

Which cost efficient flowmeters are both reliable and tailored to your needs?

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SITRANS FM electromagnetic flowmeters offer accuracy, innovation and millions of product options for a fully integrated solution.

Answers for industry.

SIEMENS



Combine and optimize your solution...

Siemens is your partner 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.

SITRANS F M flowmeter program will help you do an easier job of managing flow. Whether it is installation, managing operations or verifying continuous accuracy, customers rely on SITRANS F M to improve the entire value chain of activities.

Siemens can provide the best electromagnetic flowmeter options available.

With Siemens flowmeters you get:

- The best value for the money
- 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 solutions for:

- Irrigation, Water & Wastewater
- Chemical
- Food & Beverage
- Pharmaceutical
- Mining/Aggregates/Cement
- Pulp & Paper
- District Cooling, Power & Utilities



...with the dedicated SITRANS F M program

Greater flexibility

- Wide product program
- Compact or remote installation using the same transmitter/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

Easier operation and maintenance

- No moving parts
- Robust construction and materials
- Uniform user interface for all SITRANS F M products

Easier service

- Transmitter replacement requires no programming. 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 communication modules allow future upgrades without investing in a new flowmeter

Diagnostics: Application and metering

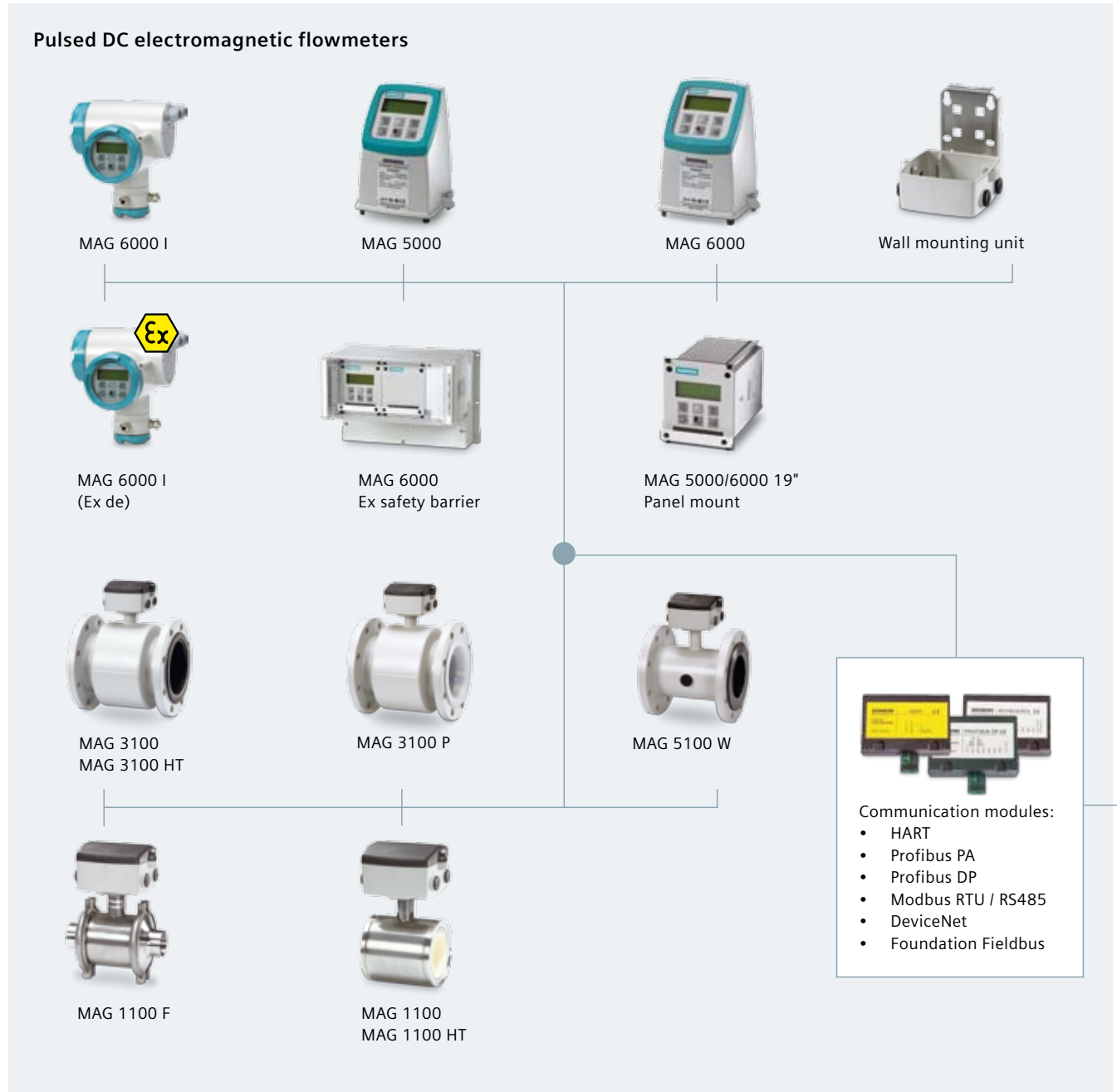

- Identification in clear text and error-log
- Error categories: function; warning; permanent and fatal errors
- Transmitter self-check including outputs
- Sensor check
- Overflow
- Empty pipe; partial filling; low conductivity; electrode fouling
- System verification with SITRANS F M Vericator and Soft Vericator

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One platform. Infinite solutions

