

Aerobic Treatment Control Panel · Demand + UV

120 VAC · Single Phase | Demand Dose · UV Disinfection | Failsafe Lockout

ENGINEERED & MANUFACTURED FOR AKHA MANUFACTURING, LLC · HYDRO-ACTION® SYSTEMS

PRODUCT OVERVIEW

The CP-001-3-0003 is a UL 508A Listed control panel for NSF/ANSI 40 aerobic treatment systems with integrated UV disinfection. It supervises the aeration compressor, monitors the UV lamp through a PRI-51/1 current relay, and controls a demand-dose pump — with failsafe lockout on air loss or UV fault. High water is alarm-only. A dedicated control circuit keeps the alarm live during main power loss.

KEY FEATURES

- Integrated UV disinfection with automatic lamp failure / end-of-life detection
- Failsafe demand-pump lockout on air loss or UV fault
- Continuous compressor supervision via air pressure switch
- PRI-51/1 current monitoring relay — no manual lamp testing
- Dedicated control circuit — alarm stays live if the main breaker trips
- Red beacon + 95 dB horn with silence push-button
- Simple relay logic — minimal components, high reliability
- NEMA 4X polycarbonate · UL 508A Listed · NSF/ANSI 40

PANEL IDENTIFICATION

MODEL
CP-001-3-0003
UL FILE NUMBER
E547664
MANUFACTURED FOR
AKHA Manufacturing, LLC
SYSTEM PLATFORM
Hydro-Action®
KEY COMPONENTS
PRI-51/1 · UV Ballast
DOCUMENTATION
Manual v2.0 · LD v1.2 · CD v1.3.3

⚠ READ FIRST — CONTROL CIRCUIT

TWO separate 120 V feeds: main power plus a dedicated control circuit that **remains energized when the main breaker is OFF** — disconnect BOTH and verify with a tester before opening. Neutrals from both feeds must land on the same neutral bus in the feeder panel.

TECHNICAL SPECIFICATIONS

PARAMETER	SPECIFICATION
Model	CP-001-3-0003
Supply	120 VAC, 60 Hz, single phase — dual feeds: main power + dedicated control circuit
Total FLA / SCCR	25 A · SCCR 5 kA
Compressor Circuit	120 V, ½ HP max (10 FLA) — internal overload required
Demand Pump Circuit	120 V, 1 HP max (15 FLA) — largest motor
UV Ballast	Electronic, 25–35 W · Type P (outdoor) · thermal protection · 600 V max
Feeder Protection (Field Supplied)	Upstream at the feeder panel (not in this panel): main 20–30 A · control circuit 5 A max
Protection Logic	Failsafe demand-pump lockout — air loss · UV fault (high water: alarm only)
Alarm System	Red beacon · 95 dB horn · silence push-button — powered by the control circuit
Enclosure	NEMA 4X polycarbonate · indoor or weatherproof outdoor · –20 °C to 50 °C
Field Wiring	26–10 AWG copper, 600 V, 60 °C · torque 4.425 in-lbs (0.50 N·m)
Compliance	UL 508A Listed · File E547664 · NSF/ANSI 40

PROTECTION & LOCKOUT MATRIX

Air loss and UV fault lock out the demand pump so under-treated effluent cannot be discharged; lockouts clear automatically when corrected. High water is alarm-only — the pump keeps running to lower the level.

CONDITION	DETECTED BY	PANEL RESPONSE
Air pressure loss	Air pressure switch (N.O.)	Alarm · demand pump LOCKED OUT
UV lamp fault / end-of-life	PRI-51/1 current monitor	Alarm · demand pump LOCKED OUT
High water	High water float (N.O.)	Alarm only — pump operation unaffected
Main power loss	—	Alarm system remains live on the control circuit feed

SUPERVISION SYSTEMS

UV LAMP SUPERVISION — PRI-51/1

Disinfection Integrity

The PRI-51/1 relay continuously measures UV lamp current. Lamp failure, end-of-life degradation, or disconnection drops the relay — raising the alarm and locking out the demand pump until the lamp is restored.

AERATION SUPERVISION — PRESSURE SWITCH

Treatment Integrity

The air pressure switch verifies the compressor is producing air. Loss of pressure raises the alarm and locks out the demand pump so effluent is never discharged without active aeration.

PROGRAMMING REFERENCE PRI-51/1 field adjustment — with a QR link to the official Elko EP manual — is provided in Section 6 of the CP-001-3-0003 Operation Manual v2.0. The relay is factory calibrated; adjust only after a lamp or ballast replacement.

SUPPORT & WARRANTY

All technical support, warranty claims, and service questions must be directed to:

AKHA Manufacturing, LLC

2055 Pidco Dr. / P.O. Box 640

Plymouth, Indiana 46563

Toll Free 800-370-3749 · Ph (574) 936-2542

hydro-action.com

Two (2) year limited warranty to the original purchaser, administered through AKHA Manufacturing, LLC. Legacy Controls does not accept direct end-user or installer inquiries for this product line.

- Field-supplied main disconnect required; verify with a voltage tester before opening
- Feeder protection is field supplied at the main panel — main 20–30 A, control circuit 5 A max
- All floats normally open (N.O.), customer supplied · UV lamp customer supplied, field installed
- Never override the air loss or UV fault lockouts
- Any alteration, modification, or unauthorized repair voids the UL listing and warranty
- See CP-001-3-0003 Operation Manual v2.0, Line Drawing v1.2, and Connection Diagram v1.3.3