FLARM intro
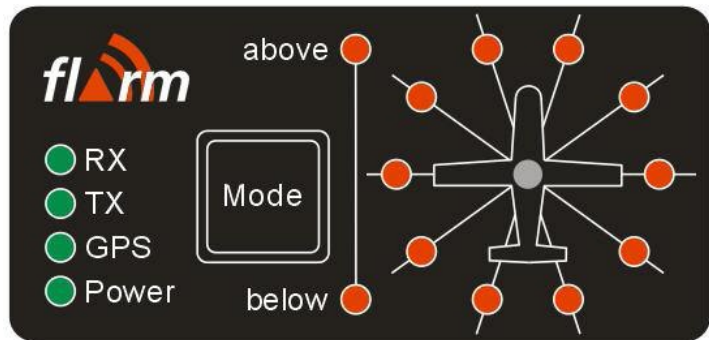
1 Visning

FLARM är ett kollisions varningssystem som ger ljud och ljus signal om ett flygplan med Flarm är nära eller det är risk för kollision. Ljus signal ges på en liten panel som monteras på instrumentpanelen. Du får riktning till det andra flygplanet och om det är över eller under dig.

En demo av FLARM i funktion på Youtube (endast de snabba pipen är FLARM, övrigt pip är variomentern):

http://www.youtube.com/watch?v=ynrGYSboCD0

Några enkla inställningar (ljud, mode of operation): http://www.youtube.com/watch?v=7e-dQ8MLGxA
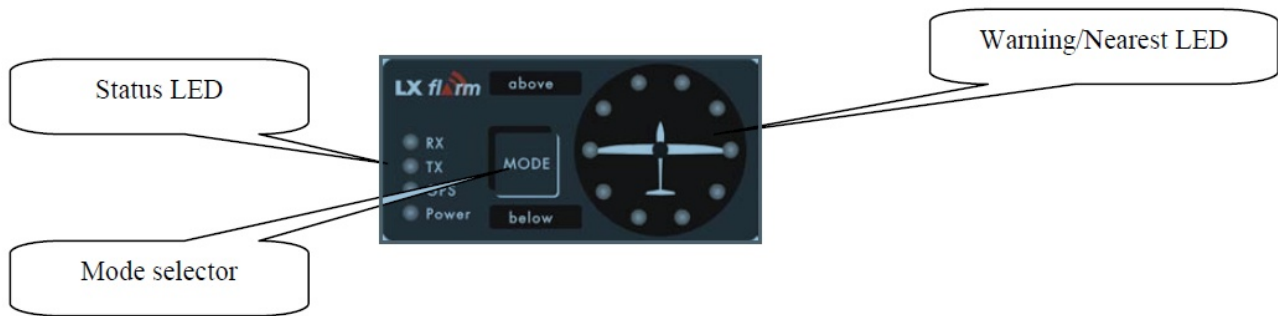
2 FLARM (Red box) anvisningar

Detta är anvisningar för den typ av FLARM som flygklubben (KSFK) har.

The unit will run immediately after power will be applied. With GPS antenna connected and visible satellites about three minutes will take to be operable. There are no commands or status indicators on the unit. All important statuses are be readable on External display, also all inputs will be done this way.

2.1 Flarm external display

The unit consists of a 50x20 mm flat housing which has one push button and 16 LED's. A 6P telephone type connector connects External display with Flarm unit. Each LED position is equipped with two LEDs, one red and one green.

- 10 radial positioned LED's, defines **direction to** the near glider (top LED active means frontal collision risk)

- 2 additionally red light emitting diodes marked like **above** and **below** informs about vertical position of the glider, which is close.

- **Mode** button is used to control the unit, see table below

- 5 status LED's.

Status LED

Warning/Nearest LED

Mode selector

Description of LED statuses:

- **Power red flashing**, no data from Flarm

- **Power green** data received

- **GPS red** GPS BAD, **GPS green** GPS OK/3D

- **Tx green** flashing, data sent

- **Rx green** , minimum one glider in range

- **Green circular** , indication of near gliders

- **Red circular flashing**, collision warning

- **Above below green** by near

- **Above below red** by warning

- **018°, 054°, 324° and 288°** green and red flashing, obstacles in front

The external display has **two modes of operation**:

• **WARNING Mode**
will activate a red blinking diode, if another glider equipped with Flarm will be close and a prediction for a **collision** risk will exist. An audio warning will be also executed. Higher collision risk will increase blinking frequency and the same is with audio. The warnings are classified into three levels (See Flarm manual for details)

-First level approximately **18 seconds** before predicted collision

-Second level approximately **13 seconds** before predicted collision

-Third level approximately **8 seconds** before predicted collision

Note!
Warning mode will show only gliders who caused a collision risk, other gliders won't be detected.

• **NEAREST Mode**

will show the direction to the nearest glider (always green) which position is inside of radio range. **One** green LED will light **permanently** and there will **be no audio**. The unit will change over to Warning Mode **automatically, if warning** criteria will be fulfilled and will continue in NEAREST after collision risk will disappear.

Note!
The external displays produced by LX Navigation will change over to **Demo mode** after MODE button will be short pressed 10 times. Nearest mode and all possible warnings will be displayed. To change over back to normal operation switch the unit **off**.

• Pressing of MODE selector continuously for approximately **4 seconds will deactivate** Flarm external display for next 5 minutes, no **warnings** and no **near** information will be displayed during this period. A very typical situation only Power LED on, will characterize this status.

Note!
To change mode of operation (nearest to warning and vice versa) press **MODE** button for approximately **2 seconds**. If the radial LED's will run from top toward bottom means change over to NEAREST and vice versa. After new power on, nearest will be set.

• **Obstacles.** Flarm electronic is capable to store **coordinates of obstacles**, which could cause a collision during flight. This data is available on www.flarm.com, use Flarm tools to update. The unit is factory loaded with actual obstacle database. An obstacle warning will be activated, if an obstacle is to be found in the front of the glider and a collision risk is predicted.

After a low level warning has been activated two upper LEDs will be active (such a situation will newer appear by glider collision risk). Medium and high risk will be indicated with more LED's active and more frequent audio signal.

• To change **audio warning volume** press short mode selector, each press will increase audio volume (three levels and mute available).

Note!
To change mode of operation press **MODE** button for approximately 2 seconds. If the radial LED's will run from top toward bottom means change over to NEAREST and vice versa.

After each **new power on**, the unit will start in **Nearest** mode.