

DATA CONCENTRATOR DC500



INSTALLATION INSTRUCTIONS



SURVEYOR™
ENERGY MANAGEMENT SYSTEM

Data Concentrator – DC500

The Data Concentrator is the control center for the Surveyor Energy Management System at the location. The DC500 allows the user to monitor and control the location remotely either through the Surveyor Cloud or a Surveyor Enterprise Server.

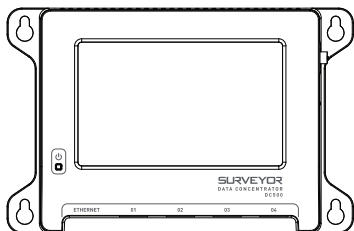
The graphic user interface on the DC500 allows for local setup and interaction. The DC500 has built-in Wi-Fi as well as Ethernet connectivity. Additional built-in radios allow the DC500 to interact with VenNet wireless sensors. The DC500 is backwards compatible and can replace a DC400 in a Surveyor ecosystem.

These instructions are intended to help you install and setup the basics of the DC500 for communication to the Surveyor Cloud or a Surveyor Enterprise Server.



Contents

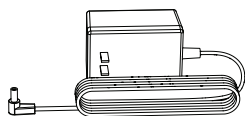
DC500



Antenna



Power Supply



Screws & Drywall anchors



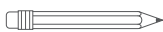
Installation Manual



Recommended Tools



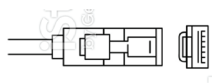
Screwdriver



Pencil



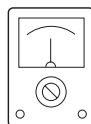
Drill



Ethernet cable

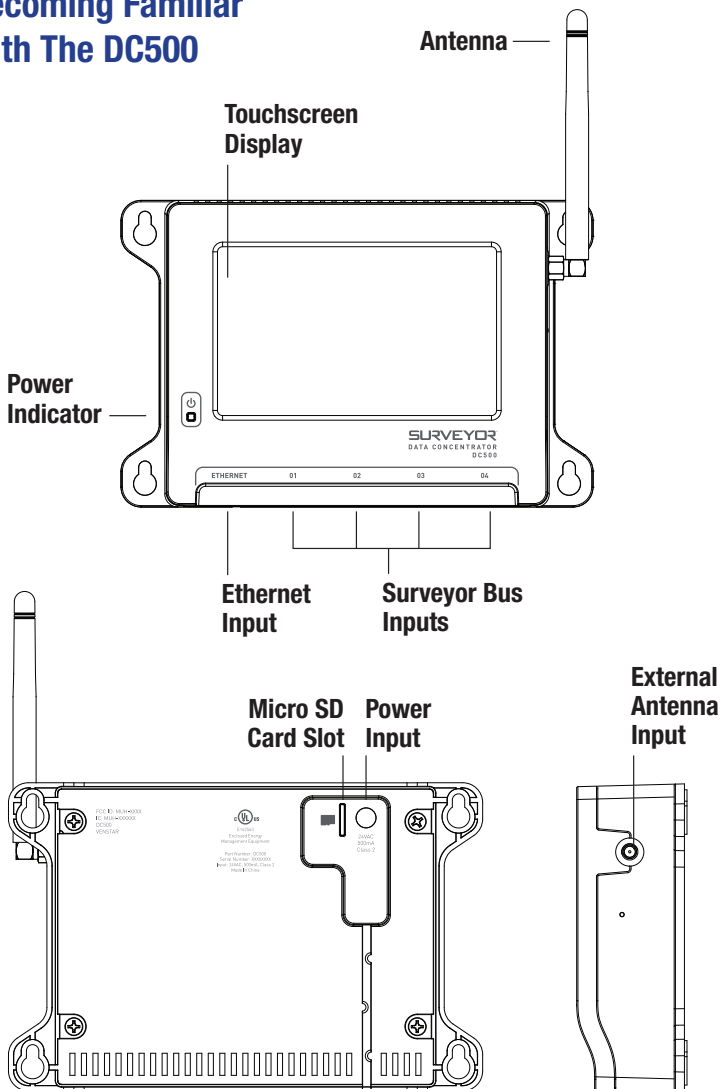


Wi-Fi network and password



Voltmeter

Becoming Familiar with The DC500



SAFETY REMINDER

- All Federal, State OSHA guidelines, NEC and local ordinances should be followed in all work to prepare, install, troubleshoot or maintain the Surveyor EMS
- Disconnect power to all appropriate devices before installing equipment components

