

This guide provides specifications for Unitronics' Short Range and Long Range Local Expansion Adapter Kit for Uni-I/O™.

The Short and long Range Local Expansion Adapter Kits allow you to increase the number of I/Os connected to a single UniStream™ CPU by linking it to an additional row of Uni-I/O™ modules.

- **UAG-XKxxx** - Short Range Local Expansion Adapter can be followed by up to 8 Uni-I/O™ modules.
- **UAG-XKPxxx** - Short Range Local Expansion Adapter with an integrated power supply can support, by itself, up to 16 Uni-I/O™ modules.
- **UAG-XKPLxxx** - Long Range Local Expansion Adapter with an integrated power supply can support, by itself, up to 16 Uni-I/O™ modules.

Installation Guides are available in the Unitronics Technical Library at www.unitronics.com

Module Support

The number of modules that is referred to in the table below, includes **all** modules, those on-board the HMI panel (including Uni-I/O™ and Uni-COM™ modules), and those linked to the CPU via a Local Expansion Adapter Kit (Uni-I/O™ modules only).

Note that Uni-COM™ modules **must** be placed on-board the back of the UniStream HMI panel, connected directly to the CPU-for-Panel or to another Uni-COM™ module.

The Local Expansion Adapter Kit comprises a Base unit, an End unit, and a connecting cable. You must plug the Base Unit into the last element on the back of the UniStream™ HMI Panel. This may be a Uni-COM™ or Uni-I/O™ module. If the CPU-for-Panel is the only element that is plugged onto the back of the HMI Panel, plug the Base unit into it.

End Unit can only be connected to a Uni-I/O™ module.

	UAG-XKxxx	UAG-XKPxxx	UAG-XKPLxxxx
	Up to 8 modules	Up to 16 modules	Up to 16 modules

Important Note:

The Base and End Units of the Short-range and Long-range models are **not interchangeable**, do not mix between them.

Power Supply	UAG-XKxxx	UAG-XKPxxx	UAG-XKPLxxxx
Input voltage	Not applicable	12 or 24 VDC	12 or 24 VDC
Permissible range	Not applicable	10.2 to 28.8 VDC	10.2 to 28.8 VDC
Max. current consumption	Not applicable	0.9@12VDC, 0.5A@24VDC	0.9@12VDC, 0.5A@24VDC

Available Cable Length

Module	Length
UAG-XK125	125cm (49")
UAG-XKP125	125cm (49")
UAG-XK300	300cm (118")
UAG-XKP300	300cm (118")
UAG-XKPL600	600cm (20')
UAG-XKPL1200	1200cm (40')
UAG-XKPL1500	1500cm (50')
UAG-XKPL2000	2000cm (66')
UAG-XKPL3000	3000cm (98')

LED Indications			
Base Unit	There are no LEDs in the Base Unit.		
End Unit	<u>Green</u>	<u>Output state</u>	<u>Comment</u>
UAG-XKxxx	Link	Off	Cable is not connected or no power from the Base unit
		On	Link with the base unit has been established
UAG-XKPxxx/UAG-XKPLxxxx	Power	Off	No external power
		On	External power is connected to the unit
	Link	Off	Cable is not connected or no power from the Base unit
		On	Link with the base unit has been established

Daisy-Chaining: Extending and Expanding I/Os

Up to five Local Expansion Adapters may be chained to each other, and together with the Unistream CPU-for-Panel they can drive up to a maximum of 85 Uni-I/O modules.

UniStream can be expanded locally in a single cabinet, using Short range Adapters of up to 3 meters each (UAG-XKxxxx and UAG-XKPxxxx).

It can also be expanded further to another cabinet, using the Long Range Expansion Adapter (UAG-XKLxxxx) as shown in the following drawings:



Single Cabinet

Two Cabinets

Daisy-chaining Rules

In order to connect a UniStream™ controller to more than one row of I/O modules via Local I/O Expansion adapters, you must follow these rules:

- Up to **2** Short range adapters can be daisy-chained to the CPU-for-Panel or to any of the modules that are connected directly to the CPU on the back of the HMI Panel. These may be either two UAG-XKPxxxx (that include incorporate an integrated power-supply), or one UAG-XKPxxxx and one UAG-XKxxxx.
- When daisy chaining, you can include only **1** Long-range adapter. You may connect it directly to the CPU-for-Panel or to any of the elements that are expanded from it.
- Following the Long-range adapter, you may daisy-chain up to **2** Short range adapters. These may be either two UAG-XKPxxxx, or one UAG-XKPxxxx and one UAG-XKxxxx.

