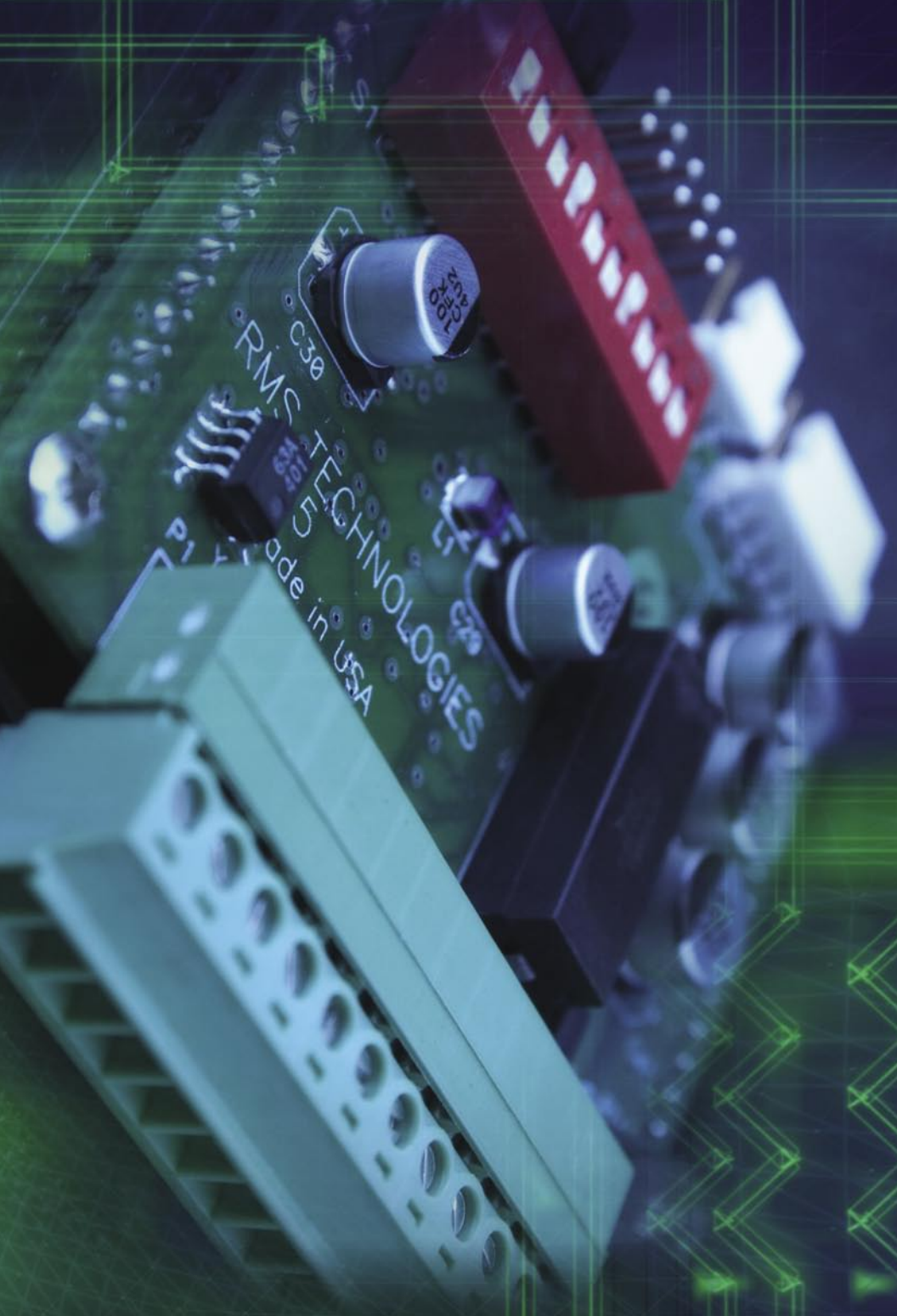




**The Driving Force in Motion Control**

**WWW.RMSMOTION.COM**



**Mission Statement**

To provide the Motion Control Industry with leading technology in drivers, controllers, and complete integrated solutions. Striving for innovative design and development of products to serve a wide range of customers, we are the Driving Force in Motion Control.

**Overview**

RMS Technologies designs and manufactures cutting edge, low-cost, high-performance step motors, drivers, and controllers.

Our specialty is the design and development of high-performance step motor drivers. We are continually striving to improve our technology and deliver the best possible products available.

RMS Technologies currently designs drivers and controllers to reduce resonance allowing step motors to run with less noise, also reducing the amount of step errors when driving a motor at 64 microstepping.

Typical applications for step motors systems include surveillance cameras, automated test equipment, robotics, medical equipment, labeling and packaging equipment.

**About RMS**

Founded in 2000, RMS Technologies has gained acknowledgement in the Motion Control Industry based on differentiating and innovative products. Headquartered in Carson City, Nevada, RMS Technologies has a team of Product Development Engineers, with over 40 years of experience in the motion control industry, constantly thinking of better ways to drive and control Step Motors.

