Rel. 20211008

LR-*Cal* LPC 300

- Up to 10 interchangeable reference pressure sensors, this means up to 10 different pressure ranges with just one device.
- Pressure ranges from 0...250 mbar (0...4 psi) to 0...6000 bar (0...87000 psi). Unique number of pressure ranges available. Pressure, vacuum, compound and absolute pressure ranges.
  Accuracy (up to 1000 bar): ±0.025% FS.
- Including certificate of calibration for pressure, current and voltage.
  Optional: DAkkS (DKD) certificate for pressure measurement.
- Measurement of current (0/4...20 mA) and voltage (0...10 V).
- Sourcing voltage (to power unit under test, 24 VDC).
- Mode MEASURE: fast and very accurate pressure measurement
- Mode CALIBRATE: pre-define calibration procedures and work with them in the field. Afterwards download calibration data to PC with optional PC-software for creating certificates, etc.
- Mode SWITCH-TEST: shows switching points and calculates hysteresis.
- Complete calibration kits LR-*Cal* **LPP-KIT** available, incl. portable pressure test pumps, adapters, etc.. See LR-*Cal* **LPP-KIT**.

LR-*Cal* **LPC 300** for calibration service companies, service industry, maintenance facilities, measurement and control laboratories, quality assurance. Portable in the field or on bench in laboratory/workshop.

For a solution that always machtes your application, there are many different pressure reference sensors LR-*Cal* **LPC-S** to choose from, with accuracies up to 0.025% and measuring ranges up to 6000 bar (87000 psi), which can be interchanged quickly and without tools. If the reference pressure sensor on the instrument is changed, then the digital indicator will recognise the new measuring range and so this saves the operator from having to configure it via menu. In addition to being fixed to the instrument, the reference pressure sensor can, optionally, be used externally via an approx. 1.2 m (4 ft.) long connecting cable.

In the setup menu, there are 3 operating modes to choose from. A menu assistant supports the user during each operation and records, for example , the calibration data from several calibrations or automatically calculates the switch hysteresis. To power the test item and to read ist measurement signals, there are electrical inputs and outputs which are protected from adverse conditions in the field by optional protection caps.

For the evaluation and documentation of the calibration data stored in the LR-*Cal* **LPC 300** the software LR-*Cal* **LPC300-*Cal*** is available. Using this software, the data is automatically transferred into a printable calibration certificate. For data transfer, an USB and RS232 interface are available at the LR-*Cal* **LPC 300**.

For mobile maintenance and service applications, various service case kits LR-*Cal* **LPP-KIT** are available. These include service cases with or without pressure generation, charger, test-cable set, adapters, etc.

A mains charger 115...230 VAC with EU-/UK-/US-adapters and a test-cable set are included in standard delivery.

Image (left):
LR-*Cal* **LPC 300** with 4 reference sensors LR-*Cal* **LPC-S** in optional transit case.

Image:
Electrical ports at the LR-*Cal* **LPC 300**

Архангельск (8182)63-90-72
Астана (7172)727-132
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89
Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Иркутск (395)279-98-46
Казань (843)206-01-48
Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Липецк (4742)52-20-81
Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижний Новгород (831)429-08-12
Новокузнецк (3843)20-46-81
Новосибирск (383)227-86-73
Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Пермь (342)205-81-47
Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Санкт-Петербург (812)309-46-40
Саратов (845)249-38-78
Севастополь (8692)22-31-93
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сургут (3462)77-98-35
Тверь (4822)63-31-35
Томск (3822)98-41-53
Тула (4872)74-02-29
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Ярославль (4852)69-52-93
Киргизия (996)312-96-26-47
Россия (495)268-04-70
Казахстан (772)734-952-31
https://leitenberger.nt-rt.ru/ || bge@nt-rt.ru

LPC 300 Documenting process and pressure calibrator with up to 10 measuring ranges, ±0.025% FS

LR-Cal

Reference pressure sensors LR-*Cal* LPC-S for LR-*Cal* LPC 300

Min. 1 sensor, max. 10 sensoren with one LR-*Cal* **LPC 300** instrument. Direct connected or externally via optional extension cable 1.2 m (Order-Code: **LPC-KABEL**)

Pressure range	**[bar]**	**0...0.25**	**0...0.4**	**0...0.6**	**0...1**	**0...1.6**	**0...2.5**	**0...4**	**0...6**	**0...10**	**0...16**
Overpressure limit	[bar]	1.6	2	4	5	10	10	14	35	35	80
Burst pressure	[bar]	2.4	2.4	4.8	6	12	12	20.5	40	42	96
Accuracy of measuring chain:	±0.025% FS (calibrated at 23°C (74°F) and in vertical mounting position, pressure connection facing downwards)										
Pressure range	**[bar]**	**0...25**	**0...40**	**0...60**	**0...100**	**0...160**	**0...250**	**0...400**	**0...600**	**0...700**	**0...1000**
Overpressure limit	[bar]	80	80	120	200	320	500	800	1200	1200	1500
Burst pressure	[bar]	96	96	550	800	1000	1200	1700	2400	2400	3000
Accuracy of measuring chain:	±0.025% FS (calibrated at 23°C (74°F) and in vertical mounting position, pressure connection facing downwards)										
Pressure range	**[bar]**	**-0.4...0**	**-0.6...0**	**-1...0**	**-0.25...+0.25**	**-0.4...+0.4**	**-0.6...+0.6**	**-1...+1.5**	**-1...+3**	**-1...+5**	**-1...+9**
Overpressure limit	[bar]	2	4	5	2	4	5	10	14	35	35
Burst pressure	[bar]	2.4	4.8	6	2.4	4.8	6	12	20,5	40	42
Accuracy of measuring chain:	±0.025% FS (calibrated at 23°C (74°F) and in vertical mounting position, pressure connection facing downwards)										
Pressure range	**[bar]**	**-1...+10**	**-1...+15**	**-1...+20**	**-1...+24**	**-1...+39**					
Overpressure limit	[bar]	35	80	80	80	80					
Burst pressure	[bar]	42	96	96	96	96					
Accuracy of measuring chain:	±0.025% FS (calibrated at 23°C (74°F) and in vertical mounting position, pressure connection facing downwards)										
Pressure range	**[bar]**	**0...1600**	**0...2500**	**0...4000**	**0...5000**	**0...6000**					
Overpressure limit	[bar]	2300	3500	5000	6000	7000					
Burst pressure	[bar]	4000	6000	8000	10000	11000					
Accuracy of measuring chain:	±0.1% FS (calibrated at 23°C (74°F) and in vertical mounting position, pressure connection facing downwards)										

All pressure ranges from **0...0.4 bar to 0...25 bar** are also available as **absolute** pressure ranges.

Techncal data LR-*Cal* LPC 300

Anzeige	
Display	Large TFT colour screen for the display of reference and test signals and additional information
Display resolution	up to 6 digits, adjustable
Pressure units	mbar, bar, psi, Pa, hPa, Mpa, mmHg, cmHg, inHg, mmH2O, cmH2O, mH2O, inH2O, kg/cm² and a customer-specific unit (freely selectable dependant on measuring range)
Funktions	
Operating modes	MEASURING, CALIBRATION and SWITCH-TEST
Measurement rate	2 values per second
Functions	MEASURING, CALIBRATION, SWITCH-TEST Min-/Max memory, Tare, Min-/Max alarm (audible/visual), filter (running average), zero-point adjustment, PowerSave function
Menu languages	German, English, Spanish, French, Italian (settable), or Russian
CALIBRATE function	
Memory capacity	up to 16 test items
Test points / test item	up to 32 comparison points per test item
SWITCH-TEST function	
Switch points	Determination of the switch points and automatic calculation of the hysteresis
Measuring input: Voltage	
Measuring ranges	0...1 VDC, 0...2 VDC, 0...5 VDC, 0...10 VDC
Resolution	up to 6 digits, adjustable
Accuracy	1 mV
Measuring input: Current	
Measuring ranges	0...20 mA, 4...20 mA
Resolution	up to 6 digits, adjustable
Accuracy	5 µA
Output	
Voltage supply	24 VDC (load: max. 50 mA; min. 20 mA), can be activated via menu
Power supply	
Supply	Internal Lithium-Ion rechargeable battery (charging time < 6 h)
Battery life	approx. 20 hours of operation
Permissable ambient conditions	
Operating temperature	0...50°C (32...122°F)
Storage temperature	-20...+70°C (-4...+158°F)
Relative humidity	0...85% r.h. (non-condensing)
Communication	
Interfaces	USB and RS232
Case	
Material	Impact-resistant ABS plastic, membrane keypad, transparent screen
Ingress protection	IP 54 (with proctection caps closed)
Dimensions	156 mm x 208 mm x 78 mm (incl. direct mounted reference sensor)
Weight	approx.. 850 g (1.87 lbs) (without reference sensor)

