

HX8+ GrowNET™ Hub 8-Port Device Hub with Power Over Cable

Specifications

Input Power	1A@24Vdc --- Class II / Limited Energy Power Supply
Max Device Current	1A per port / 1A combined
Master (Input) Ports	1x RJ-45
Device (Outputs) Ports	8x RJ-45
Power Indicator	LED
Power Jack	2.1x5.5mm
Operating Temperature	10 - 50°C (50 - 120°F)
Operating Humidity	Max 75% RH (non-condensing)
Power Terminals	Optional, DC input terminals
Protocols Supported	GrowNET™, MODBUS RTU



Electrical Process Control Equipment
File No.: E516807

Contents

Overview	2
Warnings & Notices	3
Installation Instructions	4
Mounting the Enclosure	4
Connections	5
Technical Information	6
Troubleshooting	6
Maintenance & Service	7
Storage and Disposal	7
Warranty	7

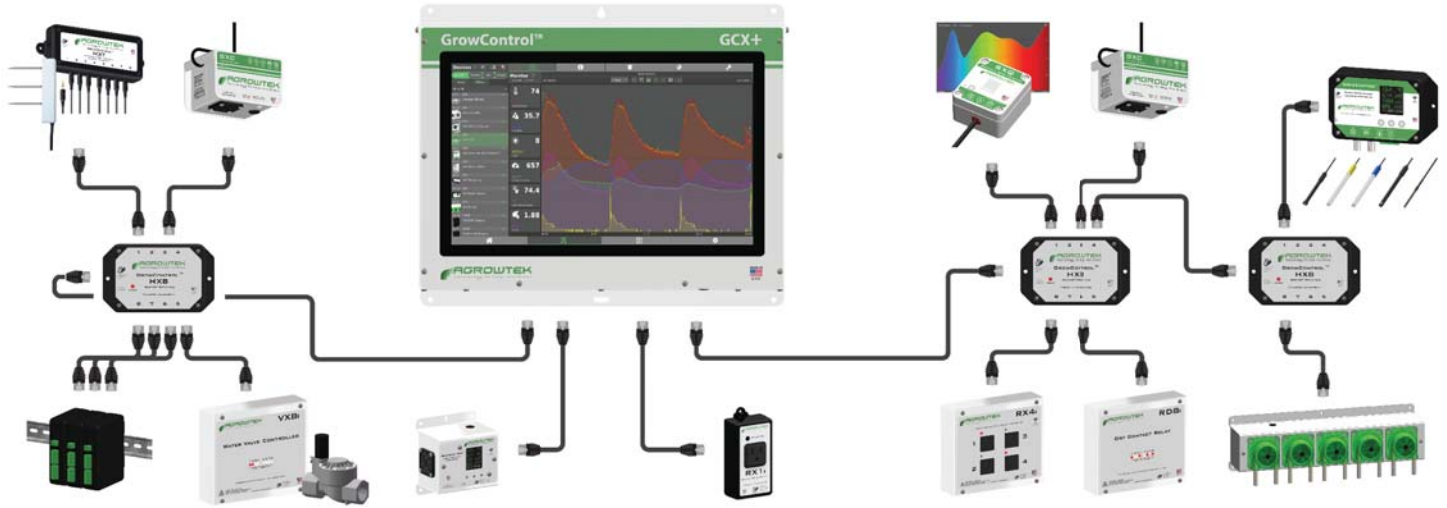
KEEP THESE INSTRUCTIONS

This product is intended for commercial use only.

REV 03/26

Overview

HX8 GrowNET™ hubs expand a single GrowNET™ port from a GrowControl™ clutivation™ controller into eight more ports in order to connect many GrowNET™ devices to the controller and reduce cabling. HX8 hubs can also be daisy-chained to form a network of up to 100 devices per GrowNET™ bus. It is typical to locate hubs centrally in hall ways and rooms for simplified cabling back to the controller.

