



High Speed Counter

HE800HSC601 / HE-HSC601*

High Speed Counter Inputs

Sourcing Pulse Outputs

* HE- denotes plastic case.



This datasheet also covers products starting with IC300.

This product also has a detailed supplement (SUP0265) available.

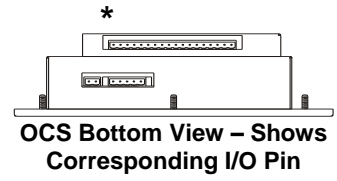
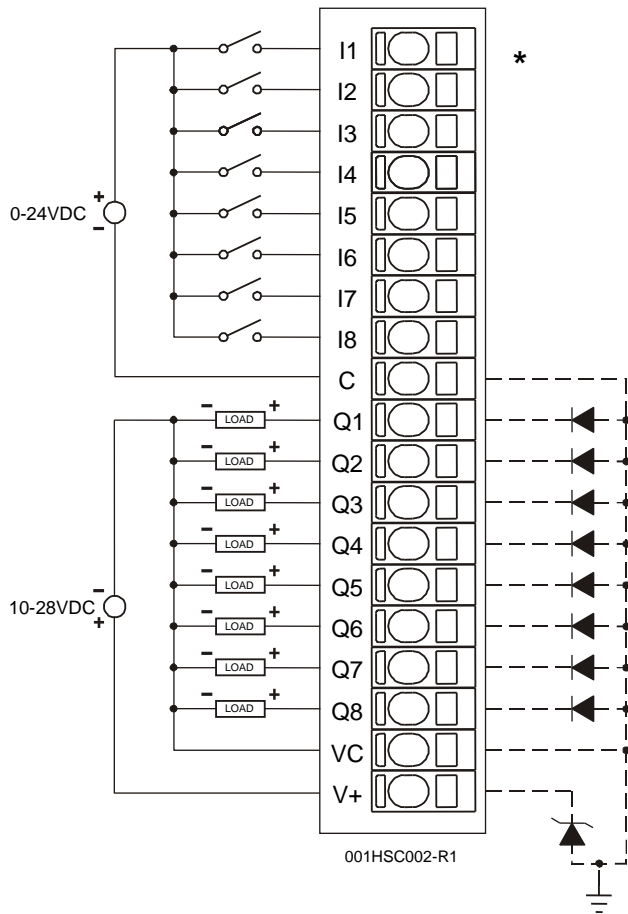
1 SPECIFICATIONS

INPUT	HSC601					HSC601
Inputs per Module	8				Commons per Module	1
Minimum Pulse Width	250 ns				Minimum Period	500 ns
Maximum Frequency	2 MHz					
Programmable Input Voltage Ranges	Zero Crossing	TTL / 5 VDC	12 VDC	24 VDC	Input Type	Positive Logic
	ON Voltage Level	+ 0.1	+ 2	+ 8	+ 16	Peak Voltage
OFF Voltage Level	- 0.1	+ 0.8	+ 4	+ 8	Input Impedance	10K Ohms
					Input Filter	500KHz, 50KHz, 5KHz

OUTPUT	HSC601					HSC601
Outputs per Module	8				Maximum Inrush Current	650mA per channel
Commons per Module	1				Minimum Load	None
Operating Voltage	10 - 28VDC				OFF to ON Response	10µs.
Output Type	Sourcing / 10K Pull-Down Positive Logic				ON to OFF Response	10µs.
Peak Voltage	28VDC Max.				Output Characteristics	Current Sourcing
Maximum Load Current Per Output	0.5A Max.				Output Protection	Short Circuit
Minimum PWM Pulse Width	10 µS				Maximum PWM Frequency	50 KHz @ 50% duty cycle (10 µS ON + 10 µS OFF)
Minimum PWM Frequency	153 Hz @ any duty cycle					

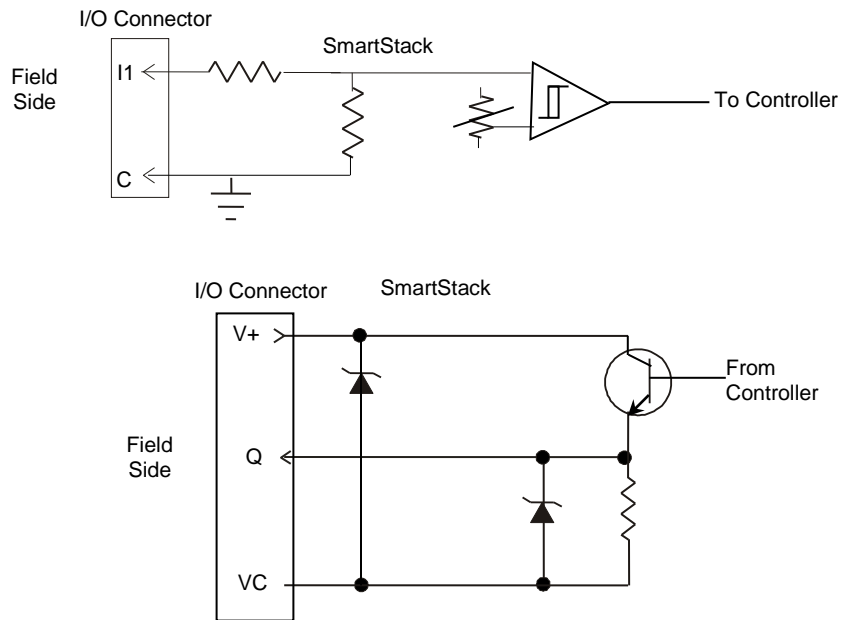
General Specifications			
Required Power (Steady State)	0.29W (12.43mA @ 24VDC)	Operating Temperature	0° to 60° Celsius
Required Power (Inrush)	0.44W (18.4mA @ 24VDC)	Terminal Type	Spring Clamp, Removable
Relative Humidity	5 to 95% Non-condensing	Weight	9.5 oz. (270 g)
CE	See Compliance Table at http://www.heapg.com/Support/compliance.htm		
UL	Operating Temperature Code T4A; See Compliance Table at http://www.heapg.com/Support/compliance.htm		