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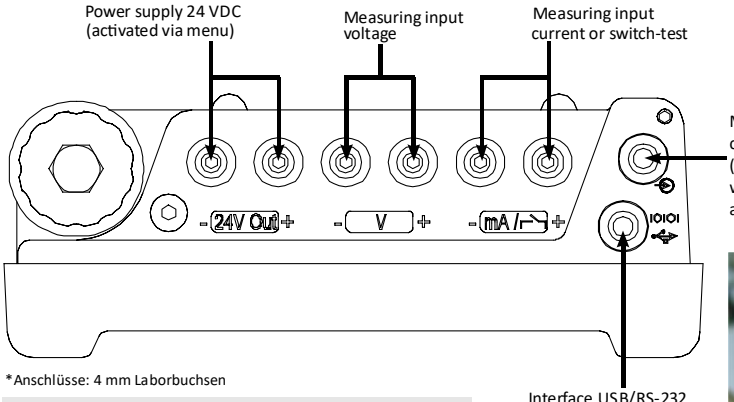
Technical data LR-*Cal* LPC-S sensor for LR-*Cal* LPC 300

Pressure connection	≤ 1000 bar: 1/2" BSP male (optional several threaded adapters available) ≥ 1600 bar: M16 x 1.5 female with sealing cone 60°
Material	
Wetted parts	Stainless steel (ranges ≥ 40 bar...≤ 1000 bar: Elgiloy® in addition)
Internal transmission fluid	Only for measuring ranges up to 25 bar (360 psi): synthetic oil For optional oxygen variants: Halocarbon oil (max. +60°C / +140°F)
Sensor specifications	
Accuracy per year	≤ 0.025% FS (only with related LR-*Cal* **LPC 300**) Ranges ≥ 1600 bar: ±0.1% FS
Compensated range	0...50°C (32...122°F)
Permissible ambient conditions	
Medium temperature	-20...+80°C / -4...+176°F (optional oxygen variants: max. +60°C / +140°F)
Operating temperature	-20...+80°C / -4...+176°F
Storage temperature	-40...+85°C / -40...+185°F
Relative humidity	0...95% r.h. (non-condensing)
Case	
Material	Stainless steel
Connection to LR-*Cal* **LPC 300**	Plug and Play, direct (optional: externally via extension cable 1.2 m / 4 ft.)
Ingress protection	IP65 (with cable connected)
Dimensions	Height 126 mm x largest diameter 40 mm
Weight	approx. 230 g (0.5 lbs.)
Output signal	Digital communication to LR-*Cal* **LPC 300**

Conformities, approvals and certifications

- EMC directive 2004/108/EC, EN 61326 emission (group 1, class B) and interference immunity (LR-*Cal* **LPC 300**: portable measuring equipment and LR-*Cal* **LPC-S**: industrial application)
- Pressure equipment directive 97/23/EC, module A, PS > 200 bar, pressure accessory
- Traceable factory certificates of calibration for pressure, current and voltage measurement
  Optional: DAkkS (DKD) certification for pressure measurement

Electrical connections at the instrument LR-*Cal* LPC 300

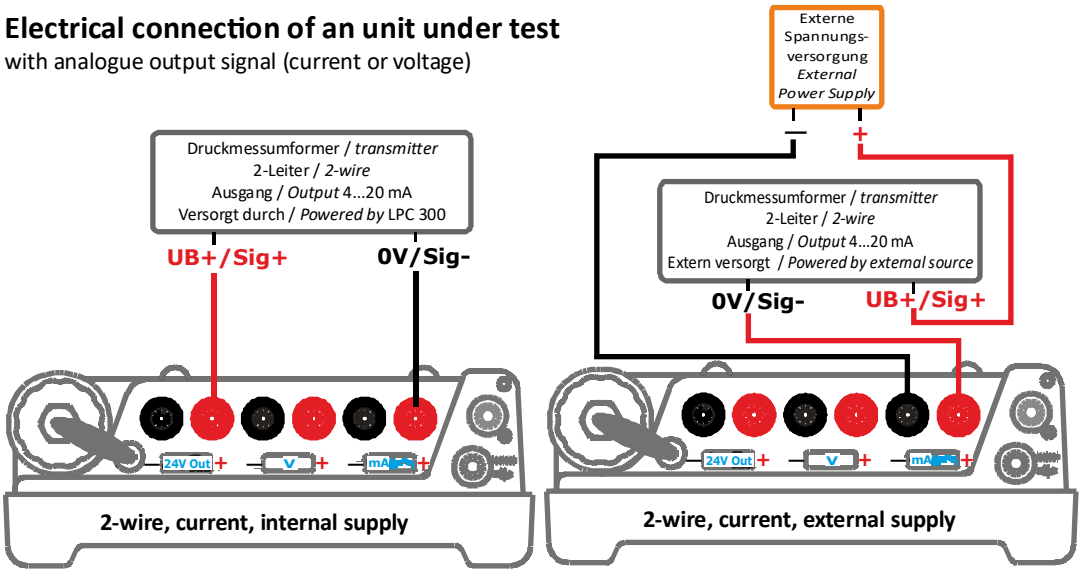


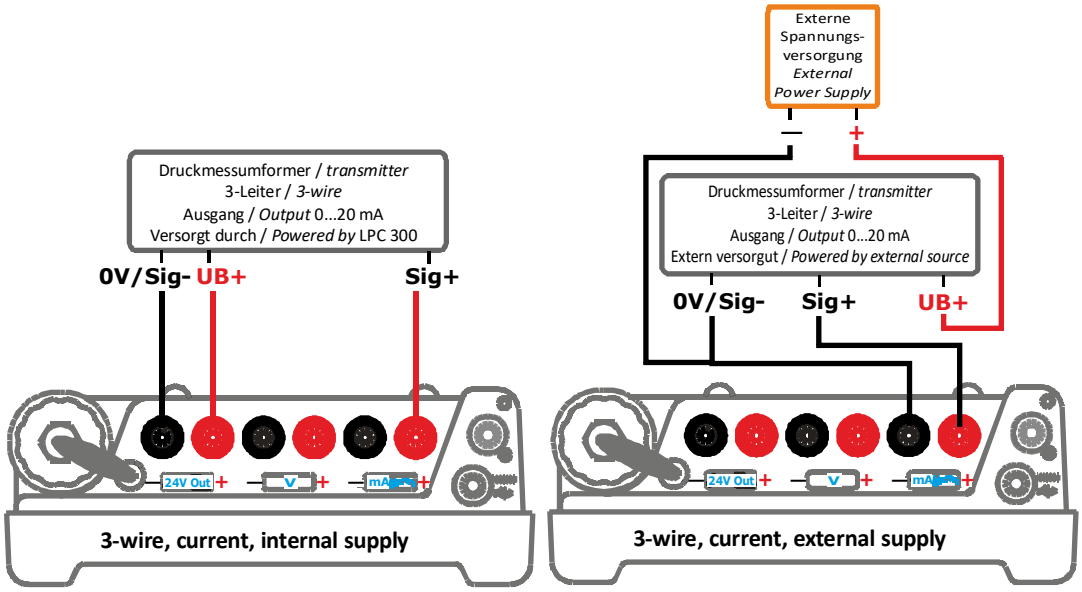
*Anschlüsse: 4 mm Laborbuchsen

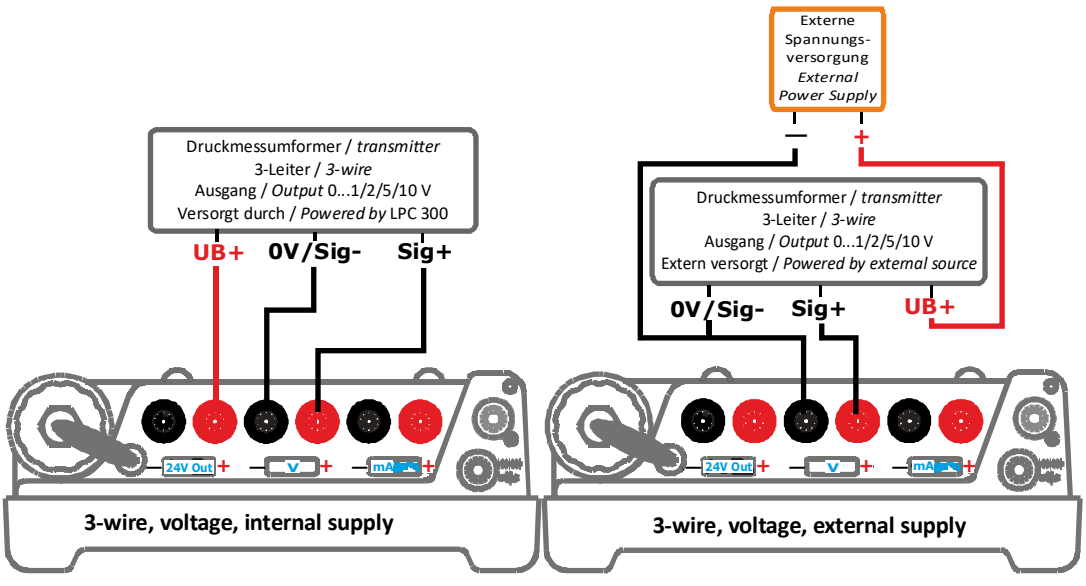
LR-*Cal* **LPC 300** with pressure comparison pump LR-*Cal* **LSP 1200-H**

