



Certificate no.:
TAF00001YJ

TYPE APPROVAL CERTIFICATE

This is to certify:

that the **Water and Foam Monitor**

with type designation(s)
FPSC70M, FPSC70E, FPSC98M, and FPSC98E

issued to

Firetec Engineering Co., Ltd.
Shanghai, China

is found to comply with

DNV statutory interpretations DNV-SI-0364 – SOLAS interpretations, Edition July 2021
DNV rules for classification – Ships
DNV offshore standards

Application:

Water monitor approved for installation on ships and offshore vessels.

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

Issued at **Høvik** on **2025-01-08**

This Certificate is valid until **2030-01-07**.

for **DNV**

DNV local unit: **Shanghai**

Approval Engineer: **Helge Bjørnara**

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 USD 300 000.

Product description

“FPSC70M, FPSC70E, FPSC98M, and FPSC98E”, manually (M) or electrically (E) controlled water monitor consisting of a solid jet nozzle and a turret (both of stainless steel 316L) with two rotating components (rotation and elevation). The solid jet nozzle comes in two sizes. The turret is fitted with a pressure gauge.

For further details, see drawings listed under Type Approval documentation below.

Application/Limitation

The water monitor is approved for installation on ships and offshore vessels.

Monitor type	FPSC70M	FPSC70E	FPSC98M	FPSC98E
Flow rate [lpm]	3168 – 4480	3168 – 4480	4412 – 6240	4412 – 6240
k-factor [lpm/bar ^{0.5}]	1120	1120	1560	1560
Working pressure [bar]	8 – 16	8 – 16	8 – 16	8 – 16
Rated pressure [bar]	16	16	16	16
Throw length (still air) [m]	82 – 110*	82 – 110*	95 – 125*	95 – 125*
Rotation	360°	-170° ~ +170°	360°	-170° ~ +170°
Elevation	-55° ~ +90°	-55° ~ +90°	-55° ~ +90°	-55° ~ +90°

* Range and flow will depend on pressure.

Hydraulic test to 1.5 times working pressure to be documented before delivery.

Works certificate indicating mechanical properties of materials in the monitor and pressure test report is to accompany each product.

Materials are to be in accordance with DNV-RU-SHIP Pt.4 Ch.6 Sec.1 (pipe of class III).

The specific arrangement of monitors, piping and control equipment is subject to approval in each case.

Each product is to be supplied with its manual for installation, use and maintenance.

Type Approval documentation

Certification in accordance with Class Program DNV-CP-0338, September 2021.

Design, Installation, Operation and Maintenance Manual No.16-237589-001, Rev.0, dated January 2024 from manufacturer.

Performance test No. 16-237589-002 dated January 2024 from manufacturer.
Supplementary testing No. FTC-FFM-01-TP dated 27 August 2024 from manufacturer.

Data sheet No. 80.01.001, Rev.0, dated 11 April 2022 from manufacturer.
Data sheet No. 80.01.002, Rev.0, dated 11 April 2022 from manufacturer.

Material Specification from manufacturer.

Tests carried out

Discharge/coefficient test, range test, leak test and mechanical test.

Marking of product

The product is to be marked with name or trademark of the manufacturer, model designation (type), serial or batch number, working pressure, and nominal flow.

Periodical assessment

DNV's surveyor is to be given permission to perform Periodical Assessments at any time during the validity of this certificate and at least every second year. The arrangement is to be in accordance with procedure described in Class Program DNV-CP-0338, Section 4.

Manufactured by:

Firetec Engineering Co., Ltd., Shanghai, China.