

Light, cost effective and space efficient

Shipboard valve
communication networks





Less space and weight, lower construction costs, and faster installation

Modern ships are highly automated, self-contained chemical plants that operate for several weeks at sea without resupply. It is important to find better solutions to integrate a vessel's automated valve systems. That's why Valmet's solutions are used by shipbuilders around the world to improve their operations. Installations with our Stonel™ products mean space constraints, weight limitations, construction cost caps, and installation requirements are minimized.

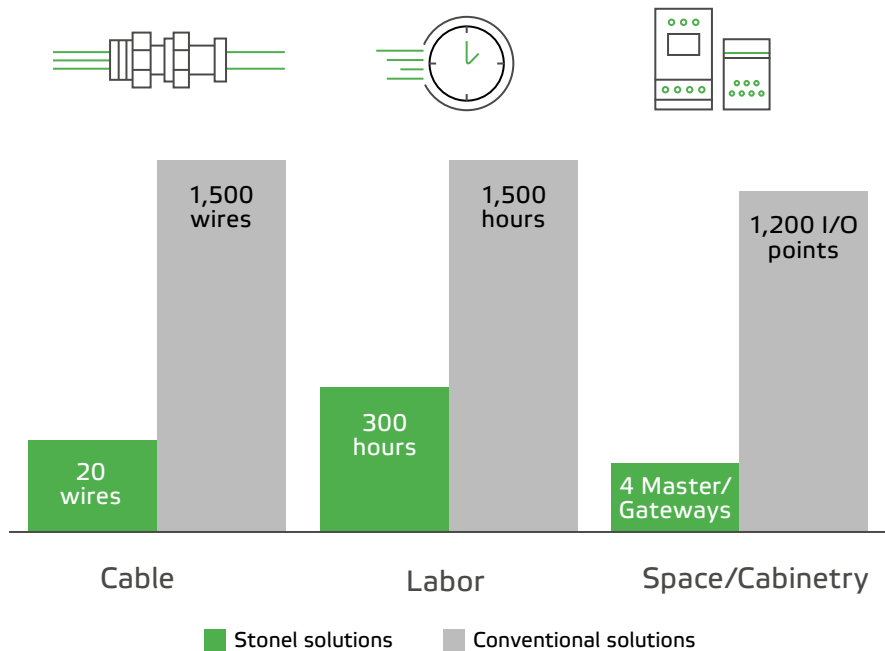
Only two wires

Conventional control systems require miles of cables and considerable input/output (I/O) points. Each process control device has to be individually wired with up to five or more connections. For example, a ship with 300 automated on/off valves would require 1,500 wires and 1,200 I/O points to operate. An AS-Interface network of 300 automated on/off valves, however, requires only 20 two-wire cables, making it considerably less expensive, lighter, and reducing the need for I/O cabinets and infrastructure.

In some cases, automated valves are located in remote areas, resulting in difficult local status indication, calibration, and trouble-shooting if the valve system malfunctions. This makes routine maintenance and system reviews difficult and time consuming, as well as jeopardizing the safety of personnel.

300 automated on/off valves

Installation requirements



By reducing the number of wires required per valve the AS-Interface networking solution reduces the wiring burden by over 40 percent.

