



DEUTSCH* DTMN Series Connector System

1. INTRODUCTION

1.1. Purpose

This report summarizes the results of testing performed on DEUTSCH DTMN series connector system to determine conformance to the requirements of product specification 108-151079.

1.2. Scope

This report covers the electrical, mechanical, and environmental performance of the DEUTSCH DTMN series connector system. Testing was performed at the DEUTSCH Industrial Products Division Laboratory in 1998. The test file numbers for this testing are listed in Figure 1. This documentation is on file at Product Engineering, Industrial Commercial Transportation (ICT) Laboratory.

Test Group	Test Report
1	981117-01/09 981112-06
2	981112-01/09 981116-02/03
3	981112-06 981116-04/12

Figure 1

1.3. Conclusion

The DEUTSCH DTMN series connector system products listed in Paragraph 1.4 conform to the electrical, mechanical and environmental performance requirements given in product specification 108-151079.

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
DTMN04-2P	2pin Rcpt, Non-Environmental	1-3
DTMN06-2S	2pin Plug, Non-Environmental	
0460-202-20141	Size 20 Solid Pin, Nickel	
0462-201-20141	Size 16 Solid 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	2	3
	TEST SEQUENCE (b)		
Examination of Product	1,11	1,2,12	1,11
Insulation Resistance	5,9	3,10	5,10
Dielectric Withstanding Voltage	4,10	4,11	4,9
Maintenance Aging	8	9	8
Contact Retention	2,3	5,6	2,3
Durability	6	8	6
Thermal Cycle	7	7	7

(a) Specimens were prepared in accordance production drawings and were selected at random from current production.

- Groups 1-3 specimens consisted of 2-position connectors with DEUTSCH solid terminal system size 20 nickel pins and 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 1-3)

- Procedure: DEUTSCH Test Procedure Rev 1/92
- Method: Conduct a visual examination for identification of product, torn seals, cracked plastic, etc.
- Requirement: The part shall also show no evidence of torn seal or part cracks.
- Result: **PASSED.**

2.2. Insulation Resistance (Groups 1-3)

- Procedure: DEUTSCH Test Procedure, rev 1/92
- Method: Check each contact to all other contacts and the shell, if shell is conductive. Test to be performed using a 500 VDC megohmmeter.
- Requirement: 1000 MΩ minimum
- Result: **PASSED.**

2.3. Dielectric Withstanding Voltage (Groups 1-3)

- Procedure: DEUTSCH Test Procedure, rev 1/92
- Method: Check each contact to all other contacts and the shell, if the shell is conductive, for one minute minimum. Test to be performed at 1500 VAC.
- Requirement: Current leakage not to exceed 2.0 mA for mated connectors.
- Result: **PASSED.**

- 2.4. Maintenance Aging (Groups 1-3)
- A. Procedure: DEUTSCH Test Procedure, rev 1/92
 - B. Method: Subject 10% of the cavities to 10 complete cycles of inserting and removing its respective contact. This process to include any secondary locks and the recommended tools.
 - C. Requirement: Parts must be capable of inserting and removing a terminal 10 cycles. Failure would consist of an inability to complete 10 cycles or breakage of any of the contact retention mechanism.
 - D. Result: **PASSED.**
- 2.5. Contact Retention (Groups 1-3)
- A. Procedure: DEUTSCH Test Procedure, rev 1/92
 - B. Method: Subject same cavities used for Maintenance Aging to a 25 lbf load for 15 seconds in a direction tending to pull the terminal from the rear of the connector.
 - C. Requirement: All terminals tested will remain in place while the load is applied for 15 seconds in a tensile manner to remove the terminal.
 - D. Result: **PASSED.**
- 2.6. Durability (Groups 1-3)
- A. Procedure: DEUTSCH Test Procedure, rev 1/92
 - B. Method: The connector shall be mated and unmated for a total of 100 complete cycles. No mechanical damage to occur.
 - C. Requirement: Parts shall show no mechanical defects or breakage as a result of 100 mating cycles. Coupling torque must not increase as a result of cycling past the point where it can reasonably be done by hand.
 - D. Result: **PASSED.**
- 2.7. Thermal Cycle (Groups 1-3)
- A. Procedure: DEUTSCH Test Procedure, rev 1/92
 - 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.**
- 2.8. Examination of Product (Groups 1-3)
- A. Procedure: DEUTSCH Test Procedure Rev 1/92
 - B. Method: Conduct a visual examination for identification of product, torn seals, cracked plastic, etc.
 - C. Requirement: The part shall also show no evidence of torn seal or part cracks.
 - D. Result: **PASSED.**

3. REVISION HISTORY

Rev Ltr	Brief Description of Change	Date	Dwn	Apvd
A	Initial Release	04-Feb-2020	DM	DM