PRODUCT CONFORMITY CERTIFICATE

This is to certify that the

AquaTrans AT600 ultrasonic flowmeter

Manufactured by:

Baker Hughes
Sensing House
Shannon Free Zone East
Shannon
County Clare
Ireland

has been assessed by CSA Group
and for the conditions stated on this certificate complies with:

Performance Standards and Test Procedures for Continuous Water Monitoring Equipment, Part 3: Performance standards and test procedures for water flowmeters, Environment Agency, version 4, March 2020

The combined performance characteristic (U_c, the expanded uncertainty) is as follows:
AquaTrans AT600 (AC) is 4.15**% (Class 2)**

Certification Range:

Velocity:	0.25m/s to 5m/s
Size:	DN50 to DN1200

Project No.:	80083931
Certificate No:	CSA MC250380/00
Initial certification:	20 August 2025
Certificate issued:	20 August 2025
Renewal date:	19 August 2030

Andrew Young
Environmental Team Manager

MCERTS is operated on behalf of the Environment Agency by

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Form 3005
Issue 6

Certificate Contents

Approved Site Application

Any potential user should make sure, 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 guidance available at www.mcerts.net

The product is suitable for use, where it is appropriate, for regulated applications such as abstraction, effluent discharge, ultraviolet disinfection and industrial processing.

The field test was carried out between the 13th December 2024 and the 13th March 2025 at a sewage treatment works in Shropshire, UK.

Basis of Certification

This certification is based on the following test report(s) and on CSA Group's assessment and ongoing surveillance of the product and the manufacturing process:

WRc Test report, ref. 'UC11411.1', "MCERTS Testing of the AT600 Ultrasonic Flow Meter", March 2016
WRc Test report, ref. 'UC15630 V2', "Baker Hughes AT600 Clamp on Ultrasonic Flow Meter", December 2021
CSA Evaluation report, ref. '80083931, incorporating report "Laboratory and Field test Results", May 2025

Product Certified

The AquaTrans AT600 clamp-on ultrasonic flowmeter measuring system consists of the following parts:

- Liquid flow transmitter with epoxy-coated weatherproof Type 4X/IP67 enclosure (168mm x 128mm x 61mm dimensions) in aluminium construction with graphic LCD display and six-button keypad.
- x2 clamp-on transducers (CRS401 & CRS402) - anodized aluminium with stainless steel strapping.

This certificate applies to all instruments with serial number M1120125, onwards.

Certified Performance

The instrument was evaluated for use under the following conditions:
Ambient Temperature Range: -19°C to +53°C
Instrument IP rating: IP67

The instrument meets **MCERTS Class 2** requirements for the combined performance characteristic as specified in Table 6 of the MCERTS performance standard. Details of individual performance characteristics are summarised below:

Test	*Result expressed as % of the certification range*				*Other results*	*Class*	*MCERTS specification*
	<0.5	*<1*	*<2*	*<5*			
LABORATORY TESTS							
General requirements/initial checks							
Protection against unauthorised access	Password protected unique to the device						cl. 3.1.2
Indicative device and/or analogue digital output signal	LCD and 4-20mA output incorporated						cl. 3.1.3
Units of measurement	Verified						cl. 3.1.6 & 3.1.7
Comparison of output values	Verified						cl. 6.1.4
Warm-up time*							cl. 6.1.2 - no specification assigned, to be reported
AT600	12 secs						
Combined performance characteristic (Uc)							cl. 6.4 - Table 6 - class specific
AT600	**4.15**					**2**	
Performance tests							
Loss of power* - AC	Settings retained for 20 parameters						cl. 6.3.1
Mean error, x							cl. 6.3.2 - Table 6 - class specific
DN65 with 401 transducer							
Test point 1			1.58			2	
Test point 2		-0.92					
Test point 3				-2.18			
Test point 4				-2.78			
Test point 5				-3.21			
Test point 6				-3.38			
Repeatability, U_R							cl. 6.3.2 - Table 6 - class specific
DN65 with 401 transducer							
Test point 1	0.22					1	
Test point 2	0.34						
Test point 3	0.41						
Test point 4	0.30						
Test point 5	0.24						
Test point 6	0.18						

