



Pressure Calibrators

Pressure Pumps & References



founded 1901
Dr. Siebert & Kühn GmbH & Co. KG



Pressure Pump + Reference = Pressure Calibrator

Compact - precise - independent!



Pneumatic and hydraulic pressure calibrators from the PM and PC series are user-friendly tools for testing and calibration purposes. Calibrators are used in laboratories, manufacturing and service environments for testing, adjustment and calibration of pressure sensors, gauges, pressure switches, safety valves and all types of pressure devices. The functionality and handling of SIKA calibrators are optimised and help to reduce your servicing and maintenance costs.

Portable pressure calibrators are a distinct advantage for on-site applications.

Neither a power supply nor pressure cylinder is required. Power is supplied by long-life batteries or rechargeable accumulators. The compact design has also proved itself to be of value here. Some calibrators are protected with a rubber cap. They are available in protection class IP 65 or IP 68.

Appropriate, temperature-compensated reference pressures from -1...1000 bar with the desired accuracy in the tolerance range from 0.6...0.01% are available for different applications.

Further highlights are the large number of switchable pressure units and the direct connection to a PC via serial interface in conjunction with compatible test and calibration software.

Besides the basic manual pressure pump with pressure hose, all models are offered with appropriate accessories. Flexible hose, metric and imperial adapters, seals and a carrying case with foam inserts are included, as well as the pressure reference gauge.

The desired results can be achieved very quickly and easily with the right combination of manual pressure pump and pressure reference gauge.



Software

Our pressure calibrators offer serial interfaces for data transfer via an external PC as a standard or optional feature. Creating documentation in the form of test certificates is very easy with our test and calibration software.



Analogue output

External recorders can be connected via an optional analogue output.



Data storage (logger function)

Pressure curves can be recorded and leak testing can be carried out with the logging function for on-site data storage. Min/max storage allows peak detection.

These useful functions can easily be activated or deactivated by pressing the respective keys.



Protection from explosions

In addition, EXI-versions are available for use in explosive environments, such as oil refineries, chemical plants and drilling platforms.











Application

The design of the calibration pumps ensures that all measuring devices can be adapted directly for calibration. If the instrument to be tested is connected by means of the hose and adapters supplied, and a pressure reference instrument is mounted directly on top of the pump, then the same pressure or vacuum is applied to both instruments when the pump is operated.

At first, the desired pressure is generated via the hand levers, it is then precisely adjusted using the fine adjustment valve. The pressure relief valve also allows continuous decompression, in order to ensure accurate and simple calibration, even with decreasing pressure.

In the simplest case, the display is indicated via an analogue precision pressure gauge. Easy to read, digital multi-function LCD displays will continue to be used. By comparing the displayed value of the reference instrument and the measured value of the tested instrument, the accuracy can be verified or the pressure measuring device to be tested can be adjusted.

Combinations

	 Reference A	 Reference E	 Reference D	 Reference P	 Reference L
 P 40.2	PM 40.2 A	PM 40.2 E	PM 40.2 D	PM 40.2 P	PM 40.2 L
 P 60	PM 60 A	X	PM 60 D	PM 60 P	X
 P 350	PM 350 A	PM 350 E	PM 350 D	PM 350 P	PM 350 L
 P 700	PM 700 A	PM 700 E	PM 700 D	PM 700 P	PM 700 L
 P 1000	X	X	PM 1000 D	PM 1000 P	PM 1000 L

All hand-held pressure pumps and reference gauges can be combined for different measuring ranges, resolutions and accuracy classes, as outlined above. Technical details and available options can be found on the following pages.

Pneumatic Pressure Pumps

Type P 40.2 and Type P 60

The P 40.2 and P 60 pneumatic manual pressure pumps are compact, lightweight and portable calibration pumps for pressure and vacuum. Switching is controlled by a valve without the need for additional tools. The pumps allow very simple and exact operation in the pressure ranges from -0.95...40 bar or -0.95...60 bar.



- ① Fine adjustment valve
- ② Pressure relief valve
- ③ Change-over valve pressure/vacuum
- ④ Pump body
- ⑤ Pressure hose
- ⑥ Handles with push rod and piston connection

