

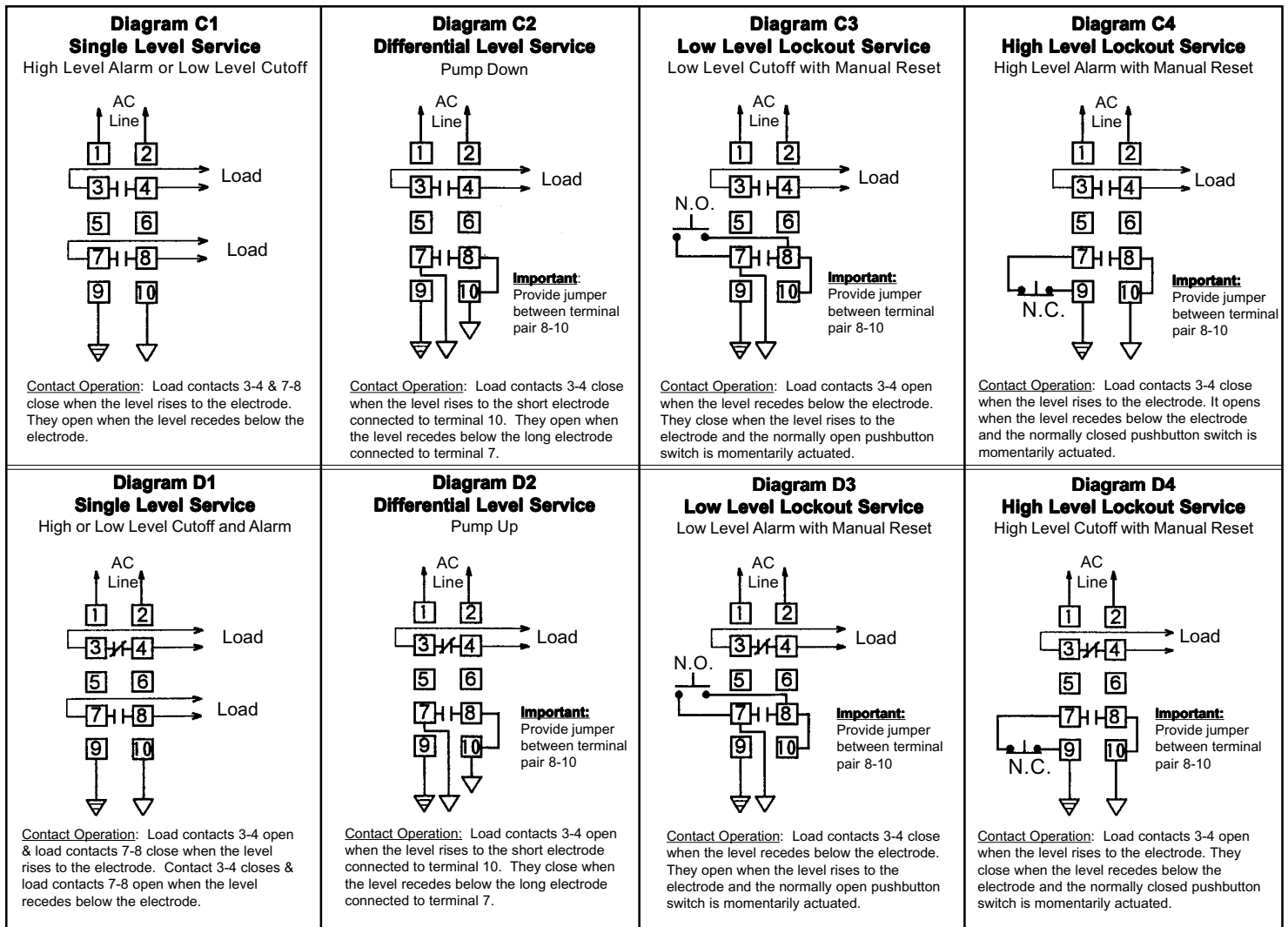
This bulletin should be used by experienced personnel as a guide to the installation of Series 1 controls. Selection or installation of equipment should always be accompanied by competent technical assistance. We encourage you to contact Gems Sensors or its representative if further information is required.

Series 1 may be wired in various ways. Select the wiring diagram that matches the contact configuration of your model number and the your application. **Mount the control on a vertical surface with the transformer on the left-hand side.** The control should be mounted in an enclosure of proper NEMA integrity and wired following the national/local electrical codes. Terminals on the control are numbered and are in the same relative position as the terminals shown in the wiring diagrams.

Each control has a data label on the right hand side of the terminal block. Terminal pair 1-2 must be continuously energized from an A.C. supply line of the same electrical characteristics as shown on the data label. **Each dry contact** used for load duty must be wired in series with the load, and that series branch circuit connected across a power source compatible with the load.

Wiring must be provided to the electrode(s) as shown. **Terminal 9 is a reference electrode termination.** When the vessel is non-metallic, terminal 9 must be connected to an additional electrode of a length equal to, or longer than, the longest electrode used in the vessel. When the vessel is metallic, terminal 9 must be grounded to the vessel. If the electrode fitting has a metallic body and is supported directly upon a metallic vessel, the ground reference connection is facilitated by securing that end of the reference conductor beneath the head of one of the four screws which fasten the terminal housing of the body of the fitting. The jumper between terminal pair 8-10 on diagrams X2, X3 and X4, and the wire pair between the control and the pushbutton switch on diagrams X3 and X4, are required field wiring.

