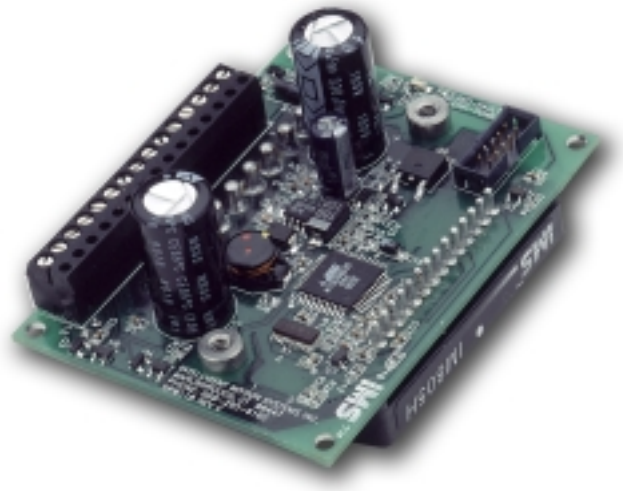
OSC-483H
AND
OSC-805H
ANALOG SPEED CONTROL BOARD



FEATURES

- Digital Oscillator for Accurate Speed Control
- Plugs Directly Onto the IM483H or IM805H Stepping Motor Driver (Sold Separately)
- Low Cost
- Extremely Compact (3.12 x 2.37 x 1.29 inches) (76 x 60 x 33 mm)
- Configurable:
  - Motor Run/Hold Current
  - Acceleration/Deceleration
  - Initial and Max Velocity
  - Microstep Resolution to 256 microsteps/step
- 2 Modes of Operation: Bidirectional and Unidirectional with Programmable Center Point
- 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-483H and OSC-805H Analog Speed Control Interface Boards offer the system designer the capability of adding low cost, intelligent velocity control to the IM483H or IM805H Microstepping Hybrid Motor Driver (sold separately). The OSC-483H mates with the IM483H driver and has a voltage range of +12 to +24VDC. The OSC-805H mates with the IM805H driver and has an input voltage range of +24 to +75 VDC.

The OSC features a digital oscillator for accurate velocity control with an output frequency of up to 100 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 analog speed control input. In unidirectional mode, only velocity is controlled by the analog speed control input; direction is controlled using a separate digital input.

The speed control board has 11 setup parameters which are configured using the included Configuration Utility. These enable the user to configure all of the operational parameters of the OSC which are stored in non-volatile memory.

The OSC 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. The OSC also features Step Clock and Direction inputs for remote connection and control. The use of the Start input switches the device from an external clock input to the internal oscillator.

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.

CONFIGURATION UTILITY

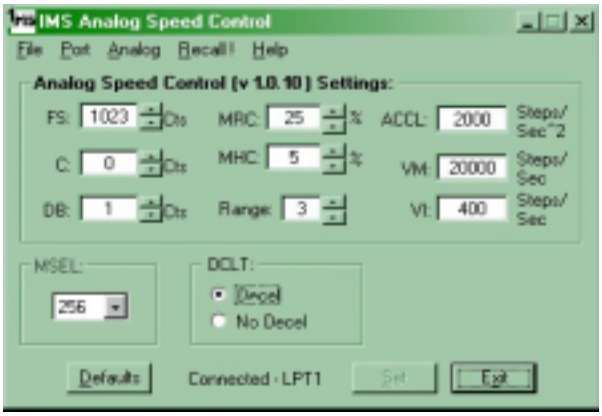
The IMS Analog Speed Control Configuration Utility is an easy to install and use graphical user interface (GUI) for configuring the OSC from the parallel port on your computer. It is required for configuring your Analog Speed Control Interface Board. This utility is included on a CD that ships with the product, or it may be downloaded 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 on next page).

*Recommended part: 10k ohm, 1/2 W potentiometer such as the Bourns 53AAA-B28-B15. This is available from Digikey (P/N 53AAA-B28-B15-ND) and Newark Electronics (Stock No. 90F6563).

