

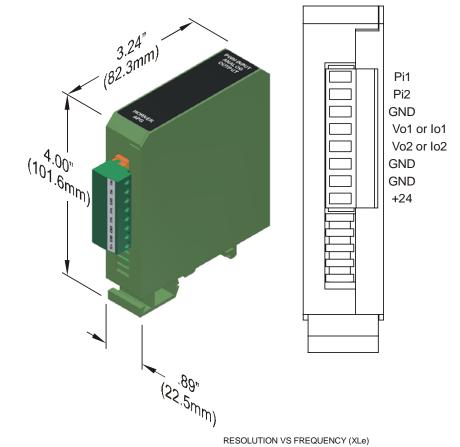
HEXPV 0-10V HEXPC 0-20mA 2 Channel PWM to Analog Converters

Specifications / Installation

Want More Information?
To download the XLE User
Manual (MAN0805), refer to
Technical Support in this
document.

SPECIFICATIONS

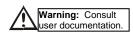
Channels per Module 2	HEXPV/HEXPC Specifications			
Nominal PWM Input Voltage 24 V P-P				
Maximum Input Voltage Range -0.5 to +33 VDC Nominal Input Impedance 2.1 kΩ to Common Max Upper Input Threshold 18 VDC Min Lower Input Threshold 6 VDC Step Change Response to 50% 12 ms PWM Ripple Feed Through 150 Hz, 50% Duty Cycle 250 Hz, 50% Duty Cycle 0.40% of Full Scale, P-P 250 Hz, 50% Duty Cycle 0.04% of Full Scale, P-P 150 Hz, 50% Duty Cycle 0.04% of Full Scale, P-P 150 Hz, 50% Duty Cycle 0.04% of Full Scale, P-P 150 Hz, 50% Duty Cycle 0.04% of Full Scale, P-P 150 Hz, 50% Duty Cycle 0.04% of Full Scale, P-P 150 Hz, 50% Duty Cycle 0.04% of Full Scale, P-P 0.04% of Full Scale, P-P 0.04% of Full Scale, P-P 0.04% of Full Scale, P-P 0.04% of Full Scale, P-P 0.04% of Full Scale, P-P 0.04% of Full Scale, P-P 0.04% of Full Scale, P-P 0.04% of Full Scale, P-P 0.04% of Full Scale, P-P 0.04% of Full Scale, P-P 0.04% of Full Scale, P-P 0.0015% of Full Scale, P-P 0.04% of Full Scale, P-P 0.04% of Full Scale, P-P 0.05% Accuracy thru 10% to 900Ω 0.05% 0.75% Accuracy thru 10% to 9	Channels per Module		2	
Nominal Input Impedance	Nominal PWM Input Voltage		24 V P-P	
Max Upper Input Threshold 18 VDC Min Lower Input Threshold 6 VDC Step Change Response to 50% 12 ms PWM Ripple Feed Through 0.40% of Full Scale, P-P 150 Hz, 50% Duty Cycle 0.40% of Full Scale, P-P 250 Hz, 50% Duty Cycle 0.04% of Full Scale, P-P 500 Hz, 50% Duty Cycle 0.0015% of Full Scale, P-P Isolation None 0-10V Outputs (HEXPV) None Minimum Load 500Ω Output Clamp -0.5 / +12 VDC 0-20mA Outputs (HEXPC) Sourcing Type Sourcing Maximum Load 500Ω Output Clamp -0.5 / +12 VDC FS Calibration Accuracy 0.25% System Linearity including XLE 0.75% Accuracy thru 10% to 90% DC of PWM Input HEXPV Minimum Output Voltage 0.15V Typical HEXPC Minimum Output Current 0.15/(100+RLoad) Typical General Specifications Required Power (Steady State) 60 mA @ 24 VDC Required Power (Inrush) 15A@μS Operating Power Range 18 – 30 VDC	Maximum Input Voltage Range		-0.5 to +33 VDC	
Min Lower Input Threshold Step Change Response to 50% 12 ms	Nor	minal Input Impedance	2.1 kΩ to Common	
Step Change Response to 50%			18 VDC	
PWM Ripple Feed Through 150 Hz, 50% Duty Cycle 0.40% of Full Scale, P-P 250 Hz, 50% Duty Cycle 0.04% of Full Scale, P-P 500 Hz, 50% Duty Cycle 0.0015% of Full Scale, P-P 500 Hz, 50% Duty Cycle 0.0015% of Full Scale, P-P 1 Isolation None 0-10V Outputs (HEXPV) None 0-10V Outputs (HEXPC) 500Ω Type Sourcing Maximum Load 500Ω Output Clamp -0.5 / +12 VDC FS Calibration Accuracy 0.25% System Linearity including XLE 0.75% Accuracy thru 10% to 90% DC of PWM Input HEXPV Minimum Output Voltage 0.15V Typical HEXPC Minimum Output Current 0.15/(100+RLoad) Typical General Specifications Required Power (Steady State) 60 mA @ 24 VDC Required Power (Inrush) 15A@µS Operating Power Range 18 – 30 VDC Safe Applied Power Range -33 to +33 VDC Relative Humidity 5 to 95% Non-Condensing Operating Temperature 0° to 50° Celsius Terminal Type Screw Type, 5 mm	Min	Lower Input Threshold	6 VDC	
150 Hz, 50% Duty Cycle 250 Hz, 50% Duty Cycle 500 Hz, 50% Duty Cycle 500 Hz, 50% Duty Cycle 1 Isolation 0-10V Outputs (HEXPV) Minimum Load Output Clamp 0-20mA Outputs (HEXPC) Type Maximum Load Output Clamp -0.5 / +12 VDC FS Calibration Accuracy System Linearity including XLE HEXPV Minimum Output Voltage HEXPV Minimum Output Current General Specifications Required Power (Steady State) Required Power Range Some Republic Power Range Safe Applied Power Range Relative Humidity Operating Temperature Terminal Type 0.40% of Full Scale, P-P 0.04% of Full Scale, Pe 0.0015% of Full Scale, P-P 0.04% of Full Scale, Pe 0.05 / 412 VDC 0.5 / 412 VDC			12 ms	
