

# Unmanned Aircraft Flight Manual

## SDO 50 V2



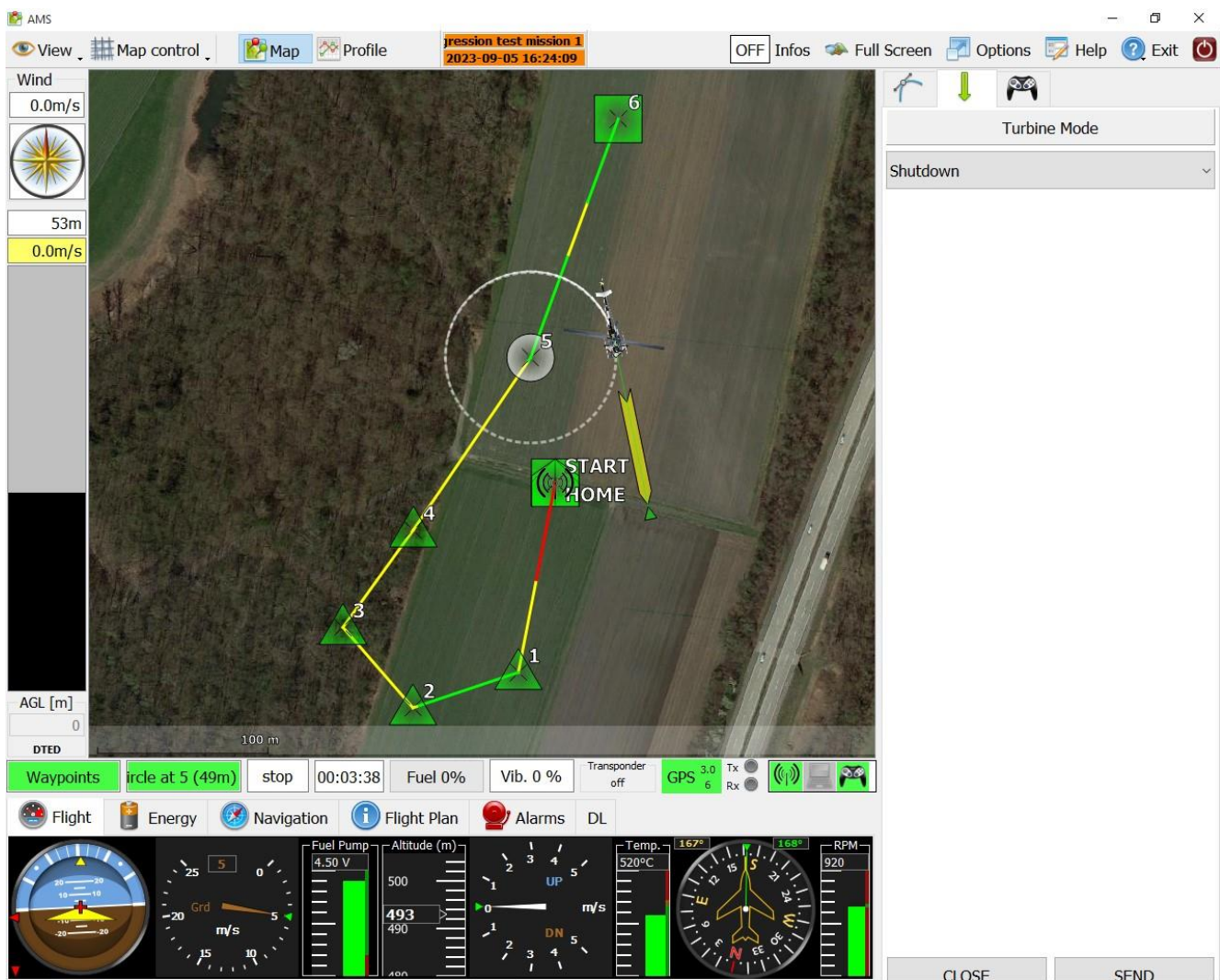


Figure 36 Engine Critical Command Selector

1.3.1.4 Information Panel

The information panel consists of six different tabs that can be selected to view. The flight tab shows flight parameters similar to a manned aircraft. The energy tab shows battery and generator parameters. The navigation tab shows navigation parameters similarly to the flight plan tab, that shows flight plan parameters. The payload tab is reserved for the payload if it feeds back information to the autopilot. The alarm tab shows the following alarms when triggered:

