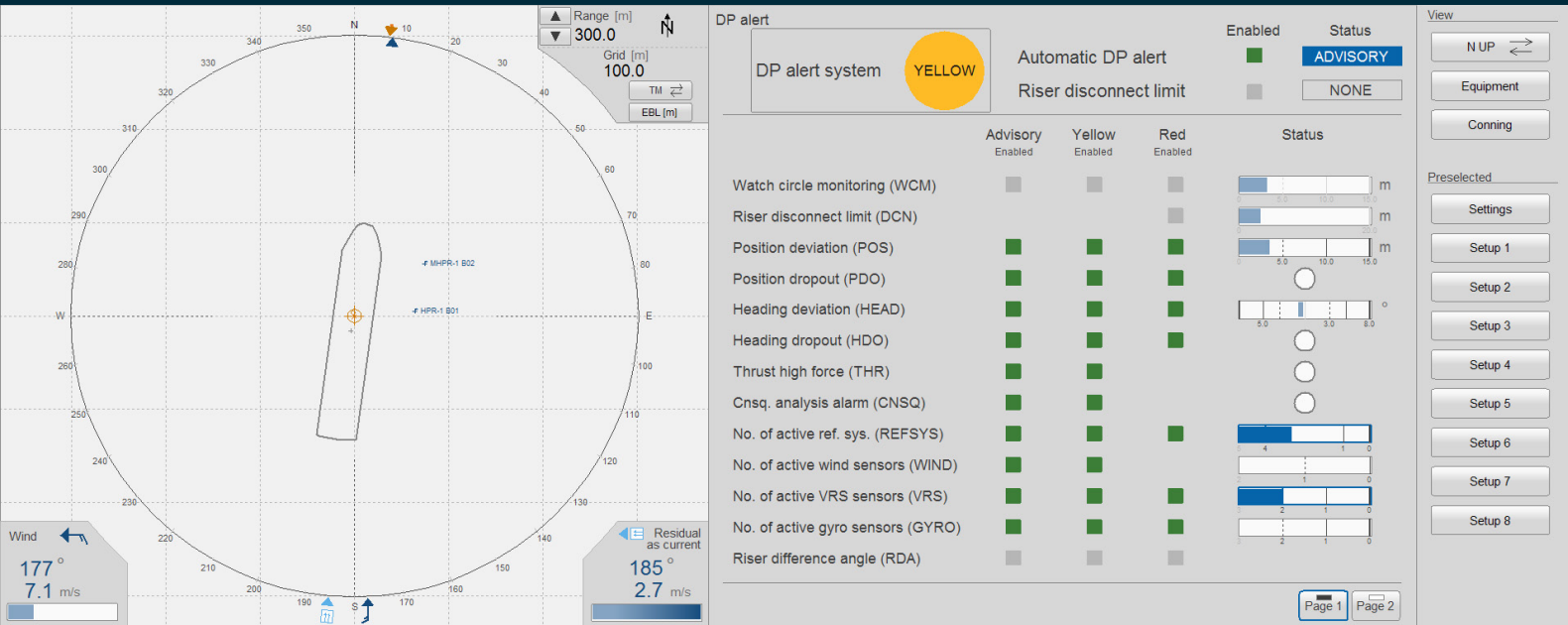


AUTOMATIC DP ALERT



KONGSBERG



DP alert view

AUTOMATIC CONTROL OF THE DYNAMIC POSITIONING ALERT SYSTEM

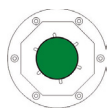
The DP Alert System is used during diving, drilling, pipelaying or other critical operations to give a general alert of any degradation of the DP system or the vessel's ability to continue the operation. The DP Alert System can be operated in Automatic DP alert mode where alert levels are escalated automatically in response to signals from the DP Control System.

The operator can also manually escalate the alert level from the DP Alert Control Panel, but only decrease it to the level requested by the DP Control System. To further decrease the alert level, automatic mode must be disabled.

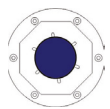
The DP Control System monitors a set of parameters that have limits set up as criteria for DP alert. If a limit is exceeded, the DP Controller sends a request to the DP Alert System to change alert level.

DP Alert status levels

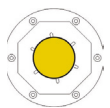
Status levels: green, blue or white, yellow, red.



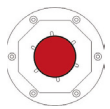
Normal operational status.



Advisory (optional) - A condition exists that must be considered by relevant personnel.



Degraded - Safe working limits exceeded - heading or position may be at risk.



Emergency - Loss of position may be inevitable, a "red condition" exists or any other emergency situation that warrants immediate action.

DP Alert Control Panel

The DP Alert System can be run manually by the DP operator using the DP Alert Control Panel.

