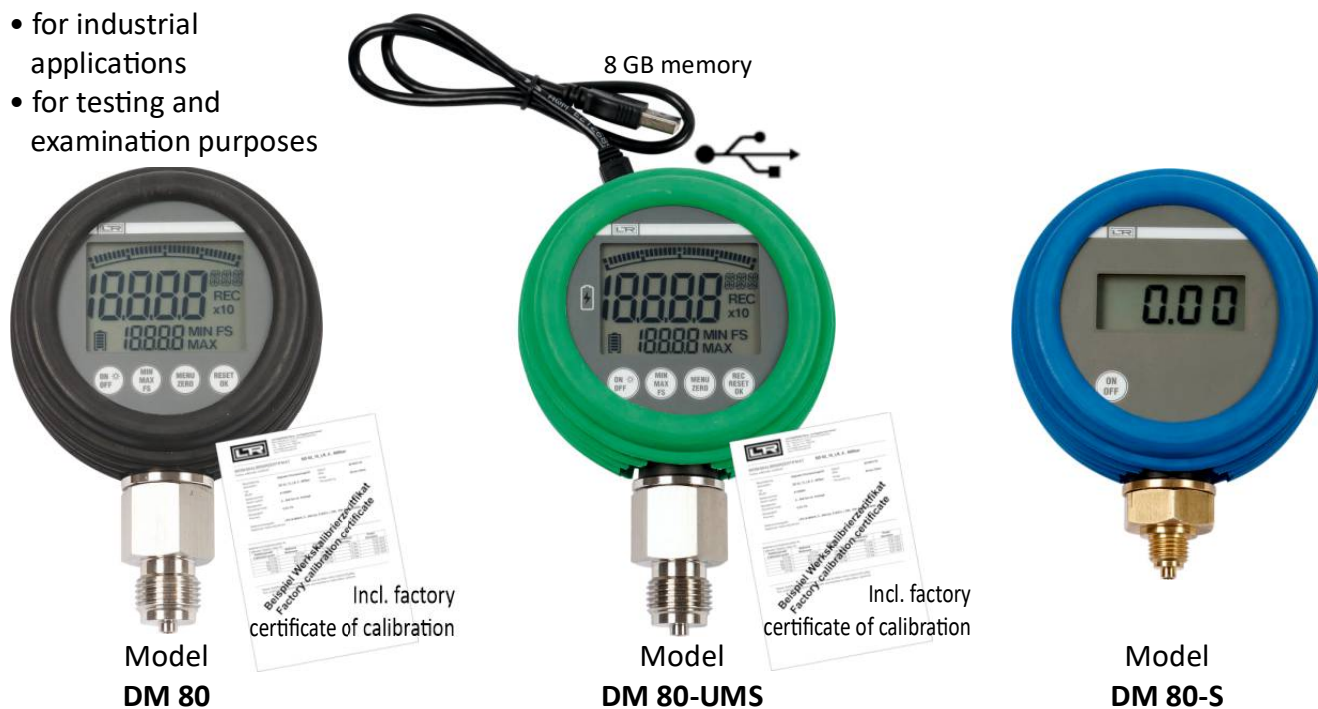


Digital Pressure Gauge Accuracy:  $\pm 0.25\%$  FS

Rel. 20211217

- for industrial applications
- for testing and examination purposes



The digital pressure gauges models **DM 80**, **DM 80-UMS** (and **DM 80-S**) are used for digital indication of measured pressure values, as well as for testing and diagnose purposes in stationary and mobile hydraulic applications.