Easy access with Stonel wireless link

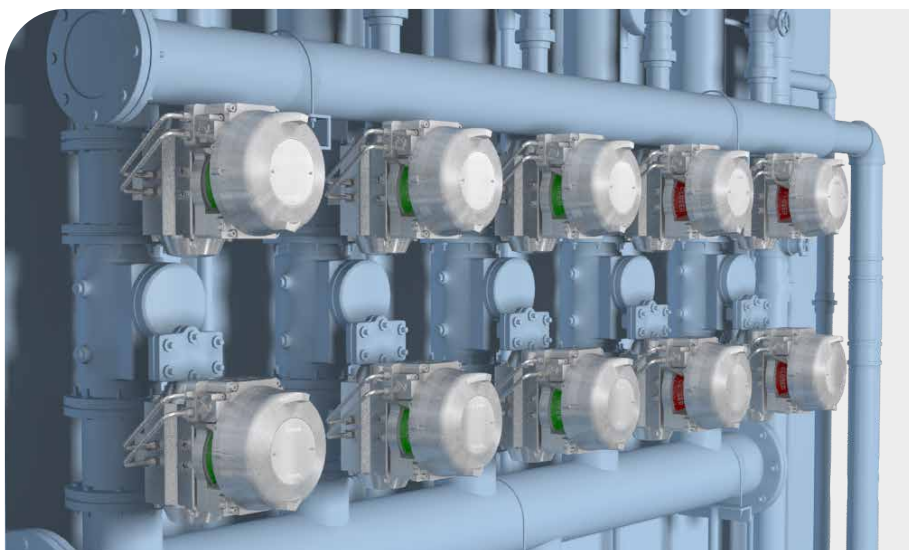
Safely, securely and conveniently access difficult to reach communication and control modules. Using a standard iPhone or iPad with the Stonel app, further cost savings may be realized. Security is assured with operational/lockout privileges.





New technologies and increasing demand: overcoming new challenges

Over the previous decade, new technologies, as well as an increasing demand for oil and gas, have spurred investment in off shore drilling and production activities. With new regulations and a greater emphasis on safety, marine support vessels are being called on in greater numbers to supply platforms with necessary materials for drilling, production, and emergency support.



Stonel Axiom™ benefits

- Uncluttered installation below deck
- Easier routine maintenance and review
- Faster installation and increased safety

Improve vessel reliability

Platform and Offshore Support Vessels are instrumental in bringing necessary supplies and materials to offshore drilling platforms. These vessels need to be versatile, configurable, and reliable to remain at sea for weeks at a time.

Well stimulation vessels are in high demand and need to be built quickly, within budget constraints, and be extremely reliable. These vessels have many valves above deck, and many are in hazardous locations where explosive gases are present.

Increased safety

Overcoming the loss of command signals with process control valves is

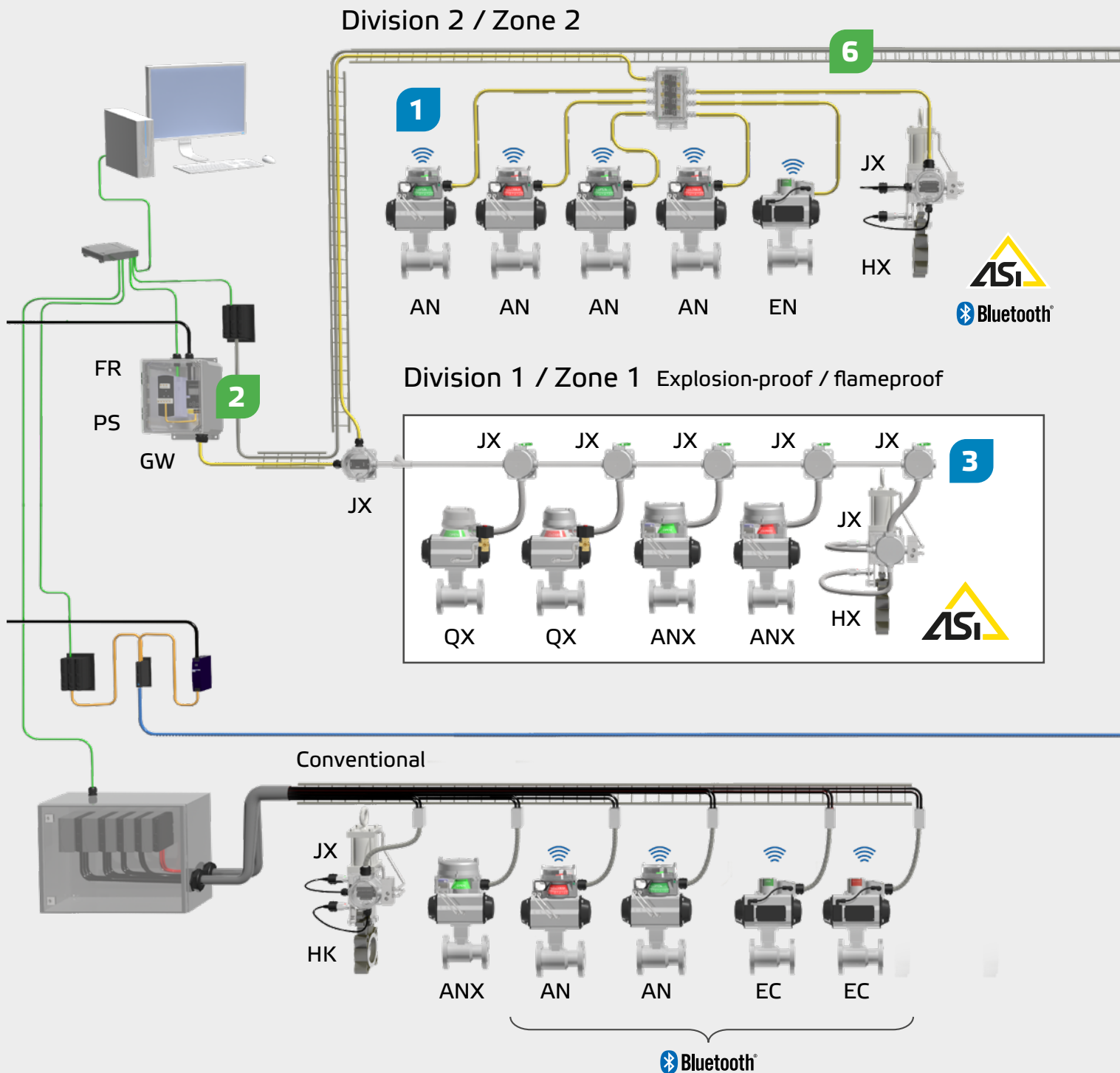
one of the many challenges Valmet solutions are designed to overcome. Our Stonel brand products offer manually or remotely activated pneumatic overrides that can drive the valve to a predetermined safe condition.

