

Specifications

Input	from conductivity cell electrodes
Threshold Adjustment	<input type="checkbox"/> none, <input type="checkbox"/> threshold-adjustment trimmers
Activation / Release Threshold	<input type="checkbox"/> 10...20 k Ω , <input type="checkbox"/> 10...1000 k Ω
Input Wiring Capacitance	max. 5000 pF
Outputs:	up to 3
Electromechanical relay	5A/250VAC with NO/NC contact
SSR	1A/250VAC
MOS gate	0.1A/60V, optically isolated
Output for external SSR	5...24 VDC, 30 mA
- OUT1	<input type="checkbox"/> relay, <input type="checkbox"/> SSR, <input type="checkbox"/> MOS gate, <input type="checkbox"/> for ext. SSR
- OUT2	<input type="checkbox"/> relay, <input type="checkbox"/> SSR, <input type="checkbox"/> MOS gate, <input type="checkbox"/> for ext. SSR
- OUT3	<input type="checkbox"/> relay, <input type="checkbox"/> SSR, <input type="checkbox"/> MOS gate, <input type="checkbox"/> for ext. SSR
Power Supply	<input type="checkbox"/> 230 VAC, <input type="checkbox"/> 90...250 VAC/DC, <input type="checkbox"/> 24 VAC, <input type="checkbox"/> 12...24 VAC/DC, <input type="checkbox"/>
Consumption	less than 2 VA
Operating Temperature / Humidity	-10...65 °C / 0...85% RH
Protection Class	IP20
Factory settings:	DIRECTION MODE
- output OUT1	<input type="checkbox"/> direct, <input type="checkbox"/> reverse <input type="checkbox"/> i/d, <input type="checkbox"/> L1/2, <input type="checkbox"/> A1/3
- output OUT2	<input type="checkbox"/> direct, <input type="checkbox"/> reverse <input type="checkbox"/> i/d, <input type="checkbox"/> L2/3, <input type="checkbox"/> A1/2
- output OUT3	<input type="checkbox"/> direct, <input type="checkbox"/> reverse <input type="checkbox"/> i/d, <input type="checkbox"/> L1/3, <input type="checkbox"/> A2/3
- hold time	<input type="checkbox"/> 1 s, <input type="checkbox"/> 5 s

Warranty and Support

.....
serial number

.....
manufacturing date

QC check mark(passed)
(stamp)

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QD-8.2.4-WC

Warranty

COMECO warrants this product to be free from defects in materials and workmanship for 2 years. If your unit is found to be defective within that time, we will promptly repair or replace it. This warranty does not cover accidental damage, wear or tear, or consequential or incidental loss. This warranty does not cover any defects caused by wrong transportation, storage, installation, or operating (see '**Specifications**').

Technical support

In the unlikely event that you encounter a problem with your COMECO device, please call your local dealer or contact directly our support team.

v13-09.09



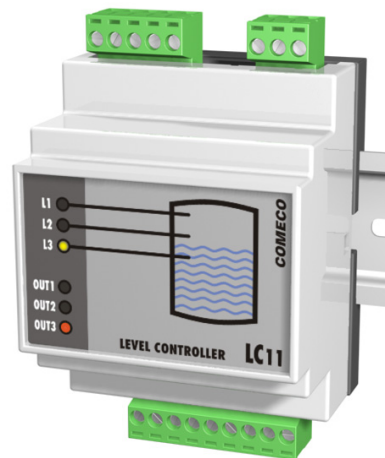
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e-mail: info@comeco.org, WWW.COMECOGROUP.COM

μ P-BASED LEVEL CONTROLLER

LC1x

for DIN-rail mounting

OPERATION MANUAL



Please read this Operation Manual before mounting and operating!
Save the Manual for future references!

Operating

Output reaction hold

A certain delay between the input change and the respective output reaction (configurable hold time) eliminates undesirable short-time switching.

Independent output mode

- ◆ The state of each output depends only on the state of the respective input and the preset direction.
- ◆ When direct action is set, the output is active at 'wet' level and inactive at 'dry' level.
- ◆ If reverse action is set, the output is active at 'dry' level and inactive at 'wet' level.

Dependent output mode

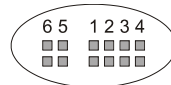
- ◆ Used is a combination of whichever 2 inputs and their respective outputs. One of the inputs senses 'lower' level and the other — 'upper' level. One of the outputs operates as control output and the other — as alarm output.
- ◆ A control output into direct action is active when both 'lower' and 'upper' levels are 'wet' and inactive when both levels become 'dry'.
- ◆ Following reversed action, the control output is active when both levels are 'dry' and inactive when they are 'wet'.
- ◆ If only one of the inputs has changed, the control output keeps its state.
- ◆ The alarm output activates when 'upper' level is sensed 'wet' while 'lower' level is 'dry' and remains active until power-off.

alarm output	control output	lower level	upper level
A1/2	L1/2	L2	L1
A1/3	L1/3	L3	L1
A2/3	L2/3	L3	L2

Indication and Adjusting

- ◆ The LEDs 'L1', 'L2', and 'L3' indicate the state of the controlled levels (light at 'wet' level). In case of an alarm during dependent mode, the respective LEDs blink by turns.
- ◆ The LEDs 'OUT1', 'OUT2', and 'OUT3' light at active output.
- ◆ To adjust a threshold, open the device, and use the corresponding trimmer (if such is mounted) next to the respective level LED.

Configuring



The default (factory) settings are given in 'Specifications'.

J4	J5	OUT1	OUT2	OUT3
1	1	independent (i/d)		
1	0	L1/2	A1/2	i/d
0	1	A1/3	i/d	L1/3
0	0	i/d	L2/3	A2/3

0 - disconnected (unsoldered);
1 - connected (soldered)

- ◆ Open the device to reach the configuration jumpers J1 through J6, located on the board in the left side of the device.
- ◆ Set the desired direction for each of the outputs by unsoldering (for reverse action) or soldering (for direct action) the pads of the respective jumper (J1, J2, J3).
- ◆ Use jumpers J4 и J5 to configure output dependency.
- ◆ Set hold time by soldering (1 second) or unsoldering (5 seconds) the pads of jumper J6.



In case of an alarm, the hold time is fixed to 10 s.

Mounting and Wiring

Mounting

LC1x for DIN-rail mounting is designed to be easily mounted on every 35 mm rail conforming to EN50022.

Wiring

- ◆ Connect the input as shown on the left.
- ◆ Connect the outputs with regard to their types (see 'Specifications') as shown on the lower diagram.
- ◆ Mind that the relay NO contacts (if there are such) are internally shunted with EMI suppression RC group of 51 Ω and 15 nF!
- ◆ Connect the right power supply voltage for your device (see 'Specifications') via terminals 22 and 24.
- ◆ In case of 90...250 VAC/DC power supply, ground the device through terminal 23.



Select cable after the admissible capacitance (see 'Specifications').

