

Qualification Test Report

HYPERGRIP® SERIES

Qualification of Disposable HG2 Plug Connectors

Revision A.2
March 2022



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1. Scope

The purpose of this test plan is to verify design aspects of test samples of the disposable HG2 plug connector.

Configuration of components for test:

- 800-1012659-016, HG2 Disposable Plug, A-Key Insulator
- HG2E10GY1204FRANH, HG2 Receptacle Assembly

2. Order of Precedence

In case of a conflict between the text of this document and the applicable referenced documents, the text of this document shall take precedence.

3. Description of Test Articles

Table 1: Description of Test Articles

| Part Number | Quantity | Description |
|---|----------|-------------------------------------|
| Group 1 – Crimp Tensile Strength | | |
| 202-1004629-002 | 5 | .4mm Gold Plate Pin with 26AWG Wire |
| 202-1004629-002 | 5 | .4mm Gold Plate Pin with 28AWG Wire |
| Group 2 – 200 Cycles Mating and Electrical Testing | | |
| HG2E10GY1204FRANH | 3 | HG2 Receptacle Assembly |
| 800-1012659-016 | 3 | HG2 Disposable Assembly, A-Key |
| Group 3 - IPx4 Testing | | |
| HG2E10GY1204FRANH | 1 | HG2 Receptacle Assembly |
| 800-1012659-016 | 1 | HG2 Disposable Assembly, A-Key |

4. Standard Ambient Test Conditions

All tests and examinations specified by this qualification test procedure will be continued under any combination of conditions within the ranges stated in this paragraph, unless specified otherwise.

Temperature: 21°C to 27°C
 Relative Humidity: 20% to 80%
 Barometric Pressure: 725 +50 –70 mm Hg

5. References

Electronic Industries Alliance (EIA)

| | |
|-------------|--|
| EIA-364-08 | Crimp Tensile Strength Test Procedure for Electrical Connectors |
| EIA-364-09C | Durability Test Procedure for Electrical connectors and Sockets |
| EIA 364-13D | Mating and Un-mating Force Test Procedure for Electrical Connectors and Sockets |
| EIA-364-20 | Withstanding Voltage Test Procedure for Electrical Connectors, Sockets and Coaxial Contacts |
| EIA-364-21 | Insulation Resistance Test Procedure for Electrical Connectors, Sockets and Coaxial Contacts |
| EIA-364-23C | Low Level Contact Resistance Test Procedure for Electrical Connectors and Sockets |
| EIA-364-38 | Cable Pull Out Force |
| EIA-364-42 | Impact Test Procedure for Electrical Connectors |
| EIA 364-98 | Housing Locking Mechanism Strength Test Procedure for Electrical Connectors |

6. Test Equipment

Table 2 lists the equipment to be use during the performance of the testing required herein. Equivalent items may be used if the effectiveness and accuracy of the tests are not adversely affected. Substitutes will be noted in Table 2.

Table 2 Test Equipment

| Manufacturer | Description and Model | Smiths Interconnect Serial Number |
|-------------------|------------------------------------|-----------------------------------|
| Ametek | Lloyd Force Tester due | 10469 |
| Ametek | Lloyd Materials Tester LD100 | 11712 |
| Ametek | 100 N Load Cell due 1/31/2023 | 20-618 |
| Ametek | 500 N Load Cell due 5/31/2022 | 20-614 |
| Cami Research | CableEye HVX21-M4 | 12037 |
| Keithley | 5A SourceMeter 2440 | 35-0847 |
| Advanced Research | High Voltage Tester/HYPOULTRA 7800 | 11662 |
| Stanley | 25' Tape Measure | 30-454 |
| Schleuniger | Pull Tester 25 | 10-468 |
| In-House | Drop Test Pendulum | NA |

7. Calibration

All test equipment used in the performance of the tests required herein shall be calibrated in accordance with ANSI/NCSL Z540-1-1994. Records of all equipment shall be maintained in accordance with ANSI/NCSL Z540-1-1994 and made available for review. Unless otherwise specified, Smiths Connectors Quality Assurance will verify that all test data and collection methods are accurate and reliable.

