

Warrick® Direct Current Controls Series Installation and Operation Bulletin

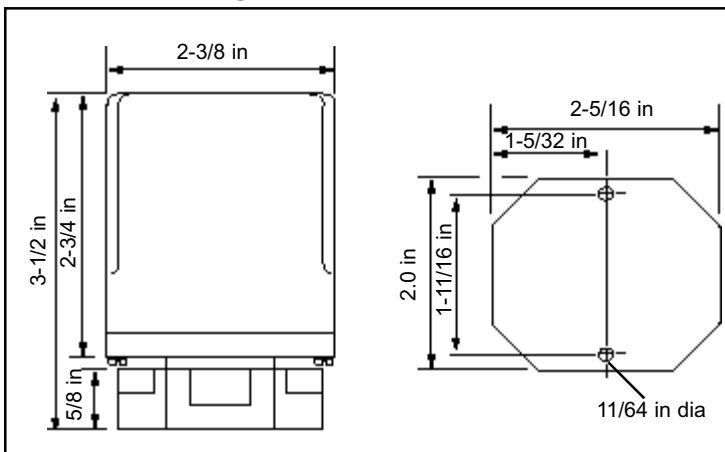
This bulletin should be used by experienced personnel as a guide to the installation of Series Direct Current Controls. Selection or installation of equipment should always be accompanied by competent technical assistance. We encourage you to contact Gems Sensors or its local representative if further information is required.

Installation

1. Remove the plug-in module from the octal base. When plug-module is removed, the pin number identification can be seen on the octal base.
2. Mount the octal socket (base) on a rigid vertical or horizontal surface using two #6 or #8 screws. The controls should be mounted within an enclosure of proper NEMA integrity.
3. After the base has been mounted, refer to the applicable wiring diagram. Connect the electrodes to the designated terminals of the socket using #14-#18 AWG wire for interconnecting leads. Be sure that the control is wired in accordance with the appropriate application drawing.
4. Wire the appropriate load contact in series with the "Hot" lead of the load device. **Note:** Load current rating must not exceed the maximum rating of the relay contact.
5. In accordance with the proper wiring diagram, connect the negative side (-) of the power supply to terminal #1 of the octal socket and the positive side (+) of the supply to terminal #2 of the socket. Verify that the power supply output voltage correlates to the data label on the control. **Caution: Reversal of power supply leads from designated polarity may damage the internal solid-state circuitry of the control. Verify the correct polarity of the power supply connections before proceeding to step #6.**
6. Plug the DC level control into the octal socket. Numbers at the base of the pins match the numbers on the installed base. The control is keyed for proper installation; the unit will not plug in if the pins are not properly aligned.

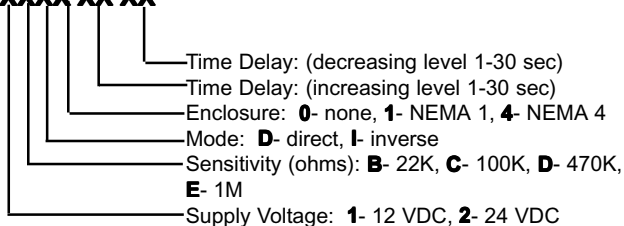
Warrick Controls recommends that you inspect and clean the electrode rods annually.

Dimensional Diagram



Use copper (60/70° C) wire only. Torque to 20 inch pounds.

