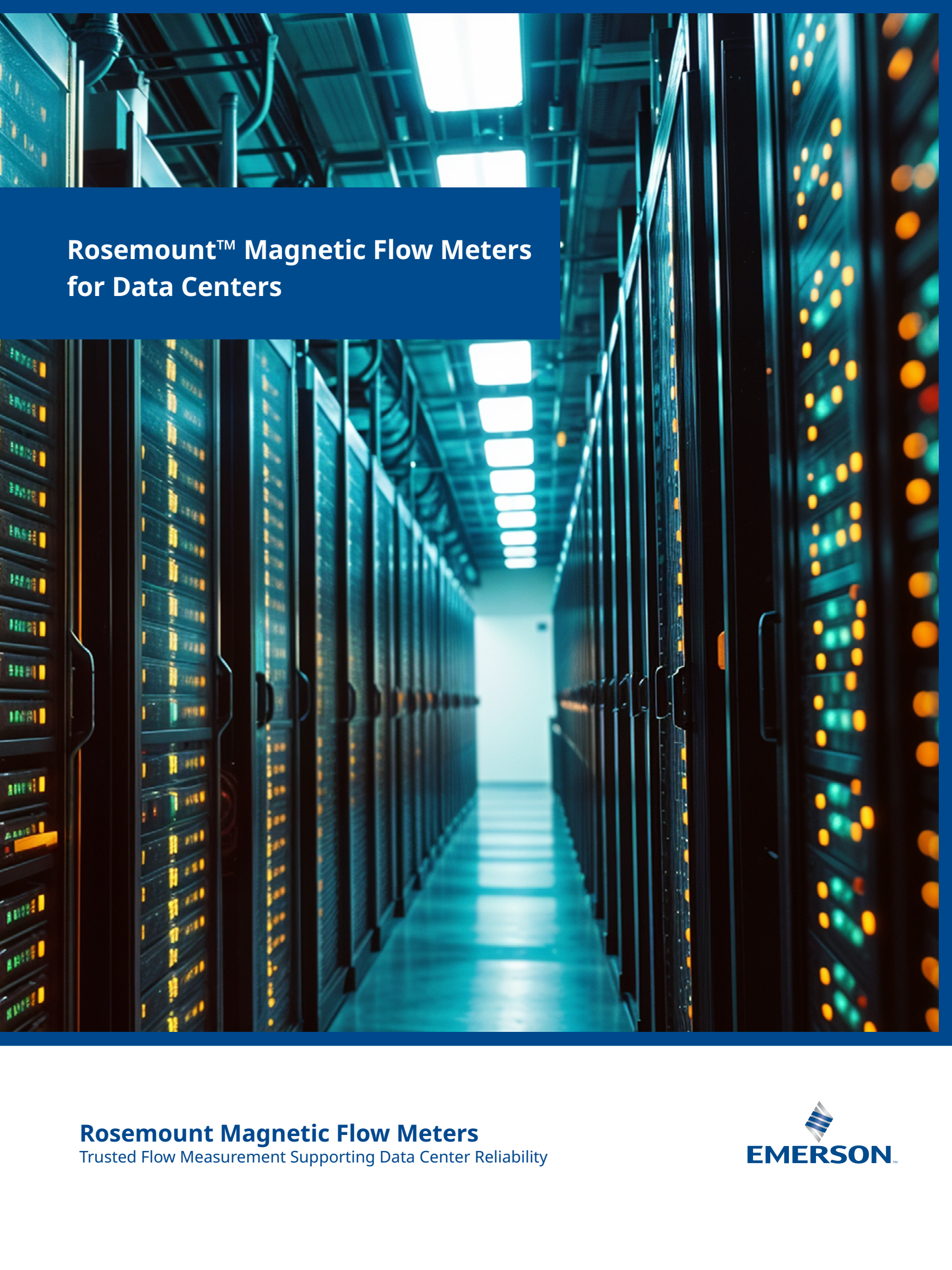




Rosemount™ Magnetic Flow Meters for Data Centers

Rosemount Magnetic Flow Meters

Trusted Flow Measurement Supporting Data Center Reliability



Smarter Flow Measurement for Reliable, Efficient Data Center Operations



Data center teams face constant pressure to protect uptime, efficiency, and control across critical cooling systems. Emerson understands these challenges firsthand, from tight installation windows and complex piping to the real consequences of unreliable measurement. That is why our flow solutions are designed around how data centers operate: helping teams install faster, verify performance, and maintain visibility into system health. When flow issues go unnoticed, risks escalate quickly. Waiting to act can compromise reliability, efficiency, and ultimately uptime.



