



AI-P693-37
EMM Issue 1

Tank Level Control (On/Off)

Description

Warning: This document does not contain sufficient information to install the system safely. See the Installation and Maintenance Instructions supplied with the products for full details.

The Spirax Sarco (on/off) tank level control system is suitable for most qualities of industrial waters down to a nominal 1µS/cm or 1 ppm at 25 °C minimum. The controllers must be mounted in an enclosure or panel to provide environmental protection. They are DIN rail mounting.

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Applications

On/off tank level control can be achieved using the Spirax Sarco LCS1350 controller in conjunction with LP11-4 level probes. The LCS1350 controller is able to provide the following functions:-

- a) Pump-in control with low or high alarm or
- b) Pump-out control with low or high alarm or
- c) High or low alarm plus extra low alarm.

Typical arrangements

We recommend the probe is in a protection tube. The metal tank generally forms the earth return. However, where the tank is of a non-conductive material one of the probe electrodes should be used to provide the earth return.

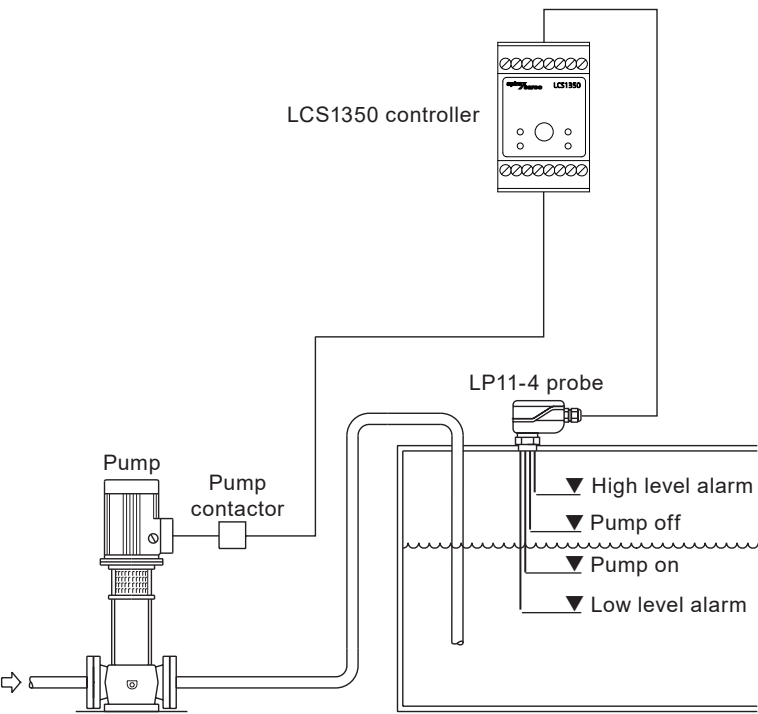


Fig .1 Pump fill with low level alarm

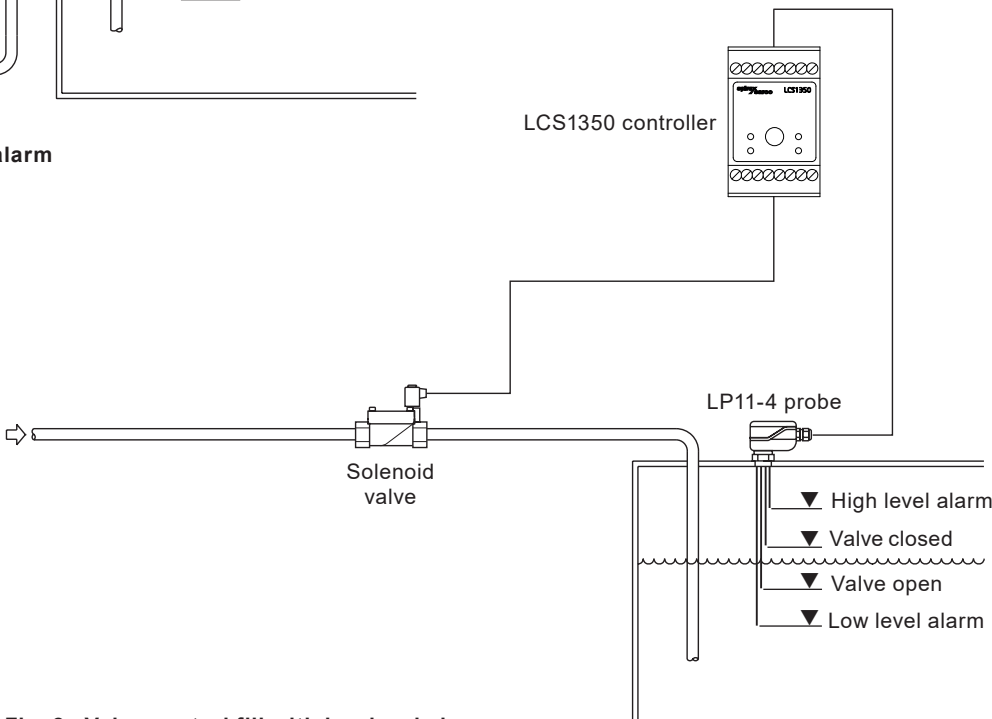


Fig. 2 Valve control fill with low level alarm

Boiler house
Level controls

Fig. 3 Tank alarms on glass lined vessel

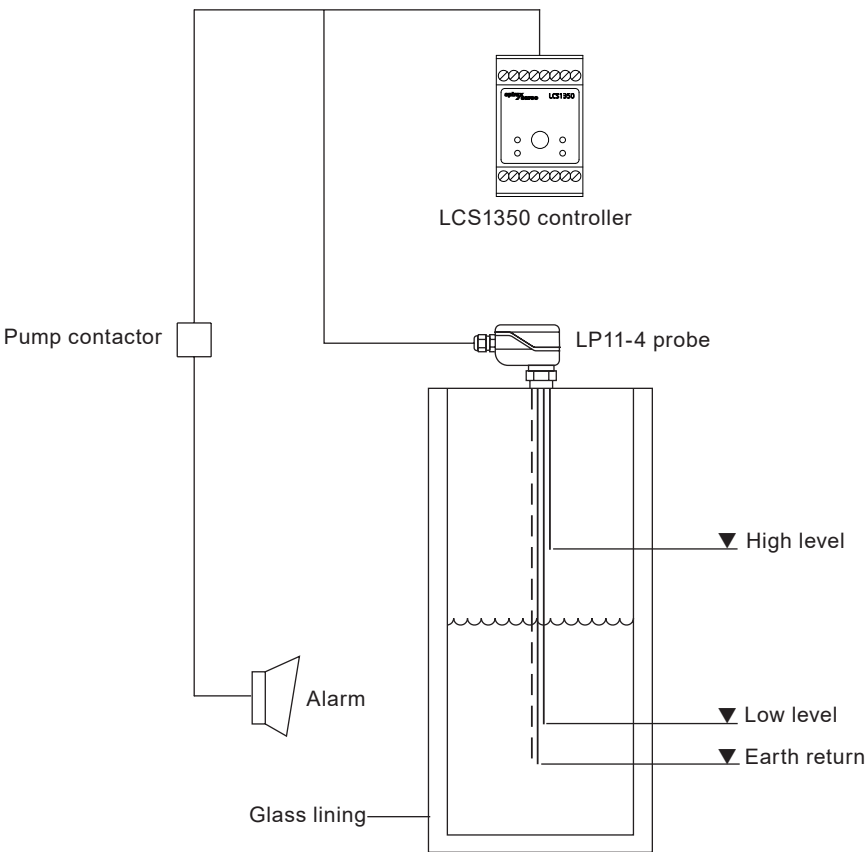
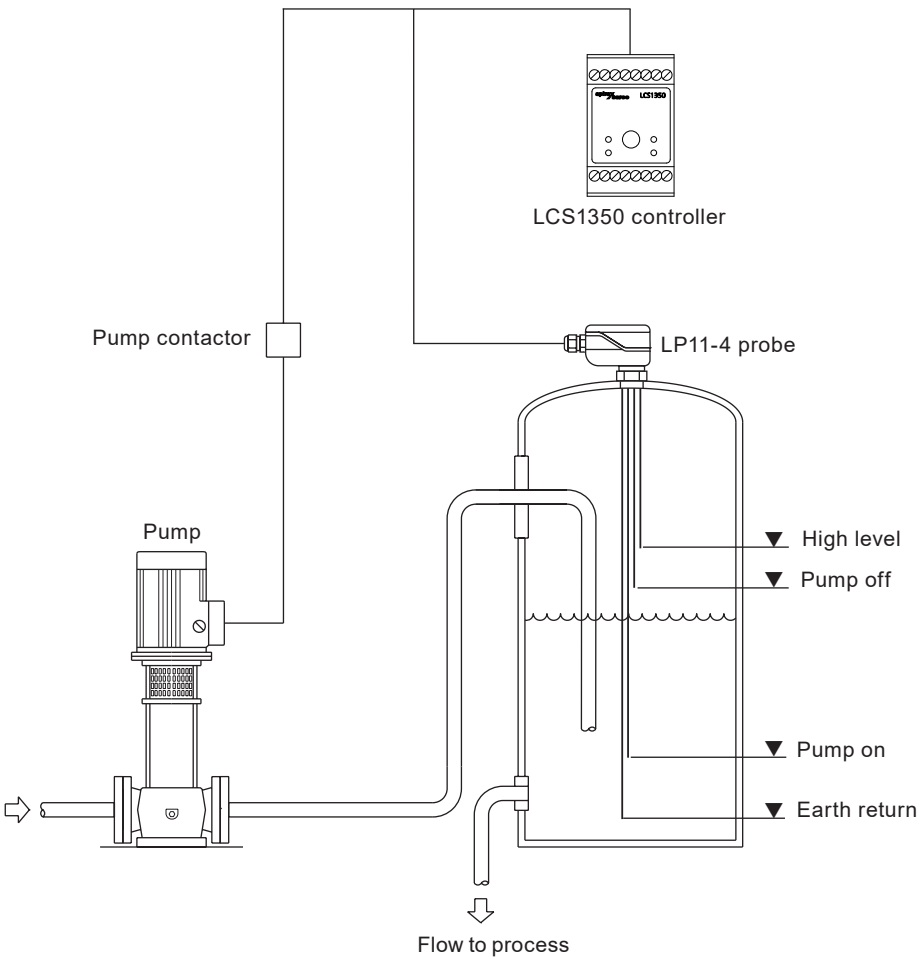


