

6. JOB— Hours of operation since the timer was reset.

- To reset "JOB" time:
 - In any interface, press and hold the "S" button to get the setting interface.
 - Press the "M" button 8 times until display shows "JOB" icon start to flash.
 - Press the "S" button once until display shows "0000.0" icon start to flash, JOB timer is reset and you will begin to record the next job interval.

7. Alert RPM — The setting value of the warning reminder.

- When the engine RPM value exceed the alert value, warning icon will flash to remind.
- Programming Alert RPM:
 - In any interface, press and hold the "M" button to get the setting interface.
 - Press the "M" button 10 times until the Alert RPM value start to flash.
 - Press the "S" button until you get desired Alert RPM value (press once to increase the value by 100, press and hold the value to increase by 1000). Setup Range OFF/100-25000RPM.
 - Release the button and wait for 10 seconds or press and hold the "M" and "S" buttons at the same time for 2 seconds to save the setup, the setting of Alert RPM is completed.

- If the Alert RPM value is set to OFF, which means that the Alert RPM function is closed.

8. MAX RPM — Display the maximum RPM recorded. During the last period of operation.

- To reset MAX RPM: In any interface, press and hold the "S" button to get the setting interface. Press the "M" button until display shows MAX RPM, then press the "S" button until display shows MAX RPM "00000" start to flash, MAX RPM is reset.

9. Programmable engine firing patterns --- Determined the amount of pluses(sparks) per engine revolution.

This product provides 9 programmable firing patterns, which can be selected according to the corresponding relationship in the form below.

Engine firing patterns	Engine type	Spark plug firing and engine rotate laps	RPM Capacity
1P1R	4 stroke 2 cylinder 2 stroke 1 cylinder	1 spark per revolution	25000
1P2R	4 stroke 1 cylinder	1 spark 2 revolution	25000
2P1R	2 stroke 2 cylinder	2 spark per revolution	12500
3P1R	4 stroke 6 cylinder 2 stroke 3 cylinder	3 spark per revolution	8000
3P2R	4 stroke 3 cylinder	3 spark 2 revolution	16000
4P1R	4 stroke 8 cylinder	4 spark per revolution	6250
5P2R	4 stroke 5 cylinder	5 spark 2 revolution	10000
6P1R	4 stroke 12 cylinder 2 stroke 6 cylinder	6 spark per revolution	4000
8P1R	4 stroke 16 cylinder	8 spark per revolution	3120

Note: Some 4 stroke 1 cylinder engine is 1P1R, the setting is the same way as the 2 stroke 1 cylinder engine.

- To set the engine firing patterns:
 - In any interface press and hold "S" button to get the display interface
 - Press the "M" button 12 times until the display shows "1P1r" icon start to flash.
 - Press the "S" button to select the desired stroke mode.

d) Release the button and wait for 10 seconds or press and hold the "M" and "S" buttons at the same time for 2 seconds to save the setup.

Note: If the obtained RPM is not accurate, for example, the RPM is half of the actual RPM, you can adjust it by programming the firing patterns.

10. Set the warning voltage value

- This function is used to measure the real-time voltage value of the user's battery; and the alarm warning for the voltage is designed.
- High & Low voltage warning setting
 - In any interface press and hold "S" button to get the display interface.
 - Press the "M" button 14 times until the display shows "H-OFF" icon start to flash.
 - Press the "S" button to set the high or low warning voltage value you want.
- The set method of low voltage alert are same as high voltage.

- When the voltage is high-voltage or low-voltage, the current voltage value and the red backlight will flash at the same time to remind.
- The maximum value of the low voltage setting is always less than or equal to the overvoltage setting value minus 0.5V.

Note: High voltage reminder range: 8.5-65V, Low voltage reminder range: 8-64.5V.

Product Specifications & Parameters

ITEM NAME	PARAMETERS	ITEM NAME	PARAMETERS
Product model	RL-HM005L1	Battery type	CR2450
TOT hours range	0.0-99999H	Working voltage	DC8-65V
Timing accuracy	0-9999.9H: 0.1H 10000H-99999H: 1H	Display window size	19.1x35mm
SVC hours range	OFF, 5-2000H	Product dimension	Φ64,4x36.7mm

ITEM NAME	PARAMETERS	ITEM NAME	PARAMETERS
TOT initial time range	0-99999H (It is only can be reset 1 hour before engine working)	Housing material	ABS+PC
RPM range	0-25000RPM	Waterproof rate	IP68
RPM display accuracy	10RPM	Product Weight	(About 82g)
Panel cut-out size	Φ60,5mm		

Product Dimension

Unit: mm

Marine Rocket

OPERATING INSTRUCTIONS

Tach/Hour/Volt meter

Product Accessories List

1 Product*1	2 Cut-out sticker*1	3 Connector wiring*1
4 Mounting bracket*1	5 Cable tie*2	6 M4 Flange nut*2
7 User manual*3	8 Run/leader color box*1	

Please refer to the quick installation manual for installation method.
RLT-Fix2.

