

# PRODUCT CONFORMITY CERTIFICATE

This is to certify that the

**IQ SENSOR NET 181 Controller Unit  
FDO 700 IQ Optical Dissolved Oxygen Probe  
VisoTurb 700 IQ Turbidity Probe**

Manufactured by:

**Xylem Analytics Germany GmbH**

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D-82362 Weilheim  
Germany

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

**MCERTS Performance Standards for Continuous Water Monitoring Equipment,  
Part 2: online analysers, Version 3.1 dated August 2010**

Certification Ranges:

DO	0 to 20mg/L / 0 to 200% sat
Turbidity	0 to 4000 FNU

Project No.:	16W31523
Certificate No:	Sira MC150286/01
Initial Certification:	02 November 2015
This Certificate issued:	01 July 2016
Renewal Date:	02 November 2020

Joe Prince MSc, MInst MC  
Deputy Certification Manager

MCERTS is operated on behalf of the Environment Agency by

## Sira Certification Service

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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)*

On the basis of the assessment this instrument is considered suitable for use on treated wastewater, untreated wastewater and receiving water applications.

## 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 report UC10125.01 October 2014  
WRc report P9719 March 2014  
WRc report UC10125.02 February 2015

## Product Certified

The measuring system consists of the following parts:

- FDO 700 IQ sensor
- VisoTurb 700 IQ sensor
- IQ SensorNet 181 Terminal/Controller

This certificate applies to all instruments fitted with software version 3.54 (serial number 15051425 onwards).

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## Certified Performance

The instrument was evaluated for use under the following conditions:

Ambient Temperature Range: -20°C to +55°C

Unless otherwise stated the evaluation was carried out on the certification ranges: DO 0-20mg/L, turbidity 0-100 NTU

Test	Results expressed as % of the reading				Other results	MCERTS specification
	<0.5	<1	<2	<5		
Combined performance characteristic						
DO				3.39		6% reading
Turbidity			1.83			2.5% span
Warm up time						
DO					23s	Value to be reported
Turbidity					25s	
Response time						
DO					270 seconds	Value to be reported
Turbidity					3 seconds	
Mean error						
DO			-1.9			5% reading
Turbidity (0 to 100 NTU)			1.8			2% span
Turbidity (0 to 500 NTU)			1.3			2% span
Linearity						
DO			1.23			2.5% reading
Turbidity (0 to 100 NTU)	-0.18					1% span
Turbidity (0 to 500 NTU)	0.35					1% span

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Test	Results expressed as % of the reading				Other results	MCERTS specification
	<0.5	<1	<2	<5		
Repeatability						
DO				2.18		2.5% reading
Turbidity (0 to 100 NTU)	0.09					1% span
Turbidity (0 to 500 NTU)	0.25					1% span
Sample matrix effects						
DO (salinity compensation)		0.6				2.5% reading
Turbidity (colour effects)			1.8			-
Drift						
DO			1.1			2.5% reading
Turbidity		-0.54				1% span
Output impedance (10 to 500Ω)						
DO					No effect	1% reading
Turbidity					No effect	0.5% span
Supply voltage AC (100V to 240V)						
DO	0.25					1% reading
Turbidity	0.13					0.5% span
Supply voltage DC (21.01V to 28.01V)						
DO	-0.25					1% reading
Turbidity	-0.5					0.5% span
Ambient temperature (-20°C to +55°C)						
DO		0.96				2.5% reading
Turbidity		0.52				1% span

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Test	Results expressed as % of the reading				Other results	MCERTS specification
	<0.5	<1	<2	<5		
Relative humidity (95% RH)						
DO	0.37					2.5% reading
Turbidity	0.06					1% span
Incident light						
DO	-0.24					1% reading
Turbidity	0.00					1% span
Sample temperature (3°C to 30°C)						
DO		0.73				2.5% reading
Turbidity	0.11					1% span
Sample flow rate						
DO	0.14					1% reading
Turbidity	0.25					0.5% span

### Field test results

Test	Results expressed as % of the reading				Other results	MCERTS specification
	<0.5	<1	<2	<5		
Error under field conditions						
DO					90%	>90% of errors
Turbidity					100%	≤ Uc value
Response time						
DO					10 minutes	To be reported
Turbidity					58 seconds	
Up time					100%	>95%
Maintenance	None					To be reported

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## Description

### **IQ SENSOR NET 181 Controller Unit**

The IQ SENSOR NET 181 is singular digital system which allows one of 4 different IQ sensors to be installed to provide a continuous monitoring solution from inlet to final effluent.

- One Controller ; One Digital IQ Sensor
- 2-wire cable provides power and communications
- System wide lightning protection
- Numerous relays, analogue and digital outputs including PROFIBUS, MODBUS, RS-232

### **FDO 700 IQ**

The FDO is an optical, luminescent based DO sensor for the IQ SensorNet system. During the biological nutrient removal process at wastewater treatment plants, continuous and precise measurement of dissolved oxygen concentration is of vital importance for optimal performance and trouble-free operation. Efficiency and energy demand is mainly determined by the performance of the aeration control system. The FDO is a reliable, proven, long-term solution for continuous DO data that can help optimise your process and lower energy costs.

### **VisoTurb 700 IQ**

The VisoTurb is a part of a family of optical sensors for turbidity and suspended solids measurements. These sensors incorporate an ultrasonic cleaning system that guarantees low maintenance and long-term reliability of the sensors. Turbidity measurements are carried out using a nephelometric principle in compliance with EN ISO 7027. Because of the wide measuring range of the VisoTurb (0 – 4000 FNU) the best resolution for each measured value can be selected using an autorange function. Thus, one sensor is required to cover almost all applications ranging from drinking water to highly concentrated sludge.

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## 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 V00 for certificate No. Sira MC150286/01
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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