

POLARSTAR

Mini Fire Control Unit Instructions

Firmware Revision 2.4.0

The Mini FCU operates on an input voltage of 6.8 - 12VDC. A small 7.4V battery with JST RCY connector is recommended, however, a standard 7.4V or 8.4V airsoft battery pack will work fine with the appropriate adapter.

The integral Motor Control Unit (MCU) will switch the full battery pack voltage to the MCU port throughout each trigger pull. This can be used to operate any 2 or 3 wire box magazine automatically. Since the winding speed of the box magazine is related to the input voltage, a 9.6V or greater battery pack may be required in order to wind the magazine fast enough to keep up with high ROF settings.

Programming

- To enter programming mode, hold down the trigger while plugging in the battery.**
 - Holding the trigger for longer than 5 seconds will reset the FCU to factory default settings and then enter the main menu when the trigger is released.
 - Holding the trigger for less than 5 seconds will enter the main menu directly.
- Pull the trigger X times to select the setting to be adjusted. After releasing the trigger for the last time, wait at least 2 seconds for the FCU to recognize the selected menu number.**
 - The 2 second timeout does not begin until the trigger is pulled for the first time, so there is no rush to select the setting after plugging in the battery.
 - If the trigger is pulled more times than the 5 available settings it will default to the max of 6.
- After adjusting any setting, wait at least 2 seconds to store the new settings.**
 - After two seconds of inactivity the FCU will save the new settings and return to the main menu.

When adjusting any setting:

- The 2 second timeout does not begin until the first trigger pull.
- After the 2 second timeout the setting is saved and the FCU returns to the main menu.
- In order to return to normal operation (firing) the battery must be disconnected and reconnected.

1: Rate of Fire (RPS) – Minimum: 1, Maximum: 99, Default: 18

Pull the trigger X number of times, where X is the desired rounds per second.

- The maximum ROF setting is 99 RPS, regardless of the number of trigger pulls.
- If the ROF setting exceeds the maximum possible cyclic rate (determined by the Dwell setting) it will automatically be set to the maximum possible ROF.

2: Dwell - Minimum: 1, Maximum: 250, Default: 80

Pull the trigger to change the dwell in 0.1ms interments. **THE SYSTEM WILL FIRE ON THE RELEASE OF THE TRIGGER.** When the trigger is released the shot fired will be with the new dwell setting. The default direction is down to reduce the dwell each shot.

- Hold the trigger for at least 2 seconds to reverse the direction of adjustment (raise/lower). No shot will be fired on the trigger release when changing adjustment direction.



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- When setting the dwell it defaults to 80 (8.0ms) as an average starting point. It will default to this any time changes are made in dwell menu selection and each time you enter this mode it will reset the dwell starting point to 80.
- The maximum dwell setting is 250 (25.0ms).

The recommended process to set the dwell is:

1. With the FCU set to defaults or the dwell set to at least 80, adjust the input pressure until the desired velocity is reached.
2. Enter programming mode and select the Dwell setting.
3. Pull and release the trigger to fire a shot through a chronograph (about 1 pull per second). Continue until velocity begins to drop.
4. Pull trigger and hold for at least 2 seconds to reverse the adjustment direction (now raising the dwell).
5. Pull and release the trigger (about 1 shot per second) to raise the dwell until the original set velocity is reached.
6. Wait at least 2 seconds to save the new setting and return to the main menu.

3: Selector Position 1 (All Switches Open) - Default: 1

Pull the trigger X number of times to set the fire mode of the first selector position.

X = 1: Semi
 X = 2: Shot Burst
 X = 3: Shot Burst
 X = 4: Full Auto

4: Selector Position 2 (Switch 1 Closed) - Default: 4

Pull the trigger X number of times to set the fire mode of the second selector position.

X = 1: Semi
 X = 2: Shot Burst
 X = 3: Shot Burst
 X = 4: Full Auto

5: Selector Position 3 (Switch 2 Closed) - Default: 3

Pull the trigger X number of times to set the fire mode of the third selector position. If this switch is closed it takes precedence over Switch 1 and the unit will operate with the settings of Selector Position 3.

X = 1: Semi
 X = 2: Shot Burst
 X = 3: Shot Burst
 X = 4: Full Auto

6: Max Semi Auto ROF - Default: 4

Pull the trigger X number of times to set the Max Semi Auto ROF setting.

X = 1: 1 shot every 2 seconds.
 X = 2: 1 shot ever second.
 X = 3: 10 shots per second.
 X = 4: No restriction (Disabled).

7: MCU Port Enable/Disable - Default: 2

Pull the trigger X number of times to enable or disable the MCU port.

X = 1: Disabled
 X = 2: Enabled