The control-to-fitting wire distance should not exceed that listed for the secondary voltage of your control.



Series 1 X - X - X - X

Contact Configuration

	N.O.	N.C.
C	2	0
D	1	1
E	0	2
F	3	0
G	2	1
H	1	2
J	0	3

AC Line Voltage

1	115 VAC
2	230 VAC
4	460 VAC
5	575 VAC
6	115/230 VAC
7	24 VAC
9	380 VAC

Secondary Voltage

	Sec. Volts	Sensitivity	Dist/Ft.
A	25	50	75,000
B	75	450	7,500
C	150	1.5 K	1,750
D	300	7.0 K	500
E	500	20.0 K	150

Enclosures

0	None
1	NEMA 1
4	NEMA 4
7	NEMA 7

For on-board reset switches, add suffix letter "A" for normally open switch and letter "C" for normally closed switch

<p>Diagram F1 Single Level Service High Level Alarm or Low Level Cutoff</p> <p>Contact Operation: Load contacts 3-4 & 5-6 & 7-8 close when the level rises to the electrode. They open when the level recedes below the electrode.</p>	<p>Diagram F2 Differential Level Service Pump Down</p> <p>Important: Provide jumper between terminal pair 8-10</p> <p>Contact Operation: Load contacts 3-4 & 5-6 close when the level rises to the short electrode connected to terminal 10. They open when the level recedes below the long electrode connected to terminal 7.</p>	<p>Diagram F3 Low Level Lockout Service Low Level Cutoff with Manual Reset</p> <p>Important: Provide jumper between terminal pair 8-10</p> <p>Contact Operation: Load contacts 3-4 & 5-6 open when the level recedes below the electrode. Then close when the level rises to the electrode and the normally open pushbutton switch is momentarily actuated.</p>	<p>Diagram F4 High Level Lockout Service High Level Alarm with Manual Reset</p> <p>Important: Provide jumper between terminal pair 8-10</p> <p>Contact Operation: Load contacts 3-4 & 5-6 close when the level rises to the electrode. Then open when the level recedes below the electrode and the normally closed pushbutton switch is momentarily actuated.</p>
<p>Diagram G1 Single Level Service High or Low Level Cutoff and Alarm</p> <p>Contact Operation: Load contacts 3-4 open & 5-6 & 7-8 close when the level rises to the electrode. Load contacts 3-4 closes and contacts 5-6 & 7-8 open when the level recedes below the electrode.</p>	<p>Diagram G2 Differential Level Service Pump Down or Pump Up</p> <p>Important: Provide jumper between terminal pair 8-10</p> <p>Contact Operation: Load contacts 3-4 open & contacts 5-6 close when the level rises to the short electrode connected to terminal 10. Contacts 3-4 close & contacts 5-6 open when the level recedes below the long electrode connected to terminal 7.</p>	<p>Diagram G3 Low Level Lockout Service L.L. Cutoff & Alarm with Manual Reset</p> <p>Important: Provide jumper between terminal pair 8-10</p> <p>Contact Operation: Load contacts 3-4 close & 5-6 open when the level recedes below the electrode. Contacts 3-4 open & contacts 5-6 close when the level rises to the electrode and the normally open pushbutton switch is momentarily actuated.</p>	<p>Diagram G4 High Level Lockout Service H.L. Cutoff & Alarm with Manual Reset</p> <p>Important: Provide jumper between terminal pair 8-10</p> <p>Contact Operation: Load contacts 3-4 open and contacts 5-6 close when the level rises to the electrode. Contacts 3-4 close & contacts 5-6 open when the level recedes below the electrode and the normally closed pushbutton switch is momentarily actuated.</p>
<p>Diagram H1 Single Level Service High or Low Level Cutoff and Alarm</p> <p>Contact Operation: Load contacts 3-4 & 5-6 open and 7-8 close when the level rises to the electrode. Load contacts 3-4 & 5-6 close and contacts 7-8 open when the level recedes below the electrode.</p>	<p>Diagram H2 Differential Level Service Pump Up</p> <p>Important: Provide jumper between terminal pair 8-10</p> <p>Contact Operation: Load contacts 3-4 & 5-6 open when the level rises to the short electrode connected to terminal 10. They close when the level recedes below the long electrode connected to terminal 7.</p>	<p>Diagram H3 Low Level Lockout Service Low Level Alarm with Manual Reset</p> <p>Important: Provide jumper between terminal pair 8-10</p> <p>Contact Operation: Load contacts 3-4 & 5-6 close when the level recedes below the electrode. Then open when the level rises to the electrode and the normally open pushbutton switch is momentarily actuated.</p>	<p>Diagram H4 High Level Lockout Service High Level Cutoff with Manual Reset</p> <p>Important: Provide jumper between terminal pair 8-10</p> <p>Contact Operation: Load contacts 3-4 & 5-6 open when the level rises to the electrode. Then close when the level recedes below the electrode and the normally closed pushbutton switch is momentarily actuated.</p>