Short-Range Local Expansion Kit

Use a Short-Range Local Expansion Kit to expand your I/O configuration by connecting a UniStream™ CPU controller to Uni-I/O™ modules located on a DIN-rail.

Short-Range Local Expansion Kits are available:

- Without power supply
- With power supply
  This enables a single CPU to support a greater number of modules

The kit is available with cables of different lengths.

Note that the maximum number of modules supported by a single CPU is provided in the CPU's technical specifications.

Before You Begin

Before installing the device, the installer must:

- Read and understand this document and related technical specifications and documents in the Technical library section of the Unitronics website.
- Verify the Kit Contents.

Alert Symbols and General Restrictions

When any of the following symbols appear, read the associated information carefully.

Symbol	Meaning	Description
⚡	Danger	The identified danger causes physical and property damage.
⚠	Warning	The identified danger could cause physical and property damage.
Caution	Caution	Use caution.

- All examples and diagrams are intended to aid understanding, and do not guarantee operation. Unitronics accepts no responsibility for actual use of this product based on these examples.
- Please dispose of this product according to local and national standards and regulations.
- This product should be installed only by qualified personnel.

⚠
- Failure to comply with appropriate safety guidelines can cause severe injury or property damage.
- Do not attempt to use this device with parameters that exceed permissible levels.
- Do not connect/disconnect the device when power is on.

Environmental Considerations

⚠
- Ventilation: 10mm (0.4″) of space is required between the device top/bottom edges and the enclosure's walls.
- Do not install in areas with: excessive or conductive dust, corrosive or flammable gas, moisture or rain, excessive heat, regular impact shocks or excessive vibration, in accordance with the standards and limitations given in the product's technical specification sheet.
- Do not place in water or let water leak onto the unit.

- Do not allow debris to fall inside the unit during installation.
- Install at maximum distance from high-voltage cables and power equipment.

Kit Contents

Item	Qty	UAG-XKxxx	UAG-XKPxxx
Local Expansion Base Unit	1	√	√
Local Expansion End Unit with an integrated xxx cm cable.	1	√	-
Local Expansion End Unit with a power supply and an integrated xxx cm cable.	1	-	√
Terminal Block	1	√	√

Kit Diagram
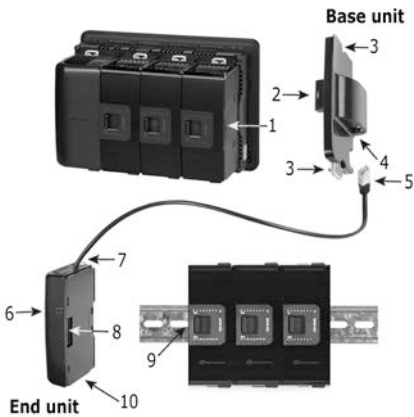
1. Bus connector
2. Base Unit plug
3. Clips
4. Base Unit's cable port
5. RJ45 connector
6. End Unit LED indicators
7. DIN-rail clips, top and bottom
8. End Unit I/O bus connector
9. I/O Bus - Left side connector
10. Model-dependent:
    - UAG-XKPxxx power supply connector
    - UAG-XKxxx earth point connector

Installation Space Considerations

Allocate space for the Base Unit and End Unit according to the dimensions in the kit's technical specifications. Also, consider the space required to install and connect them, as shown in the following Installation instructions.

Installation

⚠
- Turn off system power before connecting or disconnecting any modules or devices.
- Use proper precautions to prevent Electro-Static Discharge (ESD).

This kit enables you to connect a UniStream™ controller to a row of Uni-I/O™ modules located on a DIN-rail. To do this, you must:

- Connect the Base Unit to the last device installed on the back of the HMI panel. This may be the CPU-for-Panel, a Uni-COM™ module, or another Uni-I/O™ module.
- Connect the End Unit to the first module in a row of Uni-I/O™ modules.
- Link the End Unit into the Base Unit via the connecting cable.
- If you are using a:
  - UAG-XKPxxx with power supply, connect it to a power source
 - UAG-XKxxx without power supply, earth it.

