

Vehicle Camera Connectors

Aviation vs RCA — Installation Guide

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Aviation Connector (4-pin M12) — Choose For:

- ☐ MDVR-connected systems (video + power in single cable)
- ☐ All external HGV cameras (nearside, rear, offside)
- ☐ High-vibration environments (commercial vehicle use)
- ☐ IP-sealed connections in wet/wash environments
- ☐ New fleet installations — standardise on aviation throughout

RCA (Phono) Connector — Acceptable For:

- ☐ Legacy vehicles pre-wired with RCA cable runs
- ☐ Custom-length cable runs where pre-terminated lengths don't fit
- ☐ Consumer monitor / non-MDVR connections
- ☐ Temporary or plant machinery installations
- ☐ Always secure RCA connections with cable management (no lock mechanism)

Connector Specification Quick Reference

Connector type	4-pin aviation (M12 screw-lock)
Pins	Video + audio + 12V+ + ground
Power source	Supplied via MDVR through cable
Locking	Screw thread — requires deliberate rotation to disconnect
Moisture	Sealed when mated — compatible with IP67/IP69K cameras
Vibration	Rated for continuous vibration environments
Standard cable lengths	2m, 5m, 10m, 15m, 20m

Symptom: Camera drops out on certain road surfaces

- ☐ Likely cause: RCA connector working loose under vibration
- ☐ Check: remove and reseal RCA connection; apply cable management to secure
- ☐ Fix: replace RCA with aviation connector — eliminates vibration dropout permanently

Symptom: Intermittent signal loss at speed

- ☐ Likely cause: loose RCA or adapter junction in signal path
- ☐ Check: inspect all connector junctions from camera to MDVR
- ☐ Fix: minimise adapters; replace with direct aviation connector run

Symptom: Camera works in depot, fails on road

- ☐ Likely cause: vibration-sensitive connection (RCA or loose aviation)
- ☐ Check: aviation connector fully screwed down (finger-tight not enough)
- ☐ Check: cable management not pulling connector out under vibration

Symptom: Signal degradation / grainy image

- ☐ Likely cause: corroded RCA connector or poor adapter quality
- ☐ Check: inspect RCA connector for oxidation / moisture ingress
- ☐ Fix: replace with sealed aviation connector run

Legacy RCA Installation — Upgrade Checklist

- ☐ Identify all RCA connections in the system
- ☐ Secure existing RCA connections with cable ties / heat-shrink
- ☐ Replace highest-vibration positions (rear, nearside) first
- ☐ Plan full aviation standardisation at next major service
- ☐ Confirm MDVR inputs — most accept aviation; verify before ordering cameras