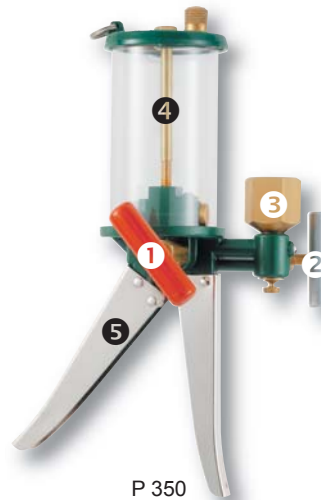
Technical data

	Pump 40.2	Pump 60
Pressure medium	air	
Pressure ranges		
- Vacuum	-0.95 bar	-0.95 bar
- High pressure	40 bar	60 bar
Pressure connection	1/4" BSP	
- Reference	1/4" BSP with Quick-Coupling and pressure hose (1 m)	
- Device under test		
Adapter set	1/8" BSP, 1/4" BSP, 3/8" BSP, 1/2" BSP, NPT 1/8", NPT 1/4", NPT 1/2" M12x1.5, M20x1.5 and 1/8" BSP male, 1/4" BSP male	
Set of seals	flat seals (Teflon) and O-rings	
Dimensions		
- Pump with pressure hose	approx. 240 x 170 x 50 mm	
- Pump with accessories in case	approx. 450 x 370 x 110 mm	
Weight		
- Pump with pressure hose	approx. 1.1 kg	
- Pump with accessories in case	approx. 4.2 kg	

Hydraulic Pressure Pumps

Type P 350, Type P 700 and Type P 1000

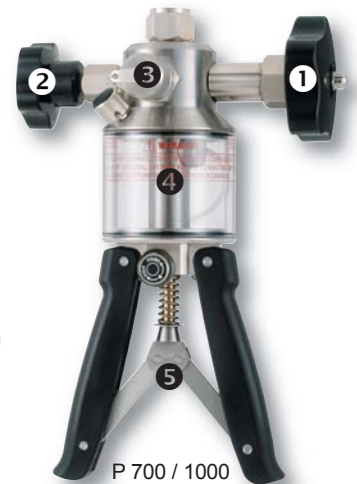
The easy-to-use manual pressure pumps P 350, P 700 and P 1000 were specifically developed for high pressure applications. The pumps have a built-in reservoir for hydraulic fluids. Pure water or hydraulic oil can be used as a pressure medium. The pressure range starts from 0 bar. Pressures up to 350 bar, 700 bar or even 1000 bar can be achieved, depending on the type of pump.



P 350

- ① Fine adjustment valve
- ② Pressure relief valve
- ③ pressure hose-connection

- ④ Pump body
- ⑤ Handles with push rod and piston connection



P 700 / 1000

Technical data

	Pump 350	Pump 700	Pump 1000
Pressure medium	pure water or hydraulic oil		
Pressure ranges - with pure water - with hydraulic oil	0...350 bar 0...350 bar	0...400 bar 0...700 bar	0...400 bar 0...1000 bar
Pressure connection - Reference - Device under test	1/2" BSP female 1/4" BSP pressure hose	3/8" BSP female 1/4" BSP pressure hose	
Adapter set	1/8" BSP, 1/4" BSP, 3/8" BSP, 1/2" BSP, NPT 1/8", NPT 1/4", NPT 1/2", M12x1.5, M20x1.5, 1/8" BSP male, 1/4" BSP male	1/8" BSP, 3/8" BSP, 1/2" BSP, reference reduction 1/4" BSP double fitting, 1/8" BSP, 1/4" BSP and NPT 1/4"	
Set of seals	flat seals (Teflon) and O-rings		
Dimensions - Pump with pressure hose - Pump with accessories in case	approx. 240 x 160 x 90 mm approx. 400 x 300 x 110 mm	approx. 236 x 159 x 70 mm approx. 360 x 320 x 130 mm	
Weight - Pump with pressure hose - Pump with accessories in case	approx. 0.9 kg approx. 3.9 kg	approx. 1.8 kg approx. 4.8 kg	

Pressure References

Type A



	Reference A	
Description	analogue test gauge with DIN measuring ranges	
Measuring range (Resolution) [bar]	-0.6...0 (0.005)	0...4 (0.05)
	-1...0 (0.01)	0...6 (0.05)
	-1...0.6 (0.02)	0...10 (0.1)
	-1...1.5 (0.02)	0...16 (0.2)
	-1...3 (0.05)	0...25 (0.2)
	-1...5 (0.05)	0...40 (0.5)
	-1...9 (0.1)	0...60 (0.5)
	-1...15 (0.2)	0...100 (1.0)
	-1...24 (0.2)	0...160 (2.0)
	0...0.6 (0.005)	0...250 (2.0)
	0...1 (0.01)	0...400 (2.0)
	0...1.6 (0.02)	0...600 (5.0)
	0...2,5 (0.02)	
Accuracy	0.6 % FS	
Pressure medium	fluids and gaseous mediums	
Pressure connection	1/4" BSP male	
Casing	stainless steel, Ø 100 mm	
Pressure units	bar	
PC connection	---	
Options	---	

