

EU-Type Examination Certificate

Measuring Instrument Directive

Certificate number: DK-0200-MI004-005

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

In accordance with Annex II Module B of the Directive 2014/32/EU of the European Parliament and of the Council of 26 February 2014 on the harmonization of the laws of the Member States relating to the making available on the market of measuring instruments (MID).

Issued to: **Siemens AG**
 DE-76181
 Karlsruhe
 Germany

Type of instrument: Ultrasonic flow meter

Type designation: SITRANS FUE380

Valid until: 2029-01-01

Number of pages: 9, including appendix

Date of issue: 2022-11-11

Version: 14
This new version of DK-0200-MI004-005 is issued due to changes to the meter and a new sealing specification. The previous certificate is withdrawn.

Approved by

Processed by

Lars Poder
Certification Manager

Nikki Christoffersen
Examiner

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. This EU-type examination certificate may not be reproduced except in full, without written permission by FORCE Certification A/S.

FORCE Certification references:
TASK No.: 122-32128.01 and ID. No.: 0200-MID-06305-14

Appendix to

EU-Type Examination Certificate

Measuring Instrument Directive

Number: DK-0200-MI004-005

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

Version	Issue date	Changes
DK-0200-MI004-005	2007-11-14	Original certificate
DK-0200-MI004-005 rev 1 - 2009	2009-12-07	-
DK-0200-MI004-005 rev 1 - 2010	2010-05-27	-
DK-0200-MI004-005 rev 2 - 2010	2010-11-10	New SW version added
DK-0200-MI004-005 rev 1 - 2011	2011-04-07	New SW version added
DK-0200-MI004-005 rev 2 - 2011	2011-07-15	New SW version added
DK-0200-MI004-005 ver 6	2017-11-01	Administrative extension of the validity period
DK-0200-MI004-005 ver 7	2018-02-22	Administrative extension of the validity period
DK-0200-MI004-005 ver 8	2018-06-01	Administrative extension of the validity period
DK-0200-MI004-005 ver 9	2018-09-01	Administrative extension of the validity period
DK-0200-MI004-005 ver 10	2018-12-01	Administrative extension of the validity period
DK-0200-MI004-005 ver 11	2019-01-01	Meter re-tested according to EN 1434:2015 and now valid for a new 10-year period
DK-0200-MI004-005 ver 12	2019-01-30	Minor editorial correction on page 4
DK-0200-MI004-005 ver 13	2019-04-30	Various editorial corrections and clarifications
DK-0200-MI004-005 ver 14	2022-10-26	New hardware bundle 002 added, new sealing specification added

Applied standards and documents:

EN 1434:2015

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

Type designation:

SITRANS FUE380

Description:

The Volume meter SITRANS FUE380 is an ultrasonic flow meter working after the transmission time difference principle.

The flow meter consists of a flow sensor with two sound tracks and a transmitter.

Technical documentation:

Reference numbers:

- 122-32128.01
- 118-36492.08
- 118-36492.05
- 118-36492.01
- 117-29536.11.01
- 117-29536.10.01
- 117-29536.09.01
- 117-29536.07.01
- 117-29536.06.01

FORCE Certification A/S – File numbers:

- 80.970.6-0048/06
- 80.976-116/09
- 80.976-172/10
- 80.976-190/10
- 80.976-213/11
- 80.976-226/11

Technical data

Instrument tested according to: EN1434:2015

Hardware bundle: 001, 002

Firmware version:

Version	Checksum for metrological part
1.02	Not available
1.04	Not available
1.05	Not available
2.01	Not available
2.03	Not available
2.04	9E32443E39FA9416A711C0EEE755C387

Verification tolerance: $\pm (2+0,02 q_p/q) \%$, max. $\pm 5 \%$

Media temperature: $\theta_{\min} - \theta_{\max} 5 \text{ }^\circ\text{C} \dots 200 \text{ }^\circ\text{C}$

Pressure class: PN10, PN16, PN25 & PN40 (bar)

Power supply: 115 – 230 VAC or 3.6 V battery

Environmental class: E2, M1

Accuracy class: 2

Climatic class: -10...55 $^\circ\text{C}$, condensing, closed

Durability specification: 10 years

Approved sensor variants

SIZE	DN50 (2")	DN65 (2½")	DN80 (3")	DN100 (4")	DN125 (5")	DN150 (6")	DN200 (8")
"R" q_p/q_i	100	100	100	100	100	100	100
q_i [m ³ /h]	0.3	0.5	0.8	1.2	2	3	5
q_p [m ³ /h]	30	50	80	120	200	300	500
q_s [m ³ /h]	45	72	120	180	280	420	700