	Model DM 80	Model DM 80-UMS	Model DM 80-S
Interface:	---	USB	---
Data storage (data transmission as CSV file):	---	8 GB	---
Ambient temperature:	-10...+50°C	-10...+50°C	-10...+50°C
Storage temperature:	-20...+60°C	-20...+60°C	-20...+60°C
Medium	ranges -50...+50 mbar and -200...+200 mbar:	-10...+50°C *)	---
temperoeature:	range 0...4 bar absolute:	-20...+80°C	---
	all other pressure ranges:	-40...+125°C	-20...+120°C
Maximal relative humidity:	ranges -50...+50 mbar and -200...+200 mbar:	85% r.h.	85% r.h.
Material	range 0...4 bar absolute:	CuZn39Pb3	---
pressure port:	all other pressure ranges:	St.st. 1.4404	---
Material	ranges from -50...+50 mbar to 0...4 bar abs.	Ceramic	---
membrane:	all other pressure ranges:	St.st. 1.4548	Ceramic
Material	ranges -50...+50 mbar and -200...+200 mbar:	Epoxy	---
gasket:	range 0...4 bar absolute:	EPDM	---
	all other pressure ranges:	welded **)	H-NBR
Temperature compensated range:	0...50°C	0...50°C	+10...+40°C
Error in temperature	ranges -50...+50 mbar and -200...+200 mbar:	<math>\leq \pm 0.03\% \text{ FS} / ^\circ\text{C}</math>	---
compensated	range 0...4 bar absolute:	<math>\leq 0.005\% \text{ FS} / ^\circ\text{C}</math>	---
range:	all other pressure ranges:	<math>\leq 0.035\% \text{ FS} / ^\circ\text{C}</math>	<math>\leq 0.02\% \text{ FS} / ^\circ\text{C}</math>
Minimum	ranges from -50...+50 mbar to 0...4 bar abs.:	10 x 10 <sup>6</sup>	---
load cycles:	all other pressure ranges:	100 x 10 <sup>6</sup>	10 x 10 <sup>6</sup>
Power supply:	2 x 1.5 VDC LR6-AA ***)	built-in Li-Ion battery	2 x 1.5 VDC LR6-AA ***)
Max. battery life time:	1500 h	10 h continuously	1500 h
	ranges -50...+50 mbar and -200...+200 mbar:	mbar	---
Pressure units:	ranges from 0...4 bar abs. to 0...60 bar:	bar, PSI, kPa, MPa, mbar	bar, PSI, kPa, MPa
	ranges from 0...100 bar to 0...600 bar:	bar, PSI, Kpa, MPa	bar, PSI, kPa, MPa
	ranges from 0...700 bar to 0...2500 bar:	bar, PSI, MPa	bar, PSI, MPa
Pressure port:	ranges -50...+50 mbar and -200...+200 mbar:	1/4" BSP M acc. EN 837 *)	---
	all other pressure ranges:	1/2" BSP M acc. EN 837	1/4" BSP M acc. EN 837
Indication:	LCD incl. bargraph	LCD incl. bargraph	LCD
PEAK function:	Min. / Max.	Min. / Max.	---
Weight:	approx. 400 g	approx. 410 g	approx. 390 g
Case	with rubber protection cap:	approx. 95-100 mm	approx. 95-100 mm
diameter:	without rubber protection cap:	approx. 80 mm	approx. 80 mm

\*) For dry gaseous media only! \*\*) no gasket, because of welded diaphragm membrane \*\*\*) NOT included in scope of standard delivery

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

**DM 80**

DM 80-UMS

DM 80-S

**LR SMART TECH Digital Pressure Gauge  $\pm 0.25\%$  FS**

DM 80 • DM 80-UMS • DM 80-S

**How to order: Pressure ranges and Order-Codes****Model DM 80**

Pressure conn.: 1/2" BSP M

Accuracy  $\pm 0.25\%$  FS (BFSL)(equal to  $\pm 0.5\%$  FS as per IEC 60770)

incl. factory certificate of calibration



Gauge pressure ranges:	Order-Code:
0...10 bar	DM80-0010-0-G12
0...25 bar	DM80-0025-0-G12
0...40 bar	DM80-0040-0-G12
0...60 bar	DM80-0060-0-G12
0...100 bar	DM80-0100-0-G12
0...250 bar	DM80-0250-0-G12
0...400 bar	DM80-0400-0-G12
0...600 bar	DM80-0600-0-G12
0...700 bar	DM80-0700-0-G12
0...1000 bar	DM80-1000-0-G12
0...2500 bar	DM80-2500-0-G12
Compound pressure ranges:	Order-Code:
-50...+50 mbar (conn. 1/4" BSP)	DM80-8000-5-G14
-200...+200 mbar (conn. 1/4" BSP)	DM80-8002-0-G14
-1...+16 bar	DM80-9016-0-G12
-1...+25 bar	DM80-9025-0-G12
-1...+40 bar	DM80-9040-0-G12
-1...+60 bar	DM80-9060-0-G12
Absolute pressure ranges:	Order-Code:
0...4 bar absolute	DM80-0004-ABS-G12

