



EC-Type Examination Certificate

Measuring Instrument Directive

Number: DK-0200-MI004-007

Issued by FORCE Certification A/S Denmark
EC-notified body number 0200

In accordance with The Danish Safety Technology Authority's statutory order no. 339 of 29 March 2010 on changes to statutory order no. 436 of 16 May 2006 which implements the Directive 2004/22/EC of the European Parliament and Council of March 31, 2004 on measuring instruments (MID).

Issued to: **Hydrometer GmbH**
 Industriestraße 13
 91522 Ansbach
 Germany

Reference No.: 80.976-215/11

Type of instrument: Ultrasonic Flowmeter

Type designation: SHARKY 475

Valid until: Nov. 26, 2017

Number of pages: 7, including appendix

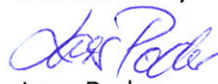
Date of issue: April 7, 2011

Revision: 1 - 2011, SW changes to 2.01

Approved by


Hans Falster
Director

Processed by


Lars Poder
Certification Manager

The conformity markings may only be affixed to the above type approved equipment. The manufacturer's Declaration of Conformity may only be issued and the notified body identification number may only be affixed on the instrument when the production/product assessment module (D or F) of the Directive is fully complied with and controlled by a written inspection agreement with a notified body.
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Appendix to

EC-Type Examination Certificate Measuring Instrument Directive

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Issued by FORCE Certification A/S, Denmark
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Applied standards and documents:
EN1434: 2007

Revision: 1 - 2011

The instruments/measuring systems shall correspond with the following specifications:

Type designation:
SHARKY 475

Description:

The Volume meter SHARKY 475 is an ultrasonic flow meter working after the transmission time difference principle.

The meter consists of a flow sensor and a transmitter.

The flow sensor has 2 sound tracks.

Technical documentation:

FORCE Certification A/S.

File no.: 80.976-023/07, 80.976-118/09, 80.976-171/10, 80.976-192/10 and
80.976-215/11.



Technical data

Instrument tested according to	: EN1434:2007
Software version	: 1.02, 1.04, 1.05, or 2.01
Verification tolerance	: $\pm(2+0,02 q_p/q)\%$, max. $\pm 5\%$
Temperature	: $\theta_{\min} - \theta_{\max}$ 15°C...200°C
Pressure	: PN10, PN16, PN25 & PN40 (bar)
Power supply	: 115 - 230VAC or 3.6VDC battery
Environment class	: E2, M1
Accuracy class	: 2
Climatic class	: -10 - +55°C, condensing, closed
Durability specification	: 10 years



SHARKY 475 FLOW meter Variants

Diameter	q _p [m ³ /h]	q _s [m ³ /h]
DN50	15	30
DN50	15	45
DN50	30	45
DN65	25	50
DN65	25	72
DN65	50	72
DN80	40	80
DN80	40	120
DN80	80	120
DN100	60	120
DN100	60	180
DN100	120	180
DN125	100	200
DN125	100	280
DN125	200	280
DN150	150	300
DN150	150	420
DN150	300	420
DN200	250	500
DN200	250	700
DN200	500	700
DN250	400	800
DN250	400	1120
DN250	800	1120
DN300	560	1120
DN300	560	1560
DN300	1120	1560
DN350	750	1500
DN350	750	2100
DN350	1500	2100
DN400	950	1900
DN400	950	2660
DN400	1900	2660
DN500	1475	2950
DN500	1475	4130
DN500	2950	4130
DN600	2150	4300
DN600	2150	6020
DN600	4300	6020
DN700	2900	5800
DN700	2900	8120
DN700	5800	8120
DN800	3800	7600
DN800	3800	10640
DN800	7600	10640
DN900	5000	10000
DN900	5000	14000
DN900	10000	14000
DN1000	6000	12000
DN1000	6000	16800
DN1000	12000	16800
DN1200	9000	18000
DN1200	9000	25200
DN1200	18000	25200

Max. q_p/q_i = 100



Verification

Errors: Maximum permissible errors according to Directive 2004/22/EC of the European Parliament and Council of March 31, 2004 on measuring instruments (MID), Annex MI-004.

