



INSTALLATION OF LVC551 — INTRINSICALLY SAFE CONTROLS

This bulletin should be used by experienced personnel as a guide to the installation of the LVC551 intrinsically safe control. Selection or installation of equipment should always be accompanied by competent technical assistance. We encourage you to contact OMEGA for complete details.

IMPORTANT: BEFORE PROCEEDING TO INSTALL AND WIRE THE CONTROL, READ AND THOROUGHLY UNDERSTAND THESE INSTRUCTIONS.

When installed according to these instructions, the unit is intrinsically safe for Class I and II, Division 1, Groups A, B, C, D, E, F, and G

Electrical equipment connected to associated apparatus should not use or generate more than 250V RMS.

LOCATION: The control must be situated in a non-hazardous area where an explosive atmosphere will not exist at any time.

WIRING:

1. Intrinsically safe wiring must be kept separate from non-intrinsically safe wiring.
2. Intrinsically safe and non-intrinsically safe wiring may occupy the same enclosure or raceway if they are at least 2 inches (50mm) apart and separately tied down. Inside panels, field wiring terminals for intrinsically safe circuits must be separated by at least 2 inches (50mm) from non-intrinsically safe terminals.
3. Wire the control device(s) to the LVC551 relay as shown in the specific application wiring diagram on reverse side. A separate rigid metallic conduit should be used to enclose the conductors of the intrinsically safe control circuit.
4. An approved seal should be used at the point where the intrinsically safe control circuit wiring enters the hazardous area.

INDUCTANCE AND CAPACITANCE: For intrinsically safe wiring use 16 AWG TYPE MTW or 14 AWG TYPE THHN.

By using these types of wire in conjunction with the following distance recommendations, you will not exceed the .45 mf maximum capacitance, and 500 mh inductance for field wiring.

Use the following chart to determine the limits of run:

Max. Sensitivity (K OHMS)	Distance (Ft.)
3.3	5000
4.7	3500
10	1750
22	1000
47	500
100	250

GROUNDING: Both tabs of the LVC551 provide an electrical connection for earth grounding. To insure grounding, use only metal screws and lockwashers. Do not use nylon or any other nonmetallic material to mount the unit in the enclosure.

NOTES:

1. Connections may be made to nonenergy generating or storing hazardous location devices, such as switch contacts, noninductive resistance thermometer detectors (RTD's) and thermocouples without necessitating a specific approval except when the device is mounted inside a tank subjected to pressure greater than 15 psi.
2. To prevent electrical shock, controller must be mounted inside a tool accessible enclosure.
3. For guidance on the installation see ANSI/ISA RP 12-6.

SPECIFICATIONS

CONTACT DESIGN: D PST: One normally open (N.O.) and one normally closed (N.C.)

CONTACT RATINGS: 8 Amperes resistive load at 250 Volts A.C. and 5 amperes at 30 Volts D.C.

CONTACT LIFE: Electrical at rated load = 100,000 cycles. Mechanical = 10,000,000 cycles.

ELECTRONICS MODULE: Solid state components epoxy encapsulated in nylon shell.

PRIMARY AC SUPPLY LINE:

(a) **Voltage:** Standard 120 VAC, optional 24, 240 VAC models, plus 10%, minus 15%, 50/60 Hz.

(b) **Frequency:** 50/60 Hertz.

(c) **Power:** .5 Watt.

SENSITIVITY: Operates from 0 - 100,000 Ohm maximum specific resistance.

TEMPERATURE: (Minus) -40 to (Plus) + 120 degrees F. ambient.

TERMINALS: Size 6 pan head screws with captivated wire clamping plate.

TIME DELAY: Standard, .5 seconds on rising level.

