



**APTA RT-SC-S-023-03, Rev. 1**

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**Signals and Communications Working  
Group**

# Local Control Panel Inspection and Maintenance

**Abstract:** This standard provides procedures for inspecting and maintaining rail transit local control panels.

**Keywords:** local control panel, inspection, maintenance, signal

**Summary:** This document establishes standard requirements for inspecting and maintaining rail transit local control panels.



## Foreword

The American Public Transportation Association is a standards development organization in North America. The process of developing standards is managed by the APTA Standards Program's Standards Development Oversight Council (SDOC). These activities are carried out through several standards policy and planning committees that have been established to address specific transportation modes, safety and security requirements, interoperability, and other topics.

APTA used a consensus-based process to develop this document and its continued maintenance, which is detailed in the [manual for the APTA Standards Program](#). This document was drafted in accordance with the approval criteria and editorial policy as described. Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

This document was prepared by the Signals and Communications Working Group as directed by the APTA Rail Transit Standards Policy Committee.

This document represents a common viewpoint of those parties concerned with its provisions, namely transit operating/planning agencies, manufacturers, consultants, engineers and general interest groups. APTA standards are mandatory to the extent incorporated by an applicable statute or regulation. In some cases, federal and/or state regulations govern portions of a transit system's operations. In cases where there is a conflict or contradiction between an applicable law or regulation and this document, consult with a legal adviser to determine which document takes precedence.

This document supersedes APTA RT-SC-S-023-03, which has been revised. Below is a summary of changes from the previous document version:

- Migration to the new 2025 APTA document template which standardizes and reorganizes the document's content; a document summary and foreword were added; the scope and purpose have been combined and updated to be more specific.
- Updated list of participants.
- Updated definitions, abbreviations and acronyms to be consistent with standard definitions; specifically, RTS has been replaced with rail transit system throughout the document.
- Additional procedures added to section 1.7 Inspection and maintenance procedures



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## Introduction

*This introduction is not part of APTA RT-SC-S-023-03, “Local Control Panel Inspection and Maintenance.”*

APTA recommends the use of this document by:

- individuals or organizations that operate rail transit systems;
- individuals or organizations that contract with others for the operation of rail transit systems; and
- individuals or organizations that influence how rail transit systems are operated (including but not limited to consultants, designers and contractors).

## Scope and purpose

The purpose of this standard is to verify that local control panels are operating safely and as designed through periodic inspection and maintenance, thereby increasing reliability and reducing the risk of hazards and failures.

## Note on alternate practices

Individual rail transit systems may modify the practices in this standard to accommodate their specific equipment and mode of operation. APTA recognizes that some rail transit systems may have unique operating environments that make strict compliance with every provision of this standard impossible. As a result, certain rail transit systems may need to implement the standards and practices herein in ways that are more or less restrictive than this document prescribes. A rail transit system may develop alternates to APTA standards so long as the alternates are based on a safe operating history and are described and documented in the system’s safety program plan (or another document that is referenced in the system safety program plan).

Documentation of alternate practices shall:

- identify the specific APTA rail transit safety standard requirements that cannot be met;
- state why each of these requirements cannot be met;
- describe the alternate methods used; and
- describe and substantiate how the alternate methods do not compromise safety and provide a level of safety equivalent to the practices in the APTA safety standard (operating histories or hazard analysis findings may be used to substantiate this claim).

# Local Control Panel Inspection and Maintenance

## 1. Inspection and maintenance requirements

### 1.1 Inspection and maintenance frequency

The inspection and maintenance procedures in this standard shall be performed when local control panels are placed in service, when they are modified, repaired, or disarranged, or as otherwise deemed necessary by the rail transit system. The rail transit system shall schedule inspection and maintenance to avoid potential impact on rail operations.

The rail transit system shall determine the need for additional inspection and maintenance frequencies for local control panels. A review of the following factors may be useful in making this assessment:

- OEM-recommended intervals
- industry experience
- operating environment/conditions
- historical data
- reliability-centered maintenance program development
- failure analysis
- rail transit system testing and experience
- regulatory requirements

The frequency of tasks shall comply with applicable federal, state, and local regulations.

### 1.2 Training

The rail transit system and/or their maintenance contractors shall develop and execute training programs that provide employees with the knowledge and skills necessary to safely and effectively perform the tasks outlined in this standard.

### 1.3 Materials

The following materials are required for inspecting and maintaining local control panels:

- dust cloths and/or other rail transit system–approved dusting utensils
- lint-free cloths
- appropriate bulbs/LEDs
- spare LCP components as required
- additional materials as required by the OEM and/or rail transit system

## **1.4 Tools**

The following tools are required for inspecting and maintaining local control panels:

- bulb extractor if necessary
- rail transit system–approved portable radio
- standard tools carried by maintenance personnel
- additional tools as required by the OEM and/or rail transit system

## **1.5 Personal protective equipment**

Personal protective equipment, as required by the rail transit system, shall be worn at all times during inspection and maintenance.

## **1.6 Safety**

Rail transit system established safety rules, procedures, and practices shall be followed at all times during inspection and maintenance procedures.

