

EMERGENCY VEHICLE ELECTRICAL SYSTEM PROCUREMENT CHECKLIST

Maintenance-Focused RFP Specification Guide for Fire & EMS Leadership

Agency: _____

RFP Number: _____

Date: _____

Prepared By: _____

When preparing your next ambulance procurement, use this checklist to define electrical system requirements that align with your department's maintenance strategy, service capabilities, and long-term fleet objectives. These sample specification statements evaluate whether a manufacturer's electrical architecture supports efficient diagnostics, common parts availability, and in-house serviceability.

EMERGENCY VEHICLE ELECTRICAL SYSTEM SPECIFICATIONS

1. Non-Multiplexed Point-to-Point Electrical Architecture

SPECIFICATION REQUIREMENT:

The patient compartment electrical system shall utilize simple, point-to-point hardwiring with color-coded conductors. Systems relying on pre-programmed multiplex logic boards, solid-state CAN-bus nodes, or proprietary printed circuit boards shall not be acceptable.

EVALUATION OBJECTIVES

- ☐ Dedicated point-to-point wiring
- ☐ Color-coded conductors
- ☐ No multiplex logic boards
- ☐ No proprietary CAN-bus body control modules
- ☐ Complete wiring schematics provided

2. Exterior Diagnostics & Open Parts Sourcing

SPECIFICATION REQUIREMENT:

All primary power relays, fuses, and terminal strips shall be housed in an accessible exterior side compartment. The electrical panel shall include visual LED monitoring diodes for visual troubleshooting. All circuit relays and fuses shall be standard, off-the-shelf automotive components available through local commercial supply networks.

EVALUATION OBJECTIVES

- ☐ Exterior electrical service compartment
- ☐ LED diagnostic indicators
- ☐ Accessible relays and fuses
- ☐ Standard automotive replacement components
- ☐ No proprietary replacement hardware

3. Diagnostic Software Freedom & In-House Serviceability

SPECIFICATION REQUIREMENT:

The body electrical system shall be fully diagnosable using a standard digital multimeter. The manufacturer shall not require proprietary laptop software, annual software licensing fees, or dealer-only service locks for body electrical troubleshooting or component replacement.

EVALUATION OBJECTIVES

- ☐ Standard multimeter diagnostics
- ☐ No annual software licensing
- ☐ Routine electrical repairs can be completed without dealer intervention
- ☐ No proprietary diagnostic software required
- ☐ In-house electrical troubleshooting supported

4. Independent Primary Power System

SPECIFICATION REQUIREMENT:

Primary electrical power for the patient compartment HVAC and auxiliary systems shall be provided by an independent 120V AC power generation system (generator or underhood power system), completely isolating heavy module electrical draws from the OEM chassis alternator.

EVALUATION OBJECTIVES

- ☐ Independent 120V AC power source
- ☐ Reduced chassis electrical loading
- ☐ Auxiliary systems powered independently
- ☐ Patient compartment isolated from chassis charging system
- ☐ HVAC powered independently

5. Direct Technical Support & Mechanics Training

SPECIFICATION REQUIREMENT:

The manufacturer shall provide 24/7 direct factory technical support without dealer middleman intervention, and shall offer free hands-on service training classes for municipal fleet mechanics.

EVALUATION OBJECTIVES

- ☐ 24/7 factory technical support
- ☐ Hands-on maintenance training
- ☐ Ongoing technical assistance available
- ☐ Direct access to factory technicians
- ☐ Service documentation provided

PROCUREMENT EVALUATION QUESTIONS

Use these questions during vendor demonstrations and proposal reviews.

Category	Evaluation Verification Items
Electrical Architecture	☐ Is the patient compartment wired using point-to-point architecture? ☐ Are proprietary body control modules used? ☐ Can individual circuits be traced visually?
Diagnostics	☐ What tools are required to diagnose electrical issues? ☐ Can municipal technicians troubleshoot the system without factory software? ☐ Are diagnostic schematics included with the vehicle?
Parts Availability	☐ Are relays, fuses, and terminal strips commercially available? ☐ Can replacement parts be sourced locally? ☐ Are replacement components proprietary?
Maintenance & Support	☐ What factory technical support is included? ☐ Is mechanic training available? ☐ Are service manuals and wiring diagrams included?
Long-Term Fleet Planning	☐ Is the electrical architecture designed to support future remounts? ☐ Can the electrical system be serviced throughout the vehicle's lifecycle? ☐ Does the manufacturer offer long-term parts and technical support?

KEY PROCUREMENT CONSIDERATIONS

When evaluating proposals, consider how each manufacturer's electrical system aligns with your department's operational priorities, including:

- Ease of diagnostics and troubleshooting
- Availability of replacement parts
- Ability to perform maintenance in-house
- Long-term serviceability
- Technical support resources
- Lifecycle maintenance strategy
- Compatibility with future remount or refurbishment plans

PROCUREMENT NOTES & COMMITTEE OBSERVATIONS