

RFRemotech Radio Frequency Remote Technology
Remote Control Products, Remote Controllable Service

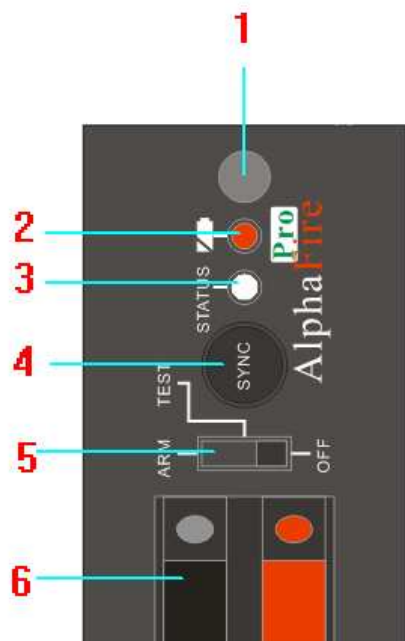
Firing Module RF1K2

User's Instruction

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Warning!!!



A. The purpose of this device is to cause the ignition of fireworks. Fireworks are explosives and may cause personal injuries or death to yourself or others, including spectators. You are responsible for the safe and legal use of this device according to the laws and regulations of your country and/or state/province/district. RFRemotech is not responsible for illegal or unsafe use of this device. The buyer/user assumes all responsibility and liability in the use of this device and further agrees, by purchase and/or use of this device, to indemnify and hold

harmless RFRemotech against all liability for injury, loss, or damage direct or consequential arising out of the use of, or inability to use this device.

B. If RED of LEARN/FIRE LED #3 above keeps turned on though 3-position switch is OFF, don't use the module any more, the unit will fire e-match or igniter randomly. It is dangerous and may do damage to body!

A. Firing Module

Two Working Modes:

1-Test: To check if the connection of igniter / ematch is in good condition. See "B.Test" below.

2-Fire: To fire igniter / ematch to make a fireworks show. There are 3 firing modes selectable. See "E. Three Firing Modes" below.

Specifications:

