



# Modernizing Naval Flow Measurement for Reliable Marine Performance

## Summary

Modern naval platforms depend on a wide range of advanced instrumentation to deliver precise monitoring and reliable control of critical onboard systems. Among these, accurate cooling water flow measurement plays a pivotal role in safeguarding the performance and longevity of essential shipboard equipment.

In this project, the customer required a rugged, future ready solution with extended diagnostics to replace their long serving, but now obsolete, flow measurement instrumentation. While the legacy Panametrics flowmeters continued to operate, evolving performance expectations made it clear that it was time to transition to a more advanced technology platform.

## Application

|                          |                                  |
|--------------------------|----------------------------------|
| Medium:                  | Cooling water                    |
| Pipe size and thickness: | OD 30mm (1.18"), WT 2.5mm (0.1") |
| Pipe material:           | Copper                           |
| Pressure:                | 43 psi-g (3 bar-g)               |
| Flow rate:               | 0-10m <sup>3</sup> /h (44 GPM)   |
| Temperature:             | 5 to 40°C (41 to 104°F)          |
| Requested accuracy:      | ±5% of reading                   |

## Benefits:

- Ease of installation
- No process shutdown required for continuous operation
- Strong local support
- Low total cost of ownership
- Rock-solid reliability



**Fig. 1:** AT600 transmitter

## Challenges

Identifying a suitable replacement system for deployment on a naval vessel brings unique challenges: every component must demonstrate exceptional reliability and perform flawlessly under harsh and variable operating conditions. These requirements become even more stringent in military applications, where instrumentation must not only meet rigorous specifications but also be extensively validated through real world, mission ready testing.

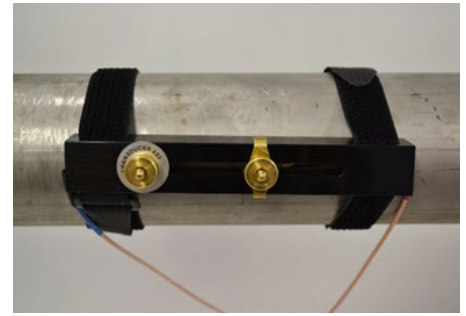
Beyond technical performance, the customer also required a field service engineer capable of providing hands on support boarding the vessel, executing the installation on site, and verifying that each new flow meter was fully configured and operating at best accuracy from day one. This combination of robust technology and committed field expertise was essential to ensure a smooth and confident upgrade.

## Solution

The customer ultimately turned to Panametrics, building on their long standing confidence in the legacy instrumentation that had delivered outstanding reliability over years of continuous naval operation. Leveraging this established trust, Panametrics provided a fully modernized solution by replacing the obsolete systems with 10x of the latest AT600 flow meter, paired with CF-LP 4 MHz transducers across ten independent cooling water lines.

This upgrade delivered a future ready platform engineered for demanding marine environments—while preserving the dependable performance the customer had relied on for decades. With enhanced measurement capability, improved maintainability, and long term technical support, the new system allows the vessel to operate with confidence in the future and in compliance with the stringent military marine requirements.

Following these positive outcomes, upgrades to additional vessels are now being considered.



**Fig. 2:** CF-LP transducers with its clamping fixture