Fig. 4 Pump fill with high level alarm (with polypropylene tank)



spirax

sarco

Tank Level Control

(On/Off or Modulating)

using Capacitance Probes

Description

The system comprises a Spirax Sarco LP21 level probe and PA420 preamplifier together with either an LCR2250 or LCR2251 controller, associated valves and fittings, depending on the application. Separate literature is available which explains the individual equipment in detail.

Applications

Spirax Sarco capacitance probe based systems can be used to monitor and control the level of a wide range of conductive liquids. The controllers may be used in a variety of configurations for many different filling or emptying applications. For modulating level control, Spirax Sarco supply a control valve with an electric actuator, the controller uses the valve travel time to determine its position. The controllers must be mounted in an enclosure or panel to provide environmental protection. They are DIN rail mounting. If the tank or vessel contents are turbulent the probe should be mounted in a protection tube.

Typical arrangements

The system provides the following options:-

Using the LCR2250 controller	Modulating fill control with high alarm
	Modulating fill control with low alarm
	Modulating empty control with high alarm
	Modulating empty control with low alarm
Using the LCR2251 controller	On/off fill control with high alarm
	On/off fill control with low alarm
	On/off empty control with high alarm (with pump contactor)
	On/off empty control with low alarm (with pump contactor)

Examples of the many level control duties possible

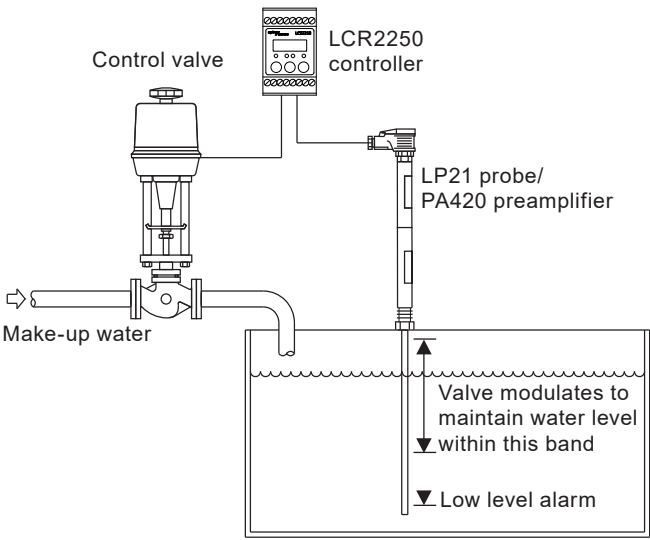


Fig. 1 Boiler feedtank make-up with modulating control and low level alarm

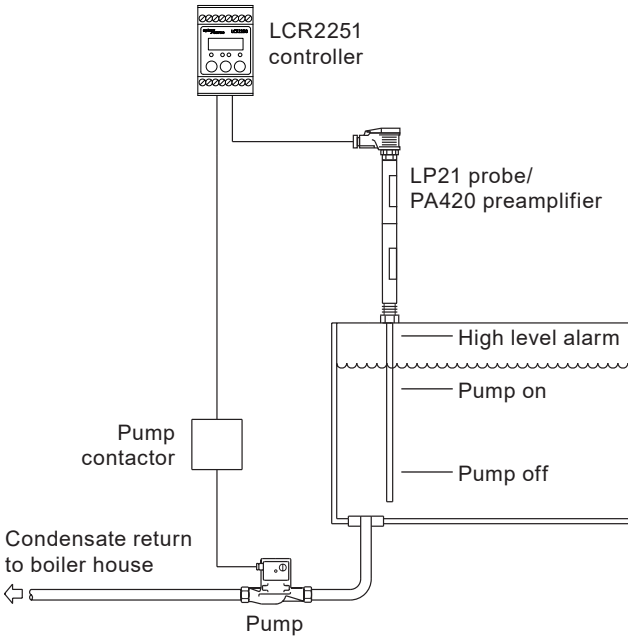


Fig. 2 Condensate return tank on/off emptying control with high level alarm

Examples of the many level control duties possible (continued)

