Evaluation Of 3 Position FASTON Flag Receptacle Housing

1. INTRODUCTION

1.1 Purpose

To complete testing that was requested by a customer to compare legacy vs. new product performance per the test request.

1.2 Scope

This report covers the electrical performance of the 3 Position FASTON* Flag Assemblies. Testing was performed at the Harrisburg Electrical Components Test Laboratory (HECTL) between January 26, 2024, and January 30, 2024. Detailed results are on file at HECTL under test number EA20230532T.

1.3 Conclusion

Testing was completed per the test request, but with additional currents for reference points. See Section 2 for detailed testing results.
NOTE – Testing was performed on T9A housing components with a right-handed orientation. The same material and similar geometry are used by the left-handed orientation components, so performance in the below tests is also expected to be similar for those configurations.

1.4 Test Specimens

The test specimens were representative of normal production lots, and the following part numbers were used for testing:

Table 1 – Test Specimens

Test Set	Part Number	Description
1	1-1969705-1	3 Position Legacy Flag FASTON ReceptacleT9A Housing, .250 Series
	63963-1	Flag FASTON Receptacle, .250 Series, Crimped On Double-Ended Cable Assembly, Each Using 8” Of 14 AWG Wire
	63963-1	Flag FASTON Receptacle, .250 Series, Crimped On Single-Ended Cable Assembly, Each Using 24” Of 14 AWG Wire
	62627-3	Electrical Test .250 Series FASTON Tab
2	5-2394343-1	3 Position Right Hand Flag FASTON ReceptacleT9A Housing, .250 Series
	2375768-3	Right Hand Flag FASTON Receptacle, .250 Series, Crimped On Double-Ended Cable Assembly, Each Using 8” Of 14 AWG Wire
	2375768-3	Right Hand Flag FASTON Receptacle, .250 Series, Crimped On Single-Ended Cable Assembly, Each Using 24” Of 14 AWG Wire
	62627-3	Electrical Test .250 Series FASTON Tab

1.5 Test Sequence

The specimens identified in Paragraph 1.4, Table 1 were subjected to the sequence listed in Table 2.

Table 2 – Test Sequence

Test or Examination	Test Sets 1 and 2
	Test Sequence (a)
Examination of Product	1,3
Temperature Rise vs. Current	2

a) The numbers indicate the sequence in which tests were performed

1.6 Environmental Conditions

Unless otherwise stated, the following environmental conditions prevailed during testing:

Temperature:	15°C to 35°C
Relative Humidity	20% to 80%

2. SUMMARY OF TESTING

2.1 Examination of Product

No physical damage detrimental to product performance was visible.

2.2 Temperature Rise vs. Current

See Tables 3 and 4 for temperature rise vs. current summary data and Figures 1 and 2 for temperature rise vs. current testing plots. Figure 3 is a comparative plot between the two test sets.

Table 3 – Test Set 1 Temperature Rise vs Current Data Summary

Current (Amps DC)	12	14	16	18	20	21	22
	T-Rise in °C						
Average	12.57	16.81	21.78	27.37	33.53	36.95	40.46
Standard Deviation	0.51	0.61	0.77	0.88	1.02	1.22	1.27
N	16	16	16	16	16	16	16