8. Test Sequence

The test process for qualification will be based on the samples in Table 1 of this document. The sequence of test is listed in Table 3: Test Sequence. All qualification parts shall be retained for 5 years.

Table 3: Test Sequence

| Test Procedure | Paragraph Reference | Pass/ Fail Criteria |
|---|---------------------|---|
| Group 1 – Crimp Tensile Strength | | |
| Pull contacts with crimped wire | 9.1 | 26AWG – 5lbs min 28AWG – 3lbs min |
| Group 2 – 200 Cycles Mating and Electrical Testing | | |
| Mating Life Cycles – 200 Cycles | 9.2 | Mating/Unmating less than or equal to 6lbs (targeted to 3lbs. +/- 1lb.) |
| Insulation Resistance Testing | 9.3 | Resistance equal to or greater than 5×10^4 MOhms at 500VDC |
| Dielectric Breakdown Voltage | 9.4 | Determine voltage for 5 mA of leakage |
| Plug Inner to Outer Housing Retention Force | 9.5 | 12lbs minimum |
| Cable Pull Out Force (Cable to plug) | 9.6 | 7lbs minimum. All conductors must pass continuity check. |
| Drop Impact (Uses One Plug from Group 2) | 9.7 | Visual and ability to still mate with receptacle after testing. |
| Group 3 – IPx4 Testing | | |
| IPx4 Testing of Mated Set | 9.8 | No water ingress into plug insulator or pass into receptacle housing. |

9. Test Procedures

9.1 Crimp Tensile Strength

The electrical contact will be held in a way that does not distort or contact the crimp area. Wire Insulation support will be disabled if present and wire sample will be a minimum of 2" long. The test piece will be pulled at 1" +/-1/4" per minute until desired force is reached or failure of crimp or wire, whichever is less.

- 26AWG – Pull to 5lbs and observe for no movement or failure
- 28AWG – Pull to 3lbs and observe for no movement or failure

Reported Measurements

- Contact PN: 28 AWG (7/36 stranded), and 26 AWD (7/34 stranded)
- Fixtures Used: NA
- Tester: Schleuniger Pull Tester 25 Last Cal Date: 6/2/2021 Next Cal Date: 6/2/2022
- Pass/ Fail: Pass or Fail
- Operator: Hippensteel Start Date: 10/24/2021 End Date: 10/27/2021

9.2 9.2 Mating Life Cycle

The wired connectors are to be tested in accordance with EIA-364-09C. The mating/unmating cycle rate per hour shall be 250 to 300 with one side of the system allowed to float. The connectors or contacts shall be examined at intervals to determine the effects of durability cycling that would include following.

- a. Measure LLCR (Low Level Contact Resistance)
- b. Measure insertion) /unmating (extraction) force

The connectors are to be tested in accordance with EIA-364-23C. The test samples shall be connected as for normal service. The test shall use a 4-wire resistance measurement. All contacts shall be measured. Failure occurs if average contact resistance of the mated connector is greater than 12 mΩ.

The wired connectors are to be tested in accordance with EIA-364-13D, Method A. The two mating connectors shall be brought to a position where mechanical mating begins and the force or torques gage is at zero indication. The connectors mate until full engagement and the peak force required for mating shall be recorded. The mated connectors shall be fully unmated and the peak force required shall be recorded. Connectors must be tested in a manner that eliminates the effects of transverse forces, perpendicular to the direction of mating. Mating and unmating will be done at approximately 1 inch per minute.

Reported Measurements

- LLCR Measurements Vs Cycle Number
- Pass or Fail for durability
- Fixtures Used: HG2 Receptacle Holder, Disposable HG2 Plug Holder
- Tester: Lloyd Force Tester (10469) Last Cal Date: 5/26/2021 Next Cal Date: 5/31/2022

- Tester: Lloyd Materials Tester LD100 (11712) Last Cal Date: 1/27/2022 Next Cal Date: 1/31/2023
- Operator: Hippensteel Start Date: 1/19/2022 End Date: 1/24/2022

9.3 Insulation Resistance Testing

The connectors are to be tested in accordance with EIA-364-21. The test voltage will be 500VDC and one contact will be tested against all other contacts for resistance equal to or greater than 5×10^4 MOhms.

