



ENJET® Turbojet Engine

G3 Series User Manual

2025.7





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Overview

Welcome to use Enjet model aircraft turbojet engine. This manual is applicable to the G3 series model aircraft turbojet engine of Guangxi Nanning Eagle Jet UAV Co., Ltd. Before using Enjet turbojet engine, please read the following contents carefully, so as to have an overall understanding and impression of the engine components and operation process, and gradually learn various materials to determine how to install, operate and maintain your engine. Please be sure to strictly abide by the requirements of this manual to ensure safety during use.

If you have any questions, please contact Enjet agent or Enjet customer service.

Disclaimer

Guangxi Nanning Enjet UAV Co., Ltd. makes no warranties of any kind with respect to the contents of this manual, including but not limited to implied warranties of merchantability and fitness.

Our company is not liable for any indirect or incidental damages resulting from errors in the information in this manual, or from the provision, use, or implementation of the contents of the manual.

Since our company cannot monitor whether users install and use the engine correctly as required, we are not liable for property damage, personal injury, or other damages caused by improper operation.

Users should fully read and understand the contents of this manual, fully understand the product functions, and recognize the potential risks in the operation process. Enjet has not made any form of commitment to product performance or function, and users should make purchases and operations based on their own professional judgment.

When flying with the ENJET turbojet engine, be sure to choose a legal and safe flying location.

Users should fully recognize the accidental risks that may occur during the flight of the turbojet engine and assume all responsibilities arising therefrom.

Before each flight, it is recommended to perform a simulation test on the ground to eliminate potential hidden troubles as much as possible.



However, since the turbojet engine and its carrier body are complex operating systems, ENJET cannot accurately determine all the specific reasons that may lead to failure. Therefore, unless it is a manufacturing defect of the product itself, ENJET is not liable for any direct or indirect losses caused by use.

Please note: ENJET turbojet engines are limited to model aircraft use only and are strictly prohibited for any other use.

Safety Precautions

A turbojet engine is a sophisticated system that often operates at high speeds and temperatures, posing certain dangers. Please be sure to recognize the existing safety risks.

1. Do not use in prohibited flight areas.
2. Do not operate in flammable, explosive, and fire prevention areas.
3. Do not operate in quiet zones.
4. It is strictly forbidden to disassemble or replace engine parts without authorization. If unauthorized operation occurs, ENJET reserves the right to refuse subsequent maintenance and repair.
5. Only carbon dioxide fire extinguishers may be used for extinguishing fires; the use of dry powder or other types of fire extinguishers is prohibited.
6. When the engine is running, personnel must stay away from the engine and enter a safe area.
7. Turbojet engines generate extremely high noise levels during operation, posing a potential risk of hearing damage. Please wear appropriate hearing protection equipment.
8. Due to the extremely high rotational speed of turbojet engines during operation, solid fragments may be ejected at high speed in the event of dynamic imbalance or other malfunctions.
9. In addition, high-pressure, high-temperature gas streams will be ejected from the tail, posing a serious risk of burns or impact. Therefore, it is strictly forbidden for any personnel to approach the engine tail, especially within a 10-meter radius and 180-degree fan-shaped restricted area behind it.
10. Do not touch the engine while it is running or has not completely cooled down to prevent severe burns.



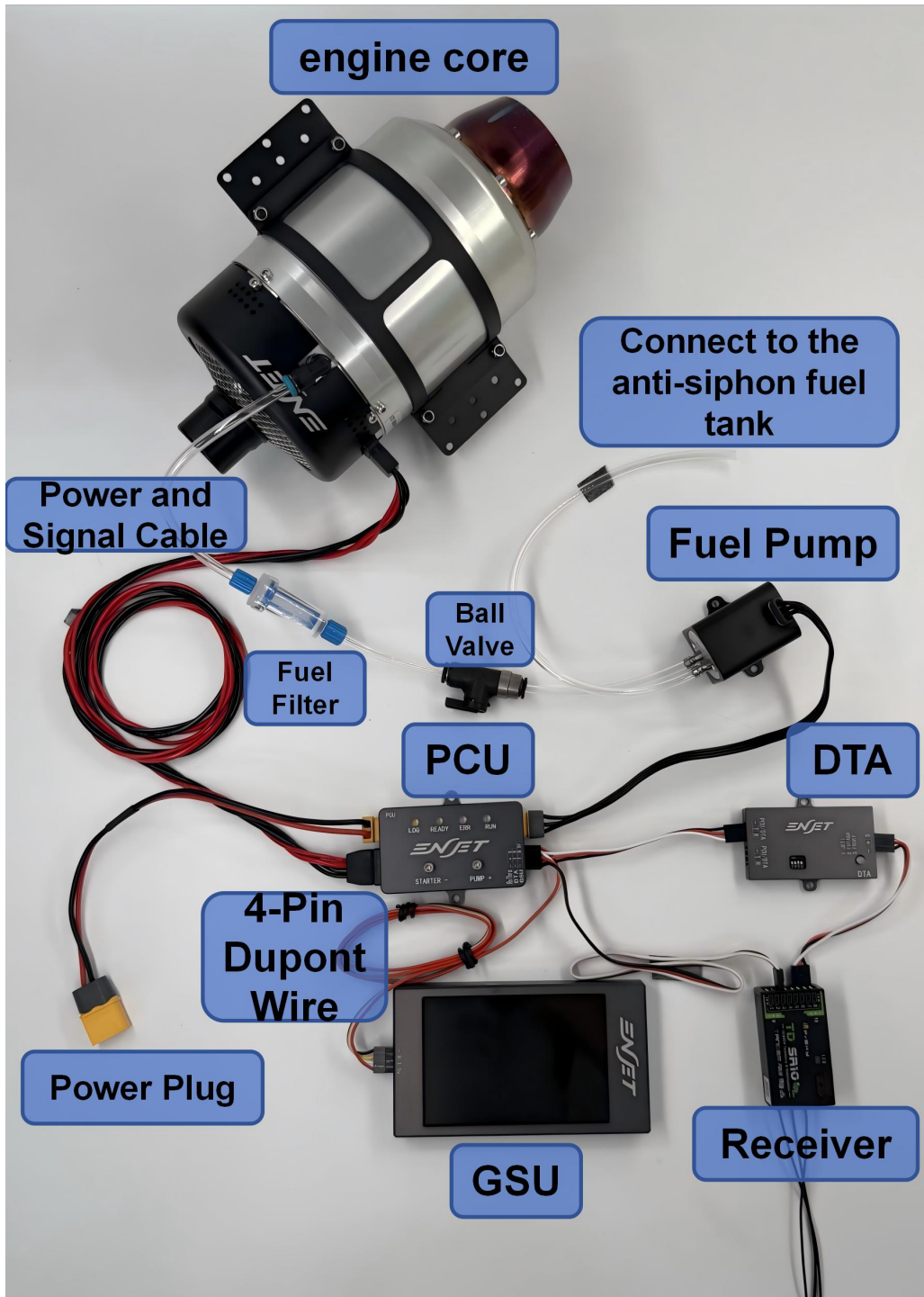
11. Do not use fuel that has been stored in plastic fuel tanks for extended periods of time, as this may cause the fuel to deteriorate and affect engine performance.

12. All fuel used must have special lubricating oil added in proportion to ensure proper engine lubrication and cooling.

Engine components and connections

	
<p>Engine body</p>	<p>DTA Telemetry Return Module (Data Transfer Adapter)</p>
	
<p>PCU Controller (Pump Control Unit)</p>	<p>GSU Ground Support Unit (Ground Support Unit)</p>
	
<p>Oil pump</p>	<p>Engine power communication line</p>
	
<p>Oil filter</p>	<p>Ball valve</p>

Please be sure to install the above components correctly according to the connection diagram provided in the accompanying instruction manual to ensure the safety of the engine system.





