SIEMENS

Simple, flexible solutions - for more than 30 years.

SITRANS F M - modularity for every application.

Process Instrumentation

siemens.com/flow

Siemens is your partner for integrating business processes across all levels and helping you create your competitive advantage. Choosing the right flowmeter for the right application dramatically improves your operations...and your bottom line.

Combine and optimize your solution with SITRANS F M flowmeters.

The SITRANS F M flowmeter program makes it easier for you to manage flow. From installation to overseeing operations and verifying continuous accuracy, customers rely on SITRANS F M to improve the entire value chain of activities.

SITRANS F M brings you:
- The highest quality and most advanced technology
- User-friendly products and services
- Superior worldwide service and support
- Low maintenance costs and reduced downtime costs

With SITRANS F M you get industry-specific solutions for:
- Water, wastewater and irrigation
- Chemical
- Food and beverage
- Pharmaceutical
- Mining, aggregates and cement
- Pulp and paper
- District cooling, power and utilities

Greater flexibility
- Wide product program
- Compact or remote installation using the same transmitter and sensor
- USM II communication platform for easy integration with all systems

Easier commissioning
- SENSORPROM enables instant measurement from the start of power-up
- User-configured settings automatically stored in the SENSORPROM

Simplified operation and maintenance
- No moving parts
- Robust construction and materials
- Uniform user interface for all SITRANS F M products
- No programming required for transmitter replacement. SENSORPROM automatically updates all settings after initialization

Room for growth
- Plug and Play communication modules are available in a wide range of bus protocols
- Add-on components allow for future upgrades without investing in a new flowmeter

Comprehensive diagnostics
- Error logs in clear text
- Error categories: function, warning, permanent and fatal errors
- Transmitter self-check including outputs
- Sensor check
- Empty pipe; partial filling; low conductivity; electrode fouling
- System verification with SITRANS F M Verificator and Soft Verificator

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One platform. Infinite solutions

Pulsed DC electromagnetic flowmeters

MAG 6000 I

MAG 5000

MAG 6000

Wall mounting unit

MAG 6000 I
(Ex de)

MAG 6000
Ex safety barrier

MAG 5000 / 6000 19”
Panel mount

MAG 3100
MAG 3100 HT

MAG 3100 P

MAG 5100 W

Communication modules:
- HART
- Profibus PA
- Profibus DP
- Modbus RTU / RS485
- DeviceNet
- Foundation Fieldbus

MAG 1100 F

MAG 1100
MAG 1100 HT

High-powered AC electromagnetic flowmeter

TRANSMAG 2
The patented pulsed AC electromagnetic flowmeter: an ideal solution for mining, cement, and pulp & paper.

Battery-operated water meter

MAG 8000
Battery-powered electromagnetic water meters for water distribution, revenue and irrigation.

The Siemens philosophy of modular design makes it easy to buy the electromagnetic flow-meter solutions and services you need.

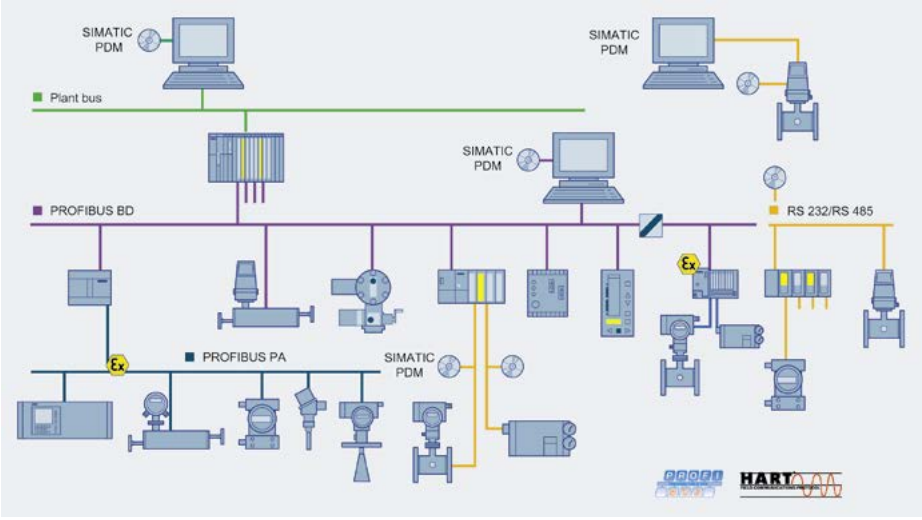
Optimize your production with TIA

Totally Integrated Automation, industrial automation from Siemens, makes engineering efficient. The open system architecture covers the entire production process and offers maximum interoperability across all automation components. This is made possible by consistent data management, global standards, and uniform interfaces for hardware and software. These shared characteristics minimize engineering time. The result: lower costs, reduced time to market, and greater flexibility.

