

# PRODUCT CONFORMITY CERTIFICATE

This is to certify that the

## ***SITRANS LUT440 Ultrasonic Level Instrument***

manufactured by:

### **Siemens Canada Limited**

*Siemens Milltronics Process Instruments  
1 IA SC PS 2 R&D TECHNOLOGY  
1954 Technology Drive  
K9J 6X7 Peterborough ON, Canada*

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 2.4 dated February 2013**

Certification Ranges :

0 to 3m (nominal)

Project No.: 16W27544 / 70183074  
Certificate No: Sira MC130226/03  
Initial Certification: 16 May 2013  
This Certificate issued: 04 July 2018  
Renewal Date: 15 May 2023

Emily Alexander  
Deputy Certification Manager

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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*The MCERTS certificate consists of this document in its entirety.  
For conditions of use, please consider all the information within.  
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## Approved Site Application

*Any potential user should ensure, in consultation with the manufacturer, that the monitoring system is suitable for the intended application. For general guidance on monitoring techniques refer to the Environment Agency Monitoring Technical Guidance Notes available at [www.mcerts.net](http://www.mcerts.net)*

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

## 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:

WRc test report number UC9452 – MCERTS testing of Siemens LUT400 series ultrasonic level instruments

LUT400 Sensor uC EoL report number A5E44258273A. Version 01 dated 11/04/2018

## Product Certified

The SITRANS LUT440 ultrasonic level measuring system consists of the following parts:

- SITRANS LUT440 ultrasonic level controller
- TS-3 external temperature sensor
- Echomax XRS-5 transducer
- Siemens sunshade (or equivalent) – *Unless permanently protected from direct solar radiation and/or at the discretion of the MCERTS inspector*

This certificate applies to all SITRANS LUT440 instruments fitted with software version 1.00.00-06 (serial number PBD/C1312131 onwards).

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## Certified Performance

The instrument was evaluated for use under the following conditions:

Ambient Temperature Range: -20°C to +50°C  
Instrument IP rating: IP65

The instrument meets MCERTS Class 1 requirements for the combined performance characteristic as specified in Table 7 of the MCERTS performance standard for the range 0 to 3m. Details of individual performance characteristics are summarised below:

Results are based on the certification range 0 to 3m, unless otherwise stated.

Test	Results expressed as error % of certification range				Other results	MCERTS specification
	<0.1	<0.2	<0.5	<1.5		
Protection against unauthorised access	Password protected					Clause 3.1.2
Units of measurement	The indicating device and output are scaled in metric units					Clause 3.1.6
Indicating device	The flowmeter incorporates an indicating device, analogue and digital output signal					Clause 3.1.3
Flow computation	The flowmeter incorporates a facility for a user defined stage/discharge curve to be entered					Clause 3.1.11
Combined performance characteristic 0 to 3m					Note 1 0.2%	Table 7 ≤0.2% Class 1
Mean error 0 to 3m	-0.019					Clause 6.3.2 ±0.1% Class 1
Repeatability 0 to 3m	0.016					Clause 6.3.2 ±0.05% Class 1
Resolution	0.067					Clause 3.1.15 <2mm Class 1
Supply voltage 10 to 32 V DC	0.007					Clause 6.3.3 0.025% Class 1
Output impedance 50-750Ω	<0.001					Clause 6.3.4 0.025% Class 1
Ambient air temperature -20°C to +50°C	0.021					Clause 6.3.6 0.25% Class 1
Direct solar radiation	0.009				Note 2	Clause 6.3.10 0.05% Class 1
Accuracy of computation	0.07				Note 3	Clause 6.3.11 0.075% Class 2
User defined stage-discharge equation	0.04				Note 3	Clause 6.3.12 0.075% Class 2
Warm up time	The unit stabilises after energising within 33 seconds					Clause 6.1.2 to be reported

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Test	Results expressed as error % of certification range				Other results	MCERTS specification
	<0.1	<0.2	<0.5	<1.5		
Loss of Power for electronic flowmeters	No changes in pre-set data					Clause 6.3.1 to be reported
Relative humidity				0.24		Clause 6.3.6 0.25% Class 3
Response time					Note 4 30s	Clause 6.3.19 <30 seconds
Error under field test conditions	Error range +0.03% to +0.33% Field test error is <0.2% for 96% of readings Field test error is <0.5% for 100% of readings Note 2					Clause 7.3 0.2% Class 1
Up time					100%	Clause 7.4 >95%
Maintenance					None	Clause 7.5 to be reported

Note 1: The combined performance characteristic reported is the root-sum-square addition of the maximum errors recorded in the following tests: mean error, repeatability, resolution, supply voltage, output impedance, ambient air temperature, direct solar radiation and accuracy of computation.

Note 2: Direct solar radiation test and field trial were conducted with a sunshade in place, as per the manufacturer's recommendations.

Note 3: Result reported as % of measured flow range.

Note 4: Result based on 'medium response rate' setting. 'Fast response rate' setting result was 5s.

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## Description

The SITRANS LUT440 High Accuracy OCM is the highest performing model of SITRANS LUT400 series controllers. It features a full suite of advanced pump control and alarm functionality, and enhanced flow data logging capability. Key applications include: wet wells, reservoirs, flumes/weirs, chemical storage, liquid storage, hoppers, crusher bins, dry solids storage.

The SITRANS LUT440 is housed in a polymeric enclosure. As a system it is used in conjunction with a remote XRS-5 ultrasonic transducer and TS-3 temperature sensor. The SITRANS LUT440 transmits a pulse signal to the transducer that is then emitted as ultrasonic pulses. The pulses echo off the water surface and are then sensed by the transducer. The time for a pulse to echo back from the water surface is temperature compensated and converted into a measurement of head. The SITRANS LUT440 uses an algorithm to convert the head measurement into flow rate. The flow rate is totalised and stored in a data log to provide detailed flow analysis.

Note: The XRS-5 transducer incorporates an integral temperature sensor that reports ambient temperature to the SITRANS LUT440, allowing it to automatically compensate the speed of sound for varying temperatures. In situations where the transducer is exposed to direct sunlight, or where variation in temperature of the sound medium is expected, a TS-3 temperature sensor is used.

## 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 for certificate No. Sira MC 130226/02
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.

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