



DEUTSCH* DRC23-40PX-N012 Connector System

1. INTRODUCTION

1.1. Purpose

This report summarizes the results of testing performed on DEUTSCH DRC23-40PX-N012 connector system to determine conformance to the requirements of product specification 108-151081.

1.2. Scope

This report covers the electrical and environmental performance of the DEUTSCH DRC23-40PX-N012 connector system. Testing was performed at the DEUTSCH Industrial Products Division Laboratory in 2003. The test file number for this testing is listed in Figure 1. This documentation is on file at Product Engineering, Industrial Commercial Transportation (ICT) Laboratory.

Test Group	Test Report
1	IPD030909-01

Figure 1

1.3. Conclusion

The DEUTSCH DRC23-40PX-N012 series connector system products listed in Paragraph 1.4 conform to the electrical, mechanical, and environmental performance requirements given in product specification 108-151081.

1.4. Test Specimens

Test specimens were representative of normal production lots. Specimens identified with the part numbers given in Figure 2 were used for testing.

DEUTSCH PART NUMBER	DESCRIPTION	TEST GROUP
DRC23-40PA-N012	40pin Header Receptacle, 90°	1
DRC26-40SA	40pin Plug	
0462-201-20141	Size 20 S&F Socket, Nickel	

Figure 2

1.5. Environmental Conditions

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

Temperature: 15° to 35°C

Relative humidity: 25 to 75%

1.6. Qualification Test Sequence

TEST OR EXAMINATION	TEST GROUP (a)
	1
	TEST SEQUENCE (b)
Examination of Product	1,11
Insulation Resistance	2,4,7,10
Water Immersion	3,6,9
Thermal Cycle	5
Temperature Life	8

- (a) Specimens were prepared in accordance production drawings and were selected at random from current production.
- Group 1 specimens consisted of 40-position connectors with DEUTSCH solid terminal system size 20 nickel sockets with 20 AWG wire.
- (b) Numbers indicate sequence that tests were performed.

Figure 3

2. TEST METHODS AND RESULTS

2.1. Examination of Product (Group 1)

- A. Procedure: SAE J2030
- B. Method: Conduct a visual examination for identification of product, torn seals, cracked plastic, etc.
- C. Requirement: The connectors shall be correctly constructed, marked and show good quality and workmanship. Connector after conditioning shall not show signs of damage or any detectable loss of function.
- D. Result: **PASSED.**

2.2. Insulation Resistance (Group 1)

- A. Procedure: SAE J2030
- B. Method: Using a 1000 VDC megohmmeter check the insulation resistance between each contact to each adjacent contact
- C. Requirement: > 20 MΩ
- D. Result: **PASSED.**

2.3. Water Immersion (Group 1)

- A. Procedure: SAE J2030
- B. Method: The wired mated connectors shall be placed in an oven at +125°C for 1 hour minimum then immediately be placed in water with a 5% salt by weight content and a 0.1 g/L wetting agent to a depth of 1 meter for 4 hours. Water temperature to be +23°C. The free ends must not enter the water.
- C. Requirement: Inspect samples for insulation resistance and visually inspect for moisture inside the connector.
- D. Result: **PASSED.**

- 2.4. Insulation Resistance (Group 1)
- A. Procedure: SAE J2030
 - B. Method: Using a 1000 VDC megohmmeter check the insulation resistance between each contact to each adjacent contact
 - C. Requirement: > 20 MΩ
 - D. Result: **PASSED.**
- 2.5. Thermal Cycle (Group 1)
- A. Procedure: DITS 7-303-01
 - B. Method: Cycle mated connectors from -55°C to +125°C at a rate of 3°C per minute. Connectors to remain at each temperature extreme for 1 hour minimum. Mated connectors are to be cycled a total of 20 complete cycles.
 - C. Requirement: There shall be no evidence of cracking, distortion or detrimental damage to the connector following the test.
 - D. Result: **PASSED.**
- 2.6. Water Immersion (Group 1)
- A. Procedure: SAE J2030
 - B. Method: The wired mated connectors shall be placed in an oven at +125°C for 1 hour minimum then immediately be placed in water with a 5% salt by weight content and a 0.1 g/L wetting agent to a depth of 1 meter for 4 hours. Water temperature to be +23°C. The free ends must not enter the water.
 - C. Requirement: Inspect samples for insulation resistance and visually inspect for moisture inside the connector.
 - D. Result: **PASSED.**
- 2.7. Insulation Resistance (Group 1)
- A. Procedure: SAE J2030
 - B. Method: Using a 1000 VDC megohmmeter check the insulation resistance between each contact to each adjacent contact
 - C. Requirement: > 20 MΩ
 - D. Result: **PASSED.**
- 2.8. Temperature Life (Group 1)
- A. Procedure: SAE J2030
 - B. Method: The wired mated connectors shall be subjected to 1000 hours at +125°C without current flowing.
 - C. Requirement: There shall be no evidence of cracking, distortion or detrimental damage to the connector following the test.
 - D. Result: **PASSED.**
- 2.9. Water Immersion (Group 1)
- A. Procedure: SAE J2030
 - B. Method: The wired mated connectors shall be placed in an oven at +125°C for 1 hour minimum then immediately be placed in water with a 5% salt by weight content and a 0.1 g/L wetting agent to a depth of 1 meter for 4 hours. Water temperature to be +23°C. The free ends must not enter the water.
 - C. Requirement: Inspect samples for insulation resistance and visually inspect for moisture inside the connector.
 - D. Result: **PASSED.**

2.10. Insulation Resistance (Group 1)

- A. Procedure: SAE J2030
- B. Method: Using a 1000 VDC megohmmeter check the insulation resistance between each contact to each adjacent contact
- C. Requirement: > 20 MΩ
- D. Result: **PASSED.**

2.11. Examination of Product (Group 1)

- A. Procedure: SAE J2030
- B. Method: Conduct a visual examination for identification of product, torn seals, cracked plastic, etc.
- C. Requirement: The connectors shall be correctly constructed, marked and show good quality and workmanship. Connector after conditioning shall not show signs of damage or any detectable loss of function.
- D. Result: **PASSED.**

3. REVISION HISTORY

Rev Ltr	Brief Description of Change	Date	Dwn	Apvd
A	Initial Release	05-Feb-2020	DM	DM