Reported Measurements

- Mated Connector Set as Test Sample
- Tester: Cami Research CableEye HVX21-M4 Last Cal Date: 9/20/2021 Next Cal Date: 9/20/2022
- Pass/ Fail: 500VDC with resistance equal to or greater than 5×10^4 Mohms
 - Contact 1 to all others: Pass or Fail
 - Contact 2 to all others: Pass or Fail
 - Etc. for all contacts
- Operator: Hippensteel Start Date: 1/19/2022 End Date: 1/24/2022

9.4 Dielectric Breakdown Testing

Test voltage shall be ramped at 500V per second (approximately) until the leakage current exceeds 5mA or maximum voltage (5000V) of the measurement instrument is reached.

Reported Measurements

- Tester: Advanced Research High Voltage Tester/HYPOULTRA 7800 Last Cal Date: 3/31/2021 Next Cal Date: 3/31/2022
- Pass/ Fail: Pass or Fail
- Operator: Hippensteel Start Date: 2/7/2022 End Date: 2/10/2022

9.5 Retention Force

Disposable plug insulator (201-1012607-101) and disposable plug body (201-1012608-106) will be pulled apart at approximately $\frac{1}{2}$ " per minute until separation or to 12lbs, whichever is lower. Passing criteria will be the housings still connected to each other after receiving a 12lb load.

Reported Measurements

- Fixtures Used: Disposable HG2 Boot Puller, Disposable HG2 Insulator Puller
- Tester: Lloyd Force Tester, 10469 Last Cal Date: 3/26/2021 Next Cal Date: 5/31/2022
- Pass/Fail: Pass or Fail
- Operator: Hippensteel Start Date: 2/10/2022 End Date: 2/10/2022

9.6 Cable Pull Out Force

Disposable plug cable will be pulled to 7 lbs. and then checked for retention to the housing (approximately at a $\frac{1}{2}$ " per minute). The disposable connector housing will be held steady by a fixture or clamp while another clamp is used to pull the cable.

Reported Measurements

- Fixtures Used: HG2 Receptacle Holder
- Tester: Lloyd Materials Tester LD100, 11712,
Last Cal Date: 3/31/2021 Next Cal Date: 9/30/2022
- Pass/ Fail: Pass or Fail
- Operator: Hippensteel Start Date: 2/7/2022 End Date: 2/10/2022

9.7 Drop Impact

The wired plug will be tested in accordance with EIA-364-42. The plug will be raised to 1.5 meters high on the pendulum and released to fall on the concrete floor. Five drops will be done in total, each at a different rotation as set by the test fixture device. After dropping the connector will be inspected for damage and ability to mate with the receptacle.

Reported Measurements

- Plug and plug wiring only will be dropped 5 times from a height of 1.5 meters (approx. 5 ft)
- Tester: Drop Impact Pendulum, Tape Measure
- Pass/ Fail: Visual defect, ability to mate with receptacle after dropping.
- Operator: Hippensteel Start Date: 2/11/2022 End Date: 2/11/2022

9.8 IPx4 testing of Mated Set

The wired connectors HG2 set will be tested for resistance to water incursion (IPx4). One mated pair will be mounted in a waterproof container and will be outsourced to determine if the Disposable HG2 passes the IPx4 requirements. Requirements include passing a splashing water test.

Reported Measurements

- Mated pair will be subjected to splashing water test
- Tester: Vendor IPx4 splashing water setup
- Pass/Fail: Evidence or lack of water inside of plug/receptacle/container
- Operator: Keystone Compliance Start Date: 12/1/2021 End Date: 12/3/2021

10. Test Results

10.1 Crimp Tensile Strength Test Data Sheet

| | | | |
|---|-----------------------------|---|--|
| Customer: N/A | | Date: 10/24/2021 | |
| Customer Part No: N/A | | Smith's Interconnect Part No: 202-1004629-002 | |
| Job No: DD-222867 | | Specification: EIA-364-08 | |
| Temp: 24.6°C | Relative Humidity: 33.1% RH | Barometric Pressure: 738.9 hPa | |
| Test Equipment (Equipment name, Model, S/N, Cal. Due Date): Schleuniger Pull Tester 25, 10-468, 1/31/22 | | | |