**To be ordered separately with each instrument DM 80:**Rubber protection cap, black **DM80-GSK-S****Accessories for DM 80:**

Rubber protective cap with hook for hanging

**DM80-GKS-S-HAKEN**

Threaded adapter

M16x2 female x 1/2" BSP female

**DM80-AD-M16-I-G12**

Threaded adapter

M16x2 male x 1/2" BSP female

**DM80-AD-M16-A-G12**

Small transit case with custom foams

**DM80-KOFFER****Model DM 80-S**

Pressure conn.: 1/4" BSP M

Accuracy  $\pm 0.5\%$  FS (IEC 60770)

Gauge pressure ranges:	Order Code:
0...60 bar	DM80-S-0060-0-G14
Compound pressure ranges:	Order Code:
-1...+3 bar	DM80-S-0003-0-G14
-1...+16 bar	DM80-S-9016-0-G14

Pressure unit BAR or PSI.

**To be ordered separately with each instrument DM 80-S:**Rubber protection cap, blue **DM80-GSK-B****Accessories for DM 80-S**

Rubber protective cap with hook for hanging

**DM80-GKS-S-HAKEN**

Factory certificate of calibration

**DM80-S-WZERT**

Threaded adapter

M16x2 female x 1/4" BSP female

**DM80-AD-M16-I-G14**

Threaded adapter

M16x2 male x 1/4" BSP female

**DM80-AD-M16-A-G14**

Small transit case with custom foams

**DM80-KOFFER**

**LR SMART TECH Digital Pressure Gauge ±0.25% FS**  
**DM 80 • DM 80-UMS • DM 80-S**

**DM 80**  
**DM 80-UMS**  
**DM 80-S**

**Model DM 80-UMS**

Pressure conn.: 1/2" BSP M  
 Accuracy ±0.25% FS (BFSL)  
 (equal to ±0.5% FS as per IEC 60770)  
 incl. factory certificate of calibration



with USB interface and **8 GB** data memory  
 (export as csv file, no special software needed)








Powered with built-in chargeable Li-Ion battery.

Gauge Pressure Ranges:	Order-Code:
0...25 bar	<b>DM80-UMS-0025-0-G12</b>
0...40 bar	<b>DM80-UMS-0040-0-G12</b>
0...60 bar	<b>DM80-UMS-0060-0-G12</b>
0...100 bar	<b>DM80-UMS-0100-0-G12</b>
0...250 bar	<b>DM80-UMS-0250-0-G12</b>
0...400 bar	<b>DM80-UMS-0400-0-G12</b>
0...600 bar	<b>DM80-UMS-0600-0-G12</b>
0...1000 bar	<b>DM80-UMS-1000-0-G12</b>
0...2500 bar (on request only)	<b>DM80-UMS-2500-0-G12</b>
Compound Pressure Ranges:	Order-Code:
-1...+16 bar	<b>DM80-UMS-9016-0-G12</b>

**To be ordered separately with each instrument DM 80-UMS:**

Rubber protection cap, green **DM80-UMS-GSK-G**

**Accessories for DM 80-UMS:**

Accessories for DM 80-UMS:	Order-Code:
Rubber protective cap with hook for hanging 	<b>DM80-GKS-G-HAKEN</b>
Mains charger 110...230 VAC 	<b>DM80-UMS-LG</b>
Threaded adapter M16x2 female x 1/2" BSP female 	<b>DM80-AD-M16-I-G12</b>
Threaded adapter M16x2 male x 1/2" BSP female 	<b>DM80-AD-M16-A-G12</b>
Small transit case with custom foams 	<b>DM80-KOFFER</b>

The model **DM 80-UMS** is equipped with a 8 GB data memory and has a micro USB connector. The data transfer speed is according to the USB 2.0 standard. The **DM 80-UMS** is recognized by connected PC/Laptop as an external memory.

The built-in rechargeable lithium-ion battery enables autonomous continuous operation of approx. 10 hours. The charging time of an empty battery is about 3 hours.

The measurement value storage rate can be set: every 10 ms, / 100 ms / 1 sec / 10 sec.  
 A data record can be also created by pushing the button „REC“.