Engine Specification Table

Engine model	E86	E100	E130	E170
Dimension Diameter (mm)	90mm	90mm	90	109mm
Total length (mm)	205mm	205mm	185	245mm
Main body weight (g)	950g	950g	950g	1500g
PCU weight (g)	48	48	48	48
Oil pump weight (g)	64	64	64	64
Speed range (1/min)	42000-152000	42000-154000	42000-150000	33000-125000
Idle thrust (N)	3.5	4	5	6
Maximum speed thrust (N)	86N	102N	128N	170N
Exhaust temperature (°C)	600-750	600-750	600-750	600-850
Maximum fuel consumption (ml/min)	340	380	440	560
Fuel used	Aviation kerosene/premium diesel	Aviation kerosene/premium diesel	Aviation kerosene/premium diesel	Aviation kerosene/premium diesel
Lubricating oil ratio	3-5%, 4% recommended	3-5%, 4% recommended	3-5%, 4% recommended	3-5%, 4% recommended
Power supply	3S LIPO (≥2200mah)	3S LIPO (≥2200mah)	3S LIPO (≥2200mah)	3S LIPO (≥2200mah)
Parameter adjustment method	Mobile APP/Setting Card	Mobile APP/Setting Card	Mobile APP/Setting Card	Mobile APP/Setting Card
Data feedback (external feedback module)	FUTABA/JETI/Frsky	FUTABA/JETI/Frsky	FUTABA/JETI/Frsky	FUTABA/JETI/Frsky
Maintenance cycle	Every 25 hours	Every 25 hours	Every 25 hours	Every 25 hours

All data are measured under standard conditions (STP) ±3%, STP: 15°C, 101.3kPa.



First run

1. Download ENJET software, or use the GSU ground setter to set parameters. IOS users can search for ENJET in the App Store to download and install. The Android version app installation package is temporarily provided by the manufacturer or distributor.
2. Ensure correct connection of electrical and oil circuits, and engine installation must comply with specifications.
3. Use a 3S LiPo battery with a capacity of no less than 2200mAh as the power supply.
4. Use the throttle calibration function of the App or GSU to calibrate the throttle travel of the remote control (see App/GSU function description for details).
5. Purge air from the oil lines and oil filter to ensure the fuel lines are fully filled.
6. The operation steps are as follows: Pull out the engine oil inlet pipe, press and hold the “PUMP” button on the PCU controller, or use the “Test Oil Pump” function of the App/GSU to pump fuel to the oil pipe outlet. After the fuel reaches the outlet, reinsert the oil pipe into the engine oil inlet.
7. Prepare a CO2 fire extinguisher and do not use a dry powder fire extinguisher.
8. Basic remote control process, start: Fine-tune to maximum, move the joystick to maximum, hold for 1-5S, and then return to the minimum to trigger the start. The engine will automatically start until it is running. The throttle joystick can be used to control the engine speed after the engine enters the running state. Shutdown: If you want to shut down the engine during the start or operation process, you can pull the throttle joystick to the lowest position and fine-tune it to the lowest position to shut down.



Engine parameter settings

1. Idle speed: The idle speed setting automatically locks the adjustable range according to different models of engine systems. It is recommended to appropriately increase the idle speed in environments where the sea wave height is greater than 500 meters.

2. Full speed: The full speed setting automatically locks the adjustable range according to different models of engine systems. Lowering it can reduce the engine thrust output.

3. Starting fuel quantity: If diesel can be used to start normally, the general starting fuel quantity is set to “0”. If the fuel is insufficient during the starting process and the flame inside the engine is too small, the “starting fuel quantity” can be increased appropriately. Appropriately increasing the “starting fuel quantity” can shorten the starting process. If using aviation kerosene, it is recommended to increase the “starting fuel quantity” by 10-20. The increase should be such that it can start normally without flameout.

4. Fuel consumption correction: Used with the return module (DTA). The efficiency of the engine oil pump will deviate in different use environments. Compensate according to the ratio of the actual fuel consumption to the fuel consumption displayed by the engine. After multiple calibrations, a more accurate value can be obtained.

5. Response mode: According to different use environments and fuels, select a suitable response mode and test from slow to fast. The engine does not stall during rapid acceleration and deceleration, and the engine does not have obvious flame ejection. It is recommended to select “Normal Mode” or a slower response mode in areas with an altitude greater than 1000 meters. It is recommended to appropriately increase the engine idle speed in areas with higher sea waves and when using a faster response mode.

6. Selection of Ultra-Fast Mode: When selecting ultra-fast mode, the atmospheric pressure value should be $\geq 99.5\text{kPa}$, the ambient temperature should be below 25°C , and aviation kerosene fuel should be used. The higher oil supply rate of the oil pump will reduce the stability of the engine, and in severe cases, there is a risk of fire. Please use this mode with caution depending on the environment!

7. Flameout Restart: The most common cause of flameout during engine operation is air entering the engine oil circuit. Setting the response mode too fast can also cause flameout during acceleration or deceleration. Excessive air in the oil circuit can reduce the success rate of flameout restart. The engine flameout



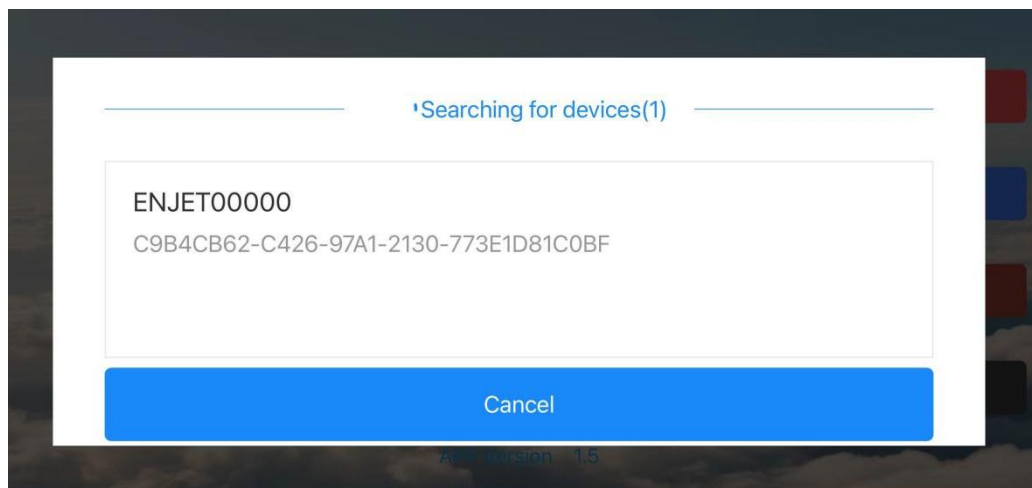
restart program requires more power than a normal start program, and insufficient discharge capacity or low voltage of the engine power supply battery can also reduce the probability of successful flameout restart. The flameout restart function does not guarantee that the engine can be safely restarted every time, and may even increase the risk of fire. This function has certain limitations, please use this function with caution.



