

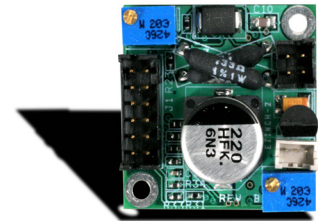


## General Specifications

Supply Input.....	9V to 30V 1A or 2A <i>Examples:</i> Digikey part 271-2446 or 62-1068
Dimensions.....	1" X 1" (25.4mm X 25.4mm) square
Step Resolution.....	1/16 microstep
Operating Modes.....	Standalone
Motor compatibility.....	Accommodates most size 23 (3") and smaller stepper motors, including bipolar or unipolar-wound motors. Best performance is with motor rated at about ¼ of supply voltage.
Motor drive current.....	Move Current: up to 1A. Hold Current = 0.25 X Move Current
Mating Connectors.....	HIROSE DF11 series. Recommended tool: Digikey H9924-ND.
I/O Interface.....	-JY: two mechanical switch or TTL-level limit inputs; 0-5V analog inputs for joystick and optional speed multiplier; one digital TTL-level input for optional low-current standby. -LR: four mechanical switch or TTL-level limit inputs; 0-5V analog input for speed set; one digital TTL-level input for optional low-current standby. TTL Signal Levels: <0.8V Vlow; >2V Vhigh
Operating Temperature.....	-20 to 85 °C PCB copper temperature
Relative Humidity.....	10% to 90% non condensing (operating and storage)

# Model Intelli-INCH

## Miniature Stepper Motor Controllers/Drivers



Model Intelli-INCH actual size

## Models

- Intelli-INCH-JY..... Joystick-controlled stepper motor controller/driver. Accepts 1K  $\Omega$  to 10K  $\Omega$  linear taper potentiometer joystick. 1A drive
- Intelli-INCH-LR..... Switch-controlled, Go Left, Go Right stepper motor controller/driver, 1A drive
- Intelli-INCH-JY-2A... Joystick-controlled with 2A drive
- Intelli-INCH-LR-2A .. Switch-controlled with 2A drive

### I/O CONNECTOR, INTELLI-INCH-JY

Mating connector: HIROSE DF11 Series 12 pin, 24 GA, part DF11-12DS-2C  
Digikey part H2024-ND

Pin	Function	Notes
1	V+ (external supply) 9V-30V	External power input
2	Power Ground	External power return
3	Right Limit Input	TTL-level or switch closure to signal ground. Normally closed (0V).
4	Right Limit Signal Ground	
5	Joystick +5V Input	Supply to joystick from board
6	NC	No connection
7	Joystick and Optional Speed Multiplier Input	0-5V analog voltage from potentiometer or external variable voltage source. 2.5V = zero velocity, with deadband from 2.42V to 2.58V. (special version with no deadband available). Speed varies linearly with joystick motion, up to a maximum set by the speed multiplier potentiometer. Joystick potentiometer 1K to 10K. Long cables may require 0.1uF decoupling capacitor to ground at the board.
8	Joystick Signal Ground	
9	Left Limit Input	TTL-level or switch closure to signal ground. Normally closed (0V).
10	Left Limit Signal Ground	
11	Speed Multiplier Input	0-5V signal sets maximum speed if Speed Multiplier Set potentiometer is removed.
12	Optional Low-Current Standby (SLEEP_BAR)	When grounded, reduces current consumption to 2mA for battery-powered applications.

### MOTOR CONNECTOR

Mating connector: HIROSE DF11 4 pin, 24 GA, part DF11-4DS-2C  
Digikey part H2019

Pin	Function	Notes
1,2	Stepper winding B	1A or 2A bipolar chopper
3,4	Stepper winding A	1A or 2A bipolar chopper

## Miniature motion control solutions with no programming

## Key Features

- (LR model) 4-function input: GO LEFT, GO RIGHT, LEFT LIMIT, RIGHT LIMIT
- (JY model) 3-function input: JOYSTICK IN, LEFT LIMIT, RIGHT LIMIT
- Performs fully profiled motion in response to switches/joystick.
- Move current and speed settable with potentiometers.
- Acceleration settable via fixed resistor.
- Limit switch inputs automatically stop motion.
- 1A or 2A chopper (PWM) stepper driver
- Milliohm FETs allow board to run cool at 100% current
- Operates from 9V to 30V.
- 1" X 1" X 0.5" thick
- 1/16th microstep resolution for smooth motion.
- Auto reduction to 25% move current in Hold Mode.
- SLEEP\_BAR input reduces current to < 2 mA for battery-powered applications.
- Accepts TTL-level inputs. No external 5V supply required.