TIA creates the ideal conditions to exploit all potentials for optimization across the entire production process:

- Time and cost savings due to efficient engineering
- Minimized downtime due to integrated diagnostic functions
- Higher flexibility in production due to integrated communication
- Protection of personnel, machinery and the environment with seamlessly integrated safety technology
- Improved quality due to data consistency
- Better performance due to interoperability of system-tested components

Control level / Field level



SIMATIC PDM allows a wide variety of process devices to be configured using one software system and one uniform graphical user interface.

Transmitter program: What is right for you?

MAG 5000 and MAG 6000
These transmitters are specially designed to offer high performance, easy operation and reduced maintenance. MAG 5000 is a truly robust, all-around solution for a wide variety of applications. MAG 6000 is for more demanding applications where higher accuracy and greater functionality are required.

MAG 6000 I
This transmitter is designed for special demands within the process industries. The robust, full metal housing provides superb protection in the harshest industrial environments. Full input and output functionality is offered even in the ATEX EEx d and FM Class 1 Div 1 version.

Guaranteed performance

- Compact or remote installation
- Superior signal resolution for optimal turndown ratio
- Digital Signal Processing with unlimited possibilities
- User-configurable operation menu with password protection
- Multiple functional outputs for process control
- Self-diagnostics for error detection and logging
- Batch control
- Multilingual display
- Custody transfer approved
- Add-on bus communication modules

Transmitter	MAG 5000 / MAG 5000 CT	MAG 6000 / MAG 6000 CT	MAG 6000 I	MAG 6000 I (Ex de)
Enclosure	IP67 / NEMA 4X/6 or IP20/66 / NEMA 2/4X Polyamide		IP67 / NEMA 4X die-cast aluminium	
Accuracy	±0.4% ± 1mm	±0.2 ± 1mm/s	±0.2 ± 1mm/s	±0.2 ± 1mm/s
Display	3-line alpha numeric LCD with backlight			
Inputs & outputs	1 digital input, 1 current output, 1 pulse/frequency output, 1 relay output			
Communication	HART	HART, Profibus PA/DP, DeviceNet, Modbus RTU, Foundation Fieldbus		HART, Profibus PA, Foundation Fieldbus
Batch function	No	Yes	Yes	Yes
Power supply	12–24 V AC/DC / 115–230 V AC		18–90 V DC / 115–230 AC	18–30 V DC / 115–230 V AC
Approvals	FM/CSA Class 1, Div 2		FM/CSA Class 1, Div 2	ATEX II 2GD, FM Class 1, Zone 1 FM Class 1, Div 1
Custody transfer approvals	Cold water pattern approval - MI-001, Heat meter pattern approval - OIML R 75. Hot water pattern approval - PTB. Media other than water - OIML R 117			

Sensor program:
Sensible - Flexible - Reliable

MAG 1100
The flangeless wafer design meets all flange standards. The MAG 1100 can be used in all industries since the corrosion-resistant stainless steel housing and the highly resistant liner and electrodes fit even the most extreme process media.

MAG 1100 F
Especially designed for the food & beverage and pharmaceutical industries, the MAG 1100 F offers unique and flexible process connections. It meets all sanitary requirements and is 3A and EHEDG certified. Its performance is unaffected by suspended solids and changes in viscosity or temperature.

MAG 5100 W
A sensor for all water and wastewater applications, the increased low-flow accuracy of the MAG 5100 W makes it especially useful for leak detection. It is suitable for direct burial and constant flooding and also complies with drinking water and custody transfer approvals.

MAG 3100 P
The MAG 3100 P for the process and chemical industries is offered in the most common combinations with PFA/PTFE liners and Hastelloy electrodes. It is specially designed to withstand harsh environments characterized by strong chemicals or high temperatures and pressures.

MAG 3100
This flexible and comprehensive sensor program offers a wide range of sizes. Liners and measuring electrodes capable of withstanding the most extreme processes are available. Fully welded construction provides a ruggedness that stands up to the toughest operating conditions.

