



Certificate No:
TAF00001MZ

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Foam Proportioner

with type designation(s)

HyFEx - Foam Liquid Proportioner P1, HyFEx - Foam Liquid Proportioner P2

Issued to

ENGIE Axima Germany GmbH
Hamburg, Germany

is found to comply with

DNV GL rules for classification – Naval vessels

Application :

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

Issued at **Hamburg** on **2022-01-17**

This Certificate is valid until **2027-01-16**.

for **DNV**

DNV local station: **Hamburg – CMC North/East**

Approval Engineer: **Andrii Pishchanskyi**

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Olaf Drews
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.



Form code: TA 251

Revision: 2021-03

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Product description

HyFEx - Foam Liquid Proportioner P1, HyFEx - Foam Liquid Proportioner P2 has nominal pressure PN 16. The main components and their materials are as follows:

Component	Material
Housing	Stainless steel grade 1.4571/316Ti
Control cartridge	Stainless steel grade 1.4401/316
Non-return valve	Stainless steel grade 1.4571/316Ti

Flow rate of foam solution is a function of differential pressure between foam concentrate and water as follows:

Differential pressure [bar]	Proportioner type	
	Proportioner P1	Proportioner P2
	Flow rate [l/h]	
0,10 – 0,95	75 – 1135	680 – 3330
0,22 – 2,10	125 – 1815	1020 – 4995
0,40 – 3,90	170 – 2270	1365 – 6660
0,90 – 8,80	250 – 3635	2045 – 9990

Application/Limitation

Types HyFEx - Foam Liquid Proportioner P1 and HyFEx - Foam Liquid Proportioner P2 are type approved for use in foam/water drencher system (FDS) of type "HyFEx-System" as per DNVGL-RU-NAVAL Pt.3 Ch.5 Sec.9 §10.1.3.8 5). Refer to DNV Type Approval Certificate No. TAF00001N0 for Type Approval of foam/water drencher system (FDS) of type HyFEx-System.

Type Approval documentation

1. Systembeschreibung DSA-Anlage No. 530-DSA dated 2021-08-20;
2. WIS Type Approval Certificate No. 5/2002 dated 2002;
3. Supplement to WIS Type Approval Certificate No. 5/2002 dated 2008-06-19.

Tests carried out

Fire testing scope commensurate with MSC.1 Circ.1165 Appendix B.

Marking of product

The components shall be marked for traceability to the Type Approval.

Periodical assessment

For retention of the Type Approval, a periodical assessment as per DNV-CP-0338 Sec.4 shall be performed by a DNV Surveyor in order to verify that the conditions for the Type Approval are complied with.

To check the validity of this certificate, please look it up in <https://approvalfinder.dnv.com>.