Thanks to Siemens' philosophy of modular design, we are making it easy to buy the electromagnetic flowmeter solutions and services you need.

High power AC electromagnetic flowmeter

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



Battery-driven electromagnetic water meter

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



Totally Integrated Automation solutions...

Totally Integrated Automation solutions – only from Siemens



Gain full performance in your value chain

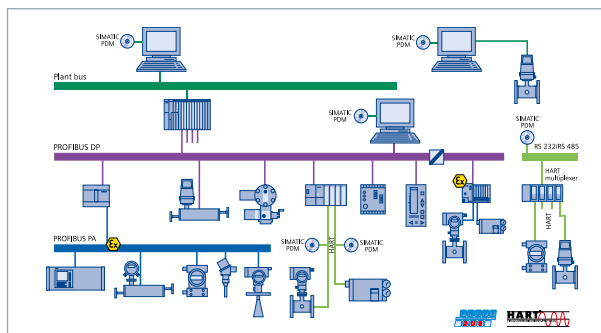
With its Totally Integrated Automation (TIA) strategy, Siemens is in a class of its own as the sole provider of a common solutions platform for all industries. Designed for the individual customer demands, TIA enables the realization of industry-specific automation solutions that significantly increase production while also offering sound investment security. These solutions are designed to ideally support companies in optimizing their plant, system and process flows.

Best of all, Siemens TIA solutions are completely scalable.

You can start with a stand-alone installation today, secure in the knowledge that you can always integrate your system tomorrow.

- Confirm flowmeters are operating optimally and are properly utilized
- Reduce downtime through predictive maintenance programs
- Access real-time flow data
- Generate the highest yield by reducing waste and costs
- SIMATIC PDM software tool for the operation, configuration, parameterization, maintenance and diagnosis of intelligent field instruments based on the worldwide leading EDDL standard

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

The transmitters are specially designed to offer high performance, easy operation and reduced maintenance. MAG 5000 is the truly robust solution for all-around applications.

MAG 6000 is for the more demanding applications where higher accuracy and greater functionality is required.

The MAG 6000 offers bus communication modules and integrated batch functionalities.



