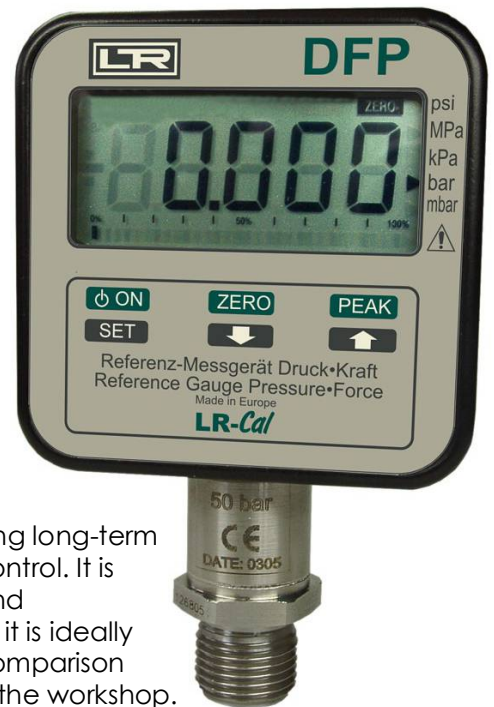


Digital reference pressure gauge LR-Cal DFP
Scalable display conversion in tons or kN.
Ideal for testing pressure gauges, e.g. on hydraulic presses
and other force/weight indicators.

- Accuracy: $\pm 0.1\%$ FS, pressure ranges up to 2,000 bar
- Battery operation (over 1 year of operation without changing batteries)
- Pressure unit „bar“, scalable in tons or kN
- MIN- and MAX value storage ("Peak" function pos./neg.)
- Adjustable digital filter
- Pressure port: 1/2" BSP male
- Large LC display with additional bargraph indication



The LR-Cal DFP digital reference pressure gauge has outstanding long-term stability, a 16-bit A/D converter and modern microprocessor control. It is ideal for reference pressure measurements as well as testing and calibration tasks. Together with the LR-Cal pressure test pumps, it is ideally suited for on-site use. In conjunction with the LR-Cal pressure comparison test pumps, it is very well suited for use in the laboratory and in the workshop.

The battery-operated LR-Cal DFP reference pressure gauge works independently of the mains for over a year without the need to change the battery, not least because of the intelligent automatic switch-off function (switches off if there has been no change in pressure for approx. 30 minutes).

The user can freely scale their own display units, e.g. weight in kilograms or tons and force in newtons. The user can assign a force unit to the measuring range end value of the LR-Cal DFP, which is to be calculated for hydraulic cylinders according to the following formula:

$$F[N] = P \cdot D^2 \cdot \pi / 40$$

P = Pressure in bar
 D = Diameter of the cylinder in mm
 π = Circular number Pi (3,14159...)

$$F[kg] = F[N] / 9,80665$$

F = Weight
 N = Newton (calculated with the first formula)
 kg = Kilogramms

Pressure  **Force**

The components used (sensors, electronics, housing) are extremely robust and ensure operation even under heavy loads (vibrations, pressure surges). In addition to the digital display, the pressure is also shown in analog form (bar graph display); this also occurs when the user is in programming/setting mode.

The LR-Cal DFP digital reference pressure gauge can optionally be supplied with an RS232 interface. A serial connection cable to your PC/laptop is also available. The LR-Cal DFP is also available in a version for panel mounting (pressure connection axially back at the rear), as well as for power supply via a 230 VAC plug-in power supply unit (instead of battery operation).

Technical data:

Linearity and hysteresis:	$\leq 0.1\%$ FS
Reading per second (0 filter)	10 (100 ms)
Temperatures:	Reference +23°C, Ambient 0...+50°C, Storage -10...+60°C
Temperature effect (1°C):	on Zero $\leq 0.002\%$; on Sensitivity $\leq 0.002\%$
Programmable functions:	Zeroing 50%; digital filter: 0...99%
	Display resolution: 1, 2, 5 or 10 digits
	Pressure unit: bar
	Force units: kg, t, daN, kN (scalable)
	Baud rate optional RS232 interface: 19200, 9600, 4800
	Peak funktion: positive (+) or negative (-)
Display:	LCD, figures height 16 mm
Power Supply:	4 Alkaline batteries 1.5 V (size AA)
Mechanical limit values (referred to nominal pressure):	Service pressure 100% -fs, high dynamic pressure 75% FS, Permissible pressure max. 150% FS, breaking pressure >300% FS
Pressure port:	1/2" BSP male
Recommended gasket:	USIT A 63-18; >1,000 bar with sealing cone 60°
Tightening torque at pressure port:	28 Nm (tightening wrench: 27 mm)
Housing:	Material: aluminium; dimensions: appr. 132 x 80 x 48 mm
Protection class:	IP 40
Optional RS232 interface:	9-pole D-SUB (female)

Order-Codes:

		D F P -				-				(Options...)			
		Display resolution:											
Range:													
0...10 bar	0.001 bar	0	0	1	0								
0...20 bar	0.002 bar	0	0	2	0								
0...50 bar	0.005 bar	0	0	5	0					R	S	2	3
0...100 bar	0.01 bar	0	1	0	0								
0...250 bar	0.02 bar	0	2	5	0								
0...350 bar	0.05 bar	0	3	5	0					E	B	A	
0...500 bar	0.05 bar	0	5	0	0								
0...700 bar	0.05 bar	0	7	0	0								
0...1,000 bar	0.1 bar	1	0	0	0					S	N	T	
0...1,500 bar	0.2 bar	1	5	0	0								
0...2,000 bar	0.5 bar	2	0	0	0								

Note on option -EBA: Dimensions 83 x 83 mm, axial pressure connection at the rear.

Note on option -SNT: Power supply 230 VAC (no batteries).

When using the LR-Cal DFP with the pneumatic pressure test pumps LR-Cal LPP 10 and LR-Cal LPP 40, we recommend a volume reducer, order-code **VRS-G12** in the pressure connection.

Recommended test pressure sources:

Portable:	LR-Cal pressure test pumps or LR-Cal pressure comparison test pumps (pneumatic or hydraulic)
Stationary:	LR-Cal pressure comparison test pumps (electric or manual, pneumatic or hydraulic)