Due to the extremely large storage capacity, the logging time is approximately as follows:

- with storage interval every 10 milliseconds: approx. 1 year
- with storage interval every 100 milliseconds: approx. 10.1 years
- with storage interval every 1 second: approx. 101.5 years
- with storage interval every 10 seconds: approx. 1015 years

The built-in data memory of the **DM 80-UMS** will be recognized by the computer as an external memory (like an USB drive). Enables extremely simple reading of the stored data (.csv file) without special software.

**Scope of standard delivery** of the digital pressure gauge and datalogger **DM 80-UMS:**

- Device **DM 80-UMS** (rubber protection cap, order-code **DM80-UMS-GSK-G** must be ordered separately!)
- USB- cable (Micro-USB to USB-A), PC connection to USB-A connector.
- Built-in chargeable Li-Ion battery (chargeable with standard 5 VDC output USB chargers)
- Factory certificate of calibration
- Operating manual

**Recommended accessories:**

- Green rubber protection cap order-code **DM80-UMS-GSK-G** (must be ordered with every **DM 80-UMS**!)
- Plug battery charger 110...240 VAC with USB-A connector: order-code **DM80-UMS-LG**

DM 80  
DM 80-UMS  
DM 80-S

**LR SMART TECH Digital Pressure Gauge  $\pm 0.25\%$  FS**  
**DM 80 • DM 80-UMS • DM 80-S**

The digital pressure gauges **DM 80**, **DM 80-UMS** as well as model **DM 80-S** are ideal not only for measurement of process pressures (**DM 80-UMS** with datalogger), but also - in combination with our pressure test pumps - perfect for testing and diagnostic works:



with pneumatic pressure test pump  
**LR-Cal LPP 08**



with pneumatic  
pressure test pump  
**LR-Cal LPP 40**



with pneumatic  
pressure test pump  
**LR-Cal LPP 60-T**



with hydraulic  
pressure test pump  
**LR-Cal LPP 700/1000**



Diagnostic Case **TESTKIT-DM80-UMS-9016**  
with pneumatic pressure test pump  
**LR-Cal LPP 40** and adapters

# 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 guaranteed 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	<b>LR-Cal LDM 70-E25</b> with stainless steel sensor	<b>LR-Cal LDM 70-K50</b> 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):	Error band / compensated range: Pressure range -1...0 bar Pressure ranges ≤0,4 bar Pressure ranges ≥0,6 bar	≤±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:	<b>Stainless steel 1.4435</b>	<b>Ceramics Al2O2 96%</b>
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**).

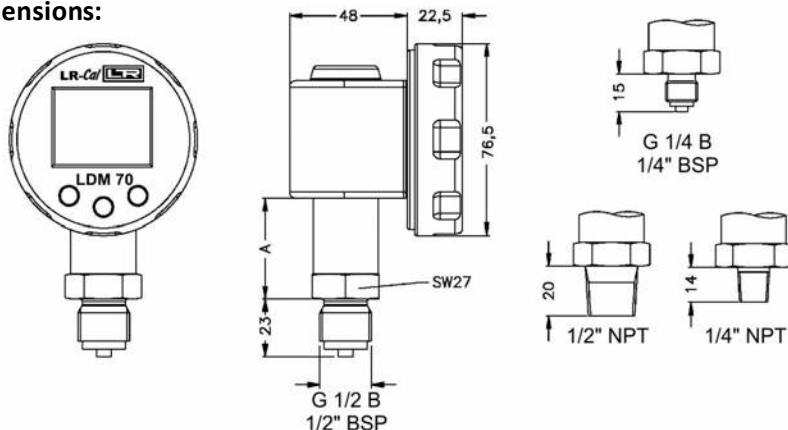
For a stationary use, as calibration pressure source we recommend our pressure comparators (spindle pumps) series **LR-Cal LSP**.

# LDM 70 Digital Test Pressure Gauge LDM 70

battery operated, accuracy 0.125% or 0.25% FS



## 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

Accuracy:	LR-Cal LDM 70-E25 with stainless steel sensor			LR-Cal LDM 70-K50 with ceramic sensor		
	±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

**Digital reference pressure gauge and data logger**  
**Model: LR-Cal LDM 80**  
**Accuracy  $\pm 0.2\%$  FS, optional  $\pm 0.1\%$  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 always 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  $\pm 0.2\%$  FS, optional  $\pm 0.1\%$  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  $\pm 1^\circ\text{C}$  (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:**  $\leq \pm 0.002\%/1^\circ\text{C}$ .