Model No.: RF1K2

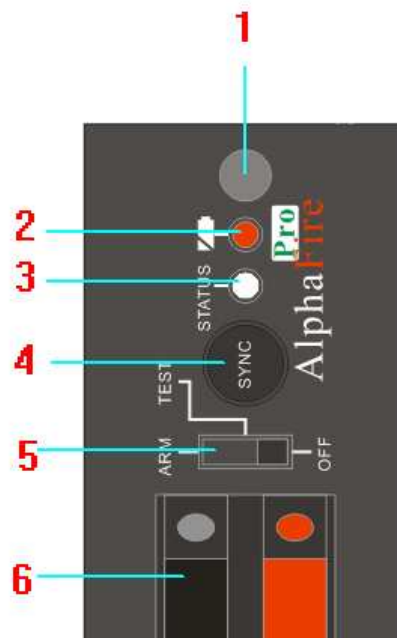
Modulation: FSK 433.92MHz

Type: Learning Code

Cue: 1

Power: 9V battery, available either rechargeable or disposable

Firing Current: >750mA, Max.5A



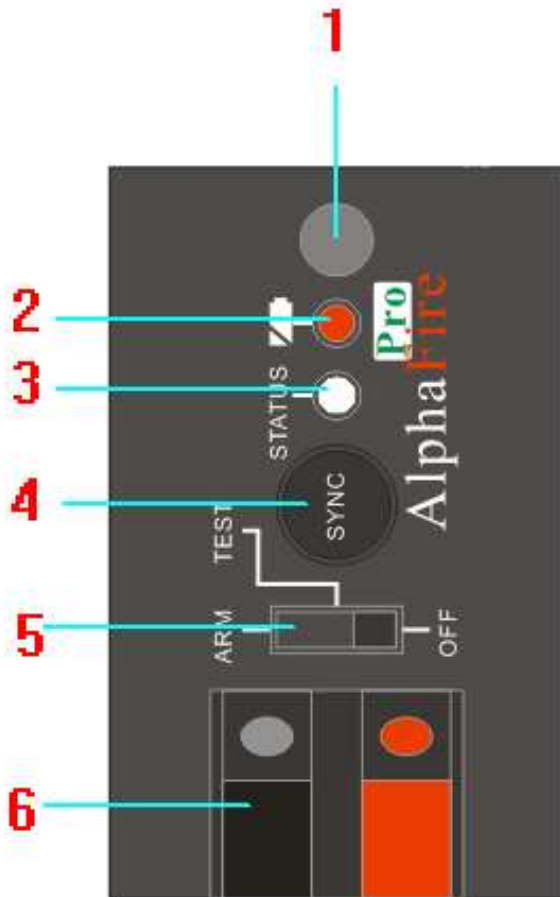
Test Current: <10mA

Sizes: 61x38x46mm, antenna is retractile and can be folded.

Color: Steel grey

With Power/Low Power Indication, Firing Indication, RF Signal Indication, Overload Protection (available only when module is inserted 9V battery), Short Warning Indication etc..

Parts:



- 1-Antenna, retractile and can be folded.
- 2-Power/Low Power LED, red. Normally the LED is always on when 3-position switch is at ARM or TEST. When batteries are low, the LED blinks.
- 3-TEST LED/ LEARN/FIRE LED, dual colours yellow&red.
TEST LED: When exterior circuit is coherent, the LED is yellow; When exterior circuit is interrupted, the LED is off.
LEARN LED: When Yellow is on, ready is to learn code of transmitter, or is clearing code. When Red is on, terminals of receiver are sending or are to send heavy current, can fire igniter or e-match. See the following descriptions **Learn Code**.
- 4- LEARN Button. Only when 3-position switch is at ARM or TEST, LEARN button can work.
- 5-3-Position Switch, TEST-Test exterior circuit or learn code, OFF-Power is off, ARM-Receiver is armed to fire fireworks or learn code.

6-Fast Fastening Terminals.

B. Test

When a firing module is powered and an igniter / ematch is connected to Wiring Terminals #6 of the module, shift 3-Position Switch #5 to TEST, TEST LED #3 should light, otherwise the igniter / e-match is

interrupted, or the wires are not connected well. Only when the connection is tested to be in good condition, the igniter / ematch can fire successfully.

C. Matchable Transmitters



Transmitter A
Dividual Firing
Transmitter



Transmitter B
Interval Firing
Transmitter



Transmitter C
Stepper Firing Transmitter

A firing module can work with 3 types of transmitter:

Transmitter A-Dividual Firing Transmitter: Normally it is a 12 button transmitter, a button can fire a firing module individually. Buttons have 1, 2, ... , 12.

Transmitter B-Interval Firing Transmitter: It is a 12 button transmitter, the buttons have 0.1, 0.2, ... , 0.9, 1.0, 2.0, ALL, Button 0.1 can fire multiple firing modules in interval 0.1 second, Button 0.2 can fire multiple firing modules in interval 0.2 second etc..

Transmitter C-Stepper Firing Transmitter: It is a 6 button transmitter, the buttons have START, STEPPER, PAUSE, CONTINUE, STOP & LOCK/UNLOCK, Button STEPPER can fire multiple firing modules in Stepper Firing Mode, one module at a time.

Press Button STOP of Transmitter C, firing will stop when modules are firing in Interval Firing Mode or Stepper Firing Mode.

Buttons START, PAUSE & CONTINUE of Transmitter C are unusable when the transmitter works with the firing module RF1K.

D. Two Learning Modes

Before Learning

Users should be aware of the following information or should do some operation below.

It's better users clear codes of firing module before make the module learn transmitters.

Only when a firing module learns codes of transmitters, it can work with the transmitters.

If Transmitter B or Transmitter C is learned but Transmitter A is not learned, Transmitter B or Transmitter C will not function.

A firing module can store codes of 1x Group Sequence, 1x Button of Transmitter A, 1x Transmitter B & 1x Transmitter C. If users learn the same type of transmitter / button, the code of the former transmitter / button will be replaced.

