

LPC 300 multi functional Pressure Calibrator
Accuracy $\pm 0.025\%$ FSO

The electronic pressure calibrator **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 **LPC 300** is a very user-friendly, accurate and compact solution for pressure comparison calibrations. The built-in reference sensor is changeable, several pressure ranges can be covered with one **LPC 300** unit.

All standard pressure ranges between 0...250 mbar (0...4 psi) and 0...1000 bar (0...14500 psi) are available as well as vacuum and absolute pressure ranges.

The electronic pressure calibrator **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 **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
- changeable built-in reference sensor
- 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



LPC 300 with calibration pump LPP 30



LPC 300 with calibration pump LPP 30 "on site"



Pressure comparison pump LSP 1000-LC

In "measuring" operation, the **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 whether unit under test is within its 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 1000-K

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

Together with the clear text menus, the result is a very easy use and operation of the **LPC 300**.

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



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

1) Measuring Mode



Configuration...

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 Usage

Now the comparison calibration can be made:

The display shows:

- Pressure range of the LPC 300 reference sensor
- True pressure as measured by the 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 whether the unit under test is within its 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.



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2) Calibration

```

.. Kalibrieren START
Prog. Nr: 4.20
Prüflins: 4..20mA
Prüf.Nr: 0815
Messstelle: ABCD
MB-Anfang: 0.00
MB-Ende: 16.00
Klasse: %FS 0.1
Einheit: bar
Messart: rel
Medium: Gas
Versorgung: Aus
Prüfpunkt: 2
Soll: 120 -0.123456
Ist: 0.133456
Prüflins Seriennummer
    
```

Configuration...

```

Kalibrieren 21.1°C
R: 0.00 1.00 kg/cm2
-0.12345
P: 0.00 1.00 kg/cm2
-0.12345
Abw. 0.12345 kg/cm2
0.12 %FS
-----
Soll 0.12345 kg/cm2
P-01: 02 0s
Prüf.Nr: 12
TAR T66 ZERO AL BAT
    
```

...and Usage

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 22 for each unit under test)
- dwell time (sec.) between test pressure points

Up to 16 units under test with each 22 test points can be managed by the LPC 300 at a time.

Later on, it can be worked on the pre-defined calibration procedures on site. The values are saved in the internal memory of the 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 whether the unit under test is within its specification or not.

3) Pressure Switch - Test

```

SchalterTest 10:20:10
R: 0 1000 kg/cm2
-0.12345
Status --
-----
-/- 0.12345 bar
-- 0.12345 bar
Hys: 0.12345 bar
TAR T53
    
```

After specification of the unit under test (pressure range, power supply 24 VDC yes/no), the electronic pressure calibrator LPC 300 shows the 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 **LPC 300**, e.g.:

- ambient temperature
- fluid level difference of unit under test
- language (English / German /
- 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

```

.. LPC300-Einstellung
Temperatur: 22.5 °C
Höhendiff.: 0000 mm
Sprache: Deutsch
Datum: 10.10.2004
Uhrzeit: 13:24:46
Helligkeit: 60%
Kontrast: 65%
Powersave 999 min
Akkukapazität 2%
02.03.04 10:22
    
```

```

.. Tara/Filter/Alarm
Ref. [0..20bar]
0.12345
Tara-Wert [bar]
0.12345
Min: 0.12345
Max: 0.12345
Alarm [bar]:
>= 0.12345
<= 0.12345
Filter: 80
10:15:12
    
```



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Technical Data:

Available LPC 300 reference pressure sensors

(special ranges on request)

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	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...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...+24	gauge	50	96

Accuracy: $\pm 0.025\%$ FSO *)

Overpressure warning: audio visual

Temperature compensation: active, 0...50°C

Wetted parts: stainless steel, welded; Thread: 1/2" BSP male

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 μ A, accuracy ± 1.6 μ A

Voltage supply: 24 VDC min. 20 mA, max. 50 mA
tolerance ± 1 V

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: 128 x 128pPixel, display 44.7 x 44.7 mm

Storage capacity: 16 units under test, each 22 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

*) calibrated at +23°C, incl. linearity, hysteresis and repeatability

The LPC 300 can manage up to 5 system-sensors at a time.

Optional Accessories:

- rubber protection caps for electrical measuring plugs
- electr. extension cable for reference sensor (herewith the reference sensor can be used "outside" the LPC 300 unit for more flexibility)



LPC 300 electr. measurement plugs
voltage & current input, voltage output,
pressure switch, USB/RS232, battery charger



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