

spirax/sarco®

LC 2200 Level Controller

- Proportional controller for electrically actuated valves
- Three stage wave filter – wide turbulence tolerance
- High or low alarm as standard
- Control levels may be altered without de-commissioning boiler
- Valve positioner built in

Description

The Spirax Sarco LC 2200 is used to control an electrically actuated valve in response to a signal from a capacitance probe, providing proportional modulating control of liquid levels. It can be used for level control of boilers, deaerators, and tanks.

The controller can also be used with any two-wire 4-20mA transmitter, for example for pressure, temperature, or level control using a pressure or differential pressure transmitter.

A dc power supply for a two-wire transmitter is included.

The LC 2200 has an alarm output, which can be set high or low, and has a filter which allows accurate alarm signalling under varying turbulence conditions. The controller also has an 'out of range' alarm which releases the alarm relay if the probe or wiring is damaged or has been incorrectly wired, enabling prompt action to be taken to rectify any potentially dangerous situation.

The LC 2200 has a three stage level wave filter (input signal damping). This switch-selectable feature gives an averaged output, maintaining a stable signal under the very different turbulence conditions found in tanks and high output boilers.

A green LED at the top of the front panel indicates power on.

A test button is provided below the red alarm LED to check the alarm output.

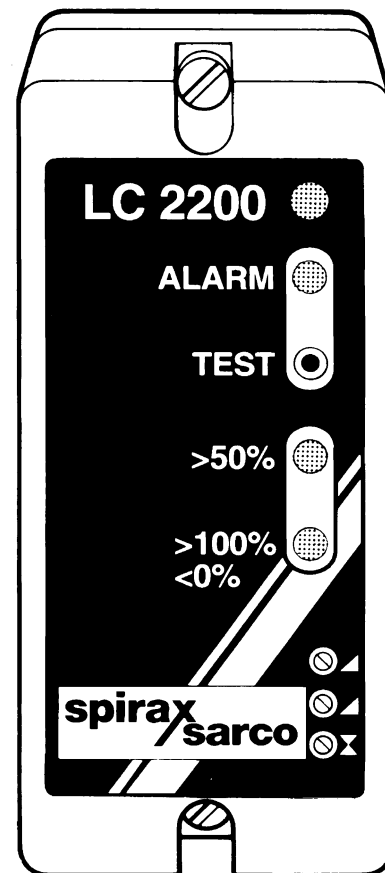
The green (>50%) LED indicates that the level is higher than 50%. i.e. above the set point.

The amber (>100%/<0%) LED indicates that the level is outside the proportional band.

The LC 2200 is set up before installation to suit the mains supply voltage and to provide the required functions, using internal switches. Calibration of set point and proportional band is carried out using the potentiometers on the front panel, so calibration can be altered if required without removing or dismantling the unit.

Limiting conditions

| | |
|--|---------------|
| Enclosure rating | IP 40 |
| Maximum ambient temperature | 130°F (55°C) |
| Maximum cable length (controller to probe) | 300 ft (100m) |



Installation

WARNING:-Isolate the mains supply before unplugging the controller as live terminals at mains voltage will be exposed in the controller base.

The controller should be installed in an enclosure or control panel to provide environmental protection.

CAUTION: Allow 1/2" (15mm) spacing between multiple units for air circulation. Spirax Sarco can provide suitable enclosures. The controller may be mounted on a 'top hat' section DIN rail using the mounting clip provided, or the clip may be removed and the controller base screwed direct to a chassis plate.

Screened cable is required for the probe. A suitable cable is Pirelli FP200 or Delta Crompton Firetuf OHLS, 3-core 1mm².

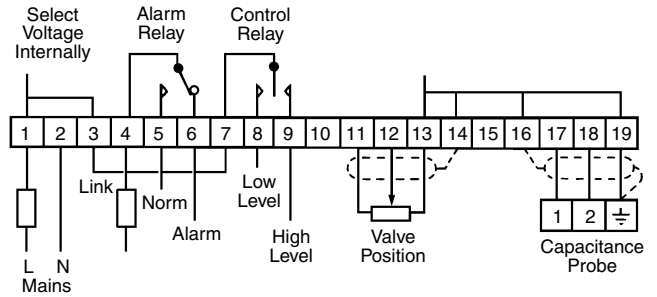
The same type of cable may also be used for the mains wiring. Full wiring diagrams, selection switch settings, and adjustments are given in the Installation and Maintenance Instructions supplied with each controller.

