

Commissioning Checks

Connection Tests

1. Voltage to be connected is the required DC voltage (12 or 24V).
2. ENSURE POLARITY OF THE VOLTAGE SUPPLY IS CORRECT.
3. All electrical connections are correct.
4. Loose cables are clipped or tied up.
5. Turn steering wheel fully clockwise and visually check that moving and mechanical parts do not foul; visually check that RFU arm has moved in the correct direction as indicated on the RFU label or top.
6. Repeat step 5 for anti-clockwise.

Dockside Tests

1. Turn steering (by hand) to midships position.
2. Turn on power supply. Select **SET** on mode switch.
3. Adjust the rudder limits. See **Rudder Limits** section of this manual.
4. Determine vessel heading by a sighting on known heading or compass.
5. Align autopilot magnetic sensor until display reads known heading.
6. Select **AUTO** mode on control unit.
7. **AUTO** light will come on.

CAUTION: IF AUTOPILOT DRIVES HARD OVER, IMMEDIATELY TURN CONTROL UNIT OFF. Reverse motor drive wires at terminal strip on rear of autopilot and repeat from Step 1.

8. Turn course knob 10 degrees to starboard.
9. Green steering light should come on.
10. Confirm that rudder moves to starboard.
11. Turn course knob back to centre, then 10 degrees to port.
12. Red steering light should come on.
13. Confirm that rudder moves to port.

NOTE: AT NO STAGE SHOULD THE AUTOPILOT DRIVE THE RUDDER INTO THE MECHANICAL STOPS.

14. Move mode switch to **SET** position.

The autopilot is now ready for full operational testing. **Use open waterways for testing until you are familiar with the operation. Complete installation and commissioning form supplied.**

Rudder Limits Switch Setting

The rudder limits prevent the steering motor driving the rudder beyond its physical (mechanical) stops. The **limit switch** is set so that the limit display comes on before the rudder reaches the stops.

There are two display symbols **P_L** (port limit), **S_L** (starboard limit) indicating the state of the rudder limit circuits:

- * The port limit **P_L** display will come on when the rudder position is further to port than the limit set by the **rudder limit port setting**. This will cause any port drive command to be ignored and turn off the port drive light on the front panel.
- * The starboard limit **S_L** functions in the same way for rudder angles to starboard.
- * The symbols do not appear in the SET mode.

NOTE: **THE RUDDER LIMITS ARE FACTORY SET BETWEEN 25 AND 30 DEGREES. IF THE RUDDER FEEDBACK HAS BEEN INSTALLED CORRECTLY, THE P L AND S L SYMBOLS SHOULD DISPLAY WHEN THE RUDDER IS MOVED TO THE PORT OR STARBOARD LIMIT.**

Setting Rudder Limit

- * Switch to **SET** mode
- * Hold down **GPS** button, press **TIMER** button, display shows [900].
- * Dial up [905] by **COURSE** knob, press **TIMER** button. Display shows rudder position as a scale of 0 to 255, 128 being the centre.
- * Rotate **steering helm** to desired **Port Limit Position** (display should be between 000 and 110), then press **GPS** button to set the **PORT LIMIT**.
- * Rotate **steering helm** to desired **Starboard Limit Position** (the display should be between 150 and 255), then press the **TIMER** button to set **STARBOARD LIMIT**.

To check **Rudder Limits**, switch AP4 to **PWR** mode, rotate **COURSE** knob to **Port** and **StarBoard lock** in turn and visually check rudder has moved to desired limit positions.

Compass Calibration