LR-Cal Electronic Pressure Calibrator LPC 300 multi functional, Accuracy ±0.025% FSO

LPC 300

LPC 300 Documenting Process Calibrator Accuracy ±0.025% FSO

The electronic pressure calibrator **LR-*Cal* LPC 300** is used for high precision calibration of pressure instruments, e.g. pressure gauges, pressure transmitter, digital manometer, pressure switches, overpressure protection valves, etc.

The **LR-*Cal* LPC 300** is a very user-friendly, accurate and compact solution for pressure comparison calibrations. The built-in reference sensor **LPC-S** is changeable, several pressure ranges can be covered with one **LR-*Cal* LPC 300** unit (up to 10).

All standard pressure ranges between 0...250 mbar (0...4 psi) and 0...1000 bar (0...14'500 psi) are available as well as vacuum and absolute pressure ranges in accuracy ±0.025% FS. Furthermore, ranges up to 8000 bar (116'000 psi) are available with acuracy ±0.1% FS.

The electronic pressure calibrator **LR-*Cal* LPC 300** measures pressure, voltage and current and supplies 24 VDC as source for transmitter. Calibration procedures can be pre-defined and used for calibrations on site. The **LR-*Cal* LPC 300** is featured with USB- and RS232-interfaces and is powered by a Lithium-Ion battery (rechargeable, without memory-effect).

Features:

- precise, high resolution, compact, rigid
- pressure ranges 0/250 mbar to 0/1000 bar 0/4 psi to 14500 psi, and vacuum & absolute ranges with accuracy ±0.025% FS
- high pressure ranges up to 0...8000 bar with accuracy ±0.1% FS
- changeable reference sensor **LPC-S**
- all standard pressure units (plus one self-definable)
- conversion pressure to current/voltage and vice versa
- stores calibration data (plus integrated real time clock)
- pressure switch test function (switch point adjustment)
- menu-driven operating in English or German language (other languages on request)
- large illuminated display, lithium-ion battery powered
- power supply 24 VDC for pressure transmitters
- USB- and RS232 interface
- calibration certificate, traceable to national standard included in standard supply for pressure. voltage and current

LPC 300 with calibration pump LPP 30 “on site”

In “measuring” operation, the **LR-*Cal* LPC 300** displays simultaneous:
- reference pressure
- output of unit under test
- deviation (in selected pressure unit)
- deviation (in % of full scale of unit under test)

This means very easy checking wether unit under test is within it’s specified accuracy class. The reference sensors have a welded st.st. diaphragm for use also with aggressive fluids and media which are compatible with stainless steel 1.4571

Pressure comparison pump LSP with LPC 300

DRUCK & TEMPERATUR Leitenberger GmbH
Bahnhofstr. 33 • D-72138 Kirchentellinsfurt • Germany
Tel.: +49-7121-90920-0 • Fax: +49-7121-90920-99
E-Mail: DT-Export@Leitenberger.de • http://www.druck-temperatur.de

LR-*Cal* Electronic Pressure Calibrator LPC 300 multi functional, Accuracy ±0.025% FSO

LPC 300

The **LR-*Cal* LPC 300** has a numeric keypad and separate cursor keys.

Together with the clear text menues, the result is a very easy use and operation of the **LR-*Cal* LPC 300**.

Note: the images are showing the
German language version of the operating system.
Language can be switched to English, French, Italian and Spanish.

The electronic pressure calibrator **LR-*Cal* LPC 300** can be operated in three different modes:

1) **Measuring Mode**

configure..

First, the unit under test must be defined:
- mechanical (e.g. pressure gauge) or electronic (e.g. pressure transmitter)
- Pressure range: start and end
- Accuracy class (of full scale or of reading)
- Pressure unit
- gauge or absolute
- gaseous or fluid medium
- power supply 24 VDC on or off

...and calibrate

Now the comparison calibration can be made:
The display shows:
- Pressure range of the **LR-*Cal* LPC 300** reference sensor **LPC-S**
- True pressure as measured by the **LR-*Cal* LPC 300**
- Pressure range of unit under test
- Output signal of unit under test (measured if it is a pressure transmitter, to be entered if it is a pressure gauge without electr. output signal)
- Deviation (in selected pressure unit of unit under test)
- Deviation (in % of full scale of unit under test)

With one view the operator sees wether the unit under test is within it's specification (accuracy class) or not.