Salt water resistant

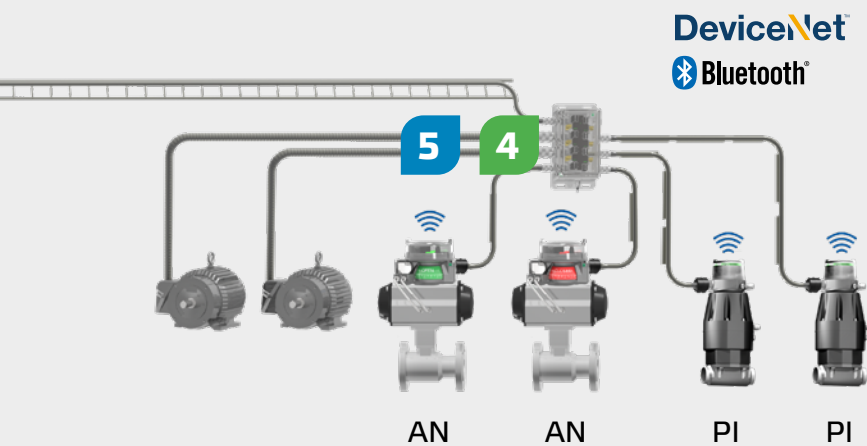
Our Axiom valve communication and control monitor can include both manual and remote pneumatic overrides, as well as a stainless steel enclosure option for salt-water resistance above deck.



Improved process performance and reduced total life cycle costs



We provide the solutions you need for integrating your automated valves. Optimum performance means that all components of your process need to be efficiently integrated with your control system. We cooperate with your design team and third party vendors to create the communication and control interfaces you need, recommending the right components for the optimal efficiency of your entire system.