Grounding Fault diagnostics quickly identify installation issues during commissioning so teams can correct problems before startup, while built-in Smart Meter Verification Basic confirms the meter is operating properly and reduces uncertainty from day one.



With proven production capacity for large data center projects and standard two-week lead times, we simplify ordering through optimized model configurations while still offering flexibility for custom requirements.



High system accuracy of 0.25% +1 mm/s, with an optional 0.15% +1 mm/s, ensures reliable measurement, while strong repeatability and flow stability maintain performance even in short runs where accuracy is often challenged.



Remote monitoring and field-licensable diagnostics enable early issue detection and long-term equipment health tracking, while extended warranties and a leak-minimizing design help protect critical cooling systems.



Major System Integrator Meets Aggressive Hyperscaler Timeline with Rapid-Delivery Rosemount Magnetic Flow



Maintained aggressive project timelines with rapid delivery



Enabled reliable, **high-accuracy measurement** for continuous cooling performance



Simplified installation and reduced commissioning risk while improving operational confidence

Background

A hyperscale data center depends on highly reliable cooling systems to maintain continuous uptime and protect mission-critical IT assets. Cooling water flow measurement is a key control and diagnostic variable, and any measurement failure or downtime can introduce unacceptable operational risk. In this case, the project was also driven by an aggressive construction and commissioning schedule, where instrumentation delivery delays could directly impact time to operation.

Challenge

The system integrator required a flow measurement solution that could be delivered quickly to meet an aggressive project schedule, install easily with minimal commissioning effort, and operate reliably with limited on-site automation expertise. Supply chain predictability and vendor responsiveness were critical, as extended lead times or inconsistent

delivery could jeopardize project timelines and increase costs.

The selected instrumentation needed to significantly exceed performance requirements to ensure long-term accuracy, enable early detection of abnormal conditions, and provide confidence in uninterrupted cooling loop operation. In addition, the system integrator needed a partner with the technical expertise to specify the correct instrumentation and provide long term global support for the customer's current and future data center projects.

Solution

The system integrator selected the Rosemount™ 8705 Magnetic Flow Sensor paired with the Rosemount™ 8712 Magnetic Flow Transmitter for cooling loop flow measurement at the hyperscale data center. Rosemount magnetic flow meters were chosen for their proven reliability, superior accuracy, and ease of installation. The meters were provided as factory configured assemblies, enabling fast,

drop in installation and simplified commissioning.

Emerson's technical experts supported instrument selection to ensure the solution exceeded application requirements and delivered dependable performance in this critical cooling application. Most importantly, Emerson was able to ship the complete, preconfigured solution in two weeks, meeting the project schedule without compromise. The system integrator selected Emerson based on our ability to deliver high-performance flow measurement solutions quickly, reliably, and with the technical expertise required to support aggressive data center timelines. By partnering with Emerson, the integrator delivered a cooling system solution that the hyperscale data center operator can trust to run continuously, identify issues early, and operate without disruption.

Emerson is More than a Vendor. We Are Your Global Partner.

Data center projects demand consistency, scale, and reliability across every phase of the lifecycle. Emerson works alongside data center teams to support design, installation, operation, and long-term maintenance. Our global presence and proven experience help reduce risk, simplify execution, and maintain confidence as systems scale.



Global Production Capability

Emerson operates multiple production facilities worldwide that work together to support high-volume requirements and compressed delivery timelines. Standard offerings are designed to meet common data center needs while maintaining flexibility for site-specific requirements.



Global Support Across the Lifecycle

From early design through installation and ongoing operation, Emerson provides local technical support backed by global product expertise. Standardized configurations simplify ordering and help reduce errors, ensuring teams receive the right instruments when they are needed to support predictable startup and long-term reliability.

