



LCSR3000 Level Control Systems

Installation and testing of self-monitoring low level alarms on/off level controls

Typical installation

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 LCSR3000 boiler water level control systems are suitable for automatically controlled steam boilers and provide the control and alarm functions specified by Standard BS EN12953 and in the BG01 which is a joint document by the CEA and SAFed, originally produced in consultation with the HSE.

The LCSR3000 low level alarms are of the high integrity type and whilst a competent boiler operator should check the boiler plant daily, he need not be on site at all times. There should, however, always be someone available on site who is suitably trained to respond to alarms and take appropriate action.

The level controls and level alarms are probably the most important controls on the boiler for ensuring safety and should only be installed and maintained by suitably trained personnel. Spirax Sarco can install, commission and provide a regular maintenance service.

Minimum conductivity	LCS3050 30 μ S/cm or 30 ppm
	LCS1350 Nominal 1 μ S/cm @ 25 °C minimum

Weekly test

High integrity self-monitoring level controls do not require daily testing but the weekly test should be carried out or witnessed by a responsible person who appreciates the hazards involved and has been suitably trained in the safe operation of the boiler and its controls.

At no time during the test should the water be lowered to the extent that it disappears from the gauge glass.

1. With the feedpump switched off, or the control valve forced closed, allow the water level to fall by evaporation until the burner and the panel lockout at the low alarms.
2. Raise the water level to normal, reset the lockout and allow the burner to refire.
3. To independently test inputs of a 2 probe system external test buttons have to be installed that create low level alarms on each probe input. For each probe input press the test button and ensure the burner shuts down, afterwards reset the lockout and allow burner to refire.
4. Include in monthly test - Under hand control raise the water level to the high alarm level. Check that the high alarm sounds.
5. Return all valves and controls to normal and monitor the boiler until satisfied that it is operating normally.

Quarterly inspection

The Health and Safety Executive recommend from experience that the boiler controls should be serviced at least at quarterly intervals. Where the regular tests are carried out properly in a well run boiler house with good water treatment, it may be that only an annual inspection of the probes etc. is required.

This is a matter, however, for the user to decide in liaison with his insurance company inspector in order to determine a sensible inspection programme to suit the individual boiler plant. We recommend a regular inspection as follows:

1. Inspect the probe plugs for moisture.
2. Unscrew the probes and wipe away any dirt from the probe tips. If any hard scale is present it may be an indication of more serious scale formation elsewhere in the boiler. Investigate water treatment.
3. Inspect the wiring and controllers for damage.
4. Reassemble and carry out a full functional check.

