INSTALLATION AND OPERATING MANUAL

ELECTRICAL ENCLOSURES (S1 & S2 RANGE)

v1.0

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General Information

GENERAL INFORMATION

1. Introduction

This manual provides detailed instructions for the safe installation, operation, and maintenance of IP Enclosures' electrical enclosures. These enclosures are engineered to protect low voltage electrical equipment, including switchgear and controlgear assemblies, against dust, water, and physical impact in a wide range of environments. By following this guidance, installers and operators can ensure long-term performance, compliance with international standards, and maximum protection of equipment.

2. Safety Information

- Installation and servicing must be performed by qualified personnel.
- Always follow local and national electrical regulations and safety codes.
- Before working on an enclosure, disconnect power and lock out all energy sources.
- Wear appropriate personal protective equipment (PPE), including gloves and eye protection.
- Neve operatean enclosure with open doors in hazardous environments.
- Ensure doors, locks, and seals are properly secured before energising equipment.

3. Product Description

- Construction: Galvanised steel (1.2–1.5 mm body; 1.5 mm doors) with AkzoNobel Interpon powder coating (80–120 µm).
- Protection Ratings: Up to IP66 ingress protection and IK10 impact resistance.
- Sealing: Full perimeter polyurethane foam-in-place (FIP) gasket, −40 °C to +80 °C (short term to 160 °C).
- Doors: Hinged with concealed removable hinges, opening angle approx. 110°.
- Accessories: Gland plates, device mounting plates, earth studs, blind nutserts for accessory fixing.
- Compliance: IEC/EN 62208, IEC/EN 61439, IEC/EN/AS 60529, CE, UKCA, UL, and RoHS.

4. Handling, Storage & Transport

- Transport: Secure doors to prevent swinging. Protect coated surfaces from scratches or abrasion. Avoid impacts.
- Storage: Store indoors or under cover, upright on a flat surface. Keep dry, dust-free, and shielded from UV until installation.
- Handling: Do not drag enclosures across surfaces. Lift using appropriate equipment or lifting points to prevent structural distortion.
- Any coating damage during transport must be repaired immediately before installation.

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5. Pre-Installation Checks

Before installation:

- Inspect for visible damage, dents, or scratches on coating and seals.
- Verify the model, size, and IP/IK rating match project requirements.
- Confirm accessories are present and in good condition.
- Ensure the mounting location provides adequate structural support and clearance for doors and cabling.
- Clean sealing surfaces if contaminated with dust or debris.

6. Installation Instructions

6.1 Mounting

- Use appropriate fixings (anchors, bolts) rated to support the enclosure plus equipment load.
- Maintain clearance for door swing and ventilation.
- Never drill additional holes into the body; use provided nutserts and gland plates to preserve IP rating.

6.2 Orientation

- Position gland plates downwards or as intended to minimise water ingress.
- Fit optional roof shields or sunshields correctly for weather and solar protection.

6.3 Sealing

- Ensure gaskets are seated correctly and surfaces are undamaged.
- Ensure seals are clean and free from dirt and debris.

6.4 Door Hinges & Locks

- Confirm hinges are correctly secured and locks operate smoothly.
- Lubricate with non-corrosive lubricant if required.

6.5 Cable Entry

- Install cables via gland plates.
- Use suitable cable glands matched to cable size.
- Seal unused entries with blanks.

6.6 Device Mounting Plate

- Install the mounting plate before equipment.
- Allow clearance for wiring, airflow, and maintenance.

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7. Wiring & Grounding

- All wiring must be carried out by licensed electricians.
- Route wiring neatly, using cable management accessories.
- Provide strain relief at entries to prevent cable stress.
- Connect enclosure body to earth via provided earth stud.
- Ensure bonding continuity between body, doors, and mounting plates.
- Test earth connection before energising.

8. Environmental Considerations

- Protect enclosures from mechanical damage and chemical attack.
- Powder coating provides UV and corrosion resistance. Harsh conditions require more frequent cleaning and inspection.
- For high-heat applications, use ventilation or thermal management (fan units, filters, or air conditioning).
- In coastal or corrosive atmospheres, rinse surfaces more frequently to remove salt or contaminants.

9. Routine Maintenance

Items	Action	Frequency
Exterior surfaces	Inspect for scratches, chips, corrosion	Semi-annual
Seals & gaskets	Inspect, clean, replace if cracked or deformed	Semi-annual
Locks & hinges	Check opreation, lubricate	Semi-annual
Earth connection	Inspect and test continuity	Annual
Cable glands	Check tightness and sealing	Semi-annual
Internal cleanliness	Remove dust and debris	Semi-annual

Ventilation accessories clean/replace filters as per accessory instructions Quarterly (if fitted)

10. Powder Coating Finish Care

- Durability: Powder coating is applied at 80–120 µm thickness, providing corrosion resistance and UV stability. Expected design life: ~25 years with correct care.
- Cleaning:
  - Indoor units: Clean once a year.
  - Outdoor/industrial/coastal units: Clean every 3–6 months.
  - Use mild pH-neutral detergent and warm water. Apply with a soft cloth or sponge, rinse thoroughly, and dry.
- Avoid: Harsh solvents, abrasive cleaners, or high-pressure water jets, which can damage the coating.
- Contaminants: Remove bird droppings, grease, or embedded rust to prevent staining.
- Repairs: For chips/scratches, treat exposed metal with zinc-rich primer and colour-matched touch-up paint.
- High exposure: in coastal/industrial locations, additional rinsing and protective coatings may extend coating life.

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11. Troubleshooting

Issue	Possible Cause	Remedy
Water ingress	Damaged gasket, misaligned door, poor gland seal	Replace gasket, realign door, reseal entries
Rust / Corrosion	Coating damage, unsealed scratch	Clean, prime, and paint exposed area
Door difficult to open	Dirty hinges, misalignment	Clean, lubricate, realign
Lock failure	Wear, corrosion, dirt	Lubricate or replace lock
Overheating	Insufficient ventilation, blocked filters	Clean filters, add thermal management
Fading finish	UV exposure, improper cleaning	Clean regularly, avoid harsh chemicals, touch-up as required

12. Disposal & End of Life

- Separate steel, aluminium, and stainless steel components for recycling.
- Dispose of gaskets, plastics, and coatings per local environmental regulations.
- Packaging materials are recyclable and should be disposed of responsibly.

13. Warranty & Support

- IP Enclosures provides a 5-year warranty against defects in materials and workmanship.
- The warranty excludes damage from improper installation, misuse, unauthorised modifications, or lack of maintenance.
- For support, provide model number, date of purchase, and photographs if possible.