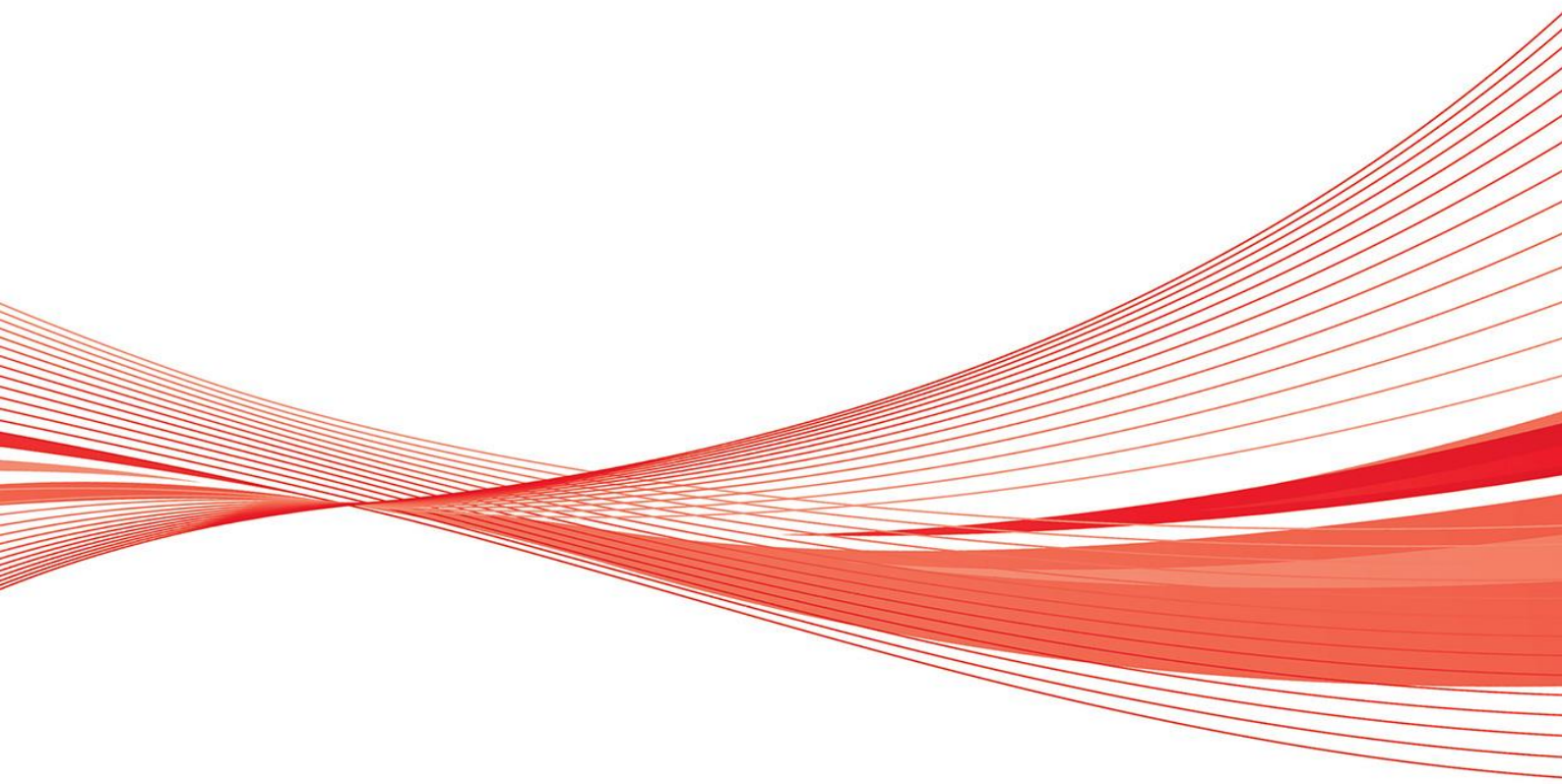
HARWIN

Harwin Test Report Summary

HT07801

Power Rating of 20A Contacts

Datamate Mix-Tek



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1. Introduction

1.1. Description and Purpose

The following tests were carried out to test the electrical performance of the 20A contacts used for standard power connections in the Datamate Mix-Tek range.

1.2. Conclusion

The following data has been collated from Harwin test report QA000073. The 20A contacts met the test requirements set out in section 2.3 of this test report summary – all electrical requirements were fulfilled. These results are representative of all Datamate Mix-Tek connectors that include 20A contacts.

2. Test Method and Requirements

2.1. Specification Parameters

Tests were carried out in general accordance with EIA-364 standards. The test covered in this summary is as follows:

Testing Standard	Description of Test	Section	Page No.
EIA-364-70A: 1998	Power Rating	3.1	2 - 4

2.2. List of Part Numbers Tested

The following connectors are used throughout the testing. Female samples were populated with M80-325 power contacts and male samples populated with M80-331 power contacts. All samples tested using test board HM2225.

