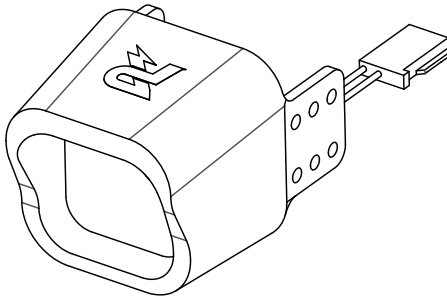# ROBOMASTER

Dart Trigger Device

User Manual v1.0

2020.05

ROBOMASTER

Disclaimer

Thank you for purchasing the ROBOMASTER™ Dart Trigger Device. Read this entire document and all safe and lawful practices DJI™ provided carefully before use. Failure to read and follow instructions and warnings may result in serious injury to yourself or others, damage to your DJI product, or damage to other objects in the vicinity. By using this product, you hereby signify that you have read this disclaimer carefully and that you understand and agree to abide by all terms and conditions of this document and all relevant documents of this product. You agree to use this product only for purposes that are proper. You agree that you are solely responsible for your own conduct while using this product, and for any consequences thereof. DJI accepts no liability for damage, injury, or any legal responsibility incurred directly or indirectly from the use of this product.

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Warning

1. Read and understand the whole user manual and strictly follow the instructions when using the device.

2. Make sure to use the product in strict accordance with the specifications listed in this document, including those related to voltage and temperature. Failure to do so may reduce the product service life or even lead to permanent damage.

3. Secure the trigger device properly to avoid damage to the structure caused by improper force.

4. If you detect any flames, smoke, strange smells, or other abnormalities, disconnect the device from the power source immediately.

5. DO NOT tear the TPU outer covering during use. Otherwise, the structure may be cracked and damaged.

Introduction

The RoboMaster Dart Trigger Device is an interactive device designed for the Dart System in the RoboMaster competition. With the trigger device mounted to the tip of the dart, the RoboMaster Dart Detection Module can receive and decode the infrared information emitted from the trigger device to judge the type of attack when the trigger device hits the module. The trigger device will continuously glow red or blue when the dart is in flight to distinguish which team the dart belongs to as well as to indicate the flight trajectory.

The trigger device adopts a hollow structure design, so that a camera of a compatible size can be installed to improve accuracy with the help of visual algorithms. The TPU material of the outer covering provides an effective buffer to protect the camera and the internal structure of the dart when it hits the target.
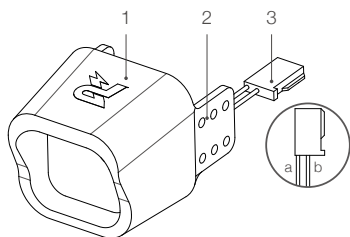
1. Logo (install the trigger device with this side facing upward)

2. Mounting Bracket

3. 3-pin 2.54mm Cable
   a. GND
   b. +5V

Dimensions

Refer to the dimensions in the figure below to mount the trigger device correctly.
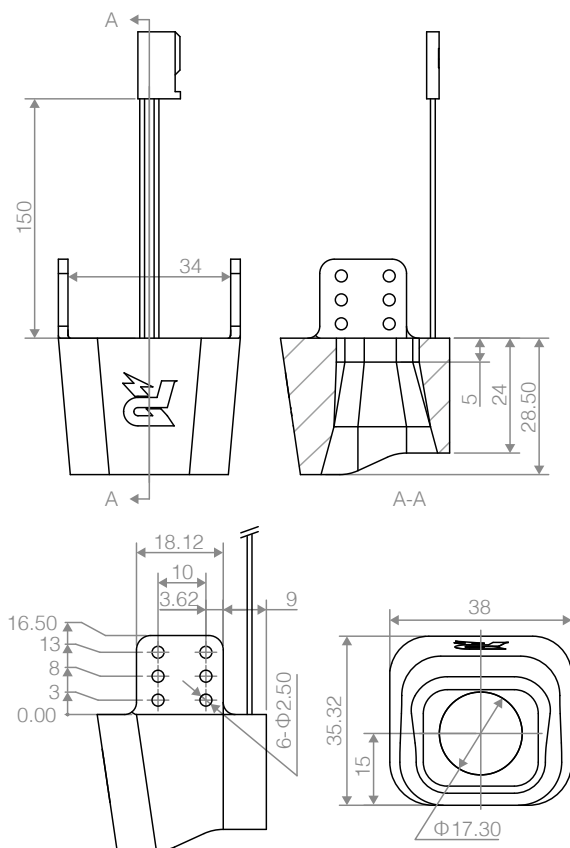

Unit: mm

Installation Instructions

1. Use at least four M2.5 screws (two for each mounting plate) to secure the trigger device to the tip of the dart. It is recommended to use washers with the screws.

