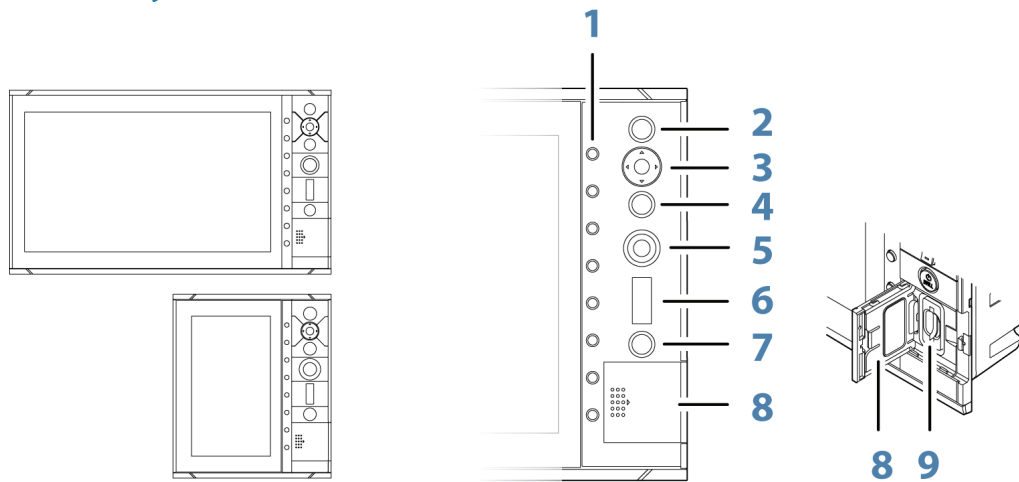


→ **Note:** This document covers the products:

- R2009 Radar system with 9" portrait display, paired with Halo, 3G, 4G or HD radar sensors.
- R3016 Radar system with 16" widescreen display, paired with Halo, 3G, 4G or HD radar sensors.
- R3016 12U/6X Radar system (IMO CAT 3).

### Front panel and softkeys



No.	Description
1	<b>Softkeys</b> Press a key once to access options for the corresponding function.
2	<b>ENT - Enter key</b> With no menu or cursor active: no function. With cursor active: press to acquire a target or activate AIS. Press and hold to display options for managing radar and AIS targets. Menu and pop-up operation: press to select an option or activate/deactivate an option.
3	<b>Arrow keys</b> With no menu active: press to move the cursor on the radar PPI. Menu operation: press to move through menu items and to adjust a value.
4	<b>EXIT - Exit key</b> With no menu active: no function. Menu operation: press to return to previous menu level or to exit a dialog.
5	<b>Rotary knob</b> With no menu active: behavior will depend on operational mode. Menu operation: rotate to scroll through menu items and to adjust values. Press to select or to save settings.
6	<b>RANGE - Range key</b> Press the indication + or - to increase or decrease the radar range.
7	<b>STANDBY/BRILL - Standby/Brilliance key</b> Press once to display the Standby/Brilliance pop-up, press again to toggle between Standby and Transmit. Press and hold to switch the radar system on/off.
8	<b>Card reader door</b>
9	<b>SD card reader</b>

### Using the cursor

Show cursor: Press one of the arrow keys.  
Hide and reset cursor: Press the **EXIT** key.

→ **Note:** The cursor cannot be activated, deactivated or moved when a menu or a Settings dialog is open.

# Main panel

The main panel is divided into predefined areas as indicated.

## 1. Plan Position Indicator (PPI)

Radar video area where all tracking and navigation options are performed.

## 2. Own ship information

Stabilization mode indicator, picture freeze indicator and gauges showing primary and secondary sensors.

## 3. Target panel

Detailed information about radar targets and AIS targets.

## 4. Softkey bar

Reference for softkey functions.

## 5. Target indicators

Overview of target indicator settings.

## 6. Markers

Details for active VRM and EBL markers.