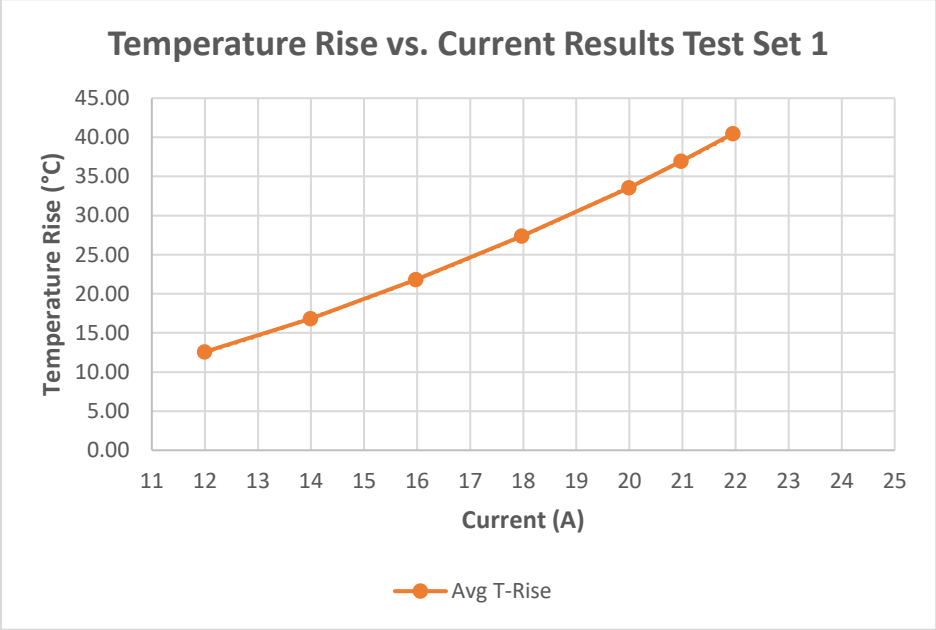

Figure 1 – Test Set 1 Temperature Rise vs. Current Testing Plot

Table 4 – Test Set 2 Temperature Rise vs Current Data Summary

Current (Amps DC)	12	14	16	18	20	21	22
	T-Rise in °C						
Average	11.03	14.70	18.83	23.50	28.61	31.25	34.06
Standard Deviation	0.42	0.54	0.71	0.92	1.13	1.26	1.37
N	16	16	16	16	16	16	16

