



VEHICLE-MOUNTED PSA OXYGEN SUPPLY SYSTEM

For Live Fish Transport

Integrated Driver-Side Controller with Emergency Liquid Oxygen Backup

www.o2mos.com

O2MOS | Republic of Korea

PRODUCT OVERVIEW

Why a Vehicle-Mounted PSA Oxygen Generator

1

Purpose-Built for Live Haulage

Delivers a dedicated, continuous oxygen supply to live fish transport trucks of every size.

2

Oxygen On Demand

Generates oxygen directly from ambient air — no refilling, no transporting or storing bulk oxygen.

3

Lower Cost, Same Reliability

A cost-saving, convenient alternative to liquid oxygen (LOX) and high-pressure cylinders.

4

Lighter, More Efficient

Cuts vehicle weight by over 200 kg versus LOX or cylinder systems, reducing fuel costs.

5

Low Cost of Ownership

Low maintenance requirements keep day-to-day operating cost to a minimum.

Field-Installed Systems



A Growing Need for Reliable Live Fish Transport

Market Overview

- Growing demand for live fish logistics across Asia and India.
- Increasing transport distances that require stable, dependable oxygen management.
- Rising costs of liquid oxygen and its refilling logistics.
- A clear market shift toward smart, safe, and low-maintenance oxygen solutions.

Why It Matters

- Getting fish to consumers alive and in top condition is one of the fisheries industry's central challenges — poor quality on arrival makes the whole production effort meaningless.
- Supplying live fish is the surest way to guarantee the consumer receives a genuinely fresh product.
- Once confined mainly to ornamental fish and fish seed, live table-fish transport is now gaining importance as consumer lifestyles change.
- Frozen fish transport remains especially critical, since quality degradation risk is highest during transit — reinforcing the case for reliable live, oxygenated transport instead.

A dependable onboard oxygen source is becoming a baseline requirement — not an optional upgrade — for live fish logistics operators.

THE PROBLEM

Challenges in Current Oxygen Supply Systems

1

Dependence on Liquid Oxygen

Trucks rely on LOX cylinders, tying operations to a continuous refill supply chain.

2

High Hidden Costs

Refilling, transport, and safety management of cylinders add significant recurring cost.

3

Safety Risk

Compressed and liquid oxygen carry real risk of leakage, fire, or explosion.

4

No Real-Time Visibility

Conventional systems offer no real-time oxygen monitoring or control.

5

Rising Fish Mortality

Mortality increases on long-distance hauls when oxygen supply is inconsistent.

THE SOLUTION

The O2MOS PSA Oxygen Generator

O2MOS is a PSA (Pressure Swing Adsorption) oxygen generator that produces high-purity oxygen for immediate, continuous use — in virtually any environment where oxygen is needed, simply by switching on the power.

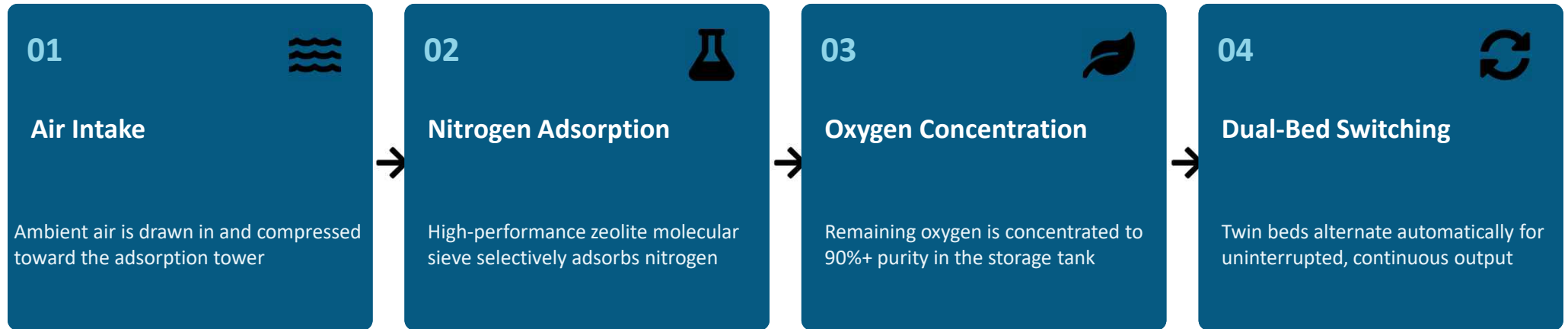
The system uses a high-performance adsorbent material with a dense network of micropores, enabling it to selectively adsorb large volumes of nitrogen and extract high-purity oxygen from ordinary compressed air.