Sensor	MAG 1100	MAG 1100 F	MAG 3100	MAG 3100 P	MAG 5100 W
Size DN	2–100 mm / 1/12"–4"	10–100 mm / ⅜"–4"	15–2000 mm / ½"–78"	15-300 mm / ½"–12"	15–2000 mm / ½"–78"
Process temperature	-20–200 °C / 4–390 °F	-30–150 °C / -20–300 °F	-40–180 °C / -4–356 °F	-20 – 150 °C / -4–300 °F	-10–70 °C / 14–158 °F
Pressure rating	PN 40 / Max 580 psi		PN 100 / Max 1450 psi* / ANSI 150 & 300 / AWWA D / AS 2129 / AS 4087 / JIS K10& K20	PN 40 / Max 580 psi / ANSI 150	PN 10 & 16 / ANSI 150 / AWWA D / AS 4087 / JIS 10K
Liner material	Ceramic PFA		Soft Rubber, EPDM, Ebonite, LINATEX, PTFE, PFA	PTFE PFA	NBR Hard Rubber, EPDM, Ebonite Hard Rubber
Electrode material	Platinum Hastelloy C		AISI 316 Ti, Hastelloy C, Titanium, Tantalum, Platinum	Hastelloy C	Hastelloy C
Approvals	ATEX II 2GD FM Class 1, Div 2	ATEX II 2GD, FM Class 1, Div 2, 3A, EHEDG, FDA	ATEX II 2GD, FM/CSA Class 1, Div 2 FM Class 1, Zone 1 FM Class 1, Div 1		Drinking water WRAS, NSF/ANSI Standard 61, DVGW, Belgaqua, ACS, FM / CSA Class 1 Div 2
Custody transfer approvals	Cold water pattern approval - PTB. Heat meter pattern approval - OIML R 75. Hot water pattern approval - PTB. Media other than water - OIML R 117	Cold water pattern approval - PTB. Hot water pattern approval - PTB. Media other than water - OIML R 117	Cold water pattern approval - DANAK TS 22.36.001, PTB. Heat meter pattern approval - OIML R 75. Hot water pattern approval - PTB. Media other than water - OIML R 117	Cold water pattern approval - DANAK TS 22.36.001, PTB. Heat meter pattern approval - OIML R 75. Hot water pattern approval - PTB. Media other than water - OIML R 117	Cold water pattern approval - MI-001, OIML R 49

* For ebonite liner only

Water and wastewater industry: SITRANS F M for water processes

The MAG 5000 transmitter and MAG 5100 W sensor are the perfect match for a cost-effective solution for all water and wastewater applications.

- Lack of moving parts ensures long-term performance
- NBR and Ebonite hard rubber liners guarantee consistent accuracy
- Highly resistant to a wide range of chemicals used in treatment plants
- Increased low-flow measurement for leak detection
- Sensor suitable for burial and constant flooding
- Drinking water approvals
- Complies with most international standards and approvals
- Built-in ground electrodes eliminate the need for grounding straps on steel pipes and grounding rings on plastic pipes

Process optimization
The MAG 6000 with add-on communication platform makes it easy to integrate SITRANS F M into your applications, thus ensuring a fully integrated solution throughout the entire plant.

Realize the full benefits of automation

- Optimize management and process control
- Ensure correct dosing and product quality
- Minimize process time and consumption of high-cost chemicals

The Siemens product range provides sensors from 2 mm up to 2000 mm (from 1/12" to 78")

SITRANS F M for the water and wastewater industry		
MAG 6000	**MAG 1100**	**MAG 3100**
For higher accuracy and bus communication	With pipe threads for chemical dosing to optimize the treatment process	Applications in hazardous areas

GSM/GPRS-Communication Module
The wireless communication module is available as a built-in module for both the MAG 8000 and MAG 8000 CT flow transmitters. It allows for continual monitoring of water applications, even when on-the-go.

Battery-driven water meter for installation virtually anywhere

SITRANS F M MAG 8000 water meter
MAG 8000 is an affordable battery-driven solution that gives you the flexibility to install a reliable water meter virtually anywhere without sacrificing accuracy or performance. No mains power is required.

MAG 8000 delivers best-in-class performance to optimize water supply. It is engineered for superior leakage detection and for billing.

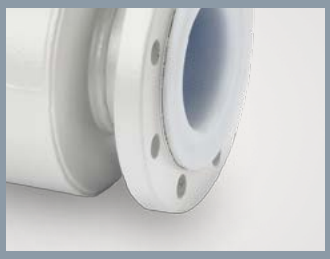
Intelligent, battery-driven operation
With a combination of high-efficiency technology and advanced power management, MAG 8000 can be trusted to deliver long-lasting, dependable operation for 6-10 years in a typical revenue application.

Outstanding performance

- Easy to install
- Minimum maintenance
- Superior measurement
- Intelligent information
- Open communication platform
- Minimum cost of ownership

Qalification Certificate
The SIMATIC PDM tool enables testing and verification of the flowmeter in the field. The resultant printed "Qualification Certificate" specifies all data defining the quality status of the measurement.

