

HUBER INSTRUMENTE

Ziefenstrasse 3, CH-4418 Reigoldswil
Tel. +41 (0)61 921 50 60
Fax +41 (0)61 921 0121
www.huber-i-l.com
E-Mail: info@huber-i-l.com

AUTOMATIC PRESSURE CALIBRATORS Types ADK 4000

Triple Range, each Class 0.05 %



Fields of Application

The Automatic Pressure Calibrator is used to increase the efficiency of adjustments, tests and calibrations of

- pressure transmitters
- pressure transducers
- pressure switches
- pressure gauges etc.

The procedures are conducted easier, more accurately, with higher security and than manually, as well as meeting the requirements of ISO 9000, ISO 17025, FDA and OSHA with respect to traceability and recording.

Combined with a conventional or the embedded PC/104 and software such C₃ (Computer Controlled Calibration), fully automatic calibrations of transmitters are possible with just a few mouse clicks.

Special Features

- Automatically measure and control pressure from 1 kPa up to 70 MPa relative or absolute
- Three measuring ranges in each calibrator, available in eight versions permitting an optimal adaption to the assigned application
- Automatic control of single pressure, calibration sequence with 20 % steps manual or automatic, stress cycle to exercise pressure sensitive devices
- No overshoot due to needle valves and precision stepper motor control
- Clear presentation of assigned and effective pressure on single display
- Nine different engineering units plus percent
- Integrated leak test to check integrity of measurement setup
- Integrated transmitter loop supply
- Economic expansion to additional ranges by cascaded Pressure Reference Standards
- Convertible between table top and 19" rack mount unit.
- Easiest operation from keyboard or through embeddable PC as a full calibration system.

Technical Characteristics

Executions / Measuring Ranges / Calibrations:

Type	ADK 4000	ADK 4001	ADK 4040	ADK 4000-G
	Table top	Rackmount	with embedded PC/104	0...70/35/15 MPa**
				-A 0...35/17.5/7 MPa
				-F 0...15/7/3 MPa
				-B 0...7'000/3'500/1500 kPa
				-C 0...3'500/1'750/700 kPa
				-D 0...700/350/150 kPa*
				-E 0...350/175/70 kPa*
				-J 0...100/50/20 kPa**
				- A relative (gage)
				- B absolute
				- C relative and absolute

* available relative only or absolute only

** available in relative calibration only

Engineering Units: kPa, mbar, bar, mmHg, cmH₂O, kg/cm², PSI, inHg, inH₂O, %

Max. error: 0.05% of active range; incl. linearity, hysteresis and reproducibility

Technical Characteristics (continued)

Resolution, Display:	0.02 % of active range
Display, Pressure:	7-segment-LED 14 mm, red
Resolution, Control:	0.002 % v.a.B.
Stability, Control:	max. ± 1 Digit
Display, Control:	5x7 fluorescence-matrix, 6 mm, 40 characters
Overload, max.:	750 % low range 300 % medium range 150 % high range
Pressure Media:	Dry instrument air or nitrogen (supply pressure approx. 20 % higher than full scale, precise regulation not required)
Consumption:	Negligible at selected target pressure and with a leak free system, content at exhaust
Pressure Exhaust:	To atmosphere for relative pressure (Vacuum pump required for absolute pressure below the actual barometric pressure)
Leak Test:	Integrated, by keyboard
"Jog"-Mode:	Modification of target pressure by display grads with keyboard, to test pressure switches and dial gauges
Operating Temperat.:	10...43 °C
Storage Temperature:	-18...65 °C
Relative Humidity:	0...95 % non-condensing
Pressure Connections:	1/8" NPT
Power Supply:	220-240 V AC, 50-60 Hz
Power Consumption:	≈ 23 W (V A)
Power Line Fuse:	0.125 A, 220 V AC
Transmitter Supply:	24 V, 24 mA
Net Weight:	≈ 14.4 kg
Dimensions:	450 x 155 x 430 mm
Data Interfaces:	GPIB (with PC/104 in addition: RS-232, Parallel, LAN, USB, VGA, PS Keyboard/Mouse)

Accessories

The Pressure Reference Standards Series DRS 3000 form economic components of a complete pressure control system. They permit to extend the range of the controller of one single ADK 4000 under cascading downwards from a highest range of 70 MPa to a lowest of 20 kPa. For optimum control characteristics over the entire range, only the supply pressure has to be adapted, beginning with the lowest range.

Also available are adapted pressure boosters, oil/gas interfaces for hydraulic test specimens, pressure limiters and other accessories.

Respective technical specifications as well as of the options mentioned beside are to be found on separate documentations.

Distributed by:

Options

Software for Automatic Calibrations

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For the realisation of fully automatic, optimum pressure calibration processes, several versions of software are available to the operator: One for Computer Aided (CAC) and one for Computer Controlled Calibration (C₃) with modules for relative, absolute, negative and/or differential pressure. The history of the data can be displayed and printed locally and exported by USB or LAN for security or processing in Instrument Maintenance Management Systems.

Increase of Accuracy

For applications where a maximum error of 0.05 % of the active range is not acceptable, Pressure Primary Standards with a maximum error of 0.03 % are available. Measuring ranges for relative or absolute pressure are available in steps between 0...1 kPa and 0...60 MPa.

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Integrated in the calibration software with TEDS mentioned above, a limitation of the uncertainty can be reached to only 0.01 % for the Pressure Primary Standards and to 0.03 % for the ADK 4000.

Technical specifications, data and design are subject to change without notice
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