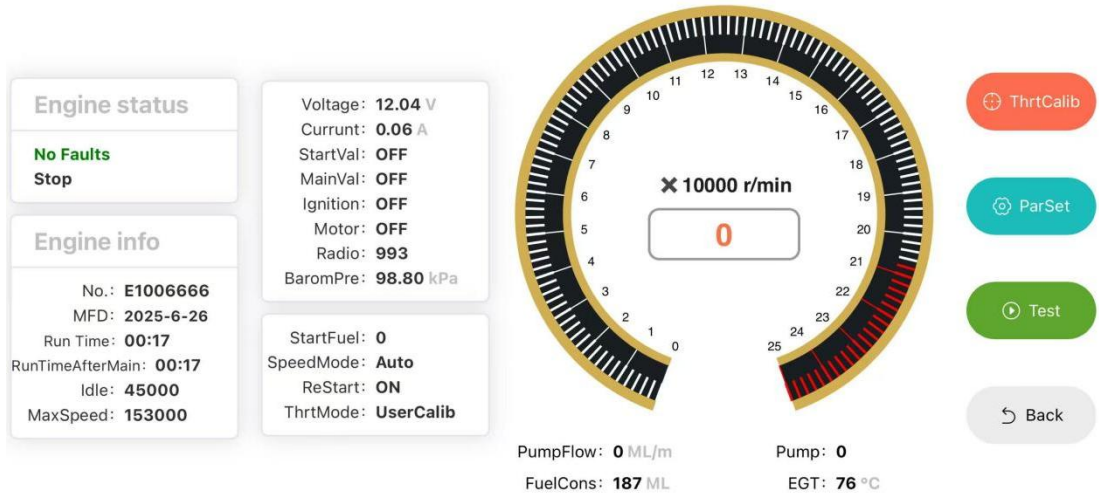
ENJET APP Operation Instructions

I. Start Running

1. Click the APP and run it
2. Select the APP language
3. Enter “Connect.” The APP will automatically search for discoverable engines and display the engine number. Click to select the engine you want to connect to.
4. Enter the main menu



Enter the main interface

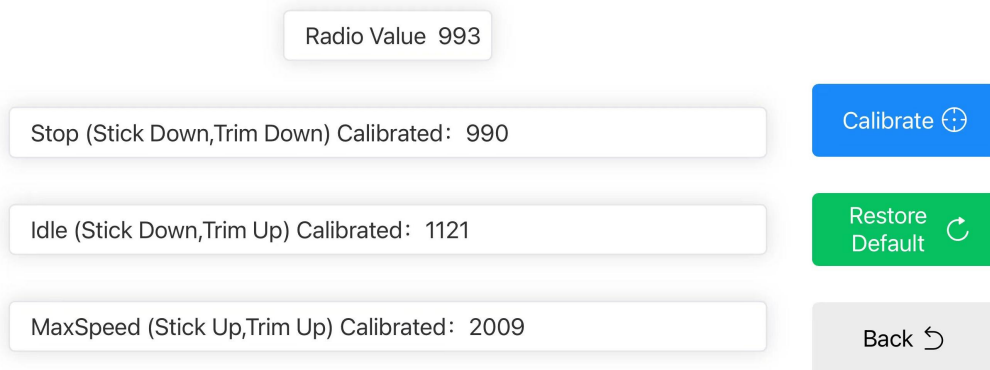


II. Throttle Calibration

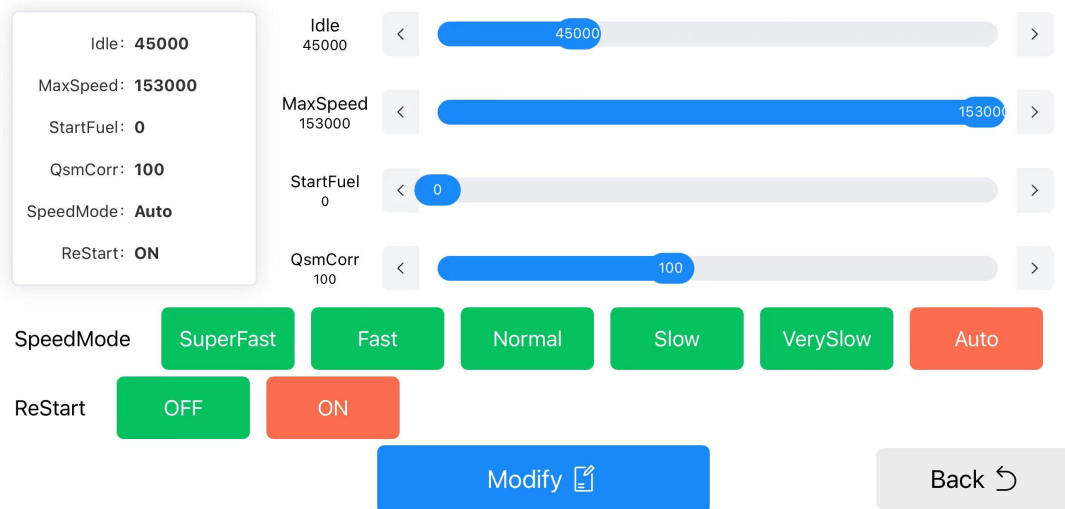
1. Enter the throttle calibration interface

2. Select the corresponding calibration item, and according to the prompt of the calibration item, put the remote control throttle rocker and trim to the corresponding position, and then click the "Calibrate" button to calibrate.

3. The "Calibrated" value is the same as the displayed remote control value, which means the calibration is successful. (A numerical deviation within ± 3 is considered a normal error)

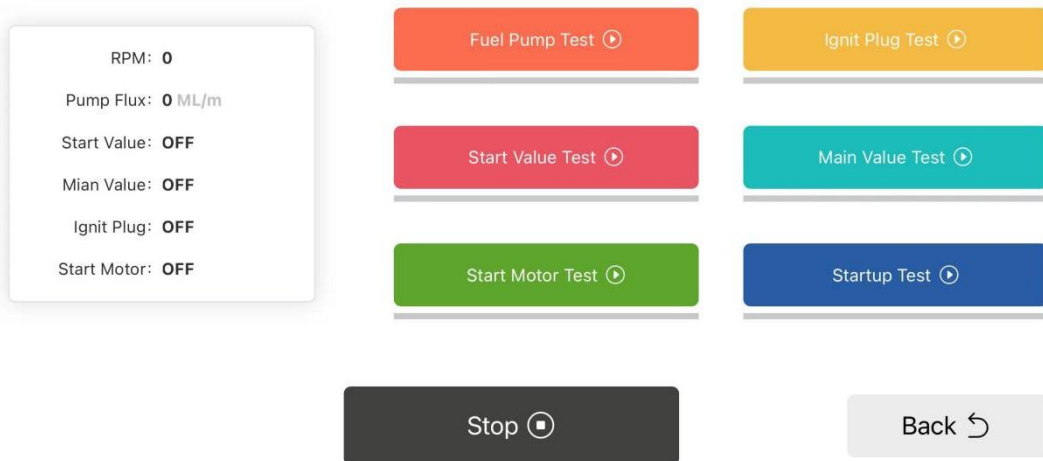


III. Parameter settings



1. Idle speed: Set the engine idle speed. The higher the idle speed, the faster the acceleration response of the engine at low speeds. The idle speed should be set as high as possible on the premise that the aircraft can stop.
2. Full speed: Set the maximum speed of the engine. If you need to reduce the maximum thrust output of the engine, reduce the speed.
3. Starting fuel quantity: Set the initial power compensation of the fuel pump when the engine is started. Increase the starting fuel quantity appropriately when starting is difficult (insufficient fuel quantity).
4. Fuel consumption correction: Correct the fuel pump flow display error. Different oil circuit resistance and oil quality will have certain errors. Correct the fuel pump flow to obtain a more accurate fuel consumption. Adjust the percentage value by adding or subtracting the percentage difference between the actual fuel consumption and the displayed fuel consumption.
5. Response mode: Five groups of preset response modes and automatic mode. Select the appropriate response mode according to the use environment. In environments with high temperature and altitude, try to select a slower response mode to obtain more stable engine performance. The automatic mode is suitable for most use environments and automatically adjusts the engine response according to the atmospheric pressure sensor data.
6. Flameout restart: Turn on or off the engine flameout restart function. Users need to understand the risks of this function based on their professional knowledge before turning it on.

