

Type Approval Certificate

This is to certify that the undernoted product(s) has/have been tested with satisfactory results in accordance with the relevant requirements of the Lloyd's Register Type Approval System.

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|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Manufacturer | Aquametro Oil & Marine AG |
| Address | Ringstr. 75, Therwil, 4106, Switzerland |
| Type | Flowmeters |
| Trade Name | CONTOIL® VZO / VZOA, CONTOIL® VZF II / VZFA II and DOMINO® ARD |
| Application | Marine, offshore and industrial applications for the use in environmental categories ENV1, ENV2, ENV3 and ENV4 as defined in Lloyd's Register's Type Approval System, Test Specification Number 1 – 2002. Types CONTOIL® VZO / VZOA, CONTOIL® VZF II / VZFA II and DOMINO® ARD are approved in fuel oil, lubrication oil and hydraulic oil systems. DOMINO® ARD is additional approved for fresh water systems (no sea water) on ships classed or intended for Classification with Lloyd's Register. |
| Specified Standard | Lloyd's Register Rules and Regulations for the Classification of Ships, 2020 IACS P2 |
| Ratings | Nom. Dia. (mm): DN 15, 20, 25, 40 and 50 Nom. Press. (bar): PN 16 and 25 Electric enclosure: IP66 / IP 68 / IP69 Temperature range: max. 130°C / 180°C |



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Other Conditions Equipment has to comply with IACS E10, Rev. 7 when intended to be installed on ships contracted for construction on or after 1 January 2022.

This certificate is not valid for equipment, the design, ratings or operating parameters of which have been varied from the specimen tested. The manufacturer should notify Lloyd's Register EMEA of any modification or changes to the equipment in order to obtain a valid Certificate.

Previous Version: 05/20053(E4)

The Design Appraisal Document HMD 16388-05, Issue No. 4 and its supplementary Type Approval Terms and Conditions form part of this Certificate.

Appendix

DESCRIPTION Aquametro Oil & Marine flowmeters with hydraulic part and different read-out options. The hydraulic part consists of a rotary piston and is working on volumetric principle (positive displacement). The read-out options can be as follows: electronic read out (electronic display module) or mechanical read out (mechanical display module with roller counter, roller counter with reed or roller counter with inductive pulser).

Rotary piston flowmeter consists of one hydraulic part CONTOIL® / DOMINO® with the following display options:

CONTOIL® VZO / VZOA – mechanical display module

CONTOIL® VZF II / VZFA II – electronic display module

DOMINO® ARD – mechanical display module

Different measurement units:

RW – roller register for local indication

RV – roller register for local indication with integrated reed-type pulser for remote indication

IN - roller register for local indication with inductive pulser module for remote indication

INA – like IN with higher resolution; pulser according to IEC 60947-5-6 (NAMUR)

VZF II / VZFA II – multifunctional electronic display module and adjustable outputs