# R208 Microstepping Driver



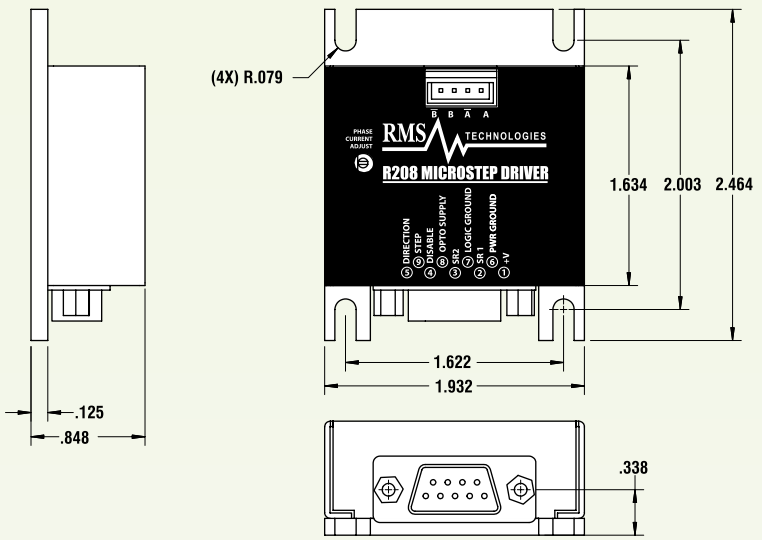
**Features**

- Bipolar Step Motor Driver
- Operates from +12 to 24 VDC
- Phase current ranges from 0.35 to 2.0 Amps Peak
- Selectable Step Resolution from Full, Half, 1/4, and 1/8 microsteps
- Optically isolated Step, Direction, and Disable/Enable Inputs
- Selectable Current Reduction of 33%
- Low Power Dissipation
- Efficient Current Control
- Thermal Shutdown, Under-voltage Protection
- Power-on Indicator
- Power Disable/Enable Control
- Sinusoidal current waveform
- Low Cost Driver

**Specifications**

- **INPUT VOLTAGE:** +12 to 24 VDC (Includes Unregulated Power Supplies)
- **DRIVE CURRENT (PER PHASE):** 0.25 to 1.4 Amps RMS, 2 Amps Peak
- **ISOLATED INPUTS:** Step Clock, Direction, Enable & Disable
- **STEP FREQUENCY (MAX):** 25 kHz
- **STEPS PER REVOLUTION (1.8 MOTOR):** 200, 400, 800, 1600

**Dimensions**



# R325 Microstepping Driver



**Features**

- Operates from +15 to 48 VDC
- Phase current from 0.3 to 3.0 Amps Peak
- Step Resolutions from Full to 256 microstepping
- Hold current reduction capability with adjustable current and timeout settings
- Three optically isolated control inputs and one optically isolated control output
- Eliminates Zero Crossing

**R325I & R325IE additional features**

- Configuration parameters stored in non-volatile memory
- Multiple module control through software assigned single character addresses
- Built-in control routines for trapezoidal position and velocity moves

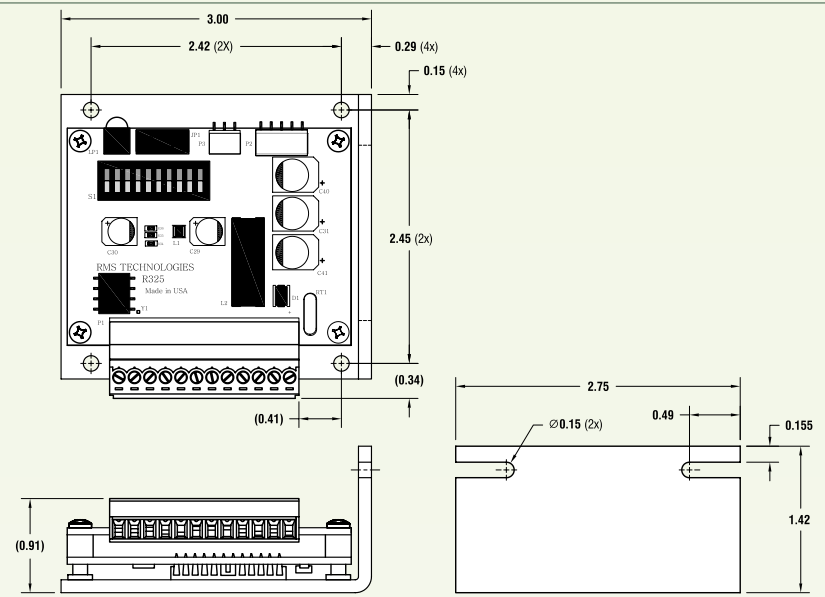
**R325IE only features**

- Static Encoder Feedback with a full set of parameters to configure a wide variety of motor and encoder combinations.
- Homing on Encoder Index
- Eight user presetable target positions

