



DEUTSCH* DRC22-40PX Series Connector System

1. INTRODUCTION

1.1. Purpose

This report summarizes the results of testing performed on DEUTSCH DRC22-40PX series connector system to determine conformance to the requirements of product specification 108-151074.

1.2. Scope

This report covers the electrical and environmental performance of the DEUTSCH DRC22-40PX series connector system. Testing was performed at the DEUTSCH Industrial Products Division Laboratory in 2009. The test file numbers for this testing are listed in Figure 1. This documentation is on file at, and available from Product Engineering, Industrial Commercial Transportation (ICT) Laboratory.

Test Group	Test Report
1	IPD081013-00
2	IPD081013-01

Figure 1

1.3. Conclusion

The DEUTSCH DRC22-40PX series connector system products listed in Paragraph 1.4 conform to the electrical, mechanical, and environmental performance requirements given in product specification 108-151074.

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
DRC22-40PA	40pin Receptacle, Flange	1-2
DRC26-40SA	40pin Plug	
1062-20-0144	Size 20 S&F Socket, Gold	
0460-202-2031	Size 20 Solid Socket, Gold	

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	2
	TEST SEQUENCE (b)	
Examination of Product	1,6	1,7
Insulation Resistance	2,5	2,5
Thermal Shock	3	3
Water Immersion	4	4
Fluid Immersion		6

- (a) Specimens were prepared in accordance production drawings and were selected at random from current production.
- Groups 1-2 specimens consisted of 40-position connectors with DEUTSCH solid terminal system size 20 gold pins with 20 AWG wire and DEUTSCH stamped and formed terminal system size 20 gold 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 (Groups 1,2)

- A. Procedure: Not Applicable
- B. Method: Examine samples for defects or damage (i.e. torn seals, cracked plastic, missing parts, arching, charring, identification, finish, interchangeability, workmanship, etc.)
- C. Requirement: Free of defects that could affect the electrical or mechanical performance of the part or degrade the long term performance of the part.
- D. Result: **PASSED.**

2.2. Insulation Resistance (Groups 1,2)

- A. Procedure: Not Applicable
- B. Method: Check each contact to all other contacts and the shell, if shell is conductive. Test to be performed using a 500 VDC ±10% Megohmmeter.
- C. Requirement: 1000 MΩ minimum
- D. Result: **PASSED.**

2.3. Thermal Shock (Groups 1,2)

- A. Procedure: SAE J2030
- B. Method: Mated connector shall be subjected to 10 cycles of thermal shock. 1 cycle shall consist of a soak time at -55°C ambient, then a transition within 2 minutes to an ambient of 125°C, with a soak time there and then a transition back to -55°C ambient within 2 minutes. The soak times shall be established as the time necessary to bring the internal connector temperature on test to within 5°C of each of the ambient temperatures.
- C. Requirement: No evidence of cracking, chipping, or other damage detrimental to the normal operation of the connector.
- D. Result: **PASSED.**

2.4. Water Immersion (Groups 1,2)

- A. Procedure: Not Applicable
- B. Method: Mated connectors shall be placed in an oven at $+125 \pm 3^{\circ}\text{C}$ for 2 hours minimum then immediately be placed in water with a 5% salt by weight content and 0.1 g/L wetting solution to a depth of 3 feet for 4 hours minimum. The free ends of the mated connectors must remain out of the water to prevent wicking of the water through the open wires. Water temperature to be $+23 \pm 3^{\circ}\text{C}$.
- C. Requirement: Insulation resistance 1000 M Ω minimum
- D. Result: **PASSED.**

2.5. Fluid Resistance (Group 2)

- A. Procedure: Not Applicable
- B. Method: Subject each sample group to one fluid only. The wired mated connectors shall be submerged in the fluids below at the temperatures listed. Each connector shall be submerged for 5 minutes, then removed from the fluid to air dry for 24 hours. This cycle is to be completed a total of 5 cycles.

Fluid	Temperature $\pm 3^{\circ}\text{C}$
Motor Oil 30 weight	+60 [140]
Brake Fluid (disc type 1)	+60 [140]
Gasoline	+25 [77]
Diesel Fuel #2	+60 [140]
50/50 Antifreeze/Water mixture	+60 [140]
Transmission Oil 90 weight	+60 [140]

- C. Requirement: No evidence of cracking, chipping, or other damage detrimental to the normal operation of the connector.
- D. Result: **PASSED.**

3. REVISION HISTORY

Rev Ltr	Brief Description of Change	Date	Dwn	Apvd
A	Initial Release	22-Oct-2019	DM	DM