CAUTION: Read all instructions carefully before installation.
Save this Installation Manual for future reference.

CDP-2

SNOW SENSOR CONTROL/DISPLAY PANEL

INSTALLATION MANUAL

Manufactured By

AUTOMATED SYSTEMS ENGINEERING

General Safety Instructions

1. **THIS UNIT SHOULD BE INSTALLED BY QUALIFIED PERSONNEL ONLY!**
2. To avoid shock hazard do not open the front cover of the attached rain/snow sensor controller with power connected to the controller or any controlled equipment.
3. Always open any circuit breakers and remove power from any high voltage electrical circuits installed in close proximity to or sharing an enclosure with the CDP-2 prior to removing the enclosure cover plate.

Overview

The CDP-2 Snow Sensor Control/Display Panel is used in conjunction with a DS-2B or DS-5 Rain/Snow Sensor Controller. The sensor is typically mounted on a roof, near a gutter, or in a similarly difficult location to reach. The CDP-2 provides a method of remotely monitoring and controlling the attached sensor. The user may monitor both the operating mode and the activation state of the sensor. The user may also set the sensor to prohibit automatic operation, to automatically operate, or to manually operate one snow melting cycle, then return to automatic operation. The CDP-2 derives its power from the snow sensor and requires no batteries or AC power. With an operating temperature range of -40°C to +85°C the CDP-2 is designed for use either indoors or outdoors with proper protection from the elements.

Installing the CDP-2 Control/Display Panel

Installation requires a CS-1 Remote Control/Monitor Pigtail for the snow sensor and an appropriate 5-conductor cable for installation between the snow sensor and the CDP-2. **The cable conductors must be tinned, stranded, minimum 22 AWG copper and overall shielding is required.** An appropriate selection is Belden® 9941 or equiv. The CDP-2 can be installed as much as 500 feet away from the snow sensor if proper cable is used. Remove all power to the snow sensor, open its cover, and install the CS-1 pigtail. Install the 5-conductor cable between the sensor and the CDP-2 enclosure. Ground the "drain" wire on **one end only** and terminate the cable leads to the CS-1 following the table below:

CS-1 Color	Function	Your Color	CDP-2 TB-1
Black	Manual On		5
White	Return		6
Green	Standby/Reset		7
Orange	Deice On Mon		8
Red	Deice On Mon		9

The CDP-2 may be installed in a conventional single or multi gang standard electrical enclosure. If installed in a multi gang enclosure next to high voltage equipment the CDP-2 and its interconnecting cable must be isolated from high voltage wires and devices. Consult local electrical codes to determine the isolation methods required. Remove 2 in. (50mm) of outer insulation and shield from the 5-conductor cable. Remove ¼ in. (6mm) of insulation from the individual inner conductors. Following the above table press the clamp button on the terminal block, insert the bare lead into the clamp hole, then release.

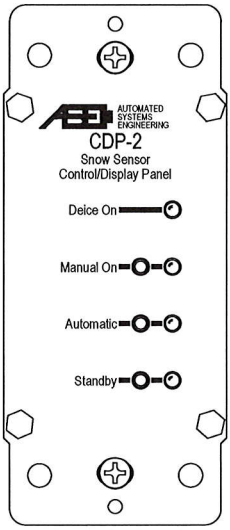
The CDP-2 faceplate can be grounded to reduce the chances of damage due to static shock. This can be an important consideration when operating in a very dry environment in the winter. Remove 1 in. (25mm) of insulation from the green EGND lead and connect this lead to an electrical ground lead using a wire nut or equivalent.

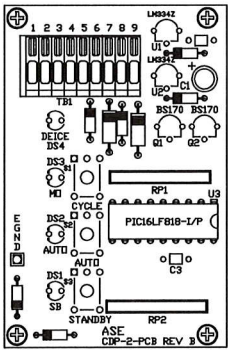
Install the CDP-2 into the electrical enclosure using the two screws provided. The screws are compatible with both metallic and non-metallic enclosures. Once installation is complete a "modular" electrical cover plate can be installed. Compatible types include the Leviton® Decora® and Hubbell® Styleline series.

External Control/Monitor Operation

The CDP-2 indicators show the current setting of the manual override switch for the attached snow sensor, either MANUAL ON, AUTOMATIC, or STANDBY. The sensor override switch will also override any current CDP-2 commands. Whenever the sensor's switch overrides the CDP-2's setting, then returns to AUTOMATIC mode, the CDP-2 will also return to AUTOMATIC mode. The sensor override switch should be left in the center AUTOMATIC position to allow the CDP-2 to control the system.

