Navitron Systems Ltd

NT700FU Follow Up Remote Steer Control

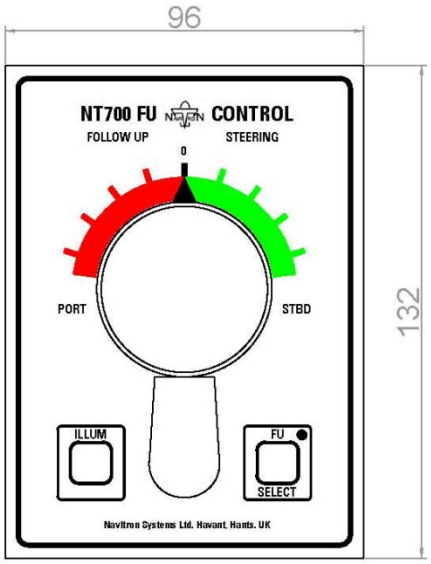
Preliminary Installation and Operating Instructions

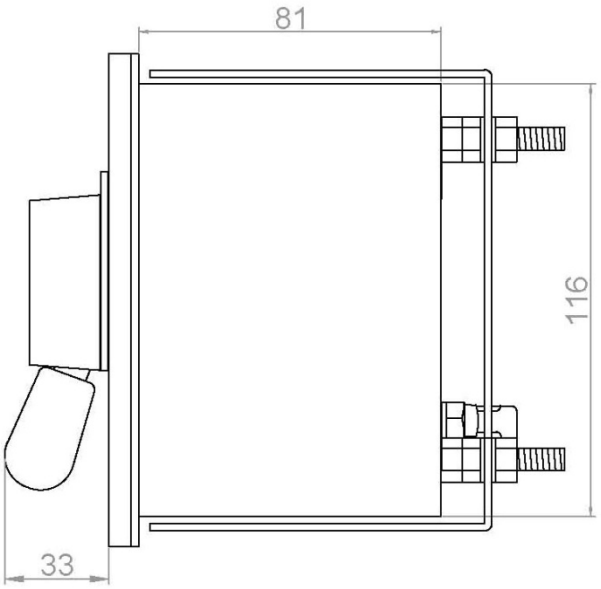
Contents

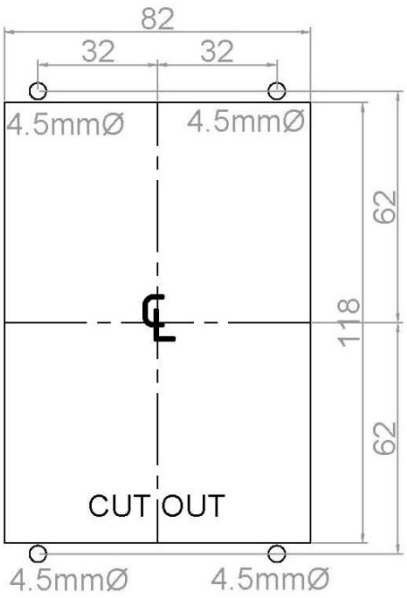
General.

The NT700FU steer control provides proportional follow up control of the vessel's rudder position from a location remote from the autopilot. When the NT700FU is selected the Autopilot will enter a standby mode and the course setter will follow any change in the vessel's heading, thus a "steer on lock on" function is provided. Additionally the range of the NT700FU can be preset, this coupled with its alignment feature make it ideal for either fine or general control of the vessel.

Section 1. Unit dimensions and installation.

