



SITRANS FM MAGFLO MANUAL

SIEMENS



Sitrans FM is a family of electromagnetic flowmeters by Siemens for liquids and gases.

The operation of such devices is based on the principle of magnetic fields and the Faraday law.

Siemens produces following MAGFLO series:

- SITRANS FM MAG1100
- SITRANS FM MAG 1000F
- SITRANS FM MAG 5100W
- SITRANS FM MAG 3100
- SITRANS F M MAG 3100P
- SITRANS F M TRANSMAG 2
- SITRANS F M MAG 8000

Siemens MAGFLO is a wide range of magnetic sensors that can perform a variety of measurement tasks using electromagnetic fields.

To find out stock ability and delivery time to your region, please contact our manager.



info@eltra-trade.com



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.

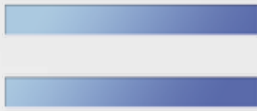
SITRANS F M flowmeter program will help you do an easier job of managing flow. Whether it is installation, managing operations or verifying continuous accuracy, customers rely on SITRANS F M to improve the entire value chain of activities. Siemens can provide the best electromagnetic flowmeter options 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 industry-specific solutions for:

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



...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

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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.

Pulsed DC electromagnetic flowmeters



MAG 6000 I



MAG 5000



MAG 6000



Wall mounting unit



MAG 6000 I
(Ex d)



MAG 6000
Ex safety barrier
IP66 / NEMA 4



MAG 5000/6000 19"
Panel mount
IP20 / NEMA 2



MAG 6000
Electrode cleaning
IP66 / NEMA 4



MAG 3100
MAG 3100 HT



MAG 3100 P



MAG 5100 W



MAG 1100 F



MAG 1100
MAG 1100 HT



Communication modules:

- HART
- Profibus PA
- Profibus DP
- Modbus RTU / RS485
- FF (pending)



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 distribution, revenue and irrigation.



Totally Integrated Automation solutions...

Totally Integrated
Automation solutions
– only from Siemens



Gain full performance in your value chain

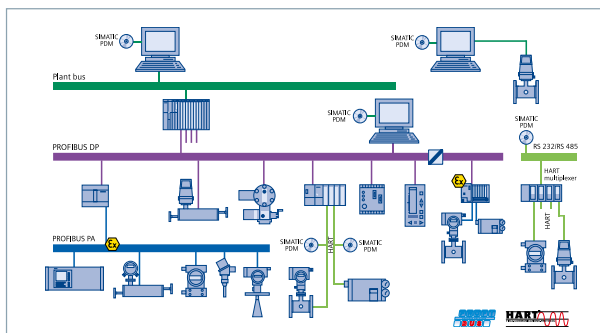
With its Totally Integrated Automation (TIA) strategy, Siemens is in a class of its own as the sole provider of a common solutions platform for all industries. Designed for the individual customer demands, TIA enables the realization of industry-specific automation solutions that significantly increase 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 Industry

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 version.

Guaranteed performance – MAG 5000, MAG 6000 and MAG 6000 Industry

- 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
- Optional electrode cleaning unit for special applications
- Add-on bus communication modules

Transmitter	MAG 5000 / MAG 5000 CT	MAG 6000 / MAG 6000 CT	MAG 6000 I	MAG 6000 I (Ex d)
Enclosure	IP67 / NEMA 4X or IP20/66 / NEMA 2/4 Polyamide		IP67 / NEMA 4X die-cast aluminium	
Max measuring error	0.50 % of rate	0.25 % of rate	0.25 % of rate	0.25 % of rate
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; Modbus RTU		HART; Profibus PA
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
Custody transfer approval	Cold water pattern approval - MI-001, OIML R 49, PTB	Cold water pattern approval - MI-001, OIML R 49, 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		

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 certified. Its performance is unaffected by suspended solids, viscosity and temperature challenges.

MAG 5100 WATER

A sensor for all water and wastewater applications. With its coned design, increased low-flow accuracy is achieved 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.


