This manual is written for the Nexus Multi Center version 2.00

Edition: January 1999

CONTENTS

1 Introduction

1.1 Welcome aboard

Thank you for choosing a Nexus Multi Center. Through this manual we would like to help you install and operate your new Nexus product. We are convinced that you will appreciate the useful functions whether you are a cruiser or a racer. To get the most out of your Nexus product, please read through this manual carefully before you start your installation. If you see us at a show, stop by to say hello.

Warning !

Electronic charts are only an aid to navigation designed to facilitate the use of authorised Government charts, not to replace them.
Only official Government charts and notices to mariner contain all information needed for the safety of navigation and, as always, the captain is responsible for their proper use.

1.2 Capabilities

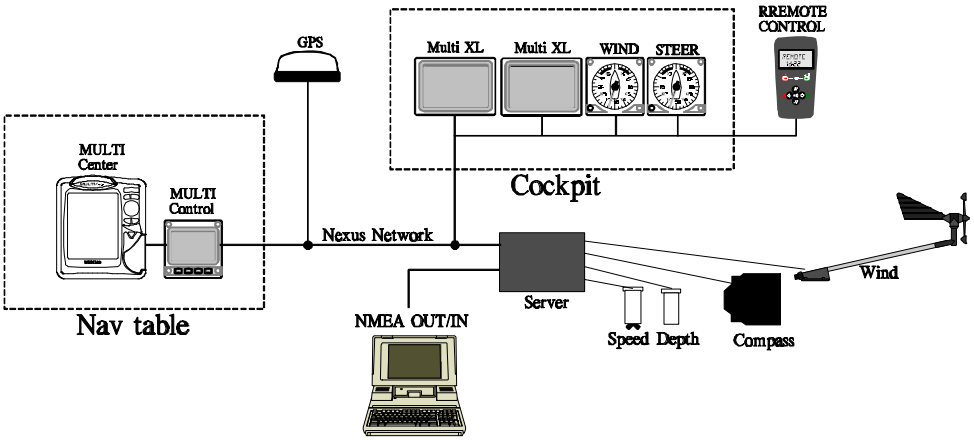
The Multi Center will be the 'center' of your boats navigation system, including a chart plotter. If you have operated a Windows™ program you will understand the use of the Multi Center within a few minutes. The Multi Center monitors all boat data on the Nexus network. Some functions may be displayed in graphs, such as wind direction , wind speed, depth etc. For the chart plotter Navionics® Navcharts are used with a very good world-wide coverage. The Multi Center may be connected to the Nexus Network or to a NMEA GPS.

In the NMEA0183 mode, standard and commonly used GPS navigation and position messages are accepted. When used in the Nexus Network mode where a Nexus Server is installed, you will get maximum integration with all information available in one Multi Center.

The high contrast super twist LCD enables you to read the Multi Center in bright sunlight and with backlight during night navigation. The Multi Center is delivered with a bracket for mounting, it is also possible to bulkhead mount the instrument. The splash proof construction, enable you to mount the Multi Center in the cockpit.

The display may be customised for your special needs, decide the size of the plotter screen, the extremely fast zooming allows you to rapidly change between an overview and a detailed zoom level. The screen amplifier function will automatically optimise the screen. It will always position the boat on the screen with largest part of the chart in front of you, regardless of speed and course. The numerous functions in the Multi Center, will provide you with valuable information even when used without charts. Monitor boat data, wind shifts, edit waypoints and use it as a graphical navigator. The operation of the Multi Center is very easy due to the Windows™ like menus. All functions are accessed by pull down menus and on screen information is available in five languages.

- Use the Multi Center as an Instrument. Displays up to 24 information boxes at the time. See 8.13.3
- Use the Multi center as a plotter, Uses the Navionics Nav Charts. See chapter 7
- Use the Multi center as a remote control for other digital Nexus instruments. See 6.2.1
- Use the Multi center as a Autopilot instrument. See chapter 9
- Calibrate all tranducers connected to the nexus system. See 8.10



1.3 Part specifications

Nexus Multi Center is delivered with all parts for mounting. Check prior to installation.

Qty.	Description
1	Instrument, Nexus Multi Center
1	Fixed mounting attachment
1	Instrument cable 6 m
1	Drill template
1	Installation and user manual
1	Warranty card
1	National distributors list
4	Mounting screws for the instrument

1.4 Registering of this product

Once you have checked that you have all the listed parts, please take time to fill in the warranty document and return it to your national distributor.

By returning the warranty card, it will assist your distributor to give you prompt and expert attention. Keep your proof of purchase. Also, your details are added to our customer database so that you automatically receive new product catalogues when they are released.

1.5 About this manual

- Each time a push-button is referred to in this manual, the push-button name will appear in **bold** and CAPITAL letters, e.g. **ENTER**
- Unless otherwise stated, the push-button presses are momentary.
- Each time a function is mentioned in the text, it will be in CAPITAL letters, e.g. SETUP.
- Each time a displayed function is mentioned in the text, it will be in brackets and in the same format, where possible, as displayed, e.g. [Chart].
- The operation of the Multi Center is similar to Windows™ like "pull-down-menus".
- This manual has been written to be: Compatible with Multi Center instrument from software version 2.00.
- You can easily update the Multi Center software. For further information please contact your local Nexus dealer.

Note: We have put in a lot of effort, in order to make this manual correct and complete. But since we continuously make our products better, some information may differ from the product functions. If you need further information contact your national distributor

Warning: Common sense must be used at all times when navigating. Nexus navigation equipment should only be considered as aids to navigation.

However the settings in setup mode are stored in a non volatile memory, we recommend to note your settings.

2 Installation

There are several possibilities to install and connect your Multi Center:

A. "Stand-alone-Unit"
- Connected to a Nexus GPS Navigator
- Connected to a NMEA Navigator

B. Part of a Nexus Network
- To display all Nexus Data only
- As the navigation center
- As a navigation repeater

For more information see 8.7

The installation includes 6 major steps:
1. Read the installation and operation manual.
2. Plan where to install the Multi Center, Nexus Server, transducers and instruments.
3. Run the cables.
4. Install the Multi Center, Nexus Server, transducers and instruments.
5. Take a break and admire your installation.
6. Learn the functions and calibrate your system.

Before you begin drilling ... think about how you can make the installation as neat and simple as your boat will allow. Plan where to position the transducers, the Nexus Server and the instruments. Think about leaving space for additional instruments in the future.

- **A few "do nots" you should consider:**

– Do not cut the cables too short. Allow extra cable length at the instrument or at the Nexus Server so it can be disconnected for inspection without having to disconnect all attached cables.
– Do not place sealant behind the display. The instrument gasket eliminates the need for sealant.
– Do not run cables in the bilge, where water may accumulate.
– Do not run cables close to fluorescent light sources, engine or radio transmitting equipment, in order to avoid possible electrical disturbances.
– Do not rush, take your time. A neat installation is easy to do.

- **The following material is needed:**

– Wire cutters and strippers.
– Small and large Philips and small flat head screw driver.
– Hole saw for the instrument clearance hole 35 mm (1½") (if flush mounted).
– Drill for the mounting holes
– Screws for mounting the bracket or bolts for flush mounting.
– Plastic cable ties.

If you are doubtful about the installation, obtain the services of an experienced technician.

2.1 Installing the Multi Center

Install the Multi Center flush mounted or by use of the bracket with adjustable mounting angle. If the Multi Center should be flash mounted, be sure, that you are able to get to the backside of the desired mounting position to screw the Multi Center.

1. **Bracket mount:**
   Place the bracket and mark the drill position by use of a pen. Drill and mount with screw.

2. **Flush mount:**
   Place the drill template on the desired location and drill the holes.

NOTE! The screw may not exceed deeper then 8 mm into the Multi Center thread inserts otherwise the Multi Center can be damaged.

2.2 Installing connections

The cable from the Multi Center is a seven-pole cable, which carries both power and data. The following colours are used.

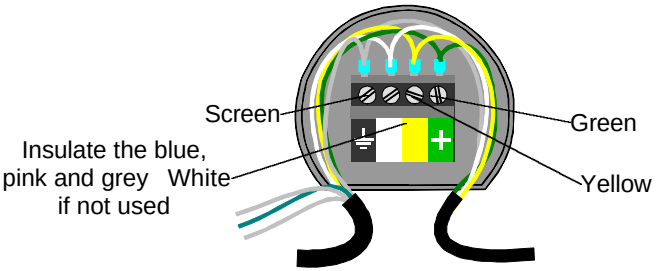
Cable colour	In a Nexus network	In a NMEA connection
Green:	+12 V	+12 V
Yellow:	Network A	NMEA out A
White:	Network B	NMEA out B
Brown/Screen:	Ground	Ground
Blue:	Not used, insulate	NMEA in
Grey:	Nut used, insulate	NMEA in return
Pink:	External ON/OFF button for Autopilot.	Not used, insulate.

Always connect a 3 AMP fuse between Power supply (green) and instrument.

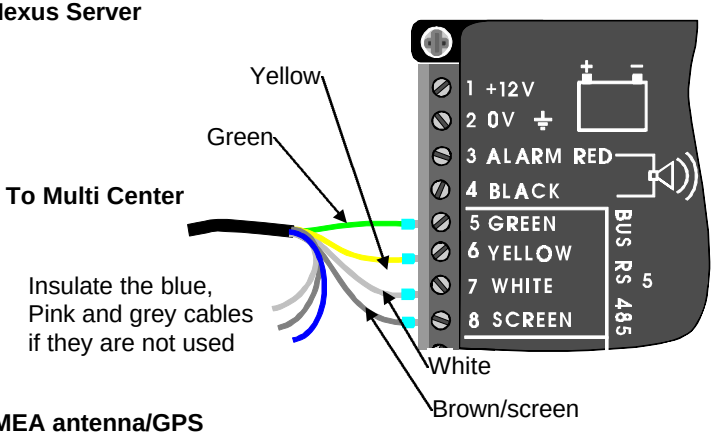
If you already have a Nexus Network you shall connect the Multi Center to the Nexus Network.

2.2.1 Installation in an existing Nexus Network

Run the cable from the Multi Center and connect according to the colours it to the nearest point of the Network. Cable that are not used should be insulated. That might be at the Nexus Server or at any Nexus instrument.

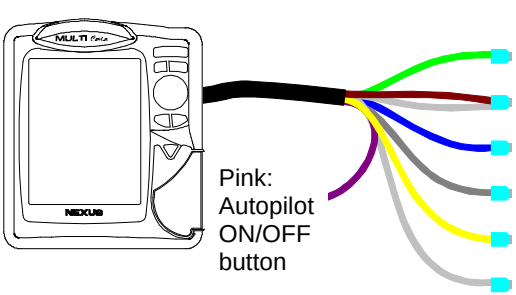


2.2.2 Connection to a Nexus Server



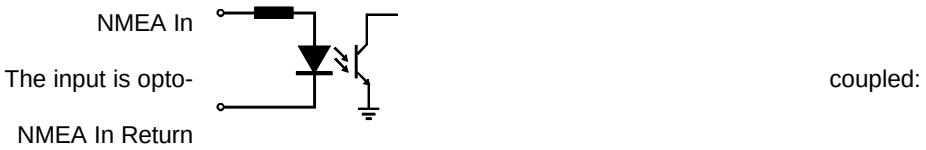
2.2.3 Connection to a NMEA antenna/GPS

The Nexus Multi Center May be used together with any GPS receiver transmitting NMEA 0183. Select NMEA at first power on or select NMEA as system mode in the setup (see 8.7).



Green:	+12 V
Brown/screen:	Ground
Blue:	NMEA in from GPS
Grey:	NMEA in return from GPS
Yellow:	NMEA out A
White:	NMEA out B

Connect always the blue cable (NMEA In) and the grey cable (NMEA In Return) to the GPS. If the GPS has no connection for NMEA In Return, connect the grey cable to Ground at the GPS.
The yellow and white cables (normally Network cables) will in NMEA mode transmit NMEA for Radars and Autopilots.
The pink cable is used for Autopilot ON/OFF button.



2.2.4 Additional Connection-Possibilities at NMEA Out

If the Multi Center is connected to a Server, you can use the NMEA Out of the Server for connection of external e.g. Radars and Autopilots.
If the Multi Center is connected to a Nexus GPS Navigator, you can use the NMEA Out of the Server for connection of external e.g. Radars and Autopilots.

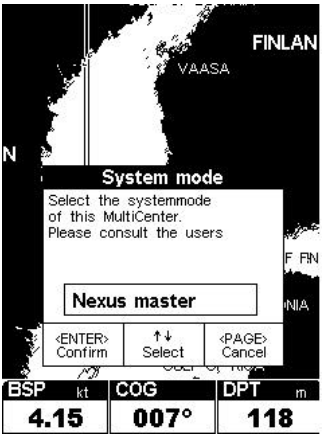
Your instrument installation is done!

3 First start

On / Off

At power on, first the software version is displayed, then the navigation warning text. To acknowledge press **PAGE** button.

At first power on after installation, you will then be asked to select from following modes:



Select **[Nexus master]** if the Multi Center is connected to a Nexus Network without a Nexus GPS navigator instrument or another Multi Center with the system mode "Master" is connected.

Select **[Nexus slave]** when there is a "Master" connected

Select **[Repeater]** when an other NMEA GPS Navigator is connected to the Nexus Server and you want to use the Multi Center as a repeater only. The Connected NMEA GPS will then calculate bearings and distances etc.

Select **[NMEA]** if a NMEA GPS is connected direct to the Multi Center. If a NMEA GPS is connected to the Nexus Server, you must select either [Nexus master], [Nexus slave] or [Repeater].

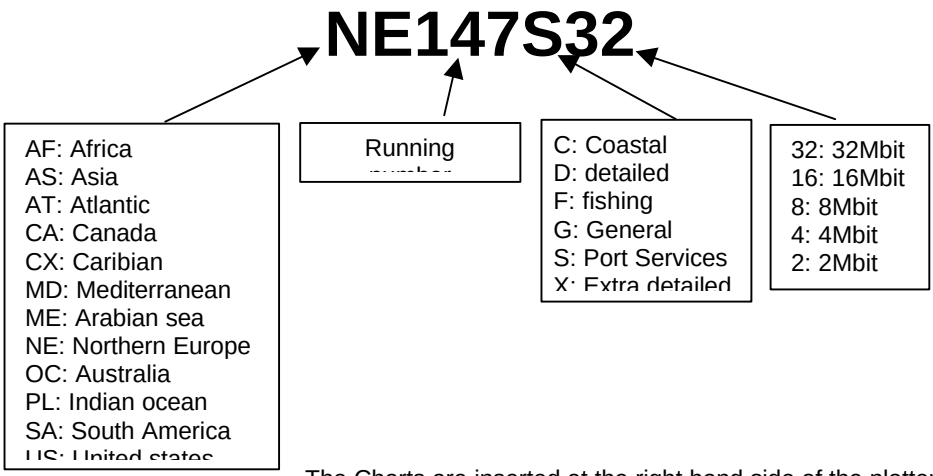
Press **UP/DOWN** to select, press **ENTER** to save the value.