Electrical connection of an unit under test

with analogue output signal (current or voltage)







User interface

1 - Setup menu

2 - Selection and entry confirmation

3 - One step back

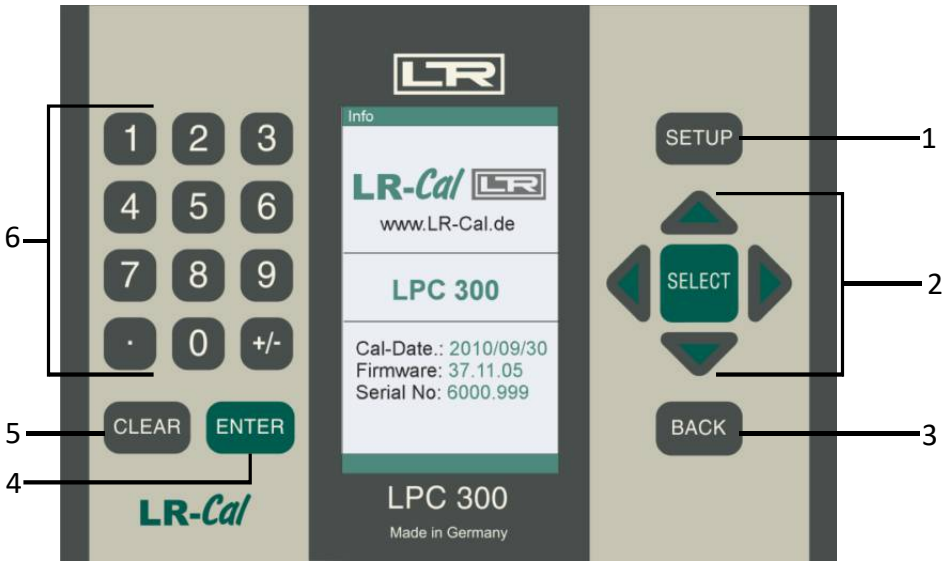
4 - Clear entry

5 - Entry acknowledgement

6 - Numeric keypad

Switch ON:
via pressing any button/key.

Switch OFF:
via menu item in main menu



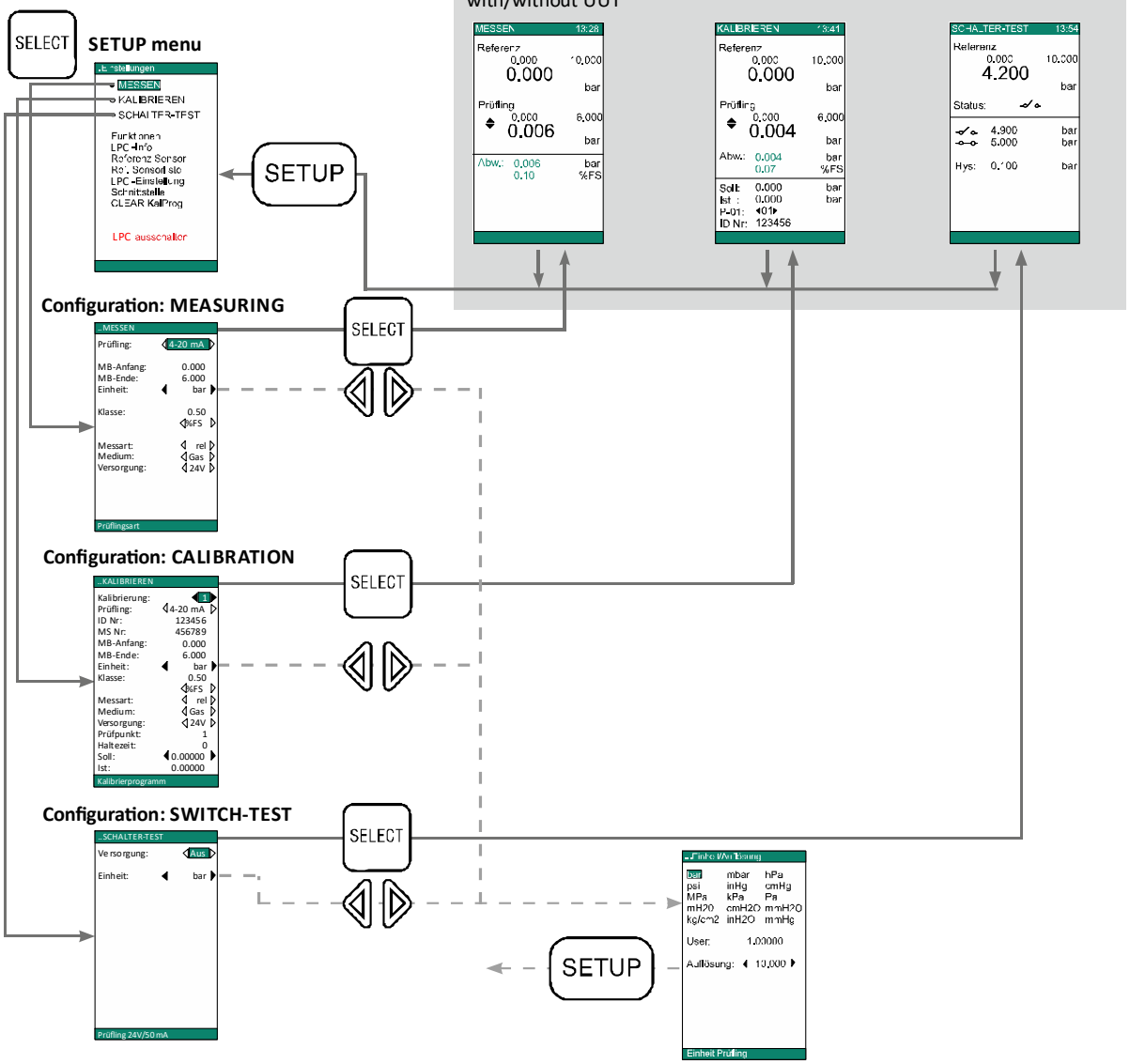
Operating modes

MEASURING
with/without UUT

CALIBRATION

SWITCH-TEST

Menu structure

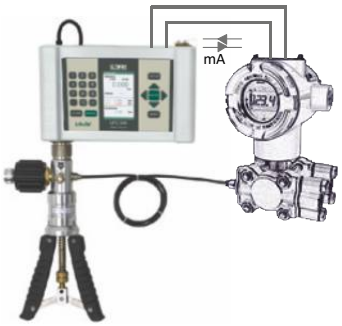


LPC 300 Documenting process and pressure calibrator with up to 10 measuring ranges, ±0.025% FS

LR-*Cal*

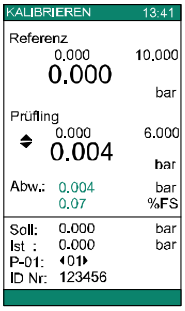
Reference pressure sensor **LR-*Cal* LPC-S** mounted directly at the **LR-*Cal* LPC 300** instrument:

Reference pressure sensor **LR-*Cal* LPC-S** externally with optional extension cable connected to **LR-*Cal* LPC 300**



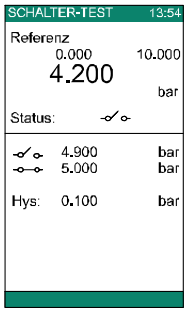
Mode: MEAURE

Mode: CALIBRATE



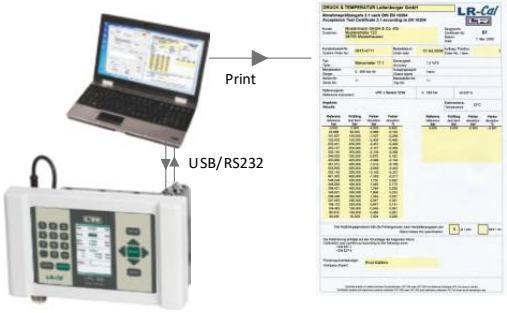
The menu guids the user through the steps to configure and carry out calibrations and measurements. Different height levels between reference and unit ander test can be specified and automatically corrected.

Mode: SWITCH-TEST



Comfortable checking and testing of pressure switches. Indication of switch points and automatically calculation of the hysteresis.

Optional PC software LR-*Cal* LPC300-*Cal*



- Calibration of pressure transmitter, pressuge gauges on site, online, with or offline without PC or laptop.
- A calibration assistant guides through the calibration, considering the DKD/DAkkS guidelines (e.g. dwell times, pre-charges, etc.) The data is stored including date & time in the instrument's memory. Calibration procedures can be pre-defined with the calibrator.
- With the **LR-*Cal* LPC300-Cal** software the stored calibration data can be downloaded to PC/laptop and printed out as certificate.

Requirement for the usage of this software:
LR-*Cal* LPC 300 device with firmware version **24.05** or younger.