Wherever oxygen is needed, high-purity oxygen can be supplied stably — simply by switching the power on.



HOW IT WORKS

PSA Technology Principle



Advantages of PSA Oxygen Generation

- ✓ **High Purity 90%+**
Consistent, standard-air-based output
- ✓ **24/7 · 365 Days**
Stable continuous supply, no interruption
- ✓ **Long Service Life**
Durable, high-quality zeolite media
- ✓ **Compact & Lightweight**
Easy to move, install, and relocate

The result: no cylinders to refill, no liquid oxygen to transport — just a self-contained system that produces oxygen for as long as the vehicle is powered.

PRODUCT LINE

O2MOS PSA System Overview for Trucks

- Compact 12V or 24V DC PSA oxygen generator, purpose-built for live fish transport vehicles.
- Generates 7 LPM or 3 LPM of continuous oxygen at 90% purity.
- Modular structure: separate compressor unit and PSA bed unit.
- Integrated driver-side controller with emergency LOX backup system.
- Enables continuous oxygen supply even while the vehicle is in motion.

All configurations share the same driver-side controller and emergency LOX backup architecture — only flow rate, voltage, and enclosure size change.

Configuration Options



7 LPM

Split Type

3 LPM

Standard 7 LPM and 3 LPM configurations, available with compressor and bed as an integrated unit or split for flexible mounting.

SPECIFICATIONS

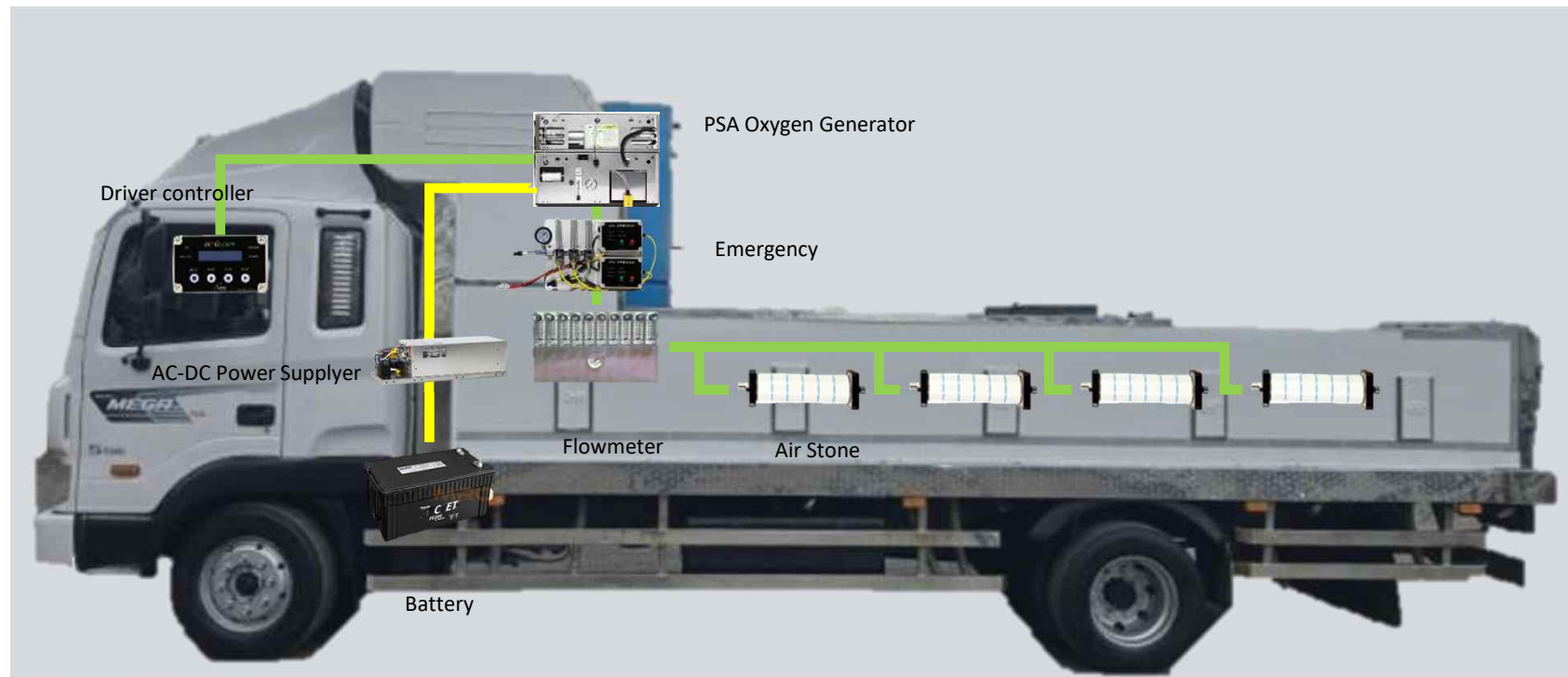
Major Applications by Power Configuration