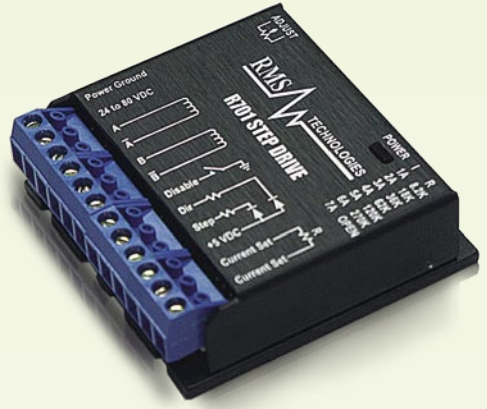
**Specifications**

- **INPUT VOLTAGE:** +15 to 48 VDC
- **DRIVE CURRENT (PER PHASE):** 0.3 to 3.0 Amps Peak
- **ISOLATED INPUTS:** Step, Direction, & Disable
- **STEP FREQUENCY (MAX):** 2.5 MHz
- **STEPS PER REVOLUTION (1.8 MOTOR):** 200, 400, 800, 1600, 3200, 6400, 12800, 25600, 51200

**Dimensions**



# R701/R710 Microstepping Driver



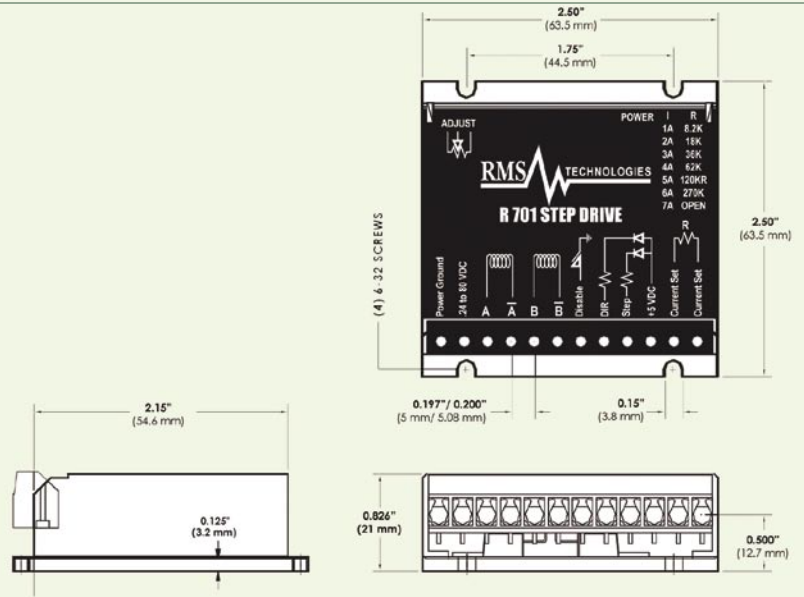
**■ Features**

- Bipolar Step Motor Driver
- Operates from +24 to 80 VDC
- Phase current ranges from 1 to 7 Amps and 0.3 to 2 Amps
- 10 Microstepping Driver
- Optically isolated Step, Direction, and Disable/Enable Inputs
- Selectable Current Reduction of 33%
- Low Power Dissipation
- Step Frequency of 200 kHz
- Efficient Current Control
- Power-on Indicator
- Power Disable/Enable Control
- Sinusoidal current waveform
- Low Cost Driver

**R710 - includes a built-in Step Pulse Multiplier board**  
The R710 has the same features as the R701 plus two additional features:

- **Input Option Header** - allows the use of a Common Ground or a Common +5VDC for optically isolated inputs
- **Step Pulse Multiplier** - will always output 10 microstepping, even with a step input of Full Step, Half Step, 5 Microstep, or 10 Microstep. The user no longer needs to change their original setup to get microstepping. Simply select the desired step multiplier of 1, 2, 5 or 10; to achieve the 10 microstepping output from the driver, while maintaining the rotational speed that you had in your original setup

**■ Dimensions**



**■ Specifications**

- **INPUT VOLTAGE:** +24 to 80 VDC
- **DRIVE CURRENT (PER PHASE):** 0.3 to 2.0 Amps or 1 to 7 Amps
- **ISOLATED INPUTS:** Step Clock, Direction, Enable & Disable
- **STEP FREQUENCY (MAX):** 200 kHz
- **STEPS PER REVOLUTION (1.8 MOTOR):** 2000