Wait for the text ”Init OK” before initialising another Nexus instrument!

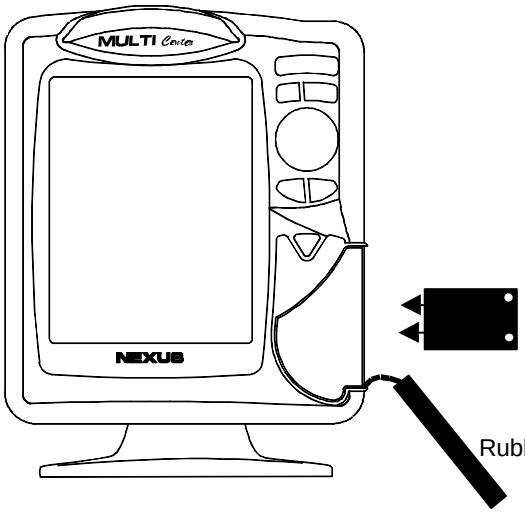
When connected to a Nexus Network, the instrument will be given a logical ID number in the Nexus Network.

4 Electronic charts

The Multi Center use electronic charts from Navionics. The type are Navcharts. They are available in three different memory sizes. 8 Mbit, 16mbit and 32 Mbit. The charts are vectoriesed charts with different grades of information on them. The name of the Navcharts tells what's on it:



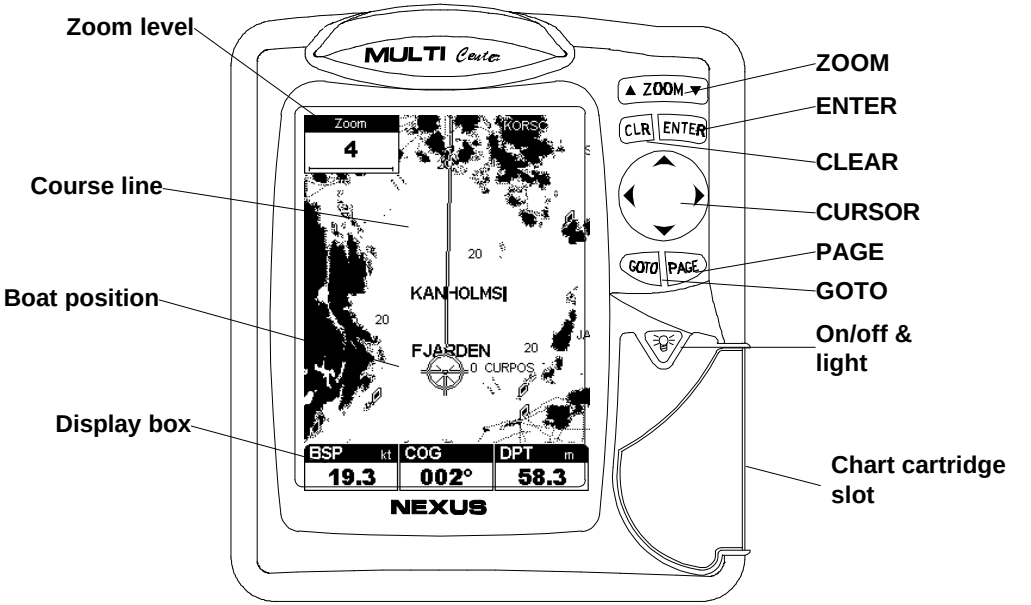
The Charts are inserted at the right hand side of the plotter



Remove the rubber lit and insert the Navchart with the text facing you and the connection pad into the Multi Center

Rubber lit

5 Operation



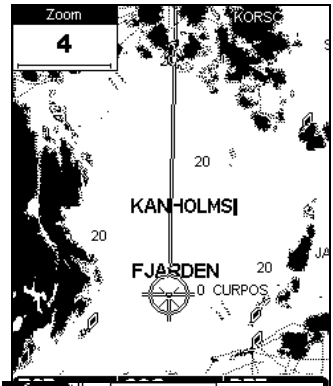
5.1 How to use the push-buttons

5.1.1 Power ON/OFF and light button

A press on **ON** switch on the instrument.
A new short press on **ON** will turn on or off the backlight.
A long press (over 2 seconds) will turn off the instrument.

5.1.2 ZOOM button

The Zoom level is displayed on the screen when zooming. [Zoom 4] means that there is 4 Nautical Miles horizontal across the screen. The maximum zoom level is 4096 and minimum is depending of the resolution of the chart used, some areas of the chart have port plans where a lower zoom-level than the rest of the chart may be selected. When the zoom-level is changed the selected zoom-level is displayed in the upper left corner for 6 sec.

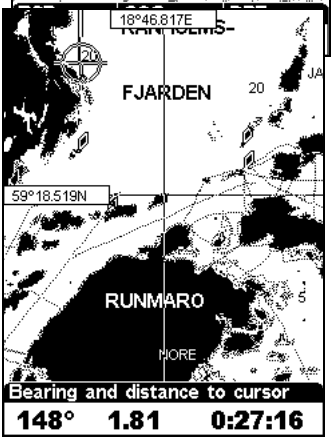


Press on ▼ to zoom in.

Press on ▲ to zoom out.

5.1.3 CURSOR button

This is the general button to use when moving the cursor, select ports, waypoints etc. When you press this button when in the normal navigation chart page, a cursor will 'pop up'. The cursor is displayed as a cross. Move the cursor cross-hair and the chart will move, by pressing the **UP, DOWN, LEFT** or **RIGHT** arrow on the large button. In this way a waypoint can be entered, or just to check a Lat / Long position. Information of bearing and distance from ship to cursor and time to go is also displayed at the bottom row. Time to go is based on the present speed.



Latitude and longitude for the cursor is displayed at the horizontal and vertical lines.

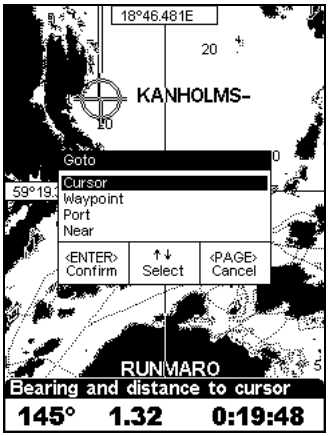
CURSOR is also used to scroll 'pull down menus' when selecting display modes, actions or when setting up data.

5.1.4 CLR (clear) button

This button is used to either clear data when in editing mode, or as the escape "button" to exit a function.

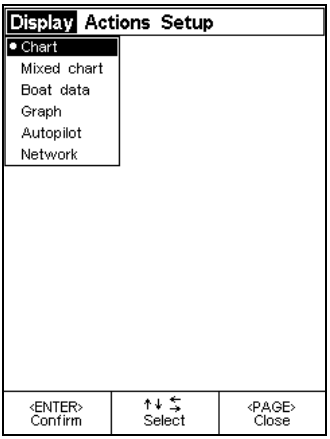
5.1.5 GOTO button

Press **GOTO** to enter the GOTO function.
Press **UP** or **DOWN** to select the functions [Cursor], [Waypoint], [Port] or [Near].



5.1.6 PAGE button

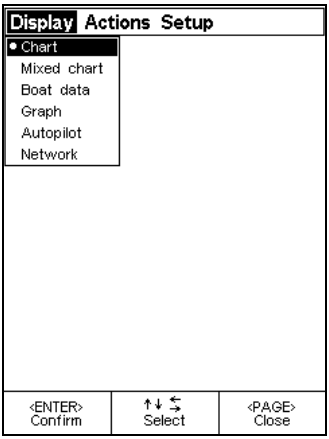
The **PAGE** button is the entry to a number of functions such as what to DISPLAY, reset trip as an ACTION or SETUP units or other preferences. All setting of data and actions are made here. If you are in cursor mode and press **PAGE** you will page to NAVIGATION mode, a press on **PAGE** will give you access to the selection mode.



6 Functions

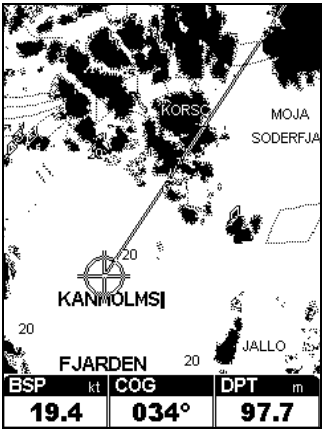
6.1 Change DISPLAY

Press **PAGE** to enter the function [Display].
Press **UP** or **DOWN** to select display and confirm with **ENTER**.



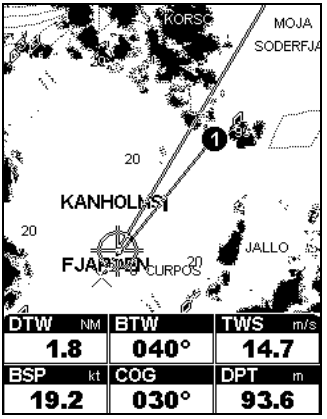
6.1.1 DISPLAY [Chart]

When DISPLAY [Chart] is selected, a chart and 3 selectable boatdata boxes in a bottom line are displayed (see 8.13.1).
The Charts used are Navionics® NavChart™ in sizes from 2, 4, 8, 16 and 32 Mbit. If no chart is available, a world-wide zoom level of 512 Nautical miles (cross the LCD) will be used.
When DISPLAY [Chart] is selected, the main part of the screen is used for chart.



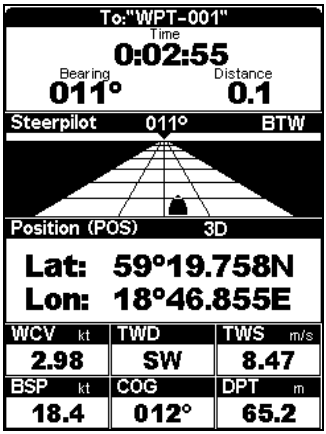
6.1.2 DISPLAY [Mixed chart]

When DISPLAY [Mixed Chart] is selected, a chart and 6 selectable boatdata boxes in a bottom line are displayed (see 8.13.2).



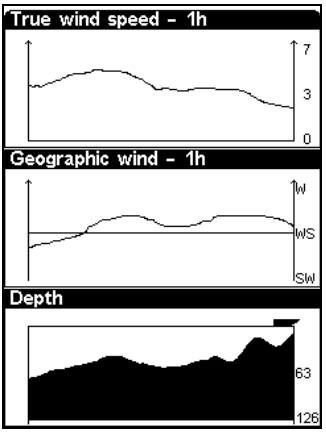
6.1.3 DISPLAY [Boat data]

When DISPLAY [Boat data] is selected, free selectable boatdata including steer information are displayed (see 8.13.3).



6.1.4 DISPLAY [Graphics]

The graphic display will view the history of a selected type of data, such as boatspeed, depth, wind speed and wind direction (see 8.13.4).
The sampling rate is selectable and a total of 200 samples of the depth can be traced back.



6.1.5 DISPLAY [Autopilot]

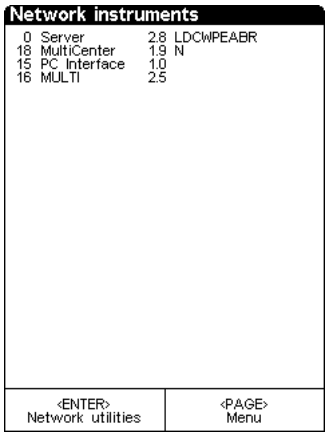
This display is only available if a Nexus servo unit is connected to the Network. For the Autopilot mode, see Chapter 9

6.1.6 DISPLAY [Network]

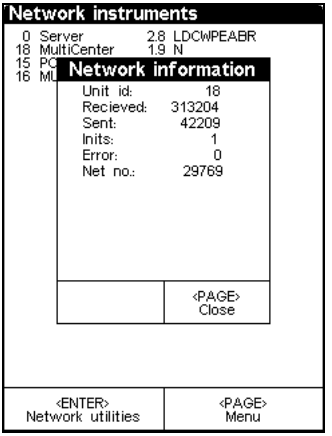
Display all units and instruments on the Network. The categories and software versions for each unit is also displayed. Multi Center can only have category N. Following categories exist:

[L] = Log and water temperature.
[D] = Depth
[C] = Compass
[W] = Wind transducer.
[P] = Position
[E] = Engine data (RPM, oil temp etc.)
[A] = Autopilot
[B] = Battery
[R] = Roll and Pitch
[N] = Navigation master with active waypoint bank.

Note: All Nexus Speed and Depth instruments will be displayed as MULTI in the list since they share instrument Id.

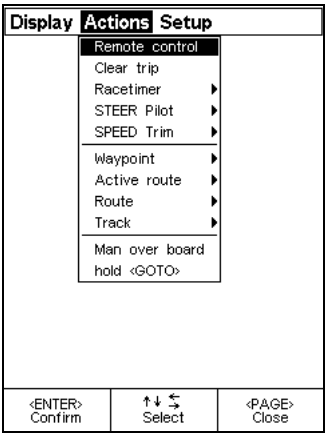


Press ENTER for Network utilities. This in formation is for trouble shooting and fault finding. Select Network information and press ENTER and a list of the network is displayed. This information may be acquired from a Nexus engineer if you experience some Network problems.



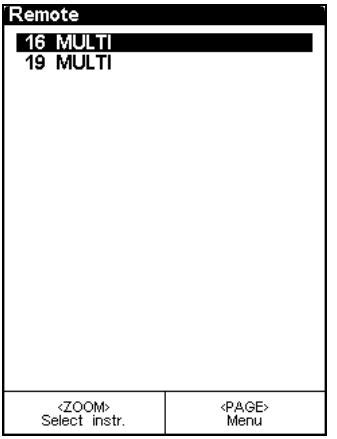
6.2 ACTIONS

A function followed by ▶ means there are additional choices. Press **RIGHT** to access.



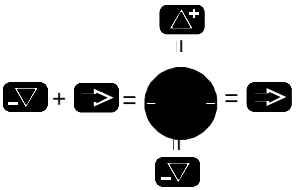
6.2.1 ACTIONS [Remote control]

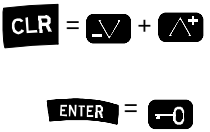
To get to the Remote mode, press **ENTER**. In this mode you may remote control all Nexus instrument on the Network. When you press **ENTER**, a list of all connected instrument will appear.



To select instruments from the list, press **ZOOM**. 

