



# X-MIND-B DRIVE

## MAINS POWERED DRIVE

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High power upto 6A @ 325V for high speed performance.

Drives 34 & 42 frame motors.

Connects directly to mains supply.

No need for mains transformer and DC supply components.

400 to 4000 step/rev resolution for smooth running at low speeds.

High efficiency bipolar chopper with IGBT output stager.

Suitable for two phase motors, 4, 6 or 8 leads

LEDs for motor phase, overtemp, overvoltage and motor short.

X 4 step input frequency multiplication factor.

Opto isolated inputs & outputs.

The X-MIND-B6 stepper motor drives is ideal for high power motion control applications where high speed and resolution are required. The drive is powered directly from AC mains of 110 or 240 VAC so no transformer or rectifier are required. This makes it ideal for high speed, high torque applications and as a possible low cost replacement for servo motors. The opto isolated step and direction inputs are compatible with 5, 12 or 24 V indexers.

Due to the high internal voltage, it must be used with stepper motors with high insulation resistance and phase inductance. Best motor matches are with the 34 frame size Sanyo Denki SM2863-5155 and SM2862-5155. Protection against motor short circuit and overheating are also included. The maximum input frequency is 100kHz and there is also a X4 input frequency multiplier built into the drive. This enables a low frequency input to produce a high motor speed.

## SPECIFICATIONS

### LOGIC INPUTS

Opto isolated (OFF = 0 -4 V or open, ON = 5 - 24V)  
Step  
Direction  
De-energise  
Step x 4

### MAXIMUM STEP FREQUENCY

80kHz

### LOGIC OUTPUTS

Opto isolated (45V @ 10mA sink open collector)  
Drive fault

### RESOLUTION

400, 800, 1600, 3200,  
500, 1000, 2000 & 4000 steps/rev

### MOTOR INDUCTANCE

1.6-20.0mH (110 VAC), 2.5-25.0mH (240 VAC)

### MOTOR CURRENT

4 settings by DIP switch

### RESONANCE DAMPING

at low speeds

### OPERATING TEMPERATURE

5-40°C (Forced cooling may be required in cabinet)

### WEIGHT

1.0 kg.

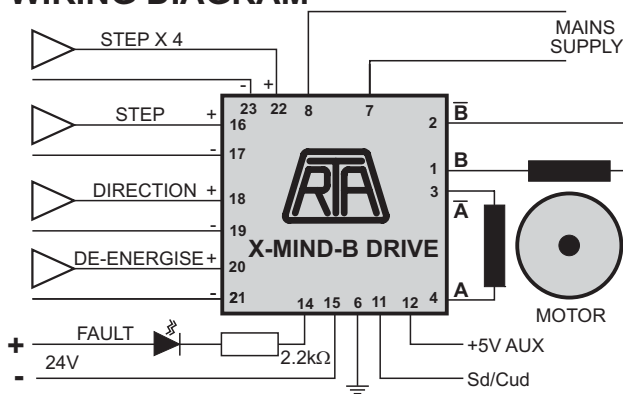
## SPECIFICATIONS

SPECIFICATIONS	X-MIND-B4	X-MIND-B6
<b>SUPPLY (VAC)</b> (maximum)	265	265
<b>SUPPLY (VAC)</b> (minimum)	93	93
<b>MOTOR CURRENT (A)</b> (maximum)	4.0	6.0
<b>MOTOR CURRENT (A)</b> (minimum)	2.3	3.5

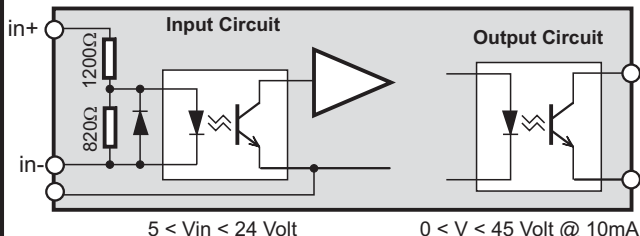
## MAXIMUM MOTOR SPEEDS (rpm)

MOTOR SIZE	X-MIND-B4	X-MIND-B6
103-H89223 (42 frame, 3 stack)	1200	2000
103-H89222 (42 frame, 2 stack)	1500	2500
SM2863 (34 frame, 3 stack)	2250	3000
SM2862 (34 frame, 2 stack)	3000	3500
All other small motors	3500	4000

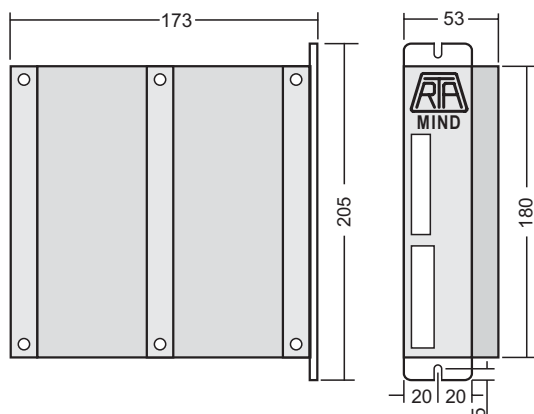
## WIRING DIAGRAM



## LOGIC SIGNALS



## DIMENSIONS (in mm)



## CONNECTIONS

- Motor** Motor winding B (2B or B+)
- Motor** Motor winding B (2A or B-)
- Motor** Motor winding A (1B or A-)
- Motor** Motor winding A (1A or A+)
- Motor shield** Motor cable shield
- Earth** Drive Ground
- AC Supply** AC Power from mains.
- AC Supply** AC Power from mains.
- Sd/Cud** changes step/dir input to CW/CCW pulse input.
- +5V AUX** 5V @ 12mA auxiliary supply output.
- Step signal** Link to +12V for high to low step transition.
- +Drive Fault** Normally shorted when drive is in working state but becomes open circuit when drive has shut down due to protection circuits.
- Drive Fault**
- +Step** The motor steps once for an OFF-ON transition of this signal. Ideal duty cycle 50%.
- Step**
- +Direction** When this signal is ON the motor direction is reversed. This signal must be on for at least 100µs before STEP input is received and must remain on at least 100µs after the last step is received.
- Direction-**
- +De-energise** When this signal is ON the drive is active.
- De-energise** When this signal is OFF the drive is inhibited so motor current (and holding torque) is zero.
- +Step X 4** When this signal is ON the step frequency input is multiplied by 4. This enables high motor speed with a low frequency controller.
- Step X 4**

Motors, transformers, controllers, motion control software and motor couplings also available on request.  
Continuous development may necessitate changes in models and specifications without notice.

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