

**AUTOPILOT**  
Robertson AP9 MK3

**SIMRAD**



**Robertson Autopilot**  
**Tested and approved for use on**  
**commercial vessels**

# Robertson AP9 MK3 Autopilot

Suitable for a wide range of vessels,  
tested and approved according to the  
latest IMO resolution



The AP9 MK3 autopilot is recognized as the most flexible and adaptable autopilot on the market place. The list below highlights a few of the features available in this sophisticated autopilot.

- Excellent steering performance
- Two complete sets of pre-programmable steering parameters
- Simple operation by dedicated push-buttons
- Any combination of dual compass input
- Interface to virtually any type of steering gear
- Combined steering and navigation
- Thruster control

As a retrofit model, the AP9 MK3 should be a first choice because of its ability to interface to almost any magnetic or gyrocompass, steering gear and navigation receiver.

Alarm reset button

Robertson

AP

ALARM  
RESET

AUTO

NAV mode button

NAV

System On/HELMSMAN mode button

HELMSMAN

AUTO

COMPASS  
SELECT

ILLUM

AUTO mode button

OFF

COUNTER  
RUDDER

RUDDER

Compass  
select button

Panel  
illumination  
adjust

Acti  
Info  
setup

System Off  
button

Counter  
rudder  
adjust

Rudder  
response  
adjust

The possibility of adding a full function second station further emphasizes the capabilities built into the AP9 MK3 autopilot system.

## Steering performance

AP9 MK3 has been designed to produce very accurate steering under autopilot control. The autopilot has been programmed to learn how the rudder responds to commands. This both reduces rudder activity and ensures that the rudder is positioned exactly as required, so eliminating rudder overshoot. It also compensates for wear and play in the steering gear, which can be of particular importance when using AP9 MK3 as a retrofit autopilot.

Precise course keeping is guaranteed by the ability to set all parameters on the AP9 MK3 individually with a high level of fine tuning. Special rate of turn functions ensure that all vessels, irrespective of their individual steering characteristics can achieve smooth course changes.

## Simple and effective operation

The combination of touch buttons, LCD displays and the advanced electronic programming for AP9 MK3 produce efficient operation. All mode selections and steering parameter settings are made using touch buttons and instruction is confirmed on the dis-

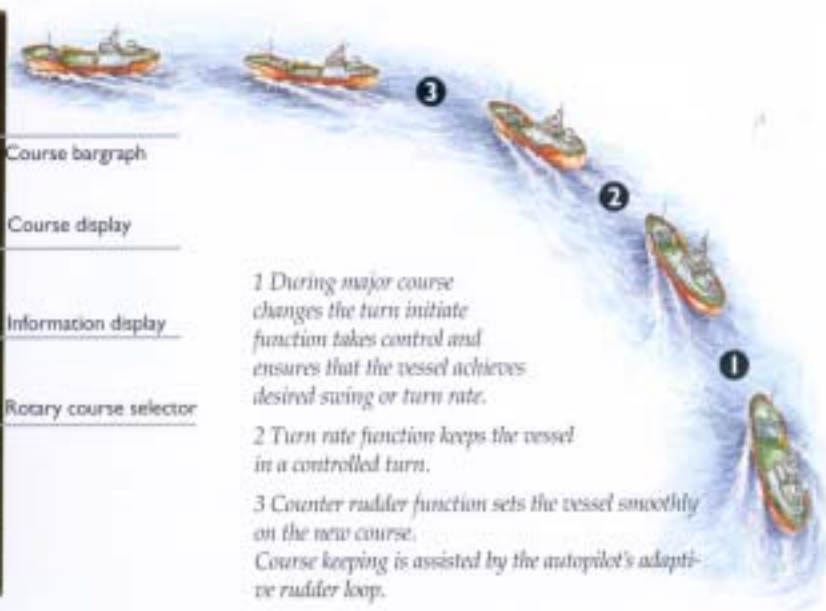




LOT  
RAD

INFO INCREASE +  
WEATHER DECREASE - PORT ←

Set-up adjust, increase value  
Weather (sea state) adjust  
Set-up adjust, decrease value  
Course adjust in 1° increments to port



1 During major course changes the turn initiate function takes control and ensures that the vessel achieves desired swing or turn rate.

