PRODUCT CONFORMITY CERTIFICATE

This is to certify that the

SITRANS F M MAG 8000 & MAG 8000 CT
Battery Powered Electromagnetic Flowmeter

manufactured by:

Siemens AG,

DE-76181 Karlsruhe
Germany

Siemens S.A.S
Chemin de la Sandlach,
67500 Haguenau, France

has been assessed by Sira Certification Service
and for the conditions stated on this certificate complies with:

MCERTS Performance Standards for Water Monitoring Equipment Part 3, Version 3, dated July 2018

Size Range DN 25 to DN 600

Project No.:	674/0190/70202901
Certificate No:	Sira MC080137/08
Initial Certification:	04 November 2008
This Certificate issued:	02 November 2018
Renewal Date:	03 November 2023

Emily Alexander
Environmental Project Engineer

MCERTS is operated on behalf of the Environment Agency by

Sira Certification Service
Unit 6, Hawarden Industrial Park
Hawarden, Deeside, CH5 3US
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Form 1335
Issue 2

Certificate Contents

Approved Site Application

The product may be used on all MCERTS applications including abstraction, effluent discharge, ultraviolet disinfection and industrial processing.

Any potential user should ensure, in consultation with the manufacturer, that the product is suitable for the process on which it will be installed.

Field Test Site

A three month field test was conducted on the final effluent discharge at a municipal waste water treatment plant.

Basis of Certification

This certification is based on the following Test Report(s) and on Sira's assessment and ongoing surveillance of the product and the manufacturing process:

Sira Evaluation Report MAG 8000 674/0190 dated 04 November 2008

Product Certified

The MAG8000 measuring system consists of the following parts:

SITRANS F M MAG 8000 & MAG8000CT Battery Powered Electromagnetic Flowmeter

This certificate applies to all instruments fitted with software version 3.03 onwards.

Serial number (MLFB code) 7ME6810-XXX3X-XXXX-Z [Where X = any figure] for the MAG 8000, and serial number (MLFB code) 7ME6820-XXXXX-XXXX-Z [Where X = any figure] for the MAG 8000CT.

DN (mm)	Flow Rate		unit
	Min	Max	
25	442.0	17671	l/h
40	1.2	45	m^3/h
50	1.6	63	m^3/h
65	2.5	100	m^3/h
80	4.0	160	m^3/h
100	6.3	250	m^3/h
125	10.0	400	m^3/h
150	15.7	629	m^3/h
200	24.9	997	m^3/h
250	40.0	1600	m^3/h
300	62.5	2500	m^3/h
350	86.6	3463	m^3/h
400	113.1	4523	m^3/h
450	143.2	5725	m^3/h
500	176.8	7068	m^3/h
600	254.5	10178	m^3/h

Certified Performance

The instrument was evaluated for use under the following conditions:
Ambient Temperature Range: -20ºC to +50ºC

The instrument meets MCERTS Class 1 requirements for the combined performance characteristic as specified in Table 6 of the MCERTS performance standard. Details of individual performance characteristics are summarised below:

Results are expressed as error % of certification range, unless otherwise stated

Test	Results expressed as error % of reading				Other results	MCERTS specification
	<0.5	<1.0	<1.5	<2.0		
Protection against unauthorised access	Access to change mode is password protected					Clause 3.1.2
Indicating device	The flowmeter incorporates an indicating device, analogue and digital output signal					Clause 3.1.3
Units of measurement	Various units of measurement are available.					Clause 3.1.6
Bi-directional flow	The sign (-) will stand in front of the flow reading when the reading is negative.					Clause 3.1.8
Combined performance characteristic			1.32			Clause 6.3.2 ±1.5% Class 1
Mean error		0.53				Clause 6.3.2 ±1.5% Class 1
Repeatability	0.30					Clause 6.3.2 1% Class 1
Supply voltage	0.50					Clause 6.3.3 0.5% Class 1
Fluid Temperature	0.03					Clause 6.3.5 0.5% Class 1
Ambient air temperature		0.70				Clause 6.3.6 0.5% Class 1
Relative humidity	0.01					Clause 6.3.6 0.5% Class 1
Stray currents	0.13					Clause 6.3.9 0.5% Class 1
Bi-directional flow Mean error Repeatability				-1.87	2.43 % reading	Mean error ±1.5% Class 1 Repeatability 1% Class 1
Loss of Power for electronic flowmeters	No changes in pre set data					Clause 6.3.1 to be reported