Sensor	MAG 8000 Standard	MAG 8000 CT	MAG 8000 Irrigation
Transmitter type	Basic version for general purpose. Advanced version for additional information and functionality		Basic version for general purpose
Application	Abstraction and distribution networks	Billing	Irrigation
Custody transfer version	Type approved and verified according to OIML R 49 MMA / MI-001		NMI 10
Sensor size DN	15-1200 mm / ½"–48" with EPDM liner	50-600 mm / 2"–24" with EPDM liner	50-600 mm / 2"-24" with Ebonite liner
Enclosure	IP68 / NEMA 6P, compact and remote with connectors and factory-mounted cable		
Display	Graphical display with touch keypad		
Output	2 individual pulse outputs (including net flow volume)		
Communication	Integrated standard IrDA interface, GSM/GPRS communication module, RS 232 / RS 485 with MODBUS RTU protocol, encoder interface module (output) with sensus protocol		
Power supply	Internal or external battery pack. 12-24 V AC / DC and 115-230 V AC with battery backup		
Features	Data logger with selectable log interval up to 26 months. Advanced version only: Leakage detection, flow statistics and consumption profile, advanced diagnostics and self-check		



Siemens brings you customizable flow solutions for every chemical application.

Chemical industry: Designed to meet unique demands

As rapid globalization leads to ever-increasing competition, chemical companies are forced to develop products faster and at lower costs. Siemens understands the unique combination of challenges you face. By making us your trusted partner in process instrumentation, you can improve the time- and cost-efficiency of your chemical production processes and remain in compliance with the strict standards necessary to protect the environment and your health.

Putting our deep knowledge of the chemical industry into practice, Siemens has designed the SITRANS F M MAG 3100 electromagnetic flowmeter for exceptional performance despite the high operating pressures and harsh ambient conditions often found in chemical applications.

The MAG 3100 can be customized with a wide selection of liners and electrode materials and is available with a variety of international approvals for hazardous areas.

Industry-optimized liners
Siemens offers PTFE liners for temperatures up to 180 °C (356 °F) and PFA liners designed with stainless steel tube reinforcement to withstand vacuum conditions as well as temperatures up to 150 °C (266 °F). Other liner options include ceramic, EPDM, Linatex, and hard or soft rubber.

SITRANS F M for the chemical industry

MAG 6000 I (Ex de)	**MAG 5000 / 6000**	**MAG 3100 P**	**MAG 3100**	**MAG 3100 HT**	**MAG 1100**
Intrinsically safe keypad and display along with ATEX and FM approvals for use in hazardous areas. Full NAMUR compliance.	Cost-effective and low-maintenance transmitter options offering high accuracy from ±0.2-0.4%.	Pre-configured for the majority of chemical applications, resulting in easy ordering and short lead times.	Flexible program to meet the requirements of almost any chemical process, even in harsh environments and high-pressure applications.	Robust design for reliable flow measurement at temperatures up to 180 °C (356 °F).	For high-quality measurement on pipe sizes as low as DN 2 (1/12 in). Stainless steel enclosure.

Choice of grounding electrodes
A variety of grounding electrodes constructed in Hastelloy C, tantalum or platinum can be provided with PFA and PTFE liners to save money and ensure a consistently stable measurement signal.

Flexible communication
The MAG 3100 takes flexibility one step further with reliable communication options such as Profibus PA/DP, HART, Modbus RTU, DeviceNet and Foundation Fieldbus. Bus communication can even be used simultaneously with analog/pulse outputs.

Sophisticated self-diagnostics
A comprehensive and easily readable menu of diagnostic functions (including self-check, error notifications and status logs) provides you with ongoing insight into the meter's performance.

Comprehensive certifications
As chemical applications often require material traceability and evidence of pressure resistance, the MAG 3100 is supplied with a material certificate for all pressurized and wetted parts and a pressure test certificate for metal work.

Built for the toughest applications

- Fully welded construction for maximum ruggedness
- Remote or compact transmitter installation
- Intrinsically safe rated input and output
- ATEX, FM/CSA and IEC approvals
- MAG 6000 I fully NAMUR compliant: NE21, NE32, NE43, NE53 and NE70
- Actual flow and totalizers (forward, reverse and net totals)
- All sensors can be paired with MAG 5000, 6000 or 6000 I transmitter to fit every application

Siemens offers a full portfolio of process instrumentation, systems and services for the chemical industry. To learn more, visit www.siemens.com/chemicals

The pre-configured SITRANS F M MAG 3100 P is designed for high-performance flow measurement in even the most difficult chemical applications, including those characterized by high temperatures and pressures, abrasive materials, fluctuating media conditions and strict safety requirements.

Pharmaceutical industry: For accuracy, sterility and confidence

With money-saving solutions that meet the highest standards of accuracy and hygienic design, Siemens helps customers in the pharmaceutical industry reduce the cost of high-purity flow measurements.

