



CERTIFICATE NUMBER
EFFECTIVE DATE
EXPIRY DATE
ABS TECHNICAL OFFICE

20-2044594-PDA
19-Nov-2020
18-Nov-2025
Hamburg Engineering Department

CERTIFICATE OF Product Design Assessment

This is to certify that a representative of this Bureau did, at the request of

IMES GMBH

located at

DR.-HERBERT-KITTEL-STR. 2, D-87600 KAUFBEUREN, Germany

assess design plans and data for the below listed product. This assessment is a representation by the Bureau as to the degree of compliance the design exhibits with applicable sections of the Rules. This assessment does not waive unit certification or classification procedures required by ABS Rules for products to be installed in ABS classed vessels or facilities. This certificate, by itself, does not reflect that the product is Type Approved. The scope and limitations of this assessment are detailed on the pages attached to this certificate.

Product Transducer, Pressure

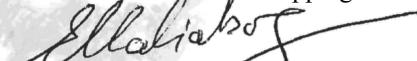
Model Cylinder Pressure Sensors: HTT-04CA, CPS-01CA, HTT-06CA, HTT-06, FPS-01CA, FPS-01, FPS-02CA, FPS-02, CPS-03CA, CPS-03

This Product Design Assessment (PDA) Certificate remains valid until 18/Nov/2025 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or previous to the effective date of the ABS Rules and standards applied at the time of PDA issuance. Use of the Product for non-ABS units is subject to agreement between the manufacturer and intended client.

American Bureau Of Shipping


Eustratios Maliatsos, Engineer/Consultant

NOTE: This certificate evidences compliance with one or more of the Rules, Guides, standards or other criteria of ABS or a statutory, industrial or manufacturer's standards. It is issued solely for the use of ABS, its committees, its clients or other authorized entities. Any significant changes to the aforementioned product without approval from ABS will result in this certificate becoming null and void. This certificate is governed by ABS Rules 1-1-A3/5.9 Terms and Conditions of the Request for Product Type Approval and Agreement (2010)

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Tier: 2 - PDA Issued

Product: Transducer, Pressure

Model: Cylinder Pressure Sensors: HTT-04CA,CPS-01CA, HTT-06CA, HTT-06, FPS-01CA, FPS-01, FPS-02CA, FPS-02, CPS-03CA,CPS-03

Intended Service:

Pressure sensing for combustion analysis with alarm, monitoring and control function for Marine Applications.

Description:

The pressure sensors consist of the three main components sensor head, connecting line and sensor electronic. The signal from the measuring element (strain gauge) inside the sensor head is transmitted to the electronic by a 5-wire cable inside a protective sleeve. Housing made of stainless steel.

Cable is armored with steel for installation at harsh environments.

Rating:

Pressure ranges: 0 ... 300 bar

Supply Voltage: 18 ... 32 V DC

Output Signal: 4 ... 20 mA

Temperature range of SCU: -40° C to 75° C

Temp. at measuring cell: 300° C

Degree of Protection: IP65/IP67

Service Restriction:

1. Unit Certification is not required for this product.
2. If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.
3. Product is not to be installed in the bridge and deck zone.

Comments:

1. The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.
2. Each particular application and installation is to be specifically approved in conjunction with the relevant system, locations and environmental conditions.

Notes/Drawing/Documentation:

- Drawing No. 1, HTT-04 CA_en_01-2009, Datasheet, Revision: 1, Pages: 2
Drawing No. 2, CPS-01_en_05_2017 Rev1, Datasheet, Revision: 1, Pages: 3
Drawing No. 3, CPS-01CA_en_04_2017, Datasheet, Revision: 1, Pages: 3
Drawing No. 4, FPS-01_en_03_2018, Datasheet, Revision: 1, Pages: 2
Drawing No. 5, FPS-01CA_en_03_2018, Datasheet, Revision: 1, Pages: 3
Drawing No. 6, FPS-02_en_12_2017, Datasheet, Revision: 1, Pages: 3
Drawing No. 7, FPS-02CA_en_12_2017, Datasheet, Revision: 1, Pages: 3
Drawing No. 8, HTT-06_en_06_2020, Datasheet, Revision: 1, Pages: 3
Drawing No. 9, HTT-06CA_en_04_2020, Datasheet, Revision: 1, Pages: 3
Drawing No. 10, CPS-03_en_06_2020, Datasheet, Revision: 1, Pages: 3
Drawing No. 11, CPS-03CA_en_06_2020, Datasheet, Revision: 1, Pages: 3
Drawing No. 12, TCS-01CA_en_02_2019, Datasheet, Revision: 1, Pages: 3
Drawing No. 13, 600703, Design Drawing, Revision: 0, Pages: 1
Drawing No. 14, 905378, Design Drawing, Revision: 0, Pages: 1
Drawing No. 15, 905243, Design Drawing, Revision: 0, Pages: 1
Drawing No. 16, 903998, Design Drawing, Revision: 0, Pages: 1
Drawing No. 17, 905164, Design Drawing, Revision: 0, Pages: 1
Drawing No. 18, 905327, Design Drawing, Revision: 1, Pages: 1
Drawing No. 19, 905161, Design Drawing, Revision: 0, Pages: 1
Drawing No. 20, 905488, Design Drawing, Revision: 0, Pages: 1
Drawing No. 21, 905537, Design Drawing, Revision: 0, Pages: 1