	DC 24V — 7 LPM	DC 24V — 3 LPM	DC 12V — 7 LPM	DC 12V — 3 LPM
Purity	90%	90%	90%	90%
Main Vehicle	5-Ton Truck & Small Boat	Small Boat	1-Ton Transport Truck	1-Ton Truck / Outboard Boat
Average Load	Flounder 1.0–1.5t Shrimp 0.5–1.0t	Live fish 300–500 kg	Live fish 500–800 kg	Live fish 50–200 kg
Power Draw	20 A	10 A	40 A	20 A
Size / Weight	485×240×400mm / 22kg	350×215×365mm / 14kg	485×240×400mm / 22kg	350×215×365mm / 14kg

SYSTEM DESIGN

Basic System Configuration

- Driver-side controller gives real-time visibility into system status while underway.
- The PSA generator's modular compressor and bed unit mount securely within the truck bed housing.
- Oxygen is distributed through a flowmeter panel that lets crew fine-tune flow to each individual tank.
- Air stones diffuse oxygen evenly through each holding tank at low, fish-safe pressure.



OPERATION

Driver-Side Control & Monitoring

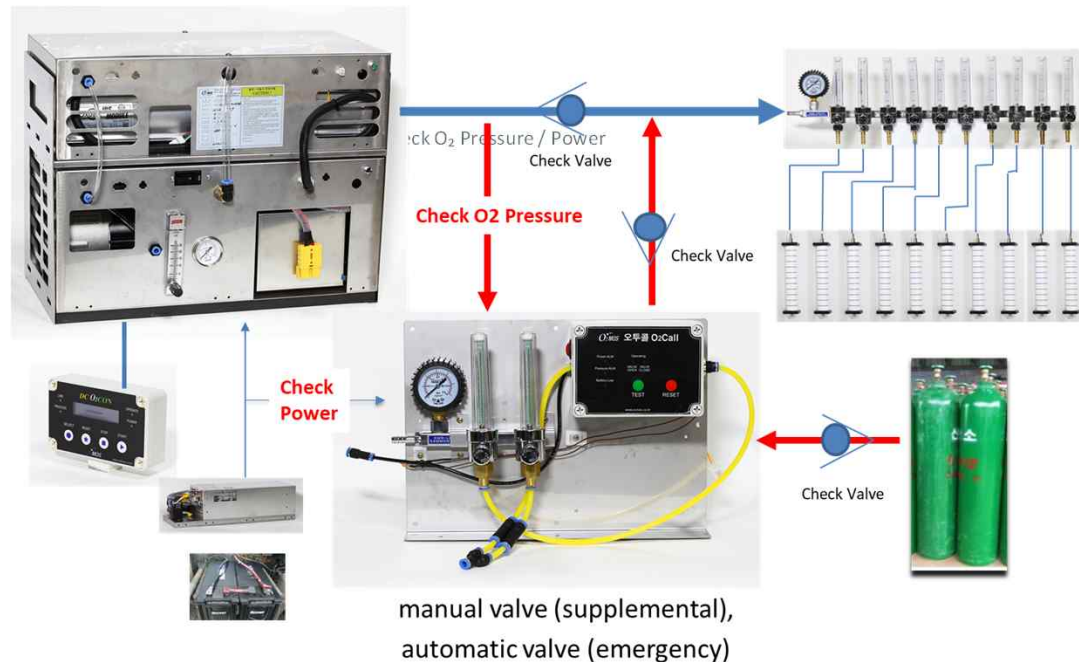


Dashboard-mounted controller — in-cab visibility for the driver at all times.

