

FLUKE®

Calibration

6241 and 6242

PPC4E Gas Pressure Controller Kits

Technical Data



- Precise pressure measurement and automated control, with ranges available from ± 15 kPa to 14 MPa (± 2.2 psi to 2,000 psi)
- Gauge, absolute and negative gauge (vacuum) modes included on most models
- Switch between absolute, gauge and bidirectional gauge modes and meet easy-to-understand full-year measurement specifications without added hardware or special calibration or maintenance operations
- ± 0.02 % one-year accuracy of any selected Autorange span, with Autorange span as low as 1 % of device full scale. Up to 100:1 accurate ± 0.02 % measure and control range turndown can truly be realized by a single calibrator
- Self-purging liquid trap included to automatically protect PPC4E from system contamination
- AutoTest™, AutoRange, ready/not ready indicator, set point jog feature, real-time measurement uncertainty display, RS-232 and IEEE-488.2 remote interfaces and other advanced features to automate, simplify testing, improve safety and prevent calibration errors and damage to equipment
- Quick connect test stand and interconnect to connect to the device under test
- Standard color graphical user interface with full support in 11 languages

Outstanding, wide-range performance in a single instrument

The Fluke Calibration PPC4E is the latest member of our PPC family of controller/calibrators to deliver extremely broad pressure range coverage at a level of performance that addresses your most common calibration workload. Calibrate transmitters, transducers, pressure switches, indicators, barometers and analog and digital gauges with ease using the color graphical user interface and advanced features.

PPC4E nominal measurement uncertainty is $\pm 0.02\%$ of AutoRanged span. The AutoRange feature allows you to quickly and easily align PPC4E performance to match your requirements exactly. Are you trying to decide if you can provide the best coverage if you buy a 300 psi or a 160 psi calibrator? What if you later need to calibrate a 200 psi device? With PPC4E it doesn't matter—accuracy is based on any AutoRanged span you enter, as long as it is within the instrument's turndown range:

- PPC4E models, 10:1 turndown (0.02 % of any AutoRanged span down to 10 % of PPC4E full scale pressure span)
- PPC4EX models, 100:1 turndown (0.02 % of any AutoRanged span down to 1 % of PPC4E full scale pressure span)

What if you receive a barometer for calibration? ...or a vacuum gauge? PPC4E is still the right tool. All models (except for PPC4E 15K) include absolute pressure and negative gauge (vacuum) capabilities. Some PPC4E models also provide excellent coverage of draft pressure (inches of water, mbar) ranges. With multiple pressure modes and very wide turndown capabilities, one PPC4E controller can effectively replace multiple controllers, calibrators or even gas deadweight testers and deadweight ball gauges. Move up to the well-known reliability and precision of a Fluke Calibration PPC4E pressure controller and enjoy great value and return on investment. Learn more about PPC4E at www.flukecal.com/ppc4e.

A simple, complete gas calibration solution

Fluke Calibration 6241 and 6242 PPC4E gas pressure controller kits feature PPC4E models to cover a very wide workload combined with the accessories needed for a complete calibration system. Included is the Fluke Calibration SPLT self-purging liquid trap to capture moisture in the test line and automatically purge to prevent contamination of the PPC4E, preventing errors and protecting your investment. Also included is interconnect hardware and a test station with a quick connect fitting to mount your pressure device to be tested. 6241 and 6242 kits provide the hardware for a complete gas calibration system.

Kit Model	PPC4E Model	0.02% accuracy of any span from/to	
		kPa	Psi
6241-15K	PPC4E 15K	± 1.5 to ± 15 kPa	± 0.2 to ± 2.2 psi
6241-100K	PPC4E 100K	± 10 to ± 100 kPa	± 1.5 to ± 15 psi
6241-1.4M	PPC4E 1.4M	140 to 1,400 kPa	20 to 200 psi
6241-7M	PPC4E 7M	700 to 7,000 kPa	100 to 1,000 psi
6241-14M	PPC4E 14M	1,400 to 14,000 kPa	200 to 2,000 psi
6242-100K	PPC4EX 100K	± 1 to ± 100 kPa	± 0.15 to ± 15 psi
6242-1.4M	PPC4EX 1.4M	14 to 1,400 kPa	2 to 200 psi
6242-7M	PPC4EX 7M	70 to 7,000 kPa	10 to 1,000 psi
6242-14M	PPC4EX 14M	140 to 14,000 kPa	20 to 2,000 psi

Table shows 6241 and 6242 0.02 % of autorange span coverage. From zero to the minimum span listed, accuracy is 0.02 % of the minimum span.

PPC4E measurement uncertainty (includes precision and one year stability)

Model	Gauge uncertainty ¹ Equal to % of AutoRanged span		Absolute uncertainty ¹ Equal to % of AutoRanged span + Constant		
	% of AutoRanged span	Minimum AutoRanged span ²	% of AutoRanged span	Constant	Minimum AutoRanged span ²
PPC4E 15K	0.02	± 1.5 (± 0.2 psi)	—	—	—
PPC4E 100K	0.02	± 10 kPa (± 1.5 psi)	0.02	0.014 kPa (0.002 psi)	70 kPa (10 psi)
PPC4EX 100K	0.02	± 1 kPa (± 0.15 psi)	0.02	0.014 kPa (0.002 psi)	70 kPa (10 psi)
PPC4E 1.4M	0.02	140 kPa (20 psi)	0.02	0.1 kPa (0.015 psi)	140 kPa (20 psi)
PPC4EX 1.4M	0.02	14 kPa (2 psi)	0.02	0.014 kPa (0.002 psi)	70 kPa (10 psi)
PPC4E 7M	0.02	700 kPa (100 psi)	0.02	0.5 kPa (0.07 psi)	700 kPa (100 psi)
PPC4EX 7M	0.02	70 kPa (10 psi)	0.02	0.05 kPa (0.007 psi)	70 kPa (10 psi)
PPC4E 14M	0.02	1,400 kPa (200 psi)	0.02	1 kPa (0.15 psi)	1,400 kPa (200 psi)
PPC4EX 14M	0.02	140 kPa (20 psi)	0.02	0.1 kPa (0.015 psi)	140 kPa (20 psi)

