

TECHNICAL DATA OF ALL MODELS

Functions	LPH	LCL/1 LCL/4	LCD	LCDR1	LTORB	LPHS	LCLS/1 LCLS/4	LCDS
Range	0 ÷ 14.00 pH 0 ÷ 1000 mV	0 ÷ 10.00 mg/l Cl ₂ 0 ÷ 30.00 mg/l Cl ₂	0 ÷ 199,9 μS 0 ÷ 1999 μS 0 ÷ 19,99 mS	0 ÷ 199,9 μS 0 ÷ 1999 μS 0 ÷ 19,99 mS	0 ÷ 40.0 NTU	0 ÷ 14.00 pH 0 ÷ 1000 mV	0 ÷ 10.00 mg/l Cl ₂ 0 ÷ 30.00 mg/l Cl ₂	0 ÷ 199,9 μS 0 ÷ 1999 μS 0 ÷ 19,99 mS
Resolution	± 0.01 pH ± 1 mV	± 0.01 mg/l Cl ₂ ± 0.1 mg/l Cl ₂	± 0.1 μS ± 1 μS ± 0.01 mS	± 0.1 μS ± 1 μS ± 0.01 mS	± 0.1 NTU	± 0.01 pH ± 1 mV	± 0.01 mg/l Cl ₂ ± 0.1 mg/l Cl ₂	± 0.1 μS ± 1 μS ± 0.01 mS
Display	7 Segments LED							
Controls	Analogic							
Calibration	Manual							
Environment Working Temperature	0°C to 50°C - 0% to 95% (non condensing) relative humidity							
ON/OFF Set Points	Two							
PROPORTIONAL Set Points	NO	NO	NO	NO	NO	One Proportional: 0 ÷ 20mA or 4 ÷ 20mA (specify when ordering)		
Input Impedance	> 10 ¹² Ohm	1,5kOhm	--	--	--	> 10 ¹² Ohm	1,5kOhm	--
On/Off Output	2 Voltage Output							
Chart Recorder Output	Specify when ordering: 0 ÷ 20mA or 4 ÷ 20mA (max 500 Ohm)							
Alarm*	Max dosing time alarm / Voltage Free Contact Relay (Fuse Protected)							
Stand-by**	Input Contact							
Delay***	Programmable "Power-on" Delay							
Max Resistive Load	5A - 220 VAC							
Power Supply	24, 115, 230 VAC (specify when ordering); 50/60 Hz							
Power Consumption	Average 10W							
Fuse	Instrument, output and alarm fuse protections							
Galvanic Isolation	Upon demand							
Casing Material	ABS - IP65 box							
Mounting	WALL							
Dimensions	225 x 215 x 125 mm							
Net Weight	1,2 kg							
Temperature Compensation	Automatic Manual 0 ÷ 100 °C	NO	Automatic Manual 0 ÷ 100 °C	Automatic Manual 0 ÷ 100 °C	NO	Automatic Manual 0 ÷ 100 °C	NO	Automatic Manual 0 ÷ 100 °C

*Alarm: to prevent over-feeding of chemicals in the system.

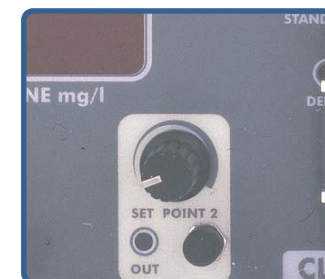
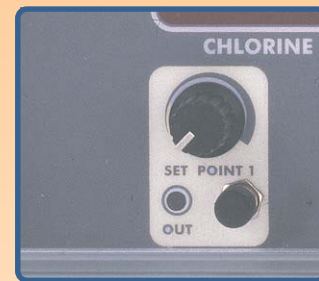
**Stand-by: when the electrode cell is running without water, the controller goes in stand-by mode and the outputs are disabled.

***Delay: delays the activation of dosing pump or any equipment driven by the controller after start-up or during stand-by mode.

