

**SIEMENS**

*Ingenuity for life*



## SITRANS F M Vericator

Validates the performance of your  
electromagnetic flow meters on-site

[usa.siemens.com/pi](http://usa.siemens.com/pi)

# 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 1100
- MAG 1100 F
- MAG 3100
- MAG 3100 P
- MAG 5100 W

## 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



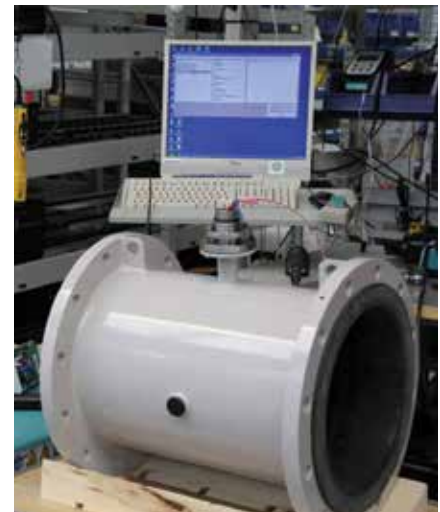
Verificator connection on the SITRANS F M flowmeter

## 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.

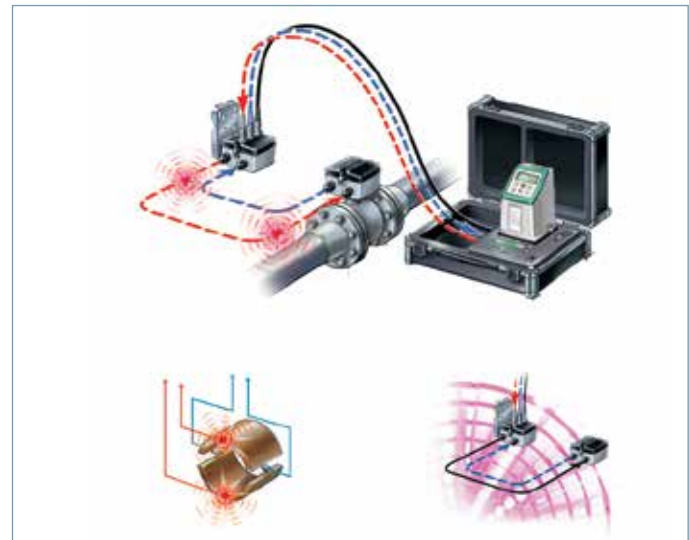
Fingerprint data and calibration parameters are stored on the intelligent SENSORPROM memory unit.



**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

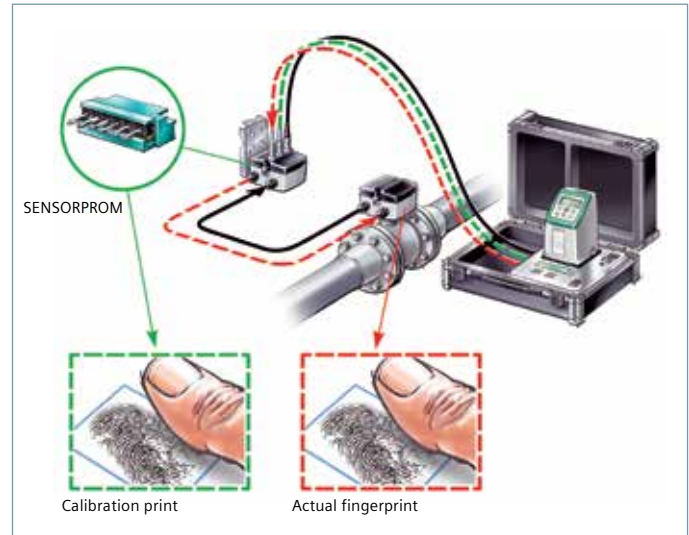


Flowmeter insulation test

**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> Name: _____ TAG No./Name: _____ Address: _____ Sensor Code No.: _____ _____ Sensor Serial No.: _____ _____ Converter Code No.: _____ _____ Converter Serial No.: _____ Phone: +33 3 488 3000 _____ Location: _____ Email: _____ Administrator: _____																																				
<b>Results:</b> Verification file name or No.: _____ Converter: _____ Sensor: _____ Magnet. Circuit: _____																																				
<table border="1"> <thead> <tr> <th>Velocity</th> <th>Theoretical</th> <th>Actual</th> <th>Deviation</th> <th>Theoretical</th> <th>Actual</th> <th>Deviation</th> </tr> </thead> <tbody> <tr> <td>3.0m/s</td> <td>3.000m/s</td> <td>3.000m/s</td> <td>-0.01%</td> <td>3.000m/s</td> <td>3.000m/s</td> <td>-0.00%</td> </tr> <tr> <td>1.5m/s</td> <td>1.500m/s</td> <td>1.500m/s</td> <td>-0.00%</td> <td>1.500m/s</td> <td>1.500m/s</td> <td>-0.01%</td> </tr> <tr> <td>0.5m/s</td> <td>0.500m/s</td> <td>0.500m/s</td> <td>-0.00%</td> <td>0.500m/s</td> <td>0.500m/s</td> <td>-0.00%</td> </tr> <tr> <td colspan="2">Current Output 4-20mA</td> <td colspan="5">Free. Output 0-10Vdc</td> </tr> </tbody> </table>		Velocity	Theoretical	Actual	Deviation	Theoretical	Actual	Deviation	3.0m/s	3.000m/s	3.000m/s	-0.01%	3.000m/s	3.000m/s	-0.00%	1.5m/s	1.500m/s	1.500m/s	-0.00%	1.500m/s	1.500m/s	-0.01%	0.5m/s	0.500m/s	0.500m/s	-0.00%	0.500m/s	0.500m/s	-0.00%	Current Output 4-20mA		Free. Output 0-10Vdc				
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Current Output 4-20mA		Free. Output 0-10Vdc																																		
<b>Converter Settings:</b> Mode: _____ Drive: _____ Flow Direction: _____ Low Flow Output: _____ Energy Flow: _____ Output: _____ Current Output: _____ Time Constant: _____ Relay Output: _____ Digital Output: _____ Frequency Range: _____ Max Value: _____ Min Value: _____ Time Constant: _____		<b>Sensor Details:</b> Size: _____ Case Factor: _____ Conversion Factor: _____ Excitation Frequency: _____																																		
<b>Verification Details:</b> Serial No.: _____ Hardware Version: _____ Software Version: _____ PC Software Version: _____ Cal. date: _____																																				
<b>Comments:</b> MAGFLO is not integrated in the SICA system. Please bear in mind that the flowmeter is functioning with 2% deviation of the original test parameters.																																				
Date and signature: _____ 2001.08.20 Page 5. Page																																				

## For more information

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