SIZE	DN250 (10")	DN300 (12")	DN350 (14")	DN400 (16")	DN500 (20")	DN600 (24")	DN700 (28")
"R" q_p/q_i	100	100	100	100	100	100	100
q_i [m ³ /h]	8	11.2	15	19	29.5	43	58
q_p [m ³ /h]	800	1120	1500	1900	2950	4300	5800
q_s [m ³ /h]	1120	1560	2100	2660	4130	6020	8120

SIZE	DN800 (32")	DN900 (36")	DN1000 (40")	DN1200 (48")
"R" q_p/q_i	100	100	100	50
q_i [m ³ /h]	76	100	100	200
q_p [m ³ /h]	7600	10000	10000	10000
q_s [m ³ /h]	10640	14000	14000	14000

Tables above describe the maximum specification of flow ranges.

Other dynamic ranges are allowed if "R" is 50, 25 or 10.

Verification

Errors: Maximum permissible errors according to Directive 2014/32/EU of the European Parliament and Council of February 26, 2014 on measuring instruments (MID), Annex VI (MI-004).

Procedure: Test points and verification requirements according to EN 1434:2015

The verification is done with water.

At least the following three flow rates shall be used for verification:

$$q_i \leq q \leq 1.1 q_i$$

$$0.1 q_p \leq q \leq 0.11 q_p$$

$$0.9 q_p \leq q \leq 1.0 q_p$$

The meter shall be verified before becoming operational (initial verification).

Temperature according to EN 1434-5 Initial verification tests:

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

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

$$\pm(2+0,02 q_p/q) \%, \text{ max. } \pm 5 \%$$

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

Sealing

Verification sealing

Verification sealings are done as shown in Figure 1. These sealings avoid anyone to access to the settings of the product or to modify the markings. The HW key is located behind the display and is thereby protected by the display sealing.

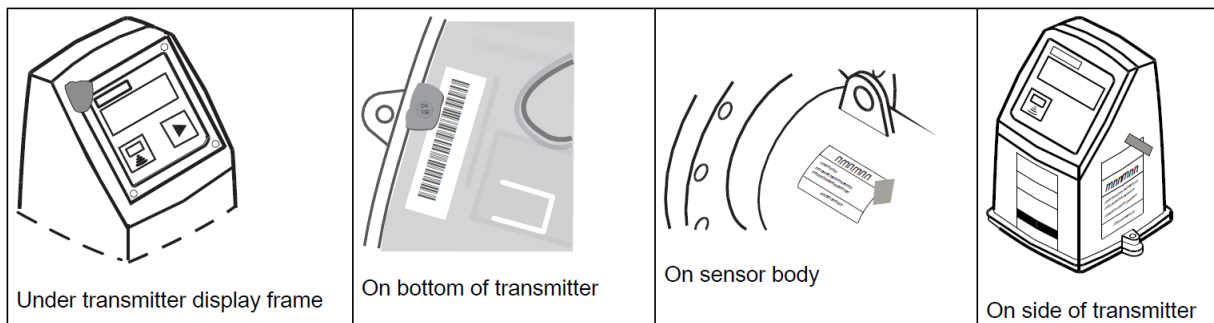


Figure 1 : Verification sealing of the SITRANS FUE380 system after verification.

User sealing

After finishing the installation and electrical connection of SITRANS FUE380 types, the user can seal the flowmeter as shown in Figure 2.