2 Turn rate function keeps the vessel in a controlled turn.

3 Counter rudder function sets the vessel smoothly on the new course. Course keeping is assisted by the autopilot's adaptive rudder loop.

play. Course changes can be made by the traditional rotary course selector or using 2 push buttons. These produce an exact 1° course change (port/stbd.). Vessel heading information is shown digitally, deviation from set course and confirmation of rudder commands are also displayed.

### Thruster control

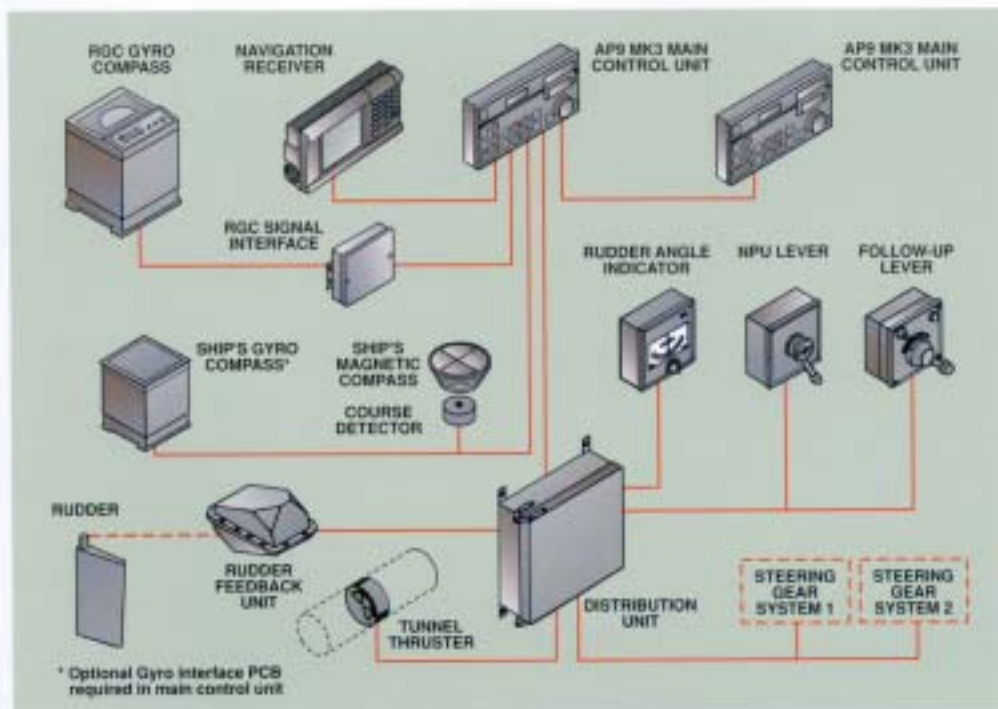
As an optional feature, the AP9 MK3 can be configured to control a bow thruster. Rudders are inefficient at the slow speeds often required by fishing boats, dredgers and survey vessels. A vessel can, however, maintain an accurate heading by automatic control of a bow thruster through the AP9 MK3 autopilot.