## 7. Cursor information

Range and bearing from the vessel to the cursor position. Also including position information if a position source is available.

## 8. Alerts panel

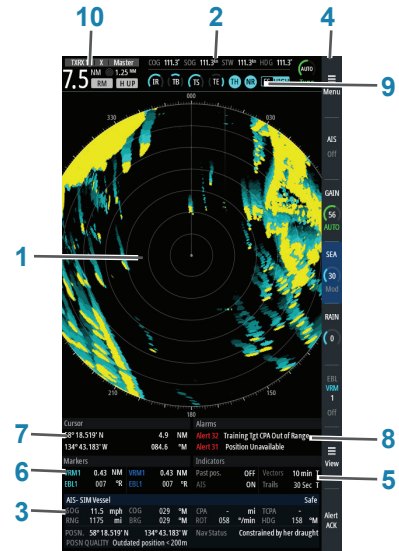
List of active alerts.

## 9. Signal indicators

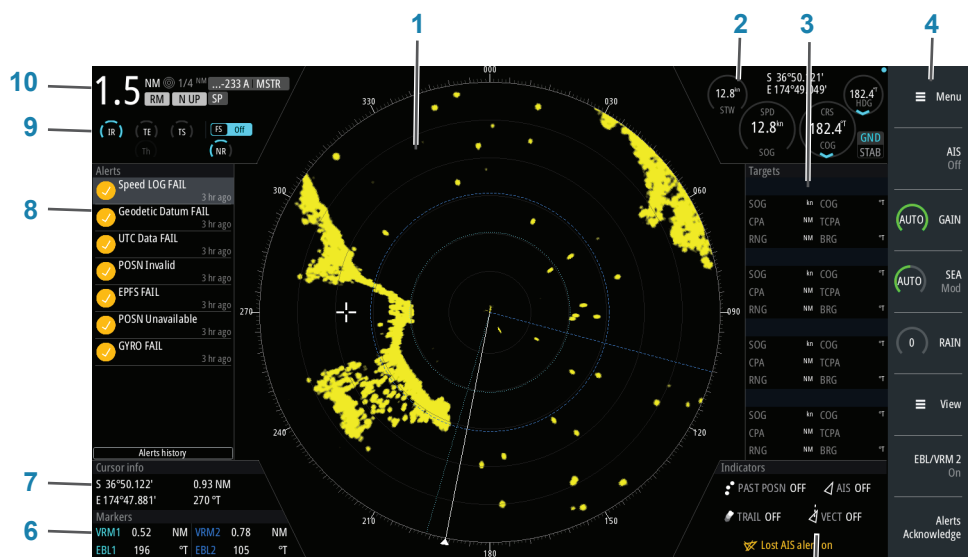
Gauges for signal processing and indicators for radar functions.

## 10. System information

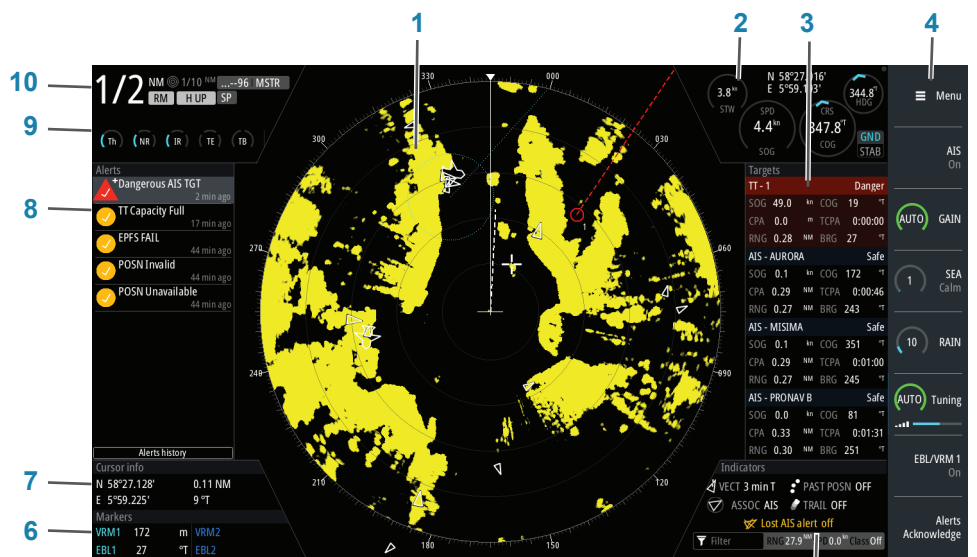
Range, mode and pulse details.