# R101 Driver/ Controller



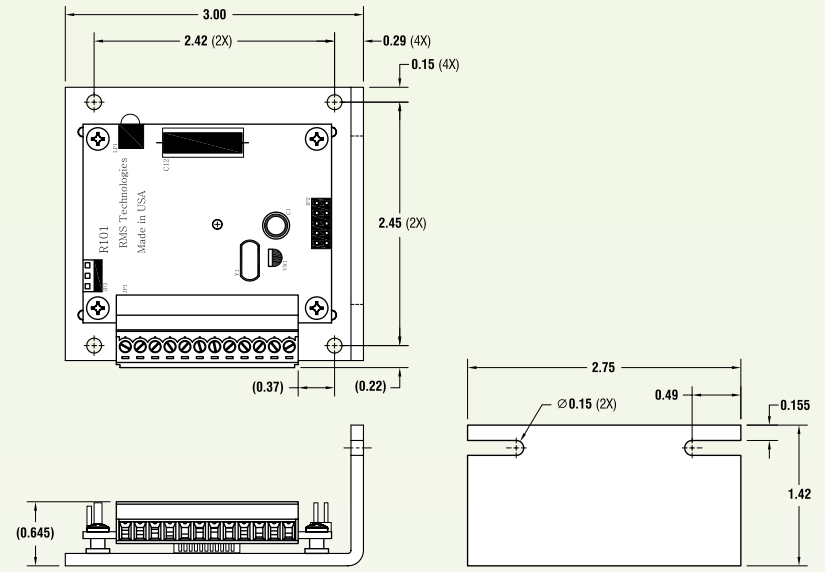
**■ Features**

- Operates from +15 to 30 VDC
- Phase current ranges from 0.2 to 2.5 Amps Peak
- Step Resolutions from Full, 1/2, 1/4, 1/8
- Automatic Motor Holding Current reduction available from 0.2 to 2.5 Amps
- Optically Isolated Step, Direction, Disable, and Zero Set Inputs.
- Configuration and control via a simple RS485 communications bus.
- Multiple modules each set with a different address code can be controlled on the same bus.
- Memory storage of all user configurable parameters after power recycling capabilities

**■ Specifications**

- **INPUT VOLTAGE:** +15 to 30 VDC
- **DRIVE CURRENT (PER PHASE):** 0.2 to 2.5 Amps Peak
- **ISOLATED INPUTS:** Step Clock, Direction, Disable & Zero Set
- **STEP FREQUENCY (MAX):** 15 kHz
- **STEPS PER REVOLUTION (1.8 MOTOR):** 200, 400, 800, 1600

**■ Dimensions**

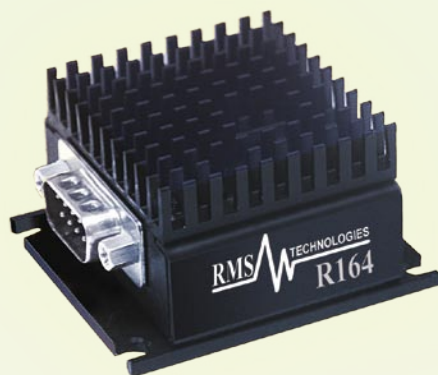


# R164

## Single Axis Controller

### ■ Features

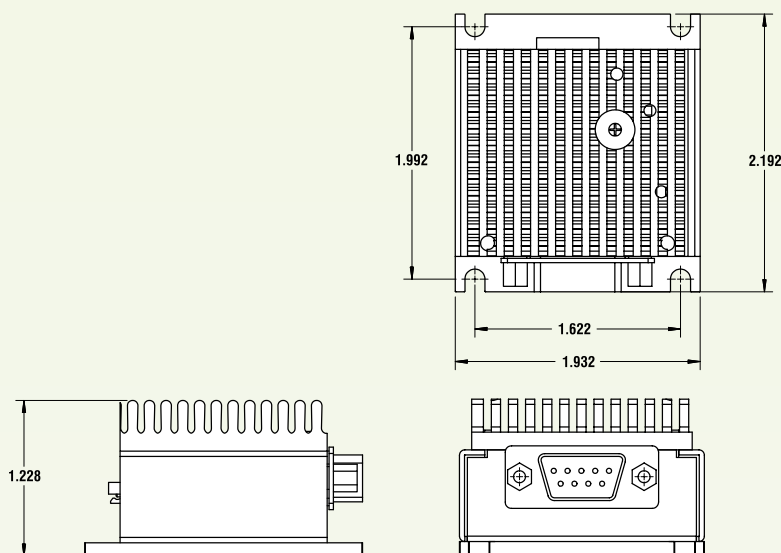
- Operates from +12 to 40 VDC
- Phase current ranges from 0.1 to 1.5 Amps Peak
- Step Resolutions of 1/2, 1/4, 1/8, 1/16, 1/32, 1/64
- 1.50 Amp Chopper (PWM) Driver
- Two Digital I/O's and two dedicated Inputs
- Execution Halt Pending a Switch
- Pre-wired for Opto Switch Inputs
- Homes to an Opto or Switch Closure
- Fully programmable ramps and speeds
- Software selectable Hold and Move currents
- Stand Alone Operation with no connection to PC
- Stores up to 16 different programs at once



### ■ Specifications

- **INPUT VOLTAGE:** +12 to 40 VDC
- **DRIVE CURRENT (PER PHASE):** 0.1 to 1.5 Amps Peak
- **ISOLATED INPUTS:** I/O, Switch Closure Ground, Opto Phototransistor
- **STEP FREQUENCY (MAX):** 10 kHz
- **STEPS PER REVOLUTION (1.8 MOTOR):** 400, 800, 1600, 3200, 6400, 12800

