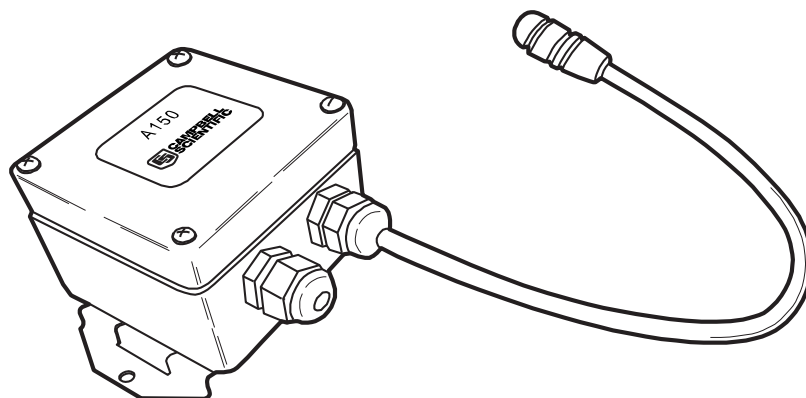


INSTRUCTION MANUAL



A150 Desiccated Case

Revision: 1/15



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DANGER — MANY HAZARDS ARE ASSOCIATED WITH INSTALLING, USING, MAINTAINING, AND WORKING ON OR AROUND TRIPODS, TOWERS, AND ANY ATTACHMENTS TO TRIPODS AND TOWERS SUCH AS SENSORS, CROSSARMS, ENCLOSURES, ANTENNAS, ETC. FAILURE TO PROPERLY AND COMPLETELY ASSEMBLE, INSTALL, OPERATE, USE, AND MAINTAIN TRIPODS, TOWERS, AND ATTACHMENTS, AND FAILURE TO HEED WARNINGS, INCREASES THE RISK OF DEATH, ACCIDENT, SERIOUS INJURY, PROPERTY DAMAGE, AND PRODUCT FAILURE. TAKE ALL REASONABLE PRECAUTIONS TO AVOID THESE HAZARDS. CHECK WITH YOUR ORGANIZATION'S SAFETY COORDINATOR (OR POLICY) FOR PROCEDURES AND REQUIRED PROTECTIVE EQUIPMENT PRIOR TO PERFORMING ANY WORK.

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General

- Prior to performing site or installation work, obtain required approvals and permits. Comply with all governing structure-height regulations, such as those of the FAA in the USA.
- Use only qualified personnel for installation, use, and maintenance of tripods and towers, and any attachments to tripods and towers. The use of licensed and qualified contractors is highly recommended.
- Read all applicable instructions carefully and understand procedures thoroughly before beginning work.
- Wear a **hardhat** and **eye protection**, and take **other appropriate safety precautions** while working on or around tripods and towers.
- **Do not climb** tripods or towers at any time, and prohibit climbing by other persons. Take reasonable precautions to secure tripod and tower sites from trespassers.
- Use only manufacturer recommended parts, materials, and tools.

Utility and Electrical

- **You can be killed** or sustain serious bodily injury if the tripod, tower, or attachments you are installing, constructing, using, or maintaining, or a tool, stake, or anchor, come in **contact with overhead or underground utility lines**.
- Maintain a distance of at least one-and-one-half times structure height, 20 feet, or the distance required by applicable law, **whichever is greater**, between overhead utility lines and the structure (tripod, tower, attachments, or tools).
- Prior to performing site or installation work, inform all utility companies and have all underground utilities marked.
- Comply with all electrical codes. Electrical equipment and related grounding devices should be installed by a licensed and qualified electrician.

Elevated Work and Weather

- Exercise extreme caution when performing elevated work.
- Use appropriate equipment and safety practices.
- During installation and maintenance, keep tower and tripod sites clear of un-trained or non-essential personnel. Take precautions to prevent elevated tools and objects from dropping.
- Do not perform any work in inclement weather, including wind, rain, snow, lightning, etc.