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Test	Results expressed as error % of reading				Other results	MCERTS specification
	<0.5	<1.0	<1.5	<2.0		
Response time					See Note 1	Clause 6.3.19 30 seconds

Field Test Results

The field test was conducted on a MAG 8000 in series with a MAG 3100 and is deemed equivalent by the certification committee for the models stated on this certificate

Test	Results expressed as error % of reading				Other results	MCERTS specification
	<0.5	<1.0	<1.5	<2.0		
Error under field test conditions	Error range -7.47% to +1.20% Field test error is <2% for 99.8% of readings Field test error is <5% for 100% readings					Clause 7.3 2% Class 1 5% Class 2
Up time					100%	Clause 7.4 >95%
Maintenance					none	Clause 7.5 to be reported

Note 1: This test has not been conducted.

Note 2: The following tests are not applicable to the flowmeter:

6.3.7	Incident light	6.3.16	Effect of conduit material
6.3.8	Sensor location	6.3.17	Effect of conduit size
6.3.10	Sonic velocity compensation & response	6.3.18	Fill level
6.3.11	Accuracy of computation	6.3.20	Vibration
6.3.12	User defined stage-discharge equation		

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Description

Sitrans FM electromagnetic flow meters included in this certificate consist of battery powered type MAG 8000 in sizes from DN25 to DN600. Transmitters can be integral to the sensor or remote mounted. They are designed to meet water applications where conventional power is not available. All versions meet IP68.

The measuring principle is based on Faraday's law of electromagnetic induction. An electrode voltage, proportional to velocity, is generated when a conductive liquid passes through the sensor's magnetic field.

Two battery options are provided. The internal battery pack has an operating life of 6 years. An alternative external battery pack will last for 10 years.

Calibration data, factory and customer settings can be accessed via the built-in infrared port using either "MAG 8000 Flowtool" software or "Siemens Process Device Manager" software. Remote transmitters incorporate plug-in connectors allowing simple transmitter exchange.

Transmitters use low noise high resolution digital signal processors which provide continuous self-monitoring and adjustment of measurement circuits to maintain required accuracy. Advanced transmitter versions have built-in verification of all operating parameters including insulation test, together with comprehensive leakage detection and statistical data. All transmitters include internal logging of operating and fault status information. Plug-in modules for digital communications, e.g. Modbus, can be added at any time during the life of the meter.

Approvals include the new EU directive for cold water custody transfer, MI 001, WRAS for potable water, and OIML R49 pattern approval. Every Siemens flow meter is calibrated at facilities that are individually accredited in accordance with ISO / IEC 17025 by UKAS, DANAK and traceable to NIST.

General Notes

1. This certificate is based upon the equipment tested. The Manufacturer is responsible for ensuring that on-going production complies with the standard(s) and performance criteria defined in this Certificate. The Manufacturer is required to maintain an approved quality management system controlling the manufacture of the certified product. Both the product and the quality management system shall be subject to regular surveillance according to 'Regulations Applicable to the Holders of Sira Certificates'. The design of the product certified is defined in the Sira Design Schedule V04 for certificate No. Sira MC080137/06

2. If certified product is found not to comply, Sira Certification Service should be notified immediately at the address shown on this certificate.

3. The Certification Marks that can be applied to the product or used in publicity material are defined in 'Regulations Applicable to the Holders of Sira Certificates'.

4. This document remains the property of Sira and shall be returned when requested by the company.