MAG 1100 F / MAG 1100
MAG 1100 F and MAG 1100 are ideally suited for pharmaceutical applications. Their obstruction-free performance minimizes the risk of deposits, and they are unaffected by the suspended solids, high viscosities and high temperatures typically found in pharmaceutical processes.

Hazardous areas
For installations in hazardous areas, the MAG 1100 F and MAG 1100 are available with FM and ATEX approvals in remote or compact design.

Additional benefits include

- Suitable for CIP and SIP cleaning
- High levels of chemical resistance
- Resistance to high temperatures and temperature shock
- Sanitary connections or AISI 316 flangeless wafer design
- High-confidence validation and accuracy in batch processing applications
- Custody transfer approvals available
- Meets FDA, 3A and EHEDG requirements
- User-friendly touch keypad and multilingual display

MAG 1100 F with stainless steel reinforced PFA liner ensures long-term stability and mechanical strength.

SITRANS F M for the pharmaceutical and food & beverage industries

MAG 6000 I (Ex de)
The robust aluminum enclosure provides optimum protection in hazardous areas.

MAG 5000 / 6000
For high performance, easy operation and reduced maintenance.

MAG 1100 F
Especially for the pharmaceutical industry, with sanitary process connections and high-temperature design.

MAG 1100
With pipe threads for chemical dosing to optimize the treatment process.

Food and beverage industry: A higher standard of precision and purity

Siemens offers the food and beverage industry a competitive edge with flow solutions that more efficiently manage flow processes.

Our flowmeters are designed to meet the challenges in the tough environment of the food and beverage industry where extreme temperature changes, humidity, condensation, hose-down and CIP cleaning are ever present.

The sanitary solution
MAG 1100 F is specially designed for the food and beverage industry. It meets all sanitary requirements and is 3A and EHEDG certified. MAG 1100 F's obstruction-free performance is unaffected by the suspended solids, viscosity, and temperature challenges typically found in food and beverage processes.

Your guarantee for hygienic food safety
- AISI 316 stainless steel enclosure
- EHEDG, 3A approvals and FDA conformity
- Suitable for CIP and SIP cleaning
- IP67 / NEMA 4X rating
- Delivered with your specified connection; with its metal-to-metal design, no grounding connection is required
- Direct access to covered keypad and display
- OIML R117 custody transfer / pattern approval

Process connections
With the unique and flexible adaptor concept, one flowmeter fits nearly every process connection. Adaptors are offered for clamp connection, threaded connection or weld-in type connection for direct welding into the process piping.

Maximum protection
There is a solution for every abrasive media application, but the choice of material is crucial to protect the flowmeter. Besides inlet protection rings, Siemens offers a wide range of liner and electrode materials. For applications involving abrasive media, Siemens recommends the LINATEX rubber liner. For applications with challenging process conditions, such as chemical media combined with high pressures and temperatures, the NOVOLAK liner is a highly resistant and cost-effective alternative.

Pulp & paper and mining industries:

Pulp & paper industry

SITRANS F M flowmeters offer exceptional value for pulp and paper applications. They are well-suited for any flow installation, even those with high solids content, and are ready to take on your most difficult challenges.

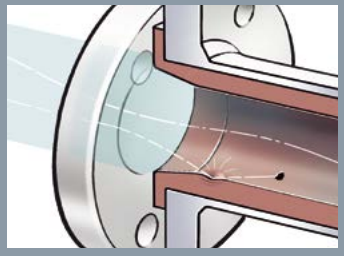
Paper stock
The high-energy magnetic field generated with pulsed AC technology provides a powerful signal ideal for measuring high concentrations of paper stock greater than 3 %.

Mining industry

Rugged in design and unaffected by electrode noise, disturbances or vibration, Siemens electromagnetic flowmeters for the mining industry can be installed easily and virtually anywhere. All models produce accurate and repeatable results for improved performance.

Slurries
SITRANS F M meters produce powerful signals ideal for measuring high concentrations of slurries as a result of the high-energy magnetic field generated with pulsed AC technology.

Magnetic particles
Magnetic particles in the media will boost the magnetic field in an electromagnetic meter, often leading to misreadings. To overcome this, the TRANSMAG 2 is designed with a second compensating coil circuit.



LINATEX protection
Minerals or particles bounce off the soft rubber liner instead of wearing it down.

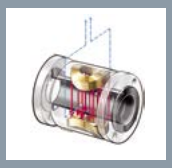
SITRANS F M for the pulp & paper and mining industries

TRANSMAG 2
The robust aluminum enclosure provides optimum protection in hazardous areas.

MAG 3100 / 6000 I
An alternative option when the media includes chemicals.

