

DET NORSKE VERITAS

TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. **A-12661**

This is to certify that the
Pressure Transmitter

with type designation(s)
8498 Ecotrans, Marine Pressure Transmitter

Manufactured by
Trafag AG
Bubikon, Switzerland


is found to comply with
Det Norske Veritas' Rules for Classification of Ships, High Speed & Light Craft and Det Norske Veritas' Offshore Standards

Application
Location classes:

Temperature	B
Humidity	B
Vibration	B
EMC	B
Enclosure	B

Høvik, 2012-02-20
for Det Norske Veritas AS

This Certificate is valid until
2015-12-31



Odd Magne Nesvåg
Head of Section



DNV local office:
Essen



Aleksandra Górowska
Surveyor



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.
If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 2 million. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.



Certificate No.: A-12661
File No.: 892.10
Job Id.: 262.1-004120-2

Product description

Type approval of Marine Pressure Transmitter, type 8498.uu.vv.ww.xx.yy.zz covers the following variants:

uu	Range	71, 73, 75, 76, 77, 78, 79, 80, 81, 82, 83, 85, 74, *
vv	Sensor, relative / absolute	29, 49
ww	Pressure connection	10, 17, 30, 18, 24
xx	Execution	04
yy	Output	29
zz	Accessories	61, 62, 63, 43, 45, 40, 58
*	Customized ranges available	

Application/Limitation

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 DNV Rules for Ships Pt.4 Ch.9 Control and Monitoring Systems.

Type Approval documentation

Data sheet:	2.3.1.21	Date: 07.2008
	ECO-"DIGI", B61153-55, index f	Date: 06.04.2005
	Ecotrans Navi, B61099, index a	Date: 09.12.2002
	Keramik – Drucksensor, B61301...40, index h	Date: 13.01.2010
Test reports:	V-224 GL Qualification, 29 pages	Date: 17.12.2002
	Overpressure tests on ceramic sensors	Date: 07.03.2003
	V-224a GL Qualification, 12 pages	Date: 07.03.2003
	Messprotokoll Nr. 095/2003, ILK Dresden	Date: 19.03.2003
	Messprotokoll Nr. 102/2003, ILK Dresden	Date: 03.04.2003
	EMC 075 / 02, EMC-testcenter Zurich AG	Date: 14.10.2002
	EMV Erstmusterprüfung EPT2 ratiometrisch, EMC-testcenter Zurich AG	Date: 21.03.2005

DNV Essen, Retention Survey report for A-10653 dated 2012-02-10.

Tests carried out

Applicable tests according to Standard for Certification No. 2.4, April 2006.

Certificate Retention Survey

The scope of the retention/renewal survey 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 survey 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

Retention survey is to be performed at least every second year and at renewal of this certificate.

END OF CERTIFICATE