| Criteria                                       | GCS Alarm    | Criticality | Reaction                                 |
|------------------------------------------------|--------------|-------------|------------------------------------------|
| Autopilot loses connection to IMU              | IMU LOST     | High        | Autopilot initializes a controlled crash |
| Autopilot loses connection to magnetometer     | MAGNETO LOST | Medium      | Not used by nav                          |
| Autopilot loses barometer                      | BARO LOST    | Low         | Not used by nav                          |
| Autopilot cannot initialize IMU during startup | IMU FAULT    | Low         | Operator needs to restart system         |



|                                                         |                        |        |                                                                     |
|---------------------------------------------------------|------------------------|--------|---------------------------------------------------------------------|
| Autopilot cannot initialize Magnetometer during startup | MAGNETO FAULT          | Low    | Operator needs to restart system                                    |
| outlier > 0.5mbar                                       | BARO FAULT             | Low    | Not used by navigation                                              |
| Com lost                                                | GPS LOST/GPS NOT VALID | Medium | Autopilot goes into degraded mode, see emergency procedure          |
| Sol not valid or sat < 6                                | GPS NOT VALID          | Medium | Autopilot goes into degraded mode, see emergency procedure          |
| Engine exhaust temperature exceeds 650°C                | MOT TEMP TOO HIGH      | Medium | Operator needs to fly forward and decrease, see emergency procedure |
| Fuel indicator measures less 15%                        | FUEL LOW               | Medium | Operator needs to land safely, see emergency procedure              |
| Avionic battery voltage 23.0V                           | FCS BAT LOW            | Medium | Operator needs to land as soon as possible, see emergency procedure |
| Pump voltage exceeds 4.6V                               | PUMP VOLTAGE HIGH      | High   | Operator needs to fly forward and decrease altitude                 |
| Pump voltage exceeds 4.9V                               | PUMP VOLTAGE MAX       | High   | Operator needs to fly forward and decrease altitude                 |

Table 9 Alarm Significations

Each alarm triggered by the autopilot, or the software, is displayed in this tab.

Alarms have 3 possible states:

- Alarm raised but not acknowledged: red active button
- Alarm acknowledged but still active: orange inactive button
- Alarm acknowledged and not active anymore: green inactive button

The user acknowledges an alarm by clicking on its button. Under each alarm the last time it was received is displayed. When at least one raised alarm has not been acknowledged, a buzzing sound is played in loop, and the main user interface is colored as red. All active alarms names are displayed in the alarm tab title.

### 1.3.2 LCD Monitor with Touch Panel

The 8.4" LCD Monitor of the GCS base unit front panel indicates information of the ground control station Furthermore, it allows settings of single system parameters via the touch panel.

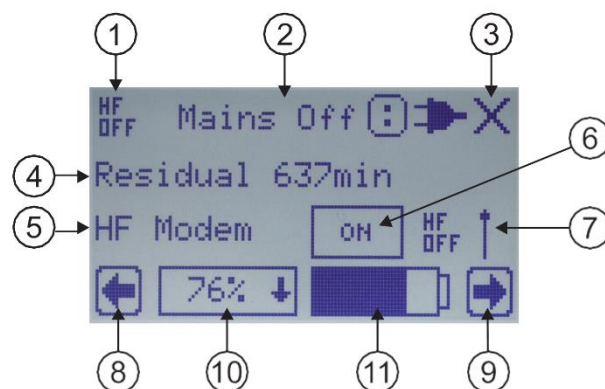


Table 10 LCD Touch Screen

| No. | Description |
|-----|-------------|
|-----|-------------|