LC 2200 Level Controller

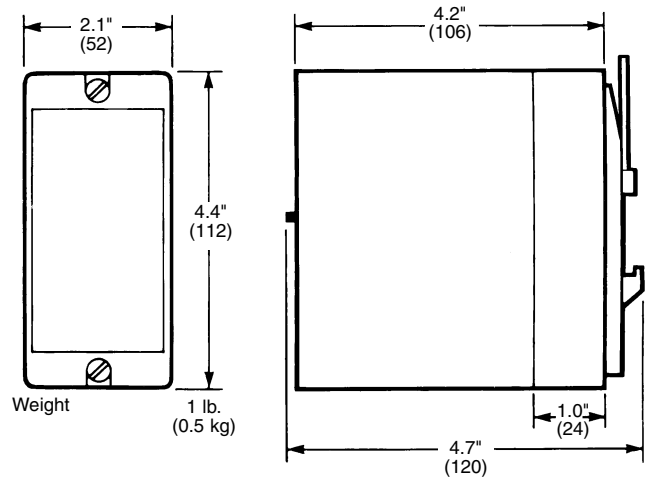
Technical data

| | | |
|--|--------------------|------------|
| Mains supply voltage | 230V setting | 198V-264V |
| | 115v setting | 99V-121V |
| Frequency | 50-60Hz | |
| Fuse | 20mm cartridge | Anti-surge |
| | 100mA | |
| Maximum power consumption 6VA | | |
| Input 1 (selectable) | 0-6V (27 kΩ) | |
| | 0-2V (9 kΩ) | |
| | 4-20mA (110 Ω) | |
| | 0-20mA (110 Ω) | |
| Input 2 | | |
| Potentiometer input | 1kΩ Potentiometer | |
| Input 3 (Opposite sense to input 1) | 0-20mA (110 W) | |
| | 4-20mA (110 W) | |
| Relay outputs | 3A max. | |
| Alarm output to be protected with 3A fast-acting fuse | | |
| Level wave filter | | |
| Approx. response time (63%) (Designed for slowly varying signals) | | |
| Filter 1 position (Min. damping) | 6 seconds | |
| Filter 2 position (Med. damping) | 15 seconds | |
| Filter 3 position (Max. damping) | 45 seconds | |
| Alarm wave filter | | |
| Approx. response time (63%) | | |
| Filter switch OFF | 5 seconds | |
| Filter switch ON | 27 seconds | |
| Set point range | 0%-100% of input | |
| Proportional band range | 2%-100% of input | |
| Transducer supply | 17-31Vdc 20mA max. | |

General wiring diagram



Dimensions (approximate) in inches



Switch selectable options

The LC2200 is supplied with the switches set as indicated on the diagram in bold type.

Capacitance Probe Input (Voltage)

Capacitance Probe Input (Voltage)

Input Out of Range OFF

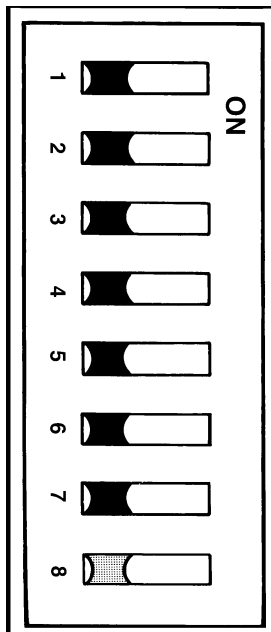
High Alarm

Alarm Wave Filter OFF

Level Wave Filter Position 1/2

Level Filter Position 1

Not Used



Current Input (4-20mA)

Current Input (4-20mA) and 0-2V input

Input Out of Range ON

Low Alarm

Alarm Wave Filter ON

Level Wave Filter Position 3

Level Filter Position 2/3

How to specify

Proportional level controller for electrically actuated valves with alarm output, three stage wave filter and out of range alarm.

How to order

Spirax Sarco LC 2200 controller