250 Hz, 50% Duty Cycle 500 Hz, 50% Duty Cycle				
Solomore Solomore				
Isolation				
0-10V Outputs (HEXPV) Minimum Load 500Ω Output Clamp -0.5 / +12 VDC O-20mA Outputs (HEXPC) Type Sourcing Maximum Load 500Ω Output Clamp -0.5 / +12 VDC FS Calibration Accuracy 0.25% System Linearity including XLE 0.75% Accuracy thru 10% to 90% DC of PWM Input HEXPV Minimum Output Voltage 0.15V Typical HEXPC Minimum Output Current 0.15/(100+RLoad) Typical General Specifications Required Power (Steady State) 60 mA @ 24 VDC Required Power (Inrush) 15A@µS Operating Power Range 18 – 30 VDC Safe Applied Power Range -33 to +33 VDC Relative Humidity 5 to 95% Non-Condensing Operating Temperature 0° to 50° Celsius Terminal Type Screw Type, 5 mm Removable Weight 3.0 oz	50			
Minimum Load Output Clamp 0-20mA Outputs (HEXPC) Type Maximum Load Output Clamp -0.5 / +12 VDC Sourcing Maximum Load Output Clamp -0.5 / +12 VDC FS Calibration Accuracy System Linearity including XLE HEXPV Minimum Output Voltage HEXPC Minimum Output Current General Specifications Required Power (Steady State) Required Power (Inrush) Operating Power Range Safe Applied Power Range Relative Humidity Operating Temperature Terminal Type Weight Weight Sourcing S			None	
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0-20mA Outputs (HEXPC) Type Maximum Load Output Clamp FS Calibration Accuracy System Linearity including XLE HEXPV Minimum Output Voltage HEXPC Minimum Output Current General Specifications Required Power (Steady State) Required Power (Inrush) Operating Power Range Safe Applied Power Range Relative Humidity Operating Temperature Terminal Type Sourcing Sour				
Type Maximum Load 500Ω Output Clamp -0.5 / +12 VDC FS Calibration Accuracy 0.25% System Linearity including XLE 90% DC of PWM Input HEXPV Minimum Output Voltage 1.5 / (100+RLoad) Typical HEXPV Minimum Output Current 0.15/(100+RLoad) Typical General Specifications Required Power (Steady State) 60 mA @ 24 VDC Required Power (Inrush) 15A@μS Operating Power Range 18 – 30 VDC Safe Applied Power Range -33 to +33 VDC Relative Humidity 5 to 95% Non-Condensing Operating Temperature 0° to 50° Celsius Terminal Type Screw Type, 5 mm Removable Weight 3.0 oz CE See Compliance Table at	Output Clamp		-0.5 / +12 VDC	
Maximum Load Output Clamp FS Calibration Accuracy System Linearity including XLE HEXPV Minimum Output Voltage HEXPC Minimum Output Current General Specifications Required Power (Steady State) Required Power (Inrush) Operating Power Range Safe Applied Power Range Relative Humidity Operating Temperature Terminal Type Maximum Load S00Ω 0.25/+12 VDC 0.75% Accuracy thru 10% to 90% DC of PWM Input 0.15/(100+RLoad) Typical 0.15/(100+RLoad) Typ				
Output Clamp -0.5 / +12 VDC FS Calibration Accuracy 0.25% System Linearity including XLE 0.75% Accuracy thru 10% to 90% DC of PWM Input HEXPV Minimum Output Voltage 0.15V Typical HEXPC Minimum Output Current 0.15/(100+RLoad) Typical General Specifications Required Power (Steady State) 60 mA @ 24 VDC Required Power (Inrush) 15A@µS Operating Power Range 18 − 30 VDC Safe Applied Power Range -33 to +33 VDC Relative Humidity 5 to 95% Non-Condensing Operating Temperature 0° to 50° Celsius Terminal Type Screw Type, 5 mm Removable Weight 3.0 oz CE See Compliance Table at	Type		Sourcing	
FS Calibration Accuracy System Linearity including XLE HEXPV Minimum Output Voltage HEXPC Minimum Output Current General Specifications Required Power (Steady State) Required Power (Inrush) Operating Power Range Safe Applied Power Range Relative Humidity Operating Temperature Terminal Type Weight Voltage 0.75% Accuracy thru 10% to 90% DC of PWM Input 0.15V Typical 0.15/(100+RLoad) Typical 0.15/(100+RLoad) Typical 1.5A@µS 0 mA @ 24 VDC 1.5A@µS 0 mA @ 24 VDC 1.5A@µS 0 mA @ 23 to +33 VDC 2.5 to 95% Non-Condensing 0.2 to 50° Celsius 3.0 oz Weight 3.0 oz	Maximum Load		500Ω	