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Test	Result expressed as % of the certification range				Other results	Class	MCERTS specification
	<0.5	<1	<2	<5			
Supply voltage*, X_V							cl. 6.3.3 - Table 6 - class specific
AC mains powered, X_V (85V to 265V)	0.16					1	cl. 6.3.3.1 - table 6 - class specific
DC powered, X_V (12V to 28V)	0.12						cl. 6.3.3.2 - Table 6 - class specific
Output impedance*, X_O (10Ω to 800Ω)							cl. 6.3.4 - Table 6 - class specific
AT600 with CRS 402 transducer	0.060					1	
AT600 with CRS 401 transducer	0.107						
Fluid temperature, X_{FT} (2°C to +27°C)							cl. 6.3.5 - Table 6 - class specific
AT600		0.62				2	
Ambient air temperature*, X_T (-20°C to +53°C)							cl. 6.3.6 - Table 6 - class specific
AT 600 with CRS 402 transducer		0.77				2	
Relative humidity*, X_{RH} (95%, -20°C to +53°C)							cl. 6.3.6 - Table 6 - class specific
AT 600 with CRS 402 transducer	0.45					1	
Bi-directional flow							cl. 6.3.13 - no specification assigned, to be reported
Mean error							
Plastic (ABS) TP1 (DN65) - 0.41m/s				-2.94			
Plastic (ABS) TP2 (DN65) - 1.75m/s			-1.13				
Plastic (ABS) TP3 (DN65) - 4.93m/s		-0.58					
Lined Ductile Iron - TP1 (DN65) - 0.27m/s				3.24			
Lined Ductile Iron - TP2 (DN65) - 0.43m/s			1.20				
Lined Ductile Iron - TP3 (DN65) - 1.01m/s	0.02						
Lined Ductile Iron - TP4 (DN65) - 1.75m/s	-0.32						
Lined Ductile Iron - TP5 (DN65) - 3.53m/s			-1.43				
Lined Ductile Iron - TP6 (DN65) - 4.79m/s			-1.40				
Repeatability							
Plastic (ABS) TP1 (DN65) - 0.41m/s		0.63					
Plastic (ABS) TP2 (DN65) - 1.75m/s	0.40						
Plastic (ABS) TP3 (DN65) - 4.93m/s	0.33						
Lined Ductile Iron - TP1 (DN65) - 0.27m/s	0.37						
Lined Ductile Iron - TP2 (DN65) - 0.43m/s		0.56					
Lined Ductile Iron - TP3 (DN65) - 1.01m/s		0.51					
Lined Ductile Iron - TP4 (DN65) - 1.75m/s	0.23						
Lined Ductile Iron - TP5 (DN65) - 3.53m/s	0.19						
Lined Ductile Iron - TP6 (DN65) - 4.79m/s	0.19						

Test	Result expressed as % of the certification range				Other results	Class	MCERTS specification
	<0.5	<1	<2	<5			
Effect of conduit material							
Mean error							
Carbon Steel - TP1 (DN65) - 0.26m/s			1.58				
Carbon Steel - TP2 (DN65) - 0.42m/s		-0.92					
Carbon Steel - TP3 (DN65) - 1.02m/s				-2.18			
Carbon Steel - TP4 (DN65) - 1.76m/s				-2.78			
Carbon Steel - TP5 (DN65) - 3.53m/s				-3.21			
Carbon Steel - TP6 (DN65) - 4.87m/s				-3.38			
Lined Ductile Iron - TP1 (DN65) - 0.28m/s				3.65			
Lined Ductile Iron - TP2 (DN65) - 0.42m/s				2.17			
Lined Ductile Iron - TP3 (DN65) - 1.01m/s		0.56					
Lined Ductile Iron - TP4 (DN65) - 1.76m/s	-0.23						
Lined Ductile Iron - TP5 (DN65) - 3.53m/s			-1.56				
Lined Ductile Iron - TP6 (DN65) - 4.80m/s			-1.65				
Plastic (ABS) TP1 (DN65) - 0.24m/s				-2.78			
Plastic (ABS) TP2 (DN65) - 0.42m/s				-3.52			
Plastic (ABS) TP3 (DN65) - 1.02m/s			-1.19				
Plastic (ABS) TP4 (DN65) - 1.73m/s		-0.57					
Plastic (ABS) TP5 (DN65) - 3.52m/s	-0.16						cl. 6.3.16 - no specification assigned, to be reported
Plastic (ABS) TP6 (DN65) - 4.80m/s	-0.16						
Repeatability							
Carbon Steel - TP1 (DN65) - 0.26m/s	0.22						
Carbon Steel - TP2 (DN65) - 0.42m/s	0.34						
Carbon Steel - TP3 (DN65) - 1.02m/s	0.41						
Carbon Steel - TP4 (DN65) - 1.76m/s	0.30						
Carbon Steel - TP5 (DN65) - 3.53m/s	0.24						
Carbon Steel - TP6 (DN65) - 4.87m/s	0.18						
Lined Ductile Iron - TP1 (DN65) - 0.28m/s	0.43						
Lined Ductile Iron - TP2 (DN65) - 0.42m/s	0.28						
Lined Ductile Iron - TP3 (DN65) - 1.01m/s	0.09						
Lined Ductile Iron - TP4 (DN65) - 1.76m/s	0.10						
Lined Ductile Iron - TP5 (DN65) - 3.53m/s	0.12						
Lined Ductile Iron - TP6 (DN65) - 4.80m/s	0.21						
Plastic (ABS) TP1 (DN65) - 0.24m/s			1.00				
Plastic (ABS) TP2 (DN65) - 0.42m/s				2.34			
Plastic (ABS) TP3 (DN65) - 1.02m/s		0.95					
Plastic (ABS) TP4 (DN65) - 1.73m/s		0.50					
Plastic (ABS) TP5 (DN65) - 3.52m/s	0.29						
Plastic (ABS) TP6 (DN65) - 4.80m/s	0.12						

