

Measuring Flow With Zero Straight Run Requirements in Building Design, HVAC & Plumbing

INTRODUCTION

In applications where adequate straight run is not available or achievable, controls contractors and other key stakeholders are opting for the ModMAG[®] M2000 Electromagnetic flow meter. Find out how this meter reduces installation time and cost with zero straight run requirements.

In building design, HVAC and plumbing applications, flow measurement tools do more than quantify water usage. They also help optimize system performance, control costs, meet regulatory compliance and maintain safety. High accuracy flow meters are critical in meeting these goals.

However, installing certain metering technologies isn't always a straightforward process. Meters often require a specified amount of straight run upstream and downstream to deliver these accuracies—sometimes five to 10 or more pipe diameters of straight pipe before and after the meter. Meeting these requirements can result in expensive modifications and extensive downtime for installation.

In applications where adequate straight run is not available or achievable, controls contractors and other key stakeholders are opting for the ModMAG[®] M2000 Electromagnetic flow meter to reduce installation time and cost with zero straight run required.



IMPRESSIVE PERFORMANCE IN APPLICATIONS WITH TIGHT SPACES

Electromagnetic flow meters are known for managing critical flow applications, improving accuracy and meeting the demands of challenging liquid conditions. Out of the box, the M2000 meter delivers accuracies of $\pm 1\%$ with zero straight run requirements or $\pm 0.2\%$ with appropriate straight run. Additional benefits include:

- Repeatability of $\pm 0.1\%$
- No pressure drops
- Horizontal to vertical up
- Full pipe measurement
- Display rotation of 90 degrees

The M2000 meter has been validated by the Netherlands Measurement Institute (NMI) to OIML/MID for sizes 2 to 12 inches, assuring it is a suitable solution in tight applications with no space or budget for modifications.

Additionally, the meter has no moving parts or strainer requirements, minimizes meter vault size and is suitable for potable water, well water, reclaimed water, wastewater and water-based solutions.

SELECTING A HIGH-PERFORMANCE METER FOR YOUR TIGHT APPLICATIONS

When selecting a metering technology, there are many considerations to take into account, including flow rates, line sizes, meter location, materials of construction, connectivity and certifications.

Oftentimes, building design, HVAC and plumbing applications are complexly designed with limited space for meter installation. This rules out meters that require a certain number of straight pipe lengths upstream or downstream as the space simply is not available. Additional challenges include close proximity to pumps, valves and other devices, as well as IP68 requirements for permanent immersion or underwater installation of metering equipment.

Rather than completing expensive modifications or remodeling the application entirely, facilities engineers can deploy the M2000 meter efficiently without significant downtime or modifications. Common applications include:

- Water consumption
- Chiller/boiler make-up and blowdown
- Sub-metering or cost allocation
- Water or wastewater treatment
- EPA water use/discharge reporting

Whether you're designing a new facility or retrofitting an existing application, electromagnetic flow meters like the M2000 meter can eliminate the need for redesign to meet straight run requirements.

Control. Manage. Optimize.

Trademarks appearing in this document are the property of their respective entities. Due to continuous research, product improvements and enhancements, Badger Meter reserves the right to change product or system specifications without notice, except to the extent an outstanding contractual obligation exists. © 2021 Badger Meter, Inc. All rights reserved.