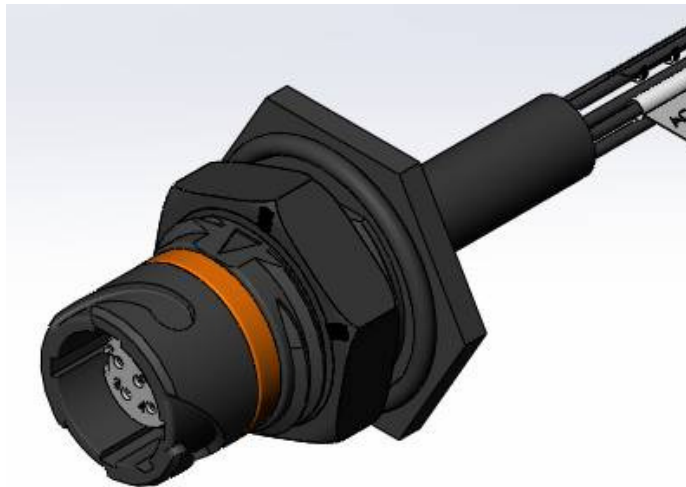




Project Number: Design Qualification Test Report		Tracking Code: 212067_Report_Rev_1	
Requested by: Travis Newton		Date: 5/24/2013	Product Rev: A
Part #: ACP-12-01-H-00.25-T-T-O-1/ACR-12-01-H-00.25-S-S1-P-1			Tech: Aaron McKim Eng: Eric Mings
Part description: ACP/ACR			Qty to test: 71
Test Start: 06/22/2012	Test Completed: 08/06/2012		



**Design Qualification Test Report  
Dust & Water  
ACP/ACR  
ACP-12-01-H-00.25-T-T-O-1/ACR-12-01-H-00.25-S-S1-P-1**

Tracking Code: 212067_Report_Rev_1	Part #: ACP-12-01-H-00.25-T-T-O-1/ACR-12-01-H-00.25-S-S1-P-1
Part description: ACP/ACR	

**REVISION HISTORY**

<b>DATA</b>	<b>REV.NUM.</b>	<b>DESCRIPTION</b>	<b>ENG</b>
05/18/2013	1	Initial Issue	KH

## CERTIFICATION

All instruments and measuring equipment were calibrated to National Institute for Standards and Technology (NIST) traceable standards according to ISO 10012-1 and ANSI/NCSL 2540-1, as applicable.

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### SCOPE

To perform the following tests: Design qualification test. See test plan.

### APPLICABLE DOCUMENTS

Standards: EIA Publication 364

### TEST SAMPLES AND PREPARATION

- 1) All materials were manufactured in accordance with the applicable product specification.
- 2) All test samples were identified and encoded to maintain traceability throughout the test sequences.
- 3) Either an automated cleaning procedure or an ultrasonic cleaning procedure may be used.
- 4) Any additional preparation will be noted in the individual test sequences.

**FLOWCHARTS****IP67 Dust & Water**

TEST STEP	GROUP A1 6 Mated Connectors	GROUP A2 6 Mated Connectors	GROUP B1 6 Connectors (Cable Dust Cover)	GROUP B2 6 Connectors (Cable Dust Cover)
01	Dust Test	Submersion Water Test	Dust Test	Submersion Water Test
02	Check for Dust	Check for Water	Check for Dust	Check for Water

Dust/Water Testing = Per CEI/IEC 60529 Code IP67

**IP68 Dust & Water**

TEST STEP	GROUP G1 3 Mated Connectors For Each Depth Tested (27 Total Mated Connectors)
01	2M for 30 Minutes
02	Check for Water
03	3M for 30 Minutes
04	Check for Water
05	4M for 30 Minutes
06	Check for Water
07	5M for 30 Minutes
08	Check for Water
09	6M for 30 Minutes
10	Check for Water
11	7M for 30 Minutes
12	Check for Water
13	8M for 30 Minutes
14	Check for Water
15	9M for 30 Minutes
16	Check for Water
17	10M for 30 Minutes
18	Check for Water

Dust/Water Testing = Per CEI/IEC 60529 Code IP68

For this test you have to use the pressure chamber

New parts should be used for each depth tested

Stop testing once parts fail

**ATTRIBUTE DEFINITIONS**

The following is a brief, simplified description of attributes.