### ■ Dimensions

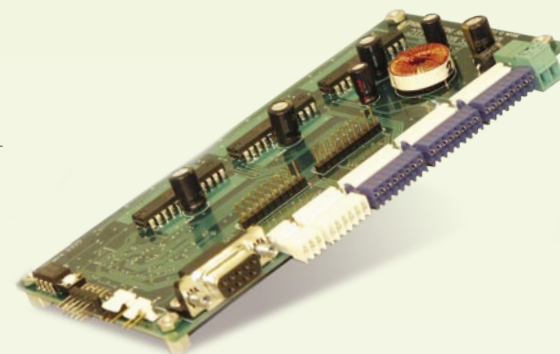


# R364

## 3 Axis Controller

### ■ Features

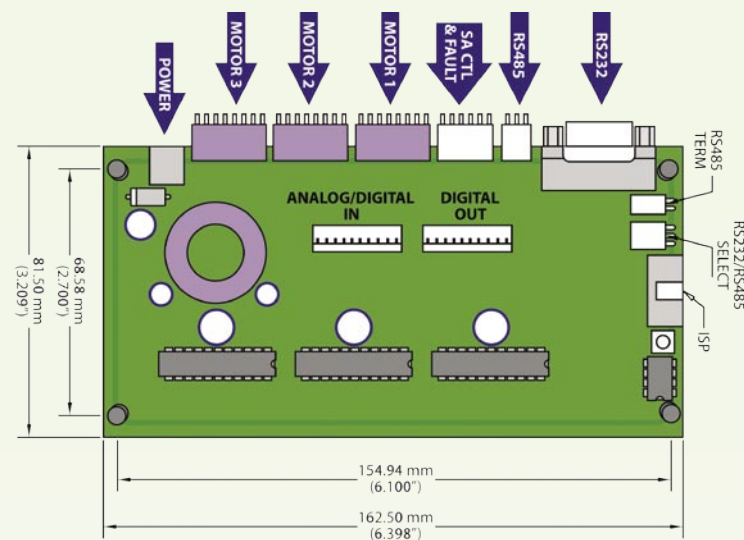
- 3-axis step motor controller and driver PCB
- Phase currents between 0.2 to 1.5 Amps/Phase (Software Programmable)
- Software selectable step resolutions from Full step, Half step, and 4x, 8x, 16x, 32x, 64x microstepping operation.
- On-board control interfaces are provided for both RS232, for single module control and RS485 for multiple module control.
- Operating at 57,600 baud the coordinated control of up to twelve axes is practical using four R364 PCB modules on a common RS485 bus.
- Up to 15.6kHz of step frequency
- Sine correction for each axis can be stored to EEPROM (default or user defined)
- All configuration parameters and a script of up to 1,750 commands stored in EEPROM.
- Self-configuration on power-up
- Left and Right limit switch inputs for all motors
- Home reference by commanded automatic sequence for each motor. The Left Limit Switch is found. The motor then moves to a user given offset position, and then sets the current position to be zero.
- Eight inputs 0 to 5 VDC analog, or eight inputs TTL digital
- Seven open-collector relay or solenoid drivers, and one TTL output



### ■ Specifications

- **INPUT VOLTAGE:** +15 to 48 VDC
- **DRIVE CURRENT (PER PHASE):** 0.2 to 1.5 Amps Peak
- **INPUTS:** Eight Inputs 0 to 5 VDC Analog, or Eight Inputs TTL Digital
- **OUTPUTS:** Seven Open-Collector Relay or Solenoid Drivers, and One TTL Digital
- **STEP FREQUENCY (MAX):** Up to 15.6 kHz - Full-step Frequency (All motor moving)
- **STEPS PER REVOLUTION (1.8 MOTOR):** 200, 400, 800, 1600, 3200, 6400, 12800

### ■ Dimensions



# Quadpack

## 4 Axis Controller



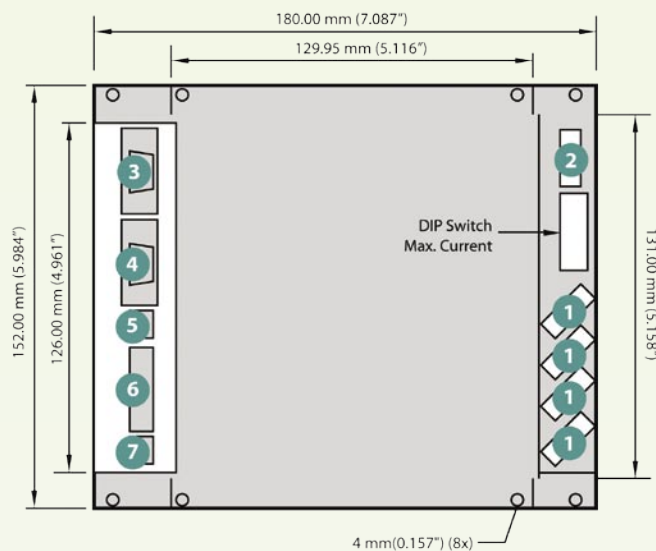
### ■ Features

- Complete 4-Axis step motor controller and driver system with 3 interface options
- Phase currents between 0.2 to 1.5 Amps/ Phase
- Ramp Profile: Automatic 3-phase ramps with programmable parameters for maximum frequency and acceleration for each channel. Alternatively user defined motion, Automatic reference search (reference switch)
- Software selectable step resolutions from Full step, Half step, and 4x, 8x, 16x microstepping operation
- Adjustable microstep phase current shape (sinusoidal or user-defined)
- On-board control interfaces are provided for RS232, RS485, and CAN.
- Daisy-chaining of multiple TMC QUADpacks via RS485 or CAN.
- Smart multi-level current control to keep drivers and motors cool
- Fullstep frequency up to 12.5 kHz per axis, microstep frequency up to 200 kHz per axis
- On-the-fly change of position and velocity
- Limit and reference switch inputs, GP I/O
- Upgradable firmware through onboard flash