MAG 6000 I

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

Guaranteed performance

– MAG 5000, MAG 6000 and MAG 6000 I

- Compact or remote installation
- Superior signal resolution for optimized turn-down ratio
- Digital Signal Processing with unlimited possibilities
- User-configurable operation menu with password protection
- Multiple functional output for process control
- Self-diagnostics for error detection and logging
- Batch control
- Multi-lingual 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	
Max measuring error	$\pm 0.4\% \pm 1 \text{ mm}$	$\pm 0.2 \pm 1 \text{ mm/s}$	$\pm 0.2 \pm 1 \text{ mm/s}$	$\pm 0.2 \pm 1 \text{ mm/s}$
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 approval	Cold water pattern approval - MI-001, Heat meter pattern approval - OIML R 75. Hot water pattern approval - PTB. Other media than water - OIML R 117			

Sensor program

Sensible. Flexible. Reliable

MAG 1100

The flangeless wafer design meets all flange standards. The MAG 1100 is used in all industries where 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 industry, 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, viscosity and temperature challenges.

MAG 5100 W

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

MAG 3100 P

A sensor for process and chemical industries in the most common combinations with PFA/PTFE liner and Hastelloy electrodes. Especially designed to withstand harsh environments with strong chemicals, high temperature and pressure.


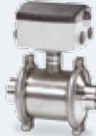



MAG 3100

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 suits the toughest environments.



Flow measurement based on Faraday's law

The coils in the sensor generate a consistent magnetic field. The liquid flowing through the sensor induces a voltage proportional to the flow velocity.

					
Sensor	MAG 1100	MAG 1100 F	MAG 3100	MAG 3100 P	MAG 5100 W
Size DN	2–100 mm / 1/2"–4"	10–100 mm / 3/8"–4"	15–2000 mm / 1/2"–78"	15–300 mm / 1/2"–12"	15–2000 mm / 1/2"–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 max.	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 Other media than water - OIML R 117	Cold water pattern approval - PTB. Hot water pattern approval - PTB. Other media 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. Other media 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. Other media than water - OIML R 117	Cold water pattern approval - MI-001, OIML R 49

* For ebonite liner only

Water and wastewater SITRANS F M for water processes



Cost-effective solution

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

- One solution for all your water and wastewater applications
- No moving parts ensures long-term performance
- Hard Rubber liner guarantees 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 grounding straps on steel pipes and grounding rings on plastic pipes

Process optimization

MAG 6000 with add-on communication platform makes it easy to integrate SITRANS F M into your applications, thus ensuring a total 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 1/2" up to 78".)



Additional products



MAG 6000

For higher accuracy and bus communication.



MAG 1100

With pipe threads, chemical dosing for optimizing the treatment process.



MAG 3100

Applications in hazardous area.

Water supply, irrigation and metering for applications everywhere



Battery pack

Battery pack available as an integrated or external battery pack with an IP68 / NEMA 6P enclosure and connection. Graphical display and keypad for simple operation and instant access to information.

MAG 8000 / MAG 8000 CT / MAG 8000 Irrigation

Up to 10 years of non-stop battery-driven performance – no mains power required.

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 is specially engineered for water applications:

- Abstraction (MAG 8000)
- Distribution/network (MAG 8000)
- Revenue and bulk metering (MAG 8000 CT)
- Irrigation (MAG 8000 Irrigation)

MAG 8000 / MAG 8000 CT is approved according to the OIML R 49 MMA/ MI-001 EU directive water meter standard.

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.



Qualification 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.

Outstanding performance

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

- Easy to install
- Superior measurement
- Intelligent information
- Open communication platform
- Long-lasting performance
- Minimum cost of ownership

Transmitter	MAG 8000	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.
Custody transfer version		For billing purpose Type approved and verified according to OIML R 49 MMA / MI-001	NMI10 Irrigation approval
Sensor size	15 to 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	Display with touch keypad		
Output	2 individual pulse outputs (include net flow volume)		
Communication	Integrated standard IrDA interface. Add-on communication modules, RS 232 / RS 485 with MODBUS RTU protocol, Encoder interface output module for radio based (RF) communication		
Power supply	Internal or external battery pack. Mains power supply with battery backup. 12-24 V AC/DC and 115-230 V AC		
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		

Chemical industry

The power of protection



Siemens offers the market's most versatile flowmeter program dedicated to work in the harshest environments.

