

General Specifications	
Required Power (Steady State)	96mA @ 5V
Analog Inputs	4
Relative Humidity	5-95% non-condensing
Port Wiring	16-24 AWG / 0.2-1.4mm ²
Analog Input Wiring	16-24 AWG / 0.2-1.4mm ²
Operating Air Temp	-40°C (-40°F) to 60°C (140°F)
Storage Temp	-40°C (-40°F) to 85°C (185°F)
Weight	2.9 oz
Dimensions	76.5mm x 124.5mm x 19mm (3" x 4.9" x 0.75")
Certifications (UL/CE)	North America: https://hornerautomation.com/certifications/ Europe: https://www.hornerautomation.eu/support/certifications-2

Analog Inputs	
Number of Channels	4
Input Ranges	0-20mA, 4-20mA, 0-10V, 0-60mV
Safe Input Voltage Range	-30V to +30V
Nominal Resolution	16 Bit
Accuracy	0.2% of full scale
Thermocouple	J / K / T / N / E / R / S / B
Converter Type	16-Bit ADC
RTD Excitation Current	0.250mA
Thermocouple supported & Temperature Ranges	PT100 : -200°C to 500 °C PT1000: -50 °C to 200 °C
Data Conversion for RTD and Thermocouples	10 counts/degree Celsius. For example, if the input temperature is 123.4, then count will be 1234.

WIRING

Port	Signal	Description
1a	1a	Universal Analog Input "1a"
1b	1b	Common
1c	1c	Common
2a	2a	Universal Analog Input "2a"
2b	2b	Common
2c	2c	Common
3a	3a	Universal Analog Input "3a"
3b	3b	Common
3c	3c	Common
4a	4a	Universal Analog Input "4a"
4b	4b	Common
4c	4c	Common

WARNING: Do not put any voltage on the 1A, 2A, 3A, or 4A port. Doing so will damage the board.

Use 75°C copper conductors only.

Analog Input Wiring				
SIGNAL	LABEL	DESCRIPTION	SIGNAL	LABEL
AI1a	1a	Universal Analog Input "1a"	A1b	1b
A1c	1c		0V	Common
AI2a	2a	Universal Analog Input "2a"	A2b	2b
A2c	1c		0V	Common
AI3a	3a	Universal Analog Input "3a"	A3b	3b
A3c	3c		0V	Common
AI4a	4a	Universal Analog Input "4a"	A4b	4b
A4c	4c		0V	Common

	Input Type:	Range:	Accuracy:
Sensor Range and Accuracy	TC J (Ungrounded)	-120 to 1000°C /-184 to 1832°F	+/-0.2% of full scale +/-1°C
	TC K (Ungrounded)	-130 to 1372°C /-202 to 2501.6°F	+/-0.2% of full scale +/-1°C
	TC T (Ungrounded)	-130 to 400°C /-202 to 752°F	+/-0.2% of full scale +/-1°C
	TC E (Ungrounded)	-130 to 780°C /-202 to 1436°F	+/-0.2% of full scale +/-1°C
	TC N (Ungrounded)	-130 to 1300°C /-202 to 2372°F	+/-0.2% of full scale +/-1°C
	TC R, S (Ungrounded)	20 to 1768°C /68 to 3214.4°F	+/-0.2% of full scale +/-3°C
	TC B (Ungrounded)	500 to 1820°C /212 to 3308°F	+/-0.2% of full scale +/-3°C
		Functions below 500°C with reduced accuracy	

0-10V Analog In

20mA Analog In - Not Self-Powered

20mA Analog In - Self-Powered

mV In

Thermocouple In

RTD In



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.

SAFETY

- All applicable codes and standards should be followed in the installation of this product.
- Shielded, twisted-pair wiring should be used for best performance.
- Shields should be grounded at one end only, preferably at the end providing the best noise shunting.

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
www.hornerautomation.eu
technical.support@horner-apg.com

INSTALLATION

The HE959ADU100 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:

- Connect the bus connectors together to form a backplane that can accept up to 8 modules including the CNX116 or another base.
- 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.
- Place the OCS-I/O base to the leftmost connector.
- Inset modules buy latching at the top of the DIN rail first and rocking down until the latch at the bottom of the DIN rail engages.
- To remove a module, insert a flat blade screwdriver into the metal DIN rail latch at the bottom of the module. Pry down to the release the latch, the rock the module up and off the DIN Rail. 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.



OCS-I/O

Universal Analog Input Module - HE959ADU100

