

Programmable Level Controller LC1x



- ◆ Operates with conductive liquids
- ◆ With up to 3 relay outputs, for up to 3 levels (independent)
- ◆ May control 2 dependent levels plus alarm
- ◆ Sensitivity adjustment option
- ◆ Tank supply and drainage control
- ◆ Indication for reached level
- ◆ Panel or DIN-rail mounting
- ◆ Low cost

LC1x is a low-cost electronic level controller available for DIN-rail and panel mounting. It employs measurement of the electrical conductivity of the liquid between electrodes or between electrode and metal vessel case and is applicable for liquids with relatively high conductivity that are normally used in chemical, paper, food, wine, biotechnological industries, etc. The LC10 variant allows monitoring 1 or 2 fixed levels, and LC11 can monitor 1, 2, or 3 fixed levels, and a corresponding relay is activated or deactivated when each level is reached (drainage / supply control). Besides signaling reached level, the output relays may also be used for controlling electrical actuators. The direction of relay action at reached level as well as the connection (dependence) between levels is user-selectable. The device can also be configured as a drainage or supply level controller with alarm relay. A high-tech microprocessor circuit guarantees accuracy and stability, prevents electrolytic polarization, and ensures stable operation. The LED indication and the possibility to adjust output sensitivity make the LC1x level controller a solution for a wide range of level related problems.



Technical specifications

Input

Input type ⁽¹⁾	resistive, from conductive electrodes
Sensitivity adjustment	by trimmers on front panel
- activation threshold	10...1000 kΩ
- release threshold	10...2000 kΩ
Input wiring capacitance	max. 5000 pF
Operation modes:	selectable ⁽³⁾
- independent levels	each level controls a relay
- dependent levels	1 relay, controlled by 2 levels
Outputs	(up to 3 relay outputs)
Relay electromechanical	5A/250V w/ NO/NC contact
Solid state relay ⁽⁴⁾	1A/250VAC
MOS gate ⁽⁴⁾	0.1A/60V, optically isolated
Output for external SSR	5...24 V, 30 mA
Control algorithm	ON/OFF
Drainage/supply control	selectable ⁽³⁾
Delay time	0...5 s
Indication	
LEDs	green LED for power ON ⁽²⁾ , 3 red LEDs for output state, 3 yellow LEDs for reached levels

Power supply

Mains supply voltage	230 VAC or 115 VAC
SMPS voltage ⁽⁴⁾	90...250 V
Isolated low voltage	12...24 V ⁽⁴⁾ or 24 VAC
Consumption	max. 2 VA
Operating conditions	
Ambient temperature	-10...65 °C
Ambient humidity	0...85 %RH
Storage temperature	-20...65 °C
Storage humidity	0...95 %RH, non-condensing
Design and materials	'V' 'R'
Dimensions [mm]	48x96(front)x107 70x110x58
Mounting	panel DIN-rail
Panel cutout [mm]	42x90 -
Mounting depth [mm]	98 53
Maximum weight [g]	500 500
Protection, front/terminals	IP54 ⁽⁵⁾ / IP20 IP20
Increased front IP (option) ⁽⁶⁾	IP65 -
Case material	plastic plastic
Wiring	plug-in terminals plug-in terminals

⁽¹⁾ Measures liquid resistance between measuring electrode and reference electrode (tank body)

⁽²⁾ Available ONLY for case 'V'

⁽³⁾ Factory settings: 3 independent levels with drainage action; different factory settings are available on request.

⁽⁴⁾ Ask for availability!

⁽⁵⁾ IP44 when sensitivity-adjustment trimmers are mounted!

⁽⁶⁾ Not available with sensitivity-adjustment option!

Ordering code LC1* - G0.G1.G5G5G5.G7G7G7 - #1.#2 ⁽⁷⁾

Code	Feature or option	Code values
*	Variant	0 - for up to 2 levels, with 2 relay outputs, 1 - for up to 3 levels, with 3 relay outputs
G0	Case	V - for panel mounting, R - for DIN-rail mounting
G1	Power supply	A - 230 VAC, B - 115 VAC, C - 90...250 V ⁽⁴⁾ , Q - 12...24 V, isolated ⁽⁴⁾ , R - 24 VAC
G5	Relay output	X - none, C - relay NO/NC, D - SSR ⁽⁴⁾ , J - for external SSR, M - isolated MOS gate ⁽⁴⁾
G7	Input	X - none, B - resistive (conductivity cell)
#1	Sensitivity adjustment	X - none, A - sensitivity-adjustment trimmers mounted
#2	Increased front protection	X - none, P - IP65 front protection ^(2,6)

⁽⁷⁾ G5G5.G7G7 for variant '0'