Every component Siemens makes combines the highest levels of safety, quality and reliability with a low cost of ownership.

Highest level of safety and quality

Siemens offers a full range of ATEX and FM/CSA approved flowmeters for remote or compact installations.

- Intrinsically safe rated input and output
- Compliance with NAMUR NE 21
- Multi-lingual display with flexible operator menu
- Actual flow and totalizers: forward, reverse and net totals
- Sophisticated self-diagnostics
- Error log and error-pending indication



Excellent chemical resistance and super performance for high temperatures and vacuum pressures 0.01 bar (abs).



Additional products

			
MAG 6000 I (Ex de)	MAG 5000 / 6000	MAG 3100 P	MAG 1100
Available for use in hazardous areas.	For high performance, easy operation and reduced maintenance.	With PFA or PTFE liner and Hastelloy electrodes.	With pipe threads, chemical dosing for optimizing the treatment process.

Proven to meet the harsh demands in the chemical industry



Siemens flowmeters have a robust design satisfying the requirements that flowmeters in the process industry are met with. They are chemically resistant, fully operational in hazardous environments and difficult applications.

Communication

Siemens brings flexibility and design one step further using fieldbus modules like Profibus PA/DP, HART, Modbus RTU, DeviceNet and Foundation Fieldbus.

Lifetime corrosive resistance

The often harsh environment in the chemical industry require the use of a wide range of corrosion-resistant materials. Siemens offers liner, electrode and housing materials that withstand such extreme process media.

Liner materials

PTFE, PFA, Ceramic.

Electrode materials

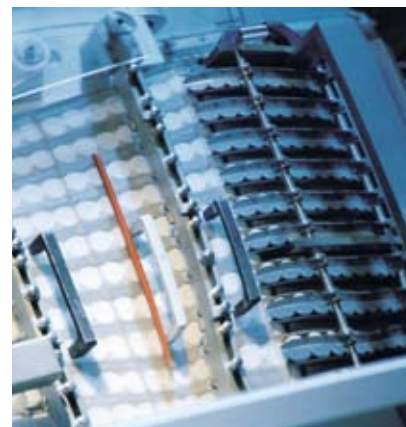
AISI 316 Ti, Hastelloy C, Titanium, Tantalum, Platinum.

PFA liners have excellent chemical resistance and are designed with stainless steel tube reinforcement. The PFA liner can withstand high temperatures up to 150 °C (300 °F) and vacuum pressure without deformations.



Pharmaceutical industry

For accuracy, sterility and complete confidence



With cost-effective solutions that meet the high standards of accuracy and hygienic design, Siemens provides flow solutions to customers in the pharmaceutical industry which 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. Its obstruction-free performance minimizes the risk of deposits, and it is unaffected by the suspended solids, viscosity, and temperatures typically found in pharmaceutical processes.

Additional benefits include

- Suitable for CIP and SIP cleaning
- High pressure
- 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

Hazardous areas

For installations in hazardous areas the flowmeters are available with FM and ATEX approvals in remote or compact design. Still the full functionality is given by the touch keypad and multi-lingual display.



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

Additional products

MAG 6000 I (Ex de)	MAG 5000 / 6000	MAG 1100 F	MAG 1100
Available for use in hazardous areas.	For high performance, easy operation and reduced maintenance.	Especially for the pharmaceutical industry with sanitary process connections and high-temperature design.	With pipe threads, chemical dosing for optimizing the treatment process.

Food & Beverage

A higher standard of precision and purity



Siemens provides flow solutions for the food & beverage industry to efficiently manage flow processes, giving them a competitive edge.

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

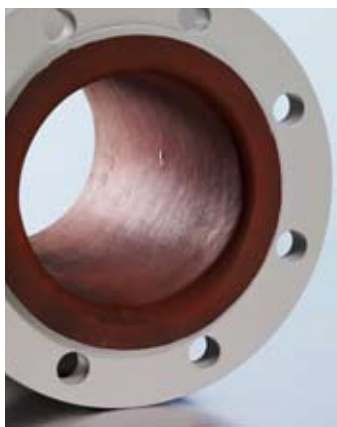


Process connections

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.

