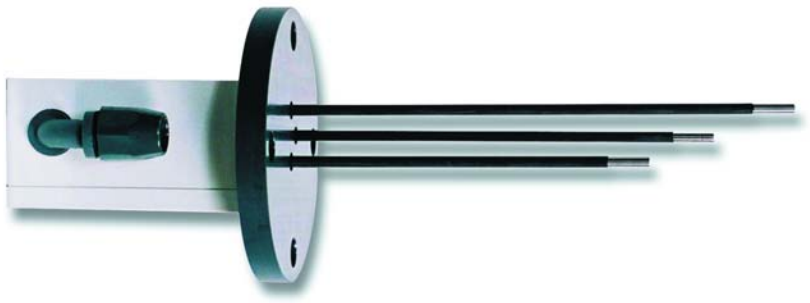
Liquid Level Controllers

LL20 Ready-2-Mount



Description

AquaMetrix has been making conductivity based LL (liquid level) controllers for over thirty years. As part of this product family, the LL20 Ready-2-Mount series is a complete line of inexpensive and easy-to-use topmounted controllers for liquid level applications.

CONDUCTIVITY-BASED CONTROL
LL20 Series Ready-2-Mount controllers operate on the principal of electrolytic conductivity.

When a conductive process solution makes contact with a ground electrode and an active electrode, it completes a circuit. The completed circuit sends enough current back to the controller to trigger a relay to turn on or off, like a light switch. The relays in turn are wired to auxiliary devices such as pumps, alarms and actuators which are activated and deactivated at preset static level points.

Typical applications vary from two electrodes (ground and alarm or auxillary device) to five electrodes (ground, low alarm, pump on, pump off, and high alarm) and any combination in between.

A built-in sensitivity adjustment permits field tuning of the instrument, making it suitable for most conductive liquids. For example, the sensitivity may be adjusted to respond to either foam or liquid level in applications such as milk.

Since the electrodes remain static as the height of the process solution changes, there are no moving parts. This results in a very reliable, long-lasting level control and level alarm system that has proven its dependability over several decades.

COMPONENTS
There are three components to every LL20 series controller: the electrodes, the mounting fitting and the controller. By using the LL20 Selection and Installation Guide, these items can be easily specified to create a level control system that suits your particular needs.

READY-2-MOUNT
Mounting the LL20 series controller is easy. Each unit is shipped as a complete integrated system with electrodes and controller fastened directly to a mounting fitting. Just trim the electrodes to the desired length, wire the controller, and mount the system.

OPTIONS
Control options include the number of level control points, and power supply. The NEMA 4X enclosure is suitable for inside or outside installation.

Fitting options include NPT threaded fittings for closed tanks and vessels, flanges for standpipes, and rectangular pads for open-top applications. All are available in PVC, CPVC, and 316 Stainless Steel.

Model RD Electrodes are ordered from the factory by the foot and are trimmed to the exact level required in the field. Standard electrode material is 1/4" 316 Stainless Steel. A variety of other materials are available. PVC and Teflon coatings for the electrodes are optional.

APPROVALS
All models are CSA approved, with built-in safety features designed to limit the voltage and the current even if electrodes are shorted.

Advantages/Benefits

- **Cost Savings**
  Less expensive than alternative level systems.
- **Labor Savings**
  Totally automated.
- **Space Savings**
  The controller and multiple electrodes are mounted on the same fitting, taking up very little space.
- **Reliable**
  Long, dependable service life since there are no moving parts.
- **Sensitivity Adjustment**
  For wide span of conductivity ranges, eliminating false readings from foam.
- **Safe**
  Low voltage and low current at the electrodes. CSA Approved.

Controls

- Pumps
- Solenoids
- High and Low Level Alarms
- Low Water Cutoff

Applications

- Liquid Level & Flow Control
- Pollution Control
- Cooling Towers
- Fume Scrubbers
- Humidifiers & A.C.
- Storage & Process Tanks
- Wells, Reservoirs, Sumps
- Waste Water
- Animal Water Troughs

AquaMetrix

AquaMetrix Inc.
22-121 Granton Drive
Richmond Hill ON Canada L4B 3N4

Tel 800.742.1413
905.763.8432
Fax 905.763.9480

Web www.aquametrix.com
Email sales@aquametrix.com

Liquid Level Controllers — LL20 Ready-2-Mount

Selection and Installation Guide

Use the charts below to specify the controller, mounting system, and the type and length of electrodes that suit your needs. When you receive the unit, trim the electrodes to the exact length for each level point, mount and wire the controller. You are now ready for years of dependable service.