¹ Maximum deviation of the RPT indication from the true value of applied pressure including precision, predicted one year stability limit, temperature effect and calibration uncertainty, combined and expanded (k=2) following the ISO “Guide to the Expression of Uncertainty in Measurement.”

² For AutoRange spans below the Minimum AutoRanged span uncertainty is equal to the value at the Minimum AutoRanged span.

Pressure control specifications

Control precision	PPC4E: ± 0.0006 % of controller span PPC4EX: ± 0.0006 % of controller span (AutoRanged span > 10 % of controller span) ± 0.00006 % of controller span (AutoRanged span ≤ 10 % of controller span)
Lowest controllable pressure (gauge mode)	Zero set by automated venting. Lowest point above or below zero limited only by RPT resolution and control precision.
Lowest controllable pressure (absolute, negative gauge modes)	1 kPa absolute (0.15 psia) or gauge equivalent, for all models except PPC4E 7M and PPC4E 14M 3.5 kPa (0.5 psia) for PPC4E 7M 7 kPa (1 psia) for PPC4E 14M
Ultimate pressure (absolute, negative gauge) Depending on vacuum pump and connections	200 to 700 Pa absolute (2 to 7 mbar, 0.03 to 0.1 psia) or gauge equivalent
Typical pressure setting ready time (0.005 % hold limit, 50 cc test volume)	15 to 30 s
Typical test volume	0 to 1000 cc for controller range of 1.4 MPa [300 psi] or less 0 cc to 500 cc for controller range greater than 1.4 MPa [300 psi]

General specifications

Warm up time	None required, 30-minute temperature stabilization recommended for best performance from cold power up	
Resolution	To 1 ppm, user adjustable	
Power requirements	100 V ac to 240 V ac (-15 %, +10 %), 50 Hz to 60 Hz, 70 VA max consumption	
Operating temperature range	10 °C to 40 °C	
PPC4E weight	16.6 kg (36.5 lb)	
PPC4E dimensions (HxWxD)	19 cm x 35 cm x 45 cm (7.5 in x 13.8 in x 17.7 in)	
Operating medium	Any clean, dry, non-corrosive gas	
PPC4E pressure connections	Test (+), Test (-): 1/8 in NPT F Supply: 1/8 in NPT F	Exhaust: 3/8 in NPT F ATM: 10-32 UNF
SPLT pressure connections	1/4 in female NPT	
Test stand connections	Female quick-connect coupling with quick-connect stem adaptors to 1/4 in 37 degree flare male (AN4), 1/8 in NPT female and 1/4 in NPT female	

Ordering information

Kit models

6241-15K with PPC4E 15K, ± 1.5 to ± 15 kPa (± 0.2 to ± 2.2 psi)
6241-100K with PPC4E 100K, ± 10 to ± 100 kPa (± 1.5 to ± 15 psi)
6241-1.4M with PPC4E 1.4M, 140 to 1,400 kPa (20 to 200 psi)
6241-7M with PPC4E 7M, 700 to 7,000 kPa (100 to 1,000 psi)
6241-14M with PPC4E 14M, 1,400 to 14,000 kPa (200 to 2,000 psi)
6242-100K with PPC4EX 100K, ± 1 to ± 100 kPa (± 0.15 to ± 15 psi)
6242-1.4M with PPC4EX 1.4M, 14 to 1,400 kPa (2 to 200 psi)
6242-7M with PPC4EX 7M, 70 to 7,000 kPa (10 to 1,000 psi)
6242-14M with PPC4EX 14M, 140 to 14,000 kPa (20 to 2,000 psi)

Each kit contains:

- PPC4E pressure controller/calibrator with power line cords and operating manual
- SPLT self-purging liquid trap with connector to PPC4E
- Mountable test stand for device under test with interconnect and quick connect fitting and adaptors

Accessories

Case Rugged, reusable molded shipping case
Rack Mount Kit Rack mount kit for 48 cm (19 in) rack (4U)
PK-PPC-BG-DVU Dual volume unit for use with 15 kPa bi-directional gauge range control in PPC4E 15 K and PPC4EX 100 K
Reference vacuum kit, 220 V Vacuum pump package for PPC EXHAUST port, includes connections
Reference vacuum kit, 110 V Vacuum pump package for PPC EXHAUST port, includes connections
RS-232 Cable 9 pin, 2 m (6.6 ft) for PPC4E COM1
COMPASS for Pressure Software to automate testing, data acquisition, reporting and asset management
Silver CarePlans (Two- and four-year) Extended warranties including calibration and repair
Gold CarePlans (One- three- and five-year) Extended warranties including calibration and repair

Fluke Calibration. Precision, performance, confidence.™

Electrical	RF	Temperature	Pressure	Flow	Software
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