Komplette Test-, Service- und Kalibrierkoffer

Transit and service case including pressure test pump(s), set(s) of threaded adapters and software. See datasheet **LR-*Cal* LPP-KIT** resp. brochure„Portable Pressure Calibration".

Rel. 20190916

HIGH ACCURACY digital pressure reading instrument
Model: LR-*Cal* TLDMM 2.0
Accuracy ±0.05% FS, above 2000 bar ±0.1% FS
Pressure ranges from 0...100 mbar to 0...3000 bar
USB interface
Optional with data logging functionality
Measurement and indication of medium temperature
Always visible analogue bargraph pressure indication
Chargeable battery, easy charging via USB

The digital reference pressure gauge **LR-*Cal* TLDMM 2.0** is featured with an outstanding longterm stability. It is perfect for reference pressure measurements, for testing and calibration purposes. Together with the portable pressure test pumps **LR-*Cal* LPP 40**, as well as **LR-*Cal* LPP 700** or **LR-*Cal* LPP 1000** it can be use mobile, on site. For higher pressure values we recommend our pressure comparison pumps **LR-*Cal* LSP**.

The **LR-*Cal* TLDMM 2.0** is powered by a rechargeable li-ion battery and is fitted with an USB interface. The instrument measures also the temperature of the pressure medium. A transit case, an USB charger and an traceable ACCREDIA certificate (equal to DAkkS, absolute ranges in gauge pressure, ranges 2500 bar and 3000 bar factory certificate) are included in standard delivery.

Options:
- Version for panel mounting with pressure port at the back side, additional order-code **TLDMM-2.0-EB**
- With data logger functionality, additional order-code **TLDMM-2.0-DL**
- Version for external power supply 12...24 VDC (instead of battery operation), additional order-code **TDLMM-2.0-ES**

Technical Data:

Accuracy (Linearity and Hysteresis)		≤±0.05% FS (ranges 2500 bar and 3000 bar: ≤±0.1% FS)
Pressure ranges:		Gauge pressure, absolute pressure, compound ranges, see table on next page
Pressure units (selectable):		bar, mbar, psi, Mpa, kPa, kg/cm², mHg, mmHg, mmH2O, mH2O
Temperature units (selectable):		°C, °F
Resolution medium temperature display:		0.1°C
Accuracy medium temperature display:		±1°C
Reference temperature:		0...50°C
Operating temperature:		-10...+60°C
Relative humidity:		<90%, non-condensing
Temperature effect (1°C):		≤±0.002%
Internal resolution:		24 bit
Conversions per second:		10 (100 ms)
Display:		7 segments, backlight, height 13 mm
Resolution pressure display:		1, 2, 5 or 10, settable
Function: digital filter		from 0 to 5, settable
Function: zero setting		100% FS
Function: PEAK		Positive and negative (vakuum) = MAX peak and MIN peak
Funktion: LOOP		Automatic switch between pressure and medium temperature indication
Funktion: Lock		Changement of parameters only after entering of password
Interface:		USB 2.0 (transmission on key press or continuously, settable)
Transmission rate:		10 values per second at continuous transmission
Maximal distance:		5 m
Power supply:		1 chargeable li-ion battery 3.6 V - 1800 mA/h
Autonomy:		50 hours continuously
Battery charging:		via USB interface (5 VDC)
Optional external power supply:		12...24 VDC
Pressure limit values:		Steady pressure 100% FS; pulsating/dynamic pressure 75% FS
Overpressure and burst pressure:		150% FS, burst pressure >300% FS
Pressure port:		1/2" BSP male, for ranges ≥1000 bar 2 sealing coins 60° are supplied
Recommended sealing:		USIT A 63-18, for ranges ≥ 1000 bar use one of the supplied sealing cone 60°
Tightening torque:		28 Nm
Protection class (EN 60529):		IP 40
Materials:		Sensor/pressure port: stainless steel 17-4 PH, Housing: Aluminium, black coated
OPTIONS:	Order-Code:	
Data logger functionality:	**TLDMM-2.0-DL**	Integr. real time clock; 130,000 pressure values or 65,000 pressure values plus 65,000 temperature values Settable storing rate (max. 1 s); max. recording duration: 10,000 h (it may be necessary to recharge the instrument)
Panel built-in version:	**TLDMM-2.0-EB**	Glass-fiber reinforced technopolymer housing
External power supply:	**TLDMM-2.0-ES**	No internal battery, supply from 12 to 24 VDC required

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TLDMM 2.0

Reference digital pressure gauge
Accuracy ±0.05% FS

LR-Cal

Order-Codes and Pressure Ranges:

		bar		mbar		psi		Mpa	
Order-Code	Range	Display	Resolut.	Display	Resolut.	Display	Resolut.	Display	Resolut.
Gauge Pressure									
TLDMM-2.0-8010	**0…100 mbar**	0.1000	0.0001	100.00	0.01	1450	0.002	0.0100	0.0001
TLDMM-2.0-8025	**0…250 mbar**	0.2500	0.0001	250.00	0.05	3620	0.002	0.0250	0.0001
TLDMM-2.0-8050	**0…500 mbar**	0.5000	0.0001	500.00	0.05	7200	0.002	0.0500	0.0001
TLDMM-2.0-0001	**0…1 bar**	10000	0.0001	1000.0	0.1	14500	0.002	0.1000	0.0001
TLDMM-2.0-0002	**0…2.5 bar**	25000	0.0005	2500.0	0.5	36200	0.005	0.2500	0.0001
TLDMM-2.0-0005	**0…5 bar**	50000	0.0005	5000.0	0.5	72500	0.010	0.5000	0.0001
TLDMM-2.0-0010	**0…10 bar**	10000	0.001	10000	1	145.00	0.02	10000	0.0001
TLDMM-2.0-0020	**0…20 bar**	20000	0.002	20000	2	290.00	0.02	20000	0.0002
TLDMM-2.0-0050	**0…50 bar**	50000	0.005	50000	5	725.00	0.10	50000	0.0005
TLDMM-2.0-0100	**0…100 bar**	100.00	0.01	99900	10	1450.0	0.2	10000	0.001
TLDMM-2.0-0250	**0…250 bar**	250.00	0.02	99900	20	3620.0	0.5	25000	0.002
TLDMM-2.0-0350	**0…350 bar**	350.00	0.05	99900	50	5000.0	0.5	35000	0.005
TLDMM-2.0-0500	**0…500 bar**	500.00	0.05	99900	50	7250.0	0.2	50000	0.005
TLDMM-2.0-0700	**0…700 bar**	700.00	0.05	99900	50	10000	0.2	70000	0.005
TLDMM-2.0-1000	**0…1000 bar**	1000.0	0.1	99000	100	14500	2	100.00	0.01
TLDMM-2.0-1500	**0…1500 bar**	1500.0	0.2	99000	200	21700	5	150.00	0.02
TLDMM-2.0-2000	**0…2000 bar**	2000.0	0.2	99000	200	29000	5	200.00	0.02
TLDMM-2.0-2500	**0…2500 bar**	2500.0	0.2	99000	200	36250	5	250.00	0.02
TLDMM-2.0-3000	**0…3000 bar**	3000.0	0.2	99000	200	43500	5	300.00	0.02
Compound Pressure									
TLDMM-2.0-1001	**-1…+1 bar**	10000	0.0001	1000.0	0.1	14500	0.002	0.1000	0.0001
TLDMM-2.0-1002	**-1…+2.5 bar**	25000	0.0005	2500.0	0.5	36200	0.005	0.2500	0.0001
TLDMM-2.0-1005	**-1…+5 bar**	50000	0.0005	5000.0	0.5	72500	0.010	0.5000	0.0001
TLDMM-2.0-1010	**-1…+10 bar**	10000	0.001	10000	1	145.00	0.02	10000	0.0001
TLDMM-2.0-1020	**-1…+20 bar**	20000	0.002	20000	2	290.00	0.02	20000	0.0002
Absolute Pressure									
TLDMM-2.0-001A	**0…1 bar**	10000	0.0001	1000.0	0.1	14500	0.002	0.1000	0.0001
TLDMM-2.0-002A	**0…2.5 bar**	25000	0.0005	2500.0	0.5	36200	0.005	0.2500	0.0001
TLDMM-2.0-005A	**0…5 bar**	50000	0.0005	5000.0	0.5	72500	0.010	0.5000	0.0001
TLDMM-2.0-010A	**0…10 bar**	10000	0.001	10000	1	145.00	0.02	10000	0.0001

Scope of delivery:

- Instrument **LR-*Cal* TLDMM** 
- USB charger(5 VDC/700 mA) 
- USB cable 
- Transit case with foam insert 
- Operating manual
- ACCREDIA certificate (equal to DAkkS), at absolute pressure ranges in gauge pressure, Range 2500 bar and 3000 bar factory certificate of calibration
- At pressure ranges 1000 bar or higher: 2 sealing cones 60° 

Accessory (to be ordered separately):

- For version for external power supply: External power supply 220 VAC to 12 VDC. Order-Code: **TLDMM-2.0-NT**

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Dimension:

Dimension of version for panel mounting:

