OSC-462H

ANALOG SPEED CONTROL BOARD FOR IB462H DRIVERS

QUICK REFERENCE

OSC-462H Quick Reference / Installation Guide

The primary function of this guide is to acquaint the user with the specifications, basic wiring and configuration of the OSC-462H Analog Speed Control Board. A combined product manual for the IB462H and OSC-462H is available in Acrobat PDF format on the IMS Product CD. It also may be downloaded from the IMS web site at www.imshome.com.

Notes And Warnings

Please observe the following when handling, connecting and using your IB462H Driver and OSC-462H Analog Speed Control Board. Failure to observe these points may result in damage to the drive. All warranty and disclaimer information is located in the full product manual and should be referenced for more information.

The OSC-462H and IB462H components are sensitive to Electrostatic Discharge (ESD). All handling should be done at an ESD protected workstation.

Hazardous Voltage Levels may be present if using an open frame power supply to power the OSC-462H and IB462H.

The Power Supply output voltage must not exceed the maximum input voltage of the OSC-462H and IB462H.

Do not apply power to the OSC-462H or IB462H without proper heatsinking or cooling. The maximum rear plate temperature of the IB462H is 70°C!

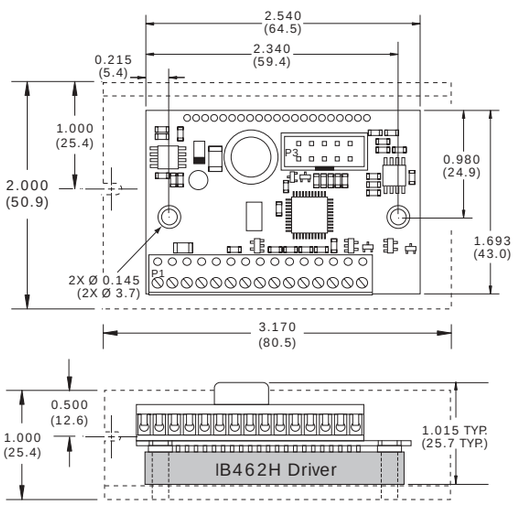
The rear mounting surface of the IB462H driver contains various voltages and must be kept isolated when attached to a conductive surface!

OSC-462H Thermal Specifications

	Range
Ambient Temperature	0 to +50°C
Storage Temperature	-40 to +125°C
Maximum Temperature	+70°C

OSC-462H Mechanical Specifications

Dimensions in Inches (mm)



Dashed lines indicate optional mounting L-Bracket.

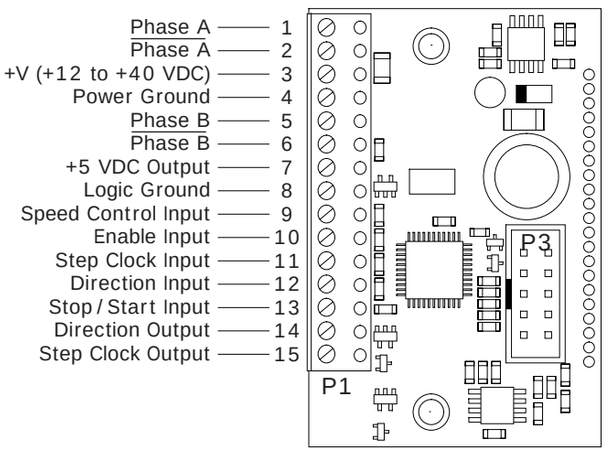
OSC-462H Electrical Characteristics

Specification	Test Condition	Min	Typ	Max	Unit
Speed Control Input Voltage		0		5	V
A/D Resolution			10		Bit
Speed Control Potentiometer Resistance			10		kΩ
Input Voltage (+V)		12		40	V
Phase Output Current*	Per Phase (IB462H Driver)			2	A
Low Level Input Voltage	Stop/Start, Direction and Step Clock	-0.5		1.5	V
High Level Input Voltage	Stop/Start, Direction and Step Clock	3.0		5.5	V
Low Level Input Voltage	Enable	0.5		1.65	V
High Level Input Voltage	Enable	3.85		5.5	V
Input Pull-up Resistance (to +5 VDC)	Stop/Start, Direction Step Clock, Enable		4.99		kΩ
Output Drain-Source Voltage	Direction and Step Clock Outputs			80	V
Output Drain Current	Direction and Step Clock Outputs			120	mA
Drain-Source On-Resistance	Direction and Step Clock Outputs			6	Ω

** For OSC-462H combined with IB462H Driver.*

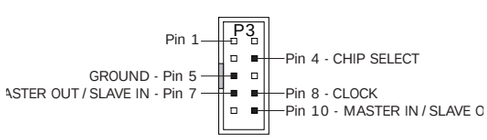
Connectors

P1 Connector and Pin Assignments



Pin #	Pin Name	Description
1	Phase A	Phase A of the stepping motor.
2	Phase $\overline{A}$	Phase $\overline{A}$ of the stepping motor.
3	+V (+12 to 40VDC)	+12 to +40VDC unregulated power supply input.
4	Power Ground	Power supply ground (return).
5	Phase B	Phase B of the stepping motor.
6	Phase $\overline{B}$	Phase $\overline{B}$ of the stepping motor.
7	+5VDC Output	+5VDC output (10kΩ potentiometer signal end).
8	Logic Ground	+5V Ground (10kΩ potentiometer ground end).
9	Speed Control Input	0 to +5VDC velocity control input (10kΩ potentiometer wiper).
10	Enable Input	Active HIGH driver enable input.
11	Step Clock Input	Step clock input. Internally pulled-up to +5VDC.
12	Direction Input	CW/CCW direction input. The function of this input is dependant on the mode specified by the MODE instruction. Internally pulled-up to +5VDC.
13	Stop/Start Input	Active LOW Stop/Start Input toggles the internal step clock generator. The function of this input is specified by the MODE instruction. Internally pulled-up to +5VDC.
14	Direction Output	Buffered direction output.
15	Step Clock Output	Buffered step clock output.

