NATIONAL WEIGHTS AND MEASURES LABORATORY

Member State of OIML
United Kingdom of Great Britain
and Northern Ireland

OIML Certificate No
R49/2006-GB1-10.01

OIML CERTIFICATE OF CONFORMITY

Issuing authority
Name: **National Weights and Measures Laboratory**
Address: **Stanton Avenue**
Teddington
Middlesex
TW11 0JZ
United Kingdom

Person responsible: **Paul Dixon - Product Certification Manager**

Applicant
Name: **ABB Limited**
Address: **Oldends Lane**
Stonehouse
Gloucestershire
GL10 3TA
United Kingdom

Manufacturer of the certified pattern is the Applicant.

Identification of the certified pattern:
Family of cold-water meters named WaterMaster, utilising a common, electromagnetic principle. Further characteristics see page 2
Type Designation: **FEV1 & FET1**

This certificate attests the conformity of the above-mentioned pattern (represented by the samples identified in the associated test report) with the requirements of the following Recommendation of the International Organization of Legal Metrology (OIML):

OIML:	**R49**
Edition:	**2006 (E)**
Accuracy class:	**1 & 2**

This certificate relates only to the metrological and technical characteristics of the pattern of the instrument concerned, as covered by the relevant OIML International Recommendation.

This certificate does not bestow any form of legal international approval.

The conformity was established by tests described in the associated test report WMFEV1 having 51 pages, test report TR0550 having 26 pages and the associated pattern evaluation checklist included in report WMFEV1.

Issuing authority

Mr P R Dixon
for NWML

CIML member

Mr P Mason

Date 24 February 2010
Ref: T23/0017

Characteristics:

			WaterMaster OIML R49 Class 2			
DN	Q4	Q3	Q0.4%	Q2	Q1	R
	(m3/h)	(m3/h)	(m3/h)	(m3/h)	(m3/h)	
40	50	40	4.2	0.2	0.13	315
50	79	63	4.2	0.32	0.20	315
80	200	160	10.7	0.81	0.51	315
100	313	250	16.7	1.3	0.79	315
150	788	630	42	3.2	2.0	315
200	1,250	1,000	67	5.1	3.2	315
250	2,000	1,600	107	8.1	5.1	315
300	3,125	2,500	167	12.7	7.9	315

			WaterMaster OIML R49 Class 1			
DN	Q4	Q3	Q0.2%	Q2	Q1	R
	(m3/h)	(m3/h)	(m3/h)	(m3/h)	(m3/h)	
* 40	50	40	6	0.32	0.2	200
* 50	79	63	7.9	0.5	0.32	200
80	200	160	16	1.3	0.8	200
100	313	250	25	2	1.25	200
150	788	630	63	5	3.2	200
200	1,250	1,000	100	8	5	200
250	2,000	1,600	160	13	8	200
300	3,125	2,500	250	20	12.5	200

Note: * OIML R49-1 allows Class 1 only for meters with Q3>= 100m3/h, although the meters were tested to class 1 accuracy and passed the requirements.

Measuring principle:	Electromagnetic
Accuracy Class:	1 & 2
Q_2/Q_1	1.6
Q_3/Q_1	Class 1 = 200, Class 2= 315
Environmental class:	T50 (0.1C to 50C)
Environmental class:	C
Electromagnetic environment:	E2
Maximum admissible temperature:	50 °C
Maximum admissible pressure:	1.6 Mpa (16 bar)
Pressure Loss Class	0.25 bar

Installation details

Connection type	Flange
Minimum straight length of inlet pipe:	5D (DN x 5)
Minimum straight length of outlet pipe:	0D (0)
Flow conditioner (details if required):	None

Mounting

Orientation:	Can be installed in any position

Functionality

Checking Facilities :	Measurement transducer, Calculator & Indicator
Checking Facilities Type:	P
Flow Measurement Direction:	Bi Directional

Power Supply

Type:	Mains or DC (85 to 265V AC or 24V AC +10%-30% / 24V DC +/-30%
U_{max} :	265V AC or 26.4VAC or 31.2V DC
U_{min}:	85V AC or 18.46V AC or 18.46V DC
Frequency:	50-60Hz