Maintenance

- Periodically (at least yearly) check for wear and damage, including corrosion, stress cracks, frayed cables, loose cable clamps, cable tightness, etc. and take necessary corrective actions.
- Periodically (at least yearly) check electrical ground connections.

WHILE EVERY ATTEMPT IS MADE TO EMBODY THE HIGHEST DEGREE OF SAFETY IN ALL CAMPBELL SCIENTIFIC PRODUCTS, THE CUSTOMER ASSUMES ALL RISK FROM ANY INJURY RESULTING FROM IMPROPER INSTALLATION, USE, OR MAINTENANCE OF TRIPODS, TOWERS, OR ATTACHMENTS TO TRIPODS AND TOWERS SUCH AS SENSORS, CROSSARMS, ENCLOSURES, ANTENNAS, ETC.

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A150 Desiccated Case

1. Function

1.1 Typical Applications

The A150 desiccated case is a small, self-contained junction box that allows a sensor to be connected to a continuation cable, a PWENC connector, or a CWS900 wireless sensor connector. Utilizing the A150, a sensor may be incorporated into a wireless sensor network or may be attached to a prewired enclosure.

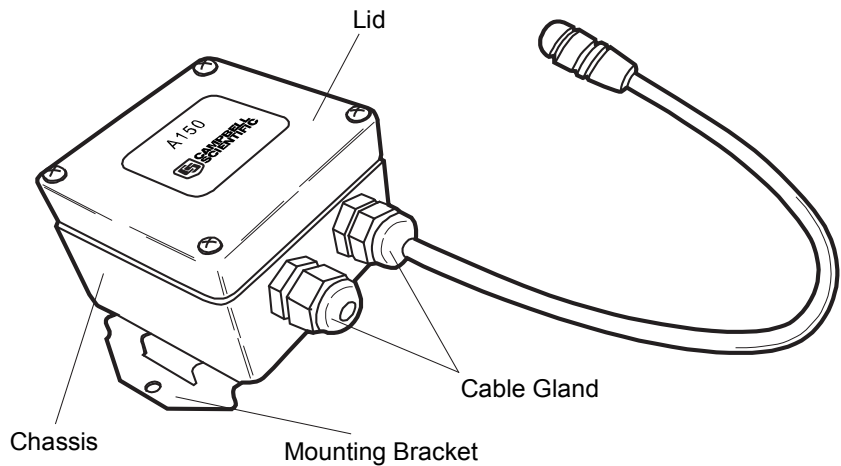


FIGURE 1-1. A150 desiccated case

The A150 allows the CS450 and CS455 pressure transducers to be used without the need to run a ventilation tube all the way to a datalogger enclosure. The sensor cable with a ventilation tube terminates at the A150, which contains a small vent and desiccant, while a second cable without a ventilation tube completes the connection to the datalogger.

The A150 provides a way for a sensor to be included in a wireless sensor network. The sensor is attached to the A150 junction box, and a second cable attaches the A150 to a CWS900 wireless sensor interface. This allows the sensor more flexibility and range than it would have if it were wired directly to a datalogger.

1.2 Compatibility

As a junction box, the A150 is compatible with most sensors using six wires or less. Sensors with multiple ground wires can use the included 5-position lever nut to combine the grounds into a single wire connection.

NOTE

It is not recommended to insert more than one wire into each connection on the terminal block. If it is necessary to combine wires, use the 5-position lever nut to combine the wires, and then insert the lead wire from the lever nut into the terminal block.

When used with a CWS900, the sensor can be used with sensors measuring analog voltages, frequency, and pulse. The CWS900 can also provide excitation voltage to a sensor through the A150.