Rosemount Magnetic Flow Meter Offering by Communication Protocol

Simplified ordering helps reduce errors while giving data center teams confidence in a vendor built to scale. Emerson’s Rosemount Magnetic Flow Meter portfolio supports a wide range of line sizes and communication protocols, with standard configurations for common applications and factory customization available for more complex requirements.

Rosemount 8705 Magnetic Flow Meter Sensor	
Accuracy	0.25% ± 1 mm/s, Optional 0.15% ± 1 mm/s
Conductivity	5µS/cm
Transmitter Option	Integral with 8732; Remote with 8732 or 8712
Line Size	½" to 36" (15mm to 900mm)
Liner Material	PTFE
Electrodes	Two Measurement Electrodes; 316L stainless steel
Flange Connection	Slip On Raised Face; ASME B16.5 Class 150
Conduit Entries	½-14 NPT
Process Temperature	-58°F to 350°F; -50°C to 177°C
Approvals	Ordinary Location (non-hazardous)

Model	LM	EM	ET	LS	FM	FR	HSG	Optional
8705	T	S	A		C	1	W0	

LS	Line Size
020	2.0" / 50 mm
030	3.0" / 80 mm
040	4.0" / 100 mm
060	6.0" / 150 mm
080	8.0" / 200 mm
100	10.0" / 250 mm
120	12.0" / 300 mm
140	14.0" / 350 mm
160	16.0" / 400 mm
180	18.0" / 450 mm

Optional	
B3	Integrally mounted configuration (remote mounted by default without this option)
D1	High Accuracy Calibration (0.15%)
PD	European Pressure Equipment Directive Certification (PED)
CR	Canadian Registration Number (CRN) Certification
Q4	Calibration Certificate per ISO 10474 3.1B/EN 10204 3.1

Rosemount Magnetic Flow Meter Offering by Communication Protocol

Rosemount 8700 Series Magnetic Flow Meter Transmitter	
User Interface	Local Operator Interface; ProLink III
Conduit Entries	½-14 NPT
Approvals	Ordinary Locations (non-hazardous)
Installation Flexibility	0.1% repeatability at OD if electrodes installed out-of-plane of a single upstream elbow per reference conditions

Model	PS	TO	CE	Optional	
			1	M4	

Model	Transmitter
8732EMT	Integral Field Mount
8732EMR	Remote Field Mount
8712EMR	Remote Wall Mount

PS	Power Supply
1	AC (90 to 250 V AC, 50-60Hz)
2	DC (12 to 42V DC)

TO	Output
A	4-20mA + Pulse
E	Ethernet + Pulse (8732 only)
M	Modbus + Pulse

Optional	
DA2	Smart Meter Verification
C1	Custom Configuration
D1	High Accuracy Calibration (0.15%)
Q4	Calibration Certificate per ISO 10474 3.1B/EN 10204 3.1
AS1	Dual 4-20mA Output with Splitter – External Powered
AS2	Dual 4-20mA Output with Splitter – Loop Powered

Rosemount Magnetic Flow Meter Offering for Data Center Applications

Rosemount 8705 Magnetic Flow Sensor and Rosemount 8732 Magnetic Flow Transmitter



Rosemount 8705 Magnetic Flow Sensor and Rosemount 8712 Magnetic Flow Transmitter



Fast and Painless Installations

Rosemount Magnetic Flow Meters simplify installation and commissioning in demanding data center environments. Factory pre-configuration and the Local Operator Interface (LOI) enable fast setup without special tools, while ProLink software supports efficient transmitter cloning to replicate configurations across multiple devices and streamline commissioning at scale. Suitable for limited straight run piping installations, maintaining measurement confidence even when piping constraints exist.



