Certificate no.:
TAP00002T1

TYPE APPROVAL CERTIFICATE

This is to certify:

that the Flowmeter

with type designation(s)
MS2500 + MV800

issued to
ISOIL INDUSTRIA S.p.A.
Cinisello Balsamo MI, MI, Italy

is found to comply with
DNV rules for classification – Ships Pt.4 Ch.6 Piping systems

Application:

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

Temperature range:	**-20 up to +130 °C**
Max. working press.:	**PN 16**
Sizes:	**DN 50 up to DN 400**

Issued at **Hamburg** on **2023-11-02**
This Certificate is valid until **2028-11-01**.
DNV local unit: **Italy/Malta CMC**

for **DNV**

Approval Engineer: **Andre Pischanski**

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

Electromagnetic Flow Meter consisting of sensor MS2500 and electronic control unit MV800.

Main features of MS2500:
Pressurized part consists of pipe made of stainless steel with welded-on flanges made of carbon steel with lining made of one of the following material: PTFE, Rilsan, Ebonite, Polyetheretherketone or PEEK.

Main features of MV800:
- MV 800 A**3**(A/B)(0/1)B0A: housing in painted Aluminum
- MV 800 A**4**(A/B)(0/1)B0A: housing in AISI304
- MV 800 A(3/4)**A**(0/1)B0A: without digital output
- MV 800 A(3/4)**B**(0/1)B0A: with additional digital output
- MV 800 A(3/4)(A/B)**0**B0A: without analog output
- MV 800 A(3/4)(A/B)**1**B0A: with analog output

- Power supply: 10 - 30V DC (24V nominal)
- Signal output: 4-20mA or/and digital output
- Electrical connection: 5 poles cable, PG11 cable gland
- Software version: 1.05.0000.xxxx

Location classes:

Temperature	**D**
Humidity	**B**
Vibration	A
EMC	**A**
Enclosure	**D / IP 68** (0.75m H_2O / 1h)

Application/Limitation

The flowmeter type is approved for water and seawater systems. Medium shall be conductive.

The selection and installation of a flowmeter shall be as per the manufacturer's instructions.

Lining material selection is based on service conditions with respect to medium, its pressure, flow velocity and temperature. Satisfactory service life shall be insured by the certificate holder.

The selection and installation of a flowmeter shall be as per the manufacturer's instructions.

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 DNVRU SHIP Pt.4 Ch.9 Sec. 1.

Type Approval documentation

Tests carried out

- Electrical part: applicable tests according to Class Guideline DNV-CG-0339, August 2021;
- Burst pressure test.

Marking of product

The products to be marked with:
- manufacturer name
- model name
- serial number
- power supply ratings

Periodical assessment

For retention of the Type Approval, a DNV Surveyor shall perform periodical assessment after two years (+/- 90 days) and after 3.5 years (+/- 90 days) to verify that the conditions for the Type Approval are complied with. Refer to DNV CP-0338, Sec.4.

- The certificate is only valid if required periodical assessments are carried out with satisfactory results. To check the validity of this certificate, please look it up in https://approvalfinder.dnv.com

END OF CERTIFICATE