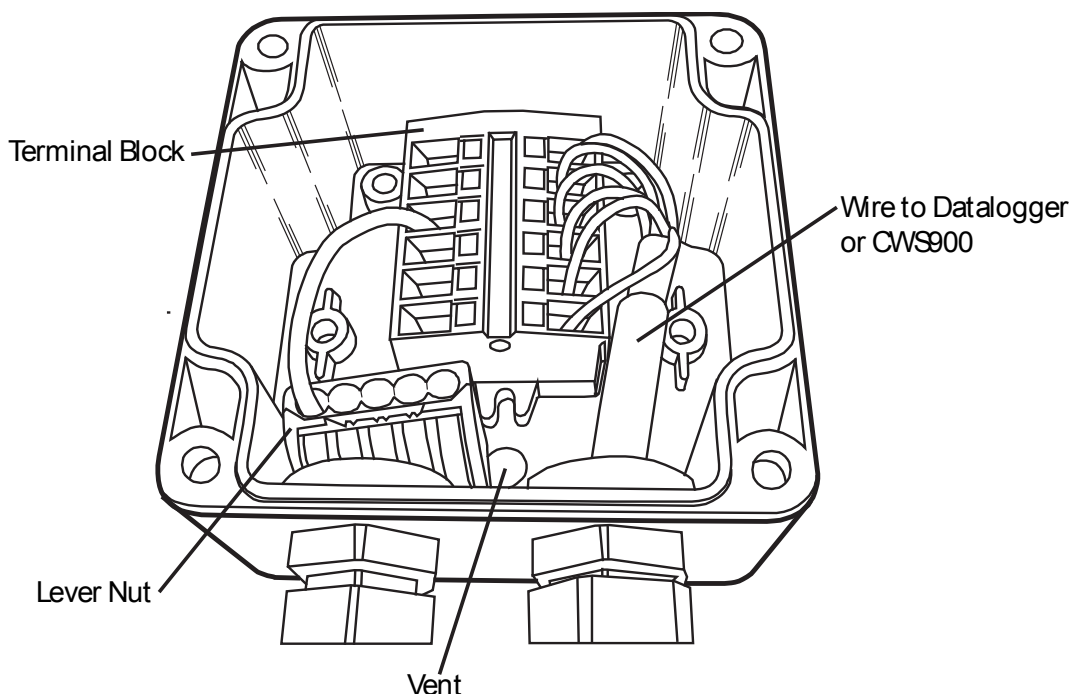


FIGURE 1-2. A150 interior

2. Physical Description

The A150 has an 80 mm x 82 mm x 55 mm chassis. Four screws secure the lid to the rest of the unit. A terminal block is mounted inside the chassis. A small vent is located on the bottom of the chassis. The vent is protected by a GORE[®] filter, which prevents moisture and contaminants from entering the unit while equalizing the interior air pressure to the current atmospheric pressure.

A mounting bracket is attached to the bottom of the chassis. The bracket is used to fasten the A150 inside an enclosure or, with the included Velcro[®] strap, to another location of the user's choosing.

3. Specifications

Dimensions:	80 mm x 82 mm x 55 mm (3.15 in x 3.228 in x 2.171 in)
Temperature Range:	-30 to 65 °C
Internal Protection Rating:	IP 66 (International Standard IEC 60529)
Terminal Block Wire Gauges:	28-12
5-wire Lever Nut Wire Gauges:	28-12 (replacement part number 27373)

Cable Gland	
Min/Max Cable Diameter:	4.6 mm/7.9 mm (0.181 in/0.312 in)
Desiccant Bag (1/2 Unit)	
Replacement Part Number:	905
Velcro® Strap	
Replacement Part Number:	5487
Humidity Indicator Card	
Replacement Part Number:	28878

4. Sensor Hook-up and Example Diagrams

There are three options available when ordering the A150. The first option includes a stripped and tinned continuation cable. The length of this cable is specified when ordering the A150.

The second option includes a PWENC connector, allowing the A150 to be attached to prewired enclosures.

The third option includes a connector to attach the A150 to the CWS900 wireless sensor interface. The CWS900 completes the connection to the datalogger through a wireless sensor network.

FIGURE 4-1 shows the pin-out of the CWS900 connector. Take care that the sensor wires attached to the A150 correspond to the correct pins as shown in the diagram.