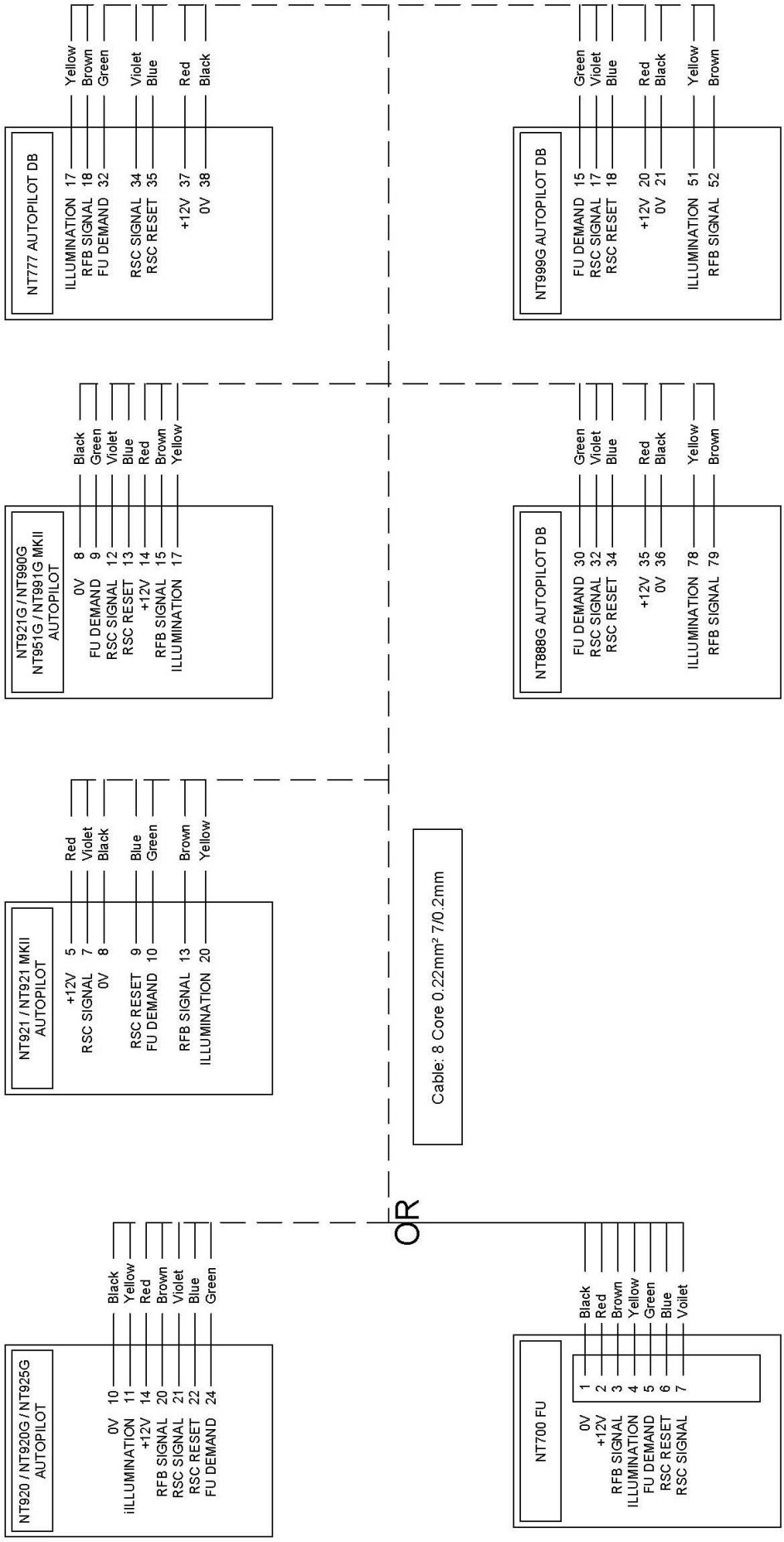






NOTE:-
If fitting with U-bracket the 4.5mmØ holes are not required

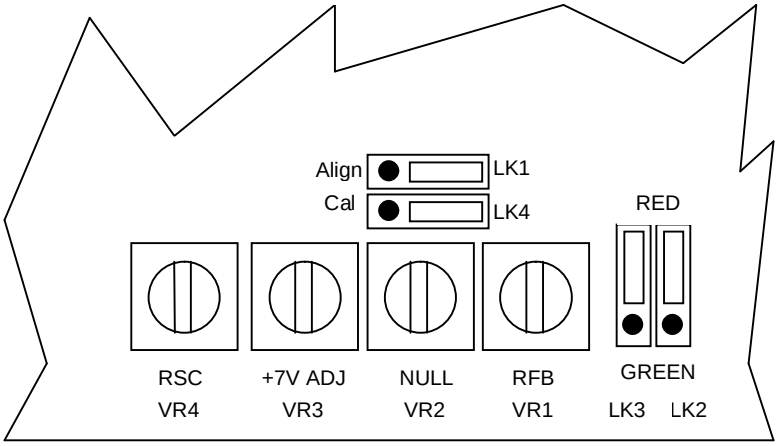
Section 2. Cables and connections.



Section 3. Installation and adjustments.

Adjustments are made using a series of links and potentiometers located at the bottom of the NT700FU circuit board show in Figure 3A and should be performed while stationary alongside and will require that the autopilot be on and allowing remote control.

Figure 3A



3.1 Illumination Colour.

The back light can be either green or red and is selectable using links LK2 and LK3 shown to the right in Figure 3A. Both must have the same setting for the back light to operate.

3.2 Factory Adjustments.

VR2 and VR3 are adjusted prior to shipping the NT700FU and should not need to be adjusted.

