SUPPORTED MAVLINK PARAMETERS

Parameter	Permission	Type	Description	Default Value	Range
BAT_CRIT_THR	Read-Only	Float	Sets the threshold when the battery will be reported as critically low.	**0.07%**	**[0.05, 0.25] (0.01)**
BAT_EMERGEN_THR	Read-Only	Float	Emergency threshold ***Note**: Set the threshold when the battery will be reported as dangerously low.*	**0.05%**	**This has to be lower than the critical threshold. This threshold commonly will trigger landing.**
BAT_LOW_THR	Read-Only	Float	Sets the threshold when the battery will be reported as low.	**0.15%**	
BAT_N_CELLS	Read-Only	Int	Number of cells for battery 1 ***Note**: Defines the number of cells the attached battery consists of.* **Values** - • 0: Unknown • 1: 1S Battery • 2: 2S Battery • 3: 3S Battery • 4: 4S Battery • 5: 5S Battery • 6: 6S Battery • 7: 7S Battery • 8: 8S Battery • 9: 9S Battery • 10: 10S Battery • 11: 11S Battery • 12: 12S Battery • 13: 13S Battery • 14: 14S Battery • 15: 15S Battery • 16: 16S Battery	**0**	
BAT_V_CHARGED	Read-Only	Float	Full cell voltage (5C load) *Note: Defines the voltage where a single cell of battery 1 is considered full under a mild load. This will never be the nominal voltage of 4.2 V.*	**4.05 V**	**-0.01 V**
BAT_V_EMPTY	Read-Only	Float	Empty cell voltage (5C load) *Note: Defines the voltage where a single cell of battery 1 is considered empty. The voltage should be chosen before the steep drop off to 2.8V. A typical lithium battery can only be discharged down to 10% before it drops off to a voltage level damaging the cells.*	**3.5 V**	**-0.01 V**

SUPPORTED MAVLINK PARAMETERS

Parameter	Permission	Type	Description	Default Value	Range
CAL_ACC0_EN	Read-Only	Int	Accelerometer Calibration	**0**	
CAL_ACC0_ID	Read-Only	Int	Accelerometer Calibration	**1**	
CAL_GYRO0_EN	Read-Only	Int	Gyro Calibration	**0**	
CAL_GYRO0_ID	Read-Only	Int	Gyro Calibration	**1**	
CAL_MAG0_EN	Read-Only	Int	Magnetometer Calibration	**1**	
CAL_MAG0_ID	Read-Only	Int	Magnetometer Calibration	**1**	
CAL_MAG0_ROT	Read-Only	Int	Magnetometer Calibration	**-1**	
CAL_MAG1_EN	Read-Only	Int	Magnetometer Calibration	**0**	
CAL_MAG1_ID	Read-Only	Int	Magnetometer Calibration	**1**	
CAL_MAG1_ROT	Read-Only	Int	Magnetometer Calibration	**-1**	
CAL_MAG2_EN	Read-Only	Int	Magnetometer Calibration	**0**	
CAL_MAG2_ID	Read-Only	Int	Magnetometer Calibration	**1**	
CAL_MAG2_ROT	Read-Only	Int	Magnetometer Calibration	**-1**	
COM_DISARM_LAND	Read-Only	Float	Time-out (in seconds) for auto disarm after landing. ***Note**: A non-zero, positive value specifies the time-out period in seconds, after which the vehicle will be automatically disarmed in case a landing situation has been detected during this period. A zero or negative value means automatic disarming triggered by landing detection is disabled.*	**-1 s**	**-0.1 s**
COM_DL_LOSS_T	Read-Write	Int	Datalink loss time threshold. After this amount of seconds without datalink the data link lost mode triggers.	**10 s**	**[5, 300] (1) s**
COM_LOW_BAT_ACT	Read-Only	Int	Battery failsafe mode; Action the system takes at critical battery. **Values** - • 0: Warning • 2: Land mode • 3: Return at critical level, land at emergency level.	**0**	
COM_OBS_AVOID	Read-Write	Int	Defines the obstacle avoidance level. The level of obstacle avoidance is platform specific, i.e. the definition of what represents this level depends on how the vehicle platform implements it (proximity to obstacles, speed, etc.). **Values** - • 0: Off • 1: Low • 2: Medium • 3: High	**3**	