MAG 5000 / 6000
Robust solutions for compact or remote installations.

MAG 1100
The wafer-designed sensor fits even the most extreme process media.



Strong magnetic field
TRANSMAG 2 flowmeter generates a strong magnetic field, a high excitation frequency, and a stable zero point. Providing an accurate, repeatable, fast-responding and stable flow signal.

Compensation coil
The TRANSMAG 2 offers, besides a very strong magnetic field, a second coil circuit to compensate for fluctuations in the magnetic field, caused by fluctuations in the main power supply or magnetic particles in the media.

Heavy-duty solutions for tough applications

TRANSMAG 2 AC flowmeter. A Siemens exclusive.

Thanks to its pulsed alternating field system, the TRANSMAG 2 is capable of measuring where conventional DC field technology cannot, including such applications as:

- Highly concentrated pulp stock
- Heavy mining slurries
- Mining slurries with magnetic particles

The AC technology generates a much stronger magnetic field within the sensor compared to DC technology. This is why it measures more reliably and with greater precision – even when the media has a high concentration of solids.

Thanks to its patented signal integration, the TRANSMAG 2 provides only the true flow measurement by removing unwanted electrode noise from the sensor's signal. The pulsed AC technology makes it possible to have a stable zero-point, resulting in measurements that are consistently accurate and reliable.

What else does the TRANSMAG 2 offer?

- Eliminates problems related to zero-point stability
- No movable parts that can wear and degrade measurement accuracy
- Electrode noise-resistant
- Heavy-duty industrial enclosure
- A wide choice of liner materials for different applications
- Automatic recognition of sensor type and calibration data as a result of SmartPLUG

Transmitter	TRANSMAG 2
Measuring principle	Pulsed alternating field AC
Enclosure	IP67 / NEMA 4X
Max. measuring error	0.5 % ± 1.2 mm/s
Display	2-line alpha numeric LCD with backlight
Inputs and outputs	1 analog, 1 digital-, 1 relay output (or 1 digital input)
Communication	HART, Profibus PA
Power supply	100–230 V AC

Measurement parameters and "fingerprint" data are stored in the SENSORPROM memory throughout the calibration process:

- Sensor information and identification
- Calibration parameters
- "Fingerprint" parameters
- Default flowmeter settings

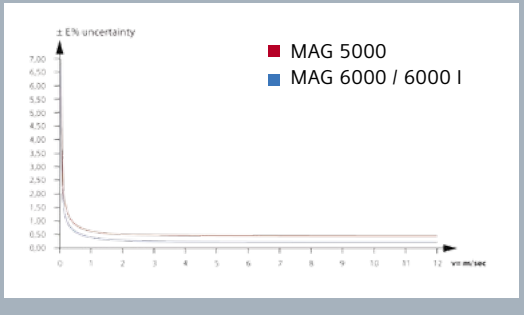
Continuous accuracy. Verifiable confidence.

Calibration and traceability
To ensure continuously accurate measurement, all flowmeters from Siemens are verified and wet-calibrated before leaving the factory. The primary measuring instrumentation used in the calibration process is itself calibrated regularly by a nationally accredited laboratory, which provides a chain of measurement traceability to national and international standards, including NIST.

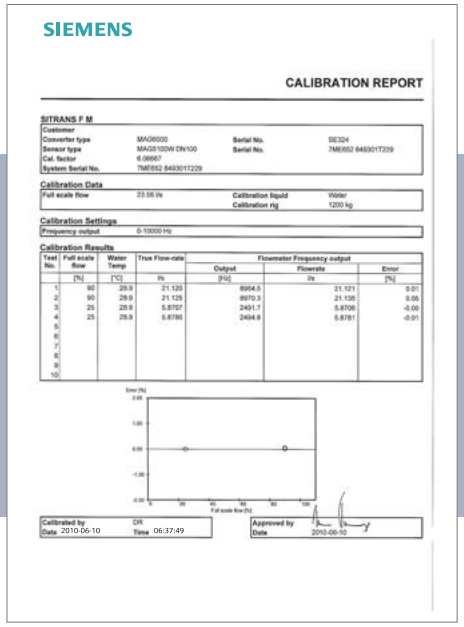
Siemens flow laboratories have been accredited to ISO17025. The calibration process is ISO9001 certified, which ensures high quality management of and control over the procedure.