Pulp & Paper and Mining industries

Heavy duty solutions for tough applications



Pulp & Paper industry

SITRANS F M flowmeters offer exceptional value for pulp & paper applications. They are well-suited for any flow applications, even with high solids content, and are ready to take on your toughest applications – no matter how challenging they may be!

Pulp

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 SITRANS F M flowmeters for the mining industry can be easily installed virtually anywhere.

All models produce accurate and repeatable results, contributing to improved quality-based performance.

Slurries

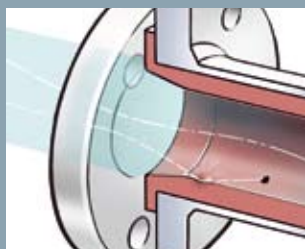
A powerful signal ideal for measuring high concentrations of slurries is provided by the high-energy magnetic field generated with pulsed AC technology.

Magnetic particles – no problem

Magnetic particles in the media will boost the magnetic field in the flowmeter and cause a misreading. To overcome this, the TRANSMAG 2 is designed with a second compensating coil circuit.

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.




LINATEX protection

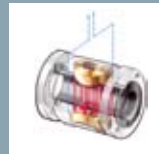
Minerals or particles will bounce off the soft rubber liner, instead of wearing it down.



Additional products

			
TRANSMAG 2	MAG 3100 - MAG 6000 I	MAG 5000/6000	MAG 1100
Ideal for high concentrations of solids, slurries and magnetic particles.	An alternative option when media includes chemicals.	Robust solutions for compact or remote installations.	The wafer-designed sensor fits even the most extreme process media.

Designed for all heavy-duty applications



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.

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, like in applications involving:

- High 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 real flow measurement by removing unwanted electrode noise from the sensor's signal. With the pulsed AC technology, it is possible to have a stable zero-point, thereby a reliable and accurate measurement.

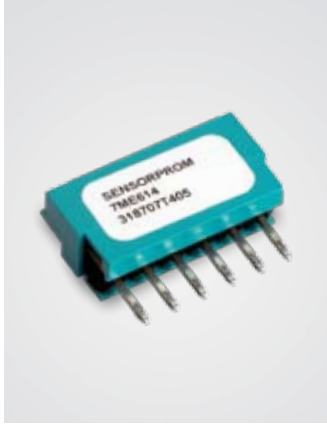
Benefits for heavy-duty solutions

- Eliminates problems related to zero-point stability
- No movable parts that can wear or 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	0.50 % ±1.2mm/s
Display	2-line alpha numeric LCD with backlight
Inputs and outputs	1 current, 1 digital, 1 relay (or 1 digital input) output
Communication	HART, Profibus PA
Power supply	100–230 V AC

Continuous accuracy Verifiable confidence



Meter performance

Thanks to their reliable performance, electromagnetic flowmeters are those mostly recommended for measurement of conductive liquids.

Calibration and traceability

To ensure continuous accurate measurement, all flowmeters from Siemens are verified and wet calibrated before leaving the factory.

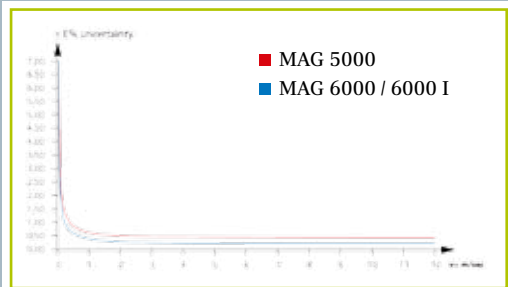
All primary measuring instrumentation used in the calibration laboratory is calibrated regularly by a nationally accredited laboratory. This provides a chain of measurement-traceability to national and international standards, including NIST. Siemens flow laboratories have been accredited to ISO17025 and offer accredited calibrated flowmeters.