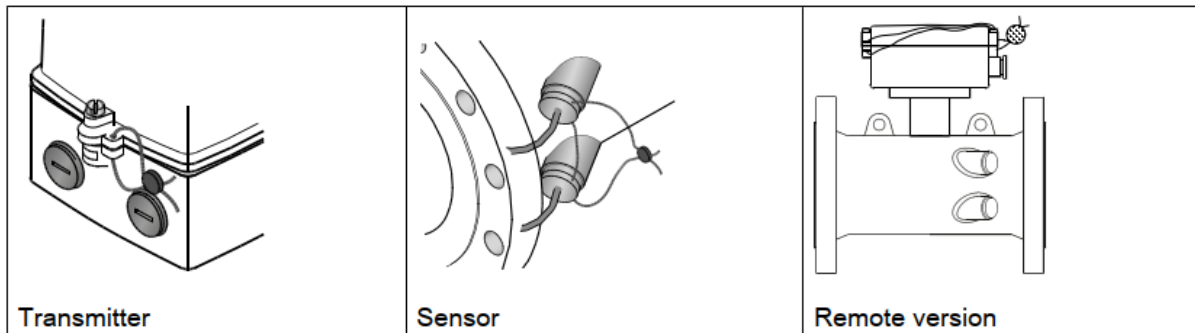


Figure 2 : User sealing of the SITRANS FUE380 system after installation

From left to right:

- **Compact & remote DN50-DN800 sealing version on transmitter**
- **Sensor sealing**
- **Remote DN900-DN1200 sealing version.**

Installation

The flow sensor can be mounted horizontal or vertical.

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

Minimum straight inlet pipe: 10 x pipe diameter, minimum 1 m.

See further recommendations in the manufacturers Operating Instructions.

Labeling and inscriptions

Manufacturer, type, year

Serial no.

EU-Type examination certificate number

T_{max} and P_{max}

Application temperature range

Power supply

Accuracy class

Software version

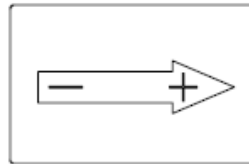
Direction of flow

Mechanical and electromagnetic environment classes.

Label examples

System transmitter label :






SIEMENS	
SITRANS FUE380	
System No.:	7ME34104RD229BR5 NOE
Serial No.:	000000H000
Transmitter:	7ME3450-2AA30-2AB0
Serial No.:	111111H000
Sensor:	FDK000H0000 SN: 222222H222
qp/qj:	7600/76m ³ /h qs: 10640m ³ /h
Pulse value:	500lp Pulse width: 50ms
Cable length:	5m
Cal. Factor:	8,88888888
T.amb.:	-10°C to +55°C
SW/HW V.:	2,04/001 Prod. year.: 2019
Checksum:	9E32443E39FA9416A711C0EEE755C387
Certification No.:	DK-0200 MI004-005
Accuracy Class:	2
Power supply:	115-230V AC
Environmental Class:	E2, M1
  0200	  
Siemens AG, DE- 76181 Karlsruhe	
Made in France	



2nd Transmitter label :

SIEMENS	
SITRANS FUE080	
Order No.:	7ME34502AA302AB0
Serial No.:	111111H111
Supply:	115-230V AC 50/60Hz, 2,5VA
IP67 / NEMA 4X/6	
T.amb.:	-10°C to +55°C
NO DIRECT SUNLIGHT EXPOSURE	
Firmware version:	2.04
	   
Siemens AG, DE- 76181 Karlsruhe	
Made in France	
	

System sensor label :

SIEMENS	
SITRANS FUE380	
Sensor:	FDK000H0000
Serial No.:	222222H222
Dimension:	DN800 / 32 inch
Process conn.:	EN1092-1, PN25
qp/qj:	7600 / 76m ³ /h
qs:	10640m ³ /h
Ermin to θmax:	+5°C to +200°C
Cal. Factor:	8,88888888
T.amb.:	-10°C to +55°C
MAWP (PS) at +5°C (TS):	25bar
MAWP (PS) at +200°C (TS):	19,4bar
Fluid group:	PED/G2
System No.:	7ME34104RD229BR5 NOE
Serial No.:	000000H000
Year of Manuf.:	2019
Meter orientation :	Horizontal
Certification No.:	DK-0200 MI004-005
Accuracy Class:	2
Environmental Class:	E2, M1
  0200	  
Siemens AG, DE- 76181 Karlsruhe	
Made in France	

Informative Annex

Integrated functions not subject to the Measuring Instruments Directive:

Integrated bi-functional Heat/Cooling function

The SITRANS FUE380 is type tested as Heating, Cooling and as bi-functional Heating/Cooling energy meter according to EN 1434-4:2015.

The integrated bi-functional Heating/Cooling function can therefore be utilized under the operating conditions as described in this certificate.

Analog output module

The analog output module (4 – 20 mA) is not subject to the MID.