- A calibration certificate is shipped with every Siemens sensor
- High-accuracy rigs with better than 0.1% calibration uncertainty
- Documentation for ISO 9001 and ISO 14001 management system

MAG 5000 / MAG 6000 / MAG 6000 I accuracy



Meter performance
Accuracy better
than ± 0.4 % ± 1 mm /
± 0.2 ± 1 mm/s
above 0.1 m/s / 0.33ft/s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CALIBRATION REPORT

SITRANS F M

Customer
Converter type MAG6000 Serial No. SE324
Sensor type MAG5100W DN100 Serial No. 7ME652 8493017229
Cal. factor 0.06667
System Serial No. 7ME652 8493017229

Calibration Data
Full scale flow 23.56 l/s Calibration liquid Water
Calibration rig 1200 kg

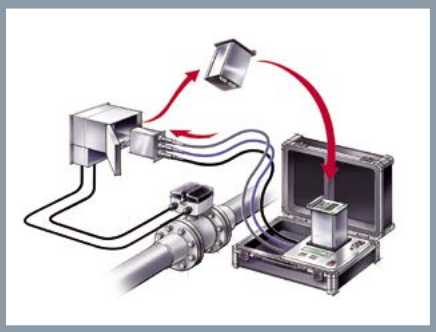
Calibration Settings
Frequency output 0-10000 Hz

Calibration Results

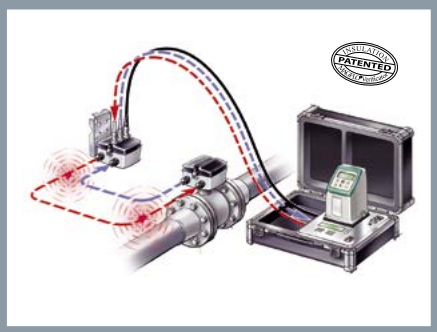
Test No.	Full scale flow [%]	Water Temp [°C]	True Flow-rate l/s	Flowmeter Frequency output Output l/s	Flowrate l/s	Error [%]
1	90	28.9	21.120	8904.0	21.121	0.01
2	90	28.9	21.125	8870.3	21.135	0.05
3	25	28.9	5.8707	2481.7	5.8706	-0.00
4	25	28.9	5.8788	2494.8	5.8781	-0.01
5						
6						
7						
8						
9						
10						

Calibrated by Date 2010-06-10 Time 06:37:49
Approved by Date 2010-06-10

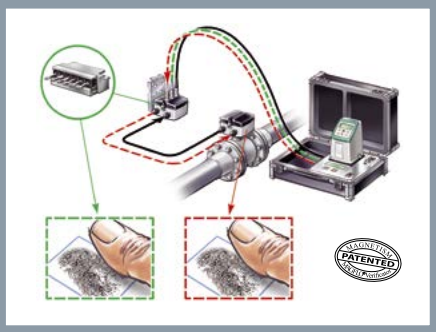
ISO 17025 ISO 14001 ISO 9001 DANAK CNAS cofrac ESSAIS PTB CE NIST



1. Transmitter test



2. Flowmeter insulation test



3. Sensor magnetism test

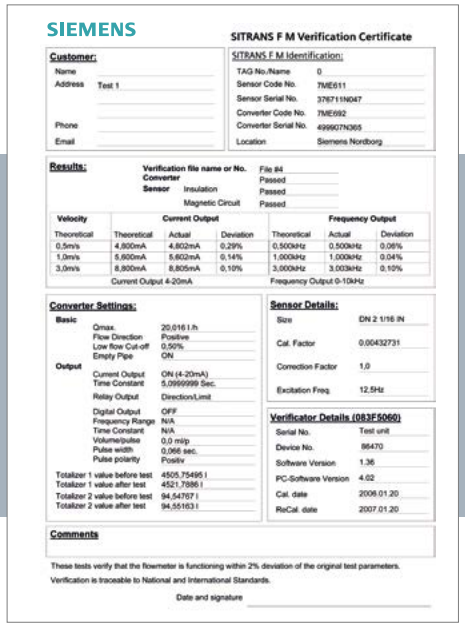
In-situ verification: Three simple steps

Through in-depth analysis, Siemens has identified the real-world parameters that influence the accuracy of flowmeter operation. Our unique, patented verification technique for SITRANS F M MAG 5000 and 6000 flowmeters checks these parameters in less than 20 minutes. The verificator provides the confidence you need in your flow measurements.

