

OSC-462H

ANALOG SPEED CONTROL BOARD

FEATURES

- Digital Oscillator for Accurate Speed Control
- Plugs Directly Onto the IB462He Half/Full Step Stepping Motor Driver (Sold Separately)
- Low Cost
- Extremely Compact
(2.54 x 1.69 x 1.02 inches) (64 x 43 x 26 mm)
- Configurable:
 - Motor Run/Hold Current
 - Acceleration/Deceleration
 - Initial and Max Velocity
 - Half or Full Step
- 2 Modes of Operation: Joystick or Velocity
- 0 to +5 VDC Speed Control Input
- Step Clock & Direction Out for Cascading Multiple Drives
- Single Supply
- Graphical User Interface (GUI) for Quick and Easy Parameter Setup
- 15 Pin Removable Screw Terminal Interface

DESCRIPTION

The OSC-462H Analog Speed Control Interface Board offers the system designer the capability of adding low cost, intelligent velocity control to the IB462He Half/Full Step Hybrid Motor Driver (sold separately). The OSC-462H is powered by a single +12 to +48 VDC power supply, which will also provide power for the IB462He driver.

The OSC-462H features a digital oscillator for accurate velocity control with an output frequency of up to 60 kilohertz. Output frequency will vary with the voltage level on the speed control input. The speed control input can be adjusted by using a 10k potentiometer* or by directly applying 0 to 5 volts to the input.

There are two basic modes of operation: bidirectional and unidirectional. In bidirectional mode, both speed and direction are controlled by the speed control input. In unidirectional mode, only velocity is controlled by the speed control input; direction is controlled by a separate input.

The speed control board has 10 setup parameters which are configured using the included Configuration Utility. These enable the user to configure all of the operational parameters of the OSC-462H which are stored in non-volatile memory.

*Not Supplied

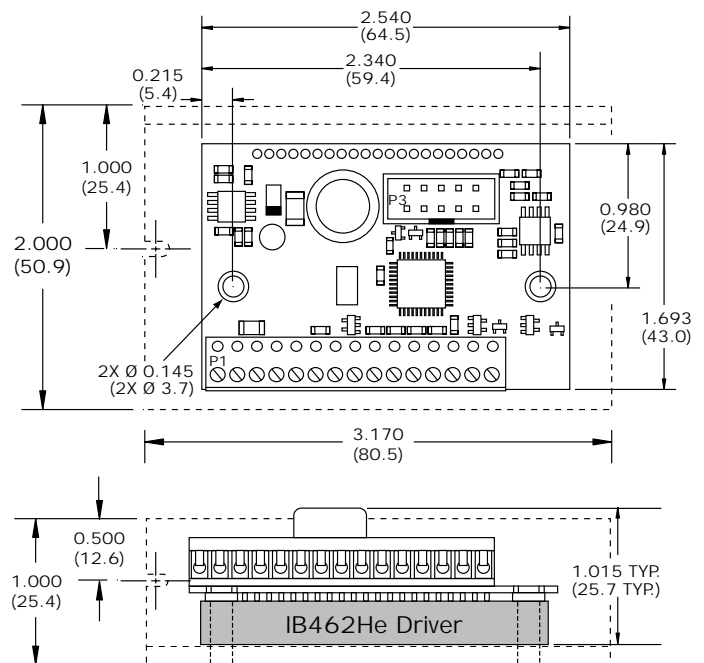


In addition, the OSC-462H has buffered step clock and direction outputs to facilitate cascading of drives. These outputs will follow the primary step clock and direction outputs of the speed control board.

Wiring is accomplished with a convenient 15 pin removable screw terminal (P1) and an optional Parameter Setup Cable which plugs into the board's 10 pin IDC header (P3). For additional mounting configurations, an L-Bracket is also available as an option.

The IB462He Half/Full Step Driver plugs easily into a 21 pin receptacle attached to the OSC-462H. This device allows for a simple, cost effective solution in applications requiring variable velocity control.

MECHANICAL SPECIFICATIONS



Dashed lines indicate optional mounting L-Bracket.