R2009 9" screen


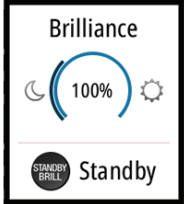


R3016 16" widescreen



R3016 12U/6X

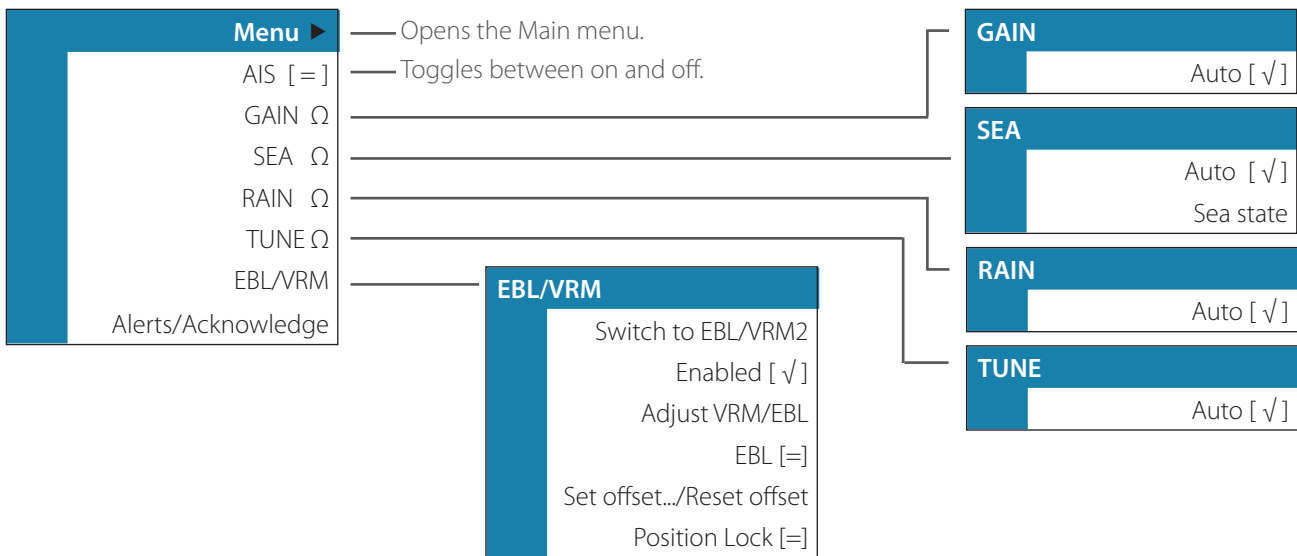
## Power/Brilliance key

 <b>STANDBY/ BRILL</b> key	Press and hold for approx. 5 seconds.		Turns on/off the control unit and the antenna.	
	Single press displays the Brilliance pop-up.		Use rotary knob to adjust brightness. Set to 40% or lower will change to Night view.  When dialog is open: Press again to toggle between Standby and Transmit.  Long press will turn off the transceiver currently selected.	To close the pop-up, press the <b>EXIT</b> key.  However, the dialog will time out after 10 seconds.

