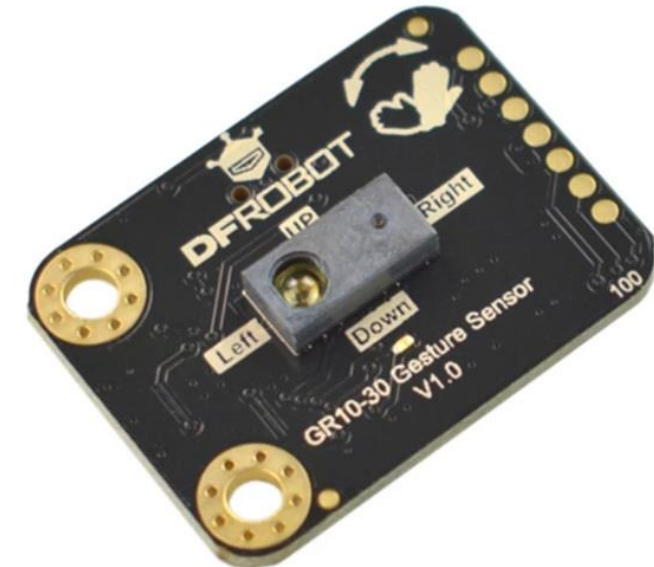


Gravity: GR10-30 Gesture Sensor

Overview

This GR10-30 gesture sensor is capable of recognizing 12 hand gestures: move up, down, left, right, forward & backward, rotate clockwise & counterclockwise, rotate clockwise & counterclockwise continuously, hover, and wave. And users can set parameters such as the gesture trigger distance, the hand rotation angle and hovering time that can be recognized, and the size of recognition window to get more accurate results. The GR10-30 features stable performance and high accuracy within sensing distance of up to 30cm.

The sensor is well suited to non-contact operation applications like gesture remote controllers, robot interaction, human-machine interface control, lighting control, and gesture game machine.



Order Code

Order Code	Brand	Description
E37002-001	DFRobot	Gravity: GR10-30 Gesture Sensor

Specification

- Supply Voltage: 3.3V to 5V
- Operating Current: <10mA
- I2C Address: 0x73
- Baud Rate: 9600
- Maximum Recognition Distance: 30cm
- Operating Temperature: 0°C to 70°C
- Operating Humidity: 5%RH to 85%RH
- Dimension: 22×30mm/0.87×1.18"

Application

- Gesture Remote Controller
- Robot Interaction
- Human-machine Interface Control

Feature

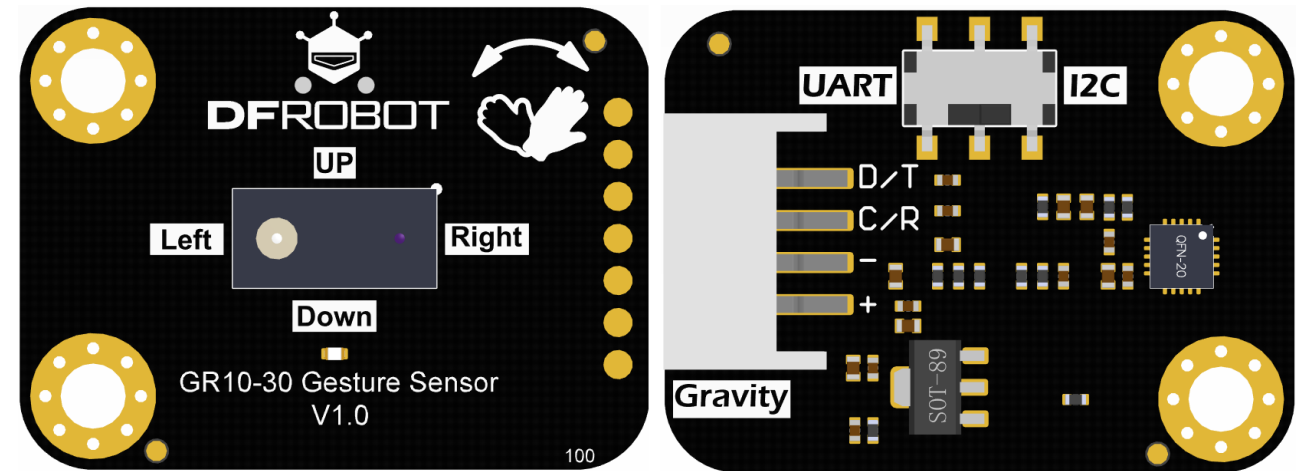
- Maximum Recognition distance of 30cm
- Capable of recognizing 12 gestures
- Configurable recognition threshold & other parameters
- Support UART & I2C communication

Gravity: GR10-30 Gesture Sensor

Board Overview

Num	Label	Description
1	+	Power +
2	-	Power -
3	C/R	I2C clock line/Serial receive
4	D/T	I2C data line/Serial transmit

LED: Light up when there is an object moving in the detection range, and black out if there is no object and when the object is stationary or the detection area is completely blocked for over 3s.



The diagram illustrates the connection of a Gravity I/O Expansion Shield V7 to a DFRobot board. The board features a power input section with a lightning bolt symbol and a green terminal block labeled PWR_IN. A red terminal block is labeled RUN. A green terminal block is labeled PROG. A green terminal block is labeled SERVO_PWR. A green terminal block is labeled SDA. A green terminal block is labeled SCL. A green terminal block is labeled GND. A green terminal block is labeled 5V. The board also has a BT/APC header, a TXRX header, and an I/O Expansion Shield V7 header. The shield is connected to the board's headers. The shield has a UART header, an I2C header, a D/T header, a C/R header, and a Gravity header. The shield is connected to the board's headers via colored wires: red, blue, green, and black.

