



LCS1350 Level Switch

Description

The LCS1350 level switch can be used in conjunction with an LP10-4, LP11-4 or LP41 conductive level probe as an interval level control system in pressurised steam and hot-water plants and in condensate and feedwater tanks. The LCS1350 level switch also indicates two alarm states, which can be configured as MIN or MAX.

The LCS1350 level switch measures using the conductivity principle and makes use of the electrical conductivity of the water to do this.

The level switch is designed for use with various conductive liquids from salt solutions or boiler water to condensate having an electrical conductivity as low as 0.5 $\mu\text{S}/\text{cm}$ at 25 °C.

The level switch operates as an interval level control system (inlet/discharge configurable by code switch), and also indicates when the water reaches two independent alarm states, which can be configured as MIN or MAX.

The switchpoints for water level control and for the MIN or MAX levels are determined by the length of the respective probe tips. Up to four probe tips can be connected.

For water level control, the level switch recognises whether the probe tips are immersed or out of the water and, depending on which function is set, it switches the switch output contact, which then turns the feedwater pump on or off, for example. The Pump LED lights up when the level switch has switched the feedwater pump on, for example.

Alarm and fault indications are displayed by LEDs.

Directives and standards

VdTÜV Bulletin BP WASS 0100-RL

The LCS1350 level switch, in combination with the LP10-4/LP11-4/LP41 level probes, is type approved to the VdTÜV Bulletin "BP WASS 0100-RL".

The VdTÜV "BP WASS 0100-RL" describes the requirements for water level control and limiting equipment.

LV (Low Voltage) Directive and EMC (Electromagnetic Compatibility)

RoHS (Restriction of Hazardous Substances)

The equipment conforms to the requirements of the Low Voltage Directive 2014/35/EU, the EMC Directive 2014/30/EU and the RoHS Directive 2011/65/EU.

ATEX (Atmosphère Explosible)

The equipment must not be used in potentially explosive atmospheres, in accordance with European Directive 2014/34/ EU.



