

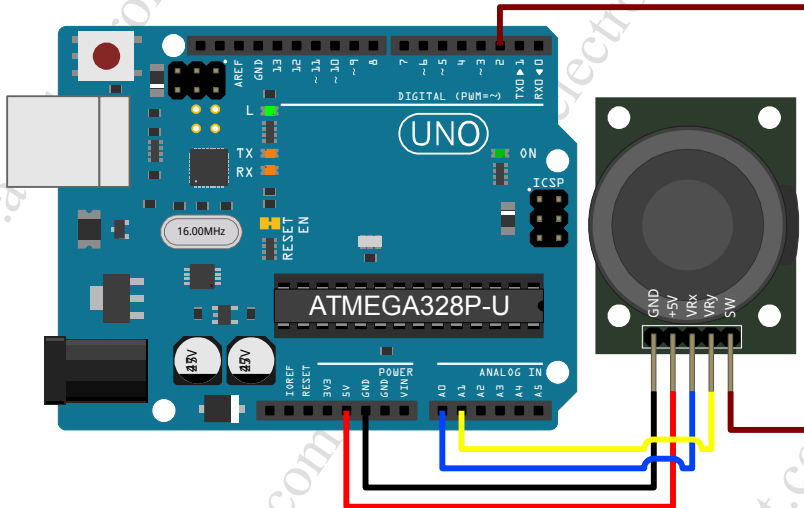
Dual Axis Analogue Joystick Module

This module contains a spring loaded dual axis joystick which returns analogue values based on the position of the stick in the horizontal and vertical planes. It also includes an integrated push button switch which activates when the joystick shaft is pressed downwards in-line with the stick.

Table 1: Dual Axis Analogue Joystick Module Pin Connections

Device	Arduino	Wire	Description
GND	GND	■	Ground connection.
+5V	5V	■	5 Volts Direct Current power supply to potentiometers.
VRx	A0	■	Connects to horizontal axis potentiometer (10 kilohm [kΩ]).
VRy	A1	■	Connects to vertical axis potentiometer (10 kΩ).
SW	D2	■	Connects to ground when the switch is depressed.

• A0, A1 can be any analogue pin, D2: can be any digital pin.



The sketch below displays the results to the Arduino Serial Monitor / Plotter:

```
int pJoyX = A0;
int pJoyY = A1;
int pJoySw = 2;
void setup() {
  Serial.begin( 9600 );
  pinMode( pJoySw, INPUT );
  digitalWrite( pJoySw, HIGH );
}
void loop() {
  Serial.print( analogRead( pJoyX ) );
  Serial.print( ", " );
  Serial.print( analogRead( pJoyY ) );
  Serial.print( ", " );
  Serial.println( digitalRead( pJoySw ) );
}
```

Dual Axis Analogue Joystick Module...

Module Specifications

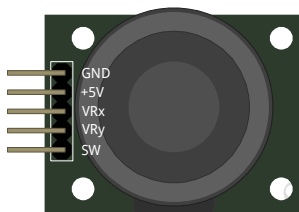
PCB Dimensions (H × W × D) :	34.0 × 26.3 × 1.6 millimetres [mm]
Enclosing Dimensions (H × W × D) :	39.4 × 27.5 × 32.9 mm
Weight:	10.07 grams [g]
Input Voltage:	~ 5 VDC

Module Performance

Note! The X and Y axis marked on the PCB are for when the module is oriented with the pins at the left hand side.

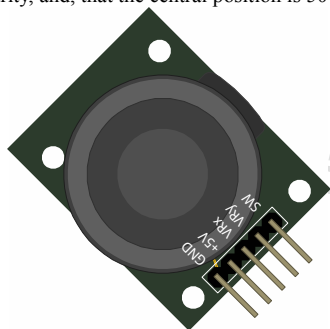
Joystick X Full Left Position Voltage:	0.0 VDC @ 5.06 VDC Supply
Joystick X Centre Position Voltage :	2.51 VDC @ 5.06 VDC Supply
Joystick X Full Right Position Voltage:	5.06 VDC @ 5.06 VDC Supply
Joystick Y Full Top Position Voltage:	0.0 VDC @ 5.06 VDC Supply
Joystick Y Centre Position Voltage :	2.46 VDC @ 5.06 VDC Supply
Joystick Y Full Bottom Position Voltage:	5.06 VDC @ 5.06 VDC Supply
Joystick X Full Left Position Resistance:	58 ohms [Ω] @ -33°
Joystick X Centre Position Resistance:	3732 Ω @ 0°
Joystick X Full Right Position Resistance:	4913 Ω @ +33°
Joystick Y Full Top Position Resistance:	23 Ω @ -33°
Joystick Y Centre Position Resistance:	3619 Ω @ 0°
Joystick Y Full Bottom Position Resistance:	4901 Ω @ + 33°
Joystick Range of movement:	66° (±33° from centre) both axis

When using the joystick to control the drive of a vehicle with separate drive and steering systems the module will be oriented as shown in the diagram below left. When used for vehicles which use tracks or skid steering, the module can be rotated clockwise 225° as shown in the diagram below right, so that the upper position returns the highest values, and the lower position returns the lowest values. This maps the direction directly to what is required for each drive motor, although this does affect the linearity, and, that the central position is 50% drive.



Normal Orientation (Pins facing left)

X = Steering
Y = Drive Speed



225° Clockwise Orientation (Pins facing bottom right)

L = Left (X), R = Right (Y)

X: 0%, Y: 0%	X: 50%, Y: 0%	X: 100%, Y: 0%	L: 100%, R: 50%	L: 100%, R: 100%	L: 50%, R: 100%
X: 0%, Y: 50%	X: 50%, Y: 50%	X: 100%, Y: 50%	L: 100%, R: 0%	L: 50%, R: 50%	L: 0%, R: 100%
X: 0%, Y: 100%	X: 50%, Y: 100%	X: 100%, Y: 100%	L: 50%, R: 0%	L: 0%, R: 0%	L: 0%, R: 50%

Module Mounting

The module has 4 × 3 mm diameter mounting holes at the end opposite the pin connections. As the bare component leads protrude through the bottom of the Printed Circuit Board, suitable spacers and insulation must be used.

Projects

Folder: Modules\Interface\Dual Axis Analogue Joystick\

- Dual Axis Analogue Joystick_SM: Displays the results to the Arduino Serial Monitor / Plotter.