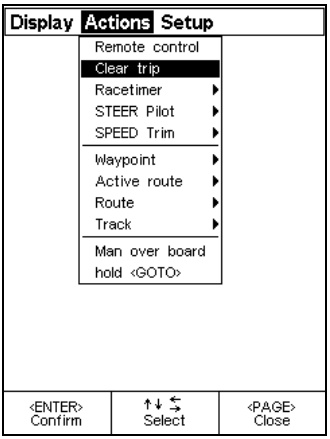
To remote control, selected instrument, **press UP, DOWN, LEFT, RIGHT, ENTER** and **CLR** as required.





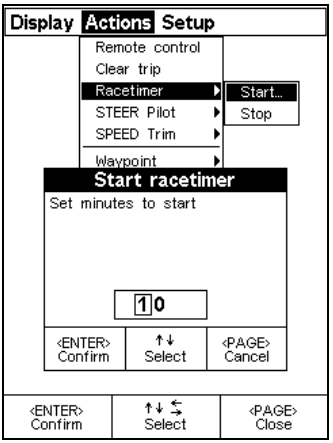
6.2.2 ACTIONS [Clear trip]

Press **ENTER** to clear the trip distance.
The command will be broadcasted on the Nexus Network to all instruments.



6.2.3 ACTIONS [Racetimer]

To activate the racetimer, press **RIGHT** and **ENTER** Set minutes to start with **UP** and **DOWN** and start the timer with **ENTER**. The command will be broadcasted on the Nexus Network to all instruments.

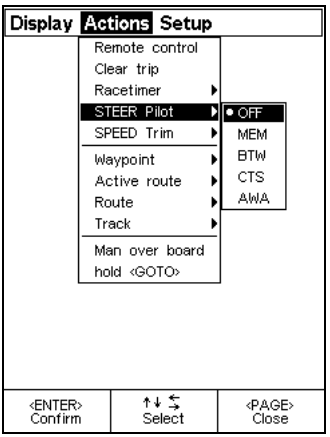


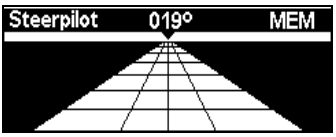
6.2.4 ACTIONS [STEER Pilot]

This function is only available, if the Multi Center is connected to a Server.
Sets the mode of operation of the steer pilot instrument. The information will be broadcasted on the Nexus Network to all instruments.

Select the desired Steer Pilot mode

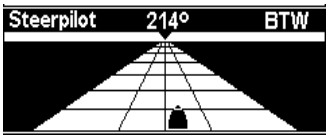
[OFF] No Steer Pilot mode activated.



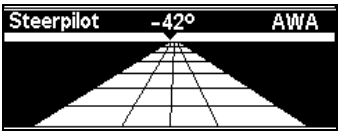


[MEM] Compass memory as steer reference.
Displays the difference between the memorised course to steer and present course steered.
The road will bend to the right if you steer to much to the left and vice versa.

[BTW] Bearing to waypoint (this function is only available, if a compass-transducer and a GPS is connected to the server).
Displays the difference between the bearing to waypoint and the course steered
The waypoint is at the end of the road. In this example, that means you have to steer to the right to get straight to the waypoint

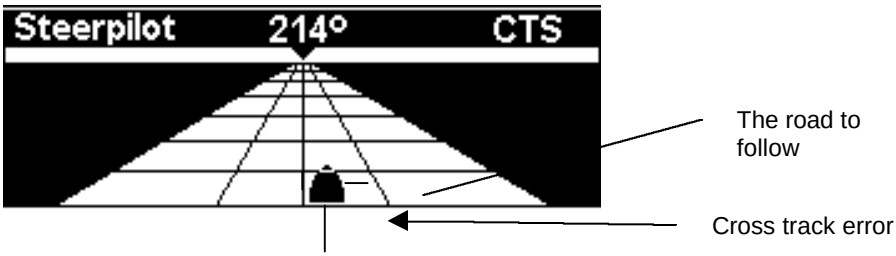


[CTS] Course to steer (this function is only available, if a compass-transducer, a log-transducer and a GPS is connected to the server).
As with BTW, plus SET and DRIFT compensation.
The CTS function gives you the shortest way to sail towards the Waypoint. Tide must however be taken into consideration, since it will give a time dependant drift on the boat.
Displays the difference between the course to steer to the waypoint and the course steered.
The waypoint is at the end of the road. In this example, that means you have to steer to the left to get straight to the waypoint.

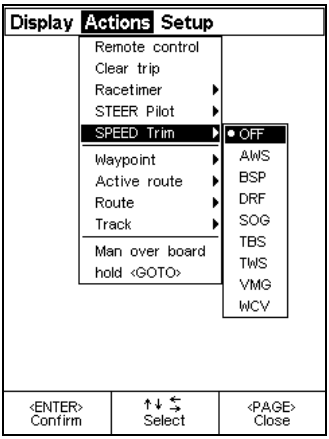


[AWA] Apparent wind angle as steer reference (this function is only available, if a wind-transducer is connected to the server).
Displays the difference between the memorised apparent wind angle and the present wind angle.
The road will bend to the right if you steer to much to the left and vice versa.

Explanation of the steering display:



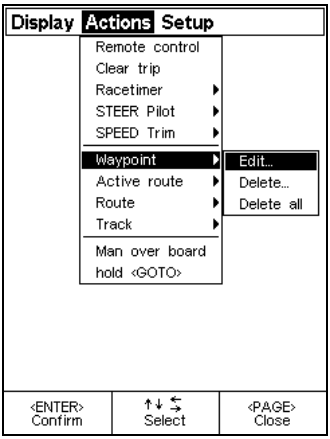
6.2.5 ACTIONS (SPEED Trim)



Select what speed you want to use as Speed trim reference. This command will be broadcasted on the Network to all connected Nexus instrument. Select from:

OFF	No reference
AWS	Apparent wind speed
BSP	Boat speed
DRF	Speed of current
SOG	Speed over ground
TBS	Target boat speed (from PC via NMEA)
TWS	true wind speed
VMG	Velocity made good
WCV	Waypoint closure velocity

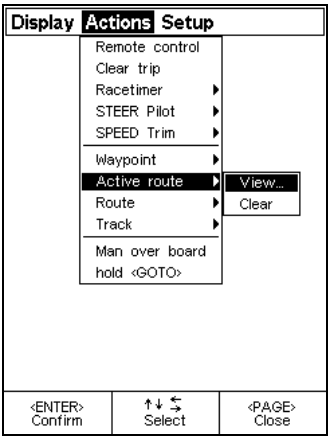
6.2.6 ACTIONS (Waypoint)



In the waypoint mode you may Edit and delete waypoints. To edit a waypoint, press **ENTER** and a list of all waypoints will appear. Select the waypoint you want to edit with **UP** or **DOWN** and press **ENTER**

Select the letter or figure you want to change with **LEFT** or **RIGHT** and change it with **UP** or **DOWN**. When you are done, close with **ENTER**

6.2.7 ACTIONS (Sailplan)

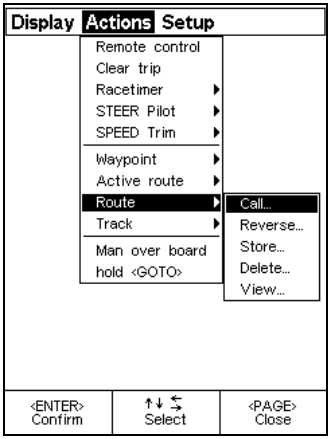


To view the sailplan, press **ENTER**. The lengths and bearings of each leg and the total length of the active route is displayed

To clear the active route, select clear with **DOWN** and press **ENTER**, confirm with **ENTER** again.
The waypoints in the active route will still be stored in the memory.

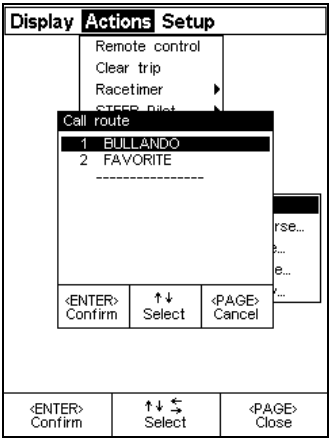
6.2.8 ACTIONS (Route)

In this function you call, reverse call, store, delete and view routes.



Call route

Select Call and press ENTER and the list of previous stored routes will appear. Select a route whit **UP** or **DOWN** and select it with **ENTER**. The route will be added to the present active route. You may in this way build an active route of previous stored routes.



Reverse Call

A reverse call will add all waypoints in a route in opposite order. This is useful if you want to go a route the opposite way.

Store route

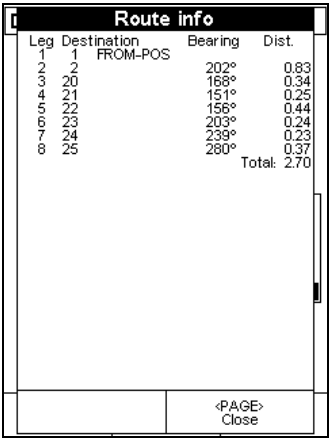
Store route will store the sailplan in memory for later use. Press **ENTER** and select which route number you want to store, you may give the route a eight letter name.

Delete route

Select the route you want to delete and press **ENTER**, conform with **ENTER** again.

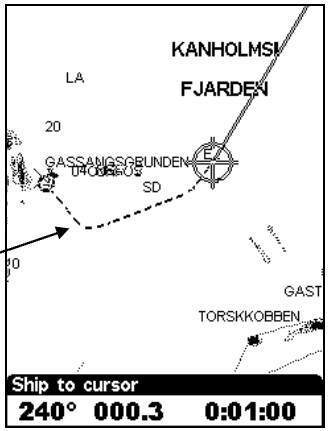
View route

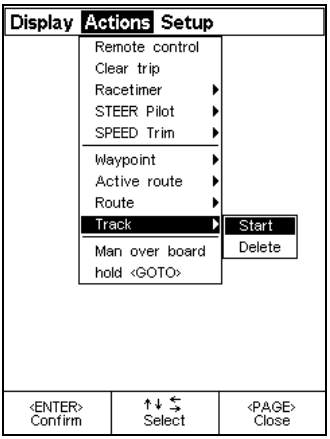
To view a route press enter, select the route you want to view with **UP** or **DOWN** and confirm with **ENTER**. The lengths and bearing of each leg in the route and the total length of the route is displayed.



6.2.9 ACTIONS (Track)

The plotter may plot your travelled way as a dotted line.



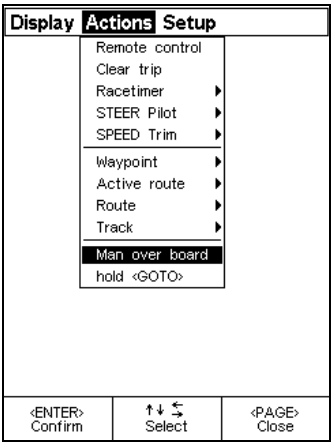


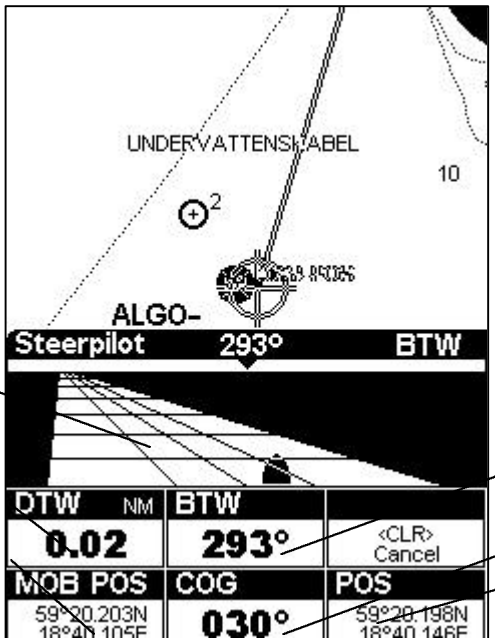
Select [Start] / [Stop] / [Delete] and confirm with **ENTER**.

6.2.10 ACTIONS (Man over board)

To activate man over board, press and hold GOTO for more than two seconds. This command will be transmitted on the Network

When man over board is activated you will automatically enter the M.O.B. function. A waypoint is created at the position for M.O.B. The MOB is always activated when GOTO is pressed more than 2 sec.





Steering aid

Distance to MOB

Position for MOB

Bearing to MOB

Present course

Your present position to MOB

7 Navigation

7.1 Introduction

The Navigation 'engine' in this Multi Center is similar to what you will find in all other Nexus instruments. Great circle navigation is performed when the distance between two waypoints are lon then 100 nautical miles.

You may use the Nexus GPS Navigator instrument as the active navigator on the Network and get of its 399 wpt's and 9 routes. Nexus navigation:

- Only one navigation engine (waypoint bank) is used in a Nexus Network installation. Configure instrument as either a master or repeater.
- When properly configured, navigation may be remotely performed from one or several Nexus M Control instrument, Remote Control Instrument, Multi Center or GPS Navigator instrument.
- The "Active route" consists of at least one active leg, i.e. the origin waypoint (start position) and destination waypoint (target).
- There can be max 24 waypoints in the active route.
- You may insert, delete or add legs in the active route while underway.
- The complete Active route is stored in the memory at power off.

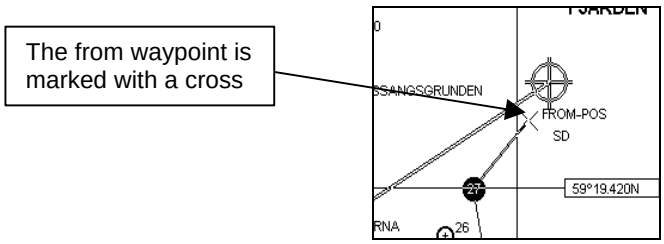
The Multi Center will automatically enter the navigation mode as soon as the GPS receiver sends a valid fix. In navigation mode the manual cursor is not displayed on the screen.

There are different ways to navigate with the Multi Center, the easiest way is to use one waypoint a time to go to. If you want to create a waypoint, just move the **CURSOR** to where you want to make waypoint. Then press **GOTO**, and confirm with **ENTER**. The Multi Center will then create a waypoi and store it as the first free waypoint number. If you don't have a active route the waypoint will be t destination of your first leg. Bearing and distance, cross track error etc. is calculated towards that waypoint. When you arrive to that waypoint you will have an alarm. Then insert a new waypoint as described above.

The Multi center have two different navigation modes, single waypoint and route. In single waypoin mode just one waypoint (numper 002) is used. Every time you command a goto, waypoint number is set. In route mode, you may build routes consisting of up to 24 waypoints. To select mode, see 8

In both mode waypoint number 001 is used as go from waypoint (to calculate bearing origin destination and cross track error). That waypoint should not be used in routes since it will b over written each time you activate goto.