## **1.7 Inspection and maintenance procedures**

1. Local control panel inspection and maintenance procedures may be modified for each rail transit system's requirements (see "Note on alternate practices").
2. Notify the Operations Control Center (OCC) and/or other authorities of the inspection and maintenance activities to be performed.
3. Inspect local control panel equipment for condition of wire tags, defective insulation, heat, and loose, corroded, rusted, damaged, or missing connectors and terminals.
4. Inspect local control panel equipment for rust, corrosion, damage, cracks, breaks, defective latches, locks, hinges, covers, weather seals, gaskets, loose, deteriorated, or damaged conduit connections, and missing or loose components and hardware. Holes and unused entrances not used for ventilation shall be sealed.
5. Clean the internal and external parts of local control panel. Replace worn or defective parts.
6. Ensure that all contacts, if so equipped, are properly adjusted and in good condition.
7. Ensure that all serial/plug coupler connections, if so equipped, are secure.
8. Ensure proper functionality of peripheral input/output devices for software-based panels.
9. Ensure that required component seals are properly secured in compliance with rail transit system requirements.
10. Ensure that manipulation charts and/or other test procedure documents established by the rail transit system are readily available.
11. Ensure that local control panels equipped with transfer control key switches have the appropriate key available for immediate use. Ensure the key is secured as prescribed by the rail transit system.
12. If there is a switch to turn on panel lights, activate the panel lights.
13. If the panel is equipped with a panel light test button, activate the panel test button and verify all the indications are functioning properly.
14. Take control of the local control panel.
15. Ensure that power supplies and train control equipment associated with local control panel are indicating/functioning as intended. The indications/functions shall be checked and/or tested for proper operation and may include but are not limited to the following:
  - track occupancy
  - signal aspect
  - train routing
  - alternating current (ac) power off
  - direct current (dc) power off

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- ac blown fuse
  - dc blown fuse
  - auxiliary switch operation
  - transfer of control
  - switch position
  - switch transition
  - traffic controls
  - code system status
  - microprocessor status
  - wheel detector status
  - compressed air supply
  - snow melting equipment status
  - ac ground detection
  - dc ground detection
  - smoke/fire intrusion alarms
  - bridge position
  - bridge operation
  - route request
  - route request cancel
  - public address equipment
  - signal maintainer horn/buzzer
  - sound power phones/communication devices
  - volt meters
  - amp meters
  - diagnostic equipment
  - additional train control equipment controlled or monitored by the local control panel
16. Return control panel to non-local mode.
  17. Local Control Panels equipped with software-based screens or controllers should be verified for proper software version configuration management.
  18. Ensure that all covers and locks are in place and secured.
  19. Perform additional tests and software diagnostics as required by the OEM and/or rail transit system.
  20. Notify the OCC and/or other authorities when inspection and maintenance activities are complete.

## **1.8 Correction of deficiencies**

Deficiencies identified during local control panel inspection and maintenance shall be corrected and documented in accordance with OEM and/or rail transit system requirements.

## **1.9 Documentation**

Inspection and maintenance activities shall be documented, reviewed, and filed in accordance with rail transit system procedures.



## Definitions

**eyelet:** A closed loop electrical fastener that provides a terminating point for wiring. Also referred to as ring terminal.

**hazard:** Any real or potential condition that can cause injury, death, or damage or loss of equipment or property.

**insulating block:** An inert, dielectric part that prohibits the passage of electrical current between two electrically active metal components.

**local control panel:** A panel displaying a line diagram of the trackage in and near a particular interlocking or group of interlockings, and equipped with various pushbuttons, electric switches, indicator lights, and audible alarms or other user interfaces to allow control and monitoring of that section of trackage. Also called *interlocking control panel*.

**Operations Control Center (OCC):** That facility from which train control, train dispatching, and/or train supervision takes place for the entire rail transit system or for specific segments of a system if there is more than one control center. Also called *rail control center*, *rail operations center*, *rail service control center*, *train command center*.

**original equipment manufacturer (OEM):** The enterprise that initially designs and builds a piece of equipment.

**personal protective equipment (PPE):** All clothing and other work accessories designed to create a barrier against workplace hazards. Examples include safety goggles, blast shields, hard hats, hearing protectors, gloves, respirators, aprons, and work boots.

**rail transit system:** The organization or portion of an organization that operates rail transit service and related activities. Also called *operating agency*, *operating authority*, *transit agency*, *transit authority*, *transit system*.

**terminal block:** A molded non-conductive material containing one or more electrical wiring terminals. See also *terminal board*.

**terminal board:** A small panel made of non-conductive materials containing one or more electrical wiring terminals. See also *terminal block*.

**terminal post:** A terminal designed to electrically connect two or more wires. Also called *binding post*.

## Abbreviations and acronyms

<b>ac</b>	alternating current
<b>dc</b>	direct current
<b>LED</b>	light emitting diode
<b>OCC</b>	Operations Control Center
<b>OEM</b>	original equipment manufacturer
<b>PPE</b>	personal protective equipment

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## Document history

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