**Display:** LCD 13 mm; with programmable backlight (1...60 seconds, or off).

**Programmable resolution:** 1, 2, 5, 10.

**Interface:** USB 2.0 (virtual COM port on PC/Laptop, programmable baud rate 19200, 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 second

**Pressure units:** selectable; bar, mbar, psi, MPa, kPa, kg/cm<sup>2</sup>, mHg, mmHg, mmH<sub>2</sub>O, mH<sub>2</sub>O.

**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).

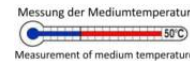
**Pressure port:** 1/2" BSP male, recommended gasket: USIT A 63-18. (Ranges >1000 bar: sealing cone TLDMM-DK).

**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

Accuracy  $\pm 0.2\%$  FS, optional  $\pm 0.1\%$  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

**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)



### Option LDM80-ST

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



### Option LDM80-WF



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  $\pm 0.1\%$  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](http://www.druck-temperatur.de) on the related product page.



**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 guaranteed 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):	Error band / compensated range:	
Pressure range -1...0 bar	≤±0.75 % FS / -20...+85°C	≤±0.2% FS / 10 K in compensated range 0...+85°C
Pressure ranges ≤0,4 bar	≤±1% FS / 0...+70°C	
Pressure ranges ≥0,6 bar	≤±0.75% FS / -20...+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**).

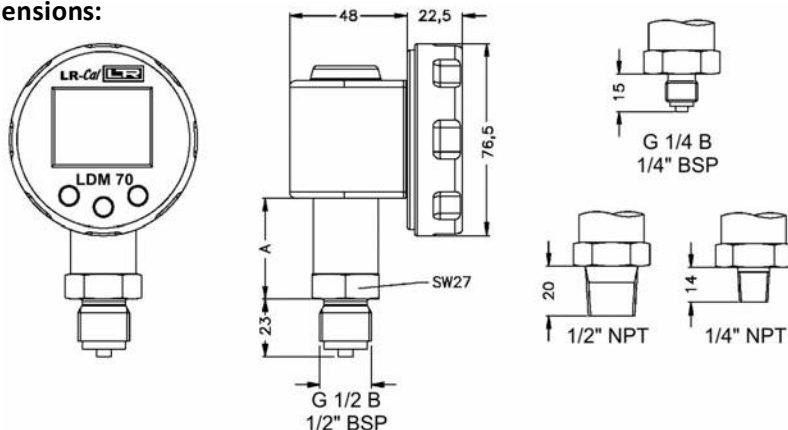
For a stationary use, as calibration pressure source we recommend our pressure comparators (spindle pumps) series **LR-Cal LSP**.

# LDM 70 Digital Test Pressure Gauge LDM 70

battery operated, accuracy 0.125% or 0.25% FS



## 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

Accuracy:	LR-Cal LDM 70-E25 with stainless steel sensor			LR-Cal LDM 70-K50 with ceramic sensor		
	±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

**Digital reference pressure gauge and data logger**  
**Model: LR-Cal LDM 80**  
**Accuracy  $\pm 0.2\%$  FS, optional  $\pm 0.1\%$  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 always 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  $\pm 0.2\%$  FS, optional  $\pm 0.1\%$  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  $\pm 1^\circ\text{C}$  (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:**  $\leq \pm 0.002\%/1^\circ\text{C}$ .

**Display:** LCD 13 mm; with programmable backlight (1...60 seconds, or off).

**Programmable resolution:** 1, 2, 5, 10.

**Interface:** USB 2.0 (virtual COM port on PC/Laptop, programmable baud rate 19200, 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 second

**Pressure units:** selectable; bar, mbar, psi, MPa, kPa, kg/cm<sup>2</sup>, mHg, mmHg, mmH<sub>2</sub>O, mH<sub>2</sub>O.

**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).

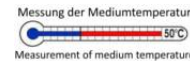
**Pressure port:** 1/2" BSP male, recommended gasket: USIT A 63-18. (Ranges >1000 bar: sealing cone TLDMM-DK).

**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

Accuracy  $\pm 0.2\%$  FS, optional  $\pm 0.1\%$  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

**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)



### Option LDM80-ST

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



### Option LDM80-WF

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  $\pm 0.1\%$  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](http://www.druck-temperatur.de) on the related product page.