Waypoint 001 is set at your present position when you select a goto waypoint. You may however m that waypoint manually with the cursor.

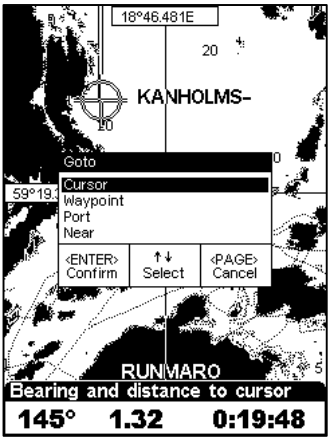


7.2 GOTO functions

The GOTO functions has two modes. If you are not that familiar with waypoints and route handling we recommend you to use the single waypoint mode instead of the route. See 8.8

7.2.1 GOTO [Cursor]

GOTO Cursor is the fastest way to both create a new waypoint and to immediately begin to navigate towards it.



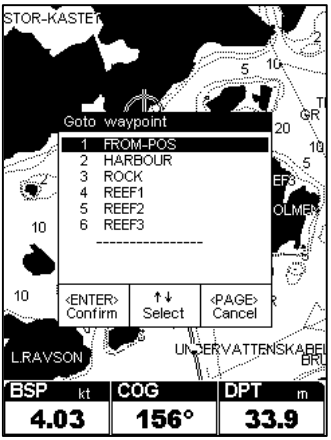
To enter a waypoint to go to, place the cursor at your destination and press **GOTO.** Press **ENTER**, a new waypoint is created and it is automatically added to the active route.

In single waypoint mode, waypoint number two is always created every time the Goto Cursor is activated

In route mode a new waypoint is added every time Goto Cursor is activated and a route is built. . To change to route mode, see 8.8

7.2.2 GOTO [Waypoint]

Press **GOTO** and select Waypoint with **DOWN**, confirm with **ENTER** and select the desired waypoint with **UP/DOWN** from the list.

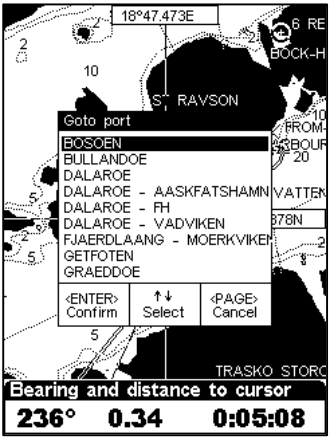


In single waypoint mode, you select which waypoint you want to go to from your waypoint list.

In route mode a new waypoint is added to the route. To change to route mode, see 8.8

7.2.3 GOTO [Port]

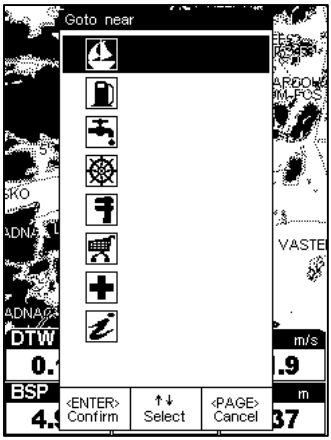
See also use of cursor in GOTO Waypoint.
This function will list available ports on the chart. Some ports on the charts are stored as pre-programmed waypoints. The names of the ports are listed in a alphanumeric order. Select with **UP** or **DOWN** and press **ENTER** to select. This function will create a waypoint, then add it as a leg.



In single waypoint mode, you select which port you want to go to from the port list.

In route mode, the port will be added at the end of the route. To change to route mode, see 8.8

7.2.4 GOTO [Service]



See also use of cursor in GOTO Waypoint.
This function will list the nearest services that are available on the chart. Select type of service by use of the icons, then press **ENTER**. You will now see up to three proposals on the chart. Press **UP** or **DOWN** to toggle between them, then press **ENTER**. This function will create a waypoint, then insert it as a leg.

 Port

 Fuel

 Water

 Service harbour

 Technical service

 General service

 First aid

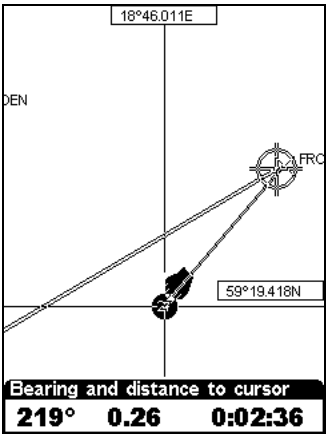
 Information

In single waypoint mode, you select which service you want to go to from the service list.

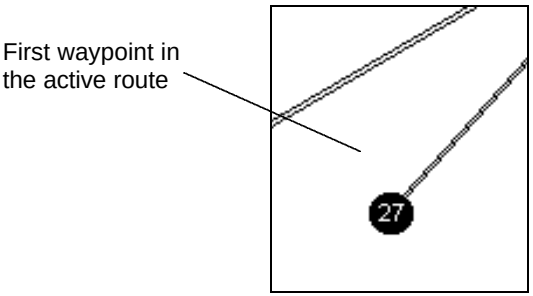
In route mode, the service station will be added at the end of the route.
To change to route mode, see 8.8

7.3 Active route

7.3.1 The first leg

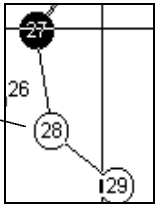


Move the cursor to your first waypoint destination, and if needed, zoom in to ”pin point” the cursor cross-hair at that position, then press **GOTO** button followed by **ENTER**.
A waypoint is created and placed in the active route list as the active leg from present position. The first waypoint in the active route is displayed as a black filled ring with the waypoint number in:

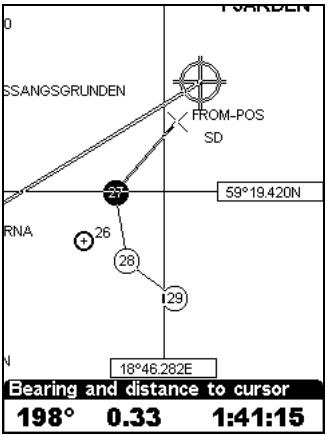


7.3.2 The following legs

One leg is probably not enough in your active route, therefore, move the cursor once again to your next waypoint destination and press **GOTO** and **ENTER**.
A waypoint is created and placed as the second leg in the active route list. You may enter up to max 24 waypoints in the sail plan. In this way, you may build up a complete route without the need of first creating single waypoints, then edit or create the active route .You may also select an earlier stored waypoint, a port or a on the chart stored service (near).

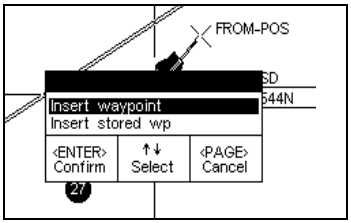


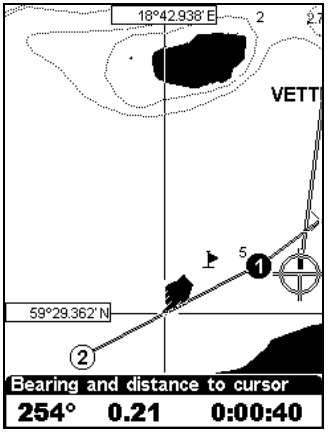
Second waypoint in active route



7.3.3 Insert waypoints in the active route

Move the cursor cross-hair <u>on</u> the leg where you wish to insert a waypoint, then press **ENTER**, press **ENTER** again to create and insert a new waypoint or select insert stored waypoint if you want to insert an earlier stored waypoint.

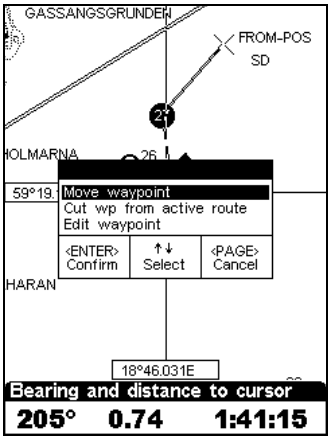




7.3.4 Remove waypoint from the active route

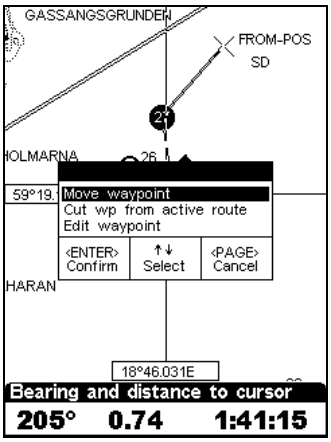
If you want to remove a waypoint from the active route, place the cursor on the waypoint and press **ENTER**. A 'pop-up' window will ask if you want to move the waypoint, cut it from the active route or edit the waypoint. Select cut from active route with **DOWN** and confirm with **ENTER**.

Note! The waypoint is still stored in the memory, it will only be removed from the active route



7.3.5 Move waypoint

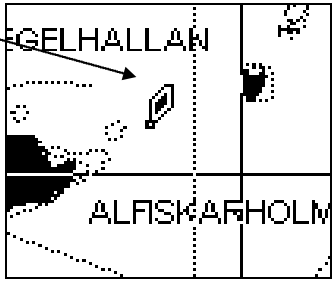
If you want to move a waypoint, place the cursor on the waypoint and press **ENTER**. A 'pop-up' window will ask if you want to move the waypoint, cut it from the active route or edit the waypoint. Select move with **ENTER**. Then move the waypoint to the new position and press **ENTER.**

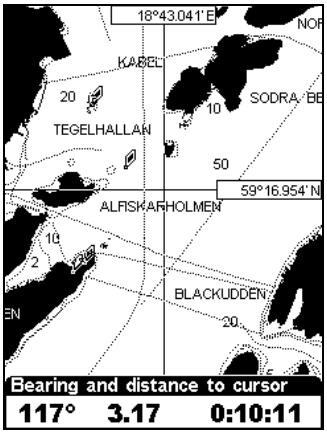


7.4 Light house characteristics

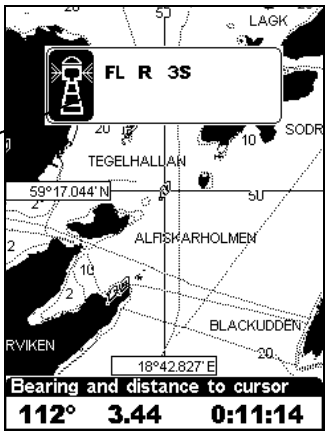
In order to get the screen as clear and readable as possible all characteristics and light house sectors has been removed from the chart. Light houses and buoys are all displayed as a rhomb. If you place the cursor on the rhomb, a 'pop-up' window tells the characteristics of a light house and the colour of a buoy.

Light house or buoy



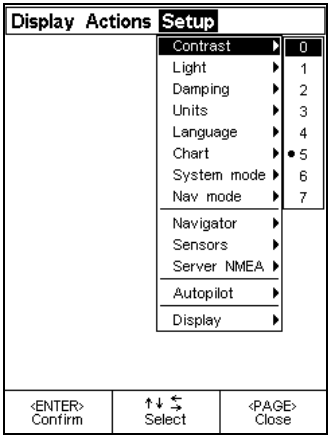


Information box
FL: Flash
R: Red
3S: Period 3 sec.



8 SETUP the Multi Center

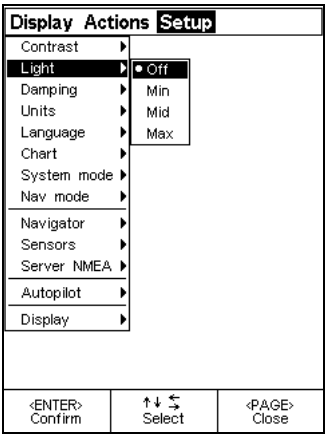
Press **UP**, **DOWN**, **RIGHT** or **LEFT** to select a setup-routine.
Press **ENTER** to save a value.
Press **CLR**, to leave the setup-routine without changing.
Press **PAGE** to leave the setup-routine.



8.1 SETUP [Contrast]

The LCD contrast may be adjusted depending on the viewing angle and temperature.
Possible values are [0] = lowest contrast to [7] = highest contrast.

8.2 SETUP [Light]

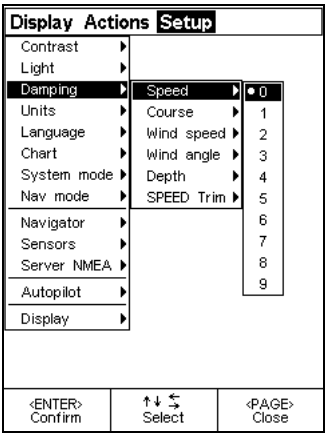


When using this light level control, all Nexus instruments connected to the Nexus Network will be set as selected.

[Off]	Light off
[Min]	Minimum light level
[Max]	Medium light level
[Max]	Maximum light level

8.3 SETUP [Damping]

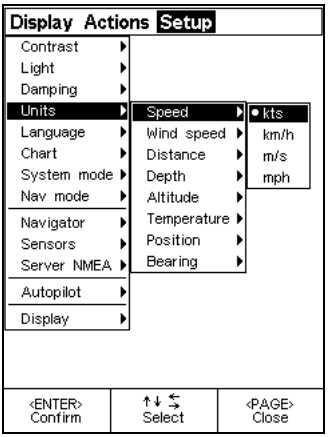
Set higher damping value in rough sea, and lower when calm.
All dampings are local, i.e. they will only effect the readings on this Multi Center.



[Speed]
[Course]
[Wind speed]
[Wind angle]
[Depth]
[SPEED Trim]

Possible values are [0] = no damping to [9] = max. possible damping.

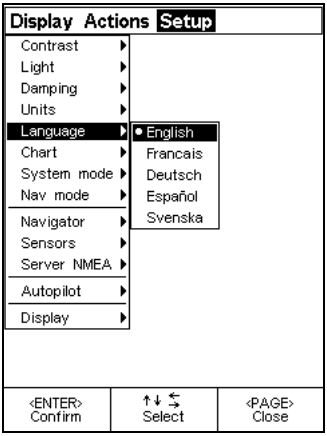
8.4 SETUP [Units]



Select unit.

[Boat speed]	[Kt] (Knot), [km/h], [m/s], [mph]
[Wind speed]	[kt] (Knot), [km/h], [m/s], [mph]
[Distance]	[nm] (Nautical mile), [km], [mil]
[Depth]	[m] (metre), [ft] (feet), [Fa] (Fathoms)
[Altitude]	[m] (metre), [ft] (feet)
[Temperature]	[C°] (Celsius), [F°] (Fahrenheit)
[Position]	[D.M.S] (Degrees.minutes.seconds) [D.M.M] (Degrees.minutes.hundreds of minutes)
[Bearing]	[True] (True), [Mag.] (Magnetic)

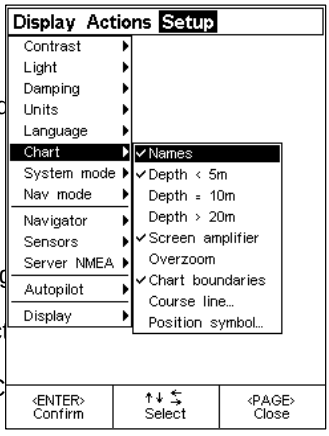
8.5 SETUP [Language]



Select language for lead text. The names in the charts will always be written in English letters.