SUPPORTED MAVLINK PARAMETERS

Parameter	Permission	Type	Description	Default Value	Range
COM_RC_IN_MODE	Read-Only	Int	RC control input mode ***Note:*** *A value of 0 enables RC transmitter control (only). A valid RC transmitter calibration is required. A value of 1 allows joystick control only. RC input handling and the associated checks are disabled. A value of 2 allows either RC Transmitter or Joystick input. The first valid input is used and will fall back to other sources if the input stream becomes invalid. A value of 3 allows either input from RC or the joystick. The first available source is selected and used until reboot. A value of 4 ignores any stick input.* **Values** - • 0: RC Transmitter only • 1: Joystick only • 2: RC and Joystick with fallback • 3: RC or Joystick keep first • 4: Stick input disabled	**1**	
COM_RC_LOSS_T	Read-Only	Float	Manual control loss timeout ***Note****: The time in seconds without a new setpoint from RC or Joystick, after which the connection is considered lost. This must be kept short, as the vehicle will use the last supplied setpoint until the timeout triggers.*	**0.5 s**	
CP_DIST	Read-Only	Float	The minimum distance the vehicle should keep from all obstacles. ***Note:*** *Only used in Position mode. Collision avoidance is disabled by setting this parameter to a negative value*	**0**	
GF_ACTION	Read-Only	Int	Geofence violation action ***Note:*** *Setting this value to 4 enables flight termination, which will kill the vehicle in violation of the fence.* **Values** - • 0: None • 1: Warning • 2: Hold mode • 3: Return mode • 4: Terminate • 5: Land mode	**1**	**[0, 5] (1)**

SUPPORTED MAVLINK PARAMETERS

Parameter	Permission	Type	Description	Default Value	Range
GF_MAX_HOR_DIST	Read-Only	Float	Maximum horizontal distance in meters the vehicle can be from home before triggering a geofence action. Disabled if 0.	**0 m**	
GF_MAX_VER_DIST	Read-Only	Float	Maximum vertical distance in meters. The vehicle can be from home before triggering a geofence action. Disabled if 0.	**0 m**	
HP_LED_STATE	Read-Only	Int	Deprecated: Use LED_ILLUM_MODE instead	**0**	
LED_ILLUM_MODE	Read-Write	Int	Enabled light mode: • 0: All Off • 1: Navigation Lights On • 4: IR Lights On • 8: IR Strobe • 32: White Light Strobe • 5: IR and Navigation Lights On • 9: IR Strobe & Nav Lights On • 33: White Strobe & Nav Lights On	**1**	**[0, 33]**
MAG_CAL_MODE	Read-Write	Int	Magnetometer Calibration Mode 0: Standard Compass Mag Cal 1: Hand Wave Calibration	**1**	**[0,1] (1)**
MAV_SYS_ID	Read-Only	Int	MAVLink system ID	**1**	**[1, 250] (1)**
NAV_AH_ALT	Read-Only	Float	Altitude of airfield home waypoint	**600**	**[50, ?] (0.5)**
NAV_DLL_ACT	Read-Only	Int	Set datalink loss failsafe mode. The data link loss failsafe will only be entered after a timeout, set by COM_DL_ LOSS_T in seconds. Once the timeout occurs the selected action will be executed. **Values -** • 0: Disabled • 1: Hold mode • 2: Return mode • 3: Land mode • 5: Terminate • 6: Lockdown	**2**	
NAV_DLL_AH_T	Read-Only	Int	Airfield home wait time The amount of time in seconds the system should wait at the airfield home waypoint	**120 s**	**[0, 3600] (1) s**