2 WIRING



Pin	Signal HSC601
I1	Input 1
I2	Input 2
I3	Input 3
I4	Input 4
I5	Input 5
I6	Input 6
I7	Input 7
I8	Input 8
C	Common
Q1	Output 1
Q2	Output 2
Q3	Output 3
Q4	Output 4
Q5	Output 5
Q6	Output 6
Q7	Output 7
Q8	Output 8
VC	Common
V+	Load Voltage +

3 INTERNAL CIRCUIT SCHEMATIC



Specification for transient voltage suppressors (transorbs) used on output circuitry is 33VDC, 300 watts.

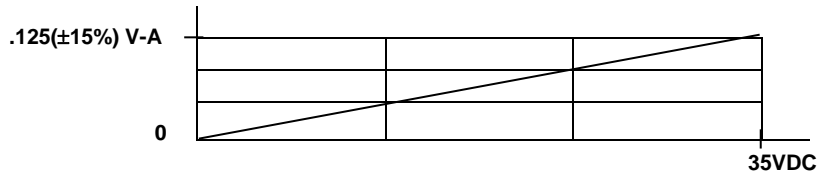
4 CONFIGURATION AND INPUT/OUTPUT MODES

Note: The status of the I/O can be monitored in Cscape Software.

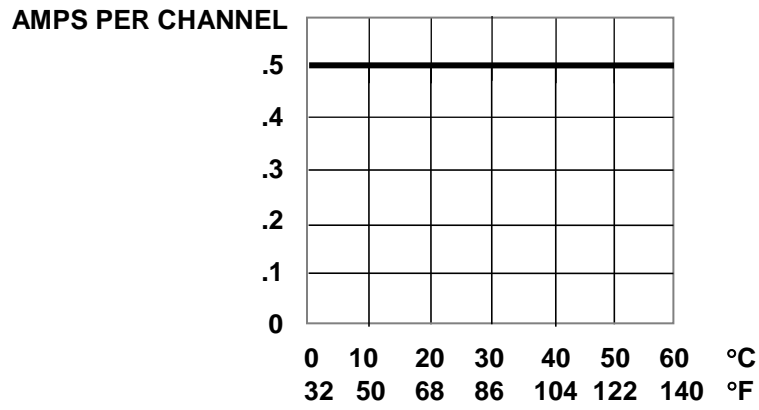
See the Supplement for the High Speed Counter Supplement (SUP0265) for detailed information covering configuration and input/output modes.

5 INPUT / OUTPUT CHARACTERISTICS

Digital Input Chart



Derating Chart



6 INSTALLATION / SAFETY

Warning: Remove power from the OCS controller, CAN port, and any peripheral equipment connected to this local system before adding or replacing this or any module.

Use the following wire type or equivalent:

- Belden 8917
- 16 AWG or larger

For detailed installation and a [handy checklist](#) that covers panel box layout requirements and minimum clearances, refer to the hardware manual of the controller you are using. (See the [Additional References](#) section in this document.).

When found on the product, the following symbols specify:



Warning: Consult user documentation.



Warning: Electrical Shock Hazard.

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.

For detailed installation and a handy checklist that covers panel box layout requirements and minimum clearances, refer to the hardware manual of the controller you are using. (See the [Additional References](#) section in this document.):

- All applicable codes and standards need to be followed in the installation of this product.
- For I/O wiring (discrete), use the following wire type or equivalent: Belden 9918, 18 AWG or larger.

Adhere to the following safety precautions whenever any type of connection is made to the module.

- Connect the green safety (earth) ground 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 floor 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.

7 ADDITIONAL REFERENCES

The following information serves as a *general* listing of Horner controller products and other references of interest and their corresponding manual numbers. Visit our website listed in the [Technical Support](#) section to obtain user documentation and updates.

Note: This list is <u>not</u> intended for users to determine which products are appropriate for their application; controller products differ in the features that they support. If assistance is required, see the Technical Support section in this document.	
Controller	Manual Number
XLE Series (e.g., HE-XExxx)	MAN0805
QX Series (e.g., HE-QXxxx)	MAN0798
NX Series (e.g., HE-NXxxx)	MAN0781
LX Series (e.g., LX-xxx; also covers RCS116)	MAN0755
Color Touch OCS (e.g., OCSxxx)	MAN0465
OCS (Operator Control Station) (e.g., OCS1xx / 2xx; Graphic OCS250)	MAN0227
Remote Control Station (e.g., RCS2x0)	
MiniOCS (e.g., HE500OCSxxx, HE500RCSxxx)	MAN0305
Other Useful References	
CAN Networks	MAN0799
Cscape Programming and Reference	MAN0313
Wiring Accessories and Spare Parts Manual	MAN0347
DeviceNet™ Implementation	SUP0326
Wiring Accessories and Spare Parts Manual	MAN0347

8 TECHNICAL SUPPORT

For assistance and manual up-dates, contact Technical Support at the following locations:

North America:

(317) 916-4274

www.heapg.com

Europe:

(+) 353-21-4321-266

www.horner-apg.com