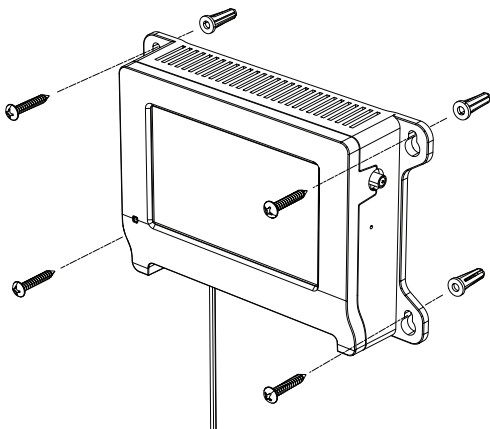
Installation Instructions

Follow these instructions to ensure the DC500 is correctly installed and connected to other compatible Surveyor devices.

Mounting the DC500

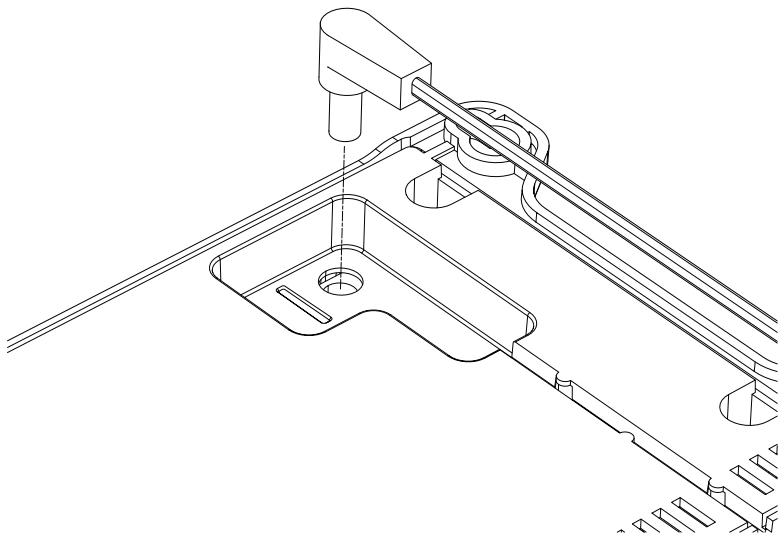
Identify the proper location to mount the DC500. It is recommended to connect the power supply to the DC500 **PRIOR TO** mounting it to the wall. Use the enclosed screws and drywall anchors when mounting the device.

TIP: Consider proximity to a power outlet as well as the best location for connecting to the Internet.



Powering the DC500

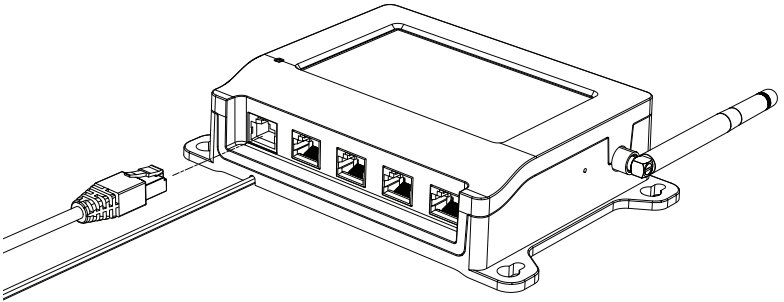
1. Plug the 24 VAC power supply into the DC500 power input
2. Connect the power supply to a standard 120v receptacle outlet that has constant power or is on a dedicated circuit



Internet Connection – Wired

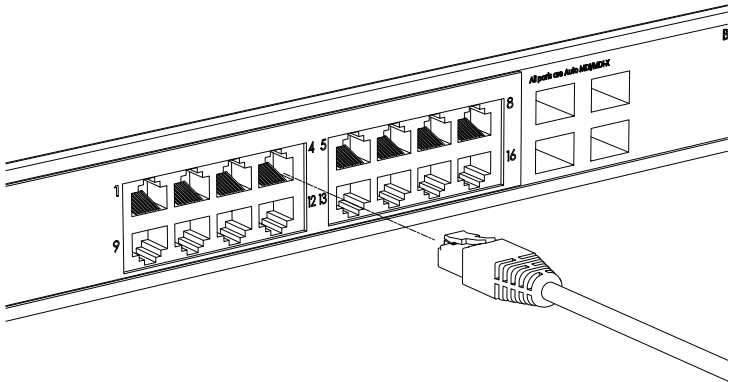
If using a wired connection then make sure the Data Concentrator is placed in proximity to the router and use an Ethernet cable of sufficient length.