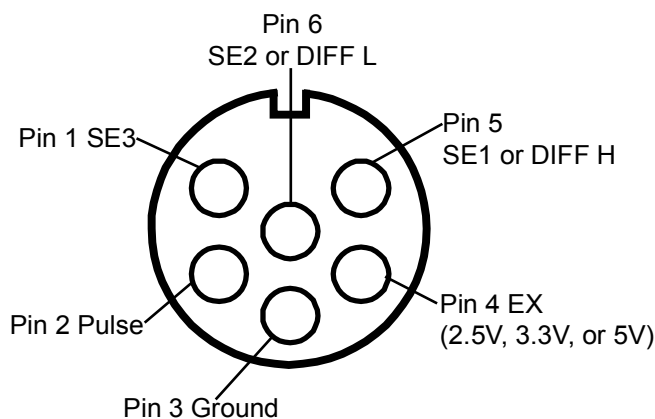


FIGURE 4-1. CWS900 connector pin-out

4.1 #26972 with Stripped and Tinned Continuation Cable

FIGURE 4-2 shows the A150 terminal block with a 26972 continuation wire attached. This configuration allows a CS450 or other sensor to be attached to the A150 while the pigtail wire completes the connection to the datalogger.

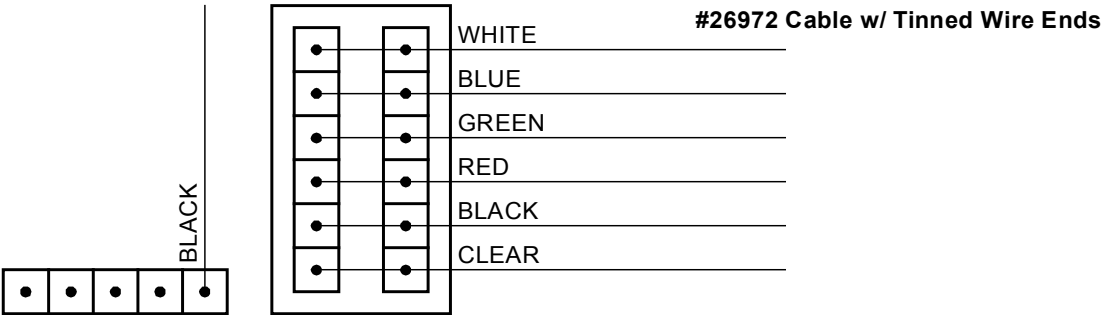


FIGURE 4-2. A150 with continuation cable

NOTE Wire colors may vary between different sensors. It is up to the installer to take into account any mismatched wire colors between the sensor and pigtail wire when connecting wires to the A150.

4.2 #22018 PWENC Connector

FIGURE 4-3 shows the A150 terminal block with a PWENC connector attached. This configuration allows a CS450 or other sensor to be attached to the A150 while the PWENC connector completes the connection to a pre-wired enclosure.

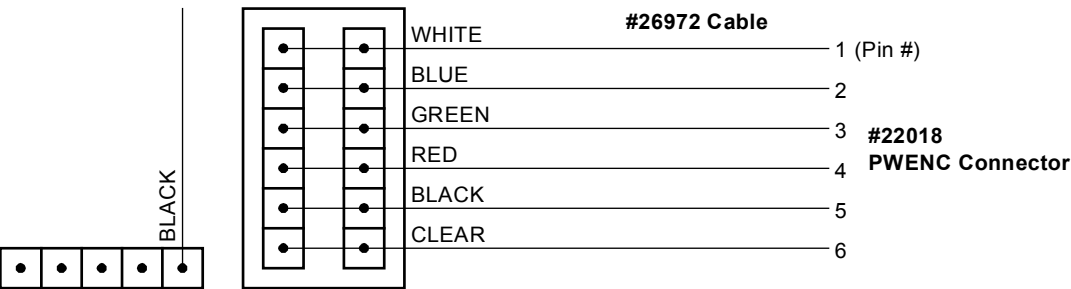


FIGURE 4-3. A150 with PWENC connector

NOTE When using the A150 to wire a sensor to a PWENC connector, ensure the wiring inside the pre-wired enclosure corresponds with the wiring from the sensor.