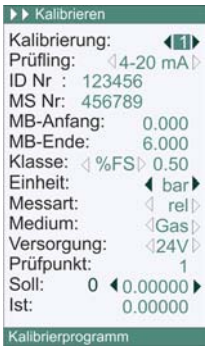
15 different pressure units are available,

one additional pressure unit can be defined by the user.

The resolution adjustment (decimal point setting) can be made very comfortable.

DRUCK & TEMPERATUR Leitenberger GmbH
Bahnhofstr. 33 • D-72138 Kirchentellinsfurt • Germany
Tel.: +49-7121-90920-0 • Fax: +49-7121-90920-99
E-Mail: DT-Export@Leitenberger.de • http://www.druck-temperatur.de

2) **Calibration**



configure...

In this mode, calibration procedures can be pre-defined, incl. management of units under test. One procedure has following data:
Same like in “Measuring” mode, but in addition:

- Calibration Number (program no.)
- Serial number of unit under test
- location number of unit under test
- test pressure points (up to 32 for each unit under test)
- dwell time (sec.) between test pressure points

Up to 16 units under test with each 32 test points can be managed by the **LR-*Cal* LPC 300** at a time.

...and calibrate

Later on, it can be worked on the pre-defined calibration procedures on site. The values are saved in the internal memory of the **LR-*Cal* LPC 300** and can be transmitted to a PC via the USB- or RS232 interface.

Also in this “Calibration” mode the operator can see on one view wether the unit under test is within it’s specification or not.

With the (optional) PC software **LPC-*Cal*** the calibration data can be downloaded and printed out (via MS-Excel).

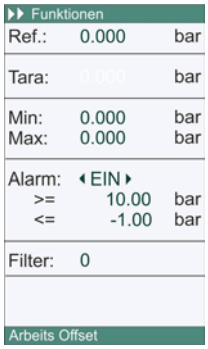
3) **Pressure Switch - Test**

After specification of the unit under test (pressure range, power supply 24 VDC yes/no), the electronic pressure calibrator **LR-*Cal* LPC 300** shows tha actual status of the pressure switch.

Also the pressures at closing and at opening are displayed, together with the hysteresis.

Several basic parameters can be entered into the **LR-*Cal* LPC 300** , e.g.:

- ambient temperature
- fluid level difference of unit under test
- language
  (English / German / French / Italian / Spanish)
- setting the real time clock
- setting the display
- setting of the powersafe function
- indicating battery level
- Tara value (offset)
- indicating min-max- values
- setting/indicating alarm values
- digital software-filter
- USB- and RS232-settings



Note: the images are showing the German language version of the operating system. Language can be switched to English and others.

DRUCK & TEMPERATUR Leitenberger GmbH
Bahnhofstr. 33 • D-72138 Kirchentellinsfurt • Germany
Tel.: +49-7121-90920-0 • Fax: +49-7121-90920-99
E-Mail: DT-Export@Leitenberger.de • http://www.druck-temperatur.de

LR-Cal Electronic Pressure Calibrator LPC 300 multi functional, Accuracy ±0.025% FSO

LPC 300

Technical Data:

LPC-S reference sensors, Accuracy ±0.025% FS
Pressure connection: Thread 1/2" BSP male

