

Quick Reference

IB462He

Ultra miniature
bipolar stepping motor driver



IMS
INTELLIGENT MOTION
SYSTEMS, INC.

Schneider
Electric

Notes and Warnings

Installation, configuration and maintenance must be carried out by qualified technicians only. You must have detailed information to be able to carry out this work. This information can be found in the user manual.

- Unexpected dangers may be encountered when working with this product!
- Incorrect use may destroy this product and connected components!

The user manual is not included, but may be obtained from the Internet at: <http://www.imshome.com/downloads/manuals.html>.

General Specifications

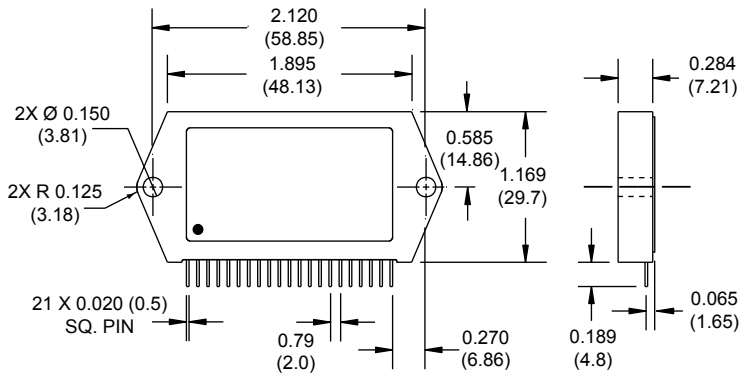
Electrical Specifications	Condition	Min	Typ	Max	Unit
Input Voltage Range	—	+12	—	+48	VDC
Phase Output Current	Per Phase	0.1	—	2	A
Quiescent Current (+V)	Outputs Floating	—	—	4	mA
Quiescent Current (+5V Input)	Outputs Floating	—	50	80	mA
Current Adjust Input Voltage	—	—	—	1.0	VDC

Logic Specifications	Condition	Min	Typ	Max	Unit
Low-Level Input Voltage	SCLK, DIR, H/F, Reset	—	—	0.6	VDC
Low-Level Input Voltage	Enable Input	—	—	1.3	VDC
High-Level Input Voltage	All Inputs	2	—	5	VDC
Low-Level Input Current	SCLK, DIR, H/F, Enable	—	—	-1.2	mA
Low-Level Input Current	Reset Input Only	—	—	-200	µA
High Level Input Current	SCLK, DIR, H/F, Enable	—	—	10	µA
Input Pull-up Resistance	SCLK, DIR, H/F, Enable	4.5	4.7	4.9	kΩ
Input Pull-up Resistance	Reset Input Only	50	51	52	kΩ

Thermal Specifications	Min	Typ	Max	Unit
Ambient Temperature	0	—	+50	°C
Storage Temperature	-40	—	+125	°C
Plate Temperature (Add'l Cooling Req'd)	—	—	+70	°C

Mechanical Specifications

Dimensions in Inches (mm)

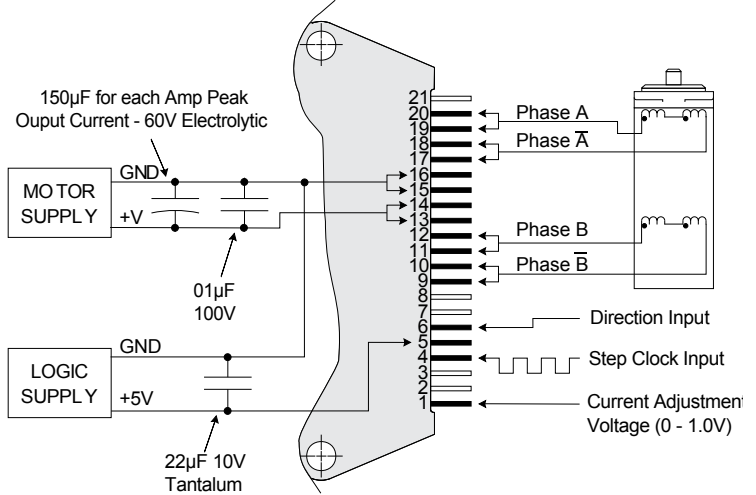


Pin Configuration

Pin #	Function
1	Phase Current Adjustment
2	Reset Input
3	Half/Full Step Input
4	Step Clock Input
5	+5 VDC Logic Supply Input
6	CW/CCW Direction Input
7	Phase Enable Input
8	Phase B Current Sense Input
9	Phase B Step Motor Output
10	

