
Integration Testing - Relay Through Circuit Test Specification

Includes:	Relay through circuits, relay circuits via TDM systems.
Excludes:	Circuits via FDM systems, circuits via other transmission systems.
Related Test Specifications:	NR/L2/SIG/30014/D120/TS17-51.
Related Standards:	Note: all relevant Technical Instructions and Notice Boards are to be checked for new instructions.
Related Design details:	Scheme Plan, Location Area Plan, REB/Location drawings, Through Circuit Schematics.
Recording of Testing:	Completion of tests shall be by application of the check marks and recording of values on test copy diagrams and by signing the appropriate test certificate.
Pre-requisites:	Cable testing, Equipment Housing testing. For Relay Through Circuits via TDM Systems, TDM System testing shall be complete. For altered circuits, alterations to the circuit shall be fully complete and locally tested.

General

This test specification is formed of the following sections, which correlate to the competency levels identified in NR/L2/SIG/30014/B410 for this type of equipment or testing.

- Integration Testing - Relay Through Circuit Tests

General definitions of terms are given in NR/L2/SIG/30014/E110, however terms specific to this specification are defined below.

This test may be carried out as part of Coordinated Testing. The use of Coordinated Testing shall be stated in the Test Plan.

Integration Testing - Relay Through Circuit Test Specification

1. THROUGH TESTING OF NEW OR ALTERED RELAY THROUGH CIRCUITS

NOTE: There is no requirement to disconnect and prove return terminals, or function links, or function a contact multiple times, to prove that contact with every other path to a single end function.

NOTE: The acceptable parameters for relay coil and intermediate voltages is + / - 10% of the nominal relay operating voltage.

NOTE: Where an existing relay through circuit is being altered the Test Plan shall identify the extent of testing, which shall be sufficient to check the integrity of the complete circuit.

- 1.1. *Measure and Record* the voltage and polarity across the outgoing terminals of the circuit at the source housing.
- 1.2. *Measure and Record* the voltage and polarity across the incoming terminals of the circuit at the relay housing.
- 1.3. *Measure and Record* the voltage and polarity across the relay.
- 1.4. *Check* the voltage measured on the voltage coils corresponds to the relay operating voltage.
- 1.5. *Check* the meter registers acceptable parameters for both the energised and non-energised states of the circuit.
- 1.6. *Test* the source fuse is effective.
- 1.7. *CIRCUIT FUNCTION TEST / STRAP AND FUNCTION TEST* all controlling functions, including those in intermediate housings, to confirm the controls are effective.

NOTE: For new through circuits the norm is to circuit function test all new contacts, unless otherwise defined in the Test Plan.

NOTE: For altered through circuits the norm is to circuit function test all new contacts and to Strap and Function Test all affected contacts, plus one clear unaffected contact on either side of the alteration, unless otherwise defined in the Test Plan.

- 1.8. *Measure and Record* voltage and polarity in intermediate housings that contain controlling functions.
- 1.9. *Measure and Record* voltage and polarity in intermediate housings where existing through circuits are altered.
- 1.10. *Test* links in intermediate housings where existing through circuits are altered.
- 1.11. For polar circuits, first *CIRCUIT FUNCTION TEST / STRAP AND FUNCTION TEST* the circuit using one polarity only, and then for the other polarity, *CIRCUIT FUNCTION TEST / STRAP AND FUNCTION TEST* the function causing the polarity change, along any new controlling functions.
- 1.12. Repeat for all new or altered relay through circuits.