



WSDOT Test Method T 424

Test Method for NEMA Type Traffic Controller Cabinet and Advanced Transportation Controller (ATC) Cabinet Power Interruption Test

1. Scope

The purpose of this test method is to evaluate Traffic Controller Cabinet operation when subjected to power interruptions of 450 milliseconds, and power interruptions greater than 500 milliseconds. This test shall be performed at nominal voltage and room temperature. This test only applies to NEMA Type Traffic Controller Cabinets and Advanced Transportation Controller (ATC) Cabinets.

2. Reference Documents

- AASHTO/ITE/NEMA Publication ATC 5301, Advanced Transportation Controller (ATC) Cabinet Standard
- NEMA Standards Publication TS-1, Traffic Control Systems
- NEMA Standards Publication TS-2, Traffic Controller Assemblies with NTCIP Requirements

3. Safety

No PPE is required to perform this test.

Observe proper electrical cord handling to reduce the risk of electrical shock.

4. Apparatus

Bermer Corporation model PLM-103P Power Interruption Simulator, or device capable of simulating power interruption with adjustable interruption intervals.

5. Procedure

5.1 Setup

Ensure the Power Interruption Simulator power switch is in the “OFF” position and the Traffic Controller Cabinet Main is in the “OFF” position. Connect the Power Interruption Simulator to a 120 V_{ac}, 60 Hz power source (standard wall outlet). Connect the Traffic Controller Cabinet to the Power Interruption Simulator. Power up the Power Interruption Simulator and then the Traffic Controller Cabinet. Program the controller to cycle on minimum recall. Ensure the Traffic Controller Cabinet is operating normally.

5.2 Test Execution

Set the Power Interruption Simulator to interrupt power at 450 millisecond intervals. Observe operation of the Traffic Controller Cabinet. The Traffic Controller Cabinet shall continue normal operation as though no power interruption has occurred. Repeat this test three times, noting the results.

Set the power Interruption Simulator to interrupt power at an interval greater than 500 milliseconds. Observe operation of the Traffic Controller Cabinet. The Traffic Controller Cabinet shall revert to its startup sequence upon each restoration of power. Repeat this test three times, noting the results.

5.3 Test Completion

Restore normal power to the Traffic Controller Cabinet. Ensure normal operation resumes. Power down the Traffic Controller Cabinet, then the Power Interruption Simulator. Disconnect the Traffic Controller Cabinet from the Power Interruption Simulator. Disconnect the Power Interruption Simulator from the 120 V_{ac}, 60 Hz power source (standard wall outlet). Return all test equipment to their proper storage location.

6. Report

During Test Execution the Traffic Controller Cabinet must conduct operation in accordance with the above conditions. Any deviation from these conditions is considered a fail.

Record any deficiency that does not meet the above minimum requirements. The overall test result shall be recorded as a “Pass” or “Fail” for test T424 in MATS.

Performance Exam Checklist

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Participant Name: _____ Exam Date: _____

Record the symbols "P" for passing or "F" for failing on each step of the checklist.

| Procedure Element | Trial 1 | Trial 2 |
|--------------------|---------|---------|
| 1. Setup | _____ | _____ |
| 2. Test Execution | _____ | _____ |
| 3. Test Completion | _____ | _____ |
| 4. Report | _____ | _____ |

Comments: First Attempt: Pass _____ Fail _____ Second Attempt: Pass _____ Fail _____

Examiner Signature: _____ WAQTC #: _____

