



Precision Flow Control for Accurate Tanker Loading Operations

Why Flow Control Matters in Custody Loading Applications

In petroleum tanker loading operations, precise flow control plays a critical role in ensuring batch accuracy, safe transfer, and efficient custody transfer performance. Even small variations in flow rate during loading can lead to product losses, extended loading cycles, or operational inconsistencies.

For operators handling fuels such as MS, HSD, ethanol, and biodiesel, maintaining controlled multi-stage flow during loading is essential for both safety and delivery accuracy. This makes advanced flow control valves a key component in modern loading gantry systems.

Customer Needs in Tanker Loading Operations

Operators managing high-volume fuel transfer systems typically require:

Accurate batch delivery across varying flow conditions

Smooth multi-stage flow rate control during loading cycles

Reduced dependency on manual valve tuning

Reliable shut-off during emergency or power-loss conditions

Low maintenance intervention with high uptime performance

Meeting these requirements consistently demands intelligent control valve technology designed specifically for custody transfer environments.

Industry Challenges in Flow Control During Fuel Loading

Traditional control valve systems often face:

01 Inconsistent Batch Delivery during fluctuating flow and line pressure.

02 Manual tuning through needle valves, which may pose safety risks in case of mishandling.

03 Limited Fail-Safe Mechanisms failing to safeguard against mechanical failures

04 Long Maintenance downtime impacting loading efficiency

05 Extended Commissioning Time due to manual valve tuning which involves multiple trials, making the setup and calibration process both tedious and time-consuming.

These challenges directly influence loading accuracy, productivity, and operational safety.

The Liquid Controls Solution: DCV Nxt Control Valve

The DCV Nxt control valve is engineered to deliver precise and stable flow control across tanker loading applications. Designed as a hydraulically operated, electrically actuated piston-type control valve, it enables accurate multi-stage flow control throughout the loading cycle.



Its hydrodynamically balanced Y-type globe body design ensures stable operation even under demanding loading conditions. This allows operators to maintain controlled flow transitions from start to finish of each batch transfer.

Key Technology Advantages

Accurate Batch Delivery: The patented trim design and innovative ATV technology of DCV Nxt ensure precise flow control & accurate batch delivery even under fluctuating conditions.

Smart Auto-Tuning: DCV Nxt automatically adjusts flow, eliminating manual intervention even with fluctuating operating conditions.

Comprehensive Fail-Safe Mechanisms: DCV Nxt protects against both electrical and mechanical failures

Tamper-Proof Design: DCV Nxt enhances safety and accuracy by eliminating the need for needle valves

Plug & Play Design: Plug & Play Design of DCV Nxt significantly reduces commissioning time by eliminating the need for manual tuning.

