



### ORDERING CODE

TYPE	MODEL	VOLTAGE	POWER SUPPLY	RELAY CONTACTS
SC	130	230V	AC	SP

SEE PAGE 94 FOR ORDERING OPTIONS

## Application Examples

- Level control of conductive liquids.
- Borehole pump control.
- Filling and draining of tanks and reservoirs.
- Control of sewerage pumps.
- Dosing of liquids chemicals or fertilisers.
- 2-wire remote stop-start control over extended distances.
- Monitoring and controlling of processes in conjunction with Light Dependent Resistors (LDR)

## Features

- Failsafe feature.
- Programmable for charging and discharging operation.
- AC modulation of probe signal to prevent plating and electrolytic corrosion.
- Low voltage probe signal for human safety.
- Adjustable sensitivity.
- DC or AC power supply option.
- 10A SPDT relay output.

## Description of Operation

The **SC-130** is a level control unit for conductive liquids. In conjunction with three conductive probes (e.g. CP-1C, CP-2C or CP-3C) it controls the level of the liquid in a reservoir between a high and a low level. It is programmable for failsafe operation in the following modes.

**Charging (Filling) Reservoirs:** When the level in the reservoirs drops below the low level probe, the relay energises. The relay then remains energised until the level reaches the high level probe. As soon as the high level probe becomes submerged, the relay de-energises and remains off until the level has dropped sufficiently to clear the low level probe.

**Discharging (Draining) of Reservoirs:** When the level in the reservoir rises sufficiently to submerge the high level probe, the relay energises. The relay then remains energised until the level has dropped below the low level probe. As the liquid clears the low level probe, the relay de-energises and remains off until the level has risen sufficiently to submerge the high level probe.

**Sensitivity Adjustment:** Sensitivity of the unit is adjustable to cater for

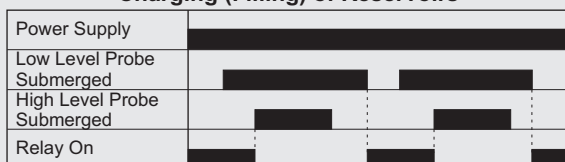
- Line impedance of long distance wiring between the probes and the unit,
- the conductivity of the liquids and
- unwanted matter, such as foam.

**Choice of Probes:** Any metal may serve as a probe. However, factors such as corrosion resistance, physical arrangement and the probability of erratic sensing of foam or condensation between probes, should be considered.

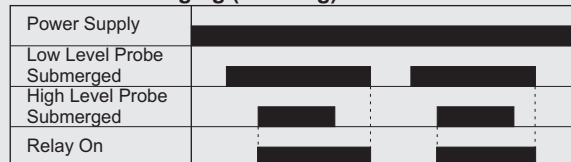
For optimum performance and ease of installation, the use of covered stainless steel probes (type CP-3C) is recommended. The length of probes may be shortened by cutting the probe to the required length or lengthened by using the extension rods (type EP-1C) and distance discs (type DD-3).

## Operational Diagrams

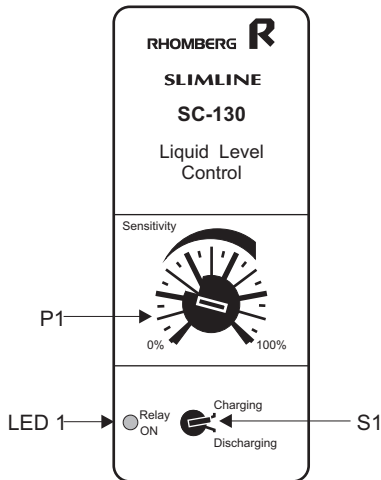
**Charging (Filling) of Reservoirs**



**Discharging (Draining) of Reservoirs**



## Description of Controls



P1: The **Sensitivity** of the liquid sensing input is adjusted on P1. Turning P1 clockwise increases sensitivity.

S1: The **Mode of Operation** is selected on S1. If set to “charging” the unit provides failsafe filling of reservoirs. If set to “discharging” the unit provides failsafe draining of reservoirs.

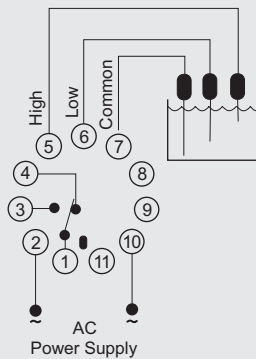
LED 1: The LED marked “**Relay On**” illuminates when the relay is energised.

## Wiring and Connection

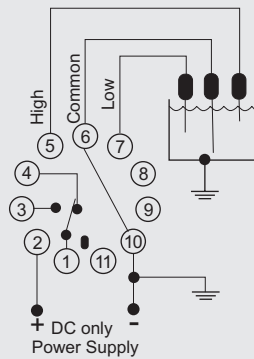
Power Supply	
Phase/ Positive	2
Neutral/ Negative	10

Relay contacts	
Normally open	1+3
Normally closed	1+4

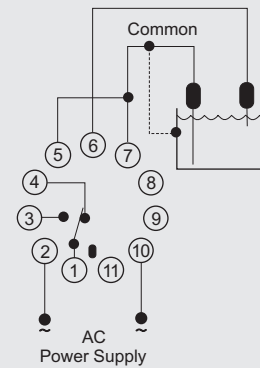
Level Probes	
Common probe	Pin 7
Low level probe	Pin 6
High level probe	Pin 5



**APPLICATION 1**  
Connection of three probe (CP-3C)



**APPLICATION 2**  
Connection of three probe (CP-3C) for DC applications.



**APPLICATION 3**  
Single level control

**Important:** In DC power supply applications pin 6 will be COMMON and pin 7 will be LOW. (Application 2)

## Technical Specifications

### POWER SUPPLY

AC: Supply voltage: 12, 24, 110, 230, 400, 415, 525V ±15%  
Isolation (probe input to power supply): 2kV  
Power consumption: 3VA (approx.)  
6VA for 415, 525V (approx.)

DC: Supply voltage: 10-30V, 48, 60, 110V ±15%  
Isolation: no galvanic isolation  
Power consumption: 100mA (10-30V), 30mA for higher ranges

### LEVEL SENSING INPUT

Probe voltage: 4V AC.  
Probe frequency: 100Hz.  
Sensitivity: 0 to 50kOhm (adjustable).  
Response time: 0,5 seconds.

Additional information in Section J, page 131.