### ■ Specifications

- **INPUT VOLTAGE:** +15 to 40 VDC
- **DRIVE CURRENT (PER PHASE):** 0.2 to 1.5 Amps Peak
- **I/O LINES:** 10 bit analog input for ratiometric measurements or stop functions, digital input for reference switch, separate analog input, digital I/O and digital output.
- **LED:** "Interface active", 7-segment Display (number of active motors, DP=reference search)
- **STEP FREQUENCY (MAX):** Full step frequencies between 0.3 Hz to 12.5 kHz, microstep frequency up to 200 khz per axis
- **STEPS PER REVOLUTION (1.8 MOTOR):** 200, 400, 800, 1600, 3200

### ■ Dimensions



# IMD 17

## Motor + Driver



### ■ Features

- NEMA 17, 1.8° Bipolar Step Motor
- Operates from +12 to 24 VDC
- Phase current ranges from 0.35 to 2.0 Amps Peak
- Step Resolutions from Full, Half, 1/4, and 1/8 microsteps
- Optically isolated Step, Direction, and Disable/Enable Inputs
- Selectable Current Reduction of 33%
- Low Power Dissipation
- Efficient Current Control
- Thermal Shutdown, Under-voltage Protection
- Up to 85 oz-in (60 N-m) of Holding Torque

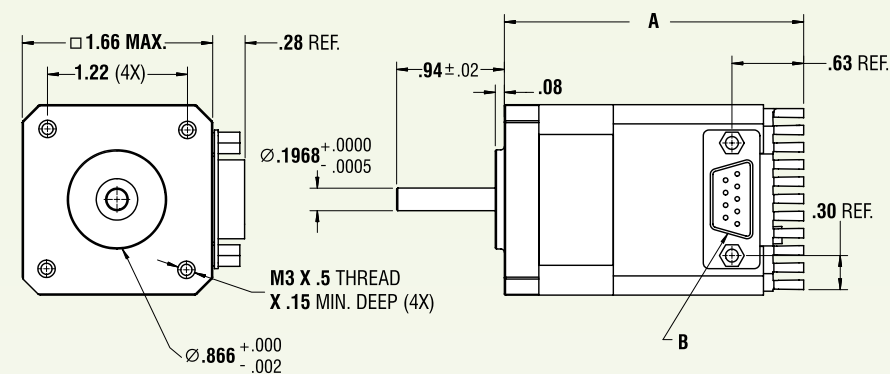
### ■ Specifications

- **INPUT VOLTAGE:** +12 to 24 VDC (Included Unregulated Power Supplies)
- **DRIVE CURRENT (PER PHASE):** 0.25 to 1.4 Amps RMS, 2 Amps Peak
- **ISOLATED INPUTS:** Step Clock, Direction, Enable & Disable
- **STEP FREQUENCY (MAX):** 25 kHz
- **STEPS PER REVOLUTION (1.8 MOTOR):** 200, 400, 800, 1600

### ■ Dimensions

- ▲ Overall Body Length  
Small: 2.69" (6.83cm)  
Med: 2.92" (7.42cm)  
Large: 3.24" (8.23cm)

- DB-9 Connector for Controls



# IMC 17

## Motor + Driver + Controller



**■ Features**

- NEMA 17, 1.8° Bipolar Step Motor
- Operates from +12 to 40 VDC
- Phase current ranges from 0.1 to 1.5 Amps Peak
- Step Resolutions of 1/2, 1/4, 1/8, 1/16, 1/32, 1/64
- 1.50 Amp Chopper (PWM) Driver
- Two Digital I/O's and two dedicated Inputs
- Execution Halt Pending a Switch
- Pre-wired for Opto Switch Inputs
- Homes to an Opto or Switch Closure
- Fully programmable ramps and speeds
- Software selectable Hold and Move currents
- Stand Alone Operation with no connection to PC
- Stores up to 16 different programs at once with 4 kBytes of memory
- Up to 84.8 oz-in of Holding Torque

