



How do you know your  
flowmeter is accurate?

SITRANS F M Verificator validates the performance  
of your electromagnetic flowmeters on-site.

Answers for industry.

**SIEMENS**

# SITRANS F M Verificator:

Market leader for continuous accuracy measurement

## Primary benefits and advantages

Siemens has manufactured high performance flowmeters for more than 35 years. Our products and services share the same goal: to improve your operations, reduce downtime, and maintain measurement accuracy for the life of the product.

The Verificator provides key benefits and the precision you need in your vital flow measurement:

- In-situ check of performance without interrupting the flowmeter installation
- Fully automated – no manual setup or data input – with predefined factory acceptance levels
- No expensive removal or installation costs
- Results in less than 15 minutes
- Full verification report

The Verificator confirms accurate performance for the following SITRANS F M transmitters and sensors:

- MAG 5000/6000
- MAG 3100
- MAG 1100
- MAG 3100 P
- MAG 1100 F
- MAG 5100 W

## Accuracy from factory . . .

Each sensor is calibrated before leaving the factory and a calibration report is issued.

The sensor is verified and the magnetic properties (fingerprint) are identified.

Fingerprint data and calibration parameters are stored on the intelligent SENSORPROM memory unit.

## Easy and reliable on-site verification

A fully automatic verification test takes only 15 minutes after connection and consists of three steps:

1. Transmitter test
2. Flowmeter insulation test
3. Sensor Magnetism test

The verification is carried out at the transmitter location. The test is not affected by liquid flow or cable length.

### Transmitter test

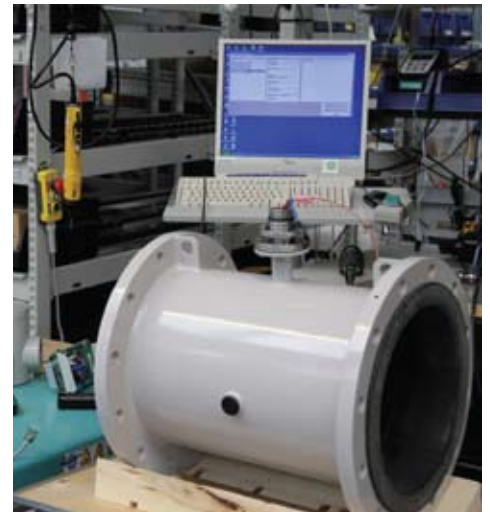
The transmitter verification checks the whole electronic system from signal input to output. Using a traceable calibrated precision network, the Verificator simulates flow signals to the transmitter input.

By measuring the transmitter outputs the Verificator calculates its accuracy against defined factory values.

- Signal function from signal input to output
- Signal processing – gain, offset, and linearity
- Test of analog and frequency output



Verificator connection on the SITRANS F M flowmeter



### Flowmeter insulation test

The verification test of the flowmeter insulation is a “cross-talk” test of the entire flowmeter and installation, which ensures that the flow signal generated in the sensor is not affected by any external influences. By generating dynamic disturbances close-coupled to the flow signal, the flowmeter is tested for noise immunity to a maximum level.

- EMC influence on the flow signal
- Moisture in sensor, connection and terminal box
- Non-conductive deposit coating the electrodes
- Missing or poor grounding, shielding and cable connection

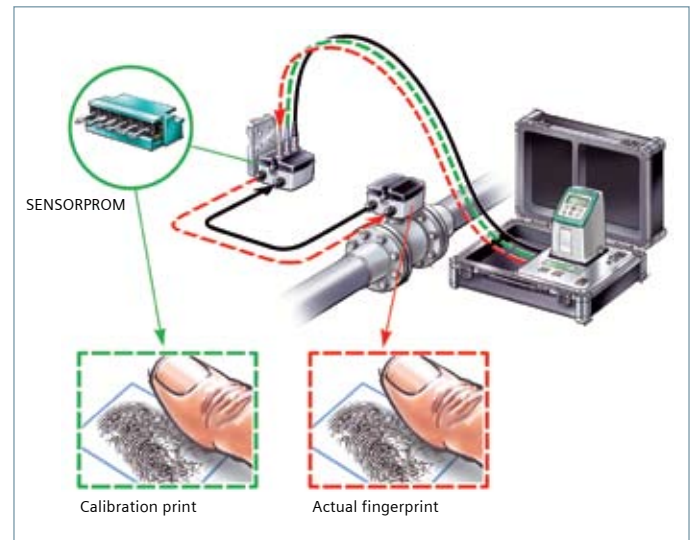


Flowmeter insulation test

### Sensor magnetism test

The sensor magnetism test ensures that the magnetic behavior is unchanged. The current sensor magnetism is compared with the “fingerprint” which was determined during initial calibration and stored in the SENSORPROM memory unit. This unique test is conducted without any interference or compensation of surrounding temperature or interconnecting cabling.