The CDP-2 provides three pushbutton switches; STANDBY, AUTOMATIC, and MANUAL ON. The respective LED indicators for each control reflect the current operating mode of the snow sensor. Note that, to save energy, the LED indicators blink periodically rather than remaining steadily illuminated. Pressing STANDBY will set the connected snow sensor to ignore snow fall and prohibit automatic operation of an attached snow melt system. This function can be used to save energy if automatic snow melting is not critical. Pressing AUTOMATIC will set the connected snow sensor to automatically activate and control an attached snow melt system when snow is detected. **Note that, if power is lost, the CDP-2 will always repower into AUTOMATIC mode.**



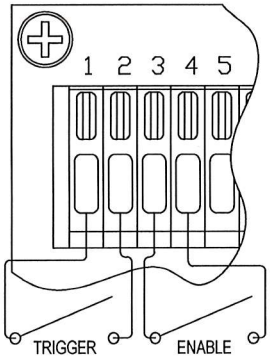


A "Delay Off" drying cycle time is configured on the snow sensor with a time delay of 30-90 minutes. It begins once snow stops falling and allows the heated surface to more thoroughly dry. For example, if the cycle is set for 30 minutes and snow falls for 2 hours the snow sensor will operate the snow melt system for 2 hours, 30 minutes. Switching the sensor override switch to the MANUAL ON position will cause the sensor to close its relay, illuminate the CDP-2 MANUAL ON and DEICE ON indicators, and activate the snow melt system continuously. Pressing the MANUAL ON button on the CDP-2 will **not** trigger the sensor to run continuously but will initiate one drying cycle. This mode can be used to test the system or clear any remaining unmelted snow. This function allows the user to run a cycle without having to remember to shut the system back off. The sensor will initiate one drying cycle and revert to automatic mode, ready for detection. The MANUAL ON mode can be activated directly from either AUTOMATIC or STANDBY mode. The user may clear the drying cycle by pressing STANDBY. **Note that a properly working unit will not show a MANUAL ON indication during this cycle but will show AUTOMATIC with a DEICE ON indicator.**

The DEICE ON indicator shows whether or not the attached snow sensor has been activated and the snow melting system is operating.

Home Automation Interface

The CDP-2 also includes an input for optional home automation control. This interface provides the capability to trigger the system through telephone or computer control. Closure of the Trigger and Enable inputs will start one snow melting cycle, just as though the MANUAL ON button was pressed. Once the cycle is complete the sensor will revert to AUTOMATIC mode.



*** Add a Jumper between 1 + 4 for manual remain on.**

The Enable input is an optional connection point for a second "safety" contact set. If used, both contact sets must close to trigger the snow melt system. This can help eliminate inadvertent cycling of the system. If only one contact set is available the user may install a jumper wire across terminals 3 & 4. The user may also connect a simple toggle switch across the Enable input to allow manual enabling and disabling of the home automation interface.

LIMITED WARRANTY

The CDP-2 is warranted against defects in workmanship and materials for two years from date of sale. This warranty does not apply to damage resulting from accident, misuse, or alteration nor where connected voltage to the attached snow sensor is more than 5% above the configured operating voltage, nor to equipment improperly installed or wired or maintained in violation of this Owner's Manual. No other written or oral warranty applies. No employee, agent, dealer or other person is authorized to give any warranties on behalf of ASE.

The customer shall be responsible for all costs incurred in the removal or reinstallation and shipping of the product for repairs. Within the limitations of this warranty, inoperative units should be returned, freight prepaid, to ASE, and we will repair or replace, at our option, at no charge to you with return freight paid by ASE. It is agreed that such repair or replacement is the exclusive remedy available from ASE and that ASE IS NOT RESPONSIBLE FOR DAMAGES OF ANY KIND, INCLUDING INCIDENTAL AND CONSEQUENTIAL DAMAGE. Some states do not allow the exclusion or limitation of incidental or consequential damages so the above exclusion may not apply to you. The warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

The CDP-2 is supplied and serviced through our network of distributors.
Your local distributor is:
Comfort Radiant Heating at (888)448-0555
or online at www.comfortradiant.com

ASE now offers interconnect cable approved for CDP-2 installation.
Ask your distributor about CS-50 (50 foot), CS-100 (100 foot), and CS-200 (200 foot) rolls of 22 AWG, stranded, shielded, 6 conductor cable with matching color code, a spare lead, and a UL 300V rating.