### Combined steering and navigation in NAV mode

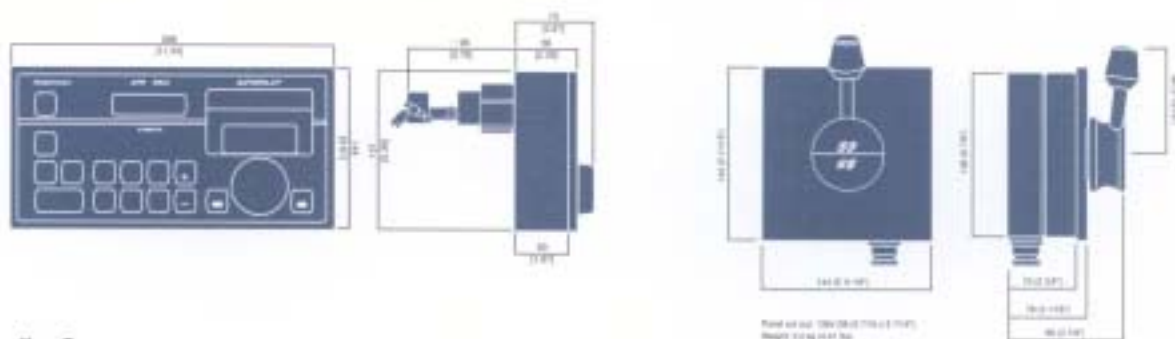
The AP9 MK3 can accept information from navigation receivers and plotters to combine steering and navigation. In practical terms the autopilot uses

constantly updated information to steer the vessel along a predetermined track. The autopilot maintains a straight line between way-points, reducing or eliminating Cross track error (XTE), and reducing both time and fuel.

Ships having navigation equipment with the ability to plan long distance routes (ECDIS) will benefit from fully automatic sailing.



# Technical Specifications



## Autopilot System

### Steering system types:

Hydraulic, solenoid control

### Mains Voltage:

24V DC +30/+25%

### Power consumption:

Dependent on system configuration

### Protection:

Control unit: IP44, Distribution unit: IP22

Other units: IP56

### Rudder drive:

Solid state with adaptive rudder loop

(See Distribution unit)

### Interface:

NMEA 0183

### Heading sensors:

Standard: Magnetic compass course detector

Options: Gyrocompass interface, Fluxgate compass (sin/cos.)

Alarms: Audible and visual, ready for external

### Language selection:

English, French, Spanish, Norwegian

### Temperature:

Operating: 0 to +55°C (+32 to +130°F)

Rudder feedback and Course detector:

-10 to +55°C (+14 to +130°F)

Storage: -30 to +80°C (-22 to +176°F)

### Auxiliary equipment:

NFU and Follow-up levers with mode selection

Multifunction handheld remote

Rudder angle indicator

## Control Unit

### Mounting:

Flush panel mount, bracket mount

### Connections:

5 ea AMP-type

connectors

### Push buttons:

Tactile membrane buttons

### Displays:

Backlit LCD Course display and bargraph

Backlit LCD Information display

### Illumination:

Displays and push buttons adjustable in 8 steps.

### Weight:

3 kg (6.6 lbs.)

### Dimensions:

See drawing.

## Distribution Unit

### Mains voltage:

24V DC +30/+25%

### Steering gear interface:

D90: Single 24-40 V DC 3 Amp solid state switched output.

(For dual output an extra PCB is required).

D91: Single 110 V DC 1 Amp solid state

switched output.

(For dual output an extra PCB is required).

D92: Single 110/220 V DC 1 Amp solid state

switched output.

(For dual output an extra PCB is required).

D93: Dual +/-10 V (adjustable) or 4-20mA

isolated analogue output.

Optional all units: Single +/-10V (adjustable) or 4-20mA isolated analogue output for thruster control.

Weight: 4.5 kg (9.9 LBS).

Dimensions: H300 mm (11.81") L 320 mm

(12.63") D 105 mm (4.2").

## RFI4XU Rudder Feedback

### Rudder angle:

+/- 90 degrees

### Output signal:

3400 Hz +/- 20 Hz/degree

Rudder angle indicator +/- 9V DC, ref. volt. 1/2

mains

Scaling: +/- 45, +/- 60, +/- 70, +/- 90 deg.

### Linearity:

+/- 2 degrees at 45 degrees

### Limit switches:

Two sets adjustable +/- 5 to +/- 160 degrees.

### Mounting:

Horizontal.

### Transmission link:

Aluminium lever with 600 mm (23.5 inch) stain-

less steel rod.

### Shaft support:

Ball bearing.

### Weight:

2.8 kg (6.2 lbs.)

### Dimensions:

From mounting surface

L 240 (9.5), W 185 (7.3)

H 120 (4.8) Shaft L 35 (1.4) Ø12 (.47)

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