Test	Result expressed as % of the certification range				Other results	Class	MCERTS specification
	<0.5	<1	<2	<5			
Effect of conduit size*# (notes 1 & 2)							cl. 6.3.17 - no specification assigned, to be reported
Mean error - with CRS 401 transducer							
SMALL - TP1 DN65			1.58				
SMALL - TP2 DN65		-0.92					
SMALL - TP3 DN65				-2.18			
SMALL - TP4 DN65				-2.78			
SMALL - TP5 DN65				-3.21			
SMALL - TP6 DN65				-3.38			
MEDIUM - TP1 DN600			-1.27				
MEDIUM - TP2 DN600		-0.75					
MEDIUM - TP3 DN600	0.09						
MEDIUM - TP4 DN600			1.53				
MEDIUM - TP5 DN600				5.96			
LARGE- TP1 DN1200			1.67				
LARGE- TP2 DN1200			1.51				
LARGE- TP3 DN1200	0.43						
LARGE- TP4 DN1200		0.93					
LARGE- TP5 DN1200			1.17				
Mean error - with CRS 402 transducer							cl. 6.3.17 - no specification assigned, to be reported
MEDIUM - TP1 DN600				3.68			
MEDIUM - TP2 DN600				3.84			
MEDIUM - TP3 DN600				4.66			
MEDIUM - TP4 DN600				4.65			
MEDIUM - TP5 DN600				5.11			

Test	Result expressed as % of the certification range				Other results	Class	MCERTS specification
	<0.5	<1	<2	<5			
Effect of conduit size*# (notes 1 & 2)							cl. 6.3.17 - no specification assigned, to be reported
Repeatability- with CRS 401 transducer							cl. 6.3.17 - no specification assigned, to be reported
SMALL - TP1 DN65	0.22						
SMALL - TP2 DN65	0.34						
SMALL - TP3 DN65	0.41						
SMALL - TP4 DN65	0.30						
SMALL - TP5 DN65	0.24						
SMALL - TP6 DN65	0.18						
MEDIUM - TP1 DN600				3.50			
MEDIUM - TP2 DN600				3.01			
MEDIUM - TP3 DN600				2.82			
MEDIUM - TP4 DN600				2.92			
MEDIUM - TP5 DN600	0.33						
LARGE- TP1 DN1200			1.67				
LARGE- TP2 DN1200			1.51				
LARGE- TP3 DN1200	0.43						
LARGE- TP4 DN1200		0.93					
LARGE- TP5 DN1200			1.17				
Repeatability- with CRS 402 transducer							
MEDIUM - TP1 DN600			1.55				
MEDIUM - TP2 DN600			1.22				
MEDIUM - TP3 DN600		0.52					
MEDIUM - TP4 DN600	0.27						
MEDIUM - TP5 DN600	0.26						
Response Time* (either increasing or decreasing flow)							cl. 6.3.19 - ≤30 seconds
Increasing					9 secs		
Decreasing					11 secs		

Test	*Parameter*	*Result*	*Class*	*MCERTS specification*
FIELD TESTS				
Error under field conditions	Maximum error (%)	-4.21	2	cl. 7.3 - Table 6
	Minimum error (%)	0.62		
	Mean error (%)	-1.39		
	Proportion of errors ≤2%	83.3		
	Proportion of errors ≤5%	100		
	Proportion of errors ≤8%	100		
Up-time (%)		99.6 (note 3)		cl. 7.4 ≥95%
Maintenance		None (note 3)		cl. 7.5 - to be reported

Note 1: Tests marked '*' denote test data taken from WRc report ref. 'UC11411.1', all other data from 'UC15630 V2'.

Note 2: Tests marked '#' denote testing carried out for "Effect of conduit size" for the sizes DN600 and DN1200 at a third-party test laboratory. Test results were reported in the WRc test report ref. 'UC11411.1'.

Note 3: The flowmeter system was installed in late 2024 with data obtained between the 13th December and 13th March 2025 with a total scheduled operating time of 2,184 hours, or 131,040 minutes. Of the total operating time 131,040 minutes, 585 minutes were attributed to outage time. No maintenance was required during the field test.

Description

The AquaTrans AT600 is a non-intrusive ultrasonic flow meter for the measurement of liquids. It is designed for industrial applications, including water, wastewater and others. The AT600 consists of the AT600 electronics, a metal enclosure, the transducer system, and a clamp-on transducer fixture.

The AquaTrans AT600 features the latest hardware and firmware developments and a wide range of configurable options and outputs to cover a range of applications and interface with virtually any control system.

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 CSA Certificates'.

2. The design of the product certified is defined in the CSA design schedule for certificate No. CSA MC250380/00.

3. If the certified product is found not to comply, CSA Group should be notified immediately at the address shown on this certificate.

4. The certification marks that can be applied to the product or used in publicity material are defined in 'Regulations Applicable to the Holders of CSA Certificates'.

5. This document remains the property of CSA Group and shall be returned when requested by CSA Group.