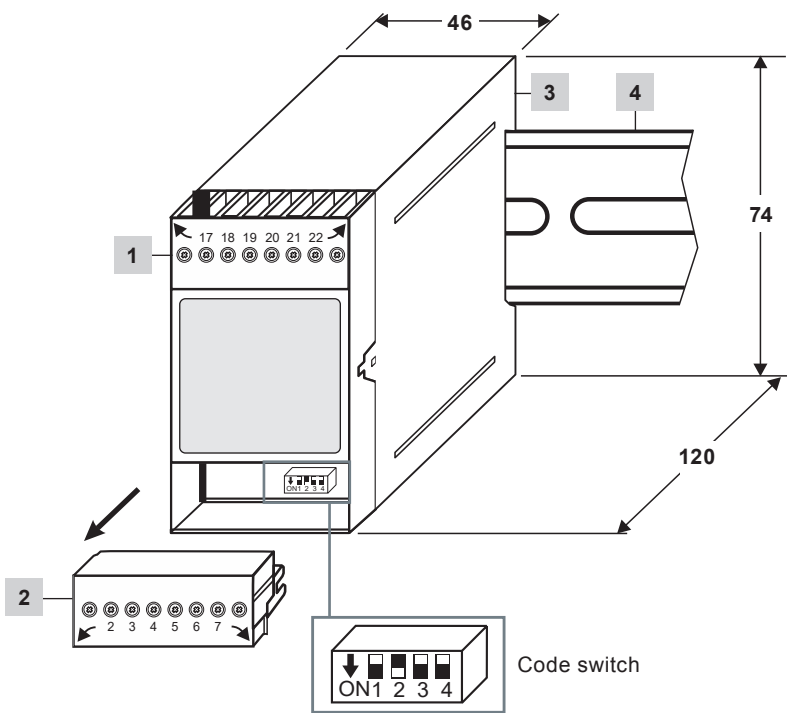
Typical applications

- Pressurised Steam Systems
- Hot-water plants
- Condensate and feedwater tanks

Technical data LCS1350

Supply voltage	24 Vdc +/- 20%
Fuse	External 0.5 A (semi-delay)
Power consumption	2 W
Connection of level probe	4 x inputs for LP10-4, LP11-4 or LP41 level probe, four-pin, reference and shield
Probe tip voltage	5 Vss
Sensitivity (water conductivity at 25 °C), switchable	> 0.5 µS/cm < 1000 µS/cm or > 10 µS/cm < 10,000 µS/cm
Outputs	2 floating changeover contacts, 8 A 250 Vac/30 Vdc cos φ = 1 (MIN/MAX) De-energizing delay 3 seconds (MIN/MAX alarm) 1 floating open/close contact, 8 A 250 Vac/30 Vdc cos φ = 1 (pump) Inductive loads must have interference suppression (RC combination) as per the manufacturer's specification Contacts requires an external T2.5A fuse for protection
Displays and controls	1 push-buttons for test function 1 x multicolour "ON" LED (green/red) - for indicating the operating state and internal errors (green = running, red = power up, malfunction or internal error) 1 x red "Alarm 1" LED for indicating a MIN/MAX alarm 1 x red "Alarm 2" LED for indicating a MIN/MAX alarm 1 x green "Pump" LED for indicating the ON/OFF pump status 1 4-pole code switch for configuration
Housing	Housing material, base: black polycarbonate; front: grey polycarbonate Conductor size: 1 x 4.0 mm ² solid, per wire, or 1 x 2.5 mm ² per lead with sleeve to DIN 46228, or 2 x 1.5 mm ² per lead with sleeve to DIN 46228 (min. Ø 0.1 mm) Terminal strips can be removed separately Housing attachment: Mounting clip on support rail TH 35, EN 60715
Electrical safety	Degree of contamination 2 for installation in control cabinet with degree of protection IP 54, fully insulated Overvoltage category III
Degree of protection	Housing: IP 40 to EN 60529 Terminal strip: IP 20 to EN 60529
Weight	approx. 0.2 kg
Ambient temperature	At moment of switch on – 0 ° to 55 °C In operation – 10 to 55 °C
Transport temperature	–20 ... +80 °C (<100 hours), only switch on after a defrosting period of 24 hours
Storage temperature	–20 ... +70 °C, only switch on after a defrosting period of 24 hours
Relative humidity	max. 95%, no moisture condensation

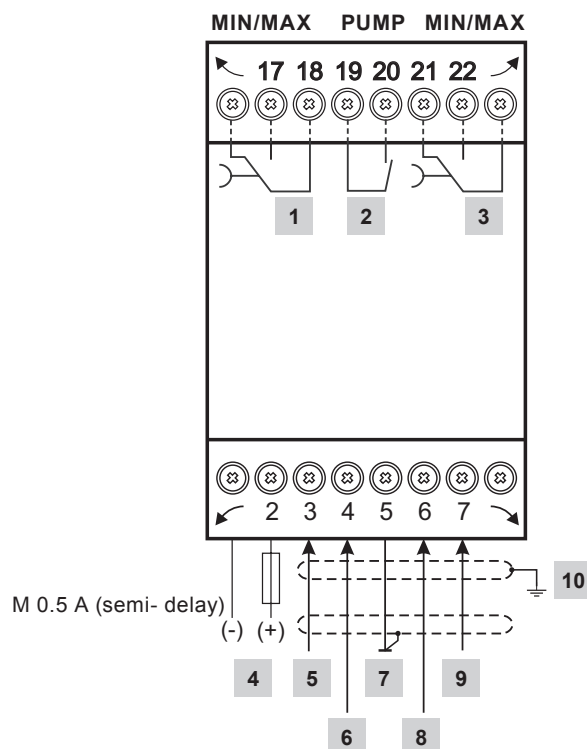
Dimensions (approximate) in mm



Item	
1	Upper terminal strip
2	Lower terminal strip
3	Housing
4	Support rail TH 35, EN 60715

Installation in control cabinet
The LCS1350 level switch is clipped onto a type TH 35, EN60715 support rail into a control cabinet, item 4.

Wiring diagram



Item	
1	Alarm 2 (MIN/MAX) output contact, de-energizing delay 3 seconds
2	Output contact (ON/OFF) for pump activation
3	Alarm 1 (MIN/MAX) output contact, de-energizing delay 3 seconds
4	Supply voltage connection 24 Vdc with semi-delay fuse M 0.5 A provided on site
5	Alarm 2 (MIN/MAX) probe tip
6	Pump low probe tip (see nameplate)
7	Functional earth in the LP10-4, LP11-4 or LP41 probe (tank or reference probe tip), with screen connection
8	Pump high probe tip (see nameplate)
9	Alarm 1 (MIN/MAX) probe tip
10	Central earthing point (CEP) in control cabinet

Fig. 4

How to specify

ON-OFF level switch, 2 volt-free change-over contacts for MIN/MAX alarms, 1 volt-free relay contact for pump/valve control, supply voltage 24V DC 2W.

How to order

Example: 1 off Spirax Sarco LCS1350 level switch.