.1. Insertion Force

	M80-8441042	M80-8441242	M80-8441442	M80-8441642
Minimum	16.3N	12.8N	18.4N	24.1N
Maximum	19.6N	24.8N	27.3N	30.4N
Average	17.6N	20.5N	23.7N	27.3N

2.3.2. Withdrawal Force

	M80-8441042	M80-8441242	M80-8441442	M80-8441642
Minimum	8.1N	9.5N	11.1N	12.9N
Maximum	13.6N	13.5N	18.8N	19.4N
Average	9.7N	11.5N	13.5N	15.5N

2.3.3. Contact Resistance

	M80-8441042	M80-8441242	M80-8441442	M80-8441642
Minimum	6.46mΩ	5.93mΩ	4.78mΩ	5.39mΩ
Maximum	8.73mΩ	8.18mΩ	6.24mΩ	8.23mΩ
Average	7.62mΩ	6.96mΩ	5.66mΩ	6.93mΩ