Additional order-code: **TLDMM-2.0-EB**

Ordering examples:

0...100 bar, standard version:	No.: **TLDMM-2.0-0100**
0...100 bar, with data logging functionality:	No.: **TLDMM-2.0-0100** + **TLDMM-2.0-DL**
0...100 bar, for external power supply:	No.: **TLDMM-2.0-0100** + **TLDMM-2.0-ES**
0...100 bar, for panel mounting, for ext. power supply:	No.: **TLDMM-2.0-0100** + **TLDMM-2.0-EB** + **TLDMM-2.0-ES**
0...100 bar, with data logging, for panel mounting:	No.: **TLDMM-2.0-0100** + **TLDMM-2.0-DL** + **TLDMM-2.0-EB**

Rel. 20190221

Electronic Pressure Calibrator LR-*Cal* LPC 200, changeable pressure sensors

- Very simple operation, easily-read display (backlighting selectable)
- Changeable reference sensors (plug & play)
  this means, up to 10 pressure ranges with one instrument
- Ranges from 0...5.8 psi (400 mbar) up to 0...87000 psi (6000 bar)
  (also vacuum-, compound- and absolute pressure ranges)
- Accuracy up to 1000 bar: ±0.025% f.s.; up to 6000 bar: ±0.1% f.s.
- Logging function, pressure rate, min-/max value, Bargraph, Tare
- Issue calibration certificates with optional
  PC-Windows® -software **LPC-*Cal***
- Pressure calibration kit's, co mplete with calibration hand pumps
  as portable pressure source
- Chargeable Lithium-Ion battery, incl. Charger, USB-interface
- Switchable pressure unit PSI, bar, mbar, kPa, mmHg, inHg

Together with a suitable calibration pressure source like the calibration hand pumps **LR-*Cal* LPP 40** (pneumatic) or **LR-*Cal* LPP 700** / **LPP 1000** (hydraulic), the **LR-*Cal* LPC 200** offers a pecision pressure calibration system, suitable also for use on site, portable. The **LR-*Cal* LPC 200** also opens up other helpfull applications, e.g. recording of pressure curves (logging function), leak testing (pressure rate function). These useful functions can be easily activated or deactivated by pressing the respective keys.
A factory calibration certificate for each reference sensor certifies the total uncertainty of the measuring chain. Alternatively, on request, a DAkkS calibration certificate can be supplied.

Using the optional **LPC-*Cal*** software, the logged data, stored in the **LR-*Cal* LPC 200**, can be transferred to a PC via a USB connection, where it can be stored in an Excel® file for documentation and further evaluation. In addition, **LPC-*Cal*** offers the possibility of PC-supported calibration of pressure measuring instruments using the **LR-*Cal* LPC 200**.

Technical Data (Indicator LR-*Cal* LPC 200 together with reference sensor LPC-2):

Standard Pressure Ranges (PSI)	**5.8**	**23.2**	**87**	**232**	**580**	**1450**	**3626**	**8700**	**14500**
Standard Pressure Ranges (bar)	**0.4**	**1.6**	**6**	**16**	**40**	**100**	**250**	**600**	**1000**
Overpressure safety (bar)	2	10	35	80	80	200	500	1200	1500
Burst pressure (bar)	2.4	12	42	96	400	800	1200	2400	3000
Accuracy (Total uncertainty of measurement chain)	0.025% FS, calibrated at 23°C and in vertical mounting position with pressure conn. facing down.								
High Pressure Ranges (PSI)	**23200**	**36200**	**58000**	**72500**	**87000**				
High Pressure Ranges (bar)	**1600**	**2500**	**4000**	**5000**	**6000**				
Overpressure safety (bar)	2000	3000	4400	6000	7000				
Burst pressure (bar)	4000	5000	7000	10000	11000				
Accuracy (Total uncertainty of measurement chain)	0.1% FS (calibrated at 23°C and in vertical mounting position with pressure conn. facing down.)								
Type of pressure	see above (standard and high pressure ranges) but also vacuum-, compound- and absolute pressure ranges								
Units of pressure	bar, mbar, kPa, mmHg, inHg, PSI (depending on range, switchable)								
Active temperature compensation	+10...+40°C								
Permissible ambient temperature	0...+50°C								
Calibration	Traceable factory certificate of calibration (optional: DAkkS certificate of calibration)								

LPC 200 Electronic Pressure Calibrator LR-*Cal* LPC 200
Accuracy up to ±0.025% FS, max. 6,000 bar

LR-*Cal*

Technical Data Indicator LR-*Cal* LPC 200:

Display	large graphic display, with backlighting on/off selectable
Display resolution	up to 6 digits, selectable
Measuring rate (pressure)	5 values per second
Functions	min-, max-memory, tare, pressure rate, filter, zeropoint-adjustment
Data logger	up to 1000 values, cycle time adjustable 1...3600 seconds
Interface	USB
Power supply	internal Lithium-Ion rechargeable battery (charging time <6 h) alternative: mains supply via charger
Battery operation	approx. 25 hours
Permissible air humidity	0...85% r.h. at 50°C, non-condensing
Permissible storage temperature	-20...+60°C
Housing material	Polyamide 12, membrane keyboard, transparent panels
Ingress protection	IP 65
Weight (without sensor)	approx. 480 g
Dimensions (without Sensor)	width x height x depth: 75/106 x 50/82 x 194 mm
CE-conformity	interference emission and immunity to EN 61326 declaration of conformity on request

Technical Data Reference Sensors LPC-2:

Pressure connection	up to 1000 bar:1/2" BSP male (other on request) >1000 bar: high pressure port M16 x 11,5 female, with sealing cone
Wetted parts (material)	stainless steel
Permissible medium temperature	-30...+105°C
Permissible storage temperature	-40...+85°C
Housing material	stainless steel
Electrical connection	round plug, 8-pole, suitable for LR-*Cal* **LPC 200**
Weight	approx. 220 g
Dimensions	diameter x height: 40 x 102,5 mm
CE-conformity	89/336/EWG interference emission and immunity to EN 61326 97/23/EG pressure equipment directive (module H)

Scope of Supply:

- Indicator LR-*Cal* **LPC 200**
- 1 reference sensor **LPC-2** (optional up to 9 more reference sensors = pressure ranges possible)
- Factory certificate of calibration 3.1 as per EN 10204
- Battery charger 115...230 VAC, incl. several adaptors
- Operating manual

The LPC-2 reference sensor(s) have to be ordered as separate item(s)

LPC200-MAH

LPC200-SCH

Options / Accessories:

- DAkkS certificate of calibration
- Thread adaptors for pressure connection
- MINIMESS ® quick-connectors and hoses
- **LPC200-MAH magnetic hook**
- **LPC200-SCH supporting loop**
- USB interface cable and PC-Windows-Software **LPC-*Cal***
- Calibration handpump LR-*Cal* **LPP 40**, LR-*Cal* **LPP 700**, LR-*Cal* **LPP 1000** and case (complete pressure calibration kit's LR-*Cal* **LPP-KIT**)

Rel. 20210401

Digital reference pressure gauge and data logger
Model: LR-*Cal* LDM 80
Accuracy ±0.2% FS, optional ±0.1% FS
Pressure ranges from 0...100 mbar to 0...3000 bar
USB interface, optional WIRELESS data transmission
Optional with Pressure Switch Test function
Incl. measurement of medium temperature
and allways visible analogue bargraph display
Chargeable battery, easy charging via USB

The digital reference pressure test gauge **LR-*Cal* LDM 80** is featured with an outstanding longterm stability. It is perfect for reference pressure measurements, for testing and calibration purposes. Together with the portable pressure test pumps **LR-*Cal* LPP 40**, as well as **LR-*Cal* LPP 700** or **LR-*Cal* LPP 1000** it can be used mobile, on site. For higher pressure values we recommend our pressure comparison pumps **LR-*Cal* LSP**.

The **LR-*Cal* LDM 80** is powered by a rechargeable li-ion battery and is fitted with an USB interface. In addition, the device is featured with a data logging function (max. 60,000 values) and it measures the temperature of the pressure medium. A transit case, an USB charger and a traceable factory certificate of calibration are included in standard delivery.

Optional, the **LR-*Cal* LDM 80** is available with electrical connection for pressure switch tests or with WIRELESS transmission of data to PC/Laptop (instead of via USB interface).

