



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**

for **DNV**

This Certificate is valid until **2028-11-01**.  
DNV local unit: **Italy/Malta CMC**

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 A3(A/B)(0/1)B0A: housing in painted Aluminum
  - MV 800 A4(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)0B0A: without analog output
  - MV 800 A(3/4)(A/B)1B0A: with analog output
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- 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 <sub>2</sub> O / 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.

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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

1. Test Report: DEKRA No. E23072201, dated 2023-05-22
2. Test Report: DEKRA No. E23072301, dated 2023-06-08
3. Data sheet MV800 Rev. MV800\_IT\_EN\_DS055REV14\_IS
4. Technical description NT094 Rev.00
5. Operating and Maintenance Manual MV800 Rev. MAN\_MV800\_EN\_IS\_R06\_1.04.XXXX
6. Instruction Manual MS 2500 Rev. MAN\_MS2500\_EN\_NL\_R04
7. Drawing: ST209 No. 1-4-1-2-PR-43-15, Rev. 03
8. Drawing: IT331 No. PR043-15, Rev. 00
9. Software version history: T036REV00
10. MS2500 Data Sheet # MS2500\_EN\_DS006REV27;
11. Pipe spool drawing # B1202607 dated 04-Feb-02;
12. Drawing MS 2500: Lining PTFE # B1021103 dated 01-Sep-2001;
13. For lining different from PTFE material datasheets:
  - a. VICTREX® PEEK 450G;
  - b. # TAB 8C. Phardite D31 Food grade ebonite Phardite D31;
  - c. # GPD INF 01 REV 08 EXELIA 4010/L004;
  - d. TECAFINE PP gray;
14. Burst pressure test reports #
  - a. RDP-1510-22, RDP-1511-22 and RDP-1512-22 dated 30-Nov-2022;
  - b. RDP-0611-23 dated 16-Feb-2023.

### 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**