

# INSTALLATION AND OPERATING MANUAL

## IP69K HYGIENIC ELECTRICAL ENCLOSURES (H RANGE)

v1.0



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# GENERAL INFORMATION

## 1. Introduction

IP Enclosures' IP69K Hygienic Range is designed specifically for use in hygienic and washdown environments such as food and beverage, dairy, pharmaceutical, and biotechnology facilities. Constructed from polished 316L stainless steel, they provide IP69K ingress protection (resistant to high-pressure, high-temperature washdowns) and conform to EHEDG hygienic design principles.

These enclosures are engineered to eliminate dirt traps, resist corrosion, and maintain sanitary conditions while protecting electrical and control equipment.

This manual outlines safe installation, hygienic handling, and ongoing care to maintain both performance and hygienic compliance.

## 2. Safety Information

- Installation and servicing must be by trained, authorised personnel.
- Comply with electrical safety, hygiene regulations, and food industry standards.
- Isolate and lock-out/tag-out power before servicing.
- PPE: gloves, safety footwear, protective eyewear.
- Anchor enclosures securely to floor, wall, or framework to prevent tipping.
- Use rated lifting gear and protect hygienic surfaces from sling/strap damage.
- Do not weld, grind, or drill enclosure surfaces as it may compromise hygienic finish.
- Ensure surfaces remain free from contamination before entering hygienic zones.

## 3. Product Description & Specifications

### Key features of IP69K Hygienic Enclosures:

- Material: 316L stainless steel, polished ( $R_a < 0.8 \mu\text{m}$  surface roughness).
- Design: Sloped roof ( $\geq 30^\circ$ ) to prevent water pooling. Rounded corners and edges.
- Ingress Protection: IP66/IP69K (resistant to high-pressure, high-temperature water jets).
- Compliance: IEC/EN 60529, EHEDG principles, CE, UKCA.
- Door: Hygienic blue silicone gasket (FDA approved, replaceable), external hinges minimised.
- Locks: Hygienic lock design with minimal dirt traps.
- Mounting: Standoff mounting brackets to allow cleaning behind enclosure.
- Finish: Polished stainless steel for ease of cleaning.

## 4. Handling, Storage & Transport

### 4.1 Handling

- Use padded lifting slings; avoid carbon steel chains that cause contamination.
- Keep protective film on surfaces until installation complete.
- Doors closed and latched during lifting.

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## 4.2 Storage

- Store indoors or under cover; avoid damp/saline conditions.
- Keep separated from carbon steel or ferrous dust.
- Leave protective film on until ready to clean before service.

## 4.3 Transport

- Transport upright; tie down securely with padded straps.
- Protect polished surfaces from scratches with cardboard/plastic guards.
- Inspect on delivery for scratches, dents, or seal damage.

## 5. Pre-Installation Checks

- Confirm correct enclosure model, size, and accessories.
- Inspect finish for transit scratches or contamination.
- Verify FDA-approved silicone gasket is intact and clean.
- Ensure prepared wall/floor/base is strong, cleanable, and suitable for hygienic zone.
- Check clearance for slope cleaning and washdown access.

## 6. Installation Instructions (Hygienic Applications)

### 6.1 Site Preparation

- Ensure installation site meets hygienic requirements (e.g. sealed walls, cleanable surfaces).
- Provide adequate drainage beneath and around enclosure.

### 6.2 Mounting

- Use stainless steel standoff brackets to allow cleaning access behind and beneath enclosure.
- Anchor securely with stainless fixings suitable for hygienic zones.

### 6.3 Cable Entry

- Use hygienic stainless cable glands with FDA-approved seals.
- Avoid plastic fittings unless FDA-approved.
- Seal all unused entries with hygienic plugs.

### 6.4 Doors & Seals

- Verify gasket compression and correct lock operation.
- Keep hygienic seals lubricated with FDA-approved silicone grease.

## 7. Wiring & Grounding

- Install by licensed electricians per local regulations.
- Earth-bond all metallic parts (doors, mounting plates, brackets) to earth stud.
- Use stainless or tinned copper earth conductors.
- Keep wiring neat to allow inspection and cleaning.

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## 8. Environmental & Hygienic Considerations

- Designed for hygienic washdown: withstands hot water at high pressure (80–100 bar, up to 80°C).
- Avoid direct impact of cleaning jets at seals for prolonged periods.
- Clean regularly with mild, non-chloride detergents; rinse thoroughly with potable water.
- Avoid bleach or hydrochloric acid cleaners, can cause stress corrosion cracking.
- Ensure slope roof and drainage paths remain unobstructed.
- Regularly inspect to maintain EHEDG-compliant hygienic performance.

## 9. Routine Maintenance

Recommended schedule (shorter intervals in harsh washdown):

| Items                     | Action                                           | Interval             |
|---------------------------|--------------------------------------------------|----------------------|
| Stainless finish          | Clean with mild detergent; rinse and dry         | After every washdown |
| Hygienic silicone gaskets | Inspect for cracks, compression; replace if worn | 6 months             |
| Hinges/locks              | Clean and lubricate with FDA-approved grease     | 6 months             |
| Mounting hardware         | Inspect standoffs and anchors                    | 12 months            |
| Earth bonding             | Verify continuity                                | 12 months            |

## 10. Stainless Steel Hygienic Surface Care

- Clean along surface grain with soft cloths or sponges.
- Avoid abrasive pads, steel wool, or carbon steel brushes.
- Do not use chloride-based or acidic cleaners.
- For stubborn stains, use approved passivation or stainless steel cleaning gels.
- Rinse with potable water after cleaning and dry thoroughly.
- Ensure tools used on stainless are reserved for stainless only (prevent cross-contamination).

## 11. Troubleshooting

| Issue             | Likely Cause                              | Remedy                                                |
|-------------------|-------------------------------------------|-------------------------------------------------------|
| Water pooling     | Incorrect mounting angle, debris on slope | Reinstall with slope $\geq 30^\circ$ ; clear debris   |
| Rust specks       | Carbon steel contamination                | Remove with passivation gel; prevent exposure         |
| Gasket leakage    | Compressed, torn, or dirty gasket         | Replace gasket; clean sealing face                    |
| Door misalignment | Impact during handling                    | Adjust hinges; replace if requiredconditioning        |
| Surface stains    | Chloride cleaners or insufficient rinsing | Clean with approved agents; adjust cleaning procedure |

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## 12. Disposal & End of Life

- Stainless steel fully recyclable.
- Silicone gaskets and plastics disposed of per regulations.
- Packaging recyclable where facilities exist.

## 13. Warranty & Support

- Warranty: 5 years against defects in materials/workmanship.
- Exclusions: damage from improper cleaning (chloride cleaners, abrasive tools), misuse, or modification.
- Support: Provide model, grade (316L), site details, and photos for warranty claims.

## 14. Commissioning Checklist

1. Mounted on hygienic standoff brackets, clearances correct
2. Anchored securely with stainless fixings
3. Gasket intact, clean, seated correctly
4. Cable glands hygienic, FDA-approved, sealed
5. Earth bonding complete and continuity verified
6. Stainless finish cleaned, free from contamination
7. Washdown access confirmed
8. Maintenance plan explained to operator