**WATER TESTING:**

- 1) Reference document: CEI/IEC 60529 Code IPX7 and IPX8
- 2) ACR torque specification for ACPN-12-P is 15 IN-LBS

**DUST TESTING:**

- 1) Reference document: CEI/IEC 60529 Code IP6X
- 2) ACR torque specification for ACPN-12-P is 15 IN-LBS

**RESULTS****IP67 Testing (Water & Dust)****Group A1**

<b>Dust</b>	<b><u>Initial (Before Exposure)</u></b> <b>No Dust Present</b>	<b><u>After Exposure</u></b> <b>No Dust Present</b>
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**Group A2**

<b>Water</b>	<b><u>Initial (Before Exposure)</u></b> <b>No Water Present</b>	<b><u>After Exposure</u></b> <b>No Water Present</b>
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**Group B1**

<b>Dust</b>	<b><u>Initial (Before Exposure)</u></b> <b>No Dust Present</b>	<b><u>After Exposure</u></b> <b>No Dust Present</b>
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**Group B2**

<b>Water</b>	<b><u>Initial (Before Exposure)</u></b> <b>No Water Present</b>	<b><u>After Exposure</u></b> <b>No Water Present</b>
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**IPX8 Testing (Water)****Group G1 (5 m)**

<b>Water</b>	<b><u>Initial (Before Exposure)</u></b> <b>No Water Present</b>	<b><u>After Exposure</u></b> <b>No Water Present</b>
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**Group G1 (6 m)**

<b>Water</b>	<b><u>Initial (Before Exposure)</u></b> <b>No Water Present</b>	<b><u>After Exposure</u></b> <b>Water Present</b>
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**DATA SUMMARIES****IP67 Testing (Water & Dust)****Group A1**

<u>Sample #</u>	<u>Visual Inspection</u>
001	PASS
002	PASS
003	PASS
004	PASS
005	PASS
006	PASS

**Group A2**

<u>Sample #</u>	<u>Visual Inspection</u>
007	PASS
008	PASS
009	PASS
010	PASS
011	PASS
012	PASS

**Group B1**

<u>Sample #</u>	<u>Visual Inspection</u>
013	PASS
014	PASS
015	PASS
016	PASS
017	PASS
018	PASS

**Group B2**

<u>Sample #</u>	<u>Visual Inspection</u>
019	PASS
020	PASS
021	PASS
022	PASS
023	PASS
024	PASS

**DATA SUMMARIES Continue****IPX8 Testing (Water)****Group G1 (5 m)**

<u>Sample #</u>	<u>Visual Inspection at 5 Meters</u>
69	PASS
70	PASS
71	PASS

**Group G1 (6 m)**

<u>Sample #</u>	<u>Visual Inspection at 6 Meters</u>
69	FAIL
70	FAIL
71	FAIL

**EQUIPMENT AND CALIBRATION SCHEDULES****Equipment #:** WATER-01**Description:** IP-67 1.0 Meter Water Column Chamber**Manufacturer:** Samtec Machine**Model:** N/A**Serial #:** N/A**Accuracy:** No Calibration Required**Equipment #:** WATER-02**Description:** IP-68 Water Depth Chamber**Manufacturer:** Samtec Machine**Model:** N/A**Serial #:** N/A**Accuracy:** No Calibration Required**Equipment #:** DUST-01**Description:** IP-X6 Dust Tester**Manufacturer:** Samtec Machine**Model:** N/A**Serial #:** N/A**Accuracy:** No Calibration Required