- Changes in dynamic magnetic behavior
- Magnetic influence inside and outside the sensor
- Missing or poor coil wire and cable connection



Sensor magnetism test

## ... to the work site.

The SITRANS F M Vericator can be used in:

1. New applications: approve new installations with certificate for handover
2. Existing applications: ensuring correct product quality and continuous accuracy

For ISO 9000 and ISO 14001 documentation a MAG Verification Certificate can be printed as handover from contractor to end user.



MAG Verification Certificate						
<b>Customer:</b>	<b>MAGLOC Identification:</b>					
Name: TAC AG-Service	Sensor Code No.: 0805064					
Address: DK-5420 Nykøbing	Sensor Serial No.: 088817040					
Phone: +45 7488 2500	Converter Code No.: 08020001					
Email:	Location: Administration 408					
<b>Results:</b>	Verification file name or No.: MAGLOC File 1					
	Insulation: Passed					
	Magnetic Circuit: Passed					
	Flow Output: Passed					
<b>Velocity</b>	<b>Current Output</b>					
Theoretical	Theoretical	Actual	Deviation	Theoretical	Actual	Deviation
0.00m/s	4.000mA	4.000mA	-0.01%	0.000m/s	0.00000A	-0.00%
1.00m/s	8.000mA	7.999mA	-0.00%	1.000m/s	1.00000A	-0.01%
3.00m/s	8.000mA	8.799mA	0.99%	3.000m/s	3.00000A	0.00%
	Current Output % Error:			Flow Output % Error:		
<b>Converter Settings:</b>		<b>Sensor Details:</b>				
Units:	Flow Direction: Positive	Size:	DN 10 3/8 IN			
Low Flow Output:	OFF	Cal. Factor:	0.00000			
Elbow Pipe:	OFF	Correction Factor:	1.00000			
Output:	Current Output: OFF	Excitation Frequency:	10.00%			
Time Constant:	NR					
Name Output:	Event Level:					
Digital Output:	None	<b>Verifier Details:</b>				
Frequency Range:	Not Used	Serial No.:	000000010			
Minimum Pulse:	1.0 mV	Hardware Version:	1.00			
Time Constant:	Not Used	Software Version:	1.35			
Transducer 1 value before test:	20000.11	PC Software Version:	2.02			
Transducer 1 value after test:	21000.01	Cal. Date:	2006-05-23			
Transducer 2 value before test:	0000.01					
Transducer 2 value after test:	0000.01					
<b>Comments:</b>	MAGLOC flowmeter is not integrated in the SCADA system.					
These tests verify that the flowmeter is functioning within 2% deviation of the original test parameters.						
Date and signature: 2007-08-20 Page 3, 3 of 3						

## For more information

Find everything about Flow Instruments:  
[www.siemens.com/flow](http://www.siemens.com/flow)

Explore the unique range of Process Instrumentation portfolio:  
[www.siemens.com/processinstrumentation](http://www.siemens.com/processinstrumentation)

Learn more about Process Automation:  
[www.siemens.com/processautomation](http://www.siemens.com/processautomation)

Siemens A/S  
Flow Instruments  
DK-6430 NORDBORG

Headquarters:  
Siemens A/S  
DK-2750 BALLERUP

Subject to change without prior notice  
Order No.: E20001-A400-P730-V1-7600  
DISPO 27900  
WS 091010.0  
Printed in Denmark  
© Siemens AG 2010

The information provided in this brochure contains merely general descriptions or characteristics of performance which in case of actual use do not always apply as described or which may change as a result of further development of the products. An obligation to provide the respective characteristics shall only exist if expressly agreed in the terms of contract.

All product designations may be trademarks or product names of Siemens AG or supplier companies whose use by third parties for their own purposes could violate the rights of the owners.