Pin #	Function
11	Phase B Step Motor Output
12	+12 to +48 VDC Motor Power Supply Input
13	
14	Power Supply Return (Ground)
15	
16	Phase A Step Motor Output
17	
18	Phase A Step Motor Output
19	
20	Phase A Step Motor Output
21	

Minimum Required Connections



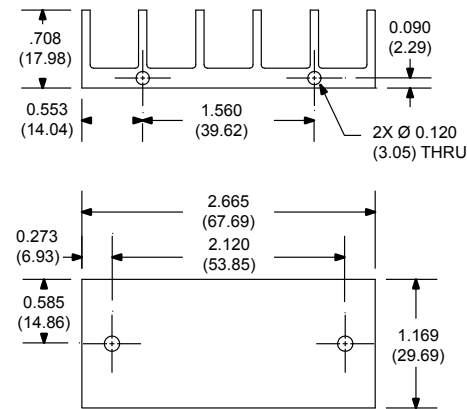
Mounting Requirements

The IB462He is designed to be socketed or soldered into a PCB. For PCB layout information and circuit board hole pattern please refer to the IB462He Manual. This part of the Quick Reference only supplies mechanical mounting information.

Heat sinking and the use of the included insulating thermal pad are ABSOLUTELY REQUIRED for the IB462He driver at all power levels. Below are some examples of mounting configurations.

H-462H Heat Sink Kit Information

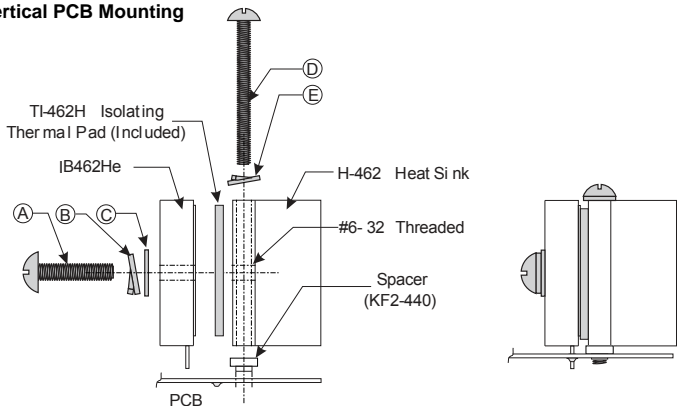
Heat Sink Dimensions



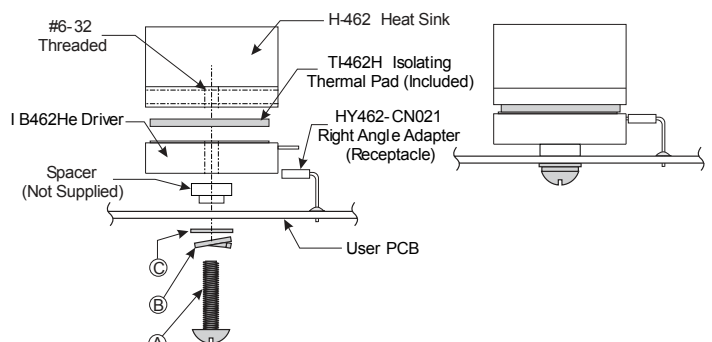
Heat Sink Kit Contents

- 1 - H-462 Heat Sink
- ⓓ 2 - 4-40 x 1.375 Screw
- ⓐ 2 - 6-32 x 5/8 Screw
- 2 - Spacers
- ⓔ 2 - #4 Split Washers
- ⓒ 2 - #6 Flat Washers
- ⓑ 2 - #6 Split Washers