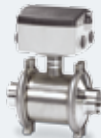



MAG 3100

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"	DN 15–300 / 1/2"–12"	25–1200 mm / 1"–48"
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	PN 40 / Max 580 psi / ANSI 150	PN 10 & 16 / ANSI 150 / AWWA D / AS 4087
Liner material	Ceramic PFA		Neoprene, EPDM, Ebonite, LINATEX, PTFE, NOVOLAK	PTFE PFA	NBR Hard Rubber, EPDM
Electrode material	Platinum Hastelloy C		AISI 316 Ti, Hastelloy C, Titanium, Tantalum,	Hastelloy C276	Hastelloy C276
Approvals	ATEX II 2GD	ATEX II 2GD, 3A, EHEDG design, FDA	ATEX II 2GD	ATEX II 2GD	Drinking Water WRAS; NSF 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, PTB

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
- NBR 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 the USM II 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 and metering

MAG 8000 for applications everywhere



Battery pack

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

MAG 8000 / MAG 8000 CT

6 years of non-stop battery-driven performance
– no mains power required

MAG 8000 / MAG 8000 CT 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 / MAG 8000 CT is specially engineered for water applications:

- Abstraction
- Distribution/network
- Revenue
- Irrigation

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

Outstanding performance

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

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

Intelligent, battery-driven operation

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

Transmitter	MAG 8000	MAG 8000 CT
Transmitter type	Basic water version for general purpose. Advanced water version for advanced information and functionality	
Custody transfer version		For billing purpose Type approved and verified according to OIML R 49 / MI-001
Sensor size	25–600 mm / 1"–24" with EPDM liner	50–300 mm / 2"–12" with EPDM liner
Enclosure	IP68 / NEMA 6P, compact and remote with connectors and factory-mounted cable	MI-001: IP68 / NEMA 6P, compact OIML R 49: 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)	2 individual pulse outputs
Communication	Integrated standard IrDA interface. Add-on communication modules, RS 232 / RS 485 with MODBUS RTU protocol	
Power supply	Internal or external battery pack Mains power supply with battery backup 12–24 V AC/DC and 115–230 V AC	MI-001: Internal or external battery pack. OIML R 49: 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



PFA reinforced with stainless steel mask has excellent mechanical stability characteristics to ensure long-term stability.

Additional products



MAG 6000 I (Ex d)

Available for use in hazardous areas.



MAG 5000 / 6000

For high performance, easy operation and reduced maintenance.



MAG 3100 P

With PFA or PTFE liner and Hastelloy electrodes.



MAG 1100

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

With the USM II, Siemens brings flexibility and design one step further using fieldbus modules like Profibus PA/DP, HART and Modbus RTU.

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

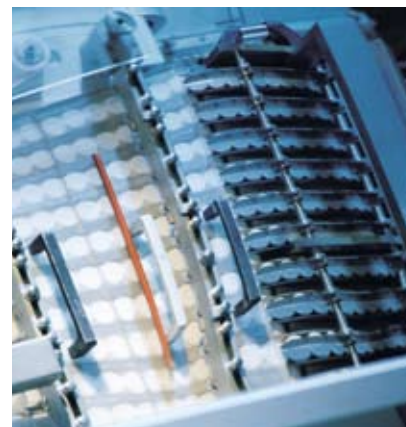
AISI 316 Ti, Hastelloy C, Titanium, Tantalum, Platinum.

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 requirements and is EHEDG tested

Hazardous areas

For installations in hazardous areas the flowmeters are available with FM/CSA 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 d)	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 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 design, 3A approvals and FDA conformity
- Suitable for CIP and SIP cleaning
- IP67 / NEMA 4X rating that is upgradeable to IP68 / NEMA 6P
- Delivered with your specified connection; with its metal-to-metal design, no grounding connection is required
- Direct access to covered keypad and display
- Accredited custody transfer approvals OIML R 117

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 mineral industry can be easily installed virtually anywhere.

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

Slurries

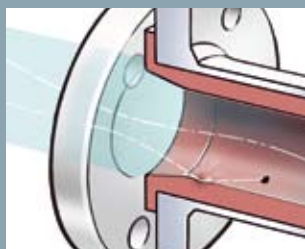
A powerful signal ideal for measuring high concentrations of slurries is provided by the high-energy magnetic field generated with pulsed AC technology.

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. Especially the soft LINATEX rubber and the NOVOLAK liner have proven themselves in these harsh environments.



LINATEX protection

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

Additional products



TRANSMAG 2

Ideal for high concentrations of solids, slurries and magnetic particles.



MAG 3100 - MAG 6000 I

An alternative option when 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.

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.

