

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Measurement Converter

with type designation(s)
H-System

Issued to
Pepperl+Fuchs GmbH
Mannheim, Germany

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

Application :

Location classes:

Temperature	D*
Humidity	B*
Vibration	A
EMC	See product description on page 2
Enclosure	Required protection according to DNV Rules shall be provided upon installation onboard

*** See Application/Limitation concerning modules HiD2025, HiD2025SK, HiD2026, and HiD2026SK**

This Certificate is valid until **2019-06-30**.

Issued at **Høvik** on **2015-03-17**

DNV GL local station: **Augsburg**

Approval Engineer: **Ståle Sneen**

for **DNV GL**

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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.

Certificate No: **A-13966**
File No: **890.70**
Job Id: **262.1-010386-2**

Place of manufacture

Pepperl + Fuchs GmbH
Lilienthalstraße 200
68307 Mannheim
Germany

Pepperl + Fuchs (Mfg) Pte. Ltd.
P+F Building
18 Ayer Rajah Crescent
139942 Singapore
Singapore

PT Pepperl+Fuchs Bintan
SD 35, 56, 57 Lobam
Bintan Industrial Estate
Pulau Bintan, RIAU
Indonesia

Product description

H-System measurement converter modules as listed below:

Isolated Switch amplifier 24V DC Supply voltage (EMC A)

HiC2821
HiC2822

Isolated Switch amplifier 24V DC Supply voltage (EMC B)

HiC2831
HiC2831R1
HiC2831R2
HiC2832
HiC2832R1
HiC2832R2
HiC2851
HiC2853
HiC2853R1
HiC2853R2

Transmitter supply isolators 24 V DC Supply voltage (EMC A)

HiC2025
HiC2025ES
HiC2025HC
HiD2025ES

Transmitter supply isolators 24 V DC Supply voltage (EMC A, Humidity A. See Application/Limitation.)

HiD2025
HiD2025SK
HiD2026
HiD2026SK

Transmitter supply isolators 24 V DC Supply voltage (EMC B)

HiD2029
HiD2029SK
HiD2030
HiD2030SK

Current driver 24 V DC Supply voltage (EMC A)

HiC2031
HiC2031HC

Current driver loop powered (EMC B)

HiD2035
HiD2036

Solenoid driver loop powered (EMC A)

HiC2871

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Thermometer Resistance Repeater 24 V DC Supply voltage (EMC B)

HiC2077

Termination Board (EMC B)

HiCTB08-*
HiCTB16-*
HiCTB32-*
HiDTB08-*
HiDTB16-*

Accessories /further Boards (EMC B)

HIATB01-FAULT-01
HIATB01-FAULT-01-CC

Approval conditions

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.

Application/Limitation

Ex-certification is not covered by this certificate. Application in hazardous area to be approved in each case according to the Rules and Ex-Certification/ Special Condition for Safe Use listed in valid Ex-certificate issued by a notified/recognized Certification Body.

Transmitter supply modules HiD2025, HiD2025SK, HiD2026 and HiD2026SK are approved for humidity class A. Humidity class A does not fulfill the minimum requirements given by IACS Unified Requirements E10, which implies that this equipment may only be mounted in locations where special precautions are taken to avoid condensation.

Parts of the modules contain a material with flame retardancy rating UL94 V-2. To satisfy class rules, the the modules should be installed inside an adequate flame retardant cabinet or enclosure to provide protection against spreading of fire. Reference is given to section Installation in the System description documents for the H-System.

The modules must be installed next to each other and tied together with cable strips as per manufacturer installation instructions to satisfy the requirements for vibration. Reference is given to section Installation in the System description documents for the H-System.

Type Approval documentation

Tests carried out

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

Marking of product

The modules are marked with manufacturer name (Pepperl+Fuchs), model name as listed in Product description and a unique serial number.

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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