Built for High-Volume Fuel Transfer Applications

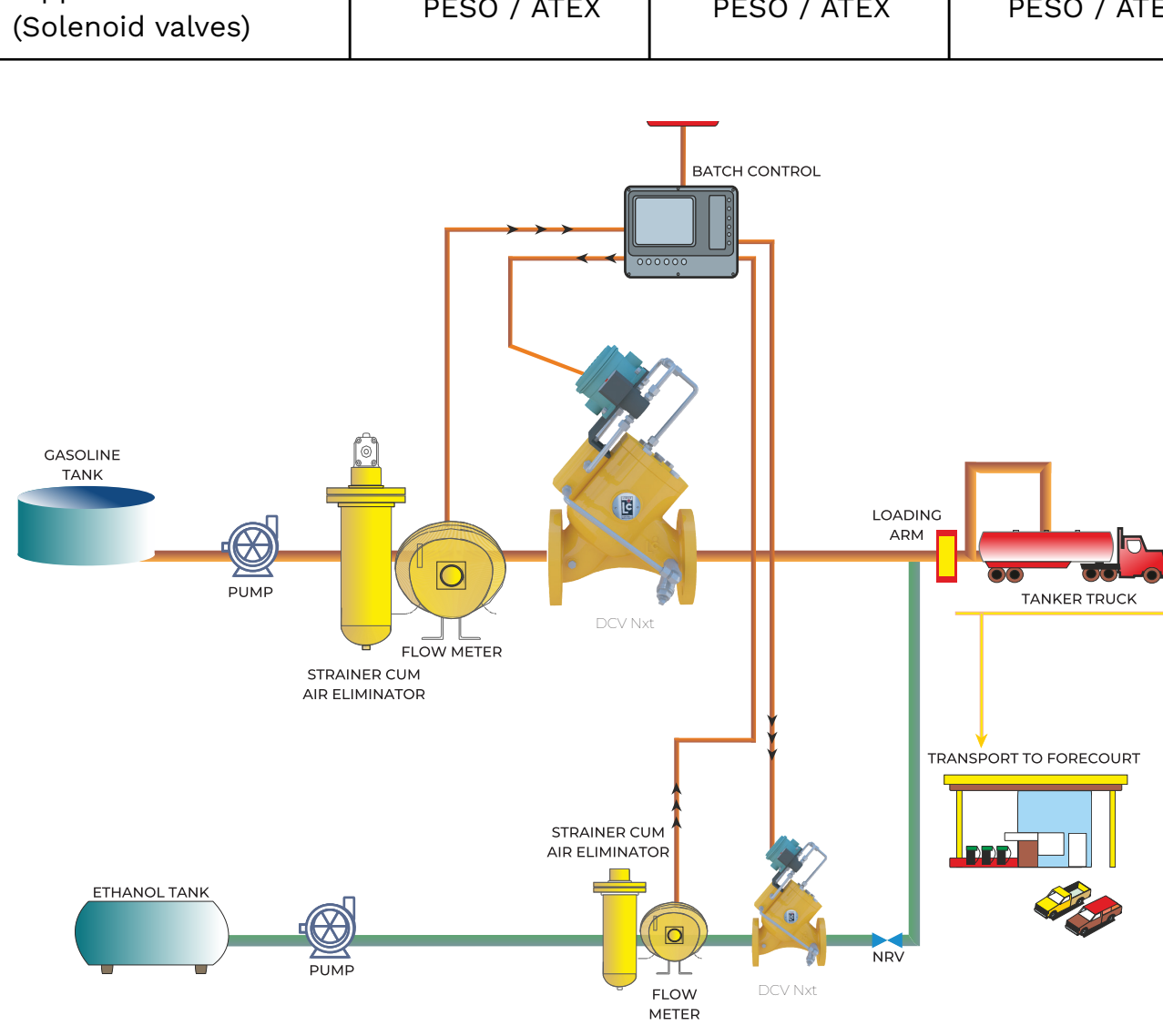
DCV Nxt is ideally suited for:

- Tanker loading gantry systems
- Petroleum product transfer terminals
- Refinery loading operations
- High-pressure custody transfer environments

Its design supports accurate batch delivery while maintaining consistent system stability across demanding operating conditions.

Specifications

Parameter	2"	3"	4"
Flow Rate (LPM)	30–660	80–1500	150–2600
Operating Pressure	1.5–10 bar	1.5–10 bar	1.5–10 bar
Design Pressure	19.6 bar	19.6 bar	19.6 bar
Temperature Range	-10°C to 60°C	-10°C to 60°C	-10°C to 60°C
Leakage Class	ANSI B16.104 Class VI	ANSI B16.104 Class VI	ANSI B16.104 Class VI
Approvals (Solenoid valves)	PESO / ATEX	PESO / ATEX	PESO / ATEX



Conclusion:

Precision Control Where It Matters Most

In tanker loading operations, accurate flow control directly supports safe transfer, batch consistency, and operational efficiency.

With its hydraulically balanced design, auto-tuning capability, fail-safe closure performance, and proven reliability in custody transfer environments, DCV Nxt delivers precise flow control built for modern fuel loading systems.



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