

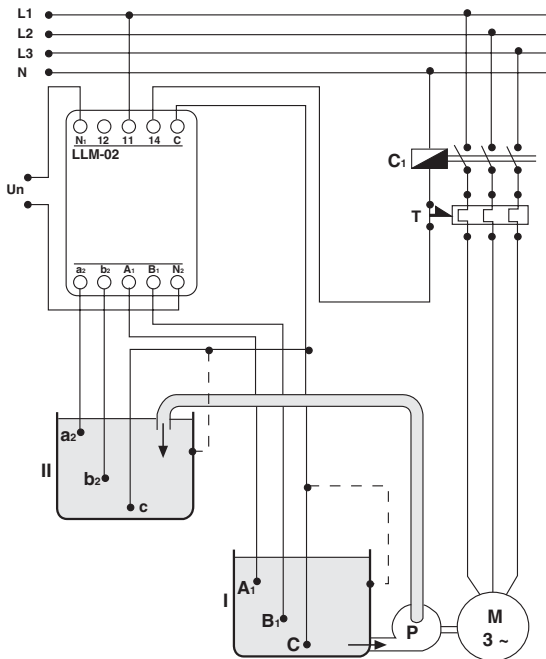
LIQUID LEVEL CONTROLLERS

LLM-02 / SSR-04 / SSRC-04

General (LLM-02)

LLM-02 type liquid level controllers are used for the level control of conductive liquids between two combined containers located in industrial plants and domestic applications. The main function of the controller is to charge the liquid from the container "I" to container "II" while controlling the levels inside the containers.

Connection Diagram for LLM-02



Operation Principles

See above connection diagram for LLM-02.

1. The output relay switches ON when the lower level electrode "b2" is no longer in contact with the liquid and switches OFF when the liquid reaches the upper level electrode "a2" of container II disabling the pumping motors.

2. However, the operation steps explained above will be valid only when the liquid is in contact with the lower electrode "B1" of container I.

I. In other words, when the liquid level in container I is below the level of electrode "B1" the pumping function will be disabled in order to prevent the system to work with empty containers. The output contact remains switched OFF until the liquid level reaches the level of the upper electrode "A1" of Container I.

If the containers are conductive, terminal "C" must be connected to the containers. If they are made of a non-conductive material, two additional (one for each container) electrodes must be used to be connected to terminal "C".

The sensitivity (i.e. impedance between electrodes) is adjusted to 25 kΩ in factory. For this preset value LLM-02 operates when the impedance between the electrodes is smaller than 25 kΩ.

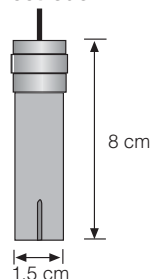
If any problem arises during the operation, appropriate impedance values can be obtained by changing the locations of the electrodes.

NOTE: This controller can not be used with flammable liquids.

Function Table

Does the liquid contact with electrode?				
a ₂	b ₂	A ₁	B ₁	Relay
NO	NO	NO	NO	OFF
NO	NO	NO	YES	OFF
NO	NO	YES	YES	ON
NO	YES	YES	YES	ON
YES	YES	YES	YES	OFF
NO	YES	YES	YES	OFF
NO	NO	YES	YES	ON
NO	NO	NO	YES	ON
NO	NO	NO	NO	OFF

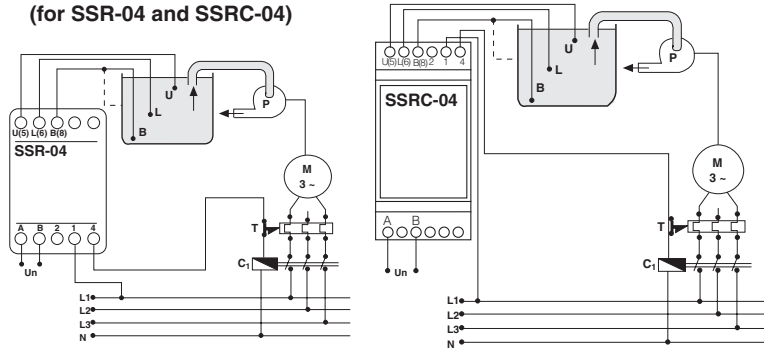
Liquid Level Electrode



General (SSR-04, SSRC-04)

SSR-04 and SSRC-04 type liquid level controllers are commonly used for the level and discharge control of conductive liquids in tanks located in industrial plants and domestic applications.

Connection Diagrams (for SSR-04 and SSRC-04)



Operation Principles (SSR-04, SSRC-04)

See above connection diagram for SSR-04 and SSRC-04

The output contact switches ON when the liquid reaches the upper level electrode (U). The output contact switches OFF when the lower level electrode (L) is no longer in contact with the liquid (in order to prevent the system to work with empty containers). B (Terminal 8) has to be connected to the container in order to determine the bottom level accurately. If the container is made of a non conductive material, an additional electrode connected to B (Terminal 8) must be used. R(kΩ) (i.e., impedance between electrodes) can be adjusted to 5-50 kΩ for different liquids by means of the knob on the front panel. The Out LED on the front panel lights when the relay is ON position.

NOTE: This controller can not be used with flammable liquids.
Technical Data (For LLM-02, SSR-04, SSRC-04)

Operating Range (ΔU)	: Please look at labels on the device.
Rated Frequency (f)	: 50/60 Hz
Output Contacts	: 1 C/O, 5A, 1250 VA (for LLM-02) : 1 C/O, 8A, 2000 VA (for SSR-04, SSRC-04)
Sensitivity (R(kΩ))	: Factory set 25 kΩ (for LLM-02) : Adjustable 5 - 50 kΩ (for SSR-04, SSRC-04)
Warning Light	: Out LED on the front panel
Ambient Temperature	: -5 °C to + 50 °C
Installation	: Surface mounting or on the mounting rails.
Dimensions	: Type PK 21 (for SSR-04) : Type PK 10 (for LLM-02) : Type PK 25 (for SSRC-04)
Protection Class	: IP 20
Weight	: 0.3 kg (for LLM-02) : 0.25 kg (for SSR-04, SSRC-04)

PRECAUTIONS FOR INSTALLATION AND SAFE USE

Failure to follow those instructions will result in death or serious injury.

- Disconnect all power before working on equipment.
- When the device is connected to the network, do not remove the front panel.
- Do not try to clean the device with solvent or the like. Only clean the device with a dried cloth.
- Verify correct terminal connections when wiring.
- Electrical equipment should be serviced only by your competent seller. No responsibility is assured by the manufacturer or any of its subsidiaries for any consequences arising out of the use of this material.
- Mount device to the panel.

Dimensions