1. Connect the Ethernet cable (not included) into the Ethernet port of the DC500



2. Connect the other end of the Ethernet cable into the appropriate port on the router

NOTE: Refer to specific customer instructions as to which port is to be used.



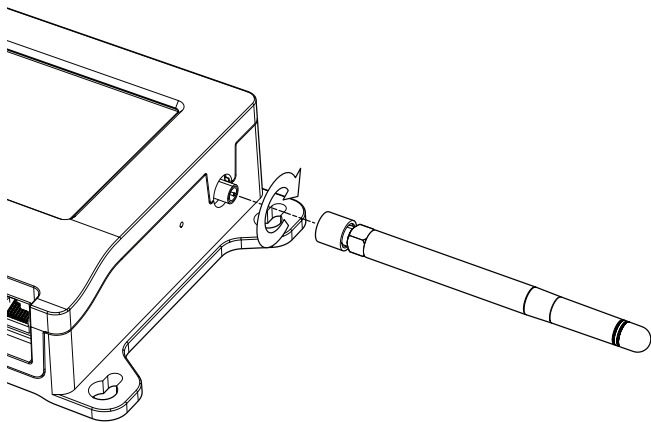
Internet Connection – Wireless

If using a Wi-Fi connection then make sure the Data Concentrator is placed in an area with a strong and reliable Wi-Fi signal. Make sure you have the correct network name and password.



Connecting the Antenna

Attach the enclosed antenna to support Sub-GHz communication to compatible Surveyor devices.

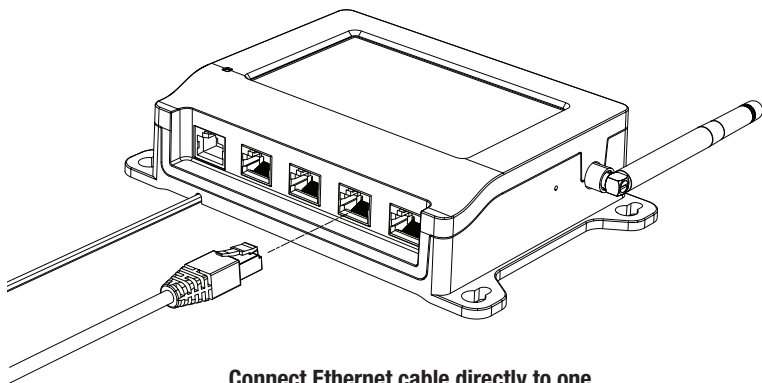


WARNING: Use only the antenna supplied with the DC500.

Connecting the Data Concentrator to Other Surveyor Devices

Ensure the communication Bus wiring to other Surveyor devices is correctly installed prior to connecting to the DC500.

TIP: Attach the three wires from the powered Surveyor device(s) to A – B – GND on the 3-pin terminal block. Use a DC voltmeter to measure between the A and B terminals before plugging the terminal block into the DC500. You should measure between 3V and 5V between A and B (A positive, B negative).