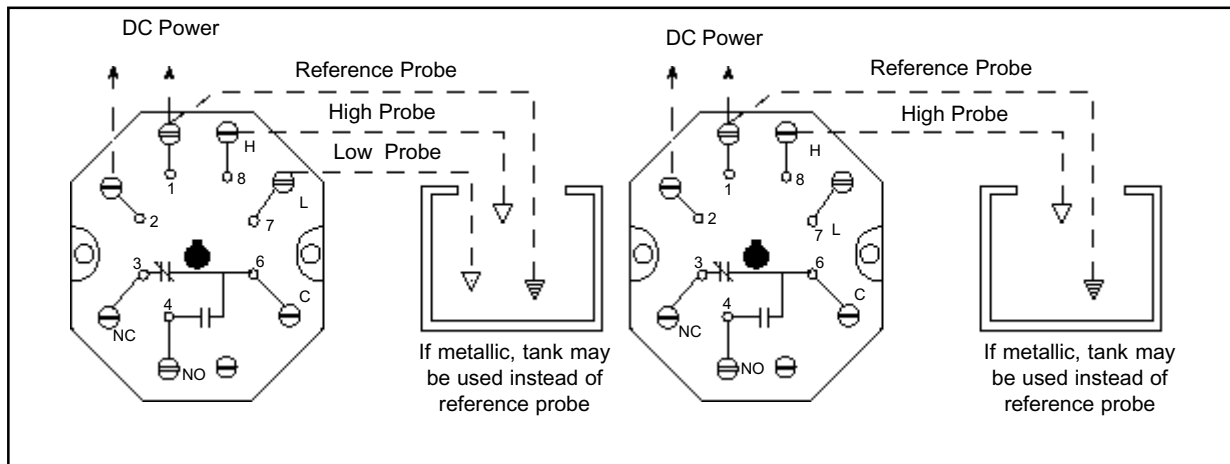
DC XXXX XX XX



Specifications

Contact Design:	SPDT (1 form C) 1 Normally Open (N.O.) and 1 Normally Closed (N.C.)
Contact Ratings:	5A @ 30 VDC or 120 VAC, 4A @ 240 VAC resistive, 1/8 th Hp 120 VAC, 240 VAC pilot duty code C150
Contact Life:	Mechanical - 20 million operations. Electrical - 100,000 operations minimum @ rated load
Electronics Module:	Solid-state components epoxy sealed in a black polystyrene plug-in style housing
Supply Voltage	12 or 24 VDC - Negative ground, ±20%
Supply Current:	12 VDC Model - Relay de-energized 10mA, Relay energized 40mA
Sensitivity Range:	0-1M maximum specific resistance, ohm factory set
Temperature Range:	-50° to +150° F

Wiring Diagram



Differential Level Wiring

Connect negative side (-) of VDC supply line to terminal #1 and positive (+) side to terminal #2. **Note:** Check polarity of power connections. Connect terminal #8 (H) to the high electrode and terminal #7 (L) to the low electrode. Terminal #1 can be grounded to tank if the tank is metallic. When the tank is not metallic, terminal #1 must be connected to an additional electrode of length equal to or longer than the longest probe.

Operation

Direct Mode: The control energizes closing load contact 4-6 and opening load contact 3-6 when the level rises to the short electrode connected to terminal #8. The control remains energized until the level recedes below the long electrode connected to terminal #7.

Inverse Mode: The control de-energizes opening load contact 4-6 and closing load contact 3-6 when the level rises to the short electrode connected to terminal #8. The control remains de-energized until the level recedes below the long electrode connected to terminal #7.

Note: For single level service controls utilizing both increasing and decreasing time delays, a jumper wire is required between terminals #7 and 8.

Single Level Wiring

Connect negative side (-) of VDC supply line to terminal #1 and positive side (+) to terminal #2. **Note:** Check polarity of power connections. Connect terminal #8 (H) to the electrode. Terminal #1 can be grounded to tank if the tank is metallic. When the tank is not metallic, terminal #1 must be connected to an additional electrode of length equal to or longer than the longest probe.

Operation

Direct Mode: The control energizes closing load contact 4-6 and opening contact 3-6 when the level rises to the electrode connected to terminal #8. The control de-energizes and the contacts return to their de-energized state when the level recedes below the electrode connected to terminal #8.

Inverse Mode: The control de-energizes opening load contacts 4-6 and closing load contact 3-6 when the level rises to the electrode connected to terminal #8. The control energizes and the contacts return to the energized state when the level recedes below the electrode connected to terminal #8.



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