The flowmeter calibration is performed by highly trained staff and the process is ISO9001 certified which ensures high quality management and controlling of 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 and MAG 6000 I accuracy



Meter performance
Accuracy better than $\pm 0.4\% \pm 1$ mm/s $\pm 0.2 \pm 1$ mm/s above 0.1 m/s / 0.33ft/s.

SIEMENS

CALIBRATION REPORT

SIEMENS F M MAG

Component No.	90000000	Serial No.	00004
Element type	MAG5000 (M 100)	Serial No.	750000 040011000
Cal. No.	0-00007		
Machine Serial No.	900000 040011000		

Calibration Date: 02.09.16 Calibration liquid: Water

Full scale flow: 25.00 m³/h Calibration sig: 1000 kg

Calibration Settings: 0-10000 kg

Processor output: 0-10000 kg

Test No.	Full scale flow	Water Temp. (°C)	True Flow rate		Flowmeter Processing output		
			m ³ /h	kg	kg	kg	Error (%)
1	25	20.0	21.120	804.9	21.121	0.00	0.00
11	50	20.0	21.120	1609.8	21.120	0.00	0.00
21	75	20.0	0.0100	3621.7	3.0700	0.00	0.00
31	100	20.0	0.0100	4828.9	4.8100	0.00	0.00

Calibrated by: GSK Date: 2006-08-01 Time: 08:27:48

Approved by: [Signature] Date: 2010-09-19

In-situ SITRANS F M verification – three simple steps

Through in-depth analysis, Siemens has identified the parameters which influence the accuracy of a flowmeter operating in the real world.

These parameters are checked using a unique, patented verification technique for SITRANS F M MAG 5000 and 6000 flowmeters.

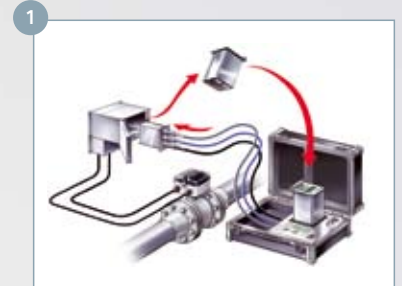
The verifier provides key benefits and the confidence you need in your vital flow measurement.

- In-situ check of performance without interrupting the flowmeter installation
- No expensive removal or installation costs
- Save money and resources by accurate dosing of the required quantities
- Verify new or existing installations
- Fully automated – no manual set up or data input – with predefined factory accept levels
- Result in less than 20 minutes
- 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

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 unaffected by external influences
- 3 Sensor magnetism test**
Ensures that the magnetism behavior is unchanged

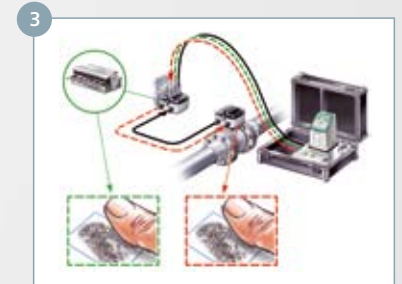
Certificate
An authorized, signed certificate documents the verification