1. Wireless Link
Enables safe, easy local access to valve status and diagnostics

2. Gateways
EtherNet/IP and other networks for easy network integration

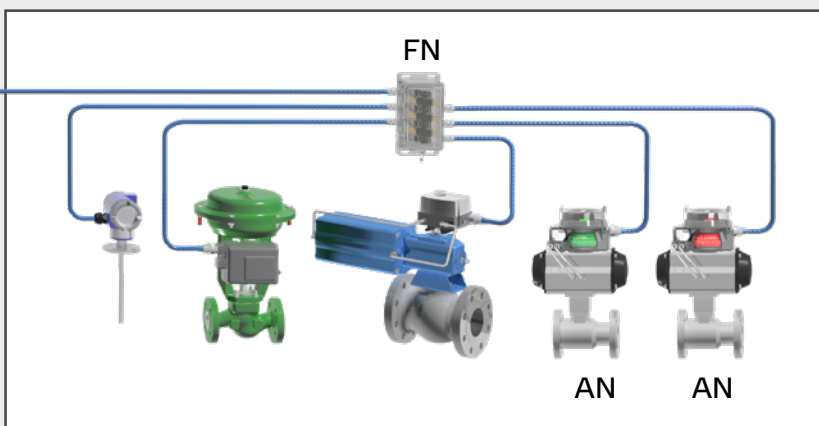
3. Disconnect switches
Enable easy maintenance in XP/Exd applications

4. Drop connectors
Make wiring networks easy and cost effective

5. Multidrop wiring
Saves space and installation costs

6. Bus networks
Most support XP/Exd wiring (some support Exi wiring)

Division 1 / Zone 1 Intrinsically safe



Protection concepts shown are for illustration purposes. Final acceptance of installation including wiring practices is subject to the authority having jurisdiction.

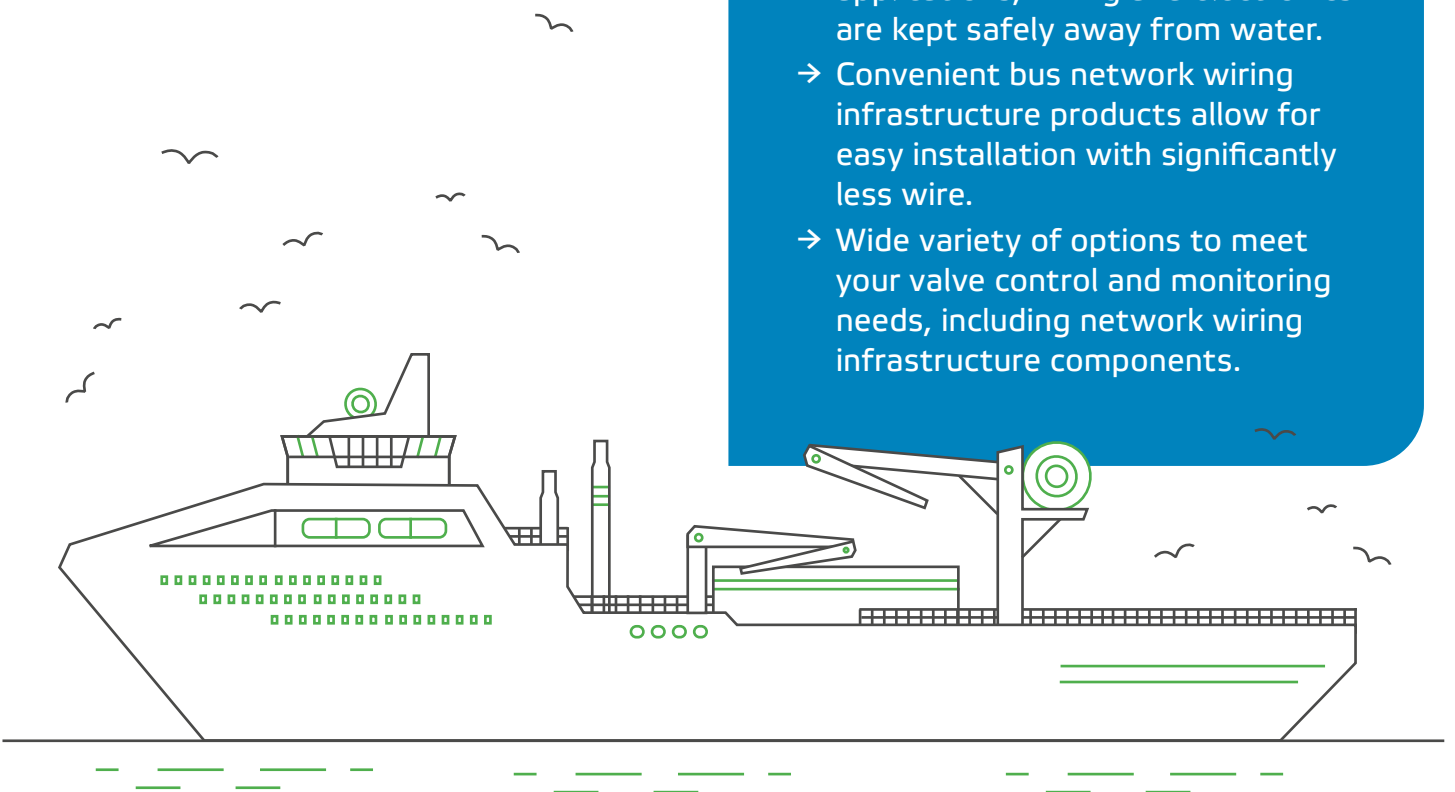
Setting the standard in valve communication networks for marine vessels