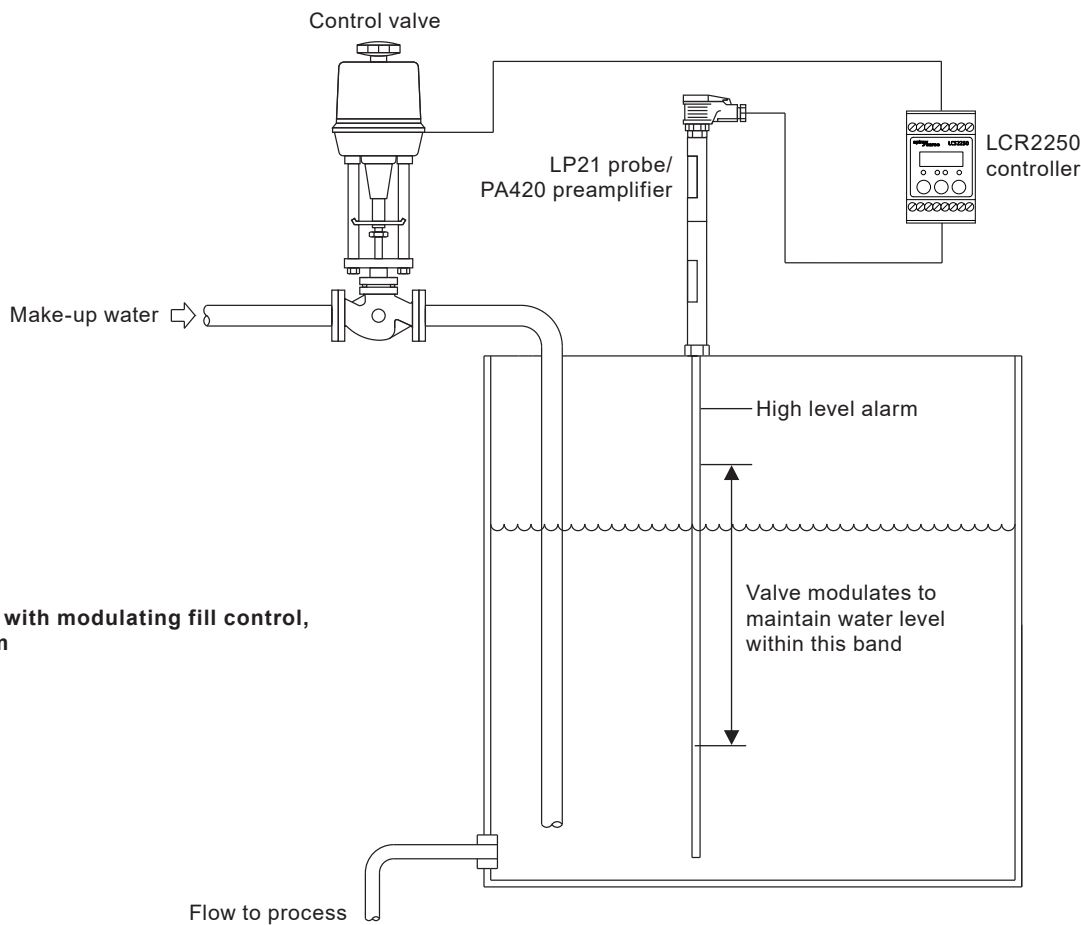


Fig. 3
Process water tank with modulating fill control,
and high level alarm

