



Confirmation of Product Type Approval

Company Name: F-R TECNOLOGIAS DE FLUJO, S.A. DE C.V.

Address: AV. MIGUEL DE CERVANTES NO. 111 COMPLEJO INDUSTRIAL CHIHUAHUA
CHIHUAHUA 31136 Mexico

Product: Viscosity and Density Controls and Measurement Systems

Model(s): HFVM

Endorsements:

Certificate Type	Certificate Number	Issue Date	Expiry Date
Product Design Assessment (PDA)	19-HS1916546-PDA-DUP	13-NOV-2019	12-NOV-2024
Manufacturing Assessment (MA)	24-6525047	02-AUG-2024	01-AUG-2029
Product Quality Assurance (PQA)	NA	NA	NA

Tier

3 - Type Approved, unit certification not required

Intended Service

Electronic viscosity and density transmitters for heavy fuel oil measurements on-board and offshore applications.

Description

Heavy Fuel Viscosity Meter (Micro Motion Fork Viscosity Meters) are accurate multi-variable devices that measure liquid viscosity, density and temperature under demanding conditions. These meters use vibrating fork technology to provide reliable direct insertion measurement. Use these viscosity meters in applications as diverse as product detection, fuel blending and heater combustion control.

Ratings

Power supply Characteristics: 24 VDC +/- 10% , 0.45 W typical, 0,7 W maximum, 35 mA Max

Enclosure rating: IP 66/67, NEMA4;

Operating temperatures: -50 to 200 °C (Fluid - Short Stem); -40 to 150 °C (Fluid - Long Stem); -40 to 65 °C (Electronics);

Maximum operating pressure (Short Stem): 207 Bar; Maximum operating pressure (Long Stem): 207 Bar;

Dynamic viscosity range: 0.5 to 10 cP, 10 to 100 cP, 100 to 1000 cP;

Density range: 0.6 to 1.25 g/cc;

Safety certification: ATEX II 2G Ex "d" IIC T4 Gb; CSA Class 1, Division 1, Groups C & D, T4

Service Restrictions

- Unit Certification is not required for this product. If the manufacturer or purchaser requests an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.
- ATEX certified equipment is not to be installed in hazardous areas on U.S. vessels unless it can be proven to have been tested to the applicable IEC 60079 series standards by an independent laboratory accepted by the U.S Coast Guard. USCG MI Notice 01-12 (February 7, 2012).

Comments

- The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.
- Each Application configuration and external connection is to be specifically approved.

Notes, Drawings and Documentation

Documentation: CSA Certificate of Compliance Number 2570840 Date Issued April 4, 2013.

Documentation: Sira Certification EC TYPE-Examination Certificate No. Sira 13ATEX2257X

Drawing No. ER-20023280, Assembly, Fork, Transmitter, Revision AF

Drawing No. PS-001487, Micro Motion Heavy Viscosity Meter (HFVM) Viscomaster, Revision C

Term of Validity

This Product Design Assessment (PDA) Certificate remains valid until 12/Nov/2024 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or previous to the effective date of the ABS Rules and standards applied at the time of PDA issuance. Use of the Product for non-ABS units is subject to agreement between the manufacturer and intended client.

ABS Rules

Rules for Conditions of Classification, Part 1 (2019): 1-1-4/7.7, 1-1-A3, 1-1-A4, which covers the following:

Rules for Building and Classing Marine Vessels (2019): 4-8-3/Table 2 & 4-8-3/13.1

Rules for Building and Classing Steel Vessels (2019): 4-8-3/Table 2 & 4-8-3/13.1

Rules for Building and Classing Steel Vessels Under 90 Meters (295 feet) in Length (2019): 4-6-3/11.3 & 4-6-3/Table 1;

Rules for Building and Classing Offshore Support Vessels (2019): 4-8-3/Table 2 & 4-8-3/13.1

Rules for Conditions of Classification, Part 1 (2019) Offshore Units and Structures 1-1-4/9.7, 1-1-A2, 1-1-A3, which covers the following:

Rules for Building and Classing Mobile Offshore Units (2019): 4-3-3/9.1, 4-3-3/Table 1

Rules for Building and Classing Mobile Offshore Drilling Units (2019): 4-3-3/9.1, 4-3-3/Table 1

International Standards

NA

EU-MED Standards

NA

National Standards

NA

Government Standards

NA

Other Standards

NA



A handwritten signature in blue ink, appearing to read 'James W. ...'.

Corporate ABS Programs
American Bureau of Shipping
Print Date and Time: 01-Oct-2024 5:43

ABS has used due diligence in the preparation of this certificate, and it represents the information on the product in the ABS Records as of the date and time the certificate is printed.

If the Rules and/or standards used in the PDA evaluation are revised or if there is a design modification (whichever occurs first), a PDA revalidation may be necessary.

The continued validity of the MA is dependent on completion of satisfactory audits as required by the ABS Rules. The validity of both PDA and MA entitles the product to receive a **Confirmation of Product Type Approval**.

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or prior to the effective date of the ABS Rules and standards applied at the time of PDA issuance. ABS makes no representations regarding Type Approval of the Product for use on vessels, MODUs or facilities built after the date of the ABS Rules used for this evaluation.

Type Approval requires Drawing Assessment, Prototype Testing and assessment of the manufacturer's quality assurance and quality control arrangements. The manufacturer is responsible to maintain compliance with all specifications applicable to the product design assessment. Unless specifically indicated in the description of the product, certification under type approval does not waive requirements for witnessed inspection or additional survey for product use on a vessel, MODU or facility intended to be ABS classed or that is presently in class with ABS.

Due to wide variety of specifications used in the products ABS has evaluated for Type Approval, it is part of our contract that; whether the standard is an ABS Rule or a non-ABS Rule, the Client has full responsibility for continued compliance with the standard.

Questions regarding the validity of ABS Rules or the need for supplemental testing or inspection of such products should, in all cases, be addressed to ABS.