Way of wiring

1. Description of the connection port

The pin function of the 8-hole connector is as follows:

Pin NO.	Pin mark	Pin meaning	Description
1	B-	Input negative power supply	Connect to the negative pole of the battery
2	S	Spark plug	Connect with spark plug
3	N/A	Standby	ODM custom pin function. (factory implementation)
4	B+	Input positive power supply	Connect to the positive pole of the battery
5	N/A	Standby	ODM custom pin function. (factory implementation)
6	N/A	Standby	ODM custom pin function. (factory implementation)
7	N/A	Standby	ODM custom pin function. (factory implementation)
8	N/A	Standby	ODM custom pin function. (factory implementation)

2. Install connection port

Step1: B+ (pin 4) & B- (pin 1) installation

- The pin 4(B+) is connected to the positive pole of the battery, and the pin 1(B-) is connected to the negative pole of the battery.
- Please make sure the battery voltage matches the voltage of the Tach/Hour meter before connecting. Excessive voltage will damage the product.

Step2: PIN2 Spark plug connection

- Install the sensor on the proper position of spark plug.

Product Usage

1. Product display interface.

- From the Main interface(Display clock when engine is off, Display real-time RPM when engine is on), press the "S" button to switch each interfaces successively: TOT(Total Hours) and Clock, Voltage, JOB(Partial Hours), MAX RPM, Alert RPM, 1P1r(Firing Patterns), MAX Voltage value, High voltage warning, Low voltage warning.

2. TOT— Total hours of operation

- Press the "M" button to check the TOT hours and remained SVC maintenance time.

- TOT time can not be reset.
- The TOT time max value is 99999 hours; When the TOT timing range is 0.0-9999.9 hours, the timing accuracy is 0.1H; When the TOT timing exceed 9999.9 hours, the timing accuracy is 1H.
- When the TOT time exceed 99999 hours, the timing will restart from 0.
- The "TOT" icon will flashing when timing is in progress.

3. Hour meter initial time setting

- You can program a start hours (old hour meter data) to replace an old hour meter.

Note: The initial time setting will not be set again after 1 hour of engine operation.

- In any interface, press and hold the "S" button to get the setting interface.
- Press the "M" button twice until display shows "0000.0" icon start to flash.
- Press and hold the "M" button to switch the setting position, press the "S" button to set the value of you want.
- Release the button and wait for 10 seconds or press and hold the "M" and "S" buttons at the same time for 2 seconds to save the setup, and the timer initial value setting is completed.

4. Clock— The clock is a 24-hour clock.

- In any interface, press and hold the "S" button to get the clock setting interface, at this time the hours on the screen start to flash.
- Press the "S" button to set the hour value of you want, then press the "M" button to switch to the minute setting position, at this time the minutes value start to flash.
- Press the "S" button to set the minute value of you want, release the button and wait for 10 seconds or press and hold the "M" and "S" buttons at the same time for 2 seconds to save the setup, and the clock setting is complete.

5. SVC— Maintenance interval time. Note: Timing is countdown.

- Programming SVC time:
 - In any interface, press and hold the "S" button to get the setting interface.
 - Press the "M" button 9 times until the SVC time value start to flash, Press the "S" button to set the value of you want.
 - Release the button and wait for 10 seconds or press and hold the "M" and "S" buttons at the same time for 2 seconds to save the setup, and the SVC time setting is completed.
 - The SVC time setting range is OFF/5-2000H. If the SVC is set to OFF, which means the SVC function is closed.

- The SVC time will remind 2 hours in advance, SVC icon will be flashed.
- There are 2 kinds of methods to cancel the maintenance reminder:
 - It will be cancelled 2 hours later automatically;
 - Press and hold the "S" button for 2s in related maintenance interface to cancel the reminder.
- SVC hours will be reminded 2 hours in advance by SVC-remained SVC hours flashed, press and hold the button 2 second to quit the reminder. Reminder method of SVC hours reminder: SVC+NOW flashed, press and hold the button 2 second to quit the reminder or quit automatically 2 hours later, the next SVC intervals will display as the 2 hours less of preset value.