DNV·GL

Certificate No:
MEDB00004F2

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Application of: Directive 2014/90/EU of 23 July 2014 on marine equipment (MED), issued as "Forskrift om Skipsutstyr" by the Norwegian Maritime Authority. This Certificate is issued by DNV GL AS under the authority of the Government of Norway.

This is to certify:

That the Heading control system (HCS)

with type designation(s)
PT900D, PT900A and PT900A PLUS

Issued to
Yokogawa Denshikiki Co., Ltd., Morioka Branch
Morioka, Iwate, Japan

is found to comply with the requirements in the following Regulations/Standards:
Regulation **(EU) 2018/773,**
item No. MED/4.16. SOLAS 74 as amended, Regulations V/18 & V/19, IMO Res. A.342(IX), IMO Res. A.694(17), IMO Res. MSC.191(79), IMO Res. MSC.64(67) Annex 3, IMO Res. MSC.302(87)

Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2020-02-09**.

Issued at **Høvik** on **2019-01-16**

DNV GL local station:
Yokohama

Approval Engineer:
Frederik Tore Elter

Notified Body
No.: **0575**

for **DNV GL AS**

Roald Vårheim
Head of Notified Body

A U.S. Coast Guard approval number will be assigned to the equipment when the production module has been completed and will appear on the production module certificate (module D, E or F), as allowed by the "Agreement between the United States of America and the EEA EFTA states on the mutual recognition of Certificates of Conformity for Marine Equipment" signed 17 October 2005.

The mark of conformity may only be affixed to the above type approved equipment and a Manufacturer's Declaration of Conformity issued when the production-surveillance module (D, E or F) of Annex B of the MED is fully complied with and controlled by a written inspection agreement with a Notified Body. The product liability rests with the manufacturer or his representative in accordance with Directive 2014/90/EU.
This certificate is valid for equipment, which is conform to the approved type. The manufacturer shall inform DNV GL AS of any changes to the approved equipment. This certificate remains valid unless suspended, withdrawn, recalled or cancelled.
Should the specified regulations or standards be amended during the validity of this certificate, the product is to be re-approved before being placed on board a vessel to which the amended regulations or standards apply.

NORWEGIAN ACCREDITATION PROD 019

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Product description

PT900D PT900A and PT900A PLUS, Heading Control System, consists of following component.

- AP CDU (Autopilot Control & Display Unit)
- Annunciator Unit
- System Selector / Mode Selector
- MCU (Main Control Unit)
- NAV I/F Unit (Navigation Interface Unit)
- S-JOY OP and I/O UNIT

PT900D PT900A and PT900A PLUS, heading control system, consists of following components;

Model	Type	Description	PCB module	Software	Remark
PT900D	MPH490	AP CDU (Autopilot Control & Display Unit)	V8225AV	V8225HU Axx	PID controller
			V8225AF	V8225HX Axx	Control panel of PID
PT900A			V8225AD	V8225HV Axx	Adaptive controller
			V8225AG	V8225HY Axx	Control panel of Adaptive
PT900A PLUS			V8225AW	V8225HW Axx	Adaptive controller
			V8225AH	V8225HZ Axx	Control panel of Adaptive
All	MPH690	Annunciator Unit	V8225BC	V8225DY Axx	-
All	MPH790	System Selector	-	-	-
All	MPH791	Mode Selector	V8225EC	V8225EU Axx	-
All	MPH291	MCU (Main Control Unit)	V8225BQ	V8225BX Axx	Man. Terminal board
			V8225FC	V8225FD Axx	CAN Adapter Board
All	MPT590	NAV I/F Unit (Navigation Interface Unit)	V8225FT	V8225FUAxx	23 serial ports
All	MPB360	S-JOY OP and I/O UNIT	Main I/O BD	V8223YEAxx	Optional. See Application/Limitation below.
	MPN051				

Above all components shall be placed in protected area.

Application/Limitation

- The installation shall be verified and tested onboard according to PT900 manual for approved and tested HCS functions.
- The heading control system may comply with requirements for NAUT-AW, depending on installation, and to be installed in accordance to manufacturers instructions.
  Final NAUT-AW approval is issued upon DNV GL onboard testing.
- S-Joy (MPB360 and MPN051) shall be connected with ECDIS (JAN-701B or JAN-901B) and/or RADAR (JMA-9100 series or JMA-7100 series) manufactured by Japan Radio Co., Ltd. for HCS functions.

Type Examination documentation

DNV GL No	Title	Drw No	Rev
43	Manual: PT900 Autopilot Maintenance mode Operation manual	SM80B22H01E	5th
38	Report: Test Procedure & Result for BAM interface Heading Control System (HCS) PT900A plus, PT900A,	YDK-D02-AA-18-060	Rev. 0
37	Report: Test Procedure & Result PT900A plus, PT900A,	YDK-D02-AA_18-059	Rev. 0
36	Report: Test Procedure & Result Heading Control System (HCS) PT900	YDK-D02-AA-18-058	Rev. 0
35	Manual: PT900 Autopilot system User's Manual	IM80B20T01E	11th
27	Manual: JRC S-Joy Steering Joystick Controller Additional Instruction Manual		Ed.3
25	Report: IEC60945 Compass safe distance S-JOY OP UNIT AND S-JOY I/O UNIT MPB360/MPN051	TR11-570(E)	
24	Report: IEC60945 OEG: EMC TEST REPORT S-JOY OP UNIT AND S-JOY I/O UNIT MPB360/MPN051	113310	Version 5
23	Manual: STEERING JOYSTICK CONTROLLER MPB360/MPN051 OPERATION MANUAL	IM80B22B-04E	3rd Edition
17	Test Procedure and Result	YDK-D02-AA-14-077	0
16	FMEA CHECK SHEET	YDK-J01-GZ-14-003	
13	Test Procedure (for pending comments)	YDK-D02-AA-14-064	2
12	PT900 Analytical evalution result		
10	TEST PROCEDURE	YDK-D02-AA-13-073	2

Tests carried out

- Performance testing: ISO 11674 (2006)
- Environmental testing: IEC 60945(2002)
- Serial Interface testing: IEC 61162-1(2016), IEC 61162-2(1998)
- Presentation of information: IEC 62288(2014)
  July 2018 - Sec.3 - 6.2.3 Heading control system

Marking of product

The Manufacturer and Type Designation to be applied to the equipment in a clearly visible location and in addition the equipment shall be marked with serial number, safe distance to magnetic compass, power consumption and/or supply voltage.