IV. Component test

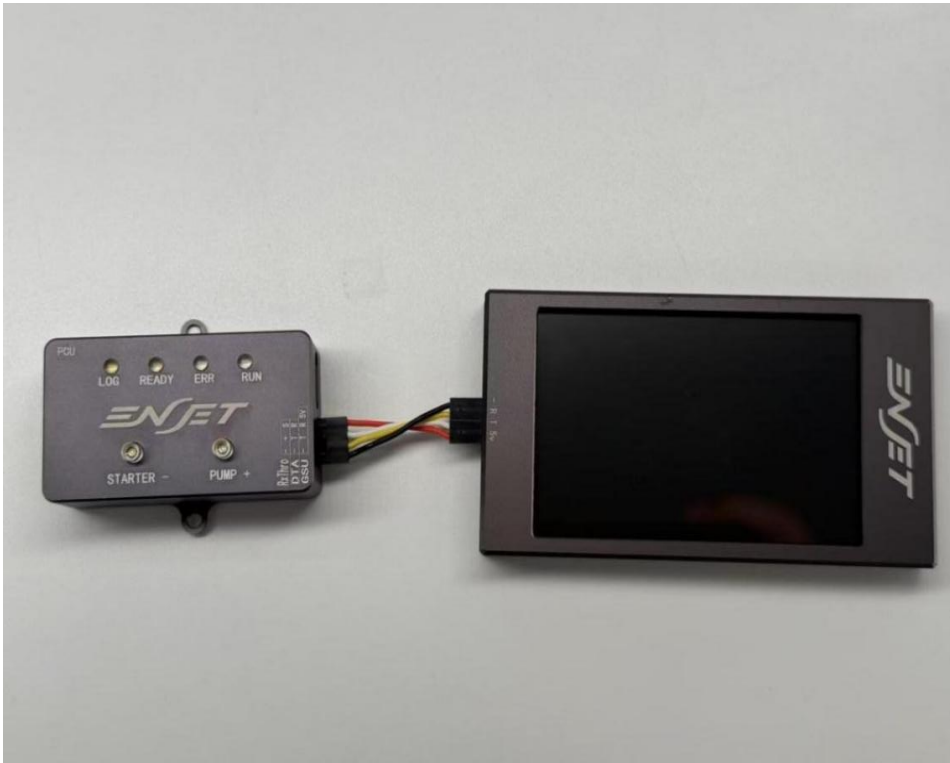


The engine can be tested for the function of each component when it is in the shutdown state.

1. "Oil Pump Test": The oil pump will slowly accelerate, and at the same time, it will link to the "Main Oil Valve Test" and the main oil valve will open.
2. Start Valve Test: Open the start solenoid valve to connect the start oil circuit.
3. Starter Test: The starter opens and drives the rotor to rotate.
4. Igniter Test: The igniter lights up for testing.
5. Main Oil Valve Test: The main oil circuit solenoid valve opens, and the main oil circuit is connected.
6. Start Test: The engine automatically ignites and starts to idle.
7. When the test button is on, the return button cannot stop the test. You need to click the test button again to make it pop up to stop, or click the "Stop" button to stop all tests.

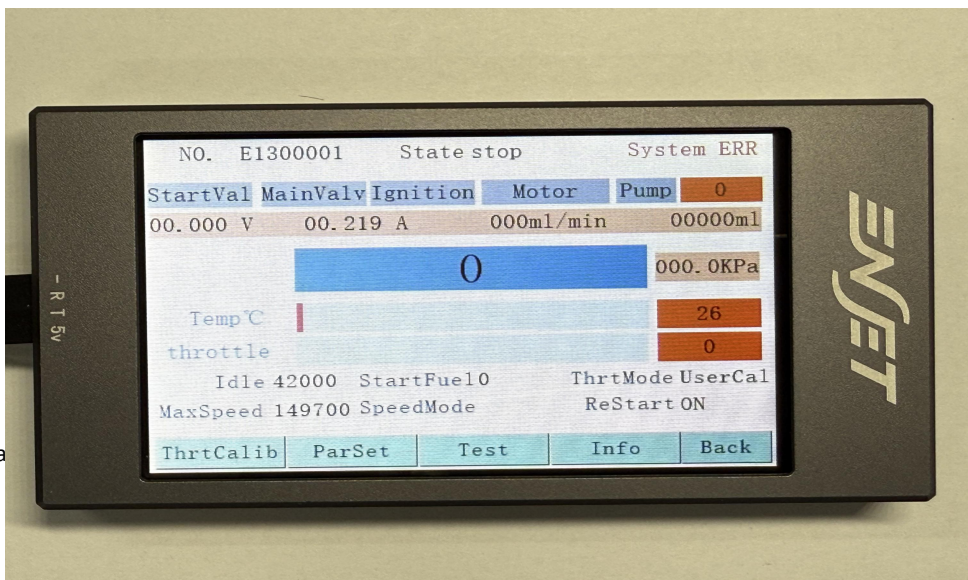


GSU Ground Setting Device Operation Instructions



Connection to PCU

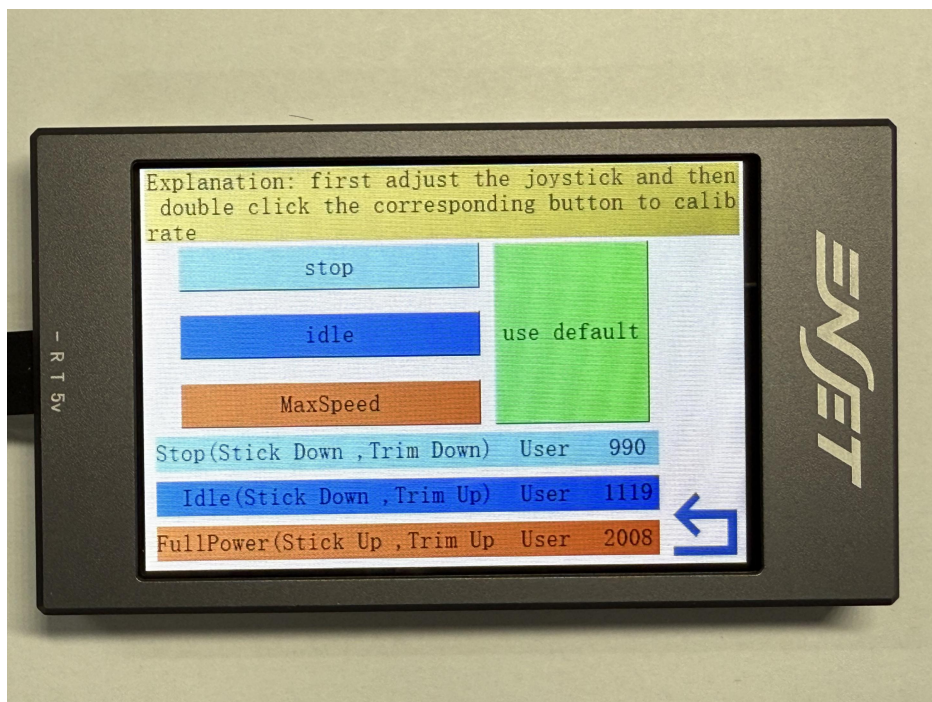
1. The GSU is a terminal for displaying and editing engine parameters, and it can be connected to or disconnected from the engine at any time.
2. The GUS is connected to the engine via the PCU using a 4P DuPont wire. The pin definition is (-RT5v). Note the negative (-) and (5v) of the DuPont wire. The screen can be lit up with the correct wiring sequence. R represents the data receiving end, and T represents the data sending end. When connecting to the PCU, the R of the GSU corresponds to the T of the PCU, and the T of the GSU corresponds to the R of the PCU, i.e., sending corresponds to receiving, and receiving corresponds to sending. The engine number displayed in the upper left corner of the screen indicates a successful connection. If the data line sequence is incorrect or the circuit is open, the upper left corner of the screen will display



"Connection interrupted.."

Throttle Calibration

1. Enter the throttle calibration interface
2. Select the corresponding calibration item, and according to the prompt of the calibration item, move the remote control throttle rocker and trim to the corresponding position, and then double-click the "Calibrate" button to calibrate.
3. Calibration should be performed in the order of "Stop", "Idle", and "Full Speed".



