



TYPE APPROVAL CERTIFICATE

Certificate No:
TAA00001MB
Revision No:
1

This is to certify:
That the Level Indicator

with type designation(s)
Portable Tank Gauging Equipment "Flexi-dip"

Issued to
MMC International Corp.
Inwood, NY, USA

is found to comply with
DNV rules for classification – Ships, offshore units, and high speed and light craft

Application :
See page 3, Tests carried out:

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

Issued at **Høvik** on **2022-10-10**

for **DNV**

This Certificate is valid until **2027-10-09**.

DNV local station: **New York**

Approval Engineer: **Didier Girardin**

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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.



Product description

Portable electronic tank gauging equipment "Flexi-dip", and associated tank entry vapour control valves, consisting of:

1. Portable tank gauging equipment (Intrinsically safe):

Sensor type:	Model number:	Monitoring function:
Tri-mode Stainless and plastic sensor version	D-2401-2	Ullage, Temperature, Oil/Water Interface
Oil/Water Interface Stainless and plastic sensor version	D-2401-2UI	Ullage, Oil/Water Interface
Temperature	D-2272-1B	Temperature
Oxygen	D-2615-11	0-25% Oxygen

2. Vapor control valves:

Valve type :	Model number :	Monitoring function :
"A"	D-2291-1A	4" A.N.S.I., 150#
"B"	B-2318-23 (XXX)	2" A.N.S.I., 150#
"MB"	B-2318-24 (XXX)	2" A.N.S.I., 150#
"MMB"	B-2318-18 (XXX)	1-1/2" A.N.S.I., 150#
"S"	D-2314-1S	4" A.N.S.I., 150#

Note: (XXX) denotes material variation in valve trim (seals, valve cap).

Application/Limitation

Portable electronic equipment, not for permanent installation.

Ex-certification is not covered by this certificate and the following paragraph, which is for information only, is based on information received from the manufacturer, but not verified by DNV.

Information on Ex-Certification received from manufacturer – Not verified by DNV		
Equipment	Certified	Certificate No.
Flexidip Portable Gauging Tape Type D-2401-2**	⊕ II 1 G EEx ia IIC T4 (-20 °C ≤ Ta ≤ +40°C)	BAS02ATEX1274X

The special conditions for safe use in above list EX-Certificate must be complied with.

Notes:

IBC gauging class definition for chemical carriers. I.S. class ullage to be confirmed.
 Valve ballport is electro-statically grounded.
 Ship's hull ground to vapour valve to be confirmed upon all valve installations.

Type Approval documentation

See ANNEX

Tests carried out

Environmental tests according to Standard for Certification DNV-CG-0339 is not carried out, as equipment is portable and shall not be left permanently installed.

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.

The main elements of the assessment are:

- Ensure that type approved documentation is available
- Inspection of factory samples, selected at random from the production line (where practicable)
- Review of production and inspection routines, including test records from product sample tests and control routines
- Ensuring that systems, software versions, components and/or materials used comply with type approved documents and/or referenced system, software, component and material specifications
- Review of possible changes in design of systems, software versions, components, materials and/or performance, and make sure that such changes do not affect the type approval given
- Ensuring traceability between manufacturer's product type marking and the type approval certificate

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE

ANNEX

Hidden

Type Approval documentation

Intrinsically safe gauging devices:

Model no.	Drawing No	Description	IBC Gauging class (*)	Dated	Ex-ia class
D-2401-2	DB-2562-1FRL Rev.E	Ullage, Temperature, Interface (UTI)	Restricted or open	87-10	IIC T4
D-2401-2	S-2562-1TR	Gas tight version of UTI	Closed	91-10	IIC T4
D-2401-2UI	DB-2562-1FRI Rev.A	Ullage, Interface (UI)	Restricted or open	87-10	IIC T4
D-2401-2UI	S-2562-1UI	Gas tight version of UI	Closed	91-10	IIC T4
D-2272-1B	DB-2562-1FRN Rev.A	Temperature only	Restricted or open	87-10	IIC T4
D-2615-11	DB-2615-1FRX	Oxygen, 0-25%	Restricted or open	92-10	IIB T4

Vapour control valves for use with above gauging devices:

Model no.	Drawing No	Description	IBC Gauging class (1)	Dated	Ex-i class
B-2318-24	B-2318-24 SBC REV "E"	2" 150# Flanged MMC Type "MB" vapour valve with bronze end cap	Restricted or closed	96-03	(2) (3)
B-2318-23	B-2318-23 SBC	2" 150# Flanged MMC Type "B" vapour valve with bronze end cap	Restricted or closed	96-03	(2) (3)
B-2318-18	B-2318-18 SBC	1.5" 150# Flanged MMC Type "MMB" vapour valve with bronze end cap	Restricted or closed	96-03	(2) (3)

Typical installation drawings. Gauging device with vapour control valves:

Gauging device model no.	Drawing No	Manufacturer's installation guidance	Dated
D-2401-2, D-2401-2UI D-2401-2UT, D-2272-1B	S-2300-1 Rev.C	Typical installation criteria for hand gauging tapes and vapour control valve type "S", "B", "MB", and "MMB"	96-07
D-2401-2, D-2401-2UI, D-2401-2UT, D-2272-1B	S-2300-2	Typical installation criteria for hand gauging tapes and vapour control valve type "A" and "U"	90-08
D-2401-2, D-2401-2UI D-2401-2UT, D-2272-1B	S-2300-3	Typical installation criteria for hand gauging tapes and vapour control valve type "MB"	95-06
D-2401-2, D-2401-2UI D-2401-2UT, D-2272-1B	S-2300-4	Typical installation criteria for hand gauging tapes and vapour control valve type "B"	97-10
D-2314-1S	S-2314-1SV5	Typical installation criteria for use with hand gauging tapes	96-07

Test report KDG Mobrey no.3961 dated 96-10-30 acc. to IMO Res. MEPC.5(XIII).

Test report KDG Mobrey no.3984 dated 97-05-06 acc. to IMO Res. MEPC.5(XIII).

Assessment Report Title: Report on: Variation and upgrade to ATEX certificate BAS02ATEX1274X (Flexidip Portable Gauging Tape Type D-2401-2**) Applicant: MMC International Corporation Report No. R80075420A Date and of issue: July 2022 CSA Issuing Body Scheme CSA Project No.s CSA Group Netherlands B.V. Utrechtseweg 310, Building B42, 6812AR, Arnhem, The Netherlands ATEX 80075420