

## HEXHSQ / HEXHSQ-5

### 24 / 5 V dual Channel High Speed PWM or Stepper Output Modules

#### 1. SPECIFICATIONS

Parameter	HEXHSQ	HEXHSQ-5
Number of Channels	2	2
Output range	6-30 VDC	5 VDC
External supply range	6-30 VDC	Internally powered
Nominal Output impedance	50Ω	50Ω
Short Circuit protection	Foldback, 200mA loaded 90mA shorted	100mA shorted
Isolated	1K VDC	1K VDC
Output Supply voltage	n/a	50mA max @ 5V
Output frequency	0-400 KHz	0-8MHz
Mark Space ratio	0-100%	0-100%
Operating temperature	-10 to 60°C	-10 to 60°C
Compliance	CE, UL, see compliance table at: <a href="http://heapg.com/support/compliance.htm">http://heapg.com/support/compliance.htm</a> <a href="http://www.horner-apg.com/en/support/certification.aspx">http://www.horner-apg.com/en/support/certification.aspx</a>	

Model Limitations			
Model #	Series Name	PWM	Stepper
HE-XE/HE-XT HEXE/HEXT240	XLe / XLt	2 channels 8MHz (50% duty) max	1 stepper 5KHz max
HE-XL/HE-XV HEXT35X/HEXT501	XL6 / XL10	2 Channels 500KHz Max	1 stepper 5KHz max
HE-XC/HE-XW HEXT251/HEXT391	XL4 / XL7	2 Channels 500KHz Max	2 steppers 500KHz max

See the relevant product manual for PWM and Stepper register mapping and configuration. Requires f/w 12.94 or higher and Cscape 9.3 SP5 or higher. Stepper on model 02's requires f/w 12.96 or higher.

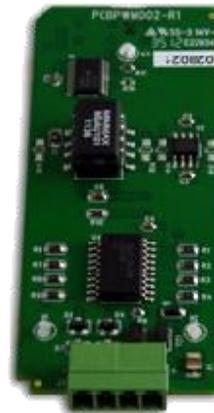
#### 2. WIRING – I/O



1      4

Terminal Connector	HEXHSQ Name
1	Q1
2	Q2
3	C
4	V+

The HEXHSQ requires external power between 6 and 24 volts dc.



1      4

Terminal Connector	HEXHSQ-5 Name
1	Q1
2	Q2
3	C
4	VO

The HEXHSQ-5 is a 5 volt only card that uses internal power and must not have power applied. VO is an isolated 5 volt output available for powering input circuitry of devices receiving the PWM signals.

Wiring specification: It is recommended that shielded I/O wiring is used. Use Belden 8441, 18 AWG or larger or equivalent.

### 3. INSTALLATION

Observe the following procedure to install the option module:

1. Disconnect all connectors from the X-Series unit including power.
2. Remove the four screws on the back of the X-Series unit and remove the back cover. The back cover will be replaced with the extended back cover that ships with the I/O add-on. Screws are re-used (Figure 1).
3. Plug the HSQ module onto the 24-pin connector. Ensure that all the pins are properly aligned (Figure 2).
4. Place the extended back cover onto the unit. It can be helpful to tip it at an angle so the connector on the module passes through the opening in the back cover.
5. Place the screws back into the hole and turn the screw slowly counter clockwise until it clicks into the threads. This prevents the screw from being cross-threaded. Turn the screw clock-wise until the cover is firmly secured. Repeat this process for all four (4) screws. Do not tighten the screws to more than 0.4Nm

**NOTE:** When using this module with an HE-XE104, HE-XE105, or similar XL models with a 13 pin bottom I/O connector, the add-on module connector interferes with the stock I/O board connector. It is necessary to order a replacement I/O connector available as part number HE-XKIT45. This is not necessary for the 102 and 103 style XL units.

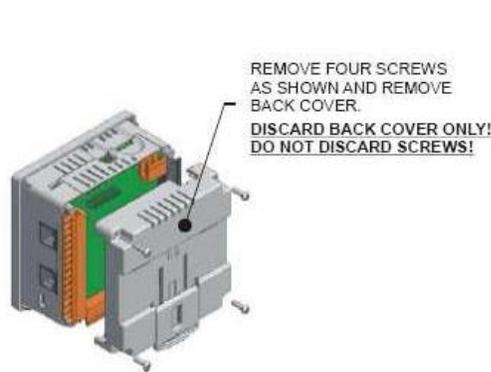


Figure 1 - Removing Back Cover of the XLE

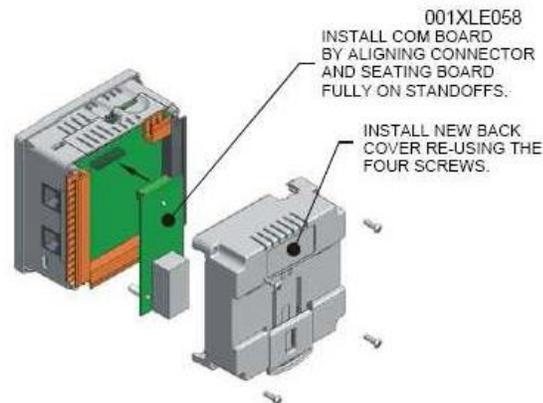


Figure 2 - Installing the COM Board in the XLE

Note: XLE used as an example, the procedure is applicable to all XL-Series

### 4. INSTALLATION / SAFETY

When found on the product, the following symbols specify:



Warning: Electrical Shock Hazard.



Warning: Consult user documentation.

**WARNING:** To avoid the risk of electric shock or burns, always connect the safety (or earth) ground before making any other connections.

**WARNING:** To reduce the risk of fire, electrical shock, or physical injury it is strongly recommended to fuse the voltage measurement inputs. Be sure to locate fuses as close to the source as possible.

**WARNING:** Replace fuse with the same type and rating to provide protection against risk of fire and shock hazards.

**WARNING:** In the event of repeated failure, do not replace the fuse again as a repeated failure indicates a defective condition that will not clear by replacing the fuse.

**WARNING:** Only qualified electrical personnel familiar with the construction and operation of this equipment and the hazards involved should install, adjust, operate, or service this equipment. Read and understand this manual and other applicable manuals in their entirety before proceeding. Failure to observe this precaution could result in severe bodily injury or loss of life.

All applicable codes and standards must be followed during the installation of this product. Adhere to the following safety precautions whenever any type of connection is made to the module:

- Connect the safety (earth) ground on the power connector first before making any other connections.
- When connecting to electric circuits or pulse-initiating equipment, open their related breakers.
- Do not make connections to live power lines.
- Make connections to the module first; then connect to the circuit to be monitored.
- Route power wires in a safe manner in accordance with good practice and local codes.
- Wear proper personal protective equipment including safety glasses and insulated gloves when making connections to power circuits.
- Ensure hands, shoes, and floors are dry before making any connection to a power line.
- Make sure the unit is turned OFF before making connection to terminals.
- Make sure all circuits are de-energized before making connections.
- Before each use, inspect all cables for breaks or cracks in the insulation. Replace immediately if defective

### 5. TECHNICAL SUPPORT

For assistance and manual updates, contact Technical Support at the following locations:

#### NORTH AMERICA

(P) 317-916-4274, (F) 317-639-4279

Web: <http://www.heapg.com>

Email: [techsppt@heapg.com](mailto:techsppt@heapg.com)

#### EUROPE

(P) +353-21-4321266, (F) +353-21-4321826

Web: <http://www.horner-apg.com>

Email: [tech.support@horner-apg.com](mailto:tech.support@horner-apg.com)