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Drawing No. 22, 905527, Design Drawing, Revision: 0, Pages: 1

Drawing No. 23, 905492, Design Drawing, Revision: 0, Pages: 1

Drawing No. 24, 905412, Design Drawing, Revision: 0, Pages: 1

Drawing No. 25, BIF-U V3.1 dated Sept. 2016, Electrical Circuit, Revision: 3.1, Pages: 1

Drawing No. 26, BIF AVR V3pl rev. 3.1 dated 24.05.2006, Electrical Circuit, Revision: 3.1, Pages: 4

Drawing No. 27, BIF-AVR-V3p3 dated 30.05.06, Electrical Circuit, Revision: 3.3, Pages: 4

Drawing No. 28, BIF-AVR K1000 V1.0 dated 13.07.2017, Electrical Circuit, Revision: 1.0, Pages: 4

Drawing No. 29, BoM BIF-U V3.2 2017-03-24, Revision: 3.2, Pages: 1

Drawing No. 30, Bill of Materials BIF AVR V3p2, Revision: 3.2, Pages: 1

Drawing No. 31, Bill of Materials BIF AVR V3p3, Revision: 3.3, Pages: 1

Drawing No. 32, Bill of Materials BIF-AVR K1000 V1.0, Revision: 1.0, Pages: 2

Drawing No. 33, 2235167KAU001, CPS-01, CPS-01CA, ENV Test Report, Intertek, dated 2019-02-27, Revision: 1.0, Pages: 17

Drawing No. 34, 2235473KAU001, CPS01, HTT-06, Vibr. Test Report, Intertek, dated 2019-03-06, Revision: 1.0, Pages: 12

Drawing No. 35, 2232148KAU001, CPS-01, CPS-01 CA, IP Test Report, Intertek, dated 2018-03-09, Revision: 1.0, Pages: 15

Drawing No. 36, 20KFU2239232, IP Test Report, Intertek, dated 2020-05-27, Revision: 1.0, Pages: 13

Drawing No. 37, 2234581, FPS-01CA, CPS-01CA, Vibr. Test Report, Intertek, dated 2018-01-09, Revision: 1.0, Pages: 10

Drawing No. 38, 2235167, CPS-01, CPS-01CA, ENV Test Report, Intertek, dated 2019-02-27, Revision: 1.0, Pages: 17

Drawing No. 39, 10TH0269_IEC60529_IP67_0, HTT-04CA, IP Test Report, Bureau Veritas, dated 2010-06-01, Revision: 0.0, Pages: 6

Drawing No. 40, 20KFU2239232 - AN0004987 IMES IEC60529 dated 2020-05-27, Revision: 0.0, Pages: 13

Drawing No. 41, U-0328-3059-01 ME, HTT-04CA, ENV Test Report, Emitel, dated 2010-06-22, Revision: 1.0, Pages: 22

Drawing No. 42, 20TH0284-IEC60068_0 dated 2020-04-08, Revision: 1.0, Pages: 17

Drawing No. 43, Fire hazard test S-0328-3060-00BT_92360230, HTT-04CA, Emitel, dated 2009-03-31, Revision: 0, Pages: 11

Drawing No. 44, 09TH0043-BV-rules_1, HTT-04CA, EMC Test Report, Bureau Veritas, dated 07 June 2010, Revision: 2.0, Pages: 61

Drawing No. 45, 20TUR0028_BV-rules_1, FPS-01, EMC Test Report, Bureau Veritas, dated 2020-09-17, Revision: 1.1, Pages: 61

Drawing No. 46, 20TUR0029_BV-rules_0, HTT-06 CA, EMC Test Report, Bureau Veritas, dated 2020-09-18, Revision: 1.1, Pages: 67

Drawing No. 47, 01/18, CPS 01, EMC Test Report, MTU Friedrichshafen, dated 06.11.2018, Revision: 0.0, Pages: 18

Drawing No. 48, Functional Description and Sensor Type Comparison dated 2020-06-23, Revision: 1.0, Pages: 10

Drawing No. 49, Type Approval Documentation_V1_2020-09-24, Revision: 1, Pages: 1

Terms of Validity:

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STANDARDS

ABS Rules:

2020 Marine Vessel Rules 1-1-4/7.7, 1-1-A3, 1-1-A4, 4-6-2/9.11.2, 4-6-2/9.11.3, 4-8-3/1.7, 4-8-3/1.11, 4-8-3/1.17.1, 4-9-9/13.1, 4-9-9 Table 1

National:

NA

International:

NA

Government:

NA

EUMED:

NA

OTHERS:

NA