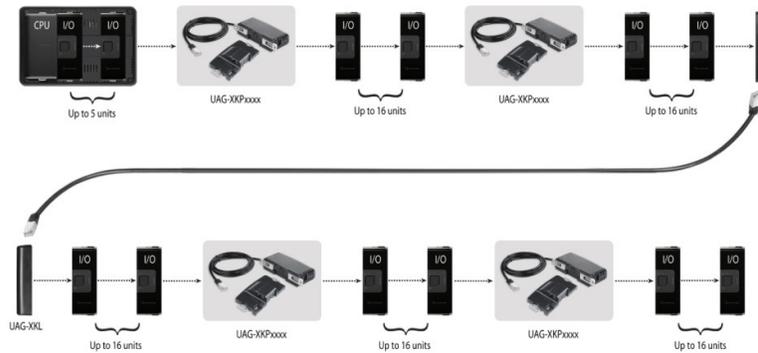
Configuration Examples

Notes:

1. All examples use the USP-104-B10 10.4" HMI panel.
2. The amount of modules at all examples relate to Uni-I/O modules. You can mix Uni-I/O modules with Uni-I/O Wide modules, considering that 1 Uni-I/O Wide module equals 1½ Uni-I/O module.

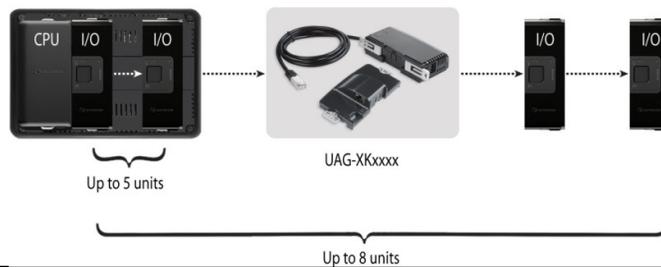
Configuring for maximum I/Os

The figure below shows the greatest number of I/O modules that can be connected to a single UniStream™ controller using Uni-I/O modules and 5 Local I/O Expansion adapters with power supplies.

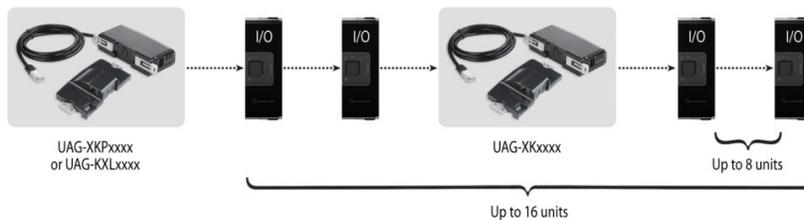


Configurations with Short-range adapter, no Power Supply (UAG-XKxxxx).

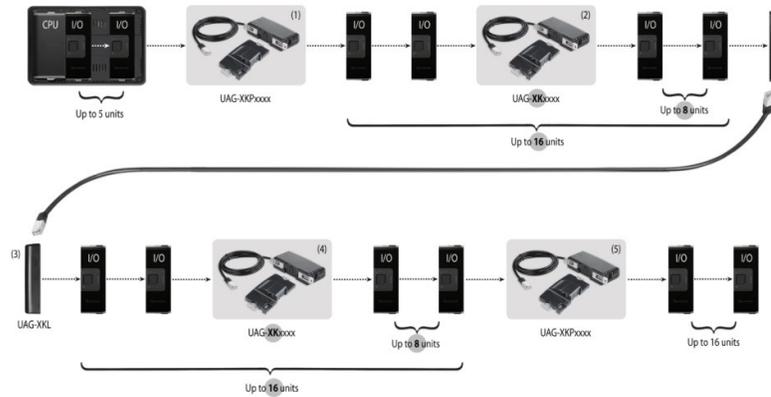
If UAG-XKxxxx is the only adapter connected to the controller, the system can support up to 8 modules.