System Linearity including XLE HEXPV Minimum Output Voltage HEXPC Minimum Output Current General Specifications Required Power (Steady State) Required Power (Inrush) Operating Power Range Safe Applied Power Range Relative Humidity Operating Temperature Terminal Type Weight O.15V Typical 0.15/(100+RLoad) Typical 15A@µS 15A@µS	Output Clamp		-0.5 / +12 VDC	
HEXPV Minimum Output	FS Calibration Accuracy			
Voltage HEXPC Minimum Output Current General Specifications Required Power (Steady State) Required Power (Inrush) Operating Power Range Safe Applied Power Range Relative Humidity Operating Temperature Terminal Type Weight Weight O.15/(100+RLoad) Typical 0.15/(100+RLoad) Typical 00 mA @ 24 VDC 15A@µS 00 perating Power Range 18 – 30 VDC 29 See Compliance Table at	System Linearity including XLE			
Current 0.15/(100+RLoad) Typical General Specifications Required Power (Steady State) 60 mA @ 24 VDC Required Power (Inrush) 15A@µS Operating Power Range 18 – 30 VDC Safe Applied Power Range -33 to +33 VDC Relative Humidity 5 to 95% Non-Condensing Operating Temperature 0° to 50° Celsius Terminal Type Screw Type, 5 mm Removable Weight 3.0 oz CE See Compliance Table at			0.15V Typical	
Required Power (Steady State) Required Power (Inrush) Operating Power Range Safe Applied Power Range Relative Humidity Operating Temperature Terminal Type Weight CE See Compliance Table at	HE	•	0.15/(100+RLoad) Typical	
Steady State 60 mA @ 24 VDC				
Required Power (Inrush) 15A@µS Operating Power Range 18 − 30 VDC Safe Applied Power Range -33 to +33 VDC Relative Humidity 5 to 95% Non-Condensing Operating Temperature 0° to 50° Celsius Terminal Type Screw Type, 5 mm Removable Weight 3.0 oz CE See Compliance Table at			60 mA @ 24 VDC	
Operating Power Range 18 - 30 VDC Safe Applied Power Range -33 to +33 VDC Relative Humidity 5 to 95% Non-Condensing Operating Temperature 0° to 50° Celsius Terminal Type Screw Type, 5 mm Removable Weight 3.0 oz CE See Compliance Table at			15A@µS	
Safe Applied Power Range -33 to +33 VDC Relative Humidity 5 to 95% Non-Condensing Operating Temperature 0° to 50° Celsius Terminal Type Screw Type, 5 mm Removable Weight 3.0 oz CE See Compliance Table at				
Relative Humidity 5 to 95% Non-Condensing Operating Temperature 0° to 50° Celsius Terminal Type Screw Type, 5 mm Removable Weight 3.0 oz CE See Compliance Table at	Safe Applied Power Range		-33 to +33 VDC	
Operating Temperature 0° to 50° Celsius Terminal Type Screw Type, 5 mm Removable Weight 3.0 oz CE See Compliance Table at	Relative Humidity		5 to 95% Non-Condensing	
Neight Removable	Operating Temperature		0° to 50° Celsius	
CE See Compliance Table at	Terminal Type			
CE See Compliance Table at	Weight		3.0 oz	
·		CE See Compliance Table at		
	UL			



SAFETY

When found on the product, the following symbols specify:

Warning: Electrical Shock Hazard.



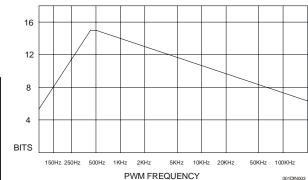
WARNING: To avoid the risk of electric shock or burns, always connect the safety (or earth) ground before making any other connections.

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 <u>not</u> replace the fuse again as a repeated failure indicates a defective condition that will <u>not</u> 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 need to be followed in 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 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.

TECHNICAL SUPPORT

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

North America:

(317) 916-4274 www.heapg.com email: techsppt@heapg.com **Europe:** (+) 353-21-4321-266 www.horner-apg.com

email: techsupport@hornerirl.ie