### HIGH ACCURACY digital pressure reading instrument

Model: **LR-Cal TLDMM 2.0**

Accuracy  $\pm 0.05\%$  FS, above 2000 bar  $\pm 0.1\%$  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)	$\leq \pm 0.05\%$ FS (ranges 2500 bar and 3000 bar: $\leq \pm 0.1\%$ FS)
Pressure ranges:	Gauge pressure, absolute pressure, compound ranges, see table on next page
Pressure units (selectable):	bar, mbar, psi, Mpa, kPa, kg/cm <sup>2</sup> , mHg, mmHg, mmH <sub>2</sub> O, mH <sub>2</sub> O
Temperature units (selectable):	°C, °F
Resolution medium temperature display:	0.1°C
Accuracy medium temperature display:	$\pm 1^\circ\text{C}$
Reference temperature:	0...50°C
Operating temperature:	-10...+60°C
Relative humidity:	<90%, non-condensing
Temperature effect (1°C):	$\leq \pm 0.002\%$
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 $\geq 1000$ bar 2 sealing coins 60° are supplied
Recommended sealing:	USIT A 63-18, for ranges $\geq 1000$ 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
<b>OPTIONS:</b>	Order-Code:
Data logger functionality:	<b>TLDMM-2.0-DL</b> 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:	<b>TLDMM-2.0-EB</b> Glass-fiber reinforced technopolymer housing
External power supply:	<b>TLDMM-2.0-ES</b> No internal battery, supply from 12 to 24 VDC required

**Order-Codes and Pressure Ranges:**

Order-Code	Range	bar		mbar		psi		Mpa	
		Display	Resolut.	Display	Resolut.	Display	Resolut.	Display	Resolut.
<b>Gauge Pressure</b>									
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
<b>Compound Pressure</b>									
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
<b>Absolute Pressure</b>									
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**



**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**

**Digital Pressure Gauge DMG 03**  
for low pressure, vacuum and differential  
pressure, ranges 0/2,5 mbar to 0/1000 mbar  
with internal pressure sensor.  
Panel mounting 96 x 48 mm

- Supervision of blowers and airfilters
- Controlling of aircurrents and liquidlevels
- Pressurecontrolling in cleanrooms
- Medical engineerings

**Description:**

The Digital Pressure Gauge **DMG 03** are measuring positive or negative overpressure, and differential pressure, and optionally volume current. The measured values are shown on a 3,5 digit LED with 14.2 mm high figures. An analogue output 0-10 V is standard. Because of the use of piezoresistive sensors, the **DMG 03** reaches a high reliability and precision. The solid aluminium housing for panel mounting possesses a high mechanical stability and very good EMV properties.

A red LED on the front of the instruments indicates in case of overpressure. The **DMG 03** is also available with a second analogue output 4-20 mA, with switch-outputs(s) or with RS232 interface (see table below). Each instrument is supplied with an inspection certificate of accuracy.



**Available Types:**

Type	Output 1	Output 2
Type DMG 03-1	Analogue Output 0-10 V	(no)
Type DMG 03-2	Analogue Output 0-10 V	2 swicht-outpus
Type DMG 03-3	Analogue Output 0-10 V	Analogue Output 4-20 mA
Type DMG 03-4	Analogue Output 0-10 V	RS232-Interface

Electronic absorbtion of the output signals 0-10 V or 4-20 mA.

**Available Ranges:**

Pressure Range (mbar)	Pressure Range (kPa)	Over-pressure (mbar)	Linear Error (max.)	Temp. Error max 0-50 /C	Long-term stability	Repeat-ability	Response Time
0 - 2.5	0 - 0.25	250	± 1% FS	± 2% FS	2% / year	0.3% FS	1 ms
0 - 5	0 - 0,5			± 1% FS	1% / year	0.2% FS	
0 - 10	0 - 1	375	± 0,6% FS	± 0,7% FS	0.1% / year	0.1% FS	
0 - 25	0 - 2,5						
0 - 100	0 - 10	750	± 0,6% FS	± 0,7% FS	0.1% / year	0.1% FS	
0 - 250	0 - 25	1125					
0 - 500	0 - 50	triple	± 0,6% FS	± 0,7% FS	0.1% / year	0.1% FS	
0 - 1000	0 - 100						
700-1100 absolute	70-110 absolute	triple	± 0.9 mbar	2.3 mbar	0.1% / year	0.1 % FS	1 ms

All pressure ranges: Response time incl. electr. absorbtion: 2.5 seconds.