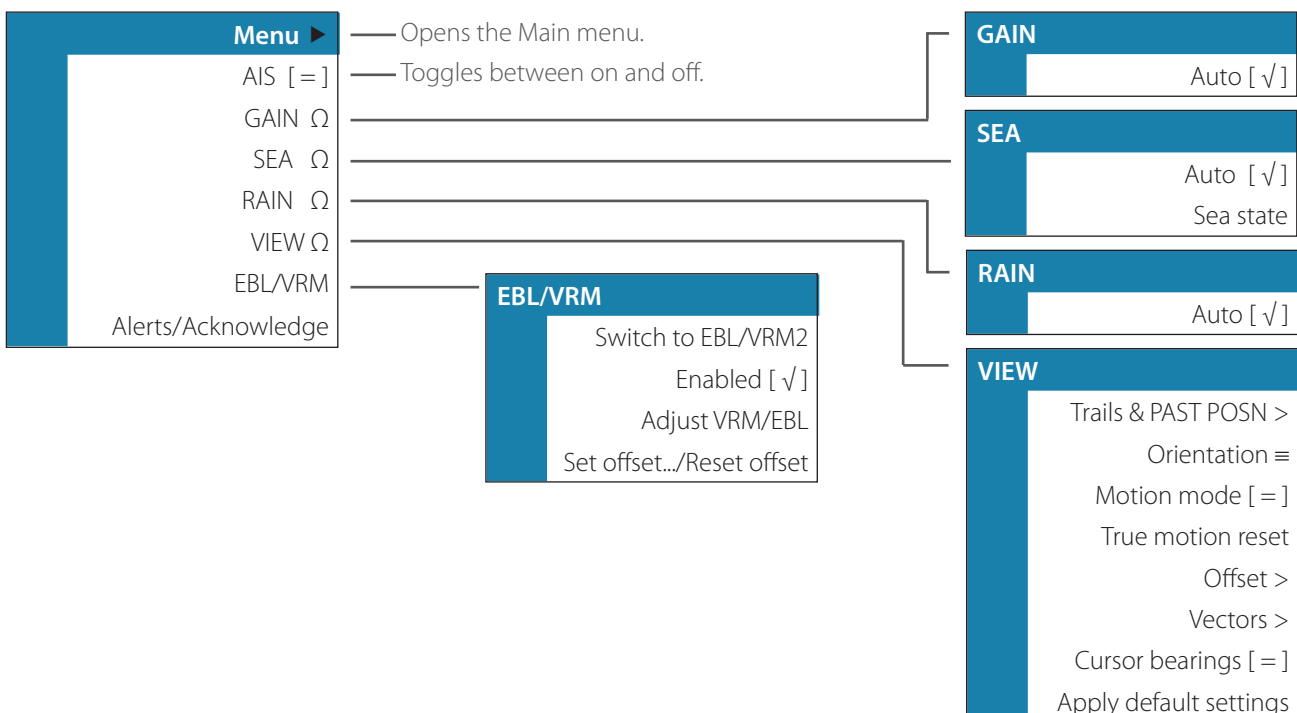
## Softkeys panel

Press a softkey to display pop-up/open a sub-menu.

### R3016 12U/6X

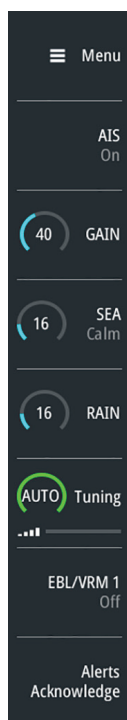


### R2009/R3016

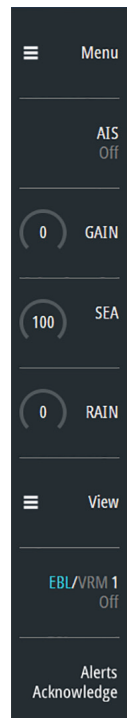


## Softkeys

The softkeys are always accessible, and the softkey bar is always visible on the radar panel. The functionality of the arrow keys, the rotary knob and the **ENT** key will vary according to which function is active.