Sample Code 1 - Read gesture by polling

Read gesture by polling

Parameter Explanation

•gr10_30.setLeftRange(5);

When the detected hand moves five units to the left, it will be determined as "move left" gesture

- Moving distance (cm)=(hand distance from sensor * Set parameter) / 25

•gr10_30.setUdlrWin(18, 11);

Set recognition area as 18*11 units

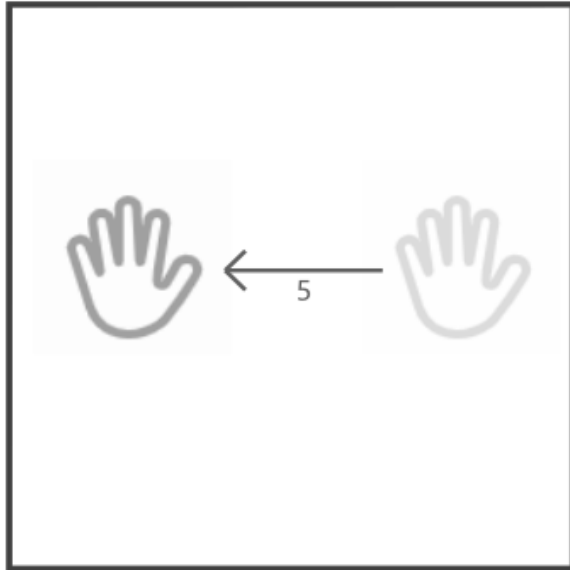
•gr10_30.setCwsAngle(4);

Rotating by 90° will be determined as "rotate" gesture

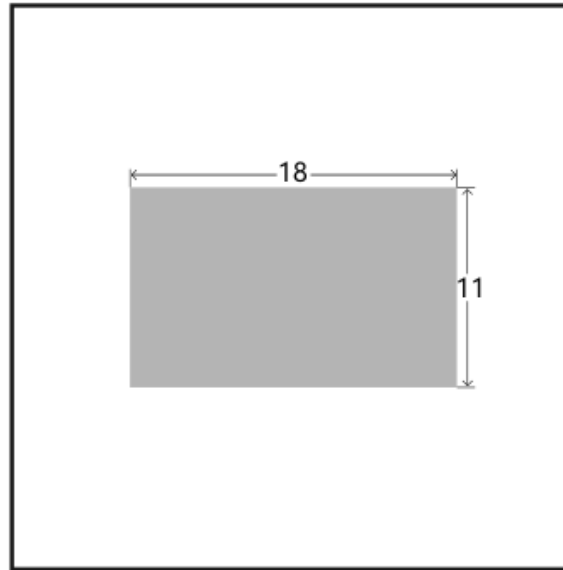
- The recognition distance for rotation gestures is about half of the maximum recognition distance.

Sample Code 1 - Read gesture by polling

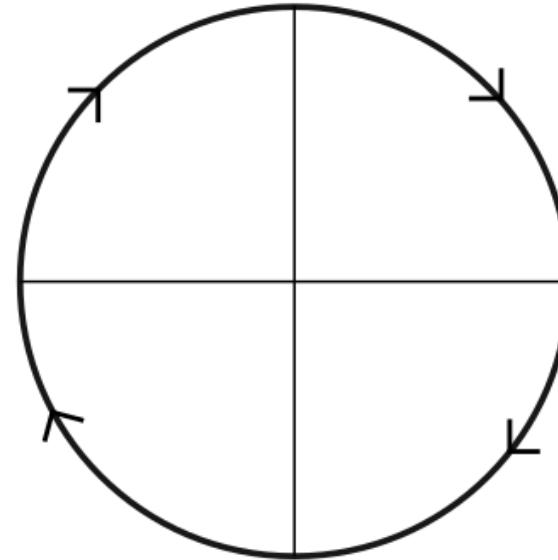
`gr10_30.setLeftRange(5);`



`gr10_30.setUdlrWin(18, 11);`



`gr10_30.setCwsAngle(4);`



[Please click here to download sample code](#)

Gravity: GR10-30 Gesture Sensor



Sample Code 1 - Read gesture by polling

Result

A screenshot of a serial terminal window titled 'COM16'. The window has a text input field at the top with a 'Send' button. The main area displays a series of timestamped messages from a sensor. The messages indicate successful initialization and a sequence of gestures: Right, Left, Down, Up, Up, Clockwise, and then a series of 'Continuous clockwise' gestures. The bottom of the window contains controls for 'Autoscroll' (checked), 'Show timestamp' (checked), a 'Newline' dropdown, a baud rate dropdown set to '115200 baud', and a 'Clear output' button.

```
COM16
10:52:28.738 -> Sensor initializ Sensor initialize success!!
10:52:28.942 -> Right
10:52:30.867 -> Left
10:52:31.920 -> Down
10:52:33.149 -> Up
10:52:34.456 -> Up
10:52:35.462 -> Clockwise
10:52:35.566 -> Continuous clockwise
10:52:35.636 -> Continuous clockwise
10:52:35.740 -> Continuous clockwise
10:52:35.844 -> Continuous clockwise
10:52:35.913 -> Continuous clockwise
10:52:36.017 -> Continuous clockwise
10:52:36.261 -> Continuous clockwise
10:52:36.504 -> Continuous clockwise
10:52:36.781 -> Continuous clockwise
```

Gravity: GR10-30 Gesture Sensor



Main API Functions

[Please click here to download main API functions](#)

Gravity: GR10-30 Gesture Sensor



Revision History

Date	Revision	Change description
30/10/2025	1.0	Initial release