Requirements:

Crimp tensile strength will be tested according to EIA-364-08. The electrical contact will be held in a way that does not distort or contact the crimp area. Wire Insulation support will be disabled if present and wire sample will be a minimum of 2" long. The test piece will be pulled at 1" +/-1/4" per minute until desired force is reached or failure of crimp or wire, whichever is less.

- 26AWG – Pull to 5lbs and observe for no movement or failure
- 28AWG – Pull to 3lbs and observe for no movement or failure

The crimp tensile strength measurements were acquired using the Schleuniger Pull Tester 25 as seen in Figure 1.

| Sample | Test Result | | | | |
|--------|-------------|------|------|------|------|
| | 1 | 2 | 3 | 4 | 5 |
| 26 AWG | PASS | PASS | PASS | PASS | PASS |
| 28 AWG | PASS | PASS | PASS | PASS | PASS |

Figure 1: Schleuniger Pull Tester 25



10.2 Mating Life Cycle: LLCR (Low Level Contact Resistance) Test Data Sheet

| | | | |
|---|-----------------------------|---|--|
| Customer: N/A | | Date: 1/19/2022 | |
| Customer Part No: N/A | | Smith's Interconnect Part No: 800-1012659-016 | |
| Job No: DD-222867 | | Specification: EIA-364-23C, EIA-364-09C | |
| Temp: 23.2°C | Relative Humidity: 26.3% RH | Barometric Pressure: 738.7 hPa | |
| Test Equipment (Equipment name, Model, S/N, Cal. Due Date): Keithley 5A SourceMeter, 2440, 35-0847, 12/21/2022 | | | |

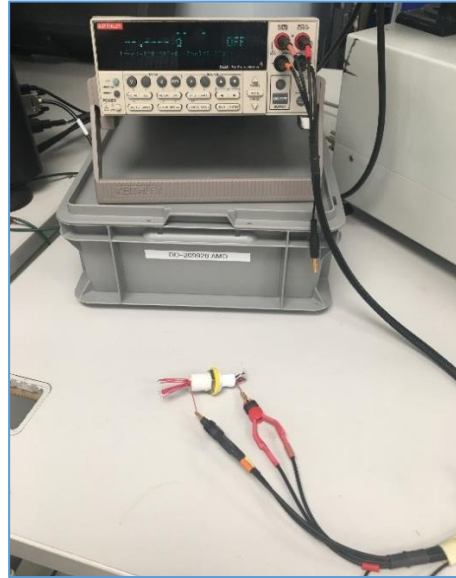
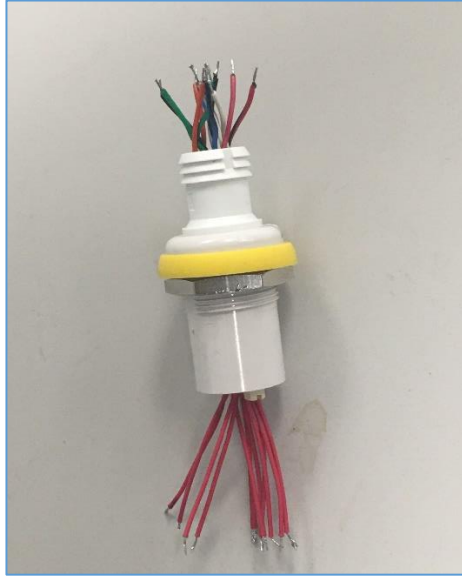
Requirements:

The HG2 Disposable Plug (800-1012659-016) mated with HG2 receptacle assembly (HG2E10GY1204FRANH) shall test in accordance with EIA-364-23C. The test shall use constant current source of 100mA, and 20 millivolts open circuit voltage. All contacts measured. Failure occurs if the contact resistance of the mated connector is greater than 12 mΩ.

