INSTALLATION AND OPERATING MANUAL

AIR-CONDITIONED FIELD CABINETS (FC & FCA RANGE)

v1.0

TABLE OF CONTENTS

General Information

GENERAL INFORMATION

1. Introduction

IP Enclosures' Air-Conditioned Field Cabinets are outdoor enclosures designed to protect electrical, communications, and control equipment in environments with high heat loads. Each cabinet is supplied pre-fitted with a factory-installed air-conditioning unit to ensure reliable temperature management.

The cabinet itself is based on IP-rated field enclosures (steel, aluminium, or stainless steel), with integrated cooling for applications such as transport, ITS, telecommunications, and industrial automation.

This manual covers installation and maintenance of the cabinet. For the air-conditioner unit, customers must refer to the separate air-conditioner operating manual supplied with the product.

2. Safety Information

- Only qualified personnel may install and service the cabinet and cooling unit.
- Follow electrical, mechanical, and AC safety regulations.
- Disconnect all power before servicing; apply lock-out/tag-out procedures.
- PPE required: gloves, safety footwear, safety glasses.
- Anchoring mandatory: secure cabinet to prepared base or plinth to prevent tipping.
- Do not drill or modify cabinet walls, as this may compromise cooling performance and IP rating.
- Do not tilt or invert cabinet during transport; the pre-fitted AC unit must remain upright.
- Refer to AC unit manual for refrigerant, filters, or fan safety precautions.

3. Product Description & Specifications

Typical features:

- Cabinet Construction: 2.0 mm galvanised steel, stainless steel, or aluminium; powder-coated where applicable.
- Protection: IP55–IP66 ingress protection (excluding active AC vents), IK10 impact rating.
- Doors: Lockable, reinforced, fitted with earth studs, closed-cell gaskets.
- Cooling: Pre-fitted active air-conditioning unit sized to match cabinet heat load.
- Accessories: Sunshields, rain hoods, gland plates, 19" racks, plinths, inner doors.
- Finish: Powder-coated (steel/aluminium) or brushed stainless steel (hygienic variants).
- Standards: IEC/EN 60529, IEC/EN 62208, IEC/EN 61439 (assemblies).

4. Handling, Storage & Transport

4.1 Handling:

- Keep doors closed and locked.
- Lift using forklift beneath plinth or crane + spreader bar with padded slings.
- Protect coated or stainless surfaces from strap abrasion.

4.2 Storage:

- Store upright, under weatherproof cover in dry conditions.

GENERAL INFORMATION

- Do not tilt or lay flat, the AC unit must remain vertical to protect refrigerant system.
- Avoid carbon steel contamination (stainless versions).

4.3 Transport

- Transport cabinet upright and secured with rated tie-downs.
- Use padded straps and prevent movement/tipping.
- Inspect on delivery for dents, scratches, or AC unit damage.

5. Pre-Installation Checks

- Confirm cabinet size, cooling capacity, and accessories match project requirements.
- Inspect enclosure and AC unit for shipping damage.
- Verify gasket integrity and finish.
- Ensure site plinth/base is level and structurally adequate.
- Confirm sufficient clearance for air circulation (AC intake and exhaust must not be obstructed).
- Check mains supply matches AC unit requirements (refer to AC manual).

6. Installation Instructions

6.1 Position & Level

- Place cabinet on prepared base/plinth.
- Confirm level alignment to prevent stress on AC unit.

6.2 Anchoring

- Mandatory: secure enclosure with anchor bolts rated for load.
- Anchor through plinth/base frame mounting points.

6.3 Cable Entries

- Use designated gland plates.
- Fit appropriate IP-rated glands; seal unused entries.

6.4 Ventilation Clearance

- Ensure intake and exhaust grills of AC unit remain unobstructed.
- Provide free airflow space as specified by AC manual.

7. Wiring & Grounding

- All wiring by licensed electricians.
- Connect AC unit to mains supply per AC specifications.
- Use strain relief at cable entries.
- Bond doors, racks, mounting plates, and AC housing to main earth stud.
- Verify earth continuity throughout.

GENERAL INFORMATION

8. Operations & Cooling Performance

- The air-conditioning unit maintains internal temperature within specified limits.
- Do not block airflow to or from the AC unit.
- Regularly monitor internal temperature using thermostats or system sensors.
- In high ambient conditions, confirm AC capacity is sufficient for installed heat load.
- For operational instructions (setpoints, alarms, cooling cycles), consult AC manual.

9. Routine Maintenance (Cabinet)

Recommended schedule (adjust to conditions):

Items	Action	Interval
Coating / finish	Inspect for scratches/chips; repair promptly	6–12 months
Gaskets	Inspect, clean; replace if degraded	6 months
Hinges/locks	Lubricate, check for smooth operation	6 months
Earth bonds	Verify continuity	12 months
Cable entries	Check glands and seals	6 months
Interior	Inspect for dust, condensation, pests	6 months

10. Air-Conditioner Maintenance (Refer to AC Manual)

- Filters: Clean or replace as recommended.
- Condensate drainage: Ensure drain tube clear and functional.
- Refrigerant system: Only serviced by certified AC technicians.
- Fans/compressors: Follow AC maintenance intervals.
- Operational checks: Confirm cooling performance against design specifications.

11. Troubleshooting

Issue	Likely Cause	Remedy
Cabinet overheating	AC unit not powered, blocked airflow, filter clogged	Check supply; clean filter; clear airflow
Water ingress	Seal/gland failure; AC drain blocked	Replace gasket; reseal; clean drain line
AC not cooling	AC fault (compressor, refrigerant, fan)	Refer to AC service manual
Door not closing	Misaligned hinges/lock	Adjust hinges; lubricate lock
Condensation inside	Drain blocked, insufficient AC duty	Clear drain; upgrade cooling capacity

GENERAL INFORMATION

12. Disposal & End of Life

- Cabinet body recyclable (steel, aluminium, or stainless).
- Gaskets, plastics disposed of per regulations.
- AC unit contains refrigerant, must be recovered by certified technicians.
- Packaging recyclable where facilities exist.

13. Warranty & Support

- Cabinet Warranty: 5 years against defects in materials/workmanship.
- AC Unit Warranty: Refer to AC documentation.
- Exclusions: misuse, blocked airflow, poor maintenance, chemical damage.
- Support: Provide cabinet model, AC unit details, site photos, and service history.

14. Commissioning Checklist

- Base/plinth level and adequate
- Cabinet anchored securely
- Cable entries sealed, glands fitted
- Doors/locks operational, gasket intact
- Earth bonding complete, continuity tested
- AC intake/exhaust clear, airflow unobstructed
- AC wired correctly, power supply matches AC rating
- Drain tube connected and clear
- Maintenance plan (cabinet + AC) explained to operator
- Documentation and AC manuals handed over