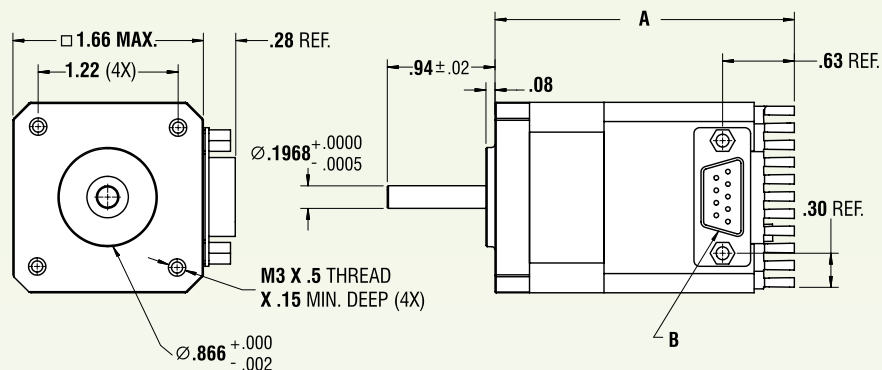
**■ Specifications**

- **INPUT VOLTAGE:** +12 to 40 VDC
- **DRIVE CURRENT (PER PHASE):** 0.1 to 1.5 Amps Peak
- **ISOLATED INPUTS:** I/O, Switch Closure to Ground, Opto Phototransistor
- **STEP FREQUENCY (MAX):** 10 kHz
- **STEPS PER REVOLUTION (1.8 MOTOR):** 400, 800, 1600, 3200, 6400, 12800

**■ Dimensions**

**A.** Overall Body Length  
 Small: 2.69" (6.83cm)  
 Med: 2.92" (7.42cm)  
 Large: 3.24" (8.23cm)

**B.** DB-9 Connector for Controls



# IMD 23

## Motor + Driver



**■ Features**

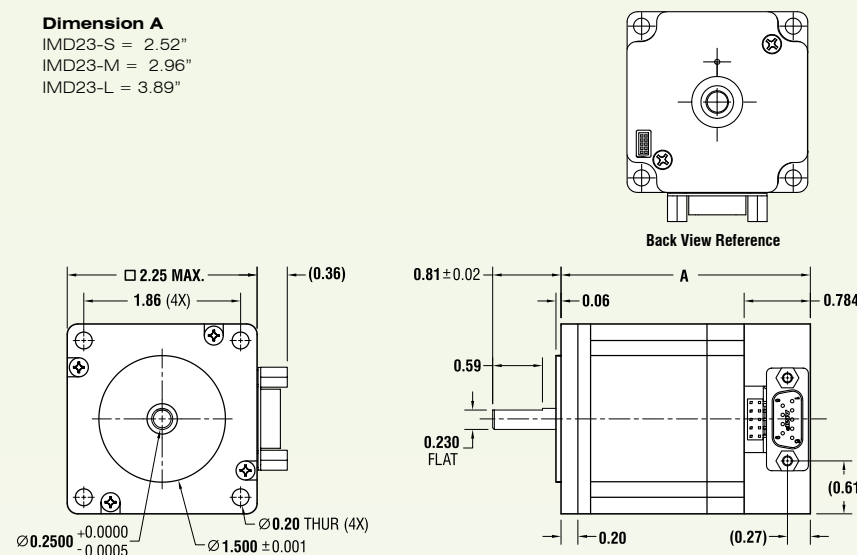
- NEMA Size 23, 2 Phase, 1.8° Bipolar Step Motor w/ Built-In Microstepping Driver
- Operates from +15 to 48 VDC
- Phase currents from 0.3 to 3.0 Amp Peak
- Step Resolutions from Half Step to 256x Microstepping
- Four Selectable Damping Modes
- Smooth motion
- Three optically isolated control inputs and one optically isolated control output
- Hold current reduction capability with adjustable current and timeout setting

**■ Specifications**

- **INPUT VOLTAGE:** +15 to 48 VDC
- **DRIVE CURRENT (PER PHASE):** 0.3 to 3.0 Amps Peak
- **ISOLATED INPUTS:** Step, Direction, and disable
- **STEP FREQUENCY (MAX):** 2.5 MHz
- **STEPS PER REVOLUTION (1.8 MOTOR):** 400, 800, 1600, 3200, 6400, 12800, 25600, 51200

**■ Dimensions**

**Dimension A**  
 IMD23-S = 2.52"  
 IMD23-M = 2.96"  
 IMD23-L = 3.89"



## RS232 to RS485 Converter Card

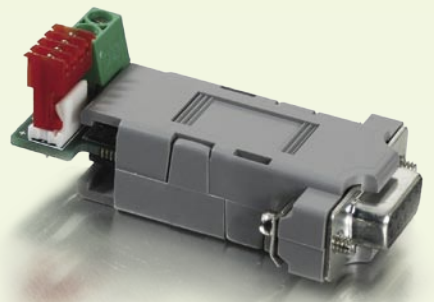
### ■ Features

- Allows the user to connect the R164 Controller or the IMC17 series of integrated motors to a PC via standard serial port
- Min and Max voltage levels: 7 to 40 VDC

The **RS485 to RS232 Converter Card** can also be purchased as part of the Designer's Kit. It allows the user to get acquainted with the unit by providing the necessary cabling to add the optional Push Button and Optical Sensor.