**R3016  
12U/6X**



**R2009/  
R3016**

Softkey/ KeyPress	Action	Arrow keys	ENT key	Rotary knob - Press	Rotary knob - Rotate
<b>Menu</b> - single press	Open menu	Scroll	Select	Select	Scroll
<b>AIS</b> - single press	On/Off	-	-	-	On/Off
<b>GAIN</b> - single press	Display pop-up	-	-	-	Adjust
- press again when dialog is open	-	-	AUTO/On/Off	AUTO/On/Off	-
- press-and-hold	AUTO/On/Off	-	-	-	-
<b>SEA</b> - single press	Display pop-up	-	-	-	Adjust
- press again when dialog is open	-	Scroll	AUTO/ On/Off or toggle Sea states	AUTO/On/Off	-
- press-and-hold	AUTO/On/Off	-	-	-	-
<b>RAIN</b> - single press	Display pop-up	-	-	-	Adjust
<b>Tuning (R3016 12U/6X)</b> - single press	Activate	-	-	-	Adjust
- press again when dialog is open	-	-	AUTO/On/Off	AUTO/On/Off	-
- press-and-hold	AUTO/On/Off	-	-	-	-
<b>View (R2009/R3016)</b> - single press	Activate	-	-	-	Adjust
- press again when dialog is open	-	-	AUTO/On/Off	AUTO/On/Off	-
- press-and-hold	AUTO/On/Off	-	-	-	-
<b>EBL/VRM*</b> - single press	Turn on EBL/VRM1	Adjust EBL/VRM intersection	-	Toggle EBL/VRM	Adjust EBL/VRM
- press-and-hold	Toggle EBL/VRM1 and EBL/VRM2	-	-	-	-
<b>Alert Acknowledge</b> - single press	Moves cursor to Alert panel and acknowledges last activated alarm	-	-	-	-
- press-and-hold	Moves focus to Alert panel	Scroll	Select	Select	Scroll

\*) See details in **Using EBL/VRM markers** in operation manual.

## Menu

Via the menu, you have access to sub-menus, dialogs and settings. If a menu is inactive for 10 seconds, it will automatically close.

## AIS targets

By default the Target panel displays basic information about four targets. The panel displays both tracked radar targets and AIS targets, listed by distance to own vessel. The information is independent of AIS or Radar target display settings.

## Gain

The Gain option controls the sensitivity of the radar receiver. A higher gain makes the radar more sensitive to radar returns, allowing it to display weaker targets. If gain is set too high, the image might be cluttered with background noise.

→ **Note:** Do not attempt to use Gain control to clean the picture from sea or rain anti-clutter.

The value of Gain should be set so that the background noise is just visible on the radar panel. Gain has a manual and an automatic mode. Refer to Softkeys for how to adjust Gain.

## Sea anti-clutter

The Sea anti-clutter option is used to filter the effect of random echo returns from waves or rough water near the vessel. When you increase the value, the sensitivity of the near field clutter caused by waves is reduced. The value should not be increased too much as this may filter out actual targets.

The value of Sea anti-clutter should be set so that the clutter is seen as small dots, making it easy to distinguish between clutter and small targets around the ship.

Sea anti-clutter has a manual and an automatic mode, and the system includes predefined settings for Calm, Moderate and Rough sea state conditions. Refer to Softkeys for how to adjust Sea anti-clutter.

## RAIN anti-clutter

The Rain anti-clutter is used to reduce the effect of rain, snow or other weather conditions on the radar image. When you increase the value, the sensitivity of the long distance field clutter caused by rain is reduced. The value should not be increased too much as this may filter out real targets.

Rain anti-clutter has no automatic mode. Refer to Softkeys for how to adjust Rain anti-clutter.

## Tuning (R3016 12U/6X)

You can tune the radar receiver to present maximum target returns on the screen. Tuning has a manual and an automatic mode.

In automatic tuning mode, the transceiver performs a tuning of the receiver when the range scale changes.