Parameter Settings

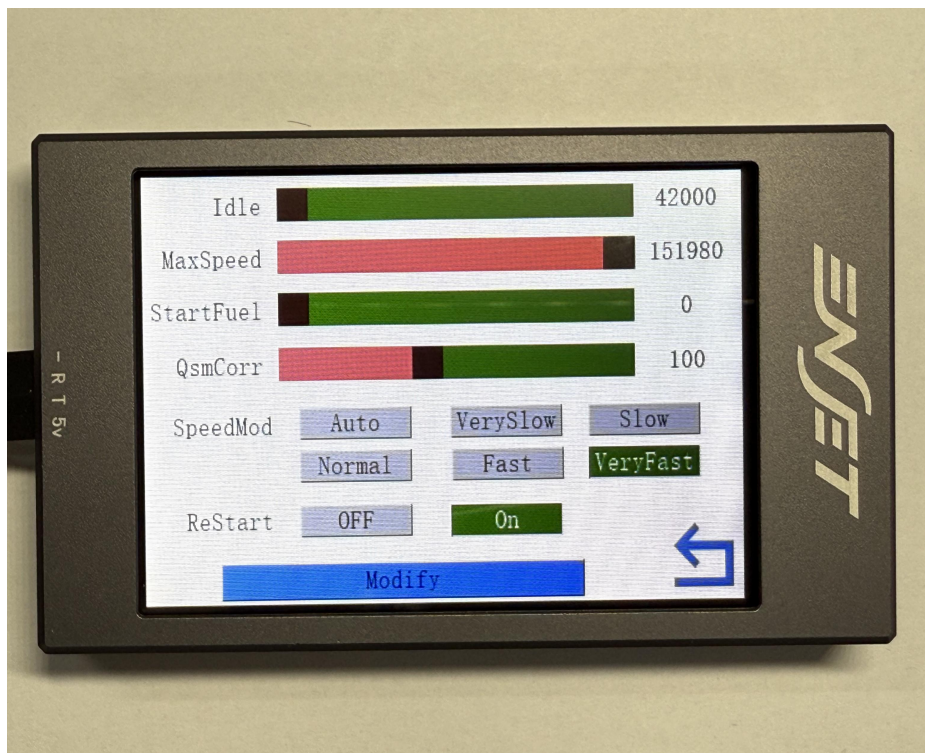
1. Idle Speed: Set the engine idle speed. A higher idle speed will make the engine's acceleration response faster at low speeds. Set the idle speed as high as possible while ensuring that the aircraft can stop.
2. Full Speed: Set the engine's maximum speed. If you need to reduce the engine's maximum thrust output, reduce the speed.
3. Starting Fuel: Set the initial pump power compensation when the engine starts. Increase the starting fuel appropriately when starting is difficult (insufficient fuel).
4. Fuel Consumption Correction: Correct the fuel pump flow display error. Different oil circuit resistance and oil quality will have a certain error. Correct the fuel pump flow to obtain a more accurate fuel consumption. Adjust the



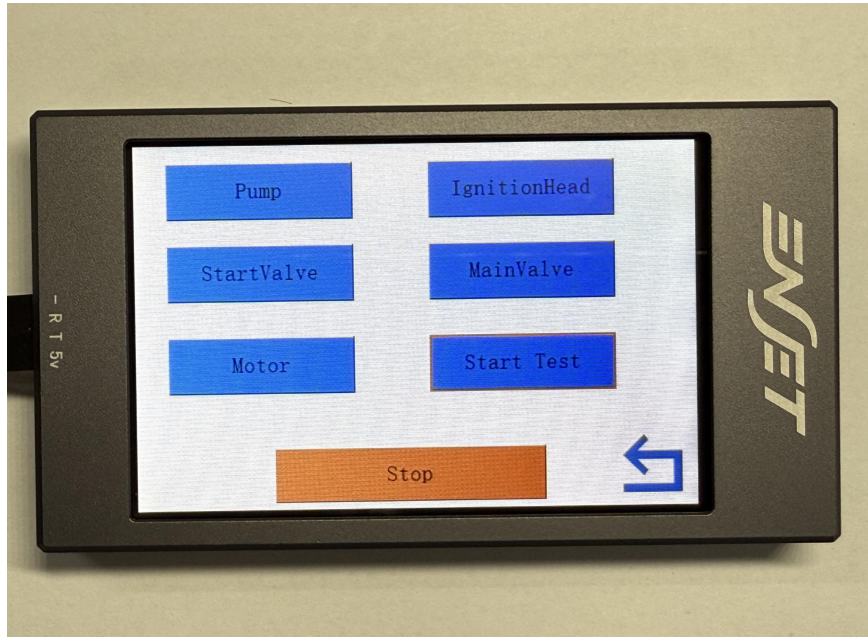
percentage value by adding or subtracting the percentage difference between the actual fuel consumption and the displayed fuel consumption.

5. Response Mode: Five preset response modes and automatic mode. Select the appropriate response mode according to the usage environment. In environments with higher temperature and altitude, try to select a slower response mode to obtain more stable engine performance. Automatic mode adapts to most usage environments and automatically adjusts the engine response based on atmospheric pressure sensor data.

6. Flameout Restart: Enables or disables the engine flameout restart function. Users need to understand the risks of this function based on their professional knowledge before enabling it.



Component Test

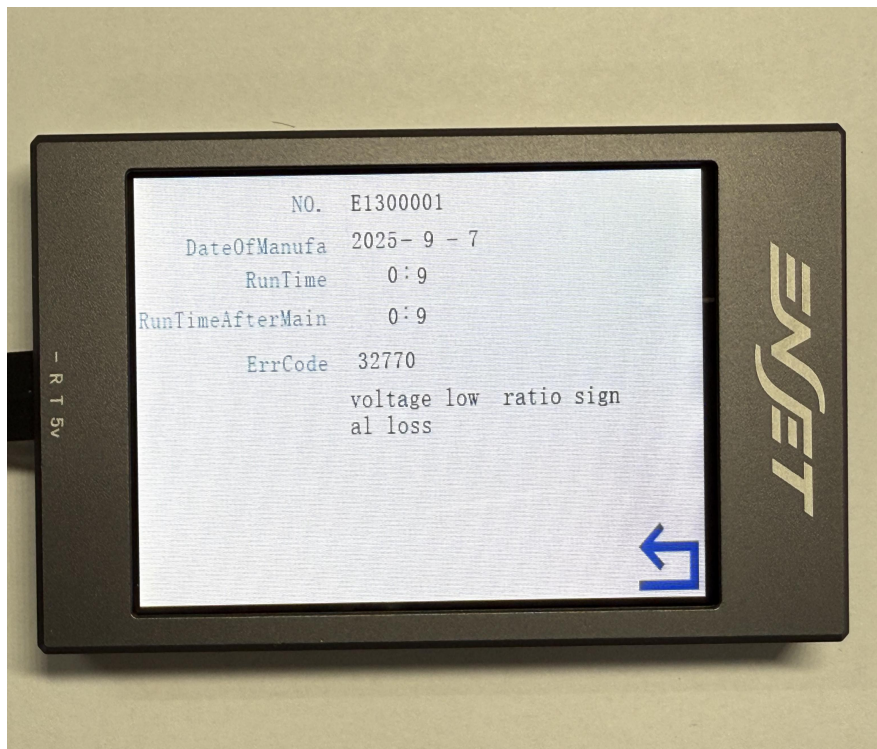


The engine can be tested for the function of each component when it is in the shutdown state.

1. "Oil Pump Test": The oil pump will slowly accelerate, and the "Main Oil Valve Test" will be linked, and the main oil valve will open.
2. Start Valve Test: Open the start solenoid valve to turn on the start oil circuit.
3. Starter Test: The starter opens and drives the rotor to rotate.
4. Ignition Head Test: The ignition head lights up for testing.
5. Main Oil Valve Test: The main oil circuit solenoid valve opens and the main oil circuit is turned on.
6. Start Test: The engine automatically ignites and starts to idle.
7. When the test button is on, the return button cannot stop the test. You need to click the test button again to make it pop up to stop, or click the "Stop" button to stop all tests.

Engine Information

1. Display engine number
2. Engine manufacture date
3. Total engine running time
4. Running time after maintenance (cleared after each routine maintenance)
5. Current fault: Displays engine fault codes and fault information.