Possible settings are:
[English]
[Francais]
[Deutsch]
[Español]
[Svenska]

8.6 SETUP [Chart]

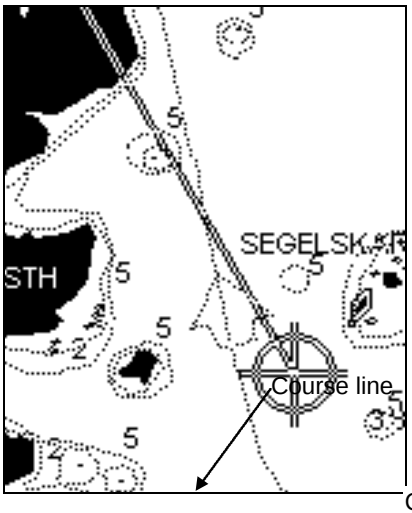


Activate any of the options in Chart setup.

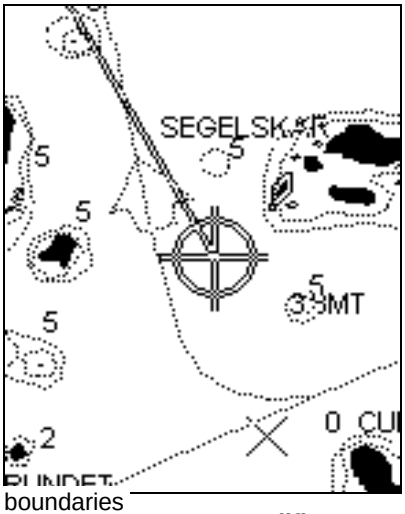
[Names]	Write names on the chart, or not.
[Depth contours <5m]	Draw contours of the 5 m level.
[Depth contours =10m]	Draw contours of the 10 m level.
[Depth contours >20m]	Draw contours of the >20 m level.
[Screen amplifier]	This function redraws the chart, in accord to the boat course, to maintain 2/3:rds of ahead of the boat (see next page).
[Over zoom]	Extra zoom level, only land contours. zoom allows you to zoom to a detailed even outside the chart coverage.
[Chart boundaries]	Draws contours of actual chart coverag extra detailed port plan.
[Course line]	If you have a compass transducer connec the Nexus system, you may select that information to the course line. Since the C is just reliable when the boat is moving.

To select HDC, change to HDC instead of COG.

[Position symbol] You may select type of position symbol, select from: Large, Medium, Small, triangle and Ship. See below.



Screen amplifier



screen amplifier

Chart boundaries of extra detailed port plan

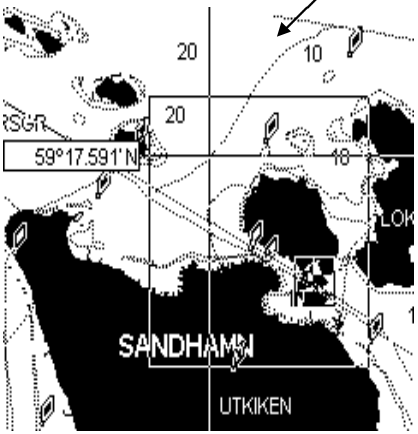
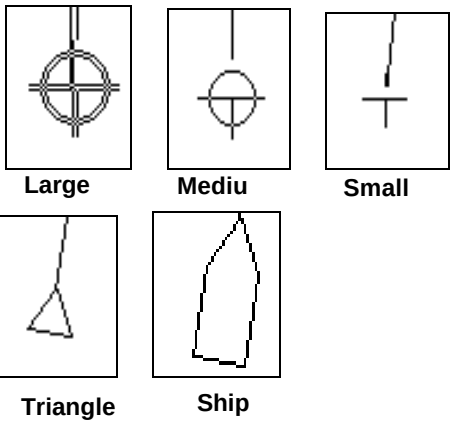


Chart boundaries

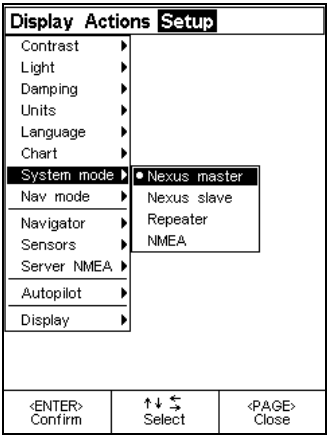
Position symbols



Large **Mediu** **Small**

Triangle **Ship**

8.7 SETUP System mode



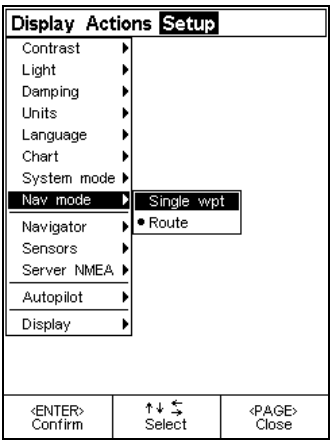
Select [Nexus master] if the Multi Center is connected to a Nexus Network an no Nexus GPS Navigator instrument or another Multi Center with the system mode Nexus master is connected.
This is the master navigator using its own WP bank (99wpt). All other Nexus instruments will display navigation information calculated by the master and may however remotely activate those waypoints for navigation, or editing.

Select [Nexus slave**]** if the Multi Center is connected to a Nexus Network with a Nexus GPS Navigator instrument or another Multi Center with the system mode "Master" is connected. You are still able to create and select waypoints in this Multi Center.

Select [Repeater] if a plotter of other brand is connected direct to the Multi Center via NMEA and you want to use that plotter as the main navigator. In this mode the Multi Center will work as an Repeater, displaying the bearings and distances the main Navigator is calculating.

Select [NMEA] if a NMEA GPS is connected direct to the Multi Center. If a NMEA GPS is connected to the Server you must select either [Nexus master] or [Nexus repeater].

8.8 SETUP Nav mode



Select between [Single wpt] (single waypoint) or [Route] navigation mode.

Single wpt:
In single wpt mode just one waypoint (wpt no. 02) is used for navigation. Every time a new position is marked with the cursor and a goto command is activated waypoint no. 02 is overwritten. In this way the navigation is very safe and simple. We recommend you to use this mode until you get more familiar with all the functions of the Multi Center.

Route:
In this mode you well get all the features of the Multi Center. In route mode a new waypoint is added to the list (active route) every time a goto command is activated. We only recommend to use this to start with if you are an experienced navigator.

8.9 SETUP Navigator

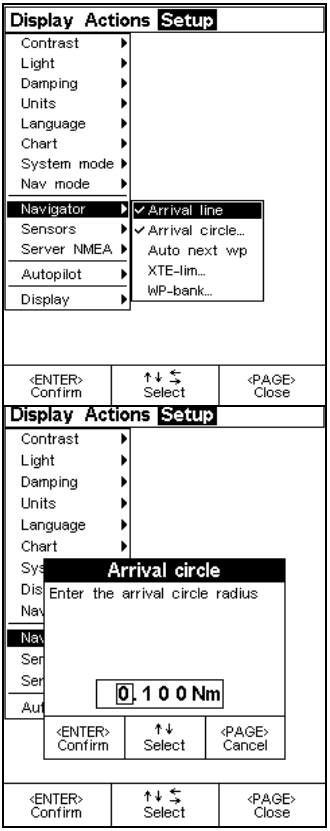
Select [Arrival line] to have an arrival alarm when you pass a line perpendicular to the bearing to waypoint.

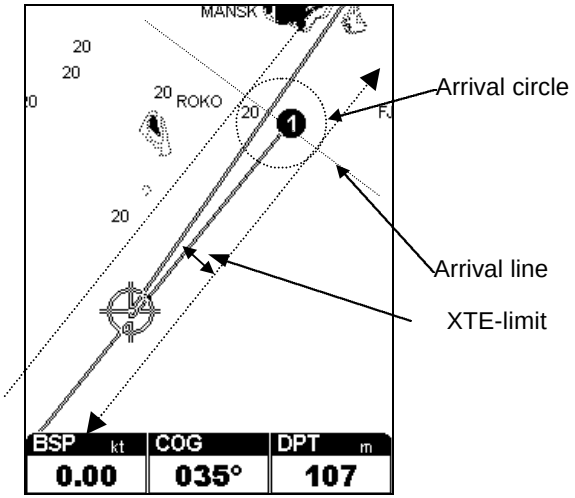
Select and set [Arrival circle] radius to have an arrival alarm when you pass the arrival circle

Select [Auto next wp] to change automatically to next waypoint in the active route when the arrival line is crossed.
Warning ! This function is not recommended when an Autopilot is used.

Select and set [XTE-lim] (Cross Track error limit) to get an alarm when the XTE exceeds the alarm limit.

Note: The [Arrival line] and [Arrival Circle] may be combined.



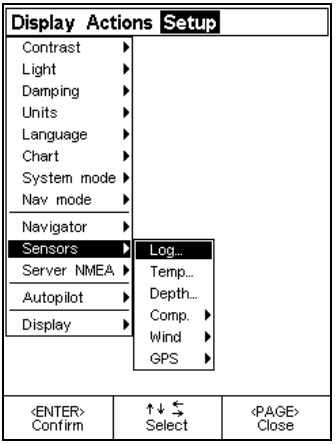


Set [WP-bank] (waypoint bank number) when you want to work with waypoints numbers higher than 100 in the Nexus Multi Control instrument. Since the Nexus Server and Nexus Multi Control instrument only can handle waypoints 001-099 and the Nexus GPS navigator may handle waypoints 001-399 you have to tell which hundredths you are working with. As an example, you want to command a goto waypoint 234 from a Nexus Multi Control instrument:

Set WP-bank to 2 and command a goto WP 34. In this case you will goto WP 234 stored in your Nexus GPS Navigator.
Note: From the Multi Center you just command goto 234 since it may handle up to 999 waypoints.

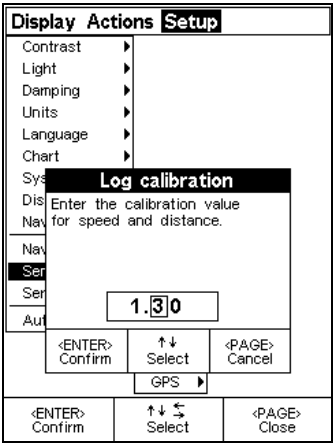
8.10 SETUP Sensors

From the Multi Center you may calibrate all transducers connected to the Nexus Server or other Nexus instrument, such as Log, depth, Wind, Compass, GPS Antenna, Temperature Sensor etc.



8.10.1 SETUP sensors [Log]

Calibration value for speed and distance (1.00 - 1.99).
Drive the boat a measured distance at normal speed.
Compare the distance with the trip counter.
Calculate the value with the following formula:



True distance from the sea chart : T
Log trip counter distance: L
The current calibration value: C
New calibration value. N

$$\frac{T}{L} \times C = N$$

If you suspect a current in the water, drive the boat in both directions and divide trip counter distance by 2.

8.10.2 SETUP sensors [Temp]

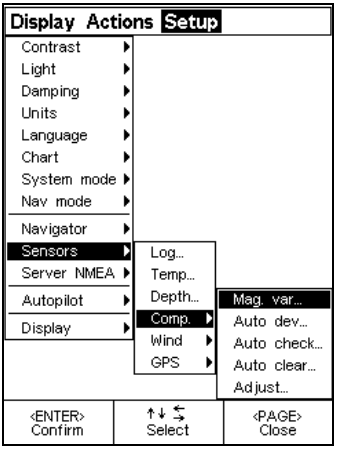
Value for compensation of the water temperature measurement.
To add, use underlining character (+) ahead of the digit (+1 °).
To subtract, use minus character (-) ahead of the digit (-1 °).

8.10.3 SETUP sensors [Depth]

Calibration of the depth transducer position.
This option is used to select whether the displayed water depth is measured from the water level or the keel.

To measure from the keel, use the minus (-) sign.
Example: (-01.2). The distance from the transducer to the keel is 1.2 m
To measure from the water surface, use the plus (+) sign.
Example: (+00.4). The distance from the transducer to the water surface is 0.4 m.
The selected value will be subtracted or added from the measured depth.

8.10.4 SETUP sensors [Compass]

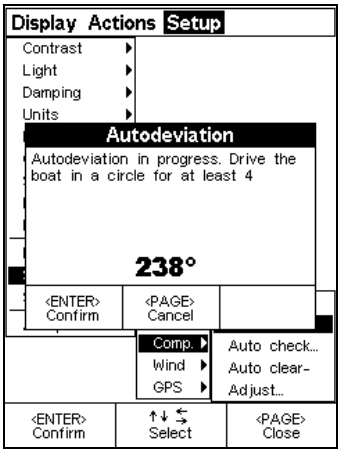


For the Compass you set the magnetic variation at the present location, perform an Auto-deviation and an Auto-check and Adjust the misalignment of the transducer.

Magnetic variation. Maximum +/- 99.9°.
Easterly variation = plus (+) sign.
Westerly variation = minus (-) sign.
The local magnetic variation is usually printed in the sea chart.

Automatic deviation [Auto dev] is performed by driving the boat in a circle up to 1¼ turn, so that the magnetic deviation can be measured, and by that also compensated.
Drive the boat in a circle for 1 1/4 turn in calm water. When you start the circle manoeuvre, press **ENTER**.

The un-deviated compass course will be shown in the display as you turn. Complete the circle up to 1 ¼ turn.
When the manoeuvre is ready, press **ENTER** to store the deviation value.
If the deviation is corrected Auto-deviation completed will be displayed.
If the deviation is not corrected, an error message will be displayed.
To verify the automatic compass deviation, perform an automatic compass check



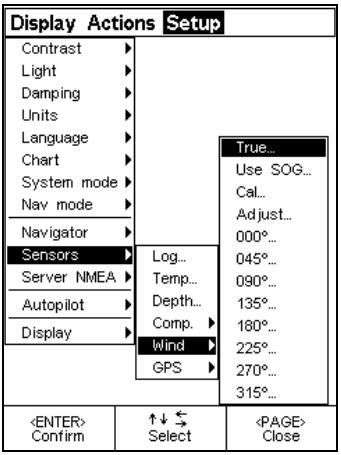
Note: You will get the best result in calm water with a smooth turn on the steering wheel independently of how the circle is performed. When activated, you can stop the automatic compass deviation at any time with a press on **PAGE**.