Manual tuning should only be used if the automatic tuning fails. The tuning should not be performed earlier than 10 minutes after the radar has been switched on. Manual tuning is best done by a long pulse setting (range set to 24 NM), and by using a high level of gain. In this condition, adjust the tuning control to obtain the maximum signal strength.

Refer to Softkeys for how to adjust Tuning.

## View (R2009/R3016)

The View menu in the Softkeys panel is a shortcut to the View options, which are available only with HALO, 3G, 4G, and HD radar sensors. See View options next page.

## EBL/VRM markers

The electronic bearing line (EBL) and variable range marker (VRM) allows quick measurements of range and bearing to vessels and landmasses within radar range.

Two different EBL/VRMs can be placed on the radar image. They are identified as dashed rings with different colors to be able to discriminate them from each other and from the fixed range rings: EBL/VRM1 is green, EBL/VRM2 is blue. The markers' line width indicates whether the marker is in edit mode (bold lines) or at a fixed position (thin lines).

## Alert/Acknowledge

Two options are available for acknowledging alerts:

- By using the Acknowledge softkey.
  - Acknowledge the most recent alarm or warning by pressing the softkey.
  - Repeat pressing this softkey to continue to acknowledge alerts from the top of the Alerts panel. The sort order of alerts is the severity (i.e. alarm prior warning), then age.
- From the Alerts panel, accessed by a long press on the Acknowledge softkey.
  - Use the Arrow keys to move up and down in the list of alerts.
  - Press the Acknowledge softkey or the **ENT** key to acknowledge the highlighted alert.
  - Press the **EXIT** key to exit the Alert panel.

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## General menu indications

- Press **Menu** in the softkeys panel to access the main menu.
- Use the arrow keys or the rotary knob to move around in the menus.
- Press the rotary knob or **ENT** key to access a sub-menu, to toggle options and to confirm a selection.
- Press the **EXIT** key to return to previous menu level and to exit the menu system.

PS: Menus are automatically configured, based on selected radar sensor.

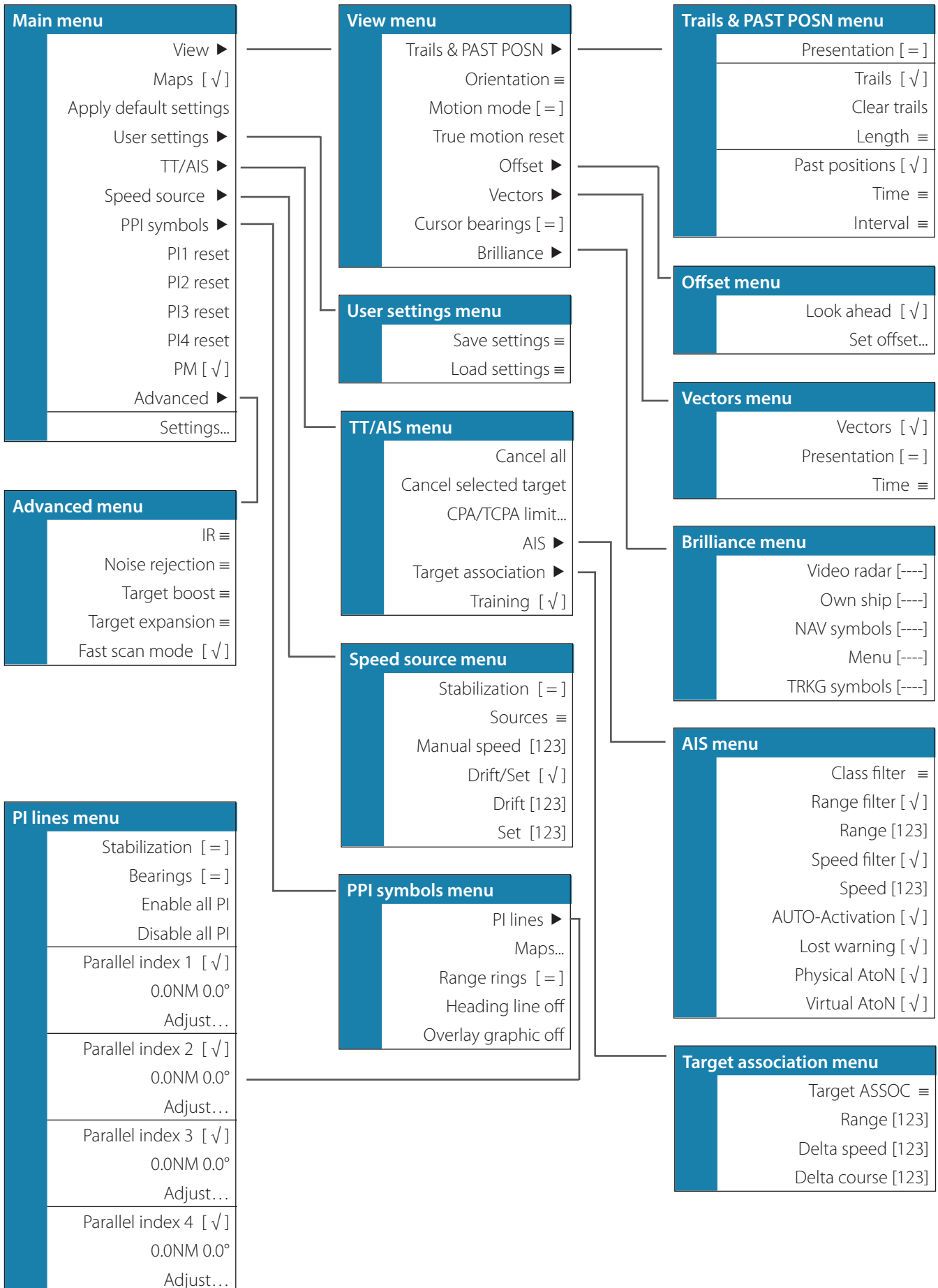
### Legend of symbols:

