



DET NORSKE VERITAS

TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. **A-13774**

This is to certify that the
Pressure Transmitter

with type designation(s)
Cylinder Pressure Sensor HTT-04CA & CPS-01CA

Issued to
Imes GmbH
Kaufbeuren, Germany

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	D
Humidity	B
Vibration	B
EMC	A
Enclosure	B/IP67

This Certificate is valid until **2016-06-30**.

Issued at **Høvik** on **2014-06-12**

DNV local station: **Essen CMC Southern Germany**

Approval Engineer: **Nils Jarem**

for **Det Norske Veritas AS**

.....
Odd Magne Nesvåg
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.

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.

Product description

The HTT-04CA & CPS-01CA are Cylinder Pressure Transmitters intended to be installed on Gas and Diesel Engines and Compressors.

Pressure Range: 0...300 bar
Supply Voltage: 18 to 32 V DC
Output Signal: 4 – 20 mA

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

Product	Type of Documentation	Documentation Reference Marking	
HTT-04CA:	- Technical Data sheet	HTT-04CA_en_01-2009	
	- Design drawing	HTT-04_600703 rev. 1.0 dated 2008-11-04	
	- Electrical circuit	BIF-AVR V3.2/V3.3 dated 2006-04-23	
	- Bill of materials	BIF-AVR V3p3 dated 2006-05-30	
	- ENV Test Report – Needle-flame test	S-0328-3060-00BT dated 2009-03-31	
	- ENV Emitel Test Report	U-328-3059-01 ME dated 2010-06-22	
	- EMC Test Report	09TH0043-BV-rules_2 dated 2010-06-07	
	- Test Report for degree of protection provided by enclosure	10TH0269-IEC60529_0 dated 2010-06-01	
	CPS-01CA	-Sensor type comparison	Dated 2014-02-14
		-Design drawing	599 099 rev. 2.1
CPS-01CA Internal IP Test Report		Dated 2014-05-05	

DNV-GL Essen periodical assessment report for A-11717, dated 2014-06-02.

Tests carried out

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

Dry Heat test carried out for 2 hours at +75°C.

Cold test carried out for 2 hours at -40°C.

Degree of protection satisfies enclosure requirements for IP67 according to IEC 60529:2001.

Marking of product

The products to be marked with model name, manufacturer name and serial number.

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 at least every second year and at renewal of this certificate.

END OF CERTIFICATE