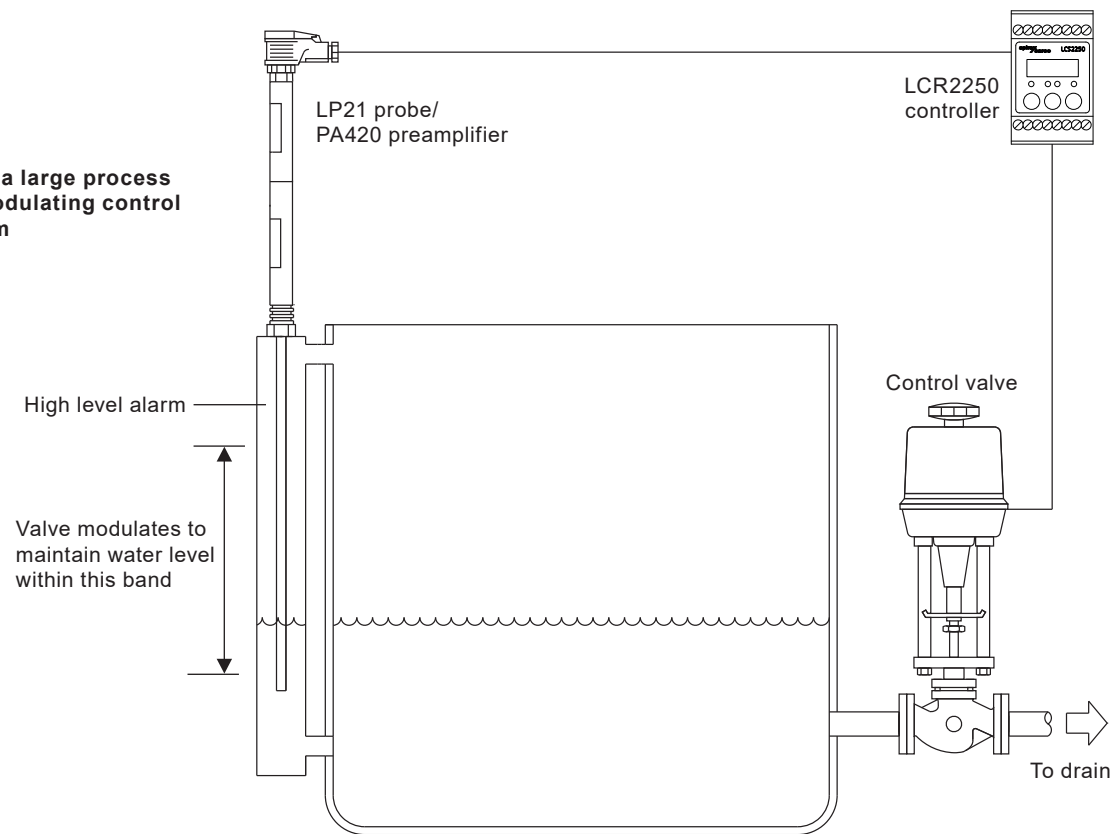


Fig. 4
Drainage control of a large process
pressure vessel; modulating control
with high level alarm