### Designer's Kit (KIT-01) Includes:

- RS485 to RS232 Converter Card (ACC-01)
- An Optical Sensor
- Red Switch Push Button



## USB 485 Converter Card

### ■ Features

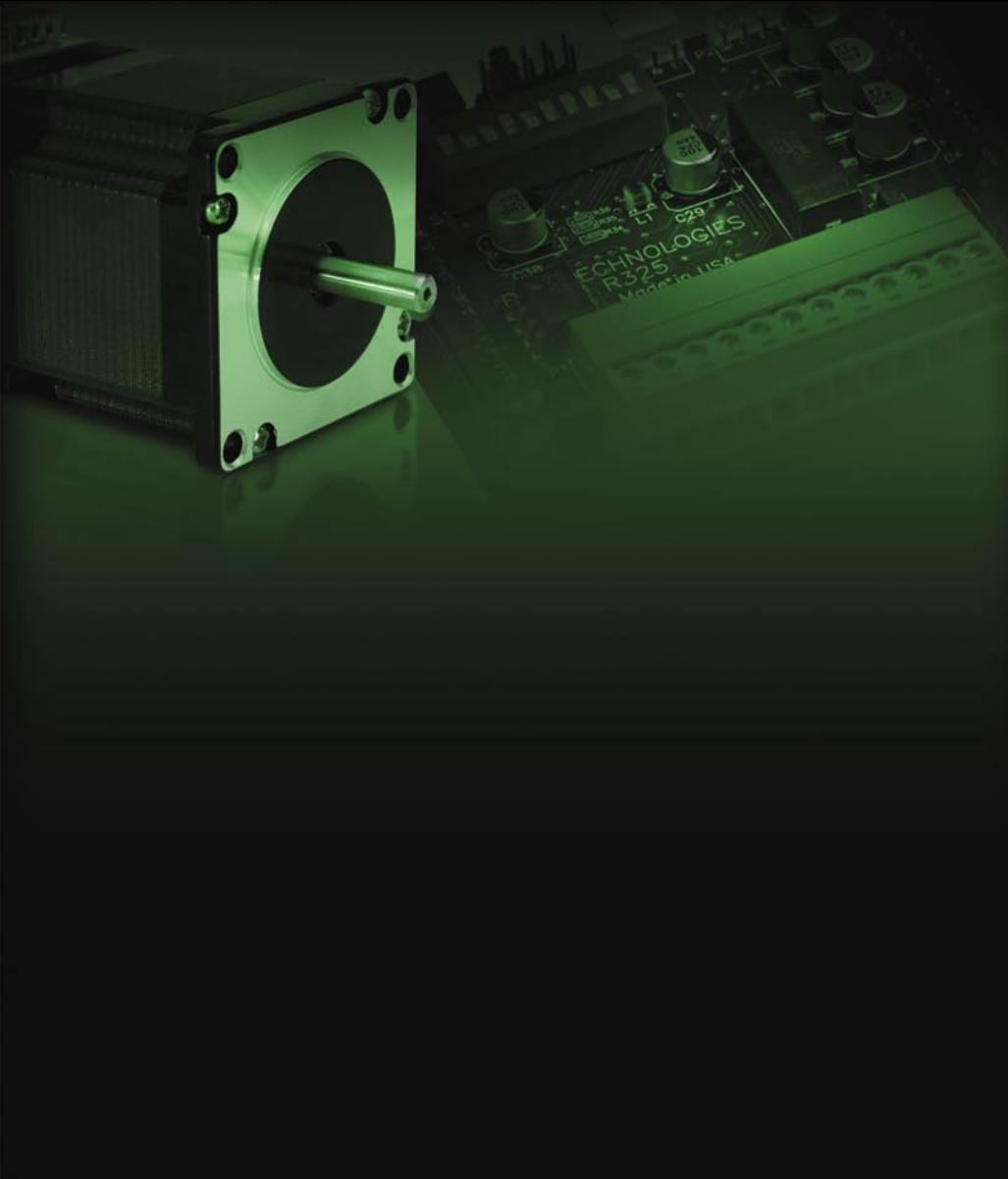
- Allows the user to connect the R101 or the R325 to a PC via standard USB port
- UART I/F Supports 7 / 8 Bit Data, 1 / 2 Stop Bits and Odd/Even/Mark/Space/No Parity
- Data rate 300 => 250K Baud
- 384 Byte Receive Buffer / 128 Byte Transmit
- Buffer for high data throughput
- Adjustable RX buffer timeout
- Auto Transmit Buffer control
- Integrated Power-On-Reset circuit
- Integrated 6 MHz - 48 MHz clock multiplier PLL
- USB 1.1 and USB 2.0 compatible
- Windows 98/98SE/ME/2000/XP Compatible

The **USB485 Converter Card** can also be purchased as part of the Designer's Kit. It allows the user to get acquainted with the unit by providing the necessary cabling to add the optional Push Button and Optical Sensor.

### Designer's Kit (KIT-02) Includes:

- USB485 Converter Card
- An Optical Sensor
- Red Switch Push Button
- 6 ft USB Cable





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