PCU function introduction

1. The PUC controller has a built-in Bluetooth module that can be connected to the ENJET APP for parameter adjustment.

2. Basic operation instructions for oil pump button

In the shutdown state, long press the “STARTER-” button to make the starter rotate, and long press the “PUMP+” to control the oil pump to rotate. In the shutdown state, press the “STARTER-” button and the “PUMP+” button at the same time to start the engine. After the engine is started, long press the button “PUMP+” to accelerate the engine; long press the button “STARTER-” to decelerate the engine; press the button “PUMP+” and the button “STARTER-” at the same time to stop the engine.

3. Status indicator

Color	Description	LED solid on represents function	LED flashing	LED off
White	LOG	Data logging normal	Storage card failure	No storage card
Yellow	READY	Turn the start switch to the ready state	-----	-----
Red	ERR	System fault detected	-----	System without fault
Green	RUN	-----	The engine is running	-----

4. Illustration:



PCU pin definitions:

1: Throttle negative	2: Throttle positive	3: Throttle signal	
4: DTA negative	5: Tx transmit	6: Rx receive	
7: GSU negative	8: Tx transmit	9: Rx Receive	10: 5v Output



Telemetry Settings for Data Transfer Adapter/Return Module

The return module supports 2 engine signal inputs and outputs telemetry information to the remote control, occupying a total of 18 telemetry values.

DIP switch definition:

1. JETI
2. FUTABA
3. FrSky
4. Reserved

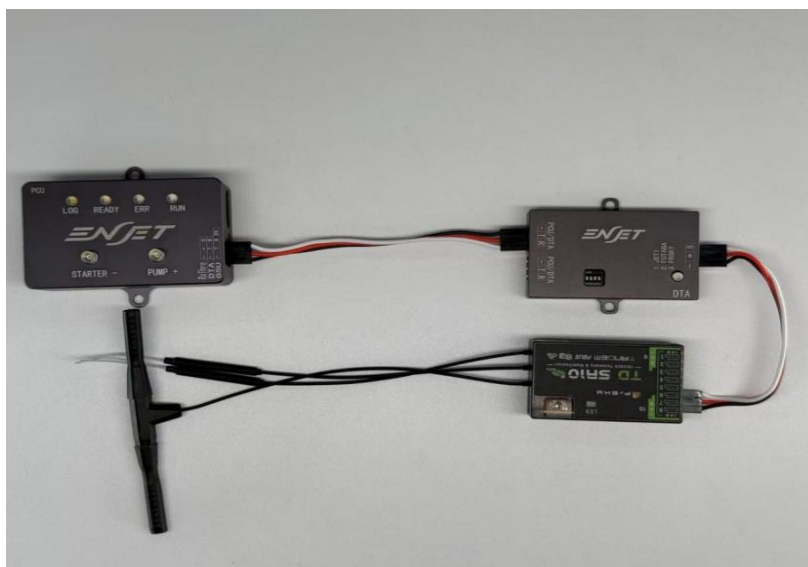
Indicator light definition:

Red light flashing: Data exchange abnormal, DIP switch does not correspond to the remote control type.

Green light flashing: Data communication is normal



The connection of DTA is shown in the figure



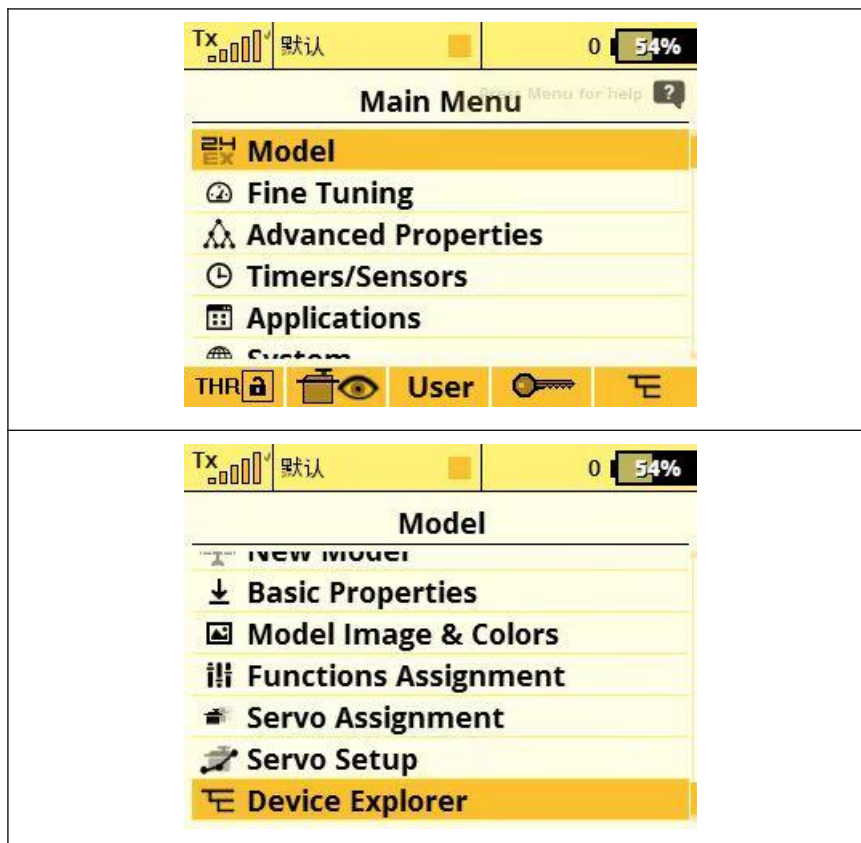
STATE status analysis:

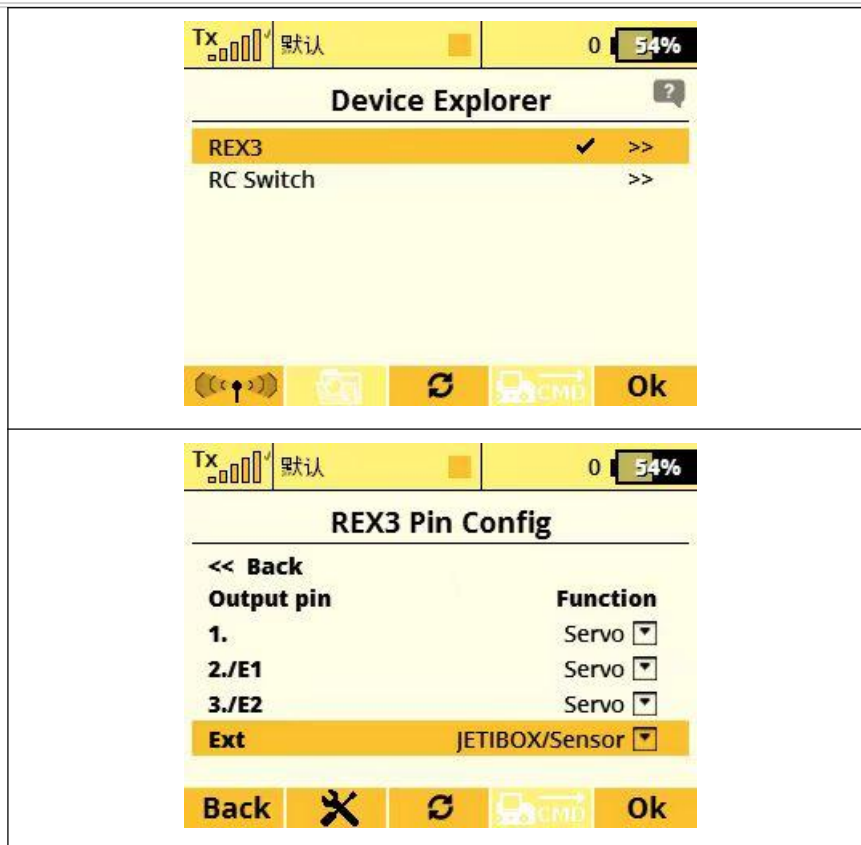
state status analysis	
Status code	Analysis
0	Downtime
1	Starting
2	Running
3	Cold machine
4	Flameout Restart
7	Component Test
8	Remote Control Calibration
9	Flameout Restart
11	Engine Ready
33	Startup Stage 1
34	Startup Stage 2
35	Startup Stage 3
36	Startup Stage 4
37	Startup Stage 5
38	Startup Stage 6

JETI Mode:

The return module supports 2 engine signal inputs and simultaneously outputs telemetry information to the remote control, occupying a total of 14 telemetry values.