Pressure References

Type E and D



	Reference E	Reference D
Description	digital reference test gauge	digital precision reference test gauge
Measuring range (Resolution) [bar]	-1...40 (0.01) 0...350 (0.1)	-1...3 (0.001) -1...40 (0.01) -1...60 (0.01) 0...350 (0.1) 0...700 (0.2) 0...1000 (0.2)
Accuracy	+/-0.5 % FS +/-1 digit	+/-0.10 % FS +/-1 digit
Pressure medium	fluids and gaseous mediums	
Pressure connection	1/4" BSP male	
Casing	D=70 h=100 w=30 mm, IP65, multi-purpose LCD (30 x 30 mm), function keys, rubber cap, 3 V battery, weight approx. 130 g	
Pressure units (switchable)	bar	bar, mbar / hPa, PSI, kPa, MPa, kg/cm ²
PC connection	---	RS 485 (only logger function)
Options	<ul style="list-style-type: none"> • EXI proofed version EX II 1G EEx ia II C T6 or T5 	<ul style="list-style-type: none"> • Analogue output programmable (4...20 mA) Scalable with offset and scale <i>- not with logger and EXI version -</i> • Logger function Logging of pressure and temperature Storing up to 57000 values Interval adjustable: 1 sec...99 days <i>- not with analogue output -</i> • EXI proofed version EX II 1G EEx ia IIC T6 or T5 EX II 2G EEx ia IIC T4 (Logger)

Pressure References

Type P and L



	Reference P	Reference L
Description	digital high-precision reference test gauge	digital high-precision reference test gauge
Measuring range (Resolution) [bar]	-1...1 (0.001 / 0.0001) 0...250 (0.1 / 0.02) -1...2.5 (0.001 / 0.0005) 0...350 (0.1 / 0.05) -1...5 (0.001 / 0.0005) 0...500 (0.1 / 0.05) -1...10 (0.01 / 0.001) 0...700 (0.1 / 0.05) -1...20 (0.01 / 0.002) 0...1000 (1 / 0.1) 0...50 (0.01 / 0.005) 0...1500 (1 / 0.2) 0...100 (0.1 / 0.01) 0...2000 (1 / 0.5)	-1...20 (0.001) 0...200 (0.01) 0...400 (0.05) 0...1000 (0.1)
Accuracy	+/-0.10 % FS +/-1 digit (Model A) +/-0.05 % FS +/-1 digit (Model B)	+/-0.025 % FS +/-1 digit (Model A) +/-0.01 % FS +/-1 digit (Model B)
Pressure medium	fluids and gaseous mediums	
Pressure connection	1/2" BSP male	1/4" BSP male
Casing	d=80 h=130 w=50 mm, IP65 (Front), multi-purpose LCD (20 x 60 mm), function keys, 4 x 1.5 V battery weight approx. 900 g	D=80 h=120 w=40 mm, IP65, multi-purpose LCD (30 x 30 mm), function keys, rubber cap, 3 V battery weight approx. 210 g
Pressure units (switchable)	bar, mbar, PSI, kPa, MPa	bar, mbar, PSI, hPa, kPa, MPa, kg/cm ² , mmHg, inHg, cmH ₂ O, mH ₂ O, inH ₂ O, ftH ₂ O
PC connection	RS 232	RS 485
Options	<ul style="list-style-type: none"> • Analogue output (Model A) programmable 4...20 mA or 0...10 V Scalable with offset and scale • Front panel mounting Front dimension 100 x 100 mm, max. depth 91.5 mm, panel cutting size 83 x 83 mm • Relais version integrated alarm and control functions programmable min., max.- and hysteresis function • Calibration software QuickCal 	<ul style="list-style-type: none"> • Recorder software Read30 • EXI proofed version EX II 1G EEx ia IIC T6

Pressure Calibrator

Type PC 700+



PC 700+	
Description	digital high-precision Pressure Calibrator
Measuring range (Resolution) [bar]	0...60 (0.005) 0...200 (0.02) 0...350 (0.03) 0...700 (0.07)
Accuracy	+/-0.025 % FS +/-1 digit
Pressure medium	special oil
Pressure connection	1/4" BSP female with pressure hose
Adapter set	1/8" BSP, 3/8" BSP, 1/2" BSP (cylindrical) NPT 1/8", NPT 3/8", NPT 1/4", NPT 1/2" (conical)
Casing	d=350 h=180 w=160 mm, IP65 (Front), approx. 8 kg, multi-purpose LCD (20 x 60 mm), function keys, 9 V rechargeable battery
Pressure units (switchable)	bar, PSI, kPa, MPa, kgf/cm ² , mmHg, inHg, cmH ₂ O, mH ₂ O, inH ₂ O, torr
PC connection	RS 232 interface
Measuring input	current 0...30 mA, voltage 0...15 VDC
Options	<ul style="list-style-type: none"> • Logger function for 30 data facts with each 10 values • Calibration software PreCal • EXI proofed version: EEx ia II C T5 - 02ATEX445Q

Our Production and Sales Range



Flow Sensors without moving Parts



Turbine Flow Sensors



Flow Switches



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Subject to technical modification