- M80-263F110-00-00 – Female housing with 10 contact cavities
  - Housing fitted with 1 x M80-325 contact
  - Housing fitted with 2 x M80-325 contacts
  - Housing fitted with 4 x M80-325 contacts
  - Housing fitted with 6 x M80-325 contacts
  - Housing fitted with 8 x M80-325 contacts
  - Housing fitted with all 10 x M80-325 contacts
- M80-5000000M2-10-331-00-000 – Male 10-contact Vertical PC Tail connector, all contacts populated

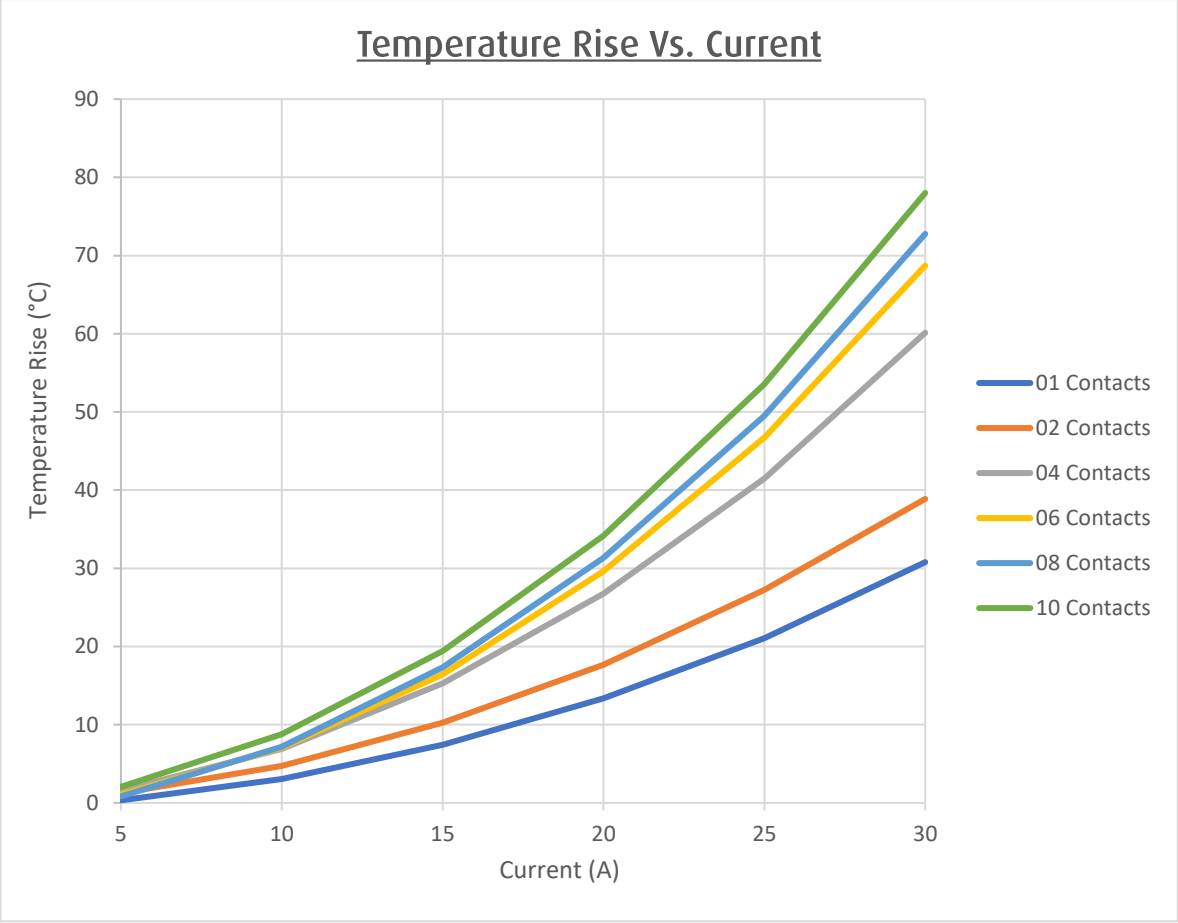
3. Test Results

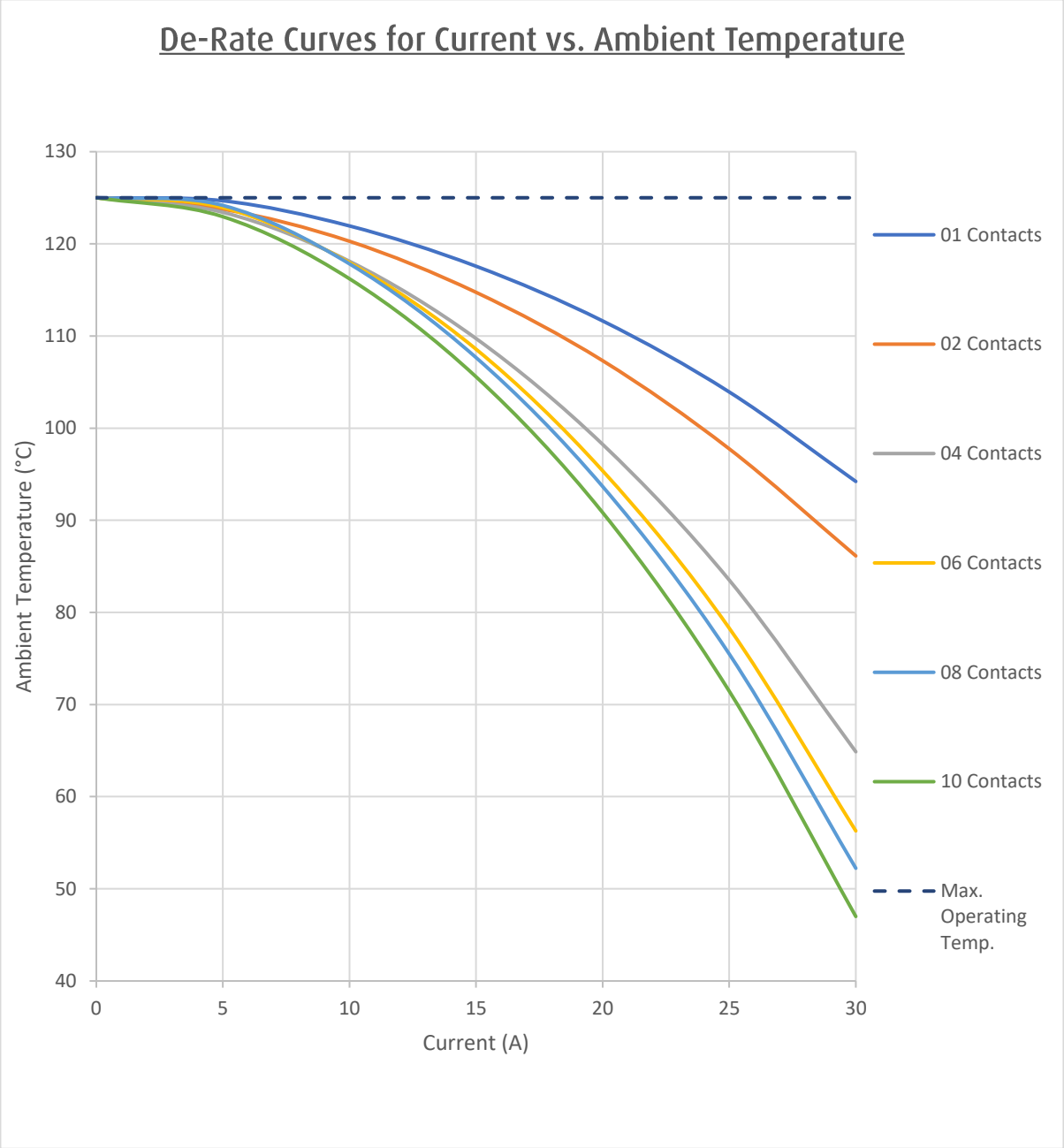
3.1. Power Rating (Current versus Temperature Rise) to EIA-364-70A: 1998

Specification: Current Rating (when all contacts are electrically loaded) = 20A.

Methodology: Multiple samples of the range of cable connectors with 1, 2, 4, 6, 8, and 10 contacts fitted were soldered to a with a minimum of 42cm of 12AWG wire for single contact connections and 84cm of 12AWG wire for series links between contacts. These connectors were all mated to the male PC Tail