OCS-I/O

HE959CPU250
Quick Reference Guide

BUILT IN I/O: 8 DIGITAL INPUTS, 10 DIGITAL OUTPUTS, 8 FLEXIBLE INPUTS, 8 ANALOG OUTPUTS

1 - General Specifications

1.1 General Specifications

Required Power (Steady State)	630 mA at 24VDC
Required Power (Inrush)	35A for 200µs 24VDC switched
Primary Power Range	10-30VDC
Relative Humidity	5-95% non-condensing
Port Wiring (Analog Inputs and Digital I/O)	12-24 AWG (2.5-0.2mm^2)
Operating Temperature	-40°C (-40°F) to 60°C (140°F)
Storage Temperature	-40°C (-40°F) to 70°C (158°F)
Weight	9.77oz (277.1g)
Dimensions	114.4mm x 124.9mm x 50mm 4.50" x 4.91" x 1.97"
Certifications (UL/CE)	North America: https://hornerautomation.com/certifications/ Europe: https://www.hornerautomation.eu/support/certifications-2/

1.2 Connectivity

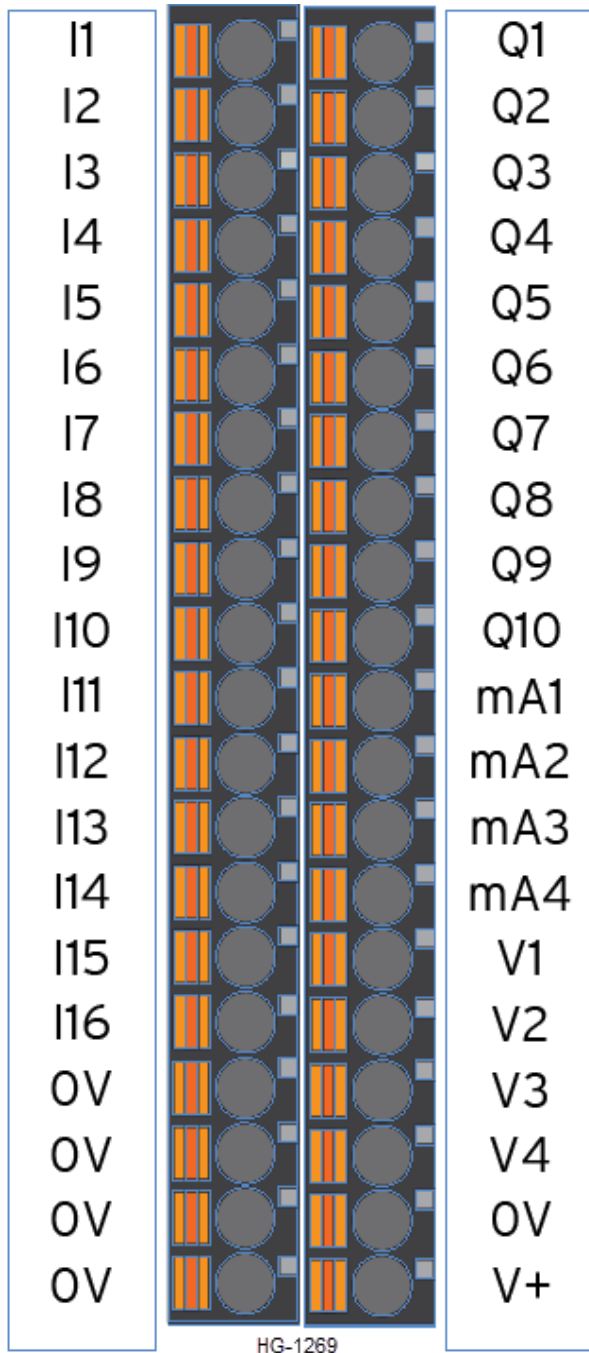|	
Serial Ports	1 x RS-232, 1 x RS-485
CAN Protocols	CsCAN
CAN Port Speeds Support	125kb, 250kb, 500kb, 1Mb/sec.
Ethernet	1 x 10/100Mbps
Communication Support	WebMI, E-mail, TCP/IP, Modbus, FTP, Datalogging
USB Type C Note: Device does not enter run mode when on USB power only	Programming, Power Unit

1.3 Digital Outputs

Outputs per Module	10
Commons per Module	4
Output Type	Sourcing
Absolute Maximum Voltage	30VDC
Output Protection	Short Circuit
Maximum Output per Point	Q1-8: 0.5A Q9-10: 2A
Maximum Total Output Current	4A
Maximum Output Supply Voltage	30VDC
Minimum Output Supply Voltage	10VDC
Maximum Voltage Drop At Rated Current	550mV
OFF to ON Response	Maximum 0.1ms
ON to OFF Response	1ms
I/O Indication	Status LED per Output