The DP operator can escalate or de-escalate the alert status when required. However, in Automatic DP alert mode there are limitations related to decreasing of the alert level.



FEATURES

Automatic DP alert mode

Automatic operation of the DP Alert System is enabled in the DP alert settings dialog box. This is accessed either from the DP alert view or via the menu settings.

The DP alert settings dialog box is also where the alert criteria are set and enabled. The thresholds are set by the DP operator in accordance with operational guidelines. The dialog box contains protection / validation to prevent the user from accidentally causing a change of DP alert level.

DP alert criteria list

The DP alert settings dialog box shows a list of DP alert criteria that are to be monitored for automatic change of DP alert status. Each DP alert criterion can be enabled and adjusted individually.

For example, the Heading deviation (HEAD) criterion has the following limits set:

- Advisory (DP Warning) 3.0°
- Yellow Alert (DP Alarm) 5.0°
- Red Alert (DP Alarm 2) 8.0°

With Automatic DP alert enabled and the (HEAD) criterion enabled for Advisory, Yellow Alert and Red Alert, the automatic DP alert behaves as follows:

- If heading deviations exceeds 3.0° the alert level changes to **Advisory**.
- If a deviation of more than 5.0° is exceeded the alert level is escalated to Yellow Alert (**Degraded**).
- If a deviation of more than 8.0° is exceeded the alert level is escalated to Red Alert (**Emergency**).

DP alert criteria	Advisory (DP warning)	Yellow alert (DP alarm)	Red alert (DP alarm2)
Watch circle monitoring (WCM)	<input type="checkbox"/> 5.0 m	<input type="checkbox"/> 10.0 m	<input type="checkbox"/> 15.0 m
Riser disconnect limit (DCH)	<input type="checkbox"/> 5.0 m	<input type="checkbox"/> 10.0 m	<input type="checkbox"/> 20.0 m
Position deviation (POS)	<input checked="" type="checkbox"/> 5.0 m	<input checked="" type="checkbox"/> 10.0 m	<input checked="" type="checkbox"/> 15.0 m
Position dropout (PDO)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Heading deviation (HEAD)	<input checked="" type="checkbox"/> 3.0 °	<input checked="" type="checkbox"/> 5.0 °	<input checked="" type="checkbox"/> 8.0 °
Heading dropout (HDO)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Thrust high force (THR)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Cnsg. analysis alarm (CNSO)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
No. of active ref. sys. (REFSYS)	<input checked="" type="checkbox"/> 4 (or less)	<input checked="" type="checkbox"/> 1 (or less)	<input checked="" type="checkbox"/> 0 (or less)
No. of active wind sensors (WIND)	<input checked="" type="checkbox"/> 1 (or less)	<input checked="" type="checkbox"/> 0 (or less)	<input checked="" type="checkbox"/> 0 (or less)
No. of active VRS sensors (VRS)	<input checked="" type="checkbox"/> 2 (or less)	<input checked="" type="checkbox"/> 1 (or less)	<input checked="" type="checkbox"/> 0 (or less)
No. of active gyro sensors (GYRO)	<input checked="" type="checkbox"/> 2 (or less)	<input checked="" type="checkbox"/> 1 (or less)	<input checked="" type="checkbox"/> 0 (or less)
Riser difference angle (RDA)	<input type="checkbox"/> 0.0 °	<input type="checkbox"/> 0.0 °	<input type="checkbox"/> 0.0 °
Tensioner stroke (TENS)	<input checked="" type="checkbox"/> 5.0 m	<input checked="" type="checkbox"/> 7.0 m	<input checked="" type="checkbox"/> 9.0 m
Pitch angle (PITCH)	<input checked="" type="checkbox"/> 3.0 °	<input checked="" type="checkbox"/> 4.0 °	<input checked="" type="checkbox"/> 5.0 °
Roll angle (ROLL)	<input checked="" type="checkbox"/> 3.0 °	<input checked="" type="checkbox"/> 4.0 °	<input checked="" type="checkbox"/> 5.0 °
Heave (HEAVE)	<input checked="" type="checkbox"/> 2.0 m	<input checked="" type="checkbox"/> 4.0 m	<input checked="" type="checkbox"/> 6.0 m

DP alert status

DP alert system **YELLOW**

Enabled Status

Automatic DP alert ■ **ADVISORY**

Riser disconnect limit ■ **NONE**

DP alert status pane

The status of the DP Alert System and Automatic DP alert is displayed in the DP alert status pane.

The status is displayed with text and colours:

- Green - Normal
- Blue or white - Advisory
- Yellow - Degraded
- Red - Emergency
- Grey - None

DP alert view

The DP alert view (shown on the front page) contains information about the current level of the DP Alert System in addition to monitoring status from the Automatic DP alert functionality.

Specifications subject to change without any further notice.