- 1 Input Power**
Live supply voltage from the vehicle battery.
- 2 Compressor Pressure**
Real-time compressor output pressure.
- 3 Oxygen Outlet Pressure**
Monitors delivery pressure to the tank line.
- 4 Generator Temperature**
Tracks operating temperature of the PSA unit.
- 5 Operating / Filter Time**
Cumulative run time for maintenance planning.

Emergency Liquid Oxygen Backup System

- Continuously monitors O₂ outlet pressure and controller power status from the PSA generator.
- If pressure or power falls out of range, the backup controller automatically opens the LOX supply valve.
- High-purity liquid oxygen instantly restores flow to the tank distribution manifold through a check valve — no manual intervention required.
- Ensures an uninterrupted oxygen supply even in the rare event of a PSA fault, protecting live cargo on long-distance hauls.



Automatic switching — no manual valve operation needed

System components: PSA generator · O₂Call backup controller · dual flowmeter regulators · LOX cylinder bank · check valves throughout.

INSTALLATION

Installation, Wiring & Power Connection

Installation & Wiring

- Bed unit: connect the control PCB to the driver console via a 4-pin harness.
- Compressor unit: mount on anti-vibration pads and connect to the battery using an Anderson connector.
- Flowmeter panel: adjust oxygen flow to each tank individually.
- Emergency LOX backup: switches in automatically for uninterrupted supply.



Driver-console integration — controller mounted for clear in-cab visibility.

Power Wiring Reference

20 A circuit → 6 sq mm cable

40 A circuit → 10 sq mm cable

Connection via Anderson connector to battery or AC–DC power supply.



Compact housing fits standard live-fish transport truck bodies.

ORDERING

Ordering the PSA O₂ Generator

MAIN

- PSA O₂ Generator (compressor + bed unit)
- Driver Controller (dashboard-mounted display)



OPTIONS

- | | |
|--|--------------------|
| ✓ Emergency O ₂ Supply (LOX backup) | ✓ Flow Meter panel |
| ✓ Air Stone (30 cm) | ✓ Rack Mounter |
| ✓ AC-DC Converter | ✓ Fan & Cable set |

SPECIFICATIONS

Technical Specifications

Model	O2MOS-12VC1-7LB2 / O2MOS-12VC2-3LB2 (24V variants available)
Oxygen Purity	90% ± 3%
Flow Rate	7 LPM or 3 LPM
Outlet Pressure	1.5 bar (7 LPM) / 1.1 bar (3 LPM)
Operating Voltage	DC 12V (11–14V) or DC 24V
Current Consumption	40 A / 20 A (12V) — 20 A / 10 A (24V)
Compressor Type	BLDC (brushless DC)
Housing Material	STS304 Stainless Steel
Bed Unit	485×240×142 mm / 10 kg — 350×215×130 mm / 5 kg
Compressor Unit	485×240×222 mm / 13 kg — 350×215×222 mm / 8 kg

Key Benefits & Suggested Applications

70%

lower oxygen supply cost vs. LOX systems

- Increases fish survival rate and reduces mortality in transit.
- Compact, reusable, and low-maintenance design.
- Operates safely — no flame or explosion risk.
- Powered directly by the vehicle battery (DC 12V/24 V) or ship power.
- Optimized for mobile transport and aquaculture logistics operations.

Suggested Applications

- Live fish transport vehicle
- Live fish carrier vessel
- Ornamental fish transport
- Live fish container
- Oxygen supply for high-altitude vehicles
- Special-purpose transport vehicle
- Oxygen supply for buses & trucks

“Relieves driver fatigue and drowsiness with cabin oxygen supply during long live fish transport.”

Convenient, economical, and reliable oxygen generation — proven by long-term field performance.

FIELD PERFORMANCE

Proven by Long-Term Field Performance



O2MOS unit installed and operating in a live fish transport truck bed.



Convenient, Economical & Reliable Oxygen Generation

High-purity PSA oxygen technology for marine logistics, engineered and manufactured in the Republic of Korea.

MANUFACTURER

O2MOS (Republic of Korea)

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