- In-situ performance check without interrupting the flowmeter installation
- No removal or installation expenses
- Saves money and resources through more accurate dosing
- Verifies new or existing installations
- Fully automated with predefined factory acceptance levels - no manual setup or data input required

A verification consists of the following steps:

1. Transmitter test
   Flow simulation test that checks the whole electronic system
2. Flowmeter insulation test
   Ensures that the sensor flow signal is not affected by external influences
3. Sensor magnetism test
   Ensures that the magnetism behavior remains unchanged



SIEMENS

SITRANS F M Verification Certificate

Customer:

Name
Address Test 1
Phone
Email

SITRANS F M Identification:

TAG No./Name	0
Sensor Code No.	7ME611
Sensor Serial No.	3767119/047
Converter Code No.	7ME692
Converter Serial No.	499907N365
Location	Siemens Nordborg

Results:

Verification file name or No. File #4
Converter Passed
Sensor Insulation Passed
Magnetic Circuit Passed

Velocity	Current Output			Frequency Output		
Theoretical	Theoretical	Actual	Deviation	Theoretical	Actual	Deviation
0,5m/s	4,800mA	4,802mA	0,29%	0,500kHz	0,500kHz	0,06%
1,0m/s	5,600mA	5,602mA	0,14%	1,000kHz	1,000kHz	0,04%
3,0m/s	8,800mA	8,805mA	0,10%	3,000kHz	3,003kHz	0,10%

Current Output 4-20mA — Frequency Output 0-10kHz

Converter Settings:

Basic
Qmax. 20,016 l/h
Flow Direction Positive
Low flow Cut-off 0,50%
Empty Pipe ON

Output
Current Output ON (4-20mA)
Time Constant 5,0999999 Sec.
Relay Output Direction/Limit
Digital Output OFF
Frequency Range N/A
Time Constant N/A
Volume/pulse 0,0 m³/p
Pulse width 0,066 sec.
Pulse polarity Positiv

Totalizer 1 value before test 4505,75495 l
Totalizer 1 value after test 4521,7886 l
Totalizer 2 value before test 94,54767 l
Totalizer 2 value after test 94,55163 l

Sensor Details:

Size	DN 2 1/16 IN
Cal. Factor	0,00432731
Correction Factor	1,0
Excitation Freq.	12,5Hz

Verificator Details (083F5060)

Serial No.	Test unit
Device No.	86470
Software Version	1.36
PC-Software Version	4.02
Cal. date	2006.01.20
ReCal. date	2007.01.20

Comments

These tests verify that the flowmeter is functioning within 2% deviation of the original test parameters.
Verification is traceable to National and International Standards.

Date and signature

Full verification report to confirm meter performance according to quality standards ISO 9001 and management standard ISO 14001 – as handover approval from contractor to end user.

Siemens Sensor Systems has the vision and experience to cater to every industrial need. Let us provide you with the insight and innovative solutions to sharpen your competitive edge.

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Future-proof product range - Continual innovation and technological leadership ensure future-proof automation and instrumentation systems.

Flexibility - Our breadth of technologies means we are always able to offer an optimal combination of sensor and transmitter, for any application in virtually any industry.

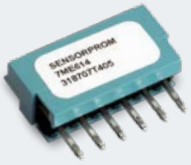
Accuracy - We test and calibrate all flowmeters in our certified laboratories. Siemens instrumentation always meets or exceeds international OIML standards, ensuring long-term accuracy and traceability.

The best flowmeter for the job

Siemens has SITRANS F M flowmeter solutions to suit every task. Our overview makes it easy to select the right product for your application.

			Examples	Parameter	Technology: SITRANS F M						
					MAG 3100	MAG 3100 P	MAG 5100 W	MAG 1100	MAG 1100 F	TRANSMAG 2	MAG 8000
Fluids	Conductive	Low viscosity < 100 cSt	Water (warm/cold) Wastewater Acids Beverage Soft drinks Fruit juices	Volume flow	✓	✓	✓	✓	✓	✓	✓
				High accuracy	✓	✓	✓	✓	✓		✓
				High temperature	✓	✓	✓	✓			
				High pressure	✓						
				Hygienic					✓		
				Large diameter	✓		✓			✓	✓
				Battery							✓
				Custody transfer	✓		✓		✓		✓
		High viscosity > 100 cSt	Food: Yogurt Dressings	Volume flow	✓	✓	✓	✓	✓		
				High accuracy	✓	✓	✓	✓	✓		
				High temperature	✓	✓		✓			
				High pressure	✓						
			Sludge: Pulp & paper Mining slurry	Hygienic					✓		
				Large diameter	✓						
				Custody transfer	✓			✓	✓		

Unique features



Communication	SENSORPROM	Touchpad	In-situ verification
Communication modules make flowmeter networking installation and configuration easy. Compatible with virtually every communication standard.	During the calibration process, measurement parameters and "fingerprint" data are stored in the SENSORPROM memory: • Sensor information and identification • Calibration parameters • Fingerprint parameters • Default flowmeter settings	Touch response keypad with LED light feedback for safe and easy operation.	The SITRANS F M verificator guarantees continuous accurate measurement. • Correct revenue metering • Confidence in process and product quality • Assurance of proper installation • ISO 9001 and ISO 14001

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