2. Connect the power port of the trigger device to a power supply with a voltage of 5 V.

Installation Requirements

After installation, make sure that each side of the trigger device as shown in the figure below is not blocked by the dart.

Trigger Device Non-Obstruction Area
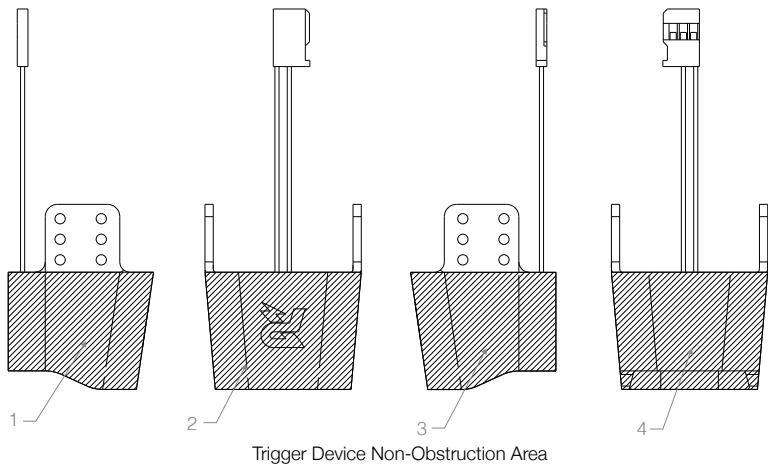
1. Left Side
2. Top
3. Right Side
4. Bottom

A camera or other device can be installed to the hollow structure of the trigger device. The area of the device you wish to install should not exceed the shaded area shown in the figure below.
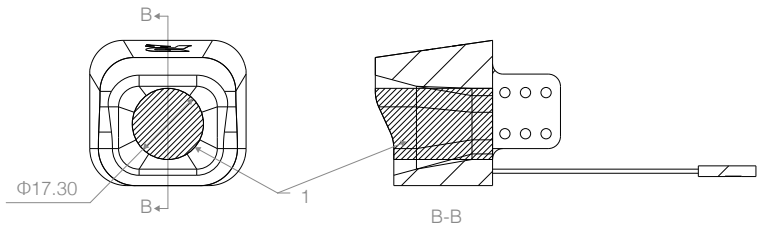
Trigger Device Hollow Structure

1. Shaded Area

Usage

Status Descriptions

Configuration Status

The trigger device enters configuration status within 3 seconds after powering on. In this status, users can configure the light color or switch modes.

Work Status

The trigger device automatically enters the work status after being powered on for 3 seconds or when configuration is completed. In this status, the trigger device will light up in the preset color for 5 seconds if it detects acceleration or impact. If the trigger device detects acceleration or impact again within the 5 seconds, the timer for the light will reset.

Malfunction Status

If the hardware is damaged, the trigger device will blink red and blue alternately to indicate that the trigger device needs to be replaced. Make sure to replace any damaged hardware before competition.

Mode Descriptions

The trigger device includes Practice mode and Competition mode. Practice mode is set by default when using for the first time.

Mode Switch

When set to Practice mode and in the configuration status, the trigger device will enter Competition mode if it receives a signal of entering Competition mode from the designated transmitter. In Competition mode, the trigger device will not respond to a standard NEC protocol signal.

When set to Competition mode and in the configuration status, the trigger device will exit from Competition mode and enter Practice mode if it receives an exit signal from the designated transmitter.

Practice Mode

In Practice mode, the trigger device will glow solid in the last preset color after powering on. If there is no operation within 3 seconds, the trigger device light will turn off and enter work status. If a standard NEC protocol signal is received within 3 seconds, the trigger device will blink a different color three times before entering work status.

Competition Mode

In Competition mode, the trigger device will blink in the last preset color at a frequency of 3 Hz. If there is no operation within 3 seconds, the trigger device light will turn off and enter work status. If a configuration signal from the designated transmitter is received within 3 seconds, the trigger device will blink in the corresponding color three times before entering work status.

Specifications

Input Voltage	5 V
Input Power*	1.5 W
Light Color	Red or blue
Structure Material	TPU
Weight	20 g
Operating Temperature	0° to 55° C (32° to 131° F)

* Tested in a well-ventilated laboratory environment at room temperature.