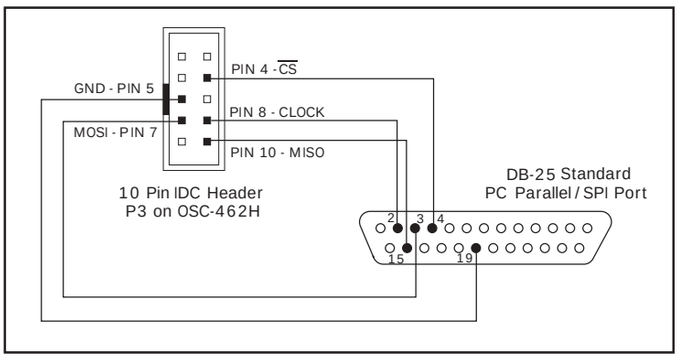
P3 Connector and Pin Assignments



Pin # *	Pin Name	Description
4	CS	Chip Select
5	GND	Communications ground.
7	MOSI	Master Out/Slave In
8	CLK	Step Clock
10	MISO	Master In/Slave Out

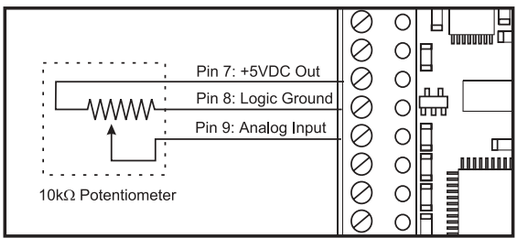
** Numbers not shown are no connect.*

Connecting the SPI Interface*



** SPI is the acronym for **S**erial **P**eripheral **I**nterface.*

Speed Control Input with Potentiometer



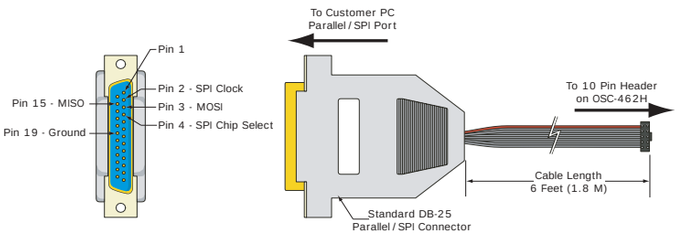
Recommended Potentiometer

Bourns 53AAA-B28-B15. This is available from Digikey (P / N 53AAA-B28-B15-ND) and Newark Electronics (Stock No. 90F6563).

Recommended Parallel / SPI Cable

The recommended method for connecting the Parallel / SPI Communications is the Parameter Setup Cable. Order IMS Part No. **OSC-CC100-000**.

Parameter Setup Cable Details

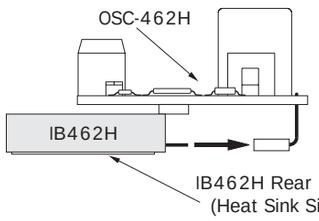


Setup Parameters

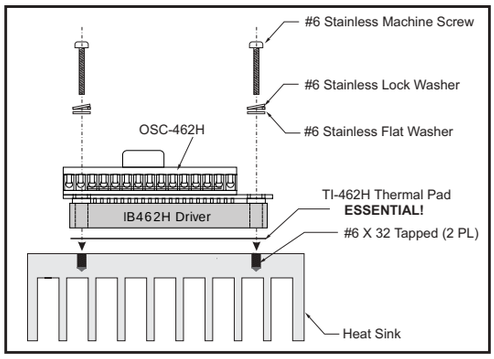
Parameter	Function	Range	Units	Default
ACCL	Acceleration / Deceleration	2000-65000	Steps / sec^2	2000
C	Joystick Center Position	0 to 1022	Counts	0
DB	Potentiometer / Joystick Deadband	0 to 255	Counts	1
FS	Full Scale of the Potentiometer / Joystick	1 to 1023	Counts	1023
MHC	Motor Holding Current	0 - 100	Percent	5
MRC	Motor Run Current	1 - 100	Percent	25
RANGE	VI / VM Range Setting	1 - 8	-	3
STEP	Half / Full Step Operation Select	H or F	-	H
VI	Initial Velocity	1-60000	Steps / sec.	400
VM	Maximum Velocity	1-60000	Steps / sec.	20000

For More Information:
See the complete IB462H Product Manual

Mounting



Mounting the IB462H Driver to the OSC-462H Speed Control



Mounting the IB462H Driver and OSC-462H Speed Control to the H-462H Heat Sink.

NOTE: The #6 Mounting Screw Torque is 5.0 to 7.0 lb-in (0.6 to 0.8 N-m).

WARNING: The Heat Sink mounting surface must be smooth, flat, and free from burrs, protrusions, cuttings, or other foreign objects.

Minimum Required Connections