If a UAG-XKxxxx follows another adapter with an integrated power supply, the support capacity of that powered module limits the number of Uni-I/Os that can be connected to the UAG-XKxxxx; in any event, no more than 8 Uni-I/Os can follow a UAG-XKxxxx adapter.



This example combining all types of adapters:



Daisy-chaining Configuration Summary

The tables below show the possible configurations between two cabinets.

Optional configurations in the cabinet with the Unistream Controller

Optional configurations in the far away cabinet

On Board	1st	2nd	Max I/Os
CPU	-	-	5
	XK	-	8
	XKP	-	21
	XKP	XK	21
	XK	XKP	24
	XKP	XKP	37

	3rd	4th	5th	Max I/Os
XKL	-	-	-	16
	XK	-	-	16
	XKP	-	-	32
	XKP	XK	-	32
	XK	XKP	-	32
	XKP	XKP	-	48

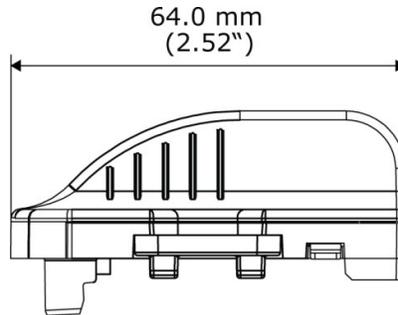
XK-UAG-XKxxxx (Short Range Local Expansion Adapter without power supply)
 XKP-UAG-XKPxxxx (Short Range Local Expansion Adapter with power supply)
 XKL-UAG-XKLxxxx (Long Range Local Expansion Adapter)

NOTE Each combination in the right table can be used with each combination in the left table. They are independent of each other and the total number of I/Os that are supported is the sum of the two tables (Maximum of 85).

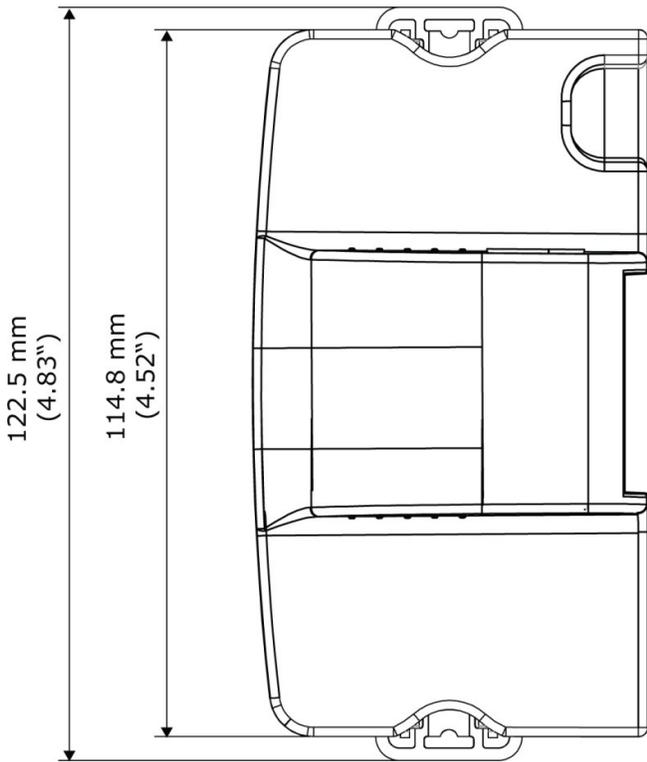
Environmental	
Protection	IP20, NEMA1
Operating temperature	-20°C to 55°C (-4°F to 131°F)
Storage temperature	-30°C to 70°C (-22°F to 140°F)
Relative Humidity (RH)	5% to 95% (non-condensing)
Operating Altitude	2,000 m (6,562 ft)
Shock	IEC 60068-2-27, 15G, 11ms duration
Vibration	IEC 60068-2-6, 5Hz to 8.4Hz, 3.5mm constant amplitude, 8.4Hz to 150Hz, 1G acceleration

Dimensions	UAG-XKxxx	UAG-XKPxxx	UAG-XKPLxxxx
Weight	Base: 64.5 g (0.14 lb) End: 142.0 g (0.31 lb)	Base: 64.5 g (0.14 lb) End: 149.5 g (0.33 lb)	Base: 64 g (0.14 lb) End: 91.5 g (0.2 lb)
Size	Refer to the images below		