1. Flip the DTA DIP switch No. 1 to the ON position.
2. Connect the DTA to the receiver EXT slot, or to a custom slot in JETIBOX/SenSor mode, and connect the DTA to the PCU.
3. Turn on the remote control and receiver, and power on the engine.
4. Enter “Timer/Sensor” in the remote control menu.
5. In the “Timer/Sensor” interface, click “Auto” and reset the telemetry setting to “Yes”.
6. The remote control automatically scans and recognizes the sensor and displays it.
7. Return to “Timer/Sensor”, enter “Telemetry Display Settings”, click “+”, and select the desired telemetry value in “Telemetry”.
8. Display example on JETI12 screen.







Telemetry settings

Tx 默认 0 54%

Main Menu ?

- Model
- Fine Tuning
- Advanced Properties
- Timers/Sensors**
- Applications
- System

THR User

Tx 默认 0 54%

Sensors/Logging Setup ?

ENJET

1	1 Engine Speed	Rpm	Yes
2	1 Temperter	C	Yes
3	1 Voltage	V	Yes
4	1 Current	A	Yes
5	1 Engine State		Yes

Auto (19) **Ok**

Tx 默认 0 52%

Displayed Telemetry ?

	Telemetry	Double
1	ENJET: 1 Engine Speed [Rpr]	No
2	ENJET: 1 Temperter [C]	No
3	ENJET: 1 Voltage [V]	No
4	ENJET: 1 Current [A]	No
5	ENJET: 1 Engine State []	No

+ **Ok**

Tx 默认 0 56%

ENJET: 1 Engine Speed	ENJET: 1 Voltage
0Rpm	7.33V
ENJET: 1 Temperter	ENJET: 1 Current
29C	0.00A
f15	ENJET: 1 Engine State
USB	0
Page 1/2	ENJET: 1 Pump Flow
	0mL/m

Start **Clr**



RiceSky frsky mode

The return module supports 2 engine signal inputs and outputs telemetry information to the remote control, occupying a total of 18 telemetry values.

1. Flip the DTA DIP switch 3 upwards to the ON position.
2. Connect the DTA to the receiver's S.Port slot. Connect the DTA to the PCU.
3. Turn on the remote control and receiver, and power on the engine.
4. Enter the remote control's "Menu" "Telemetry" "Create Custom Sensor"
5. Change the sensor to a name that matches the application ID, and set all physical IDs to 00.
6. It is especially important to set a minimum and maximum value for the temperature °C range, otherwise temperatures below 0°C will not be displayed. Other telemetry value ranges can be adjusted directly to the maximum value.
7. Return to the main interface to configure the set controls, select "Telemetry" for "Source" and select the members to be added.

Ruisikai Telemetry		Application ID	Protocol Unit
Engine No. 1 speed	Engine1 EngineSpeed	0200	r/m
Engine 1 Exhaust Temperature	Engine1 Temperter	0201	°C
Engine 1 Engine Voltage	Engine1 Voltage	0202	mV
Engine 1 Engine Current	Engine1 Current	0203	mA
Engine No. 1 engine status	Engine1 EngineState	0204	Status analysis
Engine No. 1 engine oil pump flow	Engine1 PumpFlow	0205	m/min
Engine No. 1 engine fuel consumption	Engine1 FuelCons	0206	ml
No. 1 engine oil pump power	Engine1 PumpPower	0207	PW
Engine 1 Atmospheric Pressure	Engine1 Pressure	0208	Kpa
Engine 2 Engine Speed	Engine2 EngineSpeed	0210	r/m
Engine 2 Exhaust Temperature	Engine2 Temperter	0211	°C



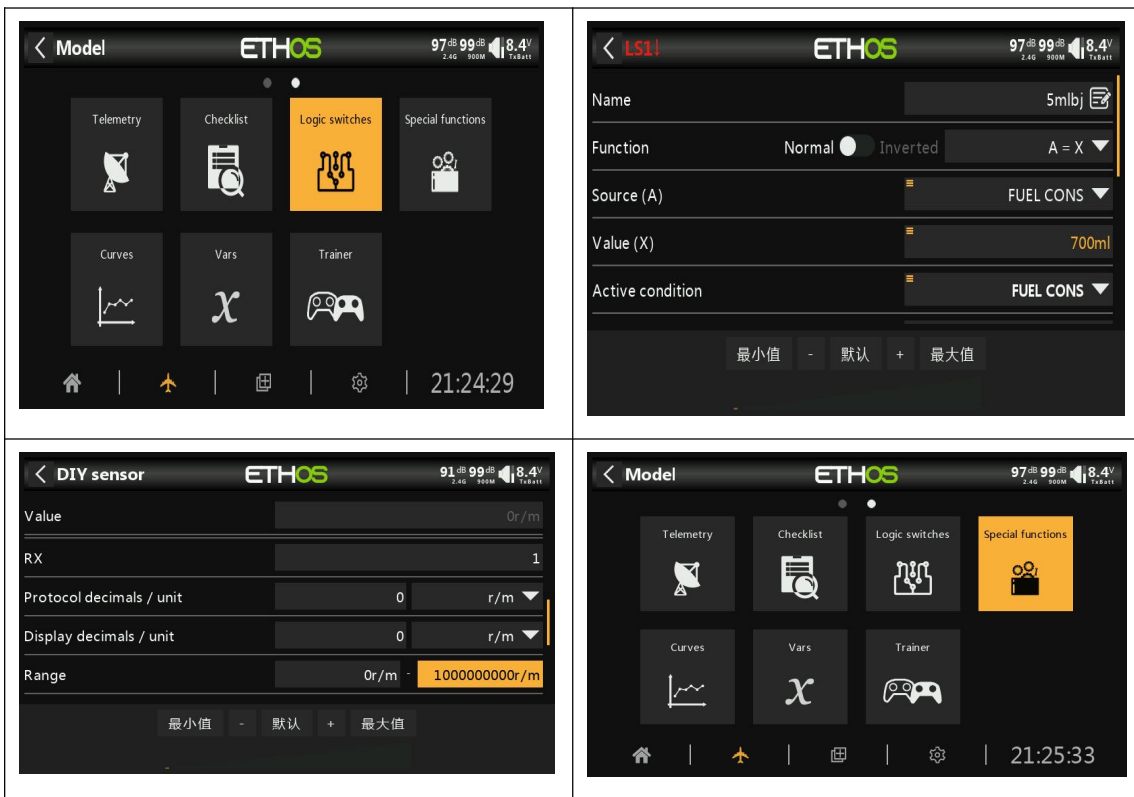
Engine 2 Voltage	Engine2 Voltage	0212	mV
Engine 2 Engine Current	Engine2 Current	0213	mA
Engine 2 Engine State	Engine2 EngineState	0214	Status analysis
Engine 2 Oil Pump Flow	Engine2 PumpFlow	0215	m/min
Engine 2 Fuel Consumption	Engine2 FuelCons	0216	ml
Engine 2 Oil Pump Power	Engine2 PumpPower	0217	PW
Engine 2 atmospheric pressure	Engine2 Pressure	0218	Kpa

The image displays four screenshots of the ETHOS mobile application interface:

- Model Screen:** Shows a main menu with options: Telemetry, Checklist, Logic switches, Special functions, Curves, Vars, and Trainer. The time is 21:21:31.
- Telemetry Screen:** Displays sensor management options: Discover new sensors (OFF), Competition (only RSSI and Battery) (OFF), and Bluetooth (OFF). It includes buttons for 'Create DIY sensor' and 'Create calculated sensor'. A table lists sensors: 2A (0.00A), Temperter (0°C), and v (11.27V).
- DIY sensor Screen (Left):** Shows configuration for a sensor with fields for Value (0r/m), Name (RPM), Physical ID (00), Application ID (0200), Module (INT/EXT), and Band (2.4G/900M).
- DIY sensor Screen (Right):** Shows configuration for a sensor with fields for Value (0r/m), RX (1), Protocol decimals/unit (0), Display decimals/unit (0), and Range (0r/m to 1000000000r/m).
- TEST Screen:** Displays a dashboard of real-time data: RPM (0r/m), PUMP FLOW (0ml/m), PUMP PW (0), V (11.26V), FUEL CONS (0ml), Temperter (27°C), A (0.00A), STATE (0), and pressure (99.24kPa). The time is 21:26:59.