Measurement was done using the Keithley 5A SourceMeter 2440 with the HG2 connector pairs. The results were measured using the plug and receptacle wires shortened to approximately one inch on each end with a total of approximately two inches of wire in total. This setup is seen in figure 2.

| Disposable HG2 Plug | Plug 1 | Plug 2 | Plug 3 |
|---------------------|--------|--------|--------|
| Test Result | N/A | PASS | PASS |

Figure 23: LLCR Measurement Disposable HG2 Plug



10.3 Mating Life Cycle: Plug Durability Test Data Sheet

| | | | |
|---|-----------------------------|---|--|
| Customer: N/A | | Date: 1/20/2022 | |
| Customer Part No: N/A | | Smith's Interconnect Part No: 800-1012659-016 | |
| Job No: DD-222867 | | Specification: EIA-364-13D, EIA 364-09C | |
| Temp: 23.2°C | Relative Humidity: 26.3% RH | Barometric Pressure: 738.7 hPa | |
| Test Equipment (Equipment name, Model, S/N, Cal. Due Date): Lloyd Materials Tester LD100, 11712, 1/31/2023 Lloyd Force Tester, 10469, 5/31/2022 | | | |

Force measurement was taken when connector is fully mated.

Requirements:

The HG2 Disposable Plug (800-1012659-016) mated with HG2 receptacle assembly (HG2E10GY1204FRANH) shall test in accordance with EIA-364-13D, Method A.

The two mating connectors shall be mated and unmated, 10 at a time, with a new, unused, HG2 plug and receptacle. Linear Automatic Cycling shall be done at a rate of 250-300 per hour, mating and unmating done at a speed of approximately 1 inch per minute.

| Disposable HG2 Plug (at 200 th Cycle) | Plug 1 | Plug 2 | Plug 3 |
|--|--------|--------|--------|
| Test Result | PASS | PASS | PASS |

10.4 Insulation Resistance Test Data Sheet

| | | | |
|---|-----------------------------|---|--|
| Customer: N/A | | Date: 1/20/2022 | |
| Customer Part No: N/A | | Smith's Interconnect Part No: 800-1012659-016 | |
| Job No: DD-222867 | | Specification: EIA-364-21 | |
| Temp: 23.2°C | Relative Humidity: 26.3% RH | Barometric Pressure: 738.7 hPa | |
| Test Equipment (Equipment name, Model, S/N, Cal. Due Date): Cami Research CableEye HVX21-M4,12037, 9/30/2022 | | | |

Requirements:

The connectors are to be tested in accordance with EIA-364-21. The test voltage will be 500VDC and one contact will be tested against all other contacts for resistance equal to or greater than 5×10^4 MOhms.

The Insulation resistance measurements were acquired using the Cami Research CableEye HVX21-M4 Tester along with the LLCR and Force Tests.

The insulation resistance for each of the three plug/receptacles is a Pass/Fail determination.

All pins on all three HG2 connectors passed the insulation resistance test.

Table 13: Insulation Resistance Test Results

| HG2 Connectors 1, 2 and 3 | | | | | | | | |
|---------------------------|----------|----------|----------|----------|----------|-----------|-----------|-----------|
| Pin Num | Baseline | 10 Cycle | 20 Cycle | 30 Cycle | 50 Cycle | 100 Cycle | 150 Cycle | 200 Cycle |
| 1 | PASS | PASS | PASS | PASS | PASS | PASS | PASS | PASS |
| 2 | PASS | PASS | PASS | PASS | PASS | PASS | PASS | PASS |
| 3 | PASS | PASS | PASS | PASS | PASS | PASS | PASS | PASS |
| 4 | PASS | PASS | PASS | PASS | PASS | PASS | PASS | PASS |
| 5 | PASS | PASS | PASS | PASS | PASS | PASS | PASS | PASS |
| 6 | PASS | PASS | PASS | PASS | PASS | PASS | PASS | PASS |
| 7 | PASS | PASS | PASS | PASS | PASS | PASS | PASS | PASS |
| 8 | PASS | PASS | PASS | PASS | PASS | PASS | PASS | PASS |
| 9 | PASS | PASS | PASS | PASS | PASS | PASS | PASS | PASS |
| 10 | PASS | PASS | PASS | PASS | PASS | PASS | PASS | PASS |
| 11 | PASS | PASS | PASS | PASS | PASS | PASS | PASS | PASS |
| 12 | PASS | PASS | PASS | PASS | PASS | PASS | PASS | PASS |