Pressure Range [bar]		overpressure [bar]	burst pressure [bar]
0...0.25	gauge	1.6	2.4
0...0.4	gauge or absolute	2	2.4
0...0.6	gauge or absolute	4	4.8
0...1	gauge or absolute	5	6
0...1.6	gauge or absolute	10	12
0...2.5	gauge or absolute	10	12
0...4	gauge or absolute	17	20.5
0...6	gauge or absolute	35	42
0...10	gauge or absolute	35	42
0...16	gauge or absolute	80	96
0...25	gauge or absolute	50	96
0...40	gauge	80	400
0...60	gauge	120	550
0...100	gauge	200	800
0...160	gauge	320	1000
0...250	gauge	500	1200
0...400	gauge	800	1500
0...600	gauge	1200	1500
0...700	gauge	1200	1500
0...1000	gauge	1500	3000
-0.4...0	gauge	2	2.4
-0.6...0	gauge	4	4.8
-1...0	gauge	5	6
-0.25...+0.25	gauge	1.6	2.4
-0.4...+0.4	gauge	2	2.4
-0.6...+0.6	gauge	4	4.8
-1...+1.5	gauge	10	12
-1...+3	gauge	17	20.5
-1...+5	gauge	35	42
-1...+9	gauge	35	42
-1...+15	gauge	80	96
-1...+20	gauge	50	96
-1...+24	gauge	50	96
-1...+39	gauge	80	400

LPC-S high pressure reference sensors, Accuracy ±0.1% FS
Pressure connection: Thread M16x1.5 female with 60° cone

High Pressure Range [bar]		overpressure [bar]	burst pressure [bar]
0...1600	gauge	2300	4000
0...2500	gauge	3500	4000
0...4000	gauge	5000	8000
0...5000	gauge	6000	10000
0...6000	gauge	7000	11000
0...8000	gauge	10000	12000

Overpressure warning: audio visual
Temperature compensation: active, 0...50°C
Wetted parts: stainless steel, welded
Resolution: adjustable, max. 6 digits +prefix +decimal point
Measurement voltage: 0-10 V, 0-5 V, 0-1 V
Resolution: display x 0,1 mV, accuracy ±0.5 mV
Measurement current: 0-20 mA, 4-20 mA
Resolution: display x 1 µA, accuracy ±1.6 µA
Voltage supply: 24 VDC min. 20 mA, max. 50 mA
tolerance ±1V, switchable via user-menu.
Operation conditions: 0°C... 50°C, max. 80% r.h. non-cond.
(during battery charging: 0...45°C)
Storage: -20°C...+60°C, max. 80% r.h. non-condensing
Graphic display: high resolution TFT colour display
Storage capacity: 16 units under test, each 32 test points
RS232-Parameter: 4800, 9600 or 11200 Baud, adjustable
Battery: Lithium-Ion with intelligent charging electronics
Battery charger: 230 VAC 50/60 Hz (other on request)
Electrical connections:
charging plug 9V / 450 mA ±50 mA, with metal protection cap
PC communication: USB and RS232, with metal prot. cap
Measurement plugs:: 4 mm standard plugs for:
- current measurement 0/4-20 mA
- voltage measurement 0-1/5/10 V
- pressure switch
- Voltage supply: 24 V / 50 mA

Dimension: 12.5 x 21 x 8 cm (width x height x depth)
Weight: appr. 1.1 kg

Indicated accuracy of the **LPC-S** reference sensors:
calibrated at 23°C ambient temperature, in vertical position, incl. linearity, hysteresis and repeatability.

Each **LR-*Cal* LPC 300** unit can handle up to 10 **LPC-S** reference sensors (plug & play).

Optional Accessories:

- rubber protection caps for electrical measuring plugs (IP 54)
- electr. extension cable for reference sensor (order-code LPC-KABEL) (herewith the reference sensor **LPC-S** can be used "outside" the **LR-*Cal* LPC 300** unit for more flexibility). Always needed for **LPC-S** ranges >=1600 bar.
- carrying case with custom foams (order-code LPC300-KOFFER)

DRUCK & TEMPERATUR Leitenberger GmbH
Bahnhofstr. 33 • D-72138 Kirchentellinsfurt • Germany
Tel.: +49-7121-90920-0 • Fax: +49-7121-90920-99
E-Mail: DT-Export@Leitenberger.de • http://www.druck-temperatur.de