Technical Data:

Internal resolution: 65,000 div.
Measurements per second (if filter is set to 0): 10 (100 ms).
Pressure measurement/indication: see table on page 2. Accuracy ±0.2% FS, optional ±0.1% FS (Code **LDM80-KL01**).
Filter: programmable digital filter for stabilisation of displayed values also at fluctuating pressures.
Temperature measurement/indication: Resoultion 0.1°C; Accuracy ±1°C (range -10...+70°C, ambient temp. 0...50°C).
Reference temperature: +23°C.
Working temperature range: -10...+70°C.
Storage temperature range: -10...+80°C.
Temperature influence: ≤±0.002%/1°C.
Display: LCD 13 mm; with programmable backlight (1...60 seconds, or off).
Programmable resulution: 1, 2, 5, 10.
Interface: USB 2.0 (virtual COM port on PC/Laptop, programmable baud rate19200, 9600 or 4800)
Optional: WIRELESS, RF frequency 433 MHz, RF transmission 200 m in free air, max. 10 transmissions per second.
ZEROing: Via key press, up to 50% of FS.
Maximal-/Minimal values: PEAK function, aktive at positive and negative pressures, 10 measurements per sedond
Pressure units: selectable; bar, mbar, psi, MPa, kPa, kg/cm², mHg, mmHg, mmH2O, mH2O.
Temperature units: selectable; °C, °F.
Data logger: max. storing frequency: 1 value per second, capacity max. 60,000 measured values
(= 60,000 pressure values or 30,000 pressure values plus 30,000 temperature values)
Supply: rechargeable inside li-ion-battery 3.7 V, type 523450, autonomy approx. 3 months (if backlight of display is switches off and without optional WIRELES data transmission, charging time approx. 8 hours (via PC/Laptop or supplied USB charger).
Pressure port: 1/2" BSP male, recommended gasket: USIT A 63-18. (Ranges >1000 bar: sealing cone **TLDMM-DK**).
Pressure limits: Static pressure up to 100% FS, max. permissible pressure up to 150% FS, breaking pressure >300% FS, at highly dynamic pressure max. 75% FS.
Pressure port mounting: Tightening wrench 27 mm, tightening torque 28 Nm.
Protection degree: IP 40
Materials: Indicator housing: black coated aluminium, pressure sensor and port: stainless steel.

LDM 80 Pressure Calibrator and Data logger LR-*Cal* LDM 80 Accurcy ±0.2% FS, optional ±0.1% FS

Order-Codes and Pressure Ranges

Order-Code	Pressure Range	Display	Resolution
LDM80-8010	0...100 mbar	100.0 mbar	0.1 mbar
LDM80-8025	0...250 mbar	250.0 mbar	0.1 mbar
LDM80-8050	0...500 mbar	500.0 mbar	0.1 mbar
LDM80-0001	0...1 bar	1.000 bar	0.001 bar
LDM80-0002	0...2.5 bar	2.500 bar	0.001 bar
LDM80-0005	0...5 bar	5.000 bar	0.001 bar
LDM80-0010	0...10 bar	10.00 bar	0.01 bar
LDM80-0020	0...20 bar	20.00 bar	0.01 bar
LDM80-0050	0...50 bar	50.00 bar	0.01 bar
LDM80-0100	0...100 bar	100.0 bar	0.1 bar
LDM80-0250	0...250 bar	250.0 bar	0.1 bar
LDM80-0350	0...350 bar	350.0 bar	0.1 bar
LDM80-0500	0...500 bar	500.0 bar	0.1 bar
LDM80-0700	0...700 bar	700.0 bar	0.1 bar
LDM80-1000	0...1000 bar	1000 bar	1 bar
LDM80-1500	0...1500 bar	1500 bar	1 bar
LDM80-2000	0...2000 bar	2000 bar	1 bar
LDM80-2500	0...2500 bar	2500 bar	1 bar
LDM80-3000	0...3000 bar	3000 bar	1 bar
LDM80-1010	-1...+1 bar	1.000 bar	0.001 bar
LDM80-1025	-1...+2.5 bar	2.500 bar	0.001 bar
LDM80-1050	-1...+5 bar	5.000 bar	0.001 bar
LDM80-1020	-1...+20 bar	20.00 bar	0.01 bar
LDM80-8050-ABS	0...0.5 bar absolute	0.5000 bar	0.0001 bar
LDM80-0001-ABS	0...1 bar absolute	1.000 bar	0.001 bar
LDM80-0002-ABS	0...2.5 bar absolute	2.500 bar	0.001 bar
LDM80-0005-ABS	0...5 bar absolute	5.000 bar	0.001 bar
LDM80-0010-ABS	0...10 bar absolute	10.00 bar	0.01 bar

Option LDM80-ST

Pressure swith with test, electr. male conn. 2-pin power jack 5x5 x 2.1 mm, at the bottom side of the housing.

Option LDM80-WF

Wireless (optional)

WIRELESS data transmission (instead of via USB interface). 100 m in free air, frequency 433 MHz, max. 10 transmissions per second.

Option LDM80-KL01

Accuracy ±0.1% v.E. instead of 0.2% incl. factory certificate of calibration

Option PC-WIRELESS

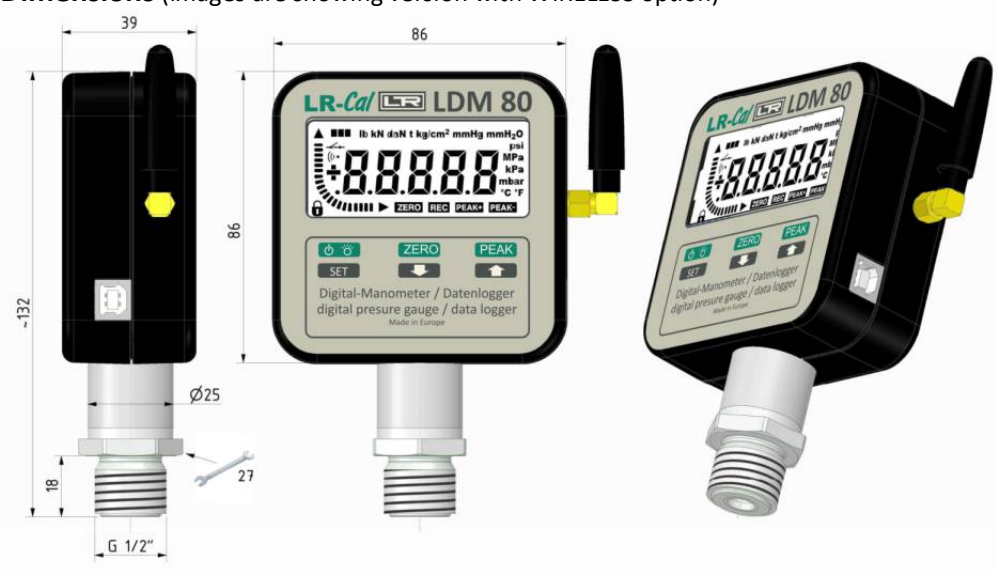
WIRELESS receiver to be connected to PC or Laptop (USB). Up to 5 LR-*Cal* **LDM 80** at one PC/Laptop.

PC/Laptop driver for USB (virtual COM port) is available for download on our internet site **www.druck-temperatur.de** on the related product page.

LDM80-DK Sealing cone 60° for the pressure port, recommended for pressure ranges > 1000 bar.

Scope of delivery: LR-*Cal* **LDM 80** + USB battery charger + USB cable + case + calibration certificate + operating manual

Dimensions (images are showing version with WIRELESS option)



LR-Cal

Digital Test Pressure Gauge LDM 70
battery operated, accuracy 0.125% or 0.25% FS

LDM 70

Rel. 20211117

Digital Test Pressure Gauge LR-*Cal* LDM 70-E25: with stainless steel sensor
Digital Test Pressure Gauge LR-*Cal* LDM 70-K50: with ceramic sensor

- Battery powered, rugged, rotatable housing (DS 70 mm)
- 4.5-digit LC display (digit height 11 mm)
- 6-digit additional display to show the selected pressure unit (height 7.5 mm)
- Pressure unit switchable (psi-bar/mbar-mWS-inHg-cmHg/mmHg-kPa/MPa)
- Easy configuration via three push buttons
- Ingress protection IP 65
- Ranges from 0/1.45 psi to 0/8,700 psi (0/100 mbar to 0/600 bar)
- MIN and MAX value storage

The display is continuously rotatable so that a clear readability is garanteed even in unusual installation positions. The **LR-*Cal* LDM 70** can be operated menu-driven via three push-buttons. Besides showing information about the nominal pressure range as well as minimal and maximal pressure of the process, several pressure units (PSI, bar, mbar, mWC, inHg, cmHg, mmHg, kPa, MPa) and the position of the decimal point can be set. The instruments zero and span can be calibrated, the **LR-*Cal* LDM 70** can be set to factory default values via menu.