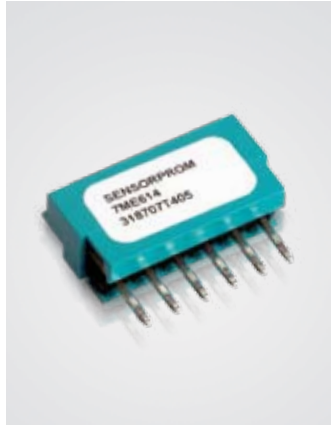
Benefits for heavy-duty solutions

- 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 % of rate
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



Calibration

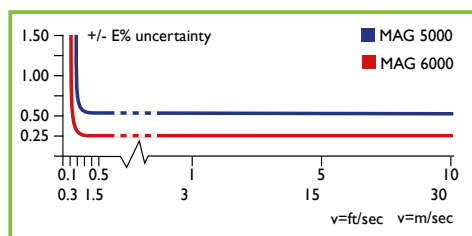
Validated calibration ensures accurate flow measurement. Every Siemens flowmeter is calibrated at facilities that are individually accredited in accordance with ISO / IEC 17025 by UKAS, DANAK and traceable to NIST. A calibration certificate is shipped with every Siemens sensor.

- High-accuracy rigs with better than 0.1% calibration uncertainty
- UKAS accredited calibration laboratory #0301
- Documentation for ISO 9001 and ISO 14001 management system

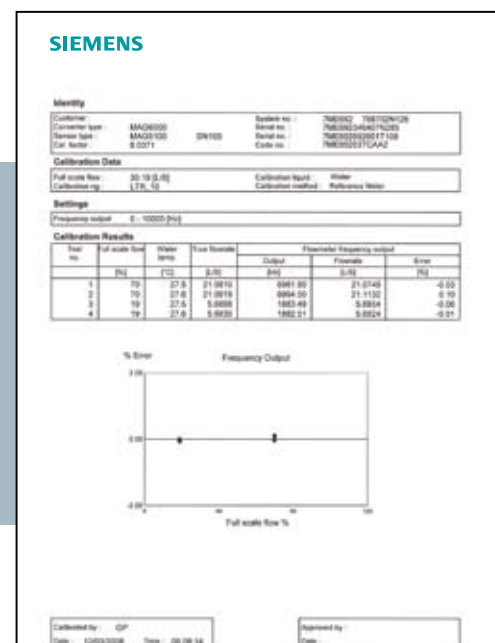
Meter performance

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

MAG 5000 / MAG 6000 and MAG 6000 I accuracy



Meter performance
Accuracy better than 0.25% / 0.5% down to 0.5 m/s / 1.5 ft/s.



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 enduser

A verification consists of the following steps:

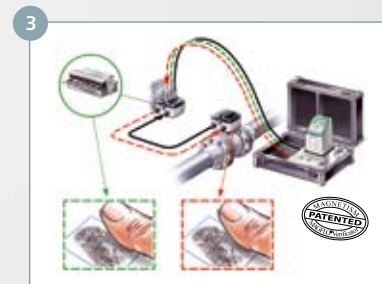
- 1 Transmitter test**
Flow simulation test that checks the whole electronic system
- 2 Flowmeter insulation test**
Ensures that the sensor flow signal is unaffected by external influences
- 3 Sensor magnetism test**
Ensures that the magnetism behavior is unchanged
- 4 Certificate**
An authorized, signed certificate documents the verification



Flow simulation test



"Cross-Talk" test



"Boost" test

SIEMENS **MAGFLO® Verification Certificate**

Customer:
Name: _____
Address: Test 1
Phone: _____
Email: _____

MAGFLO® Identification:
TAG No./Name: 0
Sensor Code No: 798011
Sensor Serial No: 2787110417
Converter Code No: 798002
Converter Serial No: 4999074030
Location: Siemens Nordborg

Results:
Verification file name or No.: _____
Sensor: _____
Insulation: _____
Magnetic Circuit: _____

Velocity		Current Output		Frequency Output	
Theoretical	Actual	Theoretical	Actual	Theoretical	Actual
0.3m/s	4.800mA	4.800mA	5.29%	6.500Hz	6.500Hz
1.2m/s	5.800mA	5.800mA	5.14%	1.000Hz	1.000Hz
3.0m/s	8.800mA	8.800mA	5.10%	3.000Hz	3.000Hz