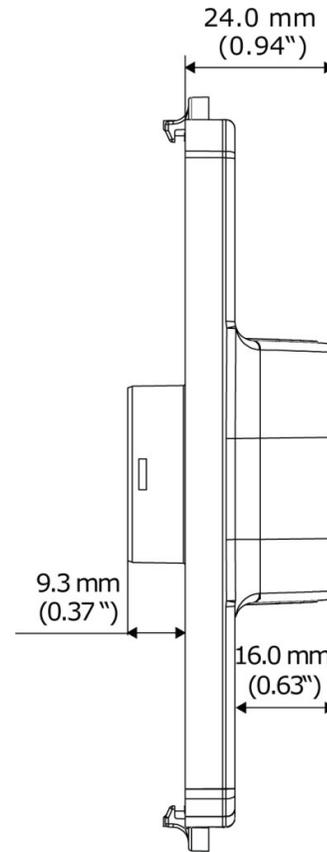
Base Unit



Top View

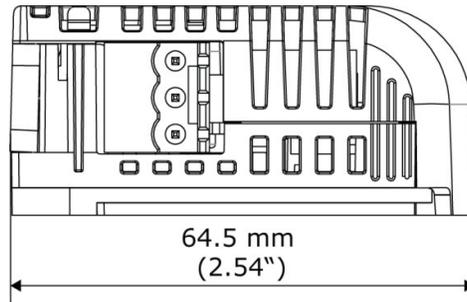


Side View

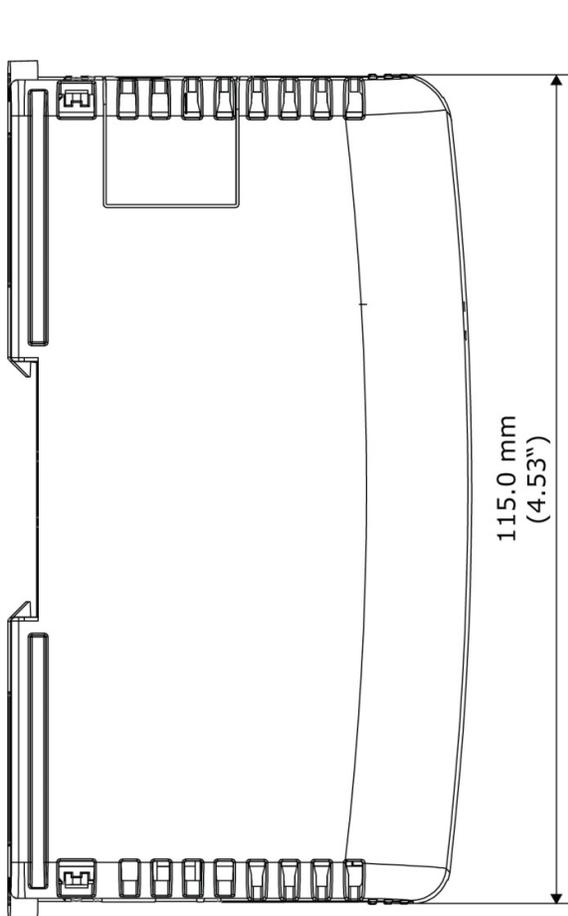


Front View

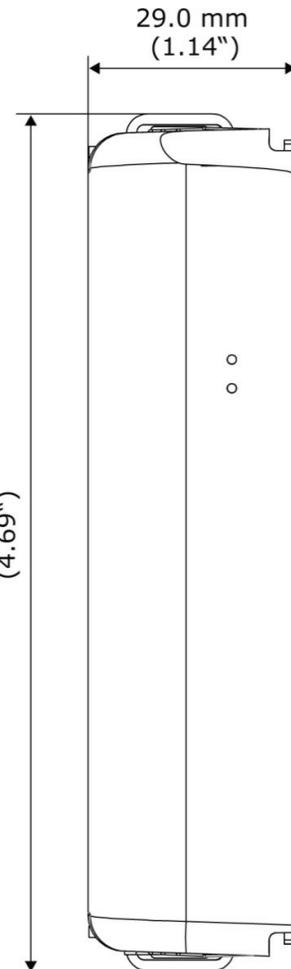
Base Unit



Top View



Side View



Front View

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