Technical Data	LR-*Cal* LDM 70-E25 with stainless steel sensor	LR-*Cal* LDM 70-K50 with ceramic sensor
Accuracy:	**±0.125% FS (BFSL) *)**	**±0.25% FS (BFSL) **)**
Measurement rate:	5 measurements per second	5 measurements per second
Long term stability:	≤±0.1% FS / year at reference conditions	
Temperature error (zero and span): Pressure range -1...0 bar Pressure ranges ≤0,4 bar Pressure ranges ≥0,6 bar	Error band / compensated range: ≤±0.75 % FS / -20...+85°C ≤±1% FS / 0...+70°C ≤±0.75% FS / -20...+85°C	≤±0.2% FS / 10 K in compensated range 0...+85°C
Permissible medium temperature:	-20...+85	-20...+85°C
Permissible ambient temperature:	-20...+70°C	-20...+70°C
Permissible storage temperature:	-30...+80°C	-30...+80°C
Vibration resistance:	5 g RMS (25...2000 Hz) acc. to EN 60068-2-6	5 g RMS (25...2000 Hz) acc. to EN 60068-2-6
Shock resistance:	100 g / 1 ms acc. to EN 60068-2-27	100 g / 1 ms acc. to EN 60068-2-27
Material pressure port / housing:	Stainless steel 1.4404	Stainless steel 1.4404
Material display housing:	PA 6.6, polycarbonate	PA 6.6, polycarbonate
Material gaskets (wetted parts)	FKM	FKM
Material membrane:	**Stainless steel 1.4435**	**Ceramics Al2O2 96%**
Wetted parts:	Pressure port, gaskets, membrane	
Display:	LC, visible area 40 x 30 mm	
Display - main display:	4.5 digits, 7 segments, digits height 11 mm	
Display indication range:	±19999	
Display - additional display:	6 digits, 14 segments, digits height 7.5 mm	
Electromagnetic compatibility:	Interference emission and immunity according to EN 61326	
Power supply:	3.6 V lithium battery; 2 pcs. (1/2 AA)	
Internal data storage (configurations):	EEPROM (non-volatile)	
Degree of protection:	IP 65	
Mounting position:	any	
Weight:	approx. 300 g	
Resolution A/D converter:	14 Bit	
Battery life time:	Standby mode: approx. 5 year	
Mechanical life time:	100 million load changes	
CE conformity:	EMC directive 2014/30/EU Ranges > 200 bar: pressure equipment directive (PED): 2014/68/EU (module A)	

***)** equal to ±0.25% FS as per IEC 60770. Pressure Ranges < 0.4 bar: accuracy ±0.25% FS (BFSL), equal to ±0.5% FS as per IEC 60770.
****)** equal to ±0.5% FS as per IEC 60770.
Characteristic curve deviation as per IEC 60770 = minimum value setting (non-linearity, hysteresis, reproducibility) / BFSL = best fit straight line

The Digital Test Pressure Gauges **LR-*Cal* LDM 70-K50** are available as complete pressure calibration kits (case, with calibration testpump **LR-*Cal* LPP 40**, **LR-*Cal* LPP 60** or **LR-*Cal* LPP 700**).

For a stationary use, as calibration pressure source we recommend our pressure comparators (spindle pumps) series **LR-*Cal* LSP**.

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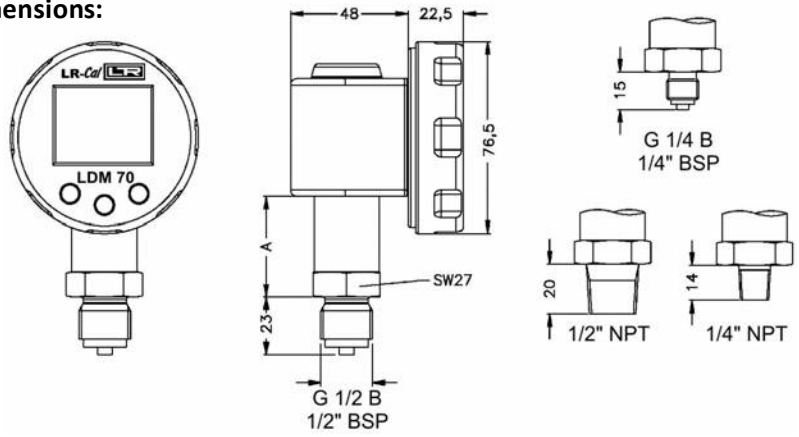
LDM 70 Digital Test Pressure Gauge LDM 70 battery operated, accuracy 0.125% or 0.25% FS

LR-Cal

Dimensions:



Dimension A:
pressure port 1/2" BSP: 62,5 mm
pressure port 1/4" BSP: 54,5 mm
pressure port 1/2" NPT: 60,5 mm
pressure port 1/4" NPT: 54,5 mm

	LR-Cal LDM 70-E25 with stainless steel sensor			LR-Cal LDM 70-K50 with ceramic sensor		
Accuracy:	**±0.125% BFSL *)** (equal to ±0.25% acc. to IEC 60770)			**±0.25% BFSL** (equal to ±0.5% acc. to IEC 60770)		
Pressure range **) [bar]	**Overload [bar]**	**Burst press. [bar]**	**Order Code starts with...**	**Overload [bar]**	**Burst press. [bar]**	**Order Code starts with...**
0...0.1	0.5	1.5	LDM70-E25-8100-0-	---	---	---
0...0.16	1	1.5	LDM70-E25-8160-0-	---	---	---
0...0.25	1	1.5	LDM70-E25-8250-0-	---	---	---
0...0.4	2	3	LDM70-E25-8400-0-	1	2	LDM70-K50-8400-0-
0...0.6	5	7.5	LDM70-E25-0000-6-	2	4	LDM70-K50-0000-6-
0...1	5	7.5	LDM70-E25-0001-0-	2	4	LDM70-K50-0001-0-
0...1.6	10	15	LDM70-E25-0001-6-	4	5	LDM70-K50-0001-6-
0...2.5	10	15	LDM70-E25-0002-5-	4	5	LDM70-K50-0002-5-
0...4	20	25	LDM70-E25-0004-0-	10	12	LDM70-K50-0004-0-
0...6	40	50	LDM70-E25-0006-0-	10	12	LDM70-K50-0006-0-
0...10	40	50	LDM70-E25-0010-0-	20	25	LDM70-K50-0010-0-
0...16	80	120	LDM70-E25-0016-0-	40	50	LDM70-K50-0016-0-
0...25	80	120	LDM70-E25-0025-0-	40	50	LDM70-K50-0025-0-
0...40	105	210	LDM70-E25-0040-0-	100	120	LDM70-K50-0040-0-
0...60	105	210	LDM70-E25-0060-0-	100	120	LDM70-K50-0060-0-
0...100	210	420	LDM70-E25-0100-0-	200	250	LDM70-K50-0100-0-
0...160	600	1000	LDM70-E25-0160-0-	400	500	LDM70-K50-0160-0-
0...250	1050	1250	LDM70-E25-0250-0-	400	500	LDM70-K50-0250-0-
0...400	1050	1250	LDM70-E25-0400-0-	600	650	LDM70-K50-0400-0-
0...600	1250	1250	LDM70-E25-0600-0-	800	880	LDM70-K50-0600-0-
-1...0	5	7.5	LDM70-E25-0000-0-	2	4	LDM70-K50-0000-0-
-1...+0.6	10	15	LDM70-E25-9000-6-	4	5	LDM70-K50-9000-6-
-1...+1.5	10	15	LDM70-E25-0001-5-	4	5	LDM70-K50-0001-5-
-1...+3	20	25	LDM70-E25-0003-0-	10	12	LDM70-K50-0003-0-
-1...+5	40	50	LDM70-E25-0005-0-	10	12	LDM70-K50-0005-0-
-1...+9	40	50	LDM70-E25-0009-0-	20	25	LDM70-K50-0009-0-
-1...+15	80	120	LDM70-E25-0015-0-	40	50	LDM70-K50-0015-0-
-1...+24	80	120	LDM70-E25-0024-0-	40	50	LDM70-K50-0024-0-
-1...+39	105	210	LDM70-E25-0039-0-	100	120	LDM70-K50-0039-0-

Process pressure port connection thread	Order Code ends with...
1/4" BSP male according to EN 837	-G14
1/2" BSP male according to EN 837	-G12
1/4" NPT male	-N14
1/2" NPT male	-N12

***)** Accuracy applies to ranges from 0...0.4 bar. Smaller ranges ±0.25% BFSL (corresponds to ±0.5% acc. to IEC 60770).

****)** Gauge pressure. For model LR-Cal **LDM 70-E25** ranges from 0...0,4 bar are available for **absolute** pressure reading.
For model LR-Cal **LDM 70-K50** ranges from 0...0.6 bar are available for **absolute** pressure reading.
Order Code for extra charge for **absolute** pressure measurement: LDM70-MP-ABS

Vacuum resistance: from measuring range 0...1 bar unrestricted vacuum resistant (for smaller ranges: on request).

OPTION: Factory calibration certificate, traceable, 11 points at increasing and decreasing pressure: LDM70-WZERT

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LR-Cal

Digital Test Pressure Gauge LDM 70
battery operated, accuracy 0.125% or 0.25% FS

LDM 70

Rel. 20211117

Digital Test Pressure Gauge LR-*Cal* LDM 70-E25: with stainless steel sensor
Digital Test Pressure Gauge LR-*Cal* LDM 70-K50: with ceramic sensor

- Battery powered, rugged, rotatable housing (DS 70 mm)
- 4.5-digit LC display (digit height 11 mm)
- 6-digit additional display to show the selected pressure unit (height 7.5 mm)
- Pressure unit switchable (psi-bar/mbar-mWS-inHg-cmHg/mmHg-kPa/MPa)
- Easy configuration via three push buttons
- Ingress protection IP 65
- Ranges from 0/1.45 psi to 0/8,700 psi (0/100 mbar to 0/600 bar)
- MIN and MAX value storage

The display is continuously rotatable so that a clear readability is garanteed even in unusual installation positions. The **LR-*Cal* LDM 70** can be operated menu-driven via three push-buttons. Besides showing information about the nominal pressure range as well as minimal and maximal pressure of the process, several pressure units (PSI, bar, mbar, mWC, inHg, cmHg, mmHg, kPa, MPa) and the position of the decimal point can be set. The instruments zero and span can be calibrated, the **LR-*Cal* LDM 70** can be set to factory default values via menu.

