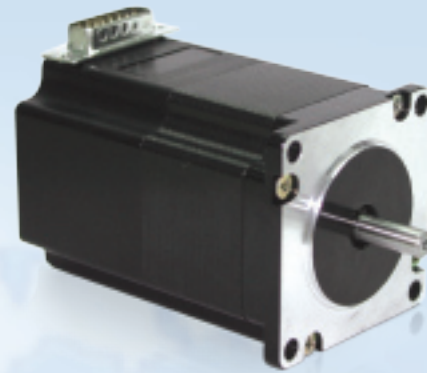


SilverPak 23C

MOTOR + CONTROLLER + Driver



MAIN FEATURES:

- Voltage: +12 to 40VDC
- Current: 0.2 to 3.0 Amps Peak, programmable in terms of percentage of max possible current
- Hold current: 0.2 to 1.5 Amps, programmable up to 50% of max possible run current
- Step resolution: 2x, 4x, 8x, 16x, 32x, 64x, 128x, 256x (NO FULL STEPPING)
- Speed: (max step frequency: 16.8kHz)
- Inputs: 4 user configurable analog or digital inputs (limited analog capabilities)
- Outputs: 2 outputs capable of driving 1 Amp of current
- RS485 communication
- Stand alone operation, can store programs on EEPROM and run upon power up

DETAILED FEATURES:

- Operating temperature: -20 to 50°C

INCLUDED ACCESSORIES:

- A DB-15 cable comes with each unit and it depends on which converter card they are using.

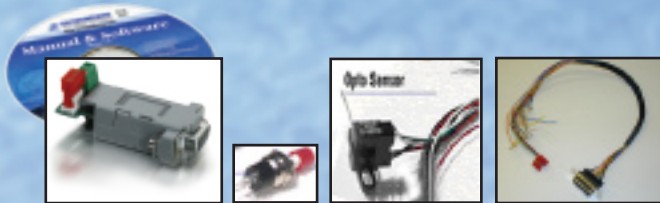


OPTIONAL ACCESSORIES:

(Available for an additional cost)

(p/n 083-00035)

- Designer's kit: RS232-to-485, push button, opto sensor, DB-15 cable (p/n 090-00094), and CD-ROM



(p/n 083-00036)

- Designer's kit: USB485 converter card, push button, opto sensor, DB-15 cable (p/n 090-00096), 6 ft USB cable, 3-pin to 3-pin cable and CD-ROM



CONNECTION SPECIFICATIONS:

Pin #	Color	Function	Input
1	Green	Power Input GROUND	
2	Black	1A On/Off Driver OC Pulldown	
3	White/Green	Opto Isolated Step Input (driver only)	
4	Yellow	Opto Isolated +5 VE Power Input (driver only)	
5	Orange	Input	2
6	Yellow/White	Opto Sensor LED	
7	Orange/White	Input	
8	Black/White	RS485 A	3
9	Red	12V to 40VDC Input POWER	
10	Blue	1A On/Off driver OC Pulldown	
11	Blue/White	Opto Isolated Direction Input (driver only)	
12	Green/White	Signal Ground	
13	White	Input	1
14	Red/White	Input	4
15	Brown	RS485 B	

OPTIONS:

- Silverpak 23CE – Encoder Option: US Digital encoders can be mounted inside the Silverpak 23C. E2 Encoders only.

Cycles per Second	Cycles Per Revolution (CPR)	
0 to 100,000	32	400
Cycles per Revolution (CPR)	50	500
32 to 1,250	96	512
Pulses Per Revolutions (PPR)	100	540
128 to 5,000	110	720
	120	900
	192	1000
	200	1016
	250	1024
	256	1250
	360	

The Silverpak 23C has encoder feedback where it constantly checks the position register on board compared to the encoder position register. Any time this is off, it will correct the move.

KEY SELLING FEATURES:

- Can run a program stand alone (no PC needed)
- Simple programming
- Encoder feedback with position correction
- Two designer's kits available for the RS232 or USB user

KITS:		CARD ONLY (no-kit)
083-00004 Designer's Kit for RS232	RS485, push button, opto sensor, cables	017-00004 RS232-485 converter card
083-00026 Designer's Kit for USB	USB485, push button, opto sensor, cables	USB485 converter card

*High resolution encoder adder (>1000)

COMMON TECH SUPPORT QUESTIONS / RMA ISSUES:

● MOTORS ARE HOT:

Check holding current or running current. It could be too high.

● POWER SUPPLY IS DRAWING EXCESSIVE CURRENT:

Ensure polarity is not switched on the main power supply, or on the converter card if using the RS232 to RS485 converter.

● MOTOR ROTATES, BUT IRRATICALLY, NOT SMOOTHLY:

If one of the two drivers are blown, then only half of the driver works. If this is the case, turning on and off the pulses to move and stop the motor might cause the motor to rotate CW and CCW at random times, when it should only rotate in one direction. Also, only half the torque is available.

Acceleration or speed is too fast for the motor. Lower the speed until it steps smoothly

You could be hitting a resonant spot, microstep the unit to see smoother results

● I CANNOT TYPE ANYTHING IN HYPERTERMINAL:

Check to make sure that you have the correct COM Port selected. Are you using Windows 95? Windows 95 has had problems with its HyperTerminal. Use an operating system of Windows 98 or higher.

Are you working on a Laptop? Sometimes there is a shift in Ground on Laptop Serial Ports. Pin 5 on the Serial Port is Ground. Confirm that this is connected to a true ground.

Did you check the Properties in HyperTerminal? Go to File / Properties / Settings / ASCII Setup, and check the box 'Echo Typed Characters Locally'.

Is the LED flashing on the back of the unit (heatsink side)? A flashing light indicates it is waiting for Commands. The other steady LED indicates that Power is being supplied to it. If neither of these is on, then check your Power Supply.

Check the Converter Card. Use a voltmeter to measure if Power is coming into the card correctly and if power is being supplied to the Controller properly.

● I AM ABLE TO TYPE IN HYPERTERMINAL BUT NOTHING HAPPENS:

Check the LED's. If neither is on, check the Power Supply. If one is steady, and the other is flashing, then Power is OK.

Is the unit set to the correct Address? Check the Red Dial on the back of the unit. The white arrow should be pointing to the corresponding Address. Confirm that the arrow is not between 2 Addresses.

Check the Converter Card. Use a voltmeter to measure if Power is coming into the card correctly and if power is being supplied to the Controller.

Assuming the Properties of HyperTerminal are set as described in the Manual (Getting Started), does HyperTerminal respond with a string of characters?

/O' indicates that the command is terminated

/O@ indicates that the command was received correctly

/OC indicates that the command is out of range

/Ob indicates bad command

Check the COM Port settings on 'My Computer'. Right-click on My Computer and go to Properties / Hardware / Device Manager / Ports. Be sure you have the correct COM# set in your HyperTerminal settings.

● MOTOR STALLS IN THE MIDDLE OF A COMMAND:

This means there is not enough current being supplied to the Motor. Use the m and l (lower case L) commands to change the current, or run the motor at a Lower Speed (V command).