SUPPORTED MAVLINK PARAMETERS

Parameter	Permission	Type	Description	Default Value	Range
NAV_RCL_ACT	Read-Only	Int	Set RC loss failsafe mode Note: The RC loss failsafe will only be entered after a timeout, set by COM_RC_LOSS_T in seconds. If RC input checks have been disabled by setting the COM_RC_IN_MODE param, it will not be triggered. **Values** - • 1: Hold mode • 2: Return mode • 3: Land mode • 5: Terminate • 6: Disarm	**2**	**[0, 6] (1)**
OBJ_DET_SRC_FEED	Read-Write	Int	Selects the video source used for detecting objects • 0: EO • 1: IR	**0**	
RGB_LED_STATE	Read-Only	Int	Enable or disable the RGB lights • 0: Disable • 1: Enable	**1**	**[0, 1] (1)**
RTL_DESCEND_ALT	Read-Only	Float	Return mode loiter altitude ***Note**: Descend to this altitude (above destination position) after return, and wait for time defined in RTL_LAND_DELAY. Land (i.e. slowly descend) from this altitude if auto landing allowed.*	**30**	**[0, ?] (0.5) m**
RTL_LAND_DELAY	Read-Only	Float	Return mode delay ***Note:** Delay before landing (after initial descent) in Return mode. If set to -1 the system will not land but loiter at RTL_DESCEND_ALT.*	**-1**	**[-1, ?] (0.5) s**
RTL_MIN_DIST	Read-Only	Float	Horizontal radius from return point within which special rules for return mode apply. ***Note:** The return altitude will be calculated based on RTL_CONE_ANG parameter. The yaw setpoint will switch to the one defined by the corresponding waypoint.*	**5**	**[0.5, ?] (0.5) m**
RTL_RETURN_ALT	Read-Write	Float	Return mode return altitude Default minimum altitude above destination (e.g. home, safe point, landing pattern) for return flight. The vehicle will climb to this altitude when Return mode is engaged unless it is currently flying higher already. This is affected by RTL_MIN_DIST and RTL_CONE_ANG.	**20**	**[0, ?] (0.5)**

SUPPORTED MAVLINK PARAMETERS

Parameter	Permission	Type	Description	Default Value	Range
RTL_TYPE	Read-Only	Int	Return type ***Note:*** *Return mode destination and flight path (home location, rally point, mission landing pattern, reverse mission).* **Values -** • 0: Return to closest safe point (home or rally point) via direct path. • 1: Return to closest safe point other than home (mission landing pattern or rally point), via direct path. If no mission landing or rally points are defined return home via direct path. Always chose closest safe landing point if vehicle is a VTOL in hover mode. • 2: Return to a planned mission landing, if available, using the mission path, else return to home via the reverse mission path. Do not consider rally points. • 3: Return via direct path to closest destination: home, start of mission landing pattern or safe point. If the destination is a mission landing pattern, follow the pattern to land.	**0**	
SDLOG_MODE	Read-Only	Int	Logging Mode **Note:** Determines when to start and stop logging. By default, logging is started when arming the system and stopped when disarming. **Values –** • -1: disabled • 0: when armed until disarm (default) • 1: from boot until disarm • 2: from boot until shutdown • 3: depending on AUX1 RC channel • 4: from 1st armed until shutdown Reboot required: true	**0**	
SECURITY_STATE	Read-Only	Int	Vehicle Security Status • 0: Unknown • 1: Not Provisioned • 2: Not Encrypting • 3: Encrypting • 4: Unlocked • 5: Error	**0**	

SUPPORTED MAVLINK PARAMETERS

Parameter	Permission	Type	Description	Default Value	Range
SENS_BOARD_ROT	Read-Only	Int	Board rotation ***Note**: This parameter defines the rotation of the FMU board relative to the platform.*	**0**	
SENS_BOARD_X_OFF	Read-Only	Float	Board rotation X (Roll) offset ***Note:** This parameter defines a rotational offset in degrees around the X (Roll) axis. It allows the user to fine tune the board offset in the event of misalignment.*	**1°**	
SENS_BOARD_Y_OFF	Read-Only	Float	Board rotation Y (Pitch) offset ***Note:** This parameter defines a rotational offset in degrees around the Y (Pitch) axis. It allows the user to fine tune the board offset in the event of misalignment.*	**0°**	
SENS_BOARD_Z_OFF	Read-Only	Float	Board rotation Z (YAW) offset ***Note:** This parameter defines a rotational offset in degrees around the Z (Yaw) axis. It allows the user to fine tune the board offset in the event of misalignment.*	**0°**	
SENS_DPRES_OFF	Read-Only	Float	Differential pressure sensor offset ***Note:** The offset (zero-reading) in Pascal.*	**0 pascals**	
SUBJ_DETECTION	Read-Write	Int	Subject Detection On-Vehicle • 0: Disabled • 1: Enabled	**0**	
SYSID_OVERRIDE	Read-Write	Int	Used to set the MAV_SYS_ID MAVLink system ID	**1**	**[1, 250] (1)**
SYS_AUTOCONFIG	Read-Only	Int	Automatically configure default values **Note**: Set to 1 to reset parameters on next system startup (setting defaults). Platform-specific values are used if available. RC* parameters are preserved. **Values –** • 0: Keep parameters • 1: Reset parameters to airframe defaults	**0**	
SYS_AUTOSTART	Read-Only	Int	Auto-start script index	**18**	**[0, 9999999]**