FIGURE 4-4 gives an example of an anemometer wired to an A150. Note that the green wire in the PWENC connector must be connected to a datalogger's pulse input inside the enclosure for the signal to be measured.

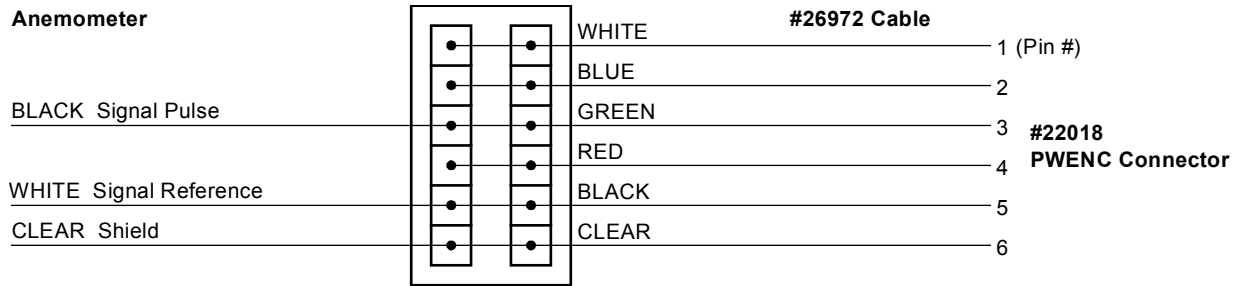


FIGURE 4-4. Anemometer wired to an A150

4.3 #19520 CWS900 Connector

FIGURE 4-5 shows the A150 terminal block with a CWS900 attached. This configuration allows a CS450 or other sensor to be attached to the A150 while the CWS900 wireless sensor interface completes the connection to the wireless sensor network.

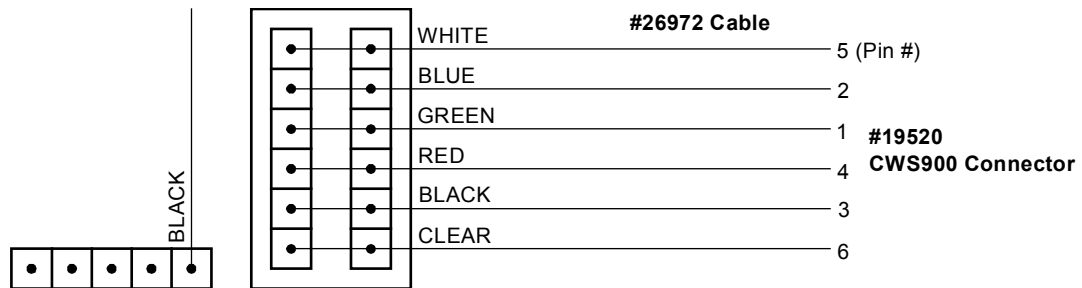


FIGURE 4-5. A150 with CWS900 connector

FIGURE 4-6 shows a CS450 connected to an A150. Note how multiple grounds are combined into a single lead wire using the lever nut.