Our robust networking components are suitable for process or shipboard applications in demanding environments. With proven safety, reliability, and quality, thousands of Stonel conventional and networked valve monitors have been supplied to marine vessels operating around the world.

Customer driven to provide the right products needed for challenging shipboard applications

Key benefits of Stonel valve monitors:

- Durable, corrosion proof enclosures provide long life and reliable performance in challenging environments.
- Hazardous approval ratings ensure products are designed to be safely used in hazardous locations.
- Vapor tight and submersible rated for IP67 and NEMA 4, 4X, 6 applications, wiring and electronics are kept safely away from water.
- Convenient bus network wiring infrastructure products allow for easy installation with significantly less wire.
- Wide variety of options to meet your valve control and monitoring needs, including network wiring infrastructure components.



Valve communication offering

On/off valve controllers:

Axiom



The **Axiom** discrete valve controller can be ordered with multiple options to fulfill your requirements; standard solid state, network-enabled, and Stonel's Wireless Link diagnostics and advanced capabilities. Each share most of the same components and functions.

Features:

- Integral, high flow rate solenoid valve in single or dual pilot configurations
- Internal and optional external manual pneumatic overrides
- Wiring terminations or quick connector
- Advanced valve diagnostics versions available
- Universal voltage
- Rebreather
- Full 5 year warranty
- **Bulletin reference:** 7AN21

Drop connectors:

FieldBlock (FN)



The **FieldBlock (FN)** is a versatile drop connector platform designed to make it easier to use in industrial networks. With simplified wiring, the Fieldblock can be used with flexible or hard conduit wiring systems and is invaluable for field networking projects.

Features:

- Suitable for hazardous locations in non-incendive applications
- Multiple quick connector, cable gland and conduit entry options
- Space-efficient design
- LED display system
- Wide variety of drop connectors
- Individually switched drops save maintenance and set-up time

Drop connectors:

Junction module (JX)



The **Junction Module (JX)** is a versatile drop connector platform designed to make it easier and safer to use especially in hazardous locations. The JX makes wiring networks easier and more convenient, while adding the ability to perform safe maintenance on network components.

Features:

- Rugged, anodized aluminum enclosure
- External disconnect switch enables safe and easy maintenance
- Quick access screw-on cover enables convenient access to the enclosure
- Short circuit protection for continued network operation in case of a short circuit
- Compact design minimizes space requirements

Reliable networking components

Stonel FieldLink products and services enable automated valves and instruments to interconnect a the ship's control system using standardized, proven, field-based communication protocols such as AS-Interface, DeviceNet, Modbus, Profibus, and more.