Connecting the Base Unit

1. Check the unit to which you will connect the Base Unit to verify that its Bus Connector is not covered.
2. Hold the Base Unit as shown in the accompanying figure, and plug it into the last device installed on the back of the HMI panel.
3. Click the top and bottom clips into the Guide Tunnel of the last device.

Connecting the End Unit

1. Push the End Unit onto the DIN-rail until the clips located at the top and bottom of the unit have snapped onto the DIN-rail.
2. Install Uni-I/O™ modules to the right of the End unit. Please refer to the specific Installation Guide of each Uni-I/O™ module.
3. Slide the Bus Connector Lock of the first module all the way to the left.
4. Link the units by plugging the RJ45 of the End Unit's cable into the port on the bottom of the Base Unit.
5. If you are using a:
   - UAG-XKPxxx with power supply, connect it to a power source as described on page 4.
   - UAG-XKxxx without power supply, earth it.
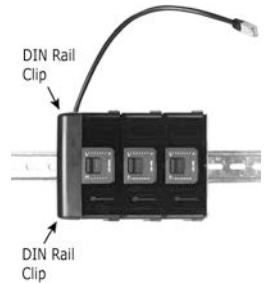
⚠ - Do not connect the cable to any device other than the Base Unit.
   - Do not connect the Base Unit's cable port to any other cable or device.

Wiring

⚠ - This equipment is designed to operate only at SELV/PELV/Class 2/Limited Power environments.
   - All power supplies in the system must include double insulation. Power supply outputs must be rated as SELV/PELV/Class 2/Limited Power.
   - Do not connect either the 'Neutral' or 'Line' signal of the 110/220VAC to device's 0V point.
   - Do not touch live wires.
   - All wiring activities should be performed while power is OFF.
   - Use over-current protection, such as a fuse or circuit breaker, to avoid excessive currents into the *UAG*-XKPxxx supply port.
   - Unused points should not be connected (unless otherwise specified). Ignoring this directive may damage the device.
   - Double-check all wiring before turning on the power supply.

Caution - To avoid damaging the wire, use a maximum torque of 0.5 N·m (5 kgf·cm).
   - Do not use tin, solder, or any substance on stripped wire that might cause the wire strand to break.
   - Install at maximum distance from high-voltage cables and power equipment.

Wiring Procedure

Use crimp terminals for wiring; use 26-12 AWG wire (0.13 mm^2 –3.31 mm^2).

1. Strip the wire to a length of 7±0.5mm (0.250–0.300 inches).
2. Unscrew the terminal to its widest position before inserting a wire.
3. Insert the wire completely into the terminal to ensure a proper connection.
4. Tighten enough to keep the wire from pulling free.

Wiring Guidelines

In order to ensure that the device will operate properly and to avoid electromagnetic interference:

- Use a metal cabinet. Make sure the cabinet and its doors are properly earthed.
- Use wires that are properly sized for the load.
- Connect the 0V point of the UAG-XKPxxx directly to the power supply 0V terminal.
- Connect the functional ground point (⏚) to the earth of the system (preferably to the metal cabinet chassis).
  Use the shortest and thickest wires possible: less than 1m (3.3′) in length, minimum thickness 14 AWG (2 mm2).
- Connect the power supply 0V to the earth of the system.

NOTE For detailed information, refer to the document System Wiring Guidelines, located in the Technical Library in the Unitronics' website.

Wiring the Power Supply (UAG-XKPxxx)

The UAG-XKPxxx requires an external 12 or 24VDC power supply.

⚠️ - The 0V of the UAG-XKPxxx end unit must be connected to the HMI Panel's 0V. Ignoring this directive may damage the device.
   - In the event of voltage fluctuations or non-conformity to voltage power supply specifications, connect the device to a regulated power supply.

Connect the +V and 0V terminals as shown in the accompanying figure.
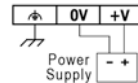
Removing the Expansion Cable

1. Turn off the system power.
2. Unplug the cable from the Base Unit.
3. To remove the Base unit, pull the top clip up and the bottom clip down; and pull it slowly away until the plug disengages.
4. To remove the End unit:
   - Locate the Bus connector lock of the Uni-I/O™ module connected to the End Unit and slide it to the right.
   - Pull the End Unit's top DIN-rail clip up and the bottom clip down.
   - Pull the End Unit out of its place (away from the DIN rail).