10.5 Dielectric Breakdown Test Data Sheet

| | | | |
|---|-----------------------------|---|--|
| Customer: | | Date: 2/7/2022 | |
| Customer Part No: N/A | | Smith's Interconnect Part No: 800-1012659-016 | |
| Job No: DD-222867 | | Specification: EIA-364-20, EIA-364-21 | |
| Temp: 22.6°C | Relative Humidity: 31.5% RH | Barometric Pressure: 741.1 hPa | |
| Test Equipment (Equipment name, Model, S/N, Cal. Due Date): High Voltage Tester/HYPOULTRA 7800, 11662, 9/30/2022 | | | |

Requirements:

Test voltage shall be ramped at 500V per second (approximately) until the leakage current exceeds 5mA or maximum voltage of 5000V.

The Disposable HG2 plug and cable are inserted into a vessel of mini gold-plated spheres and 5000V are applied to the spheres while the High Voltage Tester measures any shorting out of wires to each other as seen in Figure 4.

| Disposable HG2 | Plug 1 | Plug 2 | Plug 3 |
|----------------|--------|--------|--------|
| Test Result | PASS | PASS | PASS |

Figure 4: Dielectric Breakdown Test Setup



10.6 Retention Force Test Datasheet

| | | | |
|---|-----------------------------|---|--|
| Customer: | | Date: 2/10/2022 | |
| Customer Part No: N/A | | Smith's Interconnect Part No: 800-1012659-016 | |
| Job No: DD-222867 | | Specification: EIA-364-98 | |
| Temp: 22.4°C | Relative Humidity: 36.6% RH | Barometric Pressure: 743.3 hPa | |
| Test Equipment (Equipment name, Model, S/N, Cal. Due Date): Lloyd Force Tester, 10469, 5/31/2022 | | | |

Requirements:

Disposable plug insulator (201-1012607-101) and disposable plug body (201-1012608-106) will be pulled apart at approximately 1/2" per minute until separation or to 12lbs, whichever is lower. The insulator will be held at 12 lbs. for three seconds to show no slippage of the plug body.

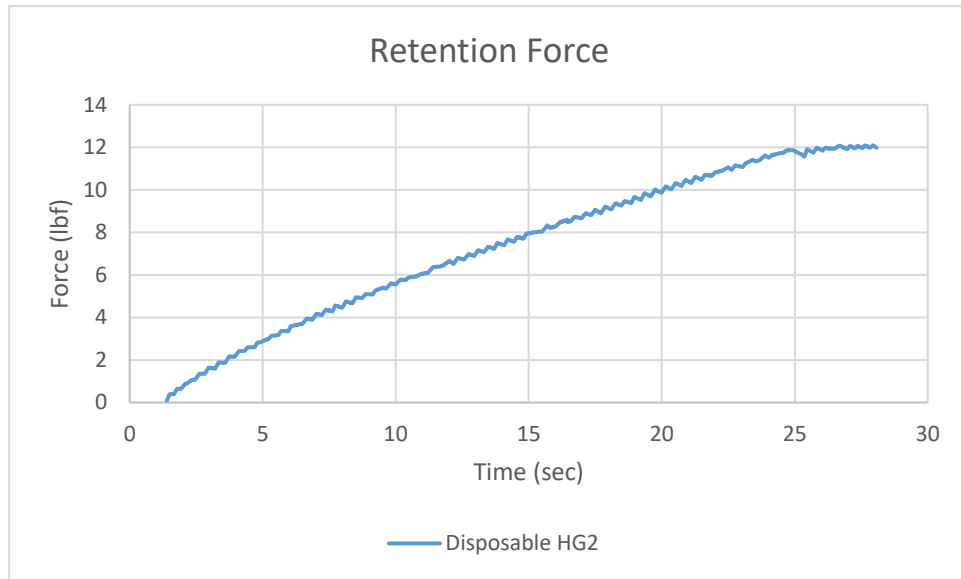
Passing criteria will be the housings still connected to each other after receiving a 12lb load. The insulator and plug will be pulled as shown in Figure 5. Figure 6 shows the Disposable HG2 Retention Force Results graph

| Disposable HG2 | Plug 1 | Plug 2 | Plug 3 |
|----------------|--------|--------|--------|
| Test Result | PASS | PASS | PASS |