ANALOG INSTRUMENTS

L SERIES

LPH * LPHS * LCL * LCLS * LTORB * LCDRI * LCD * LCDS



SINCERT



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R1-01-03



ANALOG INSTRUMENTS

L SERIES

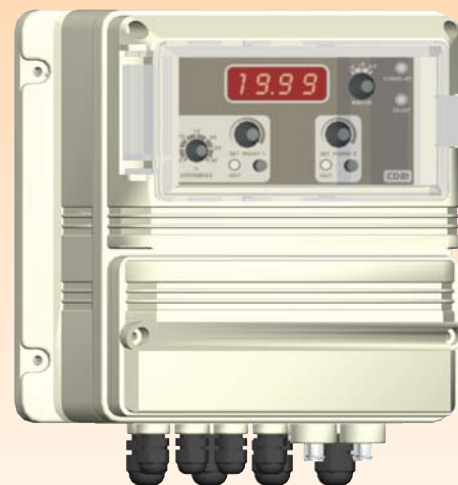
The L Series are compact and user-friendly wall mounted instruments to control and measure **pH**, **Redox (ORP)**, **Residual Chlorine**, **Turbidity** and **Conductivity**, providing **reliable** and **accurate** measurements. The L Series is the ideal partner to manage chemical treatment systems.

The fields of applications are numerous:

- waste water treatment
- drinking water
- cooling towers
- boilers
- chemical industry
- swimming pools
- process industry
- agriculture

... and much more.

L Series offers the possibility to select between two operating modes!



ON/OFF mode

Features:

- two independent set points (On/Off);
- one proportional analog (mA) output for chart recorder or external control (e.g. PLC).

On/Off mode controllers can be connected to Emec dosing pumps models CO, CL or MAN or any other On/Off mode equipment.

LCD

Measures and controls **Conductivity** utilizing mS or μ S measuring range. Three ranges are available by means of 3-way selector: 0÷200 μ S, 0÷2000 μ S, 0÷20 mS.

LCDRI

Conductivity meter specifically designed for Cooling Tower applications. Main features:

- three ranges are available by means of 3-way selector: 0÷200 μ S, 0÷2000 μ S, 0÷20 mS;
- one On/Off output set point with hysteresis control for bleed electrovalve control.

LPH

Offers the great advantage of being two controllers in one unit: utilizing the proper electrode, it measures and controls either **pH** or **Redox** (ORP Potential).

LTORB

Measures and controls **Turbidity** value utilizing NTU measurement System. LTORB is specifically designed for swimming pool and drinking water systems. Main features:

- 0÷40 NTU measuring and reading ranges.

LTORB works with Emec turbidity cell mod. ETORB.

LCL

LCL controls the **Residual Chlorine (Cl₂)**. It can be used with Emec amperometric cell.

LCL/1 is suitable for Emec chlorine cells mod. ECL1/2/3/8.
LCL/4 is suitable for Emec chlorine cells mod. ECL4/5/6

PROPORTIONAL mode

Features:

- one proportional output (0÷20 mA or 4÷20 mA) driven by one set point to control proportional dosing pumps;
- two independent set points (On/Off);
- one proportional analog (mA) output for chart recorder or external control (e.g. PLC).

Proportional mode controllers can be connected to Emec dosing pump models IC or EXT or any other equipment driven by mA signal.

LCDS

Proportional controller with analogic (mA) signal output. It measures and controls **Conductivity** utilizing mS or μ S measuring range. Three ranges are available by means of 3-way selector: 0÷200 μ S, 0÷2000 μ S, 0÷20 mS.

LPHS

Proportional controller with analogic (mA) signal output. It offers the great advantage of being two controllers in one unit: utilizing the proper electrode, it measures and controls either **pH** or **Redox** (ORP Potential).