Current Output 4.20mA
Frequency Output 9.10kHz

Converter Settings:
Basic: On, 20.016 L/h, Flow Direction: Positive, Low Flow Cut-off: 5.0%, Empty Pipe: ON
Output: Current Output: ON (4-20mA), Time Constant: 5.000000 Sec, Relay Output: (Disconnect, int)
Digital Output: OFF
Frequency Range: 0.0, Time Constant: 0.0, Volume Output: 5.0 m³, Pulse width: 5.000 sec, Pulse priority: Positive
Totalizer 1 value before test: 4505.75488 l
Totalizer 1 value after test: 4521.7898 l
Totalizer 2 value before test: 94.94767 l
Totalizer 2 value after test: 94.93163 l

Sensor Details:
Size: DN 2 1/2" PN
Cal. Factor: 0.00432731
Correction Factor: 1.0
Excitation Freq: 12.5Hz

Verifier Details: 063736660
Serial No: _____
Device No: 06470
Software Version: 1.38
PC Software Version: 4.52
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.



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.



By choosing Siemens you gain the benefit of:

Your total solution provider

Siemens is the market leader in total solutions for process automation and instrumentation. More than merely a supplier, Siemens is integrated into the value chain, providing services from engineering to commissioning or services, locally or worldwide.

TIA – Totally Integrated Automation

Thanks to a common program environment, database and open communication systems, our products, systems and solutions can be totally integrated into any industry sector. Siemens TIA solutions are scalable, engineered for upgrade from stand-alone to automated system on demand.

The power of a single partner

Standardized concepts across technology and business areas make it easy to exploit Siemens synergies to the full, for any size or complexity of task.

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 the best combination or adaptation of sensor and transmitter, for any application in virtually any industry.

Accuracy

We test and calibrate all flowmeters in our own EN 45001-approved laboratories. Our meters meet or exceed international OIML standards, ensuring long-term accuracy – and traceability back to international norms.

The best flowmeter for the job

Siemens offers the ultimate flexibility in its range of flowmeters. For a given task, we can often provide solutions based on two or three different technologies. The broadness of our range means we always find the best flowmeter for the job. Sensors and transmitters can be combined and adapted to meet any need in just about any industry. The overview makes it easy to select just the right SITRANS F M flowmeter solution for your application.

		MAG 5000	MAG 6000	MAG 6000 I	MAG 6000 I Ex d	MAG 3100 / 3100 HT	MAG 3100 P	MAG 5100	MAG 1100 F	MAG 1100 / 1100 HT	MAG 8000	TRANSMAG 2 / 911/E
Water & Wastewater	Abstraction	●	●	○		●		●			●	
	Water treatment	●	●	○		○	○	●		●		
	Distribution	●	●	●		○	○	●			●	
	Revenue/billing	●	●			○	○	●			●	
	Wastewater treatment	●	●	○	○	○	○	●		●		
	Re-use/filtration	●	●	○		○	○	●				
	Irrigation	●	●			●		●			●	
Chemical Industry	Basic Chemicals	○	●	●	●	●	●	○		○		○
	Fibers & Foils	○	●	●	●	●	●	○		●		○
	Speciality Chemicals	○	●	○	●	●	●	○		○		○
	Fine Chemicals	○	●	○	●	●	●	○		●		○
	Bio Chemicals	○	●	●	●	●	●	●		●		○
Food & Beverage and Pharmaceutical	Food	●	●	○		○	○	●	●	●		
	Dairy	●	●	○		●	●	●	●			
	Soft drink	●	●						●	●		
	Beverages	●	●			●	●	●	●	●		
	Pharmaceutical	○	●	●	●	●	●		●	○		
Mining, Cement and Pulp & Paper	Mining	○	●	●		●	●	●		○		●
	Cement	○				●	●	●		○		●
	Pulp & Paper	○	●	●		●	●	●		●		●
Power and Utilities	District cooling and chillers	●	●	●	●	●	●	●		○	○	
Oil & Gas	Upstream	○	●	●	○	●	●	●		○		
	Midstream	○	●	●	○	●	●	●		○		
	Downstream	○	●	●	○	●	●	●		○		

● Most often used ○ Often used ○ Can be used

Unique features



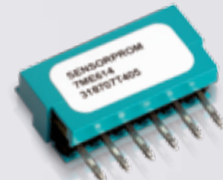
Communication modules

The USM II makes 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

We supply:

- **SITRANS FM Magflo**
- **SIEMENS MAG 1100**
- **SIEMENS MAG 3100**
- **SIEMENS MAG 5100**
- **SIEMENS MAG 8000**
- **other Siemens products**

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