Technical Data	LR-*Cal* LDM 70-E25 with stainless steel sensor	LR-*Cal* LDM 70-K50 with ceramic sensor
Accuracy:	**±0.125% FS (BFSL) *)**	**±0.25% FS (BFSL) **)**
Measurement rate:	5 measurements per second	5 measurements per second
Long term stability:	≤±0.1% FS / year at reference conditions	
Temperature error (zero and span): Pressure range -1...0 bar Pressure ranges ≤0,4 bar Pressure ranges ≥0,6 bar	Error band / compensated range: ≤±0.75 % FS / -20...+85°C ≤±1% FS / 0...+70°C ≤±0.75% FS / -20...+85°C	≤±0.2% FS / 10 K in compensated range 0...+85°C
Permissible medium temperature:	-20...+85	-20...+85°C
Permissible ambient temperature:	-20...+70°C	-20...+70°C
Permissible storage temperature:	-30...+80°C	-30...+80°C
Vibration resistance:	5 g RMS (25...2000 Hz) acc. to EN 60068-2-6	5 g RMS (25...2000 Hz) acc. to EN 60068-2-6
Shock resistance:	100 g / 1 ms acc. to EN 60068-2-27	100 g / 1 ms acc. to EN 60068-2-27
Material pressure port / housing:	Stainless steel 1.4404	Stainless steel 1.4404
Material display housing:	PA 6.6, polycarbonate	PA 6.6, polycarbonate
Material gaskets (wetted parts)	FKM	FKM
Material membrane:	**Stainless steel 1.4435**	**Ceramics Al2O2 96%**
Wetted parts:	Pressure port, gaskets, membrane	
Display:	LC, visible area 40 x 30 mm	
Display - main display:	4.5 digits, 7 segments, digits height 11 mm	
Display indication range:	±19999	
Display - additional display:	6 digits, 14 segments, digits height 7.5 mm	
Electromagnetic compatibility:	Interference emission and immunity according to EN 61326	
Power supply:	3.6 V lithium battery; 2 pcs. (1/2 AA)	
Internal data storage (configurations):	EEPROM (non-volatile)	
Degree of protection:	IP 65	
Mounting position:	any	
Weight:	approx. 300 g	
Resolution A/D converter:	14 Bit	
Battery life time:	Standby mode: approx. 5 year	
Mechanical life time:	100 million load changes	
CE conformity:	EMC directive 2014/30/EU Ranges > 200 bar: pressure equipment directive (PED): 2014/68/EU (module A)	

***)** equal to ±0.25% FS as per IEC 60770. Pressure Ranges < 0.4 bar: accuracy ±0.25% FS (BFSL), equal to ±0.5% FS as per IEC 60770.
****)** equal to ±0.5% FS as per IEC 60770.
Characteristic curve deviation as per IEC 60770 = minimum value setting (non-linearity, hysteresis, reproducibility) / BFSL = best fit straight line

The Digital Test Pressure Gauges **LR-*Cal* LDM 70-K50** are available as complete pressure calibration kits (case, with calibration testpump **LR-*Cal* LPP 40**, **LR-*Cal* LPP 60** or **LR-*Cal* LPP 700**).

For a stationary use, as calibration pressure source we recommend our pressure comparators (spindle pumps) series **LR-*Cal* LSP**.

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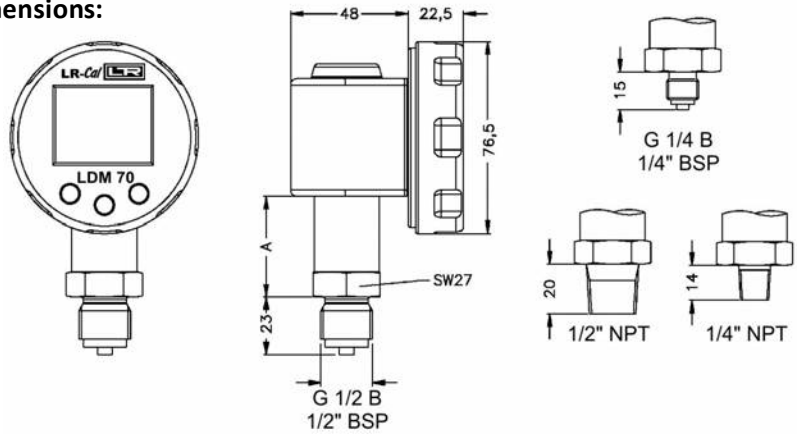
LDM 70 Digital Test Pressure Gauge LDM 70 battery operated, accuracy 0.125% or 0.25% FS

LR-Cal

Dimensions:



Dimension A:
pressure port 1/2" BSP: 62,5 mm
pressure port 1/4" BSP: 54,5 mm
pressure port 1/2" NPT: 60,5 mm
pressure port 1/4" NPT: 54,5 mm

	LR-Cal LDM 70-E25 with stainless steel sensor			LR-Cal LDM 70-K50 with ceramic sensor		
Accuracy:	**±0.125% BFSL *)** (equal to ±0.25% acc. to IEC 60770)			**±0.25% BFSL** (equal to ±0.5% acc. to IEC 60770)		
Pressure range **) [bar]	**Overload [bar]**	**Burst press. [bar]**	**Order Code starts with...**	**Overload [bar]**	**Burst press. [bar]**	**Order Code starts with...**
0...0.1	0.5	1.5	LDM70-E25-8100-0-	---	---	---
0...0.16	1	1.5	LDM70-E25-8160-0-	---	---	---
0...0.25	1	1.5	LDM70-E25-8250-0-	---	---	---
0...0.4	2	3	LDM70-E25-8400-0-	1	2	LDM70-K50-8400-0-
0...0.6	5	7.5	LDM70-E25-0000-6-	2	4	LDM70-K50-0000-6-
0...1	5	7.5	LDM70-E25-0001-0-	2	4	LDM70-K50-0001-0-
0...1.6	10	15	LDM70-E25-0001-6-	4	5	LDM70-K50-0001-6-
0...2.5	10	15	LDM70-E25-0002-5-	4	5	LDM70-K50-0002-5-
0...4	20	25	LDM70-E25-0004-0-	10	12	LDM70-K50-0004-0-
0...6	40	50	LDM70-E25-0006-0-	10	12	LDM70-K50-0006-0-
0...10	40	50	LDM70-E25-0010-0-	20	25	LDM70-K50-0010-0-
0...16	80	120	LDM70-E25-0016-0-	40	50	LDM70-K50-0016-0-
0...25	80	120	LDM70-E25-0025-0-	40	50	LDM70-K50-0025-0-
0...40	105	210	LDM70-E25-0040-0-	100	120	LDM70-K50-0040-0-
0...60	105	210	LDM70-E25-0060-0-	100	120	LDM70-K50-0060-0-
0...100	210	420	LDM70-E25-0100-0-	200	250	LDM70-K50-0100-0-
0...160	600	1000	LDM70-E25-0160-0-	400	500	LDM70-K50-0160-0-
0...250	1050	1250	LDM70-E25-0250-0-	400	500	LDM70-K50-0250-0-
0...400	1050	1250	LDM70-E25-0400-0-	600	650	LDM70-K50-0400-0-
0...600	1250	1250	LDM70-E25-0600-0-	800	880	LDM70-K50-0600-0-
-1...0	5	7.5	LDM70-E25-0000-0-	2	4	LDM70-K50-0000-0-
-1...+0.6	10	15	LDM70-E25-9000-6-	4	5	LDM70-K50-9000-6-
-1...+1.5	10	15	LDM70-E25-0001-5-	4	5	LDM70-K50-0001-5-
-1...+3	20	25	LDM70-E25-0003-0-	10	12	LDM70-K50-0003-0-
-1...+5	40	50	LDM70-E25-0005-0-	10	12	LDM70-K50-0005-0-
-1...+9	40	50	LDM70-E25-0009-0-	20	25	LDM70-K50-0009-0-
-1...+15	80	120	LDM70-E25-0015-0-	40	50	LDM70-K50-0015-0-
-1...+24	80	120	LDM70-E25-0024-0-	40	50	LDM70-K50-0024-0-
-1...+39	105	210	LDM70-E25-0039-0-	100	120	LDM70-K50-0039-0-

Process pressure port connection thread	Order Code ends with...
1/4" BSP male according to EN 837	-G14
1/2" BSP male according to EN 837	-G12
1/4" NPT male	-N14
1/2" NPT male	-N12