Automatic deviation check Make the same procedure as for Automatic deviation

Compass Adjust: Compass transducer misalignment correction or the so called ”A-fault”.
Can be set between 000°and 359°. Allows 180° reversed mounting if needed. Never mount the transducer in a 90° position relative to the boats fore-aft line.

To check the transducer position, sail/drive your boat in a straight line towards two visible objects in a line. If the actual heading taken from the sea chart is 330° and the compass displays 335°, then set compass adjust to 360° - 5° = **355°.**

8.10.5 SETUP sensors [Wind]



This setting is for the wind transducer, no matter if it is connected to the Nexus server or the Nexus Wind data instrument.

[True] set this setting to 1 if the Analog Nexus wind instrument shall display true or Apparent wind angle. This setting will also affect all nexus Multi control instruments if their calibration code C63 is set to WIA.

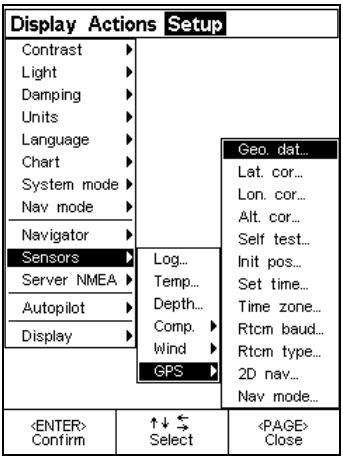
[**Use SOG]** set this setting to 1 if you have no log transducer connected to the system. True wind angle and speed will then be calculated from SOG.

[Cal] Calibration value for wind speed. This is a factory setting that should not be changed.

[Adjust] Mast top unit misalignment adjust value, makes it possible to choose any horizontal angle.
Example 1: If the wind angle is starboard 4° when you sail/drive the boat straight into the wind. Set the Adjust value to 360°-4° = **356°.**
Example 2: If the wind angle is port 4° when you sail/drive the boat straight into the wind. Set the Adjust value to **004°**.

[000° - 315°] Set the values for the wind transducer calibration according to the label provided with the transducer package.

8.10.6 SETUP sensors [GPS]



These settings of the GPS is only valid with a Nexus GPS antenna or a handheld XL1000.

Geo. Dat. Select Geodetic datum for automatic position corrections. **Note:** All Nav Charts are in geodetic datum WGS 84.

Lat. Cor. Set the latitude correction in hundredths of minutes

Lon. Cor. Set the longitude correction in hundredths of minutes

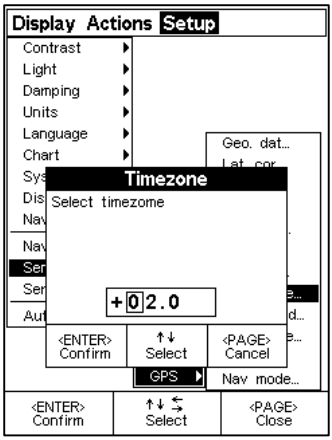
Alt. Cor. Set the Altitude correction in metres

Self test performs a self-test of the Nexus GPS Antenna or XL1000 for service purposes.

Init pos..The first time you start the Nexus GPS antenna or XL1000 you may initialise the position in order to get the first fix quicker.

Set time..The first time you start the Nexus GPS antenna or XL1000 you may set the correct time in order to get the first fix quicker.

Time zone Set the time zone, i.e. the difference in time for the local time and UTC.



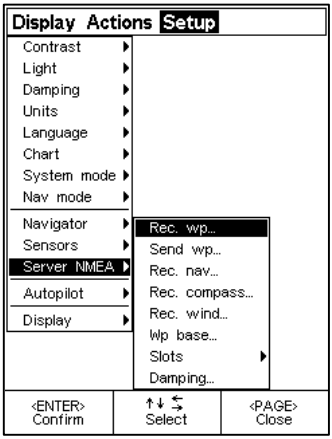
Rtcm baud..set the baud rate of your RTCM transmitter (differential receiver) connected to the Nexus GPS antenna (see the manual for you differential receiver).

Rtcm type..set the type of data your RTCM transmitter (differential receiver) connected to the Nexus GPS antenna is transmitting (see the manual for you differential receiver).

2D nav..Set 2d nav to 1 if you allow 2-dimensial solutions from the GPS antenna or XL1000.

Nav mode.. set the navigation mode you want the nexus GPS antenna or XL1000 to work in. Select from 1/1 to 1/5, in 1/1 you will have a new position every second, in 1/5 you will have a new position every fifth second (to save battery power)

8.11 SETUP [Server NMEA]



These settings will only affect the settings of the Nexus server if connected.

Rec. wp..Set receive waypoint to 1 if you want the Nexus Server to receive waypoint from any connected NMEA transmitter.

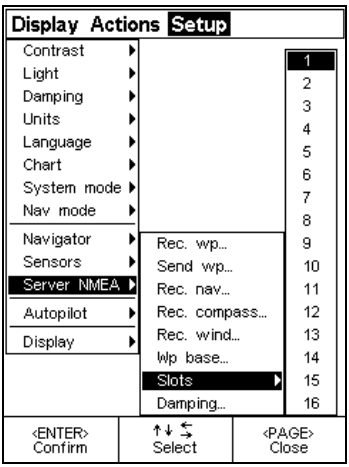
Send. wp..Set Send waypoint to 1 if you want the Nexus Server to send waypoint to any connected NMEA transmitter.

Rec. Nav..Set receive navigation data to 1 if you want the server to receive information of bearing and distance to waypoint from any other NMEA plotter or navigator connected via NMEA to the Server. Normally you don't need this if you have a Multi Center connected to the Network

Rec. Compass…Set receive compass data to 1 if you want the server to receive information compass heading from a connected NMEA compass instead of the Nexus Compass transducer.
Rec. Wind…Set receive Wind data to 1 if you want the server to receive information wind information from a connected NMEA wind transducer instead of the Nexus Compass transducer.

Wp. Base.. set the base or hundredths number you want the Nexus Server to add when it transmits waypoints via NMEA and subtract when

it receives. This is used when connected to a NMEA equipment that handles more than 100 WP:s



Slots..The NMEA output from the server have 16 output slots where you may select individually what to be transmitted in each slot. The Server supports 29 different NMEA sentences. This means you can select up to 16 of the 29 available NMEA sentences.

The Nexus Network uses the NMEA 0183 sentences, version 1.5 and 2.0.
The number in brackets, example (1), is the factory slot number given to the NMEA sentence.

0		(—)	No out signal
1		(APA)	Autopilot A (older)
2		(APB)	Autopilot B
3		(BOD)	Bearing original destination
4		(BWC)	Bearing and distance to waypoint
5	(1)	(BW1)	Short version of BWC Maxi repeater)
6		(BWR)	Bearing and distance, dead reckoning
7	(2)	(DBT)	Depth measured from the transducers position
8		(DPT)	Depth
9	(3)	(GLL)	Geographic position
10	(4)	(HDM)	Magnetic heading
11	(5)	(HDT)	True heading
	(13)		
12		(MTW)	Water temperature
13	(6)	(MWD)	Wind direction and speed
14		(MWV)	Apparent wind speed and angle
15		(RMA)	Minimum specific Loran-C data
16		(RMB)	Minimum navigation data
17		(RMC)	Minimum specific GPS- and TRANSIT-data
18	(7)	(VDR)	Set and drift
19	(8)	(VHW)	Speed and course through the water
20		(VLW)	Distance travelled through the water
21	(9)	(VPW)	Speed relative to the wind
22	(10)	(VTG)	Distance made good and distance over ground.
23	(11)	(VWR)	Apparent wind speed and wind direction
24	(12)	(VWT)	True wind speed and direction
25	(14)	(WCV)	Waypoint closure velocity
26	(15)	(WPL)	Waypoint location
27	(16)	(XTE)	Cross track error
28		(ZDA)	Time and date
29		(ZTG) & (UTC)	Time to destination or waypoint

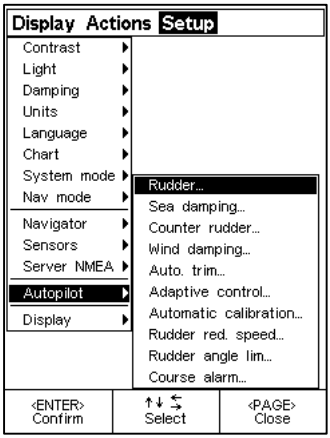
Example of NMEA sentences:

```
$IIAPA,A,A,00.007,L,N,V,V,145.03,M,004
$IIAPB,A,A,00.007,L,N,V,V,147.53,T,004,147.52,T,,T*29
$IIBOD,147.53,T,145.03,M,004,000
$IIBWC,101515,5912.890,N,01812.580,E,147.52,T,145.02,M,15.649,N,004
$IIBWC,,,,,,147.52,T,145.02,M,15.647,N,004
$IIBWR,101516,5912.890,N,01812.580,E,147.52,T,145.02,M,15.647,N,004
$IIDBT,293.52,f,089.47,M,048.36,F
$IIDPT,089.47,0.40
$IIGLL,5926.110,N,01756.171,E,101517,A
$IIHDM,026,M
$IIHDT,029,T
$IIMTW,19,C
$IIMWD,161.77,T,159.27,M,07.01,N,03.61,M
$IIMWV,133,R,07.03,N,A
$IIRMA,A,5926.110,N,01756.171,E,,,0.23,189.47,,,,*00
$IIRMB,A,00.007,L,000,004,5912.890,N,01812.580,E,15.647,147.52,,V*01
$IIRMC,101340,A,5926.115,N,01756.172,E,0.04,063.42,,,*06
$IIVDR,063.42,T,060.92,M,0.04,N
$IIVHW,029,T,026,M,00.00,N,00.00,K
$IIVLW,49626.59,N,,
$IIVPW,0.00,N,,
$IIVTG,063.42,T,060.93,M,0.04,N,,
$IIVWR,133,R,07.03,N,03.62,M,,
$IIVWT,133,R,07.01,N,03.61,M,,
$IIWCV,0.00,N,004
$IIWPL,5503.000,N,01013.450,E,027
$IIXTE,A,A,00.003,L,N
$IIZDA,101341,,,,
$IIZTG,101341,,004
```

(BWR) consists of rumb line data, and is the same information as (BWC), except that (BWC) consists of great circle data.
(BWR) is a service for receivers not accepting information that is (BWC).
(BW1) is a shorter version of (BWC), i.e. lacks time and destination waypoint position, will be sent out as a zero string. The transmitted string will be (BWC) and not (BW1) (as in the example). (BW1) is for MAXI-Repeaters.
(WPL) is sent when [Send wp] is set to (1), which means that each time (WPL) is transmitted, the contents will be the next defined waypoint and when all have been transmitted it starts again with the first one etc. the identity Id of all waypoints are transmitted with 3 digits.
It is possible to send and receive waypoints in block of 100 by setting [Wp base] the same as the desired block number.
Example: If [WP base] is set to (03), waypoint (23) will be sent as number (323).
Note: All waypoints will be affected alike.
(ZDA) consists only of UTC time. Date is not sent.

8.12 SETUP [Autopilot]

Note! All Autopilot instrument settings are central, and affects all connected Autopilot instruments and their commands.



Note! The APC routine automatically sets these functions: [Rudder], [Sea damping], [Counter rudder], [Auto trim] and [Rudder reduction speed]. Therefore these settings and their minimum and maximum values and times depend on how your boat behaves.

For more information see your Autopilot manual

Rudder Possible settings are [0] = Minimum to [9] = Maximum.
Set by the APC routine.
The setting affects how much rudder angle is used.

SEA Damping Possible settings are [0] = Minimum to [9] = Maximum.
Set by the [Automatic calibration] routine.
Controls the response time of heading changes.

Default setting should work on most boats in light to moderate sea conditions. Following seas, no matter how rough, may require lower settings to catch course error trends quickly in order to minimise excessive yaw.

Counter Rudder Possible settings are [0] = Minimum to [9] = Maximum.
Set by the APC routine.

A low value makes the boat to do overcorrecting manoeuvres at large heading changes.
A high value can result in high power consumption, if the rudder angle is corrected frequently.

Wind Damping Possible settings are [0] = Minimum to [9] = Maximum. Default setting is [2].
Damping of wind information. The factory default setting should be adequate. In very heavy weather, or unstable wind conditions, unnecessary corrections may be minimised by increasing the setting.

Automatic Trim Possible settings are [0] = Minimum to [9] = Maximum. Set by the APC routine.
In general, longer trim times (higher settings) should be set for large boats and sailing boats and shorter trim times (lower settings) for small

boats and high speed planning boats. The factory default setting should be acceptable for all but extreme applications.

Adaptive Control Possible settings are [OFF] or [On].
This function is reserved for future functions.

Automatic Calibration Possible settings are [ON] or [OFF].
The APC routine automatically sets [RUD], [SEA], [CRD], [ATC] and [RRS].

The Autopilot will not function unless the boat pass the APC routine. The APC will automatically determine and correct how wires and pipes are connected. It will also learn how the boat reacts on different rudder commands and automatically calibrate itself.
How to perform the APC function, see Sea Trials in the Nexus Autopilot manual.

Rudder Reduction Speed Possible settings are [0] = Minimum to [9] = Maximum.
Set by the [Automatic Calibration] routine.

The [RRS] controls the flow of the pumpset. It will effect the pumpset, not a solenoid valve steering system.

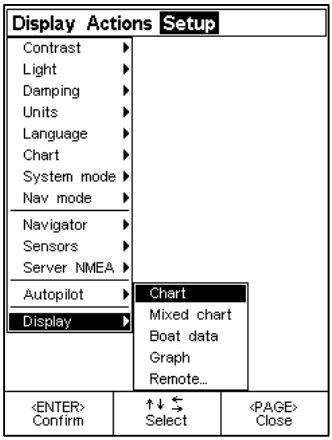
The [RRS] will be set to [5] after the APC routine is performed. It is then possible to increase or decrease the speed reduction of the pumpset motor.

Rudder angle limits Possible settings are [0°-99°]. Default setting is [00°].
An angle of 00° is the same as rudder angle limit disconnected (OFF).
Note! Make sure [LIM] is set to 00° (OFF) during installation.

Course Alarm Set an off course alarm to alert you if the Autopilot of some reason can‘t‘ maintain the desired course.

8.13 SETUP Display

In this setup you are able to customise your display. The information is displayed in boxes. You may select what you want to display in each box.