1.4 Analog Outputs

Number of Channels	8
Analog Outputs	4x 0-20mA/4-20mA, 4x 0-10V
Analog Output Data Ranges	0~4000 / -2000~2000 / 0~1000 / 0~2000 / 0~32000
Nominal Resolution	12 Bit
Minimum 10V Load	500Ω
Maximum Current Load	50-500Ω
Analog Output Halt State	Current / Minimum / Maximum / Median

1.5 Flexible Inputs - Digital / Analog

Number of Channels	8 (Digital or Analog)
Configured as Analog I/O	
Analog Input Ranges	0-20mA / 4-20mA / 0-10V
Analog Input Data Ranges	0~4000 / -2000~2000 / 0~1000 / 0~32000
Alarm	Value / Register
Configured to Digital Inputs	
Digital Input Ranges	24V / 12V / 5V / Custom
Input Voltage Range	0 - 24VDC
Absolute Maximum Voltage	30VDC
Input Impedance	1MΩ
Custom Digital Input Ranges	ON/OFF Thresholds 5-20V
OFF to ON Response	1ms
ON to OFF Response	1ms
Digital Input Active Mode	Positive / Negative Logic

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2 - WIRING

I1			Q1
I2			Q2
I3			Q3
I4			Q4
I5			Q5
I6			Q6
I7			Q7
I8			Q8
I9			Q9
I10			Q10
I11			mA1
I12			mA2
I13			mA3
I14			mA4
I15			V1
I16			V2
0V			V3
0V			V4
0V			0V
0V			V+

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Registers		Description
%I1 to %I8		Digital Inputs
%I9 to %I16	%AI1-%AI8*	Flex Inputs
%Q1 to %Q10		Digital Outputs
%AQ1 to %AQ4		Current Outputs
%AQ5 to %AQ8		Voltage Outputs
%SR196		Overcurrent Protection Status
*Flexible Inputs are assigned to %I when configured as Digital Inputs, and %AI when configured as Analog Inputs		

3 - INSTALLATION

The HE959CPU250 is compact and mounts on a DIN-rail. Each I/O module installed adds width in increments of 19mm.

NOTE: The distance between wiring duct and surrounding modules should be at least 50mm apart.

OCS-I/O modules can be added after the OCS-I/O base has been installed on the DIN-rail and can be hot swapped with power applied. I/O scanning will stop until the correct modules for the system are detected in all slots.

I/O modules are physically added with the following procedure:

1. Connect the bus connectors together to form a backplane that can accept up to 8 modules, including the CPU250 or another base.
2. Snap the bus connectors into the DIN rail. The DIN rail should be 35 mm x 7.5 mm and made to EN 60715 standards.
3. Place the CPU250 to the leftmost connector.
4. Insert modules by latching at the top of the DIN rail first, then rocking each module down until the latch at the bottom of the DIN rail engages.
5. To remove a module, insert a flat-blade screwdriver into the metal DIN rail latch at the bottom of the module. Pry downwards to the release the latch, then rock the module up and off the DIN Rail.

NOTE: Modules may be removed while powered; however, I/O scanning on the remaining modules will stop and I/O will go to the default state until a new module is inserted and all modules in the configuration are present.

4 - WARNINGS

WARNING - If the equipment is used in a manner not specified by Horner APG, the protection provided by the equipment may be impaired.

WARNING - EXPLOSION HAZARD - Do not disconnect equipment unless power has been removed or the area is known to be non-hazardous
AVERTISSEMENT - RISQUE D'EXPLOSION -Ne débranchez pas l'équipement tant que l'alimentation n'a pas été coupée ou que la zone n'est pas dangereuse.

WARNING - EXPLOSION HAZARD - Substitution of any component may impair suitability for Class I, Division 2
AVERTISSEMENT - RISQUE D'EXPLOSION -Le remplacement de tout composant peut nuire à la compatibilité avec la classe I, division 2

WARNING – POSSIBLE EQUIPMENT DAMAGE - Remove power from the I/O Base and any peripheral equipment connected to this local system before adding or replacing this or any module.
AVERTISSEMENT - DOMMAGES POSSIBLES À L'ÉQUIPEMENT - Coupez l'alimentation de la base d'E / S et de tout équipement périphérique connecté à ce système local avant d'ajouter ou de remplacer ce module ou tout autre module.

WARNING - Outputs should be connected to the same voltage levels (all connect to 24V supply sources)
WARNING - Digital Outputs are non-isolated and considered hazardous live.
WARNING - Loads for outputs require a Class 2 or Limited Power Source from a UL Listed power supply.

5 - SAFETY

a. All applicable codes and standards should be followed in the installation of this product.

b. Shielded, twisted-pair wiring should be used for best performance.

c. Shields should be grounded at one end only, preferably at the end providing the best noise shunting.

6 - TECHNICAL SUPPORT

For further details, please refer to the Datasheets on the Horner website.

For assistance, contact Technical Support at the following locations:

North America
+1 (317) 916-4274
www.hornerautomation.com
APGUSATechSupport@heapg.com

Europe
+353 (21) 4321-266
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