

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Magnetic Liquid Level Indicator

with type designation(s)

MG-33

MG-33S (SMALL)

Issued to

Hacı Ayvaz Endüstriyel Mamuller Sanayi ve Tic. A.S.
Istanbul, Turkey

is found to comply with

DNV GL rules for classification – Ships Pt.4 Ch.6 Piping systems

DNVGL-OS-D101 – Marine and machinery systems and equipment, Edition January 2018

Application :

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

Design: Magnetic level gauge

Issued at **Høvik** on **2021-09-20**

for **DNV**

This Certificate is valid until **2025-07-13**.

DNV local station: **Istanbul**

Approval Engineer: **Sinisa Sedlan**

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Zeinab Sharifi
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

Magnetic level gauges consisting of a float chamber with flanged connections for installation on tanks.

Type	MG-33 DN20 PN16		MG-33S (SMALL) DN15 & DN20 PN10	
	Size	Material	Size	Material
Body pipe	Ø60.3x2 mm	1.4301 / AISI 304 1.4401 / AISI 316	Ø38x1.5 mm	1.4301 / AISI 304 1.4401 / AISI 316
End cap	Ø60.3x2 mm	1.4301 / AISI 304 1.4401 / AISI 316	Ø38x1.5 mm	1.4301 / AISI 304 1.4401 / AISI 316
Connection pipe	Ø25x2 mm	1.4301 / AISI 304 1.4401 / AISI 316	Ø19x1.5 mm	1.4301 / AISI 304 1.4401 / AISI 316
Connection flange	EN 1092-1 Type 02 DN20 PN16	1.4301/1.4401/1.0037	EN 1092-1 Type 02 DN15 PN16	1.0037/1.4301/1.4401 DIN 17100 St37.2
Drain flange/closure	OD 108.5 mm	1.4301 / AISI 304 1.4401 / AISI 316	OD 54 mm	1.4301 / AISI 304 1.4401 / AISI 316
Drain bolting	M8x35 mm	ISO 3506-1 A2-70	-	-
Drain plug	R1/2"	1.4301 / AISI 304 1.4401 / AISI 316	G1/2"	1.4301 / AISI 304 1.4401 / AISI 316
Indicator	Variable length	AlMgSi0,5 (3.3206) / Plexiglass	Variable length	AlMgSi0,5 (3.3206) / Plexiglass

Application/Limitation

Design pressure: 16 bar (MG-33) / 10 bar (MG-33S)
 Design temperature: -10 – 160 °C

The magnetic level gauges are type approved for use on tanks (Class III) situated above the double bottom.

Materials and material protection chosen for the specific system shall be suitable for the intended medium and environmental conditions. Level gauges of austenitic stainless steel shall not be used in direct contact with seawater.

Level gauges installed as a means of level indication for tanks containing flammable fluids shall be fitted with a self-closing valve at each end, and shall be protected against mechanical damage.

These level gauges are not permitted to be used on fuel oil tanks on passenger ships, where a penetration is required below the top of the tank.

The design review has only covered the strength of pressurized parts. The functionality of the component has not been considered in the approval.

Type Approval documentation

Datasheet for MG-33 Magnetic Level Gauge

Drawings: 214040404048; 222040006653; 604040120351; 604040130049; 604040150050; 604040213020;
 604040224010; 604040224020; 604040241050; 604040320020; 604040410020; 604040410030; 604040421030;
 604040430044; 604040430047; 604040820025; 604041102000; 604041300110; 604041800060; 704201005105 (GA)
 MG33 PRESSURE CALCULATION (pipe wall thickness)
 VVD calculation MG-33

Datasheet for MG-33S Magnetic Level Gauge

Drawings: 604040111360; 604040120370; 604040130051; 604040241060; 604040300007; 604040300102;
 604040300107; 604040350030; 604040410031; 604040430045; 604040430046; 604040820106; 604040820112;
 604040830051; 604040300008; MG33S (GA DN15); MG33S (GA DN20)
 MG33S PRESSURE CALCULATION (pipe wall thickness)
 VVD calculation MG-33S (DN15 & DN20)
 Drain end calculation
 Welding list

Marking of product

For traceability to this Type Approval the products are at least to be marked with:

- Manufacturer's name or trademark
- Type designation
- Design pressure
- Year of manufacture



Job Id: 262.1-034597-1
Certificate No: TAP00002BS

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 approval are complied with. Reference is made to DNVGL-CP-0338.