Procedure: Verification requirements according to EN1434:2007

Test Points: $q_i \leq q \leq 1.1 q_i$
 $0.1 q_p \leq q \leq 0.11 q_p$
 $0.9 q_p \leq q \leq 1.0 q_p$

The meter shall be verified before becoming operational (initial verification).
The verification is done with water.

Temperature according to DS/EN 1434-5 Initial verification tests:

Initial verification at temperatures between 15°C and 50°C is approved provided a verification tolerance of max $\pm 1,5\%$ regardless of flow rate is applied.

Verification tolerance, according to DS/EN 1434-5:

When the verification is done the meter is sealed as described under sealing.

Sealing

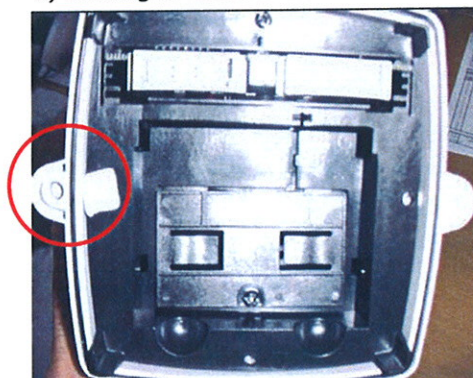
See the following 6 pictures.

Sealing

a) Sealing of electronics



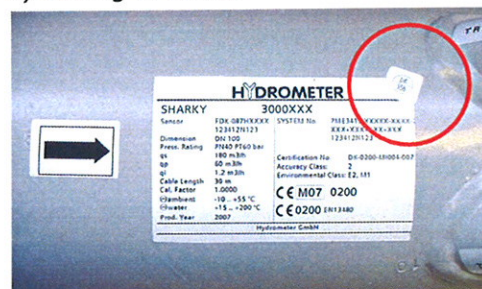
b) Sealing of electronics



a) Sealing of electronics



b) Sealing of sensor



e) Installation sealing





Installation

The flow sensor can be mounted horizontal or vertical.
Flow direction marked on the sensor.

The signal transmitter can be fitted compact on the sensor or remotely.

SHARKY 475 $\geq$ DN80 1.5 meter straight length of pipe before.

Labeling and inscriptions

Manufacturer, type, year
Serial no.
EC-Type examination certificate number
Tmax and Pmax
Application temperature range
Power supply
Accuracy class
Software version
Direction of flow
Mechanical and electromagnetic environment classes.

Example

HYDROMETER	
SHARKY	
ASE01189775	
SYSTEM No.	7ME3413-XXXXX-XXXX-Z +XXX+XXX+XXX+XXX 123412N123
Transmitter	7ME3453-XXXXX-XXXX 123412N123
Sensor	FDK-087HXXXX 123412N123
qs	180 m ³ /h
qp	60 m ³ /h
qi	1.2 m ³ /h
Pulse Value	250 L/Pulse
Pulse Width	200 ms
Cable Length	30 m
Cal. Factor	1.0000
SW vers.:	2.01
Prod. Year	2011
⊕ ambient	-10 .. +55 °C
Certification No.	DK-0200-MI004-007
Accuracy Class:	2
Environmental Class:	E2, M1
CE M11 0200	
Hydrometer GmbH	

HYDROMETER	
SHARKY	
Sensor	FDK-087HXXXX 123412N123
Dimension	DN 100
Press. Rating	PN40 PT60 bar
qs	180 m ³ /h
qp	60 m ³ /h
qi	1.2 m ³ /h
Cable Length	30 m
Cal. Factor	1.0000
⊕ ambient	-10 .. +55 °C
⊕ water	+15 .. +200 °C
Prod. Year	2011
SYSTEM No.	7ME3413-XXXXX-XXXX-Z +XXX+XXX+XXX+XXX 123412N123
Certification No.	DK-0200-MI004-007
Accuracy Class:	2
Environmental Class:	E2, M1
CE M11 0200	
CE 0200 EN13480	
Hydrometer GmbH	