Grounding Fault Detection Included

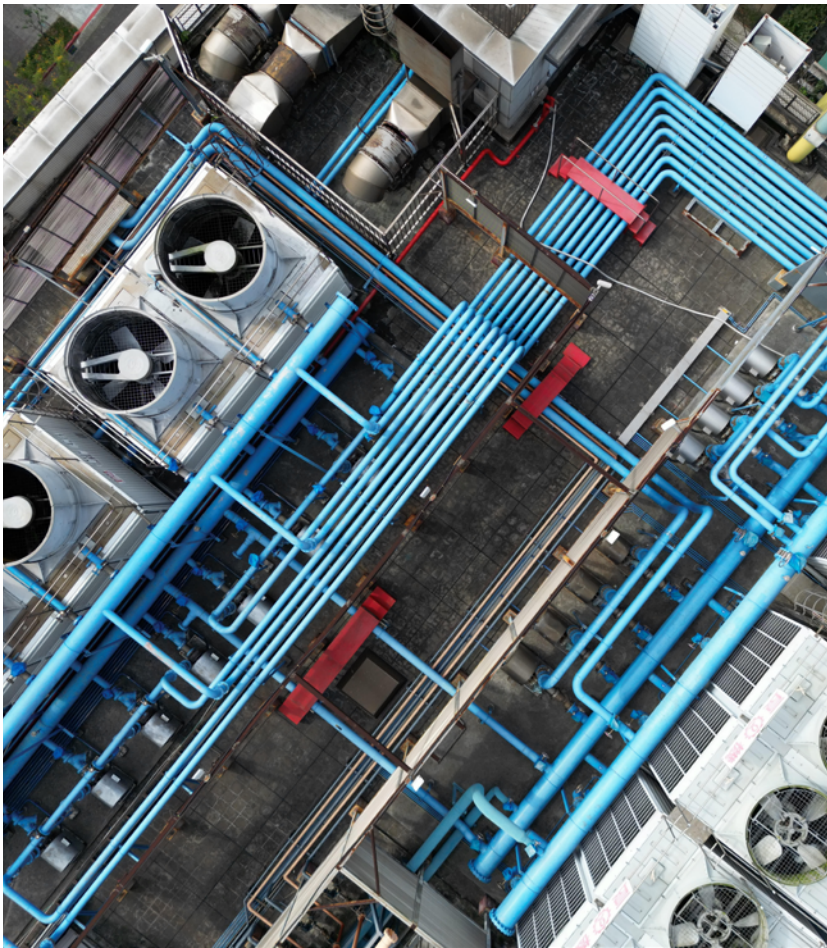
Built-in Grounding Fault Detection alerts installers immediately to any grounding issues during installation. This diagnostic enables teams to identify and correct problems early, helping ensure proper installation and reducing commissioning delays before the system enters operation.



Trimable Cable Options

Flexible cabling options help streamline installation and control costs. Choose pre-cut cable lengths to save time during installation, or select continuous lengths for on-site trimming to reduce material waste across large data center projects.

Flow Technology Designed to Support Continuous Data Center Operations



Smart Meter Verification

- Confirms the flow meter is operating within specification
- Included standard as Smart Meter Verification Basic
- Enables on-demand verification without process interruption
- Supports faster troubleshooting and reduced uncertainty
- Upgradeable to Smart Meter Verification Professional for deeper diagnostics

Coated Electrode Diagnostic

- Detects changes in measurement quality caused by coating or buildup
- Provides early indication of performance degradation over time
- Helps teams address issues before measurement confidence is impacted
- Field-licensable to support flexibility across the equipment lifecycle

Rosemount Magnetic Flow Meters

Data center cooling systems depend on accurate, stable flow measurement to support continuous operation and efficiency. Rosemount magnetic flow meters are widely used across critical water and water-glycol applications, trusted for their reliability, diagnostic capabilities, and performance in demanding installations. Built-in verification and condition-based diagnostics help teams maintain visibility into measurement quality, identify developing issues early, and act before flow problems impact system reliability or uptime.

Maintain critical cooling flow with accurate, low-maintenance magnetic flow measurement.



Fast Delivery. Simplified Procurement. One Trusted Partner

Emerson's short lead times, modular install options, and complete instrumentation portfolio simplify procurement into a single order – accelerating startup, enabling phased commissioning, and streamlining specification approval. **Expedited delivery is available to meet your accelerated schedule and keep your project execution on track.**

[Emerson.com/DataCenterMeasurement](https://emerson.com/DataCenterMeasurement)

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