Dimensions in Inches (mm)

PIN ASSIGNMENTS

REMOVABLE SCREW TERMINAL – P1	
PIN #	FUNCTION
1	PHASE A
2	PHASE /A
3	+V (+12 TO +48 VDC)
4	POWER GROUND
5	PHASE B
6	PHASE /B
7	+5 VDC OUTPUT/10K POT SIGNAL END
8	LOGIC GROUND/10K POT GND END
9	SPEED CONTROL INPUT/10K POT WIPER END
10	ENABLE INPUT
11	STEP CLOCK INPUT
12	DIRECTION INPUT
13	STOP/START INPUT
14	DIRECTION OUTPUT
15	STEP CLOCK OUTPUT
10 PIN PIN-HEADER – P3 (SPI)	
4	CHIP SELECT
5	GROUND
7	MASTER OUT – SLAVE IN
8	CLOCK
10	MASTER IN – SLAVE OUT

PARAMETERS

SETUP PARAMETERS				
PARAM.	FUNCTION	RANGE	UNITS	DEFAULT
ACCL	Acceleration/Deceleration	2000-65000	steps/sec ²	2000
C	Joystick Center Position	0 to 1022	counts	0
DB	Deadband	0 to 255	counts	1
FS	Full Scale	1 to 1023	counts	1023
MHC	Motor Hold Current	0-100	percent	5
MRC	Motor Run Current	1-100	percent	25
RANGE	VI/VM Range Setting	1-8	--	3
VI	Initial Velocity	1-60000	steps/sec	400
VM	Maximum velocity	1-60000	steps/sec	20000
STEP	Half/Full Step Operation	H or F	--	H

All parameters are set using the included Configuration Utility.

ELECTRICAL SPECIFICATIONS

Speed Control Input Voltage	0 to +5 VDC
A/D Resolution	10 bit
Speed Control Potentiometer Resistance	10 kΩ
Input Voltage (+V) Range	+12 to +48 VDC
Phase Output Current*	2 amps
Low Level Input Voltage	
Stop/Start, Dir & Step Clock	- 0.5 to +1.5 VDC
Enable	+0.5 to +1.65 VDC
High Level Input Voltage	
Stop/Start, Dir & Step Clock	+3.0 to +5.5 VDC
Enable	+3.85 to +5.5 VDC
Input Pull-up Resistance (to +5 VDC)	
Stop/Start, Dir & Step Clock, Enable	4.99 kΩ
Output Drain-Source Voltage	
(Step Clock & Dir Out)	+80 VDC
Output Drain Current (Step Clock & Dir Out)	120 mA
Drain-Source On-Resistance (Step Clock & Dir Out)	6 Ω

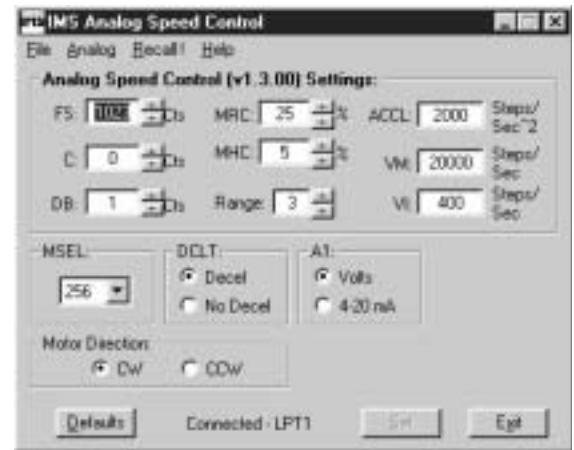
*For OSC-462H combined with IB462He Driver.

CONFIGURATION UTILITY

The IMS Analog Speed Control software is a required, easy to install and use graphical user interface (GUI) for configuring the OSC-462H from the parallel port on your computer. Access the GUI via the IMS SPI Interface included on the CD shipped with the product, or download at www.imshome.com.

Configuration Utility features include:

- Easy installation.
- Automatic communication configuration.
- Will not set out-of-range values.
- Tool-tips display valid range setting for each option.
- Ease of use via single screen interface (*shown below*).



The IMS Analog Speed Control's graphical user interface (GUI) simplifies use with single screen interface for configuring the OSC-462H.

OPTIONS

A Parameter Setup Cable is a low cost accessory which eliminates the need for the user to wire communications. This 6 foot long cable plugs in easily to connect a standard DB-25 PC parallel port to the 10 pin header (P3) on the OSC-462H.

For additional mounting options of the OSC-462H, an L-Bracket is available.

ORDERING INFORMATION

Name	Part Number
Analog Speed Control Board	OSC-462H
Half/Full Step Motor Driver	IB462He
Parameter Setup Cable	OSC-CC100-000
Mounting L-Bracket	MB-21