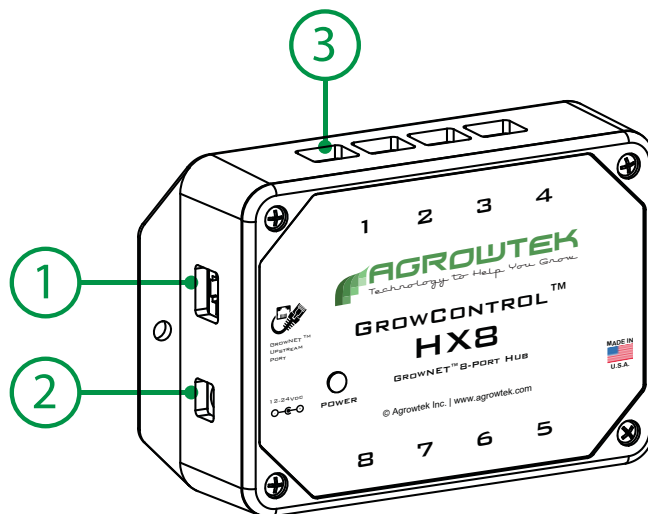


POC (Power Over Cable)

Hubs provide up to 1A of power for operating sensors and most relays directly over the CAT5 cable. A DC jack on the hub provides 24Vdc power to the ports from the included wall power supply. *A terminal block power option is also available.*

Industrial Signal Integrity

All GrowNET™ devices are connected using standard CAT5 Ethernet cable with RJ-45 connections. Individually buffered port transceivers provide excellent signal integrity and extended communication strength and range up to 1000ft.



- 1. Master Port
- 2. Power Jack
- 3. Device Port

Connects to a GCX controller port or numbered hub port from another hub.
Plug in the 24Vdc 1A power supply to provide power to the hub and 8 ports.
Connects to GrowNET™ devices.

Warnings & Notices

This is a precision electronic instrument which requires proper installation and care to maintain reliability.

READ & UNDERSTAND ENTIRE MANUAL PRIOR TO INSTALLATION OR OPERATION.

Failure to read, understand and comply with warnings and installation requirements may result in property damage, personal injury or death.

WARNING

Do not use a power supply other than the intended or included power supply. Do not exceed the maximum ratings on the product serial label or specifications listed in this manual. Any power supply with energy levels exceeding the specifications must be current limited or fused to prevent overcurrent to the device.

NOTICE

GrowNET™ ports use standard RJ-45 connections but are NOT compatible the Ethernet network equipment. *Do not connect GrowNET™ ports to Ethernet ports or network switch gear.*

DIELECTRIC GREASE

Dielectric grease is recommended on RJ-45 GrowNET™ connections when used in humid environments. Place a small amount of grease onto the RJ-45 plug contacts before inserting into the GrowNET™ port. *Non-conductive grease is designed to prevent corrosion from moisture in electrical connectors.*

- Loctite LB 8423
- Dupont Molykote 4/5
- CRC 05105 Di-Electric Grease
- Super Lube 91016 Silicone Dielectric Grease
- Other Silicone or Lithium based insulating grease

INDOOR LOCATIONS ONLY

This product is designed for indoor mounting only and must be protected from weather and direct sunlight.

NOTICE

Do not spray the equipment with water or chemicals. Protect equipment from direct water exposure. If installing the equipment in the growing environment a weather proof enclosure is recommended.



WARNING

This product may contain chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

Installation Instructions

HX8 hubs are “transparent” on the GrowNET™ network. Hubs do not consume a device address on the controller or appear in the controller’s device list. There is nothing to configure; just connect devices.

Mounting the Enclosure

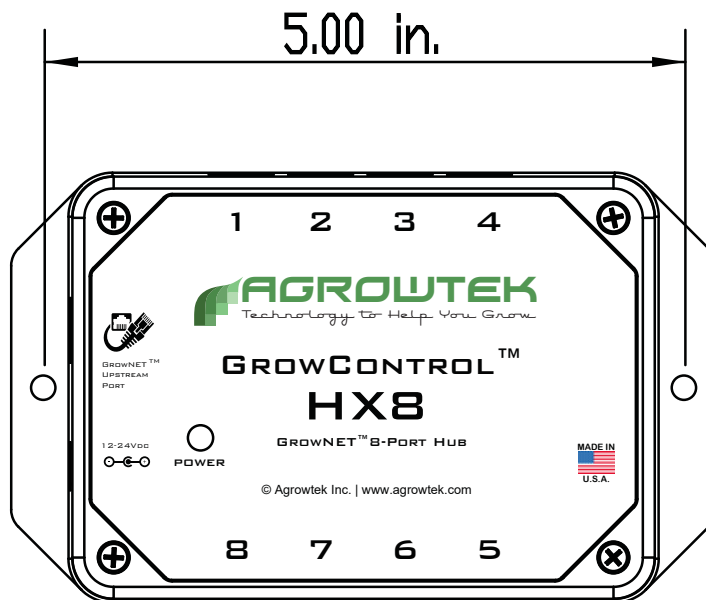
The HX8 hub enclosure includes two wall-mounting flanges with a pre-drilled hole in each flange.