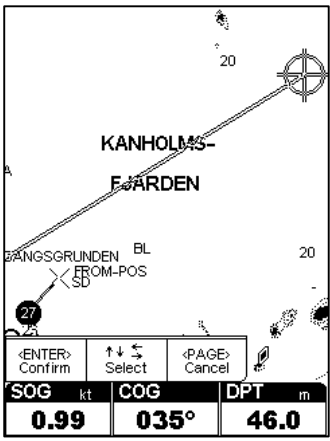


ALT	**Altitude**	**LOG**	**Total logged distance**
APM	**Autopilot mode**	**PDOP**	**Position dilution of precision**
AWA	**Apparent wind angle**	**POS**	**Position Latitude/longitude**
AWS	**Apparent wind speed**	**RAI**	**Rudder Angle Indicator**
BAT	**Battery voltage**	**REF**	**Type of steer reference**
BOD	**Bearing origin to destination**	**ROL**	**Roll angle**
BSP	**Boat speed**	**SATS**	**Number of satellites used**
BTW	**Bearing to waypoint**	**SET**	**Set of current**
CAD	**Custom angular data**	**SOG**	**Speed over ground**
CDI	**Course Deviation Indicator**	**STR**	**Steer reference**
CFD	**Custom fixed data**	**TBS**	**Target boat speed**
CMG	**Course made good**	**TIM**	**Time**
COG	**Course over ground**	**TMP**	**Temp**
CTS	**Course to steer**	**TRM**	**Speed Trim function**
DAT	**Datum**	**TRP**	**Trip distance**
DRF	**Drift of current**	**TTG**	**Time to go**
DMG	**Distance made good**	**TWA**	**True wind angle**
DPT	**Depth**	**TWD**	**True wind direction**
DTW	**Distance to waypoint**	**TWS**	**True wind speed**
ETA	**Estimated time of Arrival**	**UTC**	**Universal time constant**
FOM	**Figure Of Merit**	**VMG**	**Velocity made good**
GPS	**Type of position (2D73D7Diff)**	**WCV**	**Waypoint closure velocity**
HDM	**Heading Magnetic**	**ZOOM**	**Present Zoom level**
HDT	**Heading True**	**XTE**	**Cross track error**

8.13.1 [Chart]

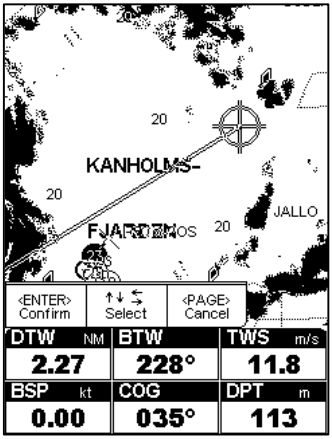
The Chart page contains one row of boat data. The three boxes may be set individually to display whatever you want.
Select chart and press **ENTER.** All three boxes starts to flash. Press **ENTER** again and select the left box. To select type of data change with **LEFT** or **RIGHT**. The options to display in the three boxes are listed above.

Press **ENTER** when you have selected what to be displayed in the left box. The middle box starts to flash. If you want to change that box change with **LEFT** or **RIGHT** and confirm with **ENTER**. You may at any time exit by a press on **PAGE**.



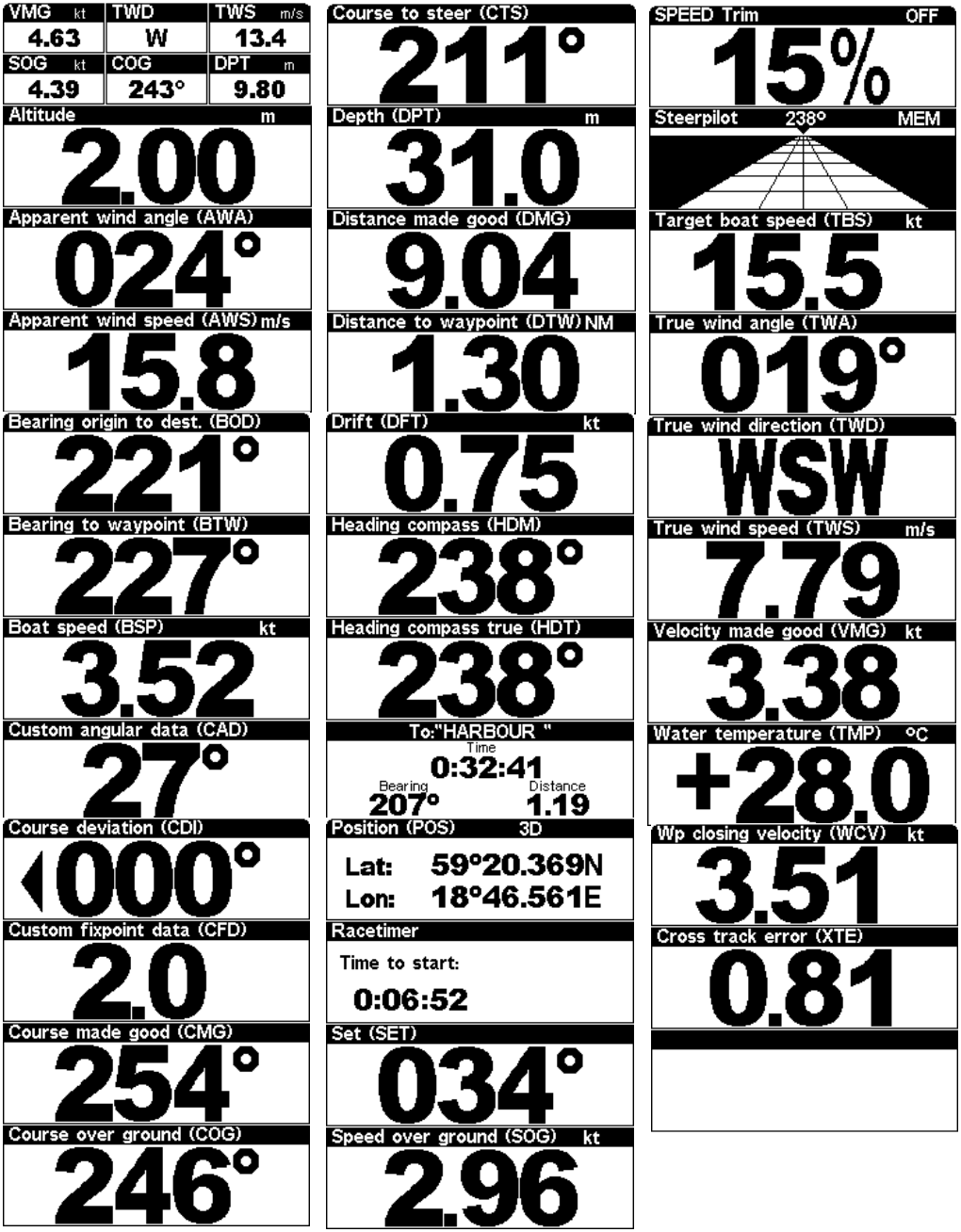
8.13.2 [Mixed Chart]

The mixed chart page may be selected from a wide range of boxes. The only difference is that you will have one bigger box. One of the boxes that you may select contain six small data boxes, the same type as for the Chart page. What to select, see Boat data.

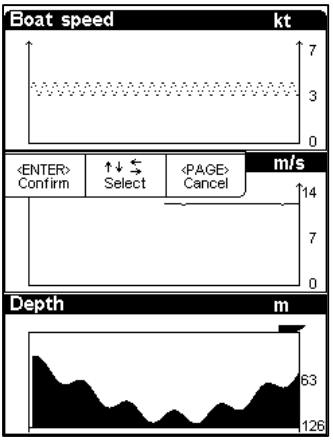


8.13.3 [Boat data]

The boat data page consists of four big boxes. You may select the type of box individually.



8.13.4 [Graph]



The Graph page consists of three big boxes. You may select the type of box individually.
[Boat speed]
[Speed Over Ground]
[Velocity made Good]
[Waypoint Closure velocity]
[Target Boat Speed]
[Depth – Fish finder]
[Depth]
[Geographic Wind 12h]
[Geographic Wind 1h]
[True wind speed 12h]
[True wind speed 1h]
[Apparent wind speed 12h]
[Apparent wind speed 1h]

8.13.5 [Remote]

Here you select how many Maxi repeaters you have connected to the system. This is to be able to individually control the Maxi repeaters from the Remote page.
Note! Remember to set individual Identification numbers for the Maxi repeaters i.e. Channel 29 (se repeater manual).

8.14 NMEA connected to the Multi Center

You can connect the Multi Center direct to an external, NMEA 0183 data sending GPS navigator 2.2.3).

8.14.1 NMEA input

The NMEA input from an external GPS receiver is used to get position, course and speed over grou etc.
The Nexus GPS antenna is operating on the Nexus Network, not NMEA!

The following NMEA 0183 sentences (listed in priority order) are read:

RMC	Minimum specific GPS/transit data	VTG	Track made good and ground speed
GGA	Global position fix data (GPS)	ZDA	Time & date
GLL	Geographic position, Latitude/Longitude		

8.14.2 NMEA output

The NMEA output is utilising the industry standard RS-422. The two wires (yellow and white) are named A and B. Connect A to NMEA in and B to NMEA out at your Radar, Autopilot etc (see 2.2.3 and 2.2.4).

The Multi Center is only transmitting NMEA if the system mode is set to [NMEA] (see 8.7)

The following NMEA sentences are transmitted once per second:

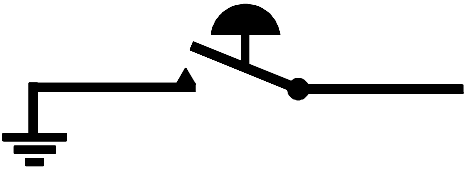
APB	Autopilot sentence "B"
RMC	Minimum specific GPS/transit data
GGA	Global position fix data (GPS)
GLL	Geographic position, Latitude/Longitude
VTG	Track made good and ground speed
ZDA	Time & date

9 Autopilot mode

The Multi Center may control the Nexus Autopilot. To be able to do that a Nexus Autopiolot Servo u (A-1500 or A-1510) must be connected to the Network.

To be able to get to the Autopilot mode, a safety switch has to be connected to the pink cable and pressed.

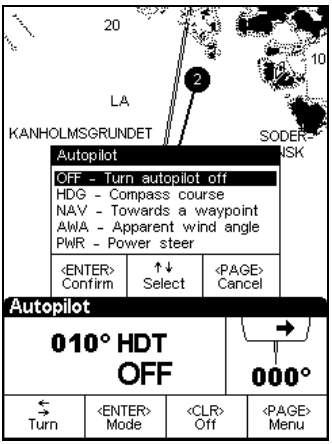
Connection of safety switch:



Pink cable from Multi Center

There are two ways to get to the Autopilot mode, 1. Change display to Autopilot, 2. Press the ON/OFF switch and the Autopilot function pops up.

When the ON/OFF switch is pressed the Autopilot pop-up window appears:



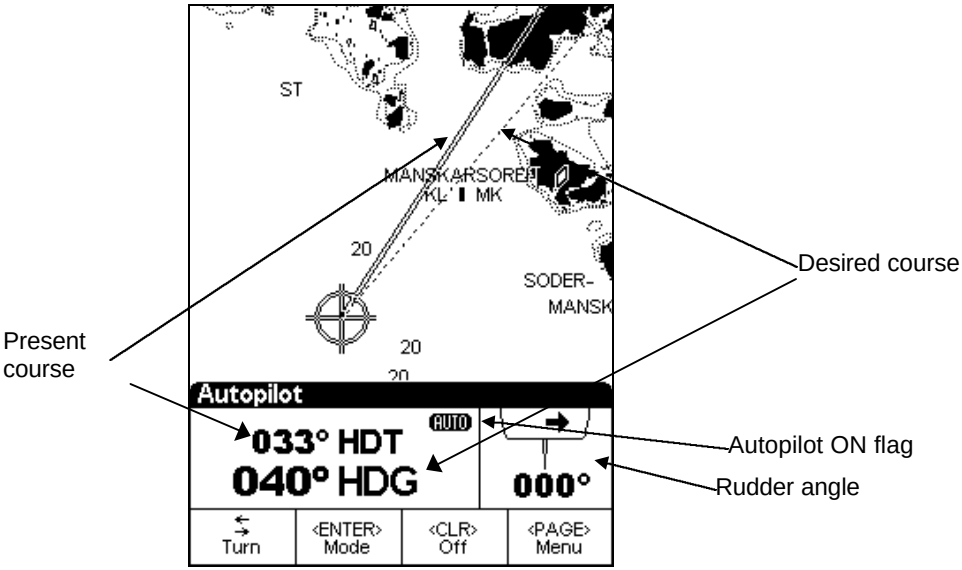
Select steering mode with **UP** or **DOWN** and confirm with **ENTER**. The steering modes to chose from are:

OFF	The Autopilot is OFF
HDG	A compass course is used as steer reference
NAV	Bearing to waypoint is used as steer reference
AWA	Apparent wind angle is used as steer reference
PWR	Power steer of the rudder

To switch off the Autopilot press the external ON/OFF switch or press and hold CLR

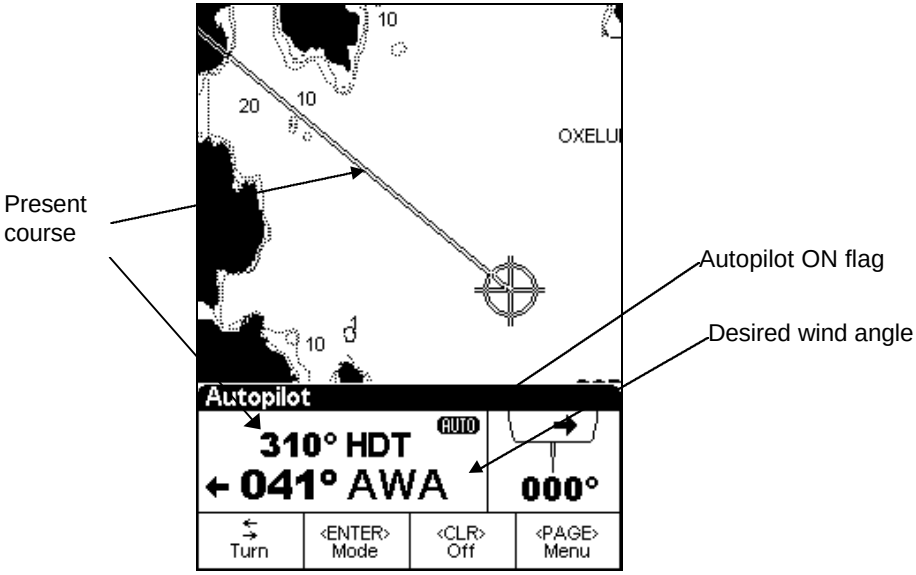
HDG – Heading

Select desired heading with **LEFT** or **RIGHT**. A long press on **LEFT** or **RIGHT** changes course reference in ten degrees steps. In HDG mode the desired course is drawn as a dotted line, this is helpful when you want to set a course to an island or a buoy.