Mode 1: Normal Learning

Learn the code of Transmitter A:

Shift 3-Position Switch #5 from OFF to ARM, keep pressing button LEARN #7 more than 3 seconds to make GREEN of LEARN/FIRE LED #8 on, and then release button LEARN #7, press one button of Transmitter A within 3 seconds, LED #8 will blink once and then goes off, the button of the Transmitter A is learned by the firing module successfully.

Learn the code of Transmitter B:

Shift 3-Position Switch #4 from OFF to ARM, keep pressing button LEARN #4 more than 3 seconds to make GREEN of LEARN/FIRE LED #6 on, and then release button LEARN #4, press any button of Transmitter B within 3 seconds, LED #6 will blink once and then goes off, the Transmitter B is learned by the firing module successfully.

Learn the code of Transmitter C:

Shift 3-Position Switch #5 from OFF to ARM, keep pressing button LEARN #4 more than 3 seconds to make GREEN of LEARN/FIRE LED #6 on, and then release button LEARN #4 press any button except Button Lock/Unlock of Transmitter C within 3 seconds, LED #6 will blink once and then goes off, the Transmitter C is learned by the firing module successfully.

Mode 2: Group Sequence Learning

Through Group Sequence Learning, a firing module will have its determinate group. The group sequence number can be one from 1 to 12.

Use Transmitter A to learn Group Sequence.

Keep pressing button LEARN #4 and don't release until the 3-Position Switch #5 is shifted from OFF to ARM, GREEN of LEARN/FIRE LED #6 blinks continuously, the firing module is in the mode Group Sequence Learning.

Keep pressing button LEARN #4 again more than 3 seconds to make GREEN of LEARN/FIRE LED #6 on, and then release button LEARN #4, press one button of Transmitter A within 3 seconds, LED #6 will blink once and then goes off, after 8 seconds the LED #6 will blink continuously again, the firing module will remember the group sequence as the number of the learned button of Transmitter A.

How to know which group sequence the firing module belongs to and what the sequence of the module is in the group.

Shift 3-Position Switch #5 from OFF to ARM, press the learned button of the Transmitter A, GREEN of LEARN/FIRE LED #6 should blink once, it indicates the code of the button is stored in the module.

Keep pressing button LEARN #4 and don't release until the 3-Position Switch #5 is shifted from OFF to ARM, GREEN of LEARN/FIRE LED #6 blinks, press the learned group sequence number button of any Transmitter A, GREEN of LEARN/FIRE LED #6 turns from blinking to solid green light, it indicates the group sequence is remembered by the firing module.

Clear codes of transmitters

Shift 3-Position Switch #5 from OFF to ARM, keep pressing button LEARN #4 for more than 6 seconds, GREEN of LEARN/FIRE LED #6 will be on and don't release yet until the LED blinks three times and then goes off, all codes are cleared.



Warning: Only when no igniter / ematch is connected, you can learn codes or clear codes!

E. Three Firing Modes

A firing module must learn codes of transmitters before the transmitters are able to fire the module.

When a firing module receives a

available RF signal, the GREEN of LEARN/FIRE LED will blink a time.

Mode 1: Dividual Firing

Shift 3-Position Switch #5 to ARM, when the module RF1K works with Transmitter A-Dividual Firing Transmitter (see the sample above), it can be activated by the learned button of the transmitter.



Mode 2: Interval Firing

Shift 3-Position Switch #5 to ARM, when the module RF1K works with Transmitter B-Interval Firing Transmitter (see the sample left), it can be activated by the transmitter in the certain firing time point.

The firing module must have its determinate Group Sequence Number and determinate number in the group through learning Transmitter A.



Mode 3: Stepper Firing

Shift 3-Position Switch #5 to ARM, when the module RF1K works with Transmitter C-Stepper Firing Transmitter (see the sample left), it can be activated in the determinate sequence by Button Stepper of the transmitter.

The firing module must have its determinate Group Sequence Number and determinate number in the group through learning Transmitter A.



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NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.