Figure 5: Retention Force Test Setup



Figure 6: Retention Force Test Graph



10.7 Cable Pullout Force Test Datasheet

| | | | |
|---|-----------------------------|---|--|
| Customer: | | Date: 2/7/2022 | |
| Customer Part No: N/A | | Smith's Interconnect Part No: 800-1012659-016 | |
| Job No: DD-222867 | | Specification: EIA-364-20, EIA-364-21 | |
| Temp: 22.3°C | Relative Humidity: 27.3% RH | Barometric Pressure: 742.3 hPa | |
| Test Equipment (Equipment name, Model, S/N, Cal. Due Date): Lloyd Materials Tester LD100, 11712, 9/30/2022 | | | |

Requirements:

Disposable plug cable will be pulled to 7 lbs. and then checked for retention to the housing (approximately at a 1/2" per minute). The cable will be held at 7 lbs. for three seconds to show no slippage of the plug body. The connector housing will be held steady by a fixture or clamp while another clamp is used to pull the cable.

Passing criteria will be the cable still connected to the plug after receiving a 7lb load.

The cable will be pulled as shown in Figure 7. Figure 8 shows the Disposable HG2 Cable Pullout Test Graph.

The HG2 Disposable plug/HG2 receptacle will be tested for electrical continuity of each mated set of pins after the test is completed.

Table 14: Cable Pullout Force Electrical Continuity Test Result

| Mated Pin No. | Disposable HG2 Plug 1 | Disposable HG2 Plug 2 | Disposable HG2 Plug 3 |
|---------------|-----------------------|-----------------------|-----------------------|
| 1 | PASS | PASS | PASS |
| 2 | PASS | PASS | PASS |
| 3 | PASS | PASS | PASS |
| 4 | PASS | PASS | PASS |
| 5 | PASS | PASS | PASS |
| 6 | PASS | PASS | PASS |
| 7 | PASS | PASS | PASS |
| 8 | PASS | PASS | PASS |
| 9 | PASS | PASS | PASS |
| 10 | PASS | PASS | PASS |
| 11 | PASS | PASS | PASS |
| 12 | PASS | PASS | PASS |