VR2 is used to ensure that the rudder goes to 0° when the follow up lever is resting on its detent.

VR3 is used to adjust the on board voltage regulation.

3.3 Rudder demand and feedback calibration.

AIM: To set the desired maximum rudder angle and match the rudder feedback signal. This allows the NT700FU to detect that demand is aligned with rudder position before taking control of the rudder.

a) Move LK4 (Cal) to the left and LK1 (Align) to the right. This puts the NT700FU in the correct mode.

b) Apply power to the unit and press the select button. The NT700FU will take control of the rudder.

c) Set the lever to the fourth graduation on one side of the scale.

d) Adjust VR4 (RSC) to obtain the desired rudder angle.

e) When rudder has settled adjust VR1 (RFB) so that the select LED illuminates Yellow.

f) Push the select button to end the calibration process.

3.4 Software Calibration

AIM: To give the onboard processor the information it needs to offer the alignment functionality. All three readings must be taken for this process to succeed.

a) Set both LK1 and LK4 to their left positions.

b) Power the NT700FU and press the select button. It will take control of the rudder and the Select LED will flash yellow.

c) Ensure the lever is set to 0° and is resting on its detent. Allow the rudder to settle amidships.

d) Press both Illum and FU Select buttons simultaneously on the front of the NT700FU. This will be acknowledged by a beep and the Select LED will flash Green.

e) Move the lever to the fourth graduation on the Starboard side of the scale.

f) Push both buttons on the front of the NT700FU. This will be acknowledged by a beep and the Select LED will flash Red.

g) Move the lever to the fourth graduation of the Port side of the scale.

h) Push both buttons on the front of the NT700FU. This will be acknowledged by a beep and the NT700FU will turn off.

i) Move LK4 (CAL) to its right hand position as show in Figure 3A.

3.5 Operation Mode

AIM: Select the mode of operation for the user.

STANDARD MODE:

When the Select Button is pressed and the autopilot is allowing remote control the NT700FU will take control of the rudder. The rudder will move to the position demanded by the NT700FU lever.

To operate in Standard Mode LK1 must be set to its right hand position as shown in Figure 3A.

ALIGNMENT MODE:

When the Select Button is pressed and the autopilot is allowing remote control the NT700FU will compare the demanded position with that of the rudder feedback. Only when the two match will the NT700FU take control of the rudder.

When the two are mismatched the buzzer will sound and the Select LED will flash either red or green indicating the direction the lever must be moved (Port or Starboard) to achieve alignment. This prevents accidental course changes when taking control of the rudder.

If the rudder angle is greater than that setup in step 3.3d the NT700FU will take control of the rudder when its lever reaches the scale extremity. The rudder will return to the range of the NT700FU.

To operate in Alignment Mode LK1 must be set to its left hand position.

Section 4. Operating Instructions.

4.1 Illumination

On a press of the Illumination Key the NT700FU will increment its back light illumination level. This will happen four times. The Select LED's brightness will be set to a corresponding level.

On the fifth press the back lights will be extinguished and the Select LED will be at maximum brightness, this is daylight running mode.

Further presses repeat the cycle.

The NT700FU also follows the illumination level of the autopilot. This is compared with the illumination level set previously. The final illumination level is whichever of the two is greatest.

Illumination is independent of the requirements stated in 4.2

4.2 Required Operating Conditions

The NT700FU may only take control of the rudder when the autopilot is engaged and remote control is enabled.

4.3 Operation

Control of the rudder is taken by pushing the Select Key on the front of the NT700FU.

STANDARD MODE

The NT700FU will gain control of the rudder. The rudder will move to the angle demanded by the NT700FU lever. The Select LED will illuminate green. The rudder will then follow the lever.

ALIGNMENT MODE / RUDDER ALIGNED

The NT700FU will gain control of the rudder. The rudder will not move and the Select LED will illuminate green. The rudder will then follow the lever.

ALIGNMENT MODE / RUDDER MISSALIGNED

The NT700FU will beep and the Select LED will flash either green or red. Move the NT700FU in the corresponding direction at a steady pace.

Control of the rudder will only be gained when the position of the lever matches the position of the rudder or the extremity of the NT700FU scale is reached.

When control is gained the NT700FU will fall silent and the Select LED will illuminate green. The rudder will now follow the lever.

4.4 Releasing the Rudder

a) To return rudder control to the autopilot simply press the Select Button.

b) The rudder will be released when another remote steer station (such as an NT700NFU or NT700FU) demands control.

c) Disabling remote controls on the autopilot will disable any remote steer controls.

Any of the above methods will cause the Select LED to extinguish.