

## Glow Wire Evaluation on POSITIVE LOCK\* Housings

### 1. INTRODUCTION

#### 1.1 Purpose

Testing was performed on the TE Connectivity POSITIVE LOCK housings to evaluate its performance during Glow Wire Testing.

#### 1.2 Scope

This report covers the glow wire performance of POSITIVE housing. Testing was performed at the Shanghai Electrical Components Test Laboratory during 07May2018 to 16May2018. The associated test number is TP-18-01350 and TP-18-01185.

#### 1.3 Conclusion

All specimens in Test Sets 1, 2 and 3 conformed to the maximum allowable flame duration of 2 seconds as specified in IEC 60335-1, Edition 5.2, 2016-05, when tested at 750° C.

#### 1.4 Test Specimens

The specimens submitted for testing are identified in Table 1.

Table 1

Test Group	Part No	Description	Qty.	Comments
1	3-173974-1	187 1P P-Lock HSG NAT	5	R/M: 2136700-1
2	3-173974-6	187 1P P-Lock HSG BLUE	5	R/M: 2136700-2
3	3-173974-7	187 1P P-Lock HSG RED	5	R/M: 1-2136700-3

#### 1.5 Test Sequence

The specimens in Table 1 were subjected to the testing outlined in Table 2.

Table 2-Test sequence

Test or Examination	Test set
	1, 2, 3
	Test Sequence
Glow Wire at 750° C	1

(a) The numbers indicate 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: 25% to 75%

### 2. SUMMARY OF TESTING

#### 2.1 GWT 750°C

All specimens conformed to IEC 60335-1 Edition 5.2, 2016-05 when tested at 750° C with a maximum allowable flame duration of 2 seconds. Tables 3 through 5 show the results of the testing and Figures 1 through 3 show the specimens after testing.

Table 3 – GWT 750°C test result

Group	Sample No	Point of Glow Wire Application	Initial	Final					
				Ti (sec)	Te (sec)	Flame Height (cm)	Drops (yes/no)	Light tissue paper burns (yes/no)	Judgment
3-173974-1	1-1	750°C	No physical damage	0	0	0	NO	NO	Meet Spec.
	1-2	750°C	No physical damage	0	0	0	NO	NO	Meet Spec.
	1-3	750°C	No physical damage	0	0	0	NO	NO	Meet Spec.
	1-4	750°C	No physical damage	0	0	0	NO	NO	Meet Spec.
	1-5	750°C	No physical damage	0	0	0	NO	NO	Meet Spec.

Note: Ti – Time of Ignition, Te – Time of Flame Extinguish from test start, Tr – Time removed from heated element



Figure 1 – visual check for after GWT 750°C test

Table 4 – GWT 750°C test result

Group	Sample No	Point of Glow Wire Application	Initial	Final					
				Ti (sec)	Te (sec)	Flame Height (cm)	Drops (yes/no)	Light tissue paper burns (yes/no)	Judgment
3-173974-6	2-1	750°C	No physical damage	0	0	0	NO	NO	Meet Spec.
	2-2	750°C	No physical damage	0	0	0	NO	NO	Meet Spec.

	2-3	750°C	No physical damage	0	0	0	NO	NO	Meet Spec.
	2-4	750°C	No physical damage	0	0	0	NO	NO	Meet Spec.
	2-5	750°C	No physical damage	0	0	0	NO	NO	Meet Spec.

Note: Ti - Time of Ignition, Te - Time of Flame Extinguish from test start, Tr - Time removed from heated element



Figure 2 – visual check for after GWT 750°C test

Table 5 – GWT 750°C test result

Group	Sample No	Point of Glow Wire Application	Initial	Final					
				Ti (sec)	Te (sec)	Flame Height (cm)	Drops (yes/no)	Light tissue paper burns (yes/no)	Judgment
3-173974-7	3-1	750°C	No physical damage	0	0	0	NO	NO	Meet Spec.
	3-2	750°C	No physical damage	0	0	0	NO	NO	Meet Spec.
	3-3	750°C	No physical damage	0	0	0	NO	NO	Meet Spec.
	3-4	750°C	No physical damage	0	0	0	NO	NO	Meet Spec.
	3-5	750°C	No physical damage	0	0	0	NO	NO	Meet Spec.

Note: Ti - Time of Ignition, Te - Time of Flame Extinguish from test start, Tr - Time removed from heated element



Figure 3 – visual check for after GWT 750°C test

### 3. TEST METHODS

All specimens were preconditioned at a temperature of 25° C and relative humidity of 60% for a minimum of 24 hours before being subjected to the Glow Wire test. The duration of the test was thirty seconds at 750 °C ± 10°C with a glow wire penetration depth of 7 mm. Test specimens were orientated whereas not to impede the material from burning up the test specimen or dripping down to the specified layer (wrapping tissue paper). The tester observed each test specimen for flame height, flame duration, and burning of the specified layer beneath the specimen under test. All testing was performed in accordance with IEC 60335-1 Edition 5.2, 2016-05 and IEC 60695-2-11, Edition 2.0, 2014-01.