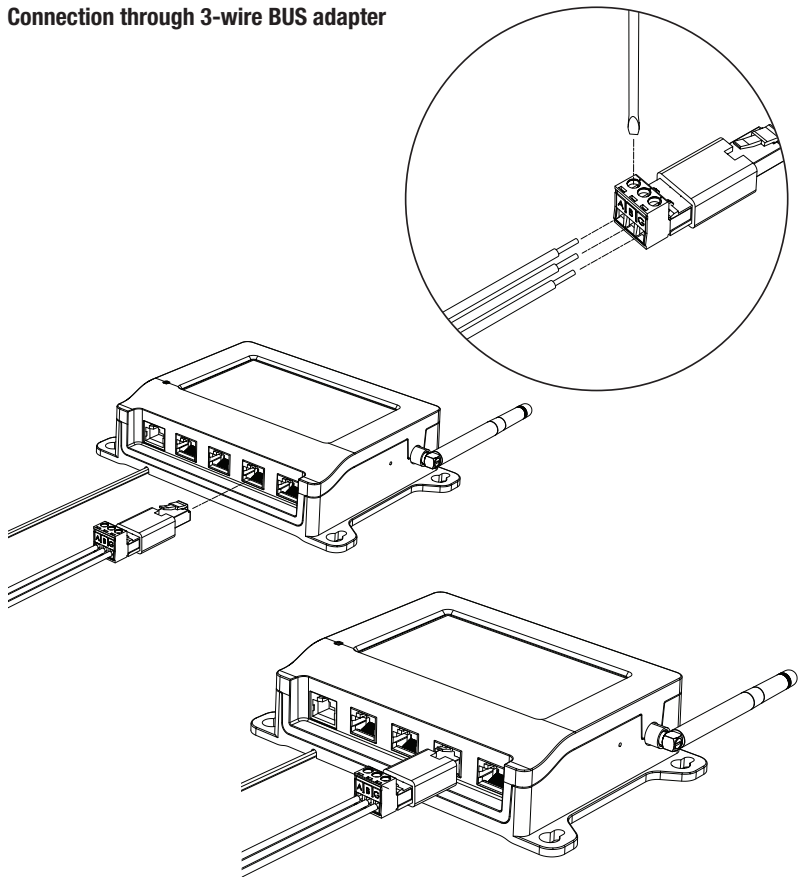


Connect Ethernet cable directly to one of the four Surveyor BUS ports

Scenarios That Require the Surveyor BUS Adapter

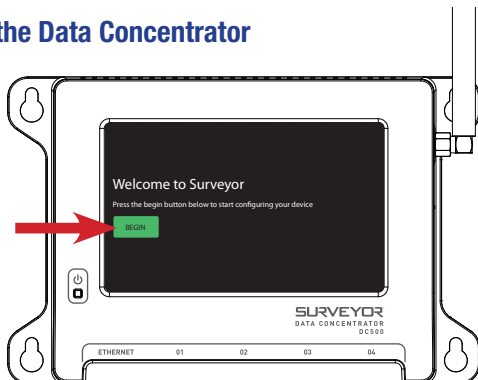
When upgrading to a DC500 from a DC400 it will require a BUS Adapter (DC500-ADPT) for each Surveyor BUS port used. BUS Adapter is sold separately.

Connection through 3-wire BUS adapter



Allow at least 3 inches of additional space for the BUS adapter(s) to secure all connections.

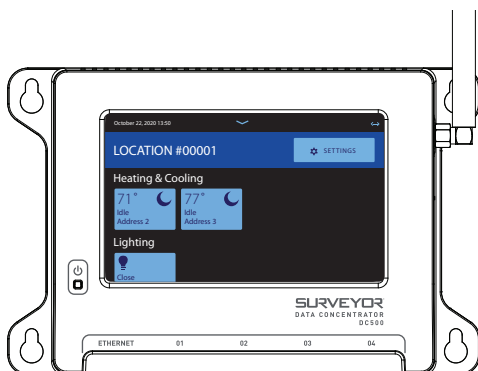
Setting up the Data Concentrator



Press begin and follow the prompts on the subsequent screens to:

- Enter location information - Include store name and number, current date, time and time zone
- Establish Internet connection - Select Ethernet or Wi-Fi then enter IP configuration (DCHP vs. Static) followed by network settings
- Enable security PIN (optional)

Upon completion of the setup process, the DC500 Auto-Discovery feature will display all connected Surveyor devices on the Home Screen.



Troubleshooting

Use the following troubleshooting guide to diagnose and solve common problems related to the installation and setup of this device.

Issue	Recommended Actions
The DC500 does not have power	<ul style="list-style-type: none">• Check the power indicator LED on the DC500• Check the 24 VAC power supply connection at the back of the DC500• Check that the outlet has power
The DC500 has power but the screen is blank	<ul style="list-style-type: none">• Check the power indicator LED on the DC500• Cycle power by disconnecting and reconnecting the power supply to the DC500• If necessary, reset factory defaults and repeat installation steps
No access to network – Wired connection	<ul style="list-style-type: none">• Verify the DC500 is connected to the correct port on the router/switch• Test the reliability of the Ethernet cable• Verify the network connection is good (online)
Other Surveyor devices are not found during Auto-discovery	<ul style="list-style-type: none">• Make sure connected devices have power• Check the wiring between the DC500 and any affected devices• It's possible the device type is not recognized by or compatible with the DC500

FCC Compliance Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by Venstar could void the user's authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic

Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

1. L'appareil ne doit pas produire de brouillage;
2. L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement

This radio transmitter 12547A-SURVEYOR1 has been approved by Innovation, Science and Economic Development Canada to operate with the antenna types listed below, with the maximum permissible gain indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device.