Figure 7: Cable Pullout Force Test Setup

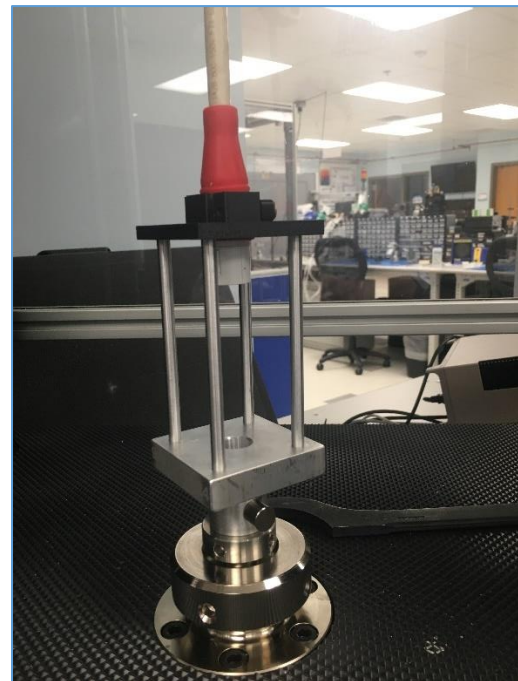
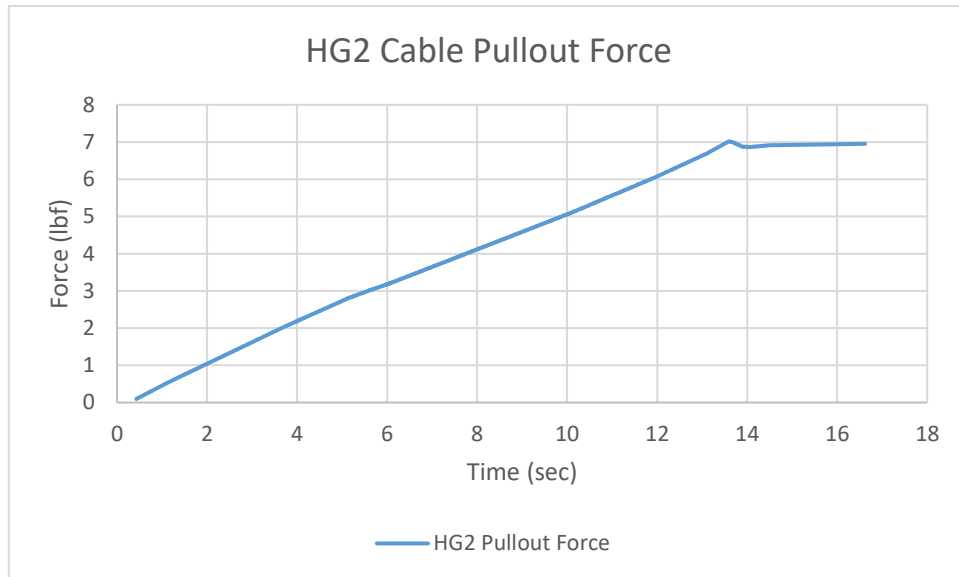


Figure 8: Cable Pullout Force Test Graph



10.8 Drop Impact Test Data Sheet

| | | |
|---|-----------------------------|---|
| Customer: N/A | | Date: 1/24/2022 |
| Customer Part No: N/A | | Smith's Interconnect Part No: 800-1012659-016 |
| Job No: DD-222867 | | Specification: EIA-364-42 |
| Temp: 22.6°C | Relative Humidity: 31.5% RH | Barometric Pressure: 741.1 hPa |
| Test Equipment (Equipment name, Model, S/N, Cal. Due Date): | | |
| Drop Test Pendulum, NA, NA | | |
| Stanley25' Tape Measure, 30-454, NA | | |

Requirements The Disposable HG2 wired plug will be tested in accordance with EIA-364-42. The plug will be raised to 1.5 meters high on the drop test pendulum and released to fall on the concrete floor. Five drops will be done in total, each at a different rotation as set by the test fixture device. After dropping the connector will be inspected for damage and ability to mate with the receptacle. Passing criteria will be the ability to connect the plug and receptacle after drops. The Drop Impact Test setup is shown below in Figure 8.

| Disposable HG2 | Plug 1 | Plug 2 | Plug 3 |
|----------------|--------|--------|--------|
| Test Result | PASS | PASS | PASS |

Figure 8: Drop Impact Test Setup



10.9 IPx4 Testing of Mated Set Data Sheet

| | | | |
|--|-----------------------|---|--|
| Customer: | | Date: 12/1/2021 | |
| Customer Part No: N/A | | Smith's Interconnect Part No: 800-1012659-016 | |
| Job No: DD-222867 | | Specification: IPx4 | |
| Temp: NA | Relative Humidity: NA | Barometric Pressure: NA | |
| Test Equipment (Equipment name, Model, S/N, Cal. Due Date): IPx4 Test Setup at Vendor | | | |

Requirements: The mated pair in a water-proof container as seen in Figure 9, will be subjected to the water ingress test (splashing water) as seen in Figure 10. The HG2 Plug/receptacle and container will be checked for water leakage.

Passing criteria will be the observed lack of water ingress. The IPx4 Test setup is shown below in Figures 9 and 10.

| Disposable HG2 IPx4 Testing | |
|-----------------------------|------|
| Test Result | PASS |

Figure 9: IPx4 Test Setup



Figure 10: Water Ingression Test

