

Electronic Pressure Controller and Calibrator Model LR-Cal LCC 100

- generates and measures pressure and vacuum
- pressure up to 1 mbar, 10 mbar, 100 mbar, 1000 mbar and 2000 mbar (vacuum max. -600 mbar)
- Uncertainty up to $\pm 0.1\%$ FS (± 1 digit)
- Great adjustment accuracy (0.01% FS)
- Chargeable Li-Ion battery
- Generates pressure by pressing a key



The **LR-Cal LCC 100** measures and generates pressure and vacuum and consequently it is more than a mere measuring instrument - it can also be applied as test and calibration instrument for pressure sensors, pressure switches and pressure gauges. Thanks to internal pressure/vacuum generation no auxiliary tools are required for operation. An internal Li-Ion battery (chargeable) makes mobile operation very easy. Parallel operation of mains and battery supply allows for maximum flexibility.

Typical applications:

- Mobile and stationary pressure standard for low pressure and vacuum
- Mobile and stationary of all kind of pressure reading instruments
- Mobile and stationary pressure and vacuum source for calibration purposes
- Leak test

Technical Data:

Type	LCC 100-1	LCC 100-10	LCC 100-100	LCC 100-1000	LCC 100-2000
Order-Code:	LCC-100-1	LCC-100-10	LCC-100-100	LCC-100-1000	LCC-100-2000
Pressure range:	1 mbar	10 mbar	100 mbar	1000 mbar	2000 mbar
Overpressure:	5-fold	5-fold	5-fold	2-fold	2-fold
Uncertainty:	± 1 digit	$\pm 0.3\%$ FS	$\pm 0.1\%$ FS	The integrated electr. pump can make max. -600 mbar vacuum. If a larger vacuum is required, an external vacuum source is needed, e.g. calibration handpump model LR-Cal LPP 08 .	
Linearity:	± 1 digit	$\pm 0.2\%$ FS	$\pm 0.1\%$ FS		
Hysteresis:	max. 0,1% v.E.				
Measurement principle:	inductive				
Temperature drift of the internal reference sensor:	Zero point: 0.003% FS / K (0% via zero balance) Span: 0.03% FS / K				
ZERO balance:	<ul style="list-style-type: none"> • automatic (in settable time spans, possible to switch off), or • manual (by pressing the ZERO button) 				
Long-term stability of the internal reference sensor:	0.1% FS per year (typical)				
Temperature range:	Working: +10°C...+40°C; Storage: -10°C...+70°C				
Usable pressure measuring range:	-10...+110%				
Adjustment accuracy:	0.01% FS				
Adjustment time:	depending on volume <5 sec.				
Measurement media:	Air, non-aggressive and corrosion-free dry gases				
Operation modes:	<ul style="list-style-type: none"> • CTRL controlling pressure • MESS measuring pressure • AUTO individually definable pressure profile • Remote-controlled operation (via USB or RS232 interface) 				
Display:	Graphic display (white on blue background)				
Interfaces:	USB and RS232				
Supply:	24 VDC / 1 A, build-in Li-Ion battery (8h typical)				
Pressure ports:	6,6 x 11 mm (for flexible hose with 6 mm diameter)				
Dimension:	Height 102.6 x Width 257 x Dept 271 mm (without handle)				

Please note: The usable pressure range of the **LR-Cal LCC 100** types is -10%...+110% of the pressure range, depending on type. To achieve larger vacuum values, user can change the +/- pressure port connections.

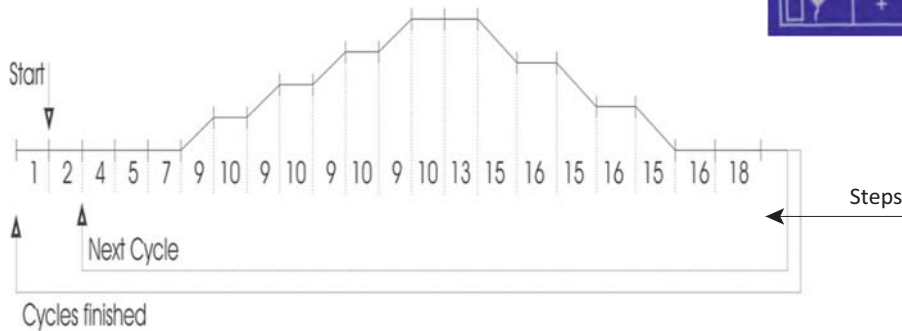
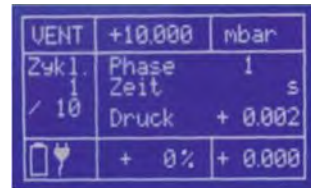
Operation modes of the LR-Cal/ LCC 100

• **Measure:** The measuring mode (“MESS”) is used to measure a gauge or differential pressure. In this operation mode the internal pump of the LR-Cal LCC 100 is deactivated. The applied pressure, measured by the internal reference sensor, is shown in the display.



• **Control:** The control mode (“CTRL”) is used to calibrate pressure transmitter, pressure switches or pressure gauges. In this operation mode the internal pump of the LR-Cal LCC 100 is activated, the pressure is adjusted to the set point. The pressure value is shown in the display.

• **Auto:** In the “AUTO” mode, a calibration procedure can be defined. This mode allows a comfortable calibration of several test specimen with same specifications. The calibration can be run AUTOMATICALLY in this mode.
Following graphic shows the principle of a calibration procedure:



- Steps:
- [1] Wait for start command (pressing OK key)
 - [2] Delay time (adjustable)
 - [4] Duration of ZERO balancing of the system
 - [7] Dwell time at ZERO point
 - [9] Adjustment time to the next step
 - [10] Dwell time
 - [13] Delay time at max. pressure step
 - [15] Adjustment time to the next step
 - [16] Dwell time at ZERO point
 - [18] Delay time (adjustable)

• **Leaktest:** In the CTRL mode, connected test specimen can be tested to leakage / tightness by pressing the LEAK key.



Back view of the LR-Cal LCC 100



Front panel of the LR-Cal LCC 100



Optional Accessories:

Spare part: Mains supply 115...230 VAC
Order-Code: **LCC-100-NT** (1 pc. included in standard supply of instrument)

Certificate of calibration (10 points)
Order-Code: **LCC-100-KAL-10**

Carrying case with custom foams:
Order-Code: **LCC-100-KOFFER**

Certificate of calibration (20 points)
Order-Code: **LCC-100-KAL-20**