It is recommended to install HX8 hubs outside of each room and pass cables through walls to equipment and sensors in the rooms. When possible, mount equipment outside of the growing environment for better service access and reduced exposure to humidity. If a hub is to be installed in a humid growing environment, mounting in a sealed enclosure is recommended.

Follow these tips for best results:

- Install the hub in a dry location away from drips or condensation.
- Ensure the hub is accessible for service.
- Use a weather proof enclosure for high humidity conditions (>70% continuous.)

1. Place the hub in the area intended for mounting. Ensure there is adequate space for connections.
2. Mark the hole locations and install anchors or pre-drill holes if necessary.
3. Mount the enclosure to the wall or ceiling using screws (not provided.)



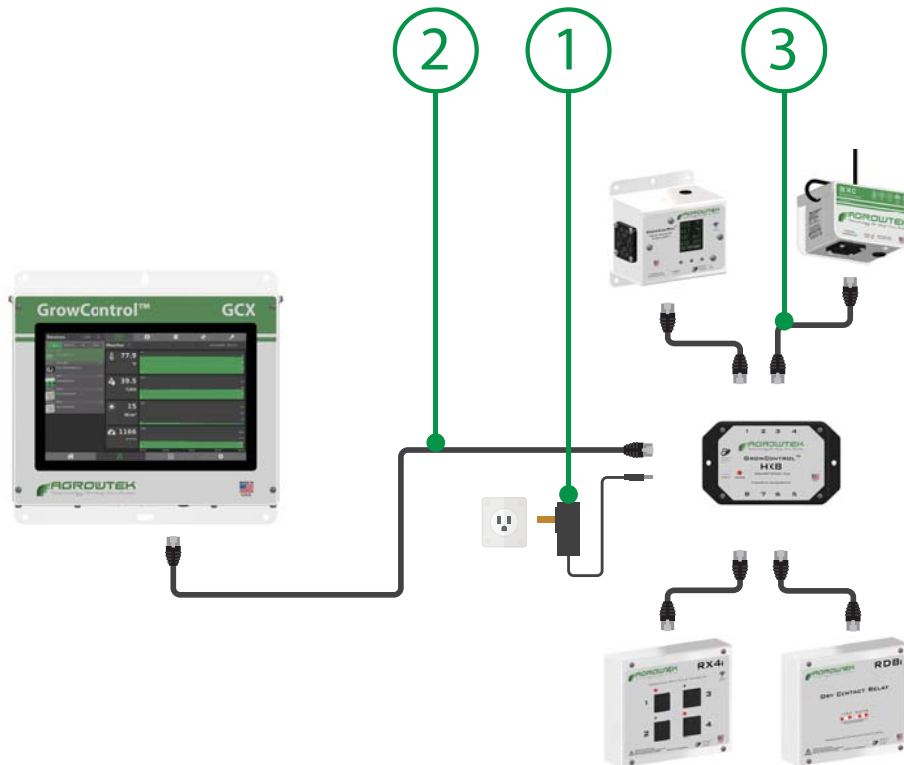
NOTE

Protect jacks from dust or contamination during installation; cover ports with masking tape.

Connections

The HX8 hub features a 'master' upstream port on the left side which is to be connected to a GrowNET™ port on a GCX controller or another 'upstream' HX8 numbered device port (daisy chained.)

Eight (8) down stream ports are provided for connecting devices or additional hubs. A power jack provides power to the hub and eight device ports from a wall power supply.



- | | |
|-------------------|--|
| 1. Power Supply | 24Vdc / 1 Amp power supply is required to operate the HX8 hub. |
| 2. Upstream Cable | Connect the upstream GrowNET™ port to a GCX controller or other HX8 device port. |
| 3. Device Cable | Connect GrowNET™ devices to the numbered hub ports. |

All cabling is standard 8-conductor RJ-45 straight through (no cross-over.) T568B pattern recommended.