8. Taking the Reisky X20RS setting "Fuel Consumption Warning" as an example

9. To set a fuel consumption warning, enter "Logic Switch" and add a logic. Function A=X, source (A) selects telemetry fuel cons, value (X) is set to the desired warning value, and the effective condition selects telemetry FUEL CONS. Return to the special function to add an operation, the operation is set to play an audio file (the audio file needs to be recorded in advance or provided by the manufacturer), the status is turned on, the effective condition selects the logic switch, and the member selects the logic that was just set. The playback type can be added according to personal preference.





Futaba mode

- 1.Futaba telemetry We simulate all engine data as temperature sensors, occupying slots 8-23.
- 2.Connect the DTA to the receiver SBUS2 slot. Connect the DTA to the PCU.
- 3.Turn on the remote control and receiver, and power on the engine.
- 4.Turn the DTA DIP switch No. 2 upwards to the ON position.
- 5.Next, we will develop more comprehensive telemetry information display.

槽位	遥测名称	
8	1号发动机转速	Engine1EngineSpeed
9	1号发动机排气温度	Engine1Temperter
10	1号发动机电压	Engine1Voltage
11	1号发动机电流	Engine1Current
12	1号发动机发动机状态	Engine1EngineState
13	1号发动机油泵流量	Engine1PumpFlow
14	1号发动机燃油消耗量	Engine1FuelCons
15	1号发动机油泵功率	Engine1PumpPower
16	2号发动机转速	Engine2EngineSpeed
17	2号发动机排气温度	Engine2Temperter
18	2号发动机电压	Engine2Voltage
19	2号发动机电流	Engine2Current
20	2号发动机发动机状态	Engine2EngineState
21	2号发动机油泵流量m/min	Engine2PumpFlow
22	2号发动机燃油消耗量ml	Engine2FuelCons
23	2号发动机油泵功率	Engine2PumpPower



Fault code

Startup failure 1	Startup phase 1 timeout
Startup failure 2	Startup phase 2 timeout
Startup failure 3	Startup phase 3 timeout
Startup failure 4	Startup phase 4 timeout
Startup failure 5	Start phase 5 timeout
Startup failure 6	Startup phase 6 timeout
Low battery voltage	Battery voltage is too low, please charge before use
High battery voltage	Battery voltage is higher than engine setting
Ignition head failure	Ignition head burned or open circuit
Abnormal temperature signal	Thermocouple is damaged and needs to be replaced
Engine not connected	PCU communication failure with the engine. Check the wiring harness for open circuits and replace with a new wiring harness.
Remote control signal lost	No remote control value input detected

Common faults and troubleshooting methods

Startup failure

Problem description	Cause analysis	Remedial measures
Engine ignition failure	The fuel line is not pre-filled with fuel, and the fuel line is not bent or blocked. Spark plug failure	Use the GSU test function to fill the oil pipe with fuel Using the GSU "test ignition", if there is no current displayed or no bright spot observed from the tail nozzle, contact after-sales service for factory repair
Engine start failure	Low battery Starter motor failure Spark plug failure	Battery charging Return to factory for repair Return to factory for repair
Throttle does	Remote control not	Recalibrate the remote control



not match actual engine speed	calibrated	
Start motor slipping, with abnormal noise	Fuel on the contact surface of the compressor turbine nut and starter motor clutch rubber ring Rubber ring wear	Use a cotton swab dipped in alcohol or cleaning agent to clean the rubber ring and replace it
Engine ignition successful but start process aborted	Air bubbles in the fuel supply pipe Oil pump not working	Air leak in the oil circuit, check all oil pipe joints
Exhaust temperature or engine speed unstable	The remote control antenna signal is being interfered with	Troubleshooting interference sources
Oil pump does not work after starting	Stalled or circuit failure	Check if the oil pump is stalled or the drive circuit is faulty
The oil pump is already pumping oil to the engine, but the combustion chamber only emits white smoke and no flame	Insufficient flame power (aging/carbon deposits/flooded with oil)	Return to factory for repair
The oil pump starts to run, but there is no flame inside the engine and no white smoke	No fuel entering the engine	Remove the oil inlet pipe from the engine oil inlet and observe whether fuel flows out. If not, check whether the oil circuit has excessive resistance or is blocked. You can also try increasing the starting fuel quantity.
Excessive preheating time	Starting fuel level too low	After starting, the engine preheating temperature reaches 100 degrees Celsius before acceleration begins. If this process is very slow (provided there is no flameout), the starting fuel level can be increased in the settings. The amount of increase depends on the engine's flameout situation during startup.
Flameout during startup	Air entering the fuel line or fuel level too low	If the flame goes out and turns into white smoke when the engine starting speed exceeds 10,000 RPM, check whether the fuel line resistance is too high (whether there are



		impurities in the fuel filter), and increase the starting fuel level in the settings.
The starter motor rotates but the engine rotor does not move	Oil stains on the clutch O-ring or the clutch is stuck and cannot pop out	Check whether the clutch is too dirty to be thrown out, and whether the clutch O-ring is slipping due to oil. (If the clutch cannot be thrown out during startup, you can gently tap the starter housing with a tool to vibrate it and let the clutch pop out.)
Startup parameter settings for diesel converted to kerosene	Kerosene requires more fuel than diesel	If the engine can be started normally with diesel but cannot be started with kerosene, set the starting fuel quantity to be 10-20 greater than the setting for diesel.
Multiple startup failures	There will inevitably be fuel accumulation in the engine, and there is a risk of fire when starting again. Prepare a carbon dioxide fire extinguisher and stay away from flammable and explosive materials.	The treatment method is to restart the engine and wait for the engine to start spraying fire, then immediately remotely shut down the engine and let it cool automatically to 90 degrees. Then restart the engine and immediately remotely shut down the engine when it starts spraying fire. Repeat this step several times to consume the residual oil inside the engine. (Before using this method, you need to pour out a large amount of residual oil inside the engine, turn the engine intake port downwards and pour out the accumulated oil from the front of the engine, and wipe it clean with a paper towel. Due to the internal structure of the engine, the accumulated oil cannot be poured out from the rear of the engine.)

Operation failure

Fault phenomenon	Cause analysis	Treatment method
Flameout when pushing the throttle quickly or releasing the throttle quickly	Accelerating or decelerating too quickly	Lower the response mode
Idle speed is too high and cannot be reduced to the set value	The minimum power limit of the oil pump or the remote control value deviates from the calibration value.	It is recommended to appropriately increase the idle speed in high-altitude areas and recalibrate the throttle travel.
Full throttle speed does not reach maximum or rises slowly.	Excessive oil circuit resistance.	Each time the engine is powered on again, it needs to learn the minimum and maximum values of the oil pump. The engine's acceleration only reaches its fastest after it learns the maximum value of the oil pump. Check whether the oil circuit resistance is too high and recalibrate the throttle travel.
The speed display suddenly becomes 0 after the engine accelerates to a certain speed.	Speed sensor failure.	Return to factory for repair