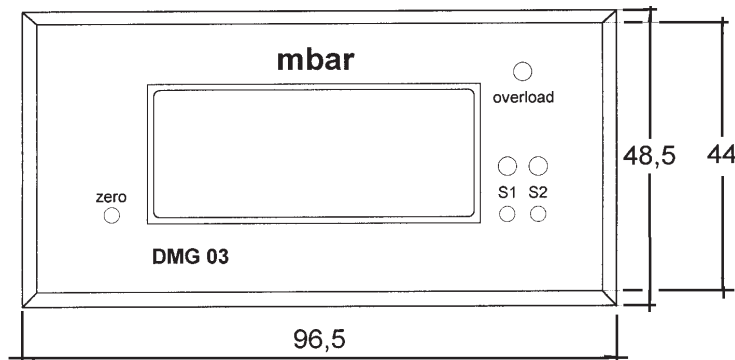


### Technical Data:

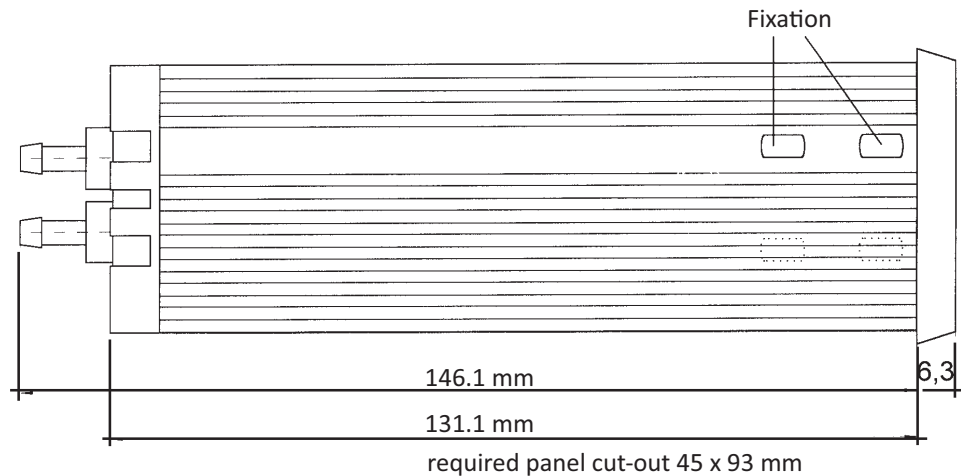
Operating temperature:	-20°C...+70°C
Hysteresis:	0.1%
Compatible media:	Air, non-aggressive gases
Output Signal:	all Types: 0-10 V, Type DMG03-3 in addition 4-20 mA, $R_L \leq 2 \text{ k}\Omega$
Power Supply:	15...24 VDC (optional: 230 VAC $\pm 10\%$ )
Electrical Connections:	Plug with 7-pole depth clamp for 0.14-1.5 mm <sup>2</sup>
Pressure Connection:	2 connections for tube 4 mm inner diameter
Optional Switches (Type DMG 03-2):	Load 230 VAC / 1 A, Hysteresis appr. 2% FS
Optional RS232 (Type DMG 03-4):	8 bit, no parity, 1 stop-bit, 9600 baud, xon/xoff-handshake
Weight:	appr. 380 g
Protection:	IP 54 (front plate)

### Dimension:

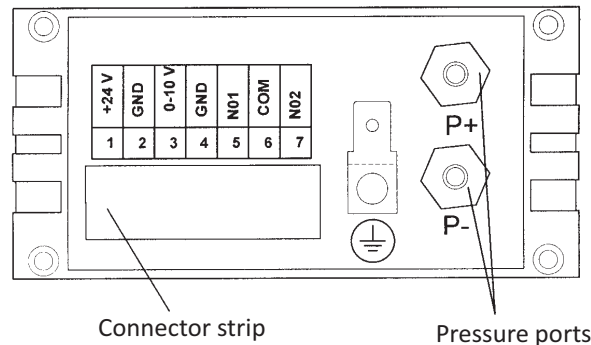
Front plate



Side view



Back view



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