LL22

A two electrode device typically used in level alarm applications. One electrode is a ground electrode. The other electrode activates a 10A relay when the circuit is completed by the solution.

LL23

For maintaining differential level where level alarms are not needed. LL23 has 3 electrodes: ground, low level and high level. When the process level drops below the low level electrode, the relay energizes, activating an auxiliary device such as a pump. The auxiliary device will add solution until the level reaches the high level electrode, which then de-energizes the relay.

LL24

Designed for maintaining differential level while providing the added security of an alarm relay. LL24 has four electrodes: ground, low level, high level, and alarm. There are two independent 10 amp relays for maintaining level and for the alarm.

LL25

For complete differential level control and safety, LL25 has five electrodes: ground, low alarm, low level, high level, and high alarm. There are three independent 10 amp relays, one for maintaining process level and one for each alarm.

Controller Options

LL Model

- **22** 1 level point: 2 electrodes; 1 10A relay; Polycarbonate enclosure Dim: H: 6.29" W: 3.14" D: 2.16"
- **23** 2 level points: 3 electrodes; 1 10A relay; Polycarbonate enclosure Dim: H: 6.29" W: 3.14" D: 2.16"
- **24** 3 level points: 4 electrodes; 2 10A relays ; Polycarbonate enclosure Dim: H: 9.44" W: 4.72" D: 3.93"
- **25** 4 level points: 5 electrodes; 3 10A relays; Polycarbonate enclosure Dim: H: 9.44" W: 4.72" D: 3.93"

Power Supply

- **A** 120 Vac, 50/60 Hz
- **B** 240 Vac, 50/60 Hz

Mounting Style Availability

Controller & Electrodes mounted on threaded adapter

- **11** 1" NPT threaded adapter LL22
- **12** 2" NPT threaded adapter LL22 & 23
- **13** 21/2" NPT threaded adapter
- **14** 3" threaded adapter

Controller & Electrodes mounted on Rectangular Pad

- **30** 3.25" x 8" rectangular flat pad with LL system mounted at one end, LL22 & 23 2 pre-drilled mounting holes for #10 machine screws at the other end.
- **31** 4.75" x 9" rectangular flat pad with LL system mounted at one end, LL24 & 25 2 pre-drilled mounting holes for #10 machine screws at the other end.

Controller & Electrodes mounted on Blind Flange

- **40** Blind Flange Nominal Pipe Flange size: 1"; Dia. of Flange: 4 1/2" LL22
- **41** Blind Flange Nominal Pipe Flange size: 2"; Dia. of Flange: 6" LL22 & 23
- **42** Blind Flange Nominal Pipe Flange size: 21/2"; Dia. of Flange: 7"
- **43** Blind Flange Nominal Pipe Flange size: 3"; Dia. of Flange: 71/2"

Mounting Material

Material of the Flange / Threaded Adapter / Square Pad

- **P** PVC
- **C** CPVC
- **S** 316 Stainless Steel

LL ____-____-____-____

RD Electrodes

The RD series of electrodes can be mixed and matched with any LL Model Liquid Level Controller.

Just specify material, length and coating (if desired). 316 Stainless Steel in two to four foot lengths with no coating material is standard.

The number of electrodes ordered should match the second digit in the LL20 model ordered.

Electrode Options

RD Electrode Material

- **A** 316 Stainless Steel
- **B** Brass
- **C** Carpenter 20
- **D** Hastaloy B
- **E** Hastaloy C
- **F** Monel
- **G** Titanium

Electrode Length (feet)

- **1** One
- **2** Two
- **3** Three
- **4** Four
- **5** Five
- **6** Six
- **7** Seven
- **8** Eight
- **9** Nine
- **10** Ten

Electrode Coating

- **A** No Coating
- **B** PVC
- **C** Teflon

RD ____-____-____

AquaMetrix

AquaMetrix Inc.
22-121 Granton Drive
Richmond Hill ON Canada L4B 3N4

Tel 800.742.1413
905.763.8432
Fax 905.763.9480

Web www.aquametrix.com
Email sales@aquametrix.com

* NOT TESTED ON ANIMALS