Le présent émetteur radio 12547A-SURVEYOR1 a été approuvé par Innovation, Sciences et Développement économique Canada pour fonctionner avec les types d'antenne énumérés ci-dessous et ayant un gain admissible maximal. Les types d'antenne non inclus dans cette liste, et dont le gain est supérieur au gain maximal indiqué pour tout type figurant sur la liste, sont strictement interdits pour l'exploitation de l'émetteur.

Antenna Part #: ANEA50000B281

Type & Gain: 900Mhz OMNI SMA male +2.00dBi

FCC ID to: MUH-SURVEYOR1

IC: 12547A-SURVEYOR1



Innovation, Science and Economic Development Canada
ICES-003 Compliance Label: CAN ICES-3 (B)/NM8-3(B)

Warranty

One-Year Warranty - This Product is warranted to be free from defects in material and workmanship. If it appears within one year from the date of original installation, whether or not actual use begins on that date, that the product does not meet this warranty, a new or remanufactured part, at the manufacturer's sole option to replace any defective part, will be provided without charge for the part itself provided the defective part is returned to the distributor through a qualified servicing dealer.

THIS WARRANTY DOES NOT INCLUDE LABOR OR OTHER COSTS incurred for diagnosing, repairing, removing, installing, shipping, servicing or handling of either defective parts or replacement parts. Such costs may be covered by a separate warranty provided by the installer.

THIS WARRANTY APPLIES ONLY TO PRODUCTS IN THEIR ORIGINAL INSTALLATION LOCATION AND BECOMES VOID UPON REINSTALLATION.

LIMITATIONS OF WARRANTIES – ALL IMPLIED WARRANTIES (INCLUDING IMPLIED WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE AND MERCHANTABILITY) ARE HEREBY LIMITED IN DURATION TO THE PERIOD FOR WHICH THE LIMITED WARRANTY IS GIVEN. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE MAY NOT APPLY TO YOU. THE EXPRESSED WARRANTIES MADE IN THIS WARRANTY ARE EXCLUSIVE AND MAY NOT BE ALTERED, ENLARGED, OR CHANGED BY ANY DISTRIBUTOR, DEALER, OR OTHER PERSON WHATSOEVER.

ALL WORK UNDER THE TERMS OF THIS WARRANTY SHALL BE PERFORMED DURING NORMAL WORKING HOURS. ALL REPLACEMENT PARTS, WHETHER NEW OR REMANUFACTURED, ASSUME AS THEIR WARRANTY PERIOD ONLY THE REMAINING TIME PERIOD OF THIS WARRANTY.

THE MANUFACTURER WILL NOT BE RESPONSIBLE FOR:

1. Normal maintenance as outlined in the installation and servicing instructions or owner's manual, including filter cleaning and/or replacement and lubrication.
2. Damage or repairs required as a consequence of faulty installation, misapplication, abuse, improper servicing, unauthorized alteration or improper operation.
3. Failure to start due to voltage conditions, blown fuses, open circuit breakers or other damages due to the inadequacy or interruption of electrical service.
4. Damage as a result of floods, winds, fires, lightning, accidents, corrosive environments or other conditions beyond the control of the Manufacturer.
5. Parts not supplied or designated by the Manufacturer, or damages resulting from their use.
6. Manufacturer products installed outside the continental U.S.A., Alaska, Hawaii, and Canada.
7. Electricity or fuel costs or increases in electricity or fuel costs for any reason whatsoever including additional or unusual use of supplemental electric heat.
8. ANY SPECIAL INDIRECT OR CONSEQUENTIAL PROPERTY OR COMMERCIAL DAMAGE OF ANY NATURE WHATSOEVER. Some states do not allow the exclusion of incidental or consequential damages, so the above may not apply to you.

This warranty gives you specific legal rights and you may also have other rights which may vary from state to state.

Patent Pending

P/N 88-XXXX Rev. 1 06/30/21

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