- Ω arched indicator
- ≡ list of options (3 or more)
- [ = ] toggle button (switch between 2 options)
- [ √ ] checkbox
- [123] keypad entry
- [ --- ] slider
- ▶ access sub-menu
- ... open dialog

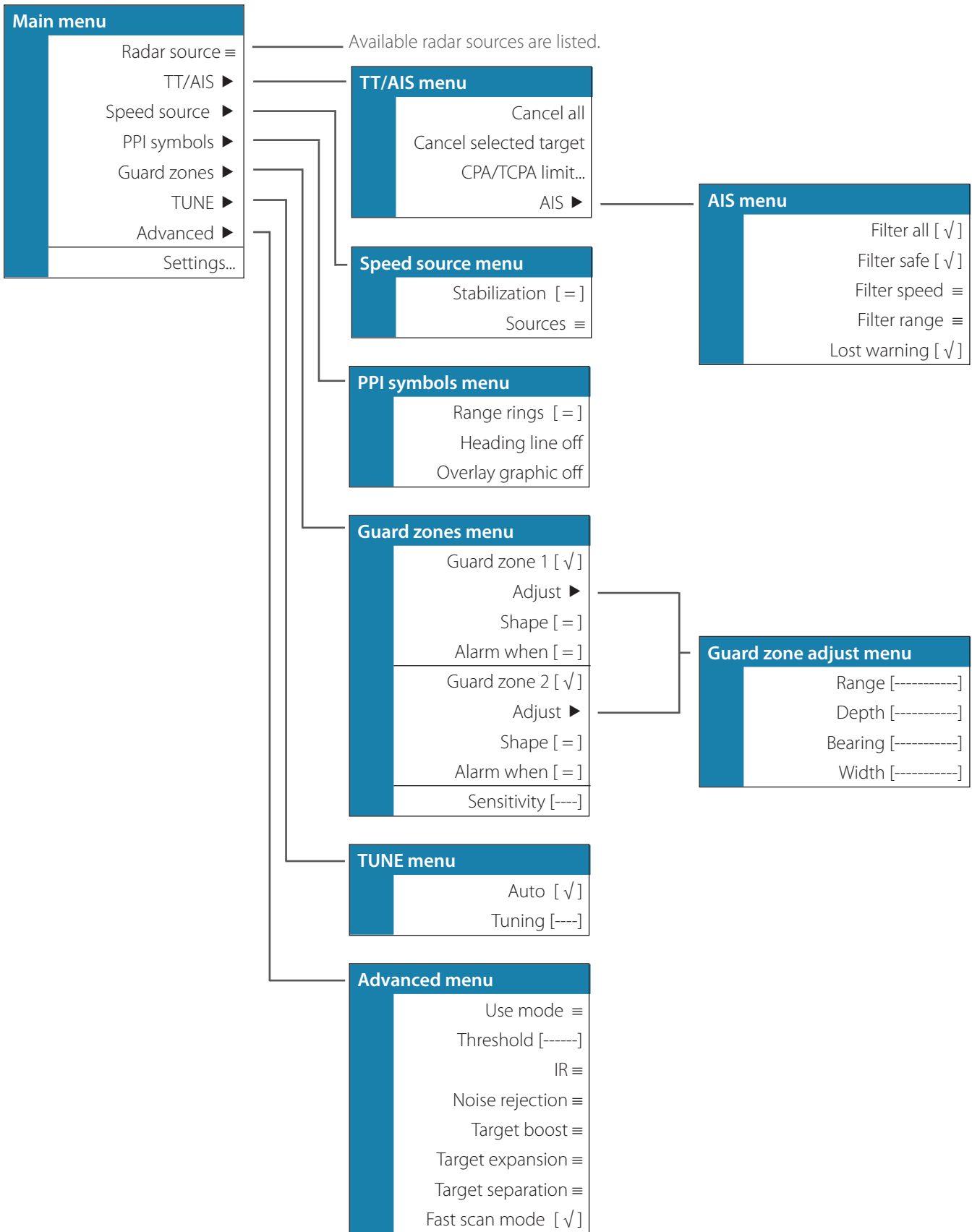
## Main menu

Access the main menu by pressing the **Menu** softkey. Use the arrow keys or rotary knob to move around in the menus and access the highlighted function by pressing the **ENT** key.

### R3016 12U/6X



**R2009/R3016**



## Alert notifications












When an alert is triggered, the alert appears in the Alerts panel. Alarms and warnings remain in the Alerts panel until the reason for the alarm/warning is removed and the alarm/warning has been acknowledged.

The alerts are displayed in a sorted order. The sort order is the severity (i.e. alarm before warning), then age.

When a rectified alert is acknowledged it will disappear from the Alerts panel.

It is not possible to acknowledge cautions. They will disappear from the system when they are rectified and therefore only have an active state.

Responsibility transferred is the process used to inform functions, sensors and/or sources that after evaluation the INS with its system knowledge has taken the responsibility in order to reduce the number of high priority alerts.

Alert type	Icon	State	Indication
Alarm		Active - not acknowledged, not silenced	Flashing symbol and descriptive text Audible signal
		Active - not acknowledged, silenced	Flashing symbol and descriptive text No audible signal
		Active - acknowledged	Steady symbol and descriptive text No audible signal
		Active - responsibility transferred	Steady symbol and descriptive text No audible signal
		Active - not acknowledged	Flashing symbol and descriptive text No audible signal
Warning		Active - not acknowledged, not silenced	Flashing symbol and descriptive text Audible signal
		Active - not acknowledged, silenced	Flashing symbol and descriptive text No audible signal
		Active - acknowledged	Steady symbol and descriptive text No audible signal
		Active - responsibility transferred	Steady symbol and descriptive text No audible signal
		Active - not acknowledged	Flashing symbol and descriptive text No audible signal
Caution		Active	Steady symbol and descriptive text No audible signal