Flow simulation test



"Cross-Talk" test



"Boost" test

SIEMENS		MAG Verification Certificate																																				
Customer:		MAG Identification:																																				
Name	Test 1	Tag No. Name	0																																			
Address		Siemens Code No.	768211																																			
Phone		Siemens Serial No.	2767119247																																			
Email		Converter Code No.	768382																																			
		Converter Serial No.	499974288																																			
		Location	Siemens Nordberg																																			
Results:																																						
Verification file name or No.	File #4	Converter	Passed																																			
Sensor	Insulation	Magnetic Circuit	Passed																																			
<table border="1"> <thead> <tr> <th>Velocity</th> <th colspan="3">Current Output</th> <th colspan="3">Frequency Output</th> </tr> <tr> <th>Theoretical</th> <th>Theoretical</th> <th>Actual</th> <th>Deviation</th> <th>Theoretical</th> <th>Actual</th> <th>Deviation</th> </tr> </thead> <tbody> <tr> <td>0.5m/s</td> <td>4.800mA</td> <td>4.802mA</td> <td>0.29%</td> <td>0.500kHz</td> <td>0.500kHz</td> <td>0.00%</td> </tr> <tr> <td>1.0m/s</td> <td>5.800mA</td> <td>5.802mA</td> <td>0.18%</td> <td>1.000kHz</td> <td>1.000kHz</td> <td>0.00%</td> </tr> <tr> <td>3.0m/s</td> <td>8.800mA</td> <td>8.805mA</td> <td>0.10%</td> <td>3.000kHz</td> <td>3.003kHz</td> <td>0.10%</td> </tr> </tbody> </table>				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	0.00%	1.0m/s	5.800mA	5.802mA	0.18%	1.000kHz	1.000kHz	0.00%	3.0m/s	8.800mA	8.805mA	0.10%	3.000kHz	3.003kHz	0.10%
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Current Output 4-20mA Frequency Output 0-10kHz																																						
Converter Settings:		Sensor Details:																																				
Basic	Ones	20,016 1/s	Size	DN 2 1/8" N																																		
Flow Direction	Flowing		Cal. Factor	0.50432731																																		
Low flow Cut-off	0.5%		Correction Factor	1.0																																		
Empty Pipe	DN		Excitation Pres.	12.5Hz																																		
Output	Current Output	DN (4-20mA)	Verifier Details (063F5060)																																			
	Tone Constant	0.000000 Sec.	Serial No.	Test 0/1																																		
	Binary Output	DirectionLine	Device No.	86470																																		
	Digital Output	OFF	Software Version	4.52																																		
	Frequency Range	N/A	PC-Software Version	4.52																																		
	Time Constant	N/A	Cal. date	2006.01.20																																		
	Value/Scale	0.0 m/s	ReCal. date	2007.01.20																																		
	Pulse width	0.000 sec.																																				
	Pulse priority	Priority																																				
Totalizer 1 value before test	4520.75888 l																																					
Totalizer 1 value after test	4521.7588 l																																					
Totalizer 2 value before test	84.54767 l																																					
Totalizer 2 value after test	84.55162 l																																					
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																																						
2007.08.23 Kjet																																						



Get it all from Siemens



Siemens Sensor Systems has the vision and experience to cater for the many aspects of industrial needs, both now and tomorrow. Over and above instrumentation, our insight into sharpening the competitive edge may even surprise you.



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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 back to international standards.

The best flowmeter for the job

For a given task, Siemens can provide SITRANS F M flowmeter solutions based on different technologies. The overview makes it easy to select the right solution for your application.

			Technology						
			SITRANS F M						
			MAG 3100	MAG 3100 P	MAG 5100 W	MAG 1100	MAG 1100 F	TRANSMAG 2	MAG 8000
Fluids	Conductive	Examples	Parameters						
		Low viscosity < 100 cSt	Water (hot/cold) Waste sewage Acids Beverage Softdrinks Fruit juices	Volume flow High accuracy High temp. High pressure Hygienic Large diameter Battery Custody transfer					
High viscosity > 100 cSt	Food: yoghurt, dressings Sludge: Pulp & paper stock Mining slurry	Volume flow High accuracy High temp. High pressure Hygienic Large diameter Custody transfer							

Distribution and abstraction

By using the MAG 8000 water meter, flow can be measured in both directions with the same degree of accuracy - and an absolute minimum of maintenance.



Unique features



Communication modules

The modules make flowmeter networking installation and configuration easy. It is compatible with virtually every communication standard.



Touchpad

Touch response keypad with LED light feedback for safe and easy operation.



SENSORPROM

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



In-situ SITRANS F M Verification

Your guarantee for continuous accurate measurement.

- Correct revenue metering
- Confidence in process and product quality
- As handover of new installations to ensure correct installation
- ISO 9001 and ISO 14001

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