Vertical PCB Mounting



PCB Mounting Using Right-Angle Receptacle



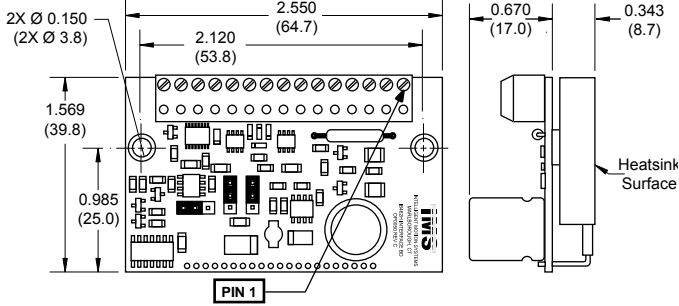
INT-462 Interface Board

General Specifications

Electrical Specifications	Condition	Min	Typ	Max	Unit
Input Voltage Range	—	+12	—	+48	VDC
Phase Output Current	Per Phase	0.1	—	2	A
Quiescent Current (Driver Connected)	Inputs/Outputs Floating	—	—	85	mA
Input Forward Current	Isolated Inputs	8	10	12	mA
Input Forward Voltage	Isolated Inputs	5	—	40	VDC
Signal Output Current	Fault Output	—	—	25	mA
Drain-Source Voltage	Fault Output	—	—	100	VDC
Drain-Source Resistance	Fault Output	—	6.5	—	Ω

INT-462 Mechanical Specifications

Dimensions in Inches (mm)



INT-462 Pin Configuration

Pin #	Function	Pin #	Function
1	Power Supply Return (Ground)	8	Step Clock Input (Isolated)
2	+V (+12 to +48 VDC)	9	+5 to +40 VDC Optocoupler Supply
3	Motor Phase A	10	Enable Input (Isolated)
4	Motor Phase \bar{A}	11	Reset Input (Isolated)
5	Motor Phase B	12	Fault Output (Open-Collector)
6	Motor Phase \bar{B}	13	Logic Ground
7	CW/CCW Direction Input (Isolated)	14	Current Adjustment
		15	Current Reduction Adjustment

Mounting

Refer to the mounting instructions on the opposite side of this sheet or in the product manual.

Setting Run and Hold Output Current

A current adjustment resistor is **REQUIRED**.

JP3 Settings

ENOFF - Current Reduction By Resistor

ENON - Outputs Disable After a move (0 Hold Current)

▲ Current Adjust (See Table)

▲ Reduction Adjust (See Equation)

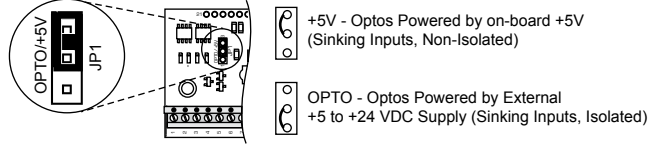
$$R_{RED} = 500 \times \left(\frac{I_{RUN} \times I_{HOLD}}{I_{RUN} - I_{HOLD}} \right)$$

Current Adjustment Resistor Values (Resistor Required)

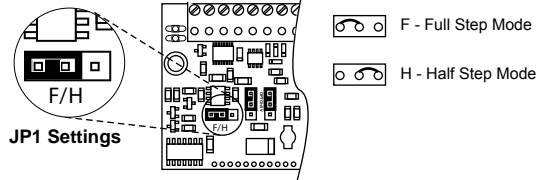
I_{RUN} (A)	1% Ω	I_{RUN} (A)	1% Ω
0.1	49	1.1	549
0.2	100	1.2	604
0.3	150	1.3	649
0.4	200	1.4	698
0.5	249	1.5	750
0.6	301	1.6	806
0.7	348	1.7	845
0.8	402	1.8	909
0.9	453	1.9	953
1.0	499	2.0	1000

Opto-Isolated Input Power Setup

JP1 Settings



Setting Half/Full Step Modes



Minimum Required Connections