CONFIGURATION UTILITY

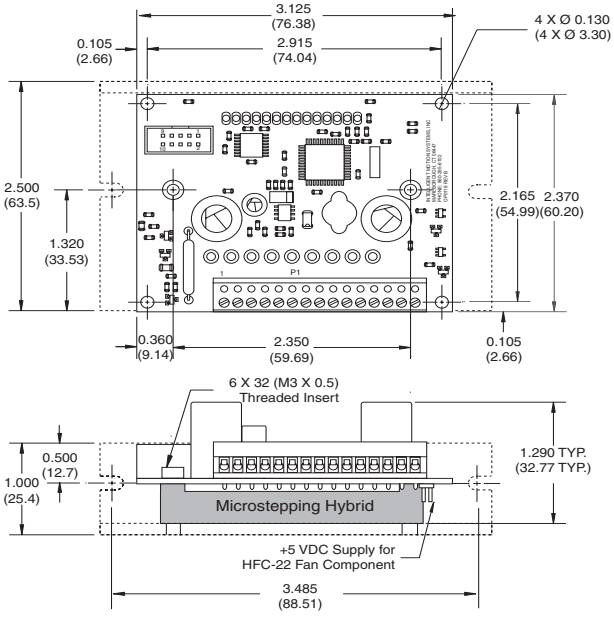


PIN ASSIGNMENTS

REMOVABLE SCREW TERMINAL – P1		
	OSC-483H	OSC-805H
PIN #	FUNCTION	
1	PHASE B	PHASE B
2	PHASE /B	PHASE /B
3	+V (+12 TO +48 VDC)	+V (+24 TO +75 VDC)
4	POWER GROUND	POWER GROUND
5	PHASE A	PHASE /A
6	PHASE /A	PHASE A
7	ENABLE INPUT	
8	START INPUT	
9	STEP CLOCK INPUT	
10	DIRECTION INPUT	
11	+5 VDC OUTPUT/10K POT SIGNAL END	
12	LOGIC GROUND/10K POT GROUND END	
13	SPEED CONTROL INPUT/10K POT WIPER END	
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	

MECHANICAL SPECIFICATIONS

Dimension in inches (mm)



Dashed line indicates optional L-Bracket

PARAMETERS

SETUP PARAMETERS				
PARAM	FUNCTION	RANGE	UNITS	DEFAULT
ACCL	Accel/Decel	2000 to100000	steps/sec^2	2000
C	Joystick Center	0 to 1022	counts	0
DB	Deadband	0 to 255	counts	1
DCLT	Decel Type	Decel at ACCL Rate/ No Decel	-	Decel
FS	Full Scale	1 to 1023	counts	1023
MHC	Hold Current	0 to 100	percent	5
MRC	Run Current	1 to 100	percent	25
MSEL	Microstep Resolution	2, 4, 5, 8, 10, 16, 25, 32, 50, 64, 125, 128, 250, 256	microsteps per step	256
RANGE	VI/VM Range	1 to 8	-	3
VI	Initial Velocity	1 to 100000*	steps/sec	400
VM	Maximum Velocity	1 to 100000*	steps/sec	20000

**Depends on the setting of the Range parameter*

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/+24 to +75 VDC
Phase Output Current (attached driver) .... 4 A/7 A (Peak)
Low Level Input Voltage
  Stop/Start, Dir & Step Clock ..... 0 to +1.5 VDC
  Enable ..... 0 to +1.65 VDC
High Level Input Voltage
  Stop/Start, Dir & Step Clock ..... +3.0 to +5.0 VDC
  Enable ..... +3.85 to +5.0 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

OPTIONS

A Parameter Setup Cable is an inexpensive accessory which eliminates the need for the user to wire communications. This 5 foot long cable plugs in easily to connect a standard DB-25 PC parallel port to the 10 pin header (P3) on the OSC. Recommended with the first order.

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

ORDERING INFORMATION

Name **Part Number**

Analog Speed Control Board OSC-483H/OSC-805H
Microstepping Motor Driver IM483H/IM805H
Parameter Setup Cable OSC-CC100-000
Mounting L-Bracket MB-22