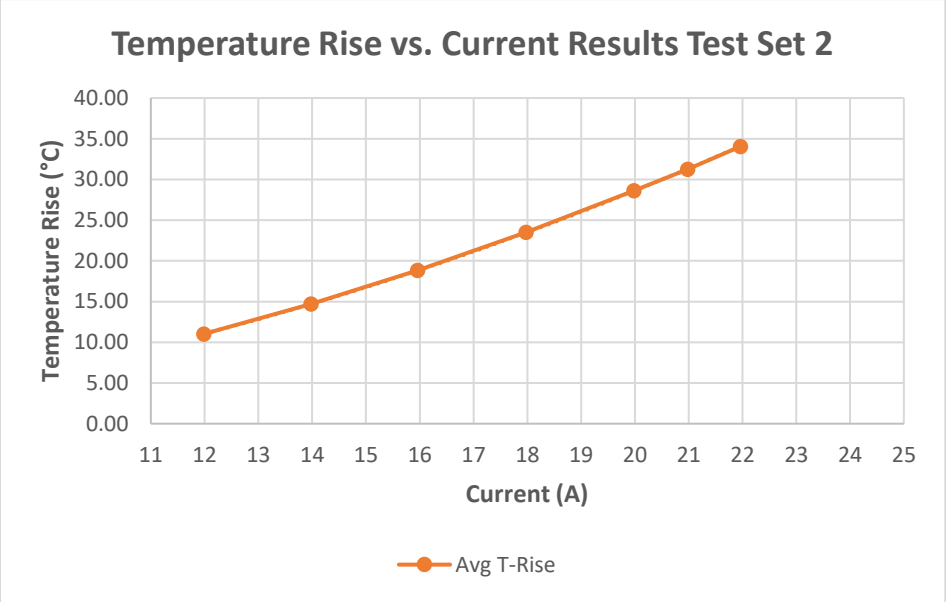

Figure 2 – Test Set 2 Temperature Rise vs. Current Testing Plot

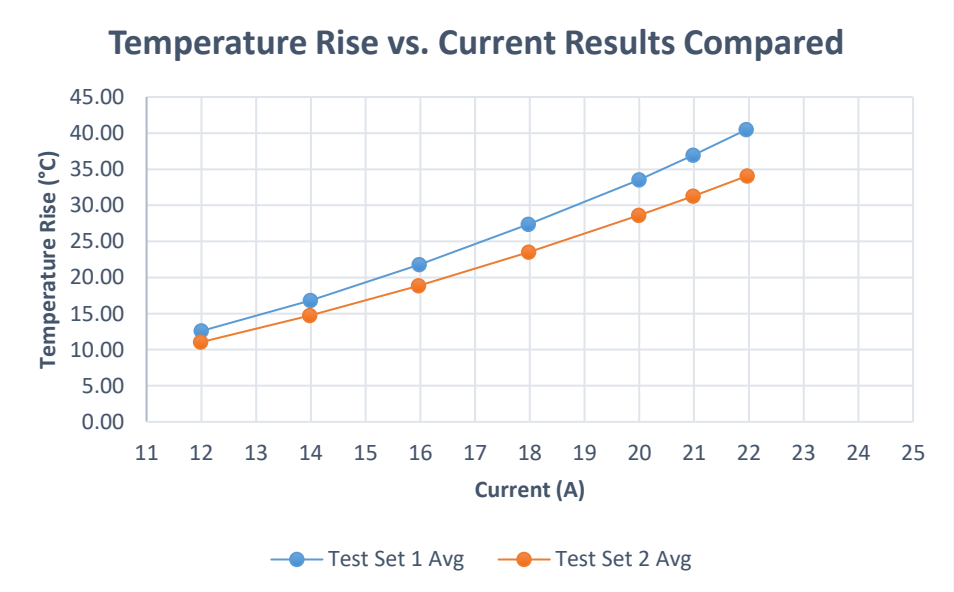

Figure 3 – Test Set 1 vs Test Set 2

3. TEST METHODS

3.1. Examination of Product

Specimens were visually examined with an unaided eye.

3.2 Temperature Rise vs. Current

All specimens were prepared by welding a Type-T, 30 AWG thermocouple to the back of the crimp. The specimens were loaded with two terminals in each of 8 housings. The specimens were connected in series and the thermocouples were connected to an automated temperature acquisition system. The system was set to energize the specimens at preset current levels until stability was reached at each level. Stability is defined as when three consecutive 5-minute measurements did not differ by more than 1°C. After recording the temperature rise, the system automatically applied the next current level until all presets were applied. See Figure 4 for the test setup.

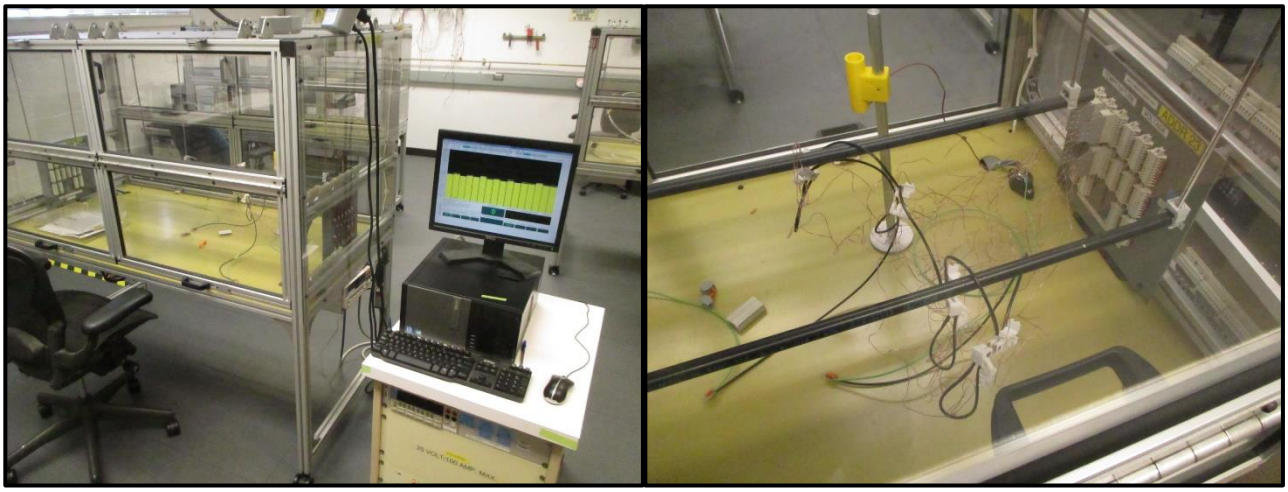

Figure 4 – Temperature Rise vs. Current Test Setup