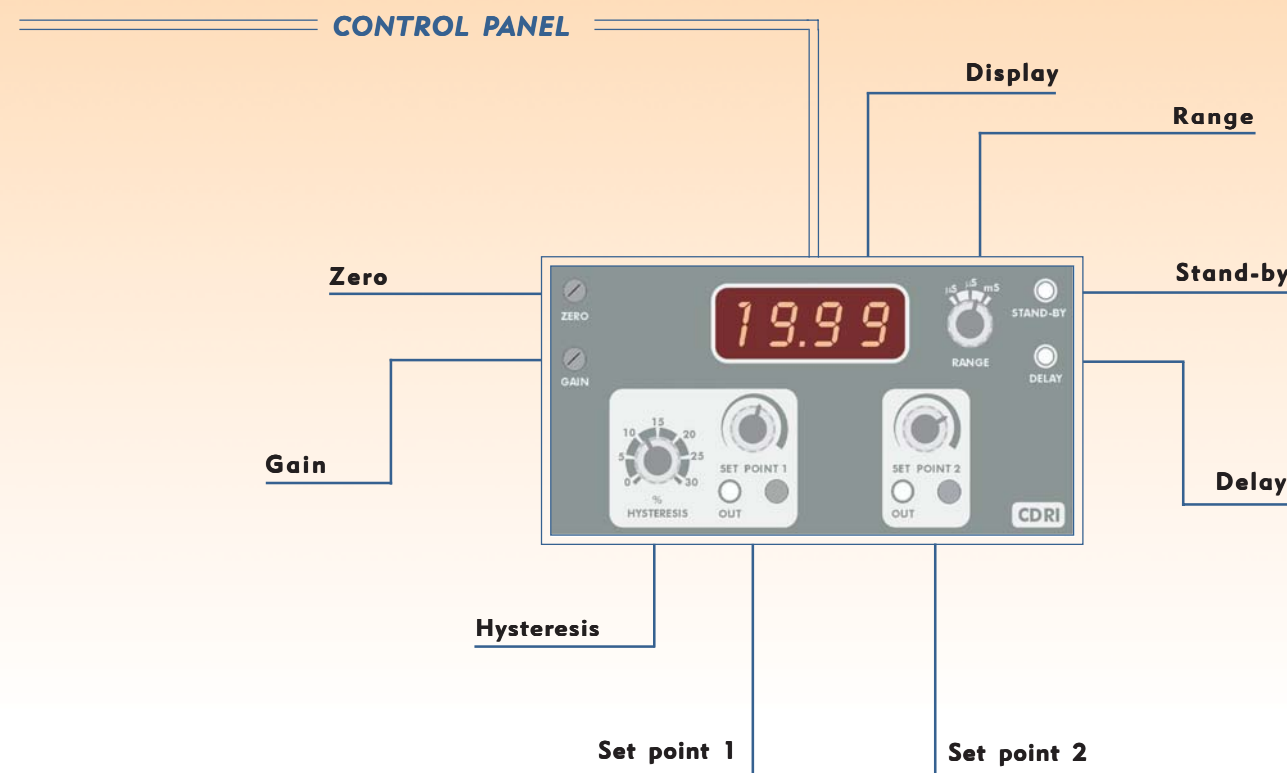
LCLS

Proportional controller with analogic (mA) signal output. It controls the **Residual Chlorine (Cl₂)** and works with amperometric measuring cells.

LCLS/1 is suitable for Emec chlorine cells mod. ECL1/2/3/8.
LCLS/4 is suitable for Emec chlorine cells mod. ECL4/5/6.

LPH * LPHS * LCL * LCLS * LTORB * LCDRI * LCD * LCDS

GENERAL FEATURES



QUALITY MARKINGS

L Analog instruments are **CE** marked.

DELAY

This safety function delays the activation of dosing pump or any equipment driven by the controller at start-up or during stand-by mode.

CONFIGURATION

Installation is easy and quick.

MAX DOSING TIME ALARM

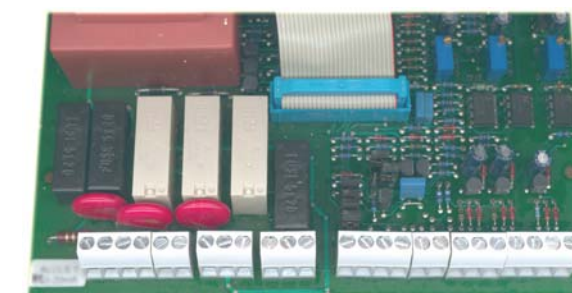
This safety feature is activated when a set point output is on for a time longer than the set time. It is meant to avoid excessive feeds.

OUTPUT

Output for chart recorder.
220 VAC outputs for constant metering pumps.
Current output for proportional pumps.
Alarm max feeding time output.

DISPLAY

7 segment display facilitates reading in high luminosity conditions.
It provides constant indications regarding operating conditions and equipment status.



CALIBRATION

Easy probe calibration to the controller. By means of buffer solutions the calibration is reliable and quick.

DESIGN

Dimensions are compact and four fixing points ensure steady and safe mounting.
User friendly controls for calibration and adjustment operations are easy to access and protected with a transparent poly-carbonate cover with clip-on lock.

CASING

Plastic casing meets **IP65**.

ACCESSORIES

Emec offers a wide range of electrodes to match technical requirements of different applications.

SET POINT

Two independent adjustable On/Off set points. One independent adjustable proportional set-point.

STAND-BY

Instruments are provided of stand-by input to disable chemical feeding when the system or electrode cell is running without water.