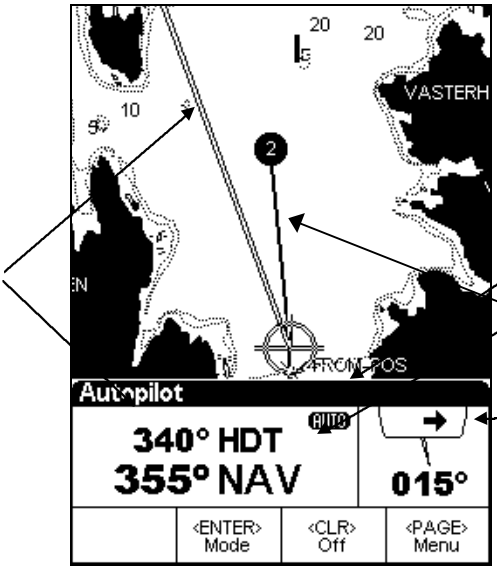


AWA – Apparent wind angle

Select desired apparent wind angle with **LEFT** or **RIGHT**. A long press on **LEFT** or **RIGHT** changes wind angle reference in ten degrees steps



NAV – Navigation mode
In Nav mode you can't change the desired course. The Autopilot steers towards the first waypoint i
the active route, if no waypoint is selected to go to this function is not present.



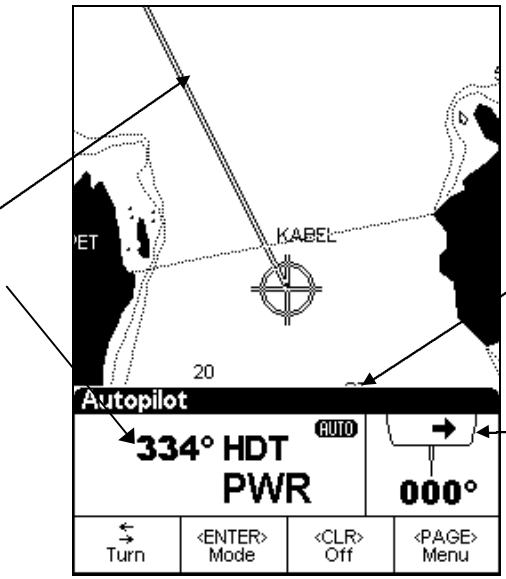
Present course

Autopilot ON flag

Bearing to waypoint

Rudder angle

PWR – Power steer mode
In power steer mode you may direct steer by changing the rudder angle to port or starboard. Use **LEFT** or **RIGHT** to move the rudder.



Present course

Autopilot ON flag

Rudder angle

10 Maintenance and fault finding

10.1 Maintenance

- To clean the instrument, use only mild soap solution and rinse with water.
- Do not use detergents or high pressure washing equipment.
- At least once a year, check all your connections and apply additional silicon paste at connection point.
- Storing transducers and instruments when not in use for longer periods: It is advisable to rer the instruments and transducers, and store them inside the boat or at home in room temperatu possible.

11 Fault finding

Before you contact your Nexus dealer, and to assist your dealer to give you a better service, pl check the following points and make a list of:

- All connected instrument and transducers, including their software versions.
- Nexus Network data bus ID numbers for each instrument (displayed at power up).

11.1 General

In most cases, the reason for faults in electronic equipment is the installation or poor connect Therefore, always first check that:

- Installation and connection is made per instructions for instrument and transducers, (see 2.1).
- Screw terminals are carefully tightened.
- No corrosion on any connection points.
- No loose ends in the wires causing short cuts to adjacent wires.
- Cables for damage, that no cables are squeezed or worn.
- Battery voltage is sufficient, should be at least 10 V DC.
- The fuse is not blown and the circuit breaker has not opened.
- The fuse is of the right type.
- Two instruments do not have the same ID number, (see 6.1.6).

12 Specification

12.1 Technical specifications

Dimensions**:**	Multi Center instrument:	160 x 185 x45 mm.
	Bracket:	See dimensions on next page
Instrument cable:	6 m	
Power supply:	12 V DC (10-18 V). The instrument is polarity protected.	
Power consumption:	1.02 W	
Current consumption:	85 mA at 12V	
	130 mA (at max illumination and 12 V)	
Temperature range:	Storage:	From -30°C to +80°C.(-22°F to 176°F)
	Operation:	From -10°C to +70°C. (14°F to 58°F)
Weight:	Instrument: 700 g (24.7 oz).	
Enclosure:	Water proof	

12.2 CE approval

The products conforms to the EMC requirements for immunity and emission according to EN 50 08
and EN 55022

12.3 Software update

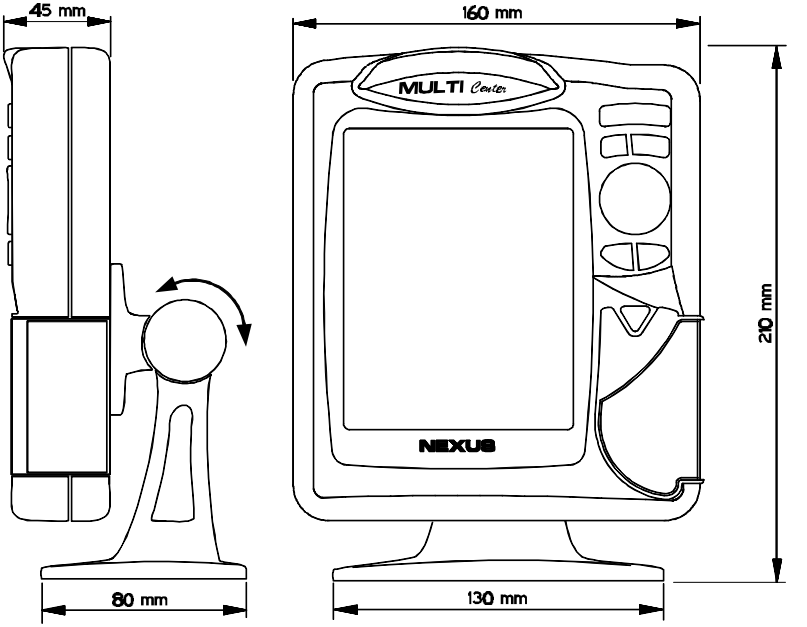
The Multi Center is using a so called flash memory, which means the software may be updated. Contact your national distributor.

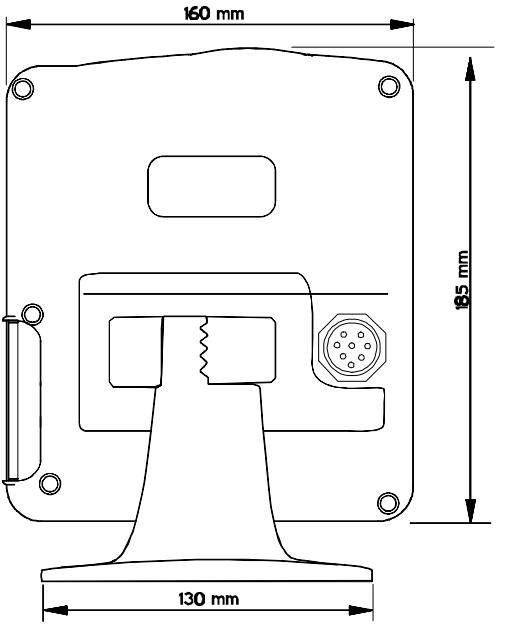
12.4 Nexus Network

The Nexus Network is a high performance, non collision multi talker, multi receiver data bus, specially designed for marine navigation applications. The most important features are the high update rate, fast response times, very low data latency (25ms) and very high data security even at long distances. Another important feature is that data transfer efficiency will not degrade even when used in large and complex systems. It utilises the RS485 standard with up to 32 senders and/or receivers to form a Local Area Network. Data is transmitted asynchronously with 1 start-bit, 8-data-bits, 1 parity-bit, two stop-bits in 9600 baud.

The link between Nexus Network and your PC-application is the PC interface FD (Full Duplex) / NMEA (Art. No. 21248-1). This is supplied with a 9-pole D-sub connector on a 1 m (3.3 ft) cable for the RS232 PC port. The PC interface is a useful tool to monitor and log real time data, or when editing waypoints to/from PC-file or to/from Nexus Network. For users who writes there own software, please see our Internet-site: see last page, where you find the Nexus application notes.

12.5 Dimensions





12.6 Accessories

Below find a selection of optional accessories available. Please contact your local Nexus dealer for more information.

Art. No.	**Nexus Complete Sets**:
20445-1	Speed Log instrument with transducer
20445-2	Depth instrument with transducer
21440	Wind Data instrument with transducer
21033-1	GPS Navigator instrument with antenna
20445-3	Multi Control instrument with Server

Art.-No.	**Nexus Digital Repeaters:**
20445-4.	Multi Control
21434-1	Wind Data
21487	Compass Data
21032	GPS Navigator
20445-5	Autopilot
21210	Remote Control Instrument
21621	Multi Center
21680-1	Multi XL
21684-2	Multi XL Set, incl. Remote Control instrument

Art.-No.	**Nexus Analogue Repeaters:**
20550-2	Steer Pilot
20550-1	Wind Angle
20550-6	Compass
20550-3	Log, 0-16 KTS
20550-4	Log, 0-50 KTS
20550-5	Depth, 0-200 m
20550-7	Depth, 0-600 FT
20550-8	Speed Trim
20550-9	Rudder Angle indicator

Art.-No.	**Nexus Transducers:**
20700	Log/Temp, 0 - 30 KTS, retractable, 8 m (26 ft) cable
20711-2	Depth, 0.8 - 150 m (2.6-490 ft), retractable, 3 + 8 m (10 + 26 ft) cable
20721	Wind transducer, 25 m (82 ft) cable
20860	Compass transducer, 8 m (26 ft) cable
21000	GPS Antenna, Nexus/NMEA, fix, 10 m (33 ft) cable
21117	GPS Compass XL1000, portable
21170	GPS Navigator XL300, portable

SPECIFICATIONS

Art.-No.	Nexus inboard hydraulic Autopilot
21035	Distribution unit
21134	Pump set hydraulic steering 12V
21134-24	Pump set hydraulic steering 24V
21341	Pump set with solenoid 12V (for mechanical steering)
21136	Cylinder
21036	Rudder angle transmitter

Art.-No.	Other Nexus Accessories
19841	Maxi Repeater via NMEA, yellow digits
19941	Maxi Repeater via NMEA, red digits
69999	Double bracket for Maxi repeater
69995	Multi XL mast bracket
21248-1	PC Interface FD (Full Duplex) / NMEA with 1 m (3.3 ft) cable and a 3½"disc.
19763	Push button for Tactical and MOB function
21154	High Speed Paddle Wheel, up to 40 KTS
19038	Internal mounting kit for depth transducer
19216	Bronze through hull fitting
18129	Instrument panel in aluminium for up to 6 Nexus instruments
18500	Through deck connector 7-pole
18501	Through deck connector 4-pole
20966	Connector 4-pole
67400-15	15° angle adjustment for mast top bracket
21453	Connection box for Compass Data and Wind Data instrument

12.7 Warranty

GENERAL

All our products are designed and built to comply to the highest class industry standards. If the products are correctly installed, maintained and operated, as described in the installation and operation manual, they will provide long and reliable service. Our international Network of distributors can provide you with the information and assistance you may require virtually anywhere in the world.

Please read through and fill in this warranty card and send it to your national distributor for product registration.

LIMITED WARRANTY

The warranty covers repair of defective parts due to faulty Manufacturing and includes labour when repaired in the country of purchase. The warranty period is stated in the product manual, and commences from the date of purchase. The above warranty is the Manufacturer's only warranty and no other terms, expressed or implied, will apply. The Manufacturer specifically excludes the implied warranty of merchantability and fitness for a particular purpose.

CONDITIONS

- The supplied warranty card and receipt with proof of purchase date, must be shown to validate any warranty claim. Claims are to be made in accordance with the claims procedure outlined below.
- The warranty is non-transferrable and extends only to the original purchaser.
- The warranty does not apply to Products from which serial numbers have been removed, faulty installation or incorrect fusing, to conditions resulting from improper use, external causes, including service or modifications not performed by the Manufacturer or by its national distributors, or operation outside the environmental parameters specified for the Product.
- The Manufacturer will not compensate for consequential damage caused directly or indirectly by the malfunction of its equipment. The Manufacturer is not liable for any personal damage caused as a consequence of using its equipment.
- The Manufacturer, its national distributors or dealers are not liable for charges arising from sea trials, installation surveys or visits to the boat to attend to the equipment, whether under warranty or not. The right is reserved to charge for such services at an appropriate rate.
- The Manufacturer reserves the right to replace any products returned for repair, within the warranty period, with the nearest equivalent, if repair within a reasonable time period should not be possible.
- The terms and conditions of the warranty as described do not affect your statutory rights.

CLAIMS PROCEDURE

Equipment should be returned to the national distributor, or one of its appointed dealers, in the country where it was originally purchased. Valid claims will then be serviced and returned to the sender free of charge.

Alternatively, if the equipment is being used away from the country of purchase, it may be returned to the national distributor, or one of its appointed dealers, in the country where it is being used. In this case valid claims will cover parts only. Labour and return postage will be invoiced to the sender at an appropriate rate.

DISCLAIMER

Common sense must be used at all times when navigating and the Manufacturer's navigation equipment should only be considered as aids to navigation.

The Manufacturers policy of continuous improvement may result in changes to product specification without prior notice.

13 Abbreviations

ALT	Altitude
AWA	Apparent Wind Angle
AWS	Apparent Wind Speed
BAT	BATtery
BOD	Bearing origin to destination
BSP	Boat SPeed
BTW	Bearing To Waypoint
C	Celsius
CAD	
CFD	
CMG	
COG	
CTS	
DAT	
DRF	
DMG	
DPT	
DTW	
F	Fahrenheit
HDC	Heading
KM	KiloMetre
KTS	KnoTS
LCD	Liquid Crystal Display
LOG	
LOW	LOW
MAX	MAX
MH	Miles per Hour
MID	MID
POS	
REF	
ROL	
SET	
SOG	Speed Over Ground
STR	
TBS	
TIM	
TMP	
TRP	TRiP
TTG	
TWA	True Wind Angle
TWD	True Wind Direction
TWS	True Wind Speed
UTC	
VMG	Velocity Made Good
WCV	
XTE	Cross Track Error

File id: ____

WARRANTY CARD

TO BE RETURNED TO YOUR NATIONAL DISTRIBUTOR

OWNER:

Name: ______________________________

Street : ______________________________

City/Zip Code : ______________________________

Country: ______________________________

Product name: **Serial number:**

	A	B	C	1	2	3	4	5	6	7
______________	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
______________	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
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______________	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Date of purchase: __________________________Date installed _______________________________

Dealers stamp:

☐ Tick here if you do not wish to receive news about future products

14 Drill dimensions