Our Stonel bus protection module (BPM) works with an AS-Interface network to identify and isolate short circuits in the VCT or the main bus trunk. When a fault occurs in a field device or bus segment the device or segment is isolated, allowing the remaining devices and network to continue normal operation. When used in conjunction with the Axiom with dual coil shuttle piston solenoid, BPMs improve safety by helping to prevent loss of process control.

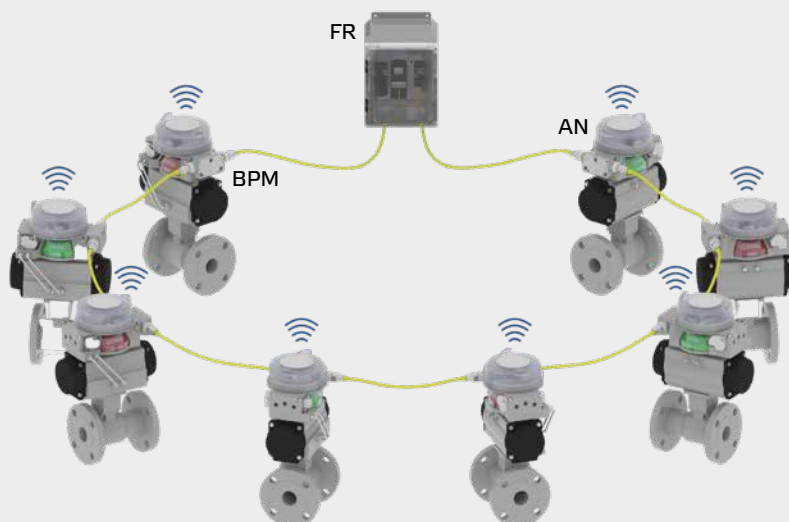
We offer a full array of components to cost effectively and reliably complete the valve communication network. That includes power supplies, control system interfacing gateways/masters, robust protected drop connector systems and connectivity accessories to tie the automated valve systems into shipboard control systems.



AS-Interface loop configured network

Network components include:

- FieldRack FR with power supply, gateway and master bus protection module
- Axiom AN VCT with optimal wireless link
- Integrated bus protection module BPM with quick connectors



Easy, safe and secure access with Stonel wireless link. Remotely.

- Monitor and set open and closed switch positions
- Monitor and set the network address
- Operate solenoid valve(s) (if network- or power supply-enabled)
- Identify model and serial number (preset from factory)
- Identify valve automation components (entered by valve supplier)
- Log maintenance information
- Monitor diagnostics (valve cycle count, electronics temperature, and more)



Valmet marine and offshore industry solutions



Comprehensive valve control offerings

Control applications

- Neles ND9300 and ND9400 valve controllers

ESD applications

- Neles ValvGuard™ VG9300 safety solenoid

On/off applications

- Stonel Axiom valve controllers
- Stonel Quartz™ limit switches
- Neles Easyflow™ K-series limit switches
- Neles Easyflow RNP-series rack and pinion actuators (stainless steel version)

Critical on/off applications

- Neles SwitchGuard™ SG9300 valve controller

Configuration and diagnostics

- FDT and EDD capable for multi-vendor support of remote configuration and diagnostics access

Valmet DNA process automation

- The Valmet DNA control system platform is modular, flexible and scalable. It can be adapted to a wide range of vessel functionalities. The system solves automation needs and requirements, whether for a large and complex cruise ship, RoPax ferry, offshore vessel, LNG or product carrier. Our latest innovation is the web-based Valmet DNA User Interface increasing situational awareness on board.
- Valmet has launched new emission control solutions that enable shipowners to achieve their sustainability at sea goals. The hybrid scrubber is a solution that can switch between open and closed-loop operation modes. With a combination of the hybrid scrubber and wet electrostatic precipitator, exhaust gas emissions from a marine diesel engine can be cut by up to 99 per cent.



Valmet's professionals around the world work close to our customers and are committed to moving our customers' performance forward – every day.

Valmet Flow Control Oy

Vanha Porvoontie 229
01380 Vantaa, Finland
flowcontrol@valmet.com
+358 10 417 5000
valmet.com/flowcontrol

