



## Case Study: Enhancing Process Visibility on Modular Skids with Sight Flow Indicators

### Industry

Industrial Equipment & Systems Integration (Harbor & Marine Infrastructure)

### Client Profile

A global systems integrator specializing in the engineering, fabrication, installation, and lifecycle support of complex mechanical systems and turnkey equipment packages. Their core markets include marine infrastructure, heavy industrial facilities, and customized process skids for fluid handling applications.

### Business Challenge

The client was contracted to deliver a series of modular process skids for end customers that required high reliability fluid handling, exceptional process integrity, and visual verification of flow conditions during operation. The systems were diverse — ranging from washdown and solvent distribution skids to lubricating and coolant distribution packages — and would operate in environments with different process fluids, pressures, and compliance requirements.

Across these skid installations, the client consistently encountered:

- **Limited visual confirmation of fluid movement** with opaque pipe runs.
- **Maintenance uncertainty**, leading to increased service calls when operators couldn't quickly verify flow.
- **Commissioning delays**, as technicians relied on instrumentation alone (flowmeters, pressure differentials) to infer flow conditions.
- **Customer requests for improved operator confidence** without costly sensor retrofits.

They needed a solution that offered simple, reliable visibility of flow without complex integration or significant additional maintenance overhead.

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## Solution: Integration of Sight Flow Indicators

After evaluating several options, the systems integrator standardized the use of **rugged sight flow indicators** in key locations across the skid portfolio.

These devices were selected based on:

- **Robust industrial design** capable of withstanding process pressures and frequent cleanings.
- **High clarity, chemical resistant viewing windows** for visual confirmation of fluid movement.
- **Compatibility with modular skid layouts**, using flanged or threaded connections.
- **Minimal maintenance requirements**, with replaceable glass and seals.



## Implementation Highlights:

- Sight flow indicators were installed in **critical pump suction and discharge lines**, recirculation loops, and at the inlet to filtration modules.
- Orientation and placement were optimized to ensure **laminar flow across the viewing glass** and avoid air entrapment during startup.
- Visual cues such as **fluid color, bubble movement, and turbulence** became immediate indicators of flow state for operators.
- Operators were trained to use the sight flow indicators for both **routine startup checks and troubleshooting** when instrumentation alarms occurred.

## Results

Operators gained instantaneous visual confirmation of fluid movement, greatly reducing uncertainty during start-stop cycles and transient operations. This translated to:

- Faster **startup verification** (seconds instead of minutes tracing instrumentation).
- Immediate detection of **blockages, vapor locking, or incorrect valve positioning**.

## Reduced Downtime & Service Calls

With sight flow indicators acting as the “eyes” of the skid, technicians could isolate issues more rapidly, reducing unnecessary service visits and diagnostics.