Technical Information

Troubleshooting

Problem	Solution
<p>The power LED is not illuminated.</p>	<p>Check for power at the AC outlet.</p> <p>Check voltage at the DC power supply cord or swap the power supply with another known working unit.</p> <p>If the power supply tests OK, disconnect RJ-45 cables from the unit one at a time. If disconnecting a cable turns on the LED and re-connecting it turns off the LED, there is a short-circuit on the cable or the device that it is connected to. Replace the cable or investigate the device for faults.</p>
<p>All devices on the hub are shown as "offline" on the control system.</p>	<p>Check if the power LED is illuminated. If not, see troubleshooting steps for "The power LED is not illuminated" above.</p> <p>Check the RJ-45 connection for damage. Test the RJ-45 cable with a tester tool.</p> <p>Check the upstream device (HX8 hub or GCX controller) that the device is connected to. Ensure the device is powered on and is working correctly.</p> <p>If connected to an HX8 hub, ensure the hub's LED is illuminated to indicate it has power. Try an alternate hub port to ensure there is not a problem with the hub port.</p> <p>Try an alternate RJ-45 cable to ensure there is not a problem with the cable.</p>
<p>One of the devices on the hub are shown as "offline" on the controller.</p>	<p>Check the RJ-45 jacks for damage.</p> <p>Test the RJ-45 cable or replace it with an alternate to verify the cable is not faulty.</p> <p>Plug the device into another known working port to ensure the port is not damaged.</p> <p>Connect the device directly to the controller bus ports to check if it appears "online."</p> <p>Reset the device using the device reset button.</p> <p>Replace the device with a working device and contact service for a return authorization.</p>

Maintenance & Service

Exterior Cleaning

Disconnect power before cleaning the enclosure to prevent electrical shock. Exterior may be wiped with a damp cloth with mild dish detergent, then wiped dry. Take caution to avoid water entering the connector jacks. If necessary, connector jack pins may be cleaned with isopropyl alcohol and a cotton swab.

Storage and Disposal

Storage

Store equipment in a clean, dry environment with ambient temperature between 10-50°C.

Disposal

This industrial control equipment may contain traces of lead or other metals and environmental contaminants and must not be discarded as unsorted municipal waste, but must be collected separately for the purpose of treatment, recovery and environmentally sound disposal. Wash hands after handling internal components or PCB's.

Warranty

Agrowtek Inc. warrants that all manufactured products are, to the best of its knowledge, free of defective material and workmanship and warrants this product for one (1) year from the date of purchase. This warranty is extended to the original purchaser from the date of purchase. Returns not purchased directly from Agrowtek Inc. must include proof of purchase date otherwise purchase date is considered as date of manufacture. This warranty does not cover damages from abuse, accidental breakage, or items that have been modified, altered, or installed in a manner other than that which is specified in the installation instructions. This warranty is applicable only to products that have been properly stored, installed, and maintained per the installation and operation manual and used for their intended purpose. This limited warranty does not cover products installed in or operated under unusual conditions or environments including, but not limited to, excessive humidity or extreme temperature conditions outside of the specified limits. Agrowtek Inc. must be contacted prior to return shipment of any returns for a return authorization. No returns will be accepted without a return authorization. Customer is responsible for return shipment to Agrowtek Inc. for warranty service. Return authorization number(s) must be printed on the outside of the box or the return may be rejected and returned to the sender. Agrowtek Inc. is not responsible for supplying replacement products or parts in advance of return(s) for warranty claim. The products which have been claimed and comply with the aforementioned restrictions shall be replaced or repaired at the sole discretion of the Agrowtek Inc. at no charge. This warranty is provided in lieu of all other warranty provisions, express or implied. It is including but not limited to any implied warranty of fitness or merchantability for a particular purpose and is limited to the Warranty Period. In no event or circumstance shall Agrowtek Inc. be liable to any third party or the claimant for damages in excess of the price paid for the product, or for any loss of use, inconvenience, commercial loss, loss of time, lost profits or savings or any other incidental, consequential or special damages arising out of the use of, or inability to use, the product. This disclaimer is made to the fullest extent allowed by law or regulation and is specifically made to specify that the liability of Agrowtek Inc. under this limited warranty, or any claimed extension thereof, shall be to replace or repair the Product or refund the price paid for the Product.