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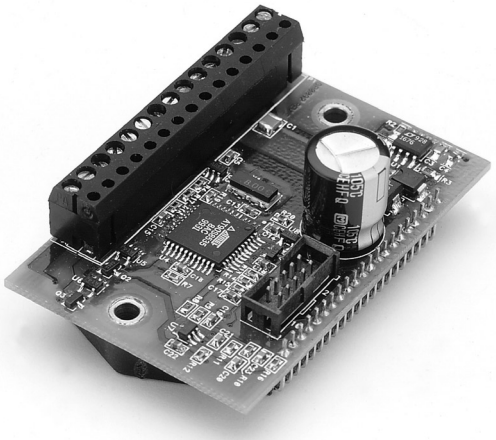
OSC-462H

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
- Operation Modes: Bidirectional and Unidirectional Velocity Control
- 0 to +5 VDC Speed Control Input
- Step Clock and 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.

*Not Supplied

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's setup parameters are configured using the included IMS Analog Speed Control GUI. This enables the user to configure all of the operational parameters of the OSC-462H which are stored in nonvolatile memory.

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 pin-header (P3). For additional mounting configurations, an L-Bracket is also available as an option.

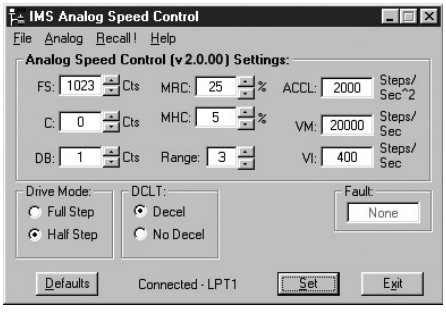
The IB462He Half/Full Step Driver plugs easily into a 21 pin receptacle attached to the OSC-462H. This device allows for a simple, cost effective solution in applications requiring variable velocity control.

CONFIGURING

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.

IMS Analog Speed Control features:

- Easy installation.
- Automatic communication configuration.
- Will not set out-of-range values.
- Tool-tips display valid range setting for each option.
- Easy single screen interface.



The IMS Analog Speed Control GUI is an easy to install and use single screen interface.

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.*

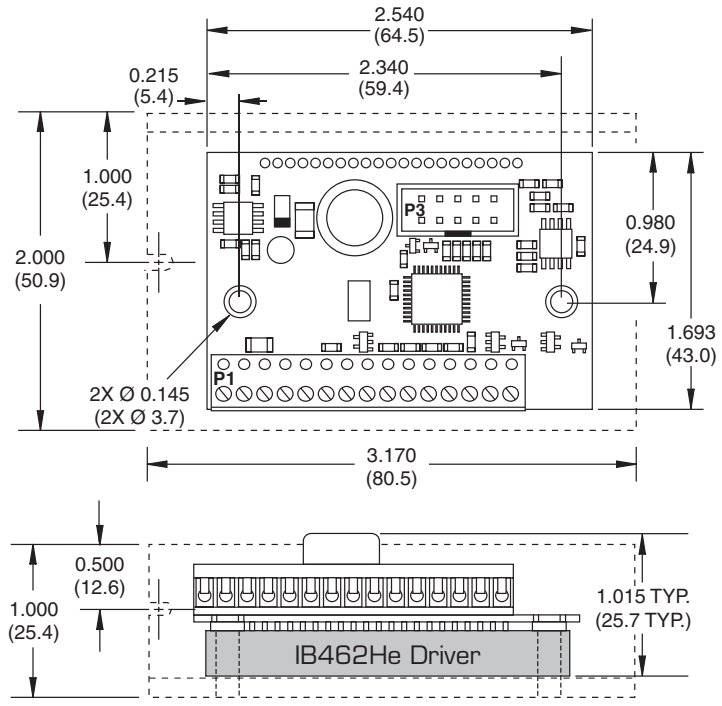
PARAMETERS

SETUP PARAMETERS				
PARAM.	**FUNCTION**	**RANGE**	**UNITS**	**DEFAULT**
ACCL	Acceleration/Deceleration	2000-65000	steps/sec^2	2000
C	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.

MECHANICAL SPECIFICATIONS

Dimension in inches (mm)



Dashed lines indicate optional mounting L-Bracket.

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 Ground 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 – P2 (SPI)	
4	Chip Select
5	Ground
7	Master Out – Slave In
8	Clock
10	Master In – Slave Out

OPTIONS

An optional Parameter Setup Cable is an inexpensive 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 pin-header (P3) on the OSC-462H. Recommended with first order.

For additional mounting options, the MB-21 L-Bracket is available for the OSC-462H.

ORDER INFORMATION

Name	**Part Number**
Speed Control Board	OSC-462H
Microstepping Motor Driver	IB462He
Parameter Setup Cable	OSC-CC100-000
Mounting L-Bracket	MB-21