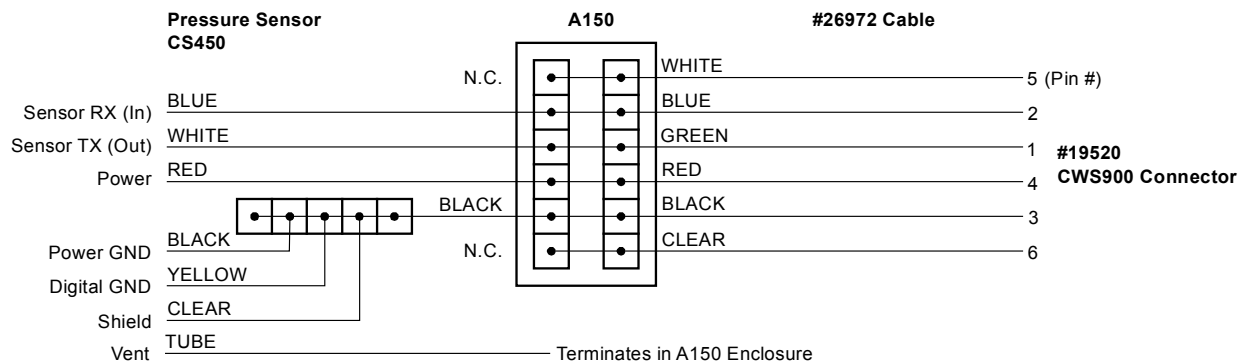


FIGURE 4-6. A150 wired for CS450 pressure sensor and CWS900 connector

5. Installation

5.1 Mounting

The A150 provides two options for mounting. The first is to use the Velcro[®] strap included with the A150. This allows the A150 to be secured to a small mast, fencepost, or other location where it is not possible to use mounting screws.

The second option is to use the mounting bracket on the back of the A150. This bracket allows the A150 to be mounted inside an enclosure or to another flat surface, using two screws through the bracket to secure the A150.

5.2 Wiring

To wire a sensor to the A150, route the sensor cable through the cable gland and attach each wire to the terminal block adjacent to the corresponding wire to the datalogger or CWS900. Use a small, flat-head screwdriver to open the wire terminal as shown in FIGURE 5-1. Use the lever nut to combine multiple ground wires into a single wire connection. Consult the documentation included with the sensor, or contact a Campbell Scientific application engineer, for the correct placement of each wire.

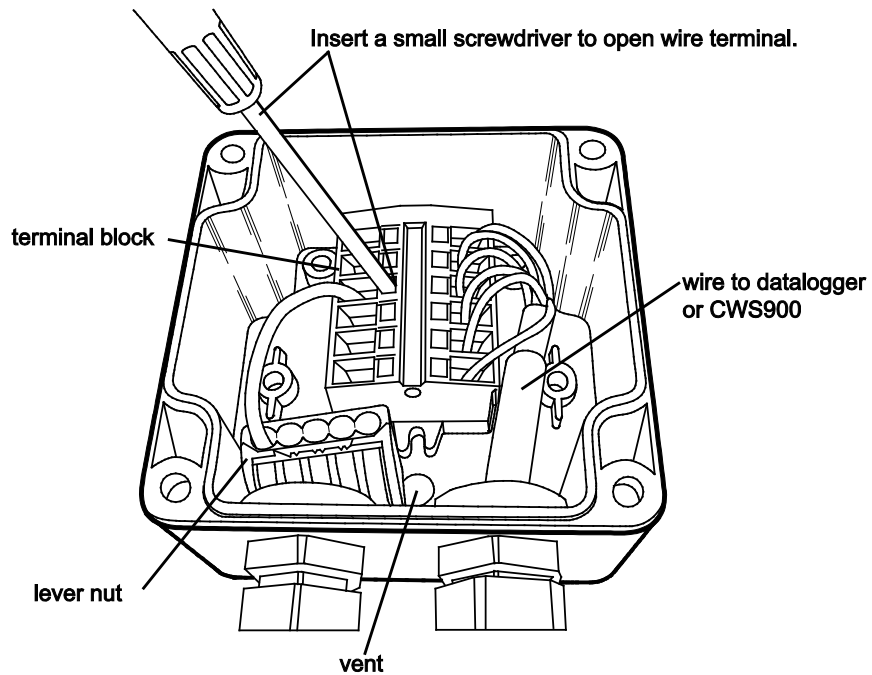


FIGURE 5-1. Attaching a wire to the A150

Once all wires are attached, tighten the wire gland to prevent water or contaminants from entering the A150. Place a desiccant pack, included with the A150, inside the chassis. Also place the humidity indicator card inside the A150, and then secure the lid in place with the four captured screws.

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