Certificate No:
TAA00003EC

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Flow Sensor

with type designation(s)
SITRANS FC100, FC500, FC600, FC700

Issued to
Siemens AG
76181 Karlsruhe, Germany

is found to comply with
DNV rules for classification – Ships, offshore units, and high speed and light craft

Application :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV.

Location classes:

Type	Temperature	Humidity	Vibration	EMC	IP[1)]
SITRANS FC[2)]	D	A and B	A or B[3)]	A	

[1)] Required protection according to the Rules shall be provided upon installation on board
[2)] Variants covered by the Type Approval as listed under Product description
[3)] Sensors/Detectors: B; Transmitters/Converters: A

Issued at **Hamburg** on **2024-06-11**
This Certificate is valid until **2026-09-14**.
DNV local station: **Augsburg**

Approval Engineer: **Dariusz Lesniewski**

for **DNV**

Joannis Papanuskas
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.

Product description

Coriolis Mass Flow and Density Meter SITRANS FC
Variants covered by the Type Approval are specified by MLFB document[4] containing at least:

Transmitter:	FCT020, FCT040 [5]
Sensor:	SITRANS FC100, SITRANS FC600, SITRANS FC500, SITRANS FC700
Type designation	7ME441-…, 7ME445-…, 7ME446-…, 7ME447-…
Meter type size[4]:	1, 2, 3, 4, 5, 6, 7, 8 / 0, 9 – no sensor (Spare transmitter)
Design and housing[4]:	Remote installation types
Communication type and I/O[4]:	E06 (HART) E14 (MODBUS)

[4] Further details and description of codes refer to the SIEMENS Catalogue SITRANS FC (Coriolis) 2023 - Selection and ordering data or the 'DNV Model Code MLFB Conversion Table'
[5] In combination with any approved sensor/detector.

Application Limitation

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV, documentation for the actual application is to be submitted for approval by the manufacturer of the application system in each case. Reference is made to DNV Rules for Ships Pt.4 Ch.9 Control and Monitoring Systems.

Ex-certification is not covered by this certificate. Application in hazardous area to be approved in each case according to the Rules and Ex-Certification/ Special Condition for Safe Use listed in valid Ex-certificate issued by a notified/recognized Certification Body.

IP-class shall be in accordance with installed area on board.

Type Approval documentation

Tests carried out

Applicable tests according to Class Guideline DNV-CG-0339, August 2021

Marking of product

The products to be marked with:
- Model name
- Manufacturer name
- Serial number

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.

The main elements of the assessment are:

- Ensure that type approved documentation is available
- Inspection of factory samples, selected at random from the production line (where practicable)
- Review of production and inspection routines, including test records from product sample tests and control routines
- Ensuring that systems, software versions, components and/or materials used comply with type approved documents and/or referenced system, software, component and material specifications
- Review of possible changes in design of systems, software versions, components, materials and/or performance, and make sure that such changes do not affect the type approval given
- Ensuring traceability between manufacturer's product type marking and the type approval certificate

Periodical assessment is to be performed at least every second year and at renewal of this certificate.

END OF CERTIFICATE