

SilverPak 17C/CE

MOTOR + CONTROLLER + DRIVER

MAIN FEATURES:

- Voltage: +12 to 40VDC
- Current: 0.2 to 2.0 Amps Peak, programmable in terms of percentage of max possible current
- Hold current: 0.2 to 1.0 Amps, programmable up to 50% of max possible run current
- Step resolution: 2x, 4x, 8x, 16x, 32x, 64x, 128x, 256x (NO FULL STEP)
- Speed: (max step frequency: 16.8MHz)
- Inputs: 2 I/O's, 1 input for homing to an opto sensor, 1 input for a switch closure to ground (Total of 2 I/O's and 2 inputs)
- RS485 communication
- Stand alone operation, can store programs on EEPROM and run upon power up
- NEW: Able to use inputs 1 & 2 as limit switches

DETAILED FEATURES:

- Operating temperature: -20 to 50°C

INCLUDED ACCESSORIES:

- 090-00022 cable for DB-9 cable comes with each unit (with a red 4-pin connector for the RS232-485 converter card)



- 090-00018 cable for motor comes with each unit (the other side is 4 flying lead wires)



OPTIONAL ACCESSORIES:

(Available for an additional cost)

- Designer's kit: RS232-to-485 with push button, opto sensor, CD-ROM, cables (2)



- Designer's kit with USB485 converter card (USB485, push button, switch, CD, cables)



CONNECTION SPECIFICATIONS:

Pin #	Color	Function	Input
1	Red	+V (Main power in)	
2	Black	I/O	1
3	Brown	RS485B (-)	
4	Black/White	RS485A (+)	
5	Orange	Switch Closure to GND (IN)	4
6	Green	GND (-V of main power in)	
7	White	Opto Sensor Phototransistor (IN)	3
8	Blue	I/O	2
9	Yellow	Opto Sensor LED (Power Out)	

PROGRAMMING:

- Programming the R256 is simple and intuitive in HyperTerminal. Programs always begin with a forward slash "/", and address number, then one alpha character and then the value:

/1A5000R

This stands for Absolute position 5000, and will rotate 5000 steps

/1A5000A0R

This will rotate to position 5000, then back to position 0

/1gA5000A0G5R

This will rotate to position 5000, then back to 0, looping 5 times (commands between the 'g' and 'G' will be repeated, or in a loop)

/1s0gA5000A0G5R

By typing 's0', this means to store the following commands in the EEPROM and run this program upon power up.

KEY SELLING FEATURES:

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

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

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).