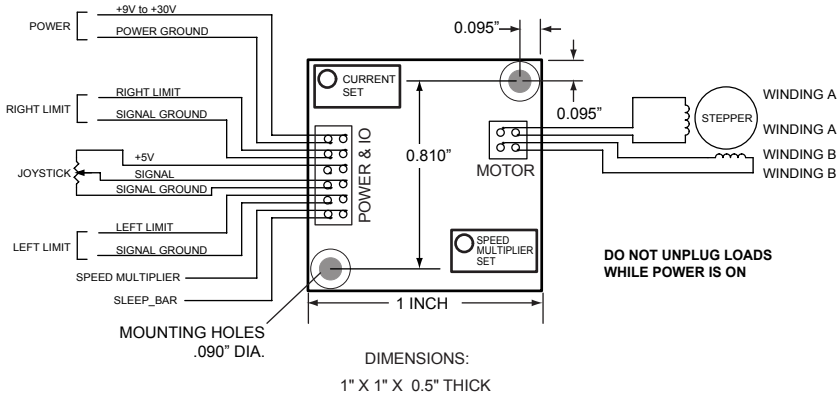
### I/O CONNECTOR, INTELLI-INCH-LR

Mating connector: HIROSE DF11 Series 12 pin, 24 GA, part DF11-12DS-2C  
Digikey part H2024-ND

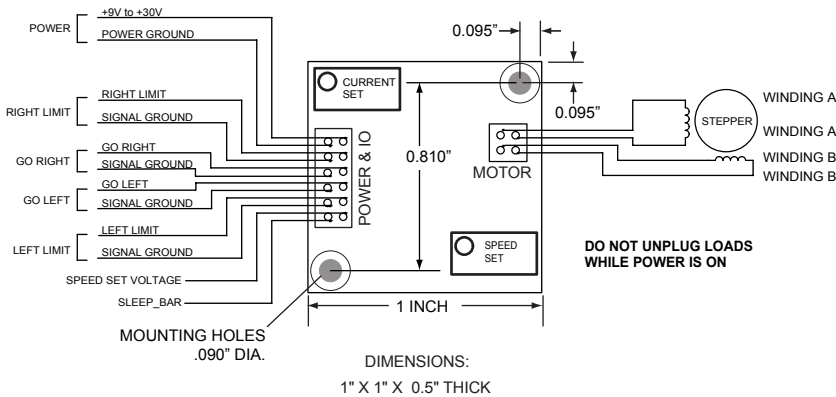
Pin	Function	Notes
1	V+ (external supply) 9V-30V	External power input
2	Power Ground	External power return
3	Right Limit Input	TTL-level or switch closure to signal ground. Normally closed (0V).
4	Right Limit Signal Ground	
5	Go Right Input	TTL-level or switch closure to signal ground. Normally open.
6	Go Right Signal Ground	
7	Go Left Input	TTL-level or switch closure to signal ground. Normally open.
8	Go Left Signal Ground	
9	Left Limit Input	TTL-level or switch closure to signal ground. Normally closed (0V).
10	Left Limit Signal Ground	
11	Speed Set Voltage Input	0-5V signal controls speed if Speed Set pot is removed.
12	Optional Low-Current Standby (SLEEP_BAR)	When grounded, reduces current consumption to 2mA for battery-powered applications.

### Mechanical Specifications

#### Joystick Model -JY

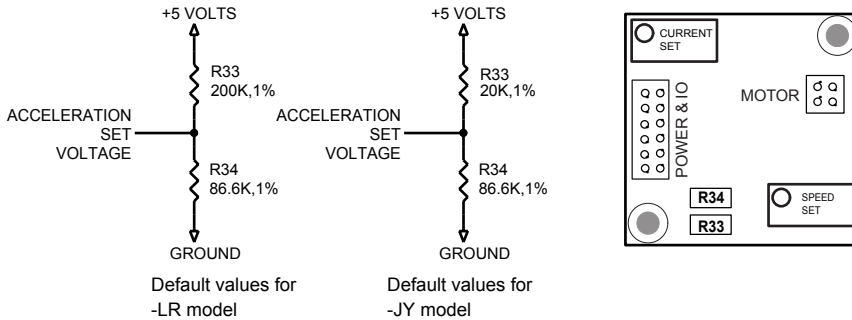


#### Go Left/Go Right Model -LR



### Acceleration Modification

Acceleration is linearly proportional to voltage at junction of R33 and R34. Higher voltages increase acceleration; for maximum, short across R33.



### Ordering Information

Name	Order Number
Joystick Intelli-INCH 1A output .....	Intelli-INCH-JY
Go Left/Go Right Intelli-INCH 1A output .....	Intelli-INCH-LR
Joystick Intelli-INCH 2A output .....	Intelli-INCH-JY-2A
Go Left/Go Right Intelli-INCH 2A output .....	Intelli-INCH-LR-2A