The model PT500 autopilot is designed for high

The model PT500 autopilot, which has superior operability and functionality compared to previous models, is suitable for a wide range of applications, from large tankers to small freighters and high speed boats. It is available in two versions, model PT500A and model PT500D, which differ in respect of the method of automatic steering. You can freely select a suitable model and configure the optimum system for the type of vessel concerned.

Features

High reliability due to separation of functions
The follow-up steering and non follow-up steering systems are completely independent of each other. Consequently, an abnormality in one system has no effect on the other system.
Also, the control systems of the automatic and hand steering units are independent of each other.

High operability which minimizes human error
The course setter has a dial (25 degrees/rotation), and the set course indicator uses a readily visible red LED. The function keys use easy-to-understand pictorial characters in order to minimize the possibility of a misoperation.

High system expandability due to the use of a separate unit for each function
A separate DIN standard unit is used for each function, making for excellent functional expandability and operability.
The automatic steering unit, steering repeater compass and other units are of compact design and occupy a volume of about 80% of that of previous units. They can thus be easily incorporated in a console or used to build up a system.
1 reliability and meets the needs of the times.

Functions

**A wide variety of steering functions**
By connecting the autopilot to an ECDIS or INS, for example, you can perform rate constant control of automatic steering, and also fixed radius course altering control when navigating through a narrow channel. You can also add an override function (option) to the autopilot for collision avoidance. This autopilot can thus cope with a wide range of navigation conditions.

**Multi-heading input**
There are two input circuits: one is for a gyro compass, the other is for a magnetic compass etc. By inputting a heading signal from a magnetic compass, for example, you can back up the automatic steering heading signal from the gyro compass. (Input signal: NMEA0183)

**Off-course alarm**
You can generate an off-course alarm by simply inputting a magnetic heading with NMEA0183.

**Digital remote controller (option)**
A digital remote controller enables you to change the steering angle setting (P/S 35 degrees) and also the set course from an arbitrary location during automatic steering.

**Input port generation function**
You can freely generate a heading signal from a heading sensor, such as a gyro compass or magnetic compass, as well as a set course signal from a GPS or INS etc, according to the particular format.
PT500 A
AUTO STEERING UNIT
ADAPTIVE TYPE PB343

Gyro compass select key
Pressing this key selects the gyro compass to determine the control heading during AUTO steering.

External compass select key
Pressing this key selects an external compass to determine the control heading during AUTO steering.

Pressing the key increases the heading.
Pressing the key decreases the heading.
Pressing the and keys together causes the numbers below the decimal point.

Buzzer stop key

Course altering control mode select key
RATE: Turns the vessel at a constant rate during automatic course altering.
RADIUS: Turns the vessel at a constant radius during automatic course altering.

Vessel speed setting key
Selects auto or manual vessel speed, and also sets the manual vessel speed.

Steering angle limit setting key
Sets the rudder angle for controlling the steering angle during automatic steering.
At the limit, displayed "RUDDER LIMIT" on the data display.

Off-course alarm setting key
Sets the deviation angle at which the off-course alarm is detected.

Key for setting various parameters
Sets the dimmer/contrast, pilot control and various hull parameters.

Data display
Indicates various control data and also the cause of an alarm.
By selecting the display screen, you can display the steering angle and rate of turn on a bar graph.

Set course display
This is an LED display which displays the set course during automatic steering.

Course setting dial
To set a course, press the dial, then rotate it while keeping it depressed.

Heading one-touch read key
Pressing this key causes the gyro heading to be read to the set course display.

Data UP key
Data DOWN key
Data finalizing key

Draft mode select key
FULL: Full load mode (60% to 100% of the designed full load draft)
MIDDLE: Medium load mode (50% to 60% of the designed full load draft)
BALLAST: Light load mode (up to 55% of the designed full load draft)

Operation mode select key
ECONOMY: Low energy steering used during an ocean voyage
PRECISION 1: Medium steering used when yawing is excessively large
PRECISION 2: Automatic steering which is used mainly to maintain the vessel on course in a narrow sea area

PT500D
AUTO STEERING UNIT
PID TYPE PB344

Gyro compass select key
External compass select key
Set course display

Buzzer stop key

Proportional gain select key
Derivative gain select key
Rudder angle limit setting key
Off-course alarm setting key

Weather adjustment setting dial
Heading one-touch read key

Data UP key
Data DOWN key

Data setting key

Draft mode select key

Operation mode select key
PT500D (option)

This is the PT500D PID type upright type unit. It has roughly the same functions as the horizontal type PID. When used in combination with the PB343 or the PB344 it permits full duplication of the automatic steering function. (In this case, the human-machine interface function, CPU, monitoring function and the power supply of the respective systems are independent of each other.)
System model numbers

PT-500  -  -  - (TWIN RUDDER)

Name of system
A : Adaptive control type
D : PID control type

Style of control stand
S : Stand type
K : Stand with built-in CMZ900 gyrocompass
P : Panel mounting type

Type of steering gear control
N1 : Direct activation of solenoid valves on steering gear pump unit, single
N2F : Direct activation of solenoid valves on steering gear pump unit, duplicated
N2 : Direct activation of solenoid valves on the steering gear pump unit made by MITSUBISHI, duplicated
J2 : Hydraulic power unit for MITSUBISHI JANNEY steering gear, duplicated
N2H : Hydraulic power unit, duplicated
K2T : Continuous control steering gear (2 pumps) made by KAWASAKI HEAVY INDUSTRIES, duplicated
Y2 : Torque motor control steering gear (2 pumps) made by MITSUBISHI HEAVY INDUSTRIES, duplicated
S2 : Continuous control steering gear (2 pumps) made by HITACHI ZOSEN CORP., duplicated
T2 : Continuous control steering gear (2 pumps) made by HATAPA, duplicated

Basic system configuration

Wheel house

Automatic navigation system (option)

Heading and rate of turn signal
CMZ900 gyrocompass

RS422

Control stand

Alarm power supply DC 24 V

Steering gear room

No.1 control & power source box

Steering gear hydraulic pump operation signal

No.1 \( \mu \) transmitter

No.1 actuator

No.2 \( \mu \) transmitter

No.2 actuator

No.2 control & power source box

Main power supply

The type of actuator depends upon the steering gear control method.
Dimensions

CONTROL STAND
Mass: 107kg
117kg (Built-in Gyrocompass)

INHALATION
C. OPERATION UNIT
GYRO MASTER COMPASS
Base (YARD SUPPLY)

FIXING DIMENSION

Panel cut drawing

STEERING REPEATER COMPASS
MKR056
177±0.5
4-Ø8 HOLE
112
112

AUTO STEERING UNIT
P8343 & P8344
225±0.5
4-Ø8 HOLE
136
136

ANNUNCIATOR UNIT PH614
& PID AUTO UNIT P8545
31±0.5
4-Ø8 HOLE
102
102

HAND STEERING UNIT
P8335
212±0.5
4-Ø8 HOLE
114
114

SWITCH UNIT
PH718
81±0.5
4-Ø8 HOLE
86
86

DIAL STEERING UNIT PT161
SWITCH UNIT PH720/PH721
81±0.5
4-Ø8 HOLE
86
86

Caution: Be sure to read the instruction manual before using the equipment.

YOKOGAWA

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Caution: Please read the manual before using this product.

Represented by:

Subject to alteration due to technical developments without notice

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