connector fitted to the test board. Current was passed through contacts and increased in 5A increments up to 30A. Temperatures and test currents were recorded after a suitable dwell time, to allow the temperature to stabilise. This process was repeated on three sample pairings per test setup.

Current (A)	Temperature Rise (°C) – Average of 3 samples					
	1 contact	2 contact	4 contact	6 contact	8 contact	10 contact
5	0.3	1.2	1.6	1.1	0.8	2.1
10	3.1	4.7	6.9	7.1	7.2	8.8
15	7.4	10.3	15.3	16.4	17.4	19.4
20	13.4	17.7	26.8	29.6	31.3	34.2
25	21.1	27.3	41.5	46.7	49.5	53.6
30	30.8	38.9	60.1	68.7	72.8	78.0
Ambient Temperature measurement (°C)						
Start of test	*21.1*	*22.5*	*21.5*	*22.0*	*21.7*	*21.7*
End of test	*23.5*	*23.7*	*24.3*	*25.0*	*25.3*	*26.0*




De-Rate Curves for Current vs. Ambient Temperature
Ambient Temperature (°C)
130
120
110
100
90
80
70
60
50
40
0
5
10
15
20
25
30
Current (A)
01 Contacts
02 Contacts
04 Contacts
06 Contacts
08 Contacts
10 Contacts
Max. Operating Temp.