

Pressure Controllers

Automated Measurement and Control



Mensor – Your Source for High Accuracy Pressure Controllers

Mensor's array of high accuracy pressure controllers are designed to cover a variety of manufacturing, verification and calibration applications.

Different applications have different requirements of accuracy, range, stability, portability, modularity and media. Mensor's line of pressure controllers are designed to address these requirements in the form of an efficient, cost effective solution.

Each Mensor controller represents breakthroughs in regulation and measurement technology to enable best in class measurement accuracy and highly stable pressure regulation. The entire family of pressure controllers have graphic interfaces to enhance ease of use.

Reliability and accuracy in automation is valued in manufacturing, aerospace, pharmaceutical, power plants and calibration.

High Pressure

High pressure pneumatic & hydraulic controllers with accuracy up to 0.01% IS-50. Ranges from 0-1,500 psi (100 bar) up to 23,000 psi (1,600 bar).



High Accuracy

Modular single or dual channel controllers with removable transducers of accuracies up to 0.008% IS-33, and ranges from 0-10 in. H₂O (25 mbar) up to 3,060 psi (211 bar).



Industrial & Portable

Industrial performance class controller with accuracy up to 0.02% IS-50 accuracy. Ranges from 0-0.4 in. H₂O (1 mbar) up to 3,060 psi (211 bar).





Contents

High Pressure Controllers	4
High Accuracy Controllers	6
Industrial & Portable Controllers	8
Accessories	10
Comparison	11

Automated Pressure Controllers for Demanding Applications

The need for optimization, efficiency, accuracy, stability, reliability and usability in the calibration process has driven the development of Mensor pressure controllers. The selection of the right solution depends on each application's requirement.

This brochure provides an initial overview of different specifications and typical applications where Mensor pressure controllers have been used.

The last section shows some of the common accessories to the controllers, alongside a comparison of the different pneumatic models to assist in choosing the right controller for your application.

QR codes in each section link to data sheets or product pages where more detailed information can be viewed.

High Pressure Controllers

CPC8000-H

Hydraulic Pressure Controller



Data Sheet



The CPC8000-H provides accurate control for high pressure applications in manufacturing and laboratory applications up to 23,000 psi. It also offers the flexibility of up to two measuring ranges with water or oil media. Internal pressure priming and multiplying technology require only a pneumatic supply for operation.

- Accuracy up to 0.01% IS-50
- Measuring range: 75...10,000 psi to 290...23,000 psi
- Control stability: 0.005% FS
- Low pressure mode up to 10,000 psi
- Up to two transducers and a barometer

CPC7000

Pneumatic High Pressure Controller



Data Sheet



The CPC7000 is a high pressure pneumatic controller with pressure range up to 10,000 psi. The instrument can be configured with up to three pressure transducers for a wide operating range. It offers reinforced overpressure safety with burst discs and emergency venting of all unused transducers. The instrument is operated remotely with RS-232, USB, Ethernet and IEEE-4888 interfaces.

- Accuracy up to 0.01% IS-50
- Measuring range:
 - Gauge: 0...1,500 to 0... 10,000 psi
 - Absolute: 0...1,515 to 0...6015 psi
- Control stability: 0.008% FS
- Up to three transducers and a barometer



High Pressure Applications

The CPC8000-H and CPC7000 are both used when there is a requirement for high pressure. The CPC8000-H offers a hydraulic output of pressure compatible with a variety of oils and water. The CPC7000 performs a similar function in the pneumatic environment for use in contamination sensitive environments. Both instruments house multiple transducers to ensure wide range operation and are designed for safe operation with emergency vent protocols and pressure relief. Both these instruments have a 365 day calibration interval.

- Automotive
 - Engine Test Cells
 - Calibration
 - Sensor manufacturing
- Aerospace
 - Space exploration sensor manufacturing
 - Aviation
 - Hydraulic testing
- Industrial sensor/transmitter manufacturing
- Calibration production standards
- Oil & gas refining and exploration

High Accuracy Controllers

CPC8000

High-End Pressure Controller



Data Sheet

The CPC8000 has an accuracy of 0.008% IS combined with a control stability of 0.002% FS to deliver a precision solution for laboratory and high accuracy manufacturing applications up to 6,000 psi. The CPC8000 houses up to three transducers with auto range capability to get the best dynamic accuracy for calibrating a variety of ranges with one instrument.

- Accuracy up to 0.008% IS-33
- Measuring range:
 - Gauge: 0...5 to 0... 6,000 psi
 - Absolute: 0 ... 14.5 to 0 ... 6,015 psi
 - Bi-Directional: -14.5 ... 14.5 to -15 ... 6,015 psi
- Adaptation of varying volumes and supply pressure
- Up to three transducers and a barometer

CPC6050

Modular Pressure Transducers



Data Sheet

The CPC6050 delivers unmatched modularity with two interchangeable channels and two removable transducers per channel. It also delivers an accuracy of 0.01% IS from 10" of H₂O to 3,045 psi for laboratory and production applications. The instrument can be configured with a pressure generation pump up to 30 psi for low pressure calibrations. Additional features like the burst test, leak test and switch test are desirable for R&D purposes and production verification.

- Accuracy up to 0.01% IS-50
- Measuring range:
 - Gauge: 0...0.36 to 0... 3,045 psi
 - Absolute: 0 ... 7.5 to 0 ... 3,060 psi
 - Bi-Directional: -0.18 ... 0.18 to -15 ... 3,045 psi
- Internal pump up to 30 psi
- Control stability: 0.003% of range
- Backward compatible with CPC6000 transducers
- Up to two channels, four transducers and a barometer



High Accuracy Applications

The CPC8000 and CPC6050 are the highest accuracy pressure controllers Mensor offers. These controllers offer the benefits of high accuracy with wide dynamic ranges, removable and interchangeable transducers and highly stable pressure control. CPC8000 and CPC6050 both automatically adapt to variation in control volume and come in rack-mountable configurations for easy setup in production environments. The CPC6050 also has the option of internal low pressure generation with control, making it a self-supplying controller. Both instruments have a 365 day calibration interval for ranges >1 psi.

- Sensor/transmitter manufacturing
- Aerospace
 - Wind tunnels
 - Calibration
 - Avionics
- Calibration transfer standards
- Medical / Pharmaceutical testing and monitoring
- Semiconductor
- Power generation

Industrial & Portable Controllers

CPC4000

Industrial Pressure Controller



Data Sheet



The CPC4000 delivers an accuracy of 0.02% IS up to 3,045 psi in a cost effective solution for plant maintenance, secondary calibrations and leak testing. With up to two auto ranging transducers, it can be optimized to calibrate devices in a wide range. The CPC4000 can also be used as a stable pressure source with a control stability of 0.005% FS for supplying pressure to reference or test instruments.

- Accuracy up to 0.02% IS-50
- Measuring range:
 - Gauge: 0...5 to 0... 3,045 psi
 - Absolute: 0...7.5 to 0...3,060 psi
 - Bi-Directional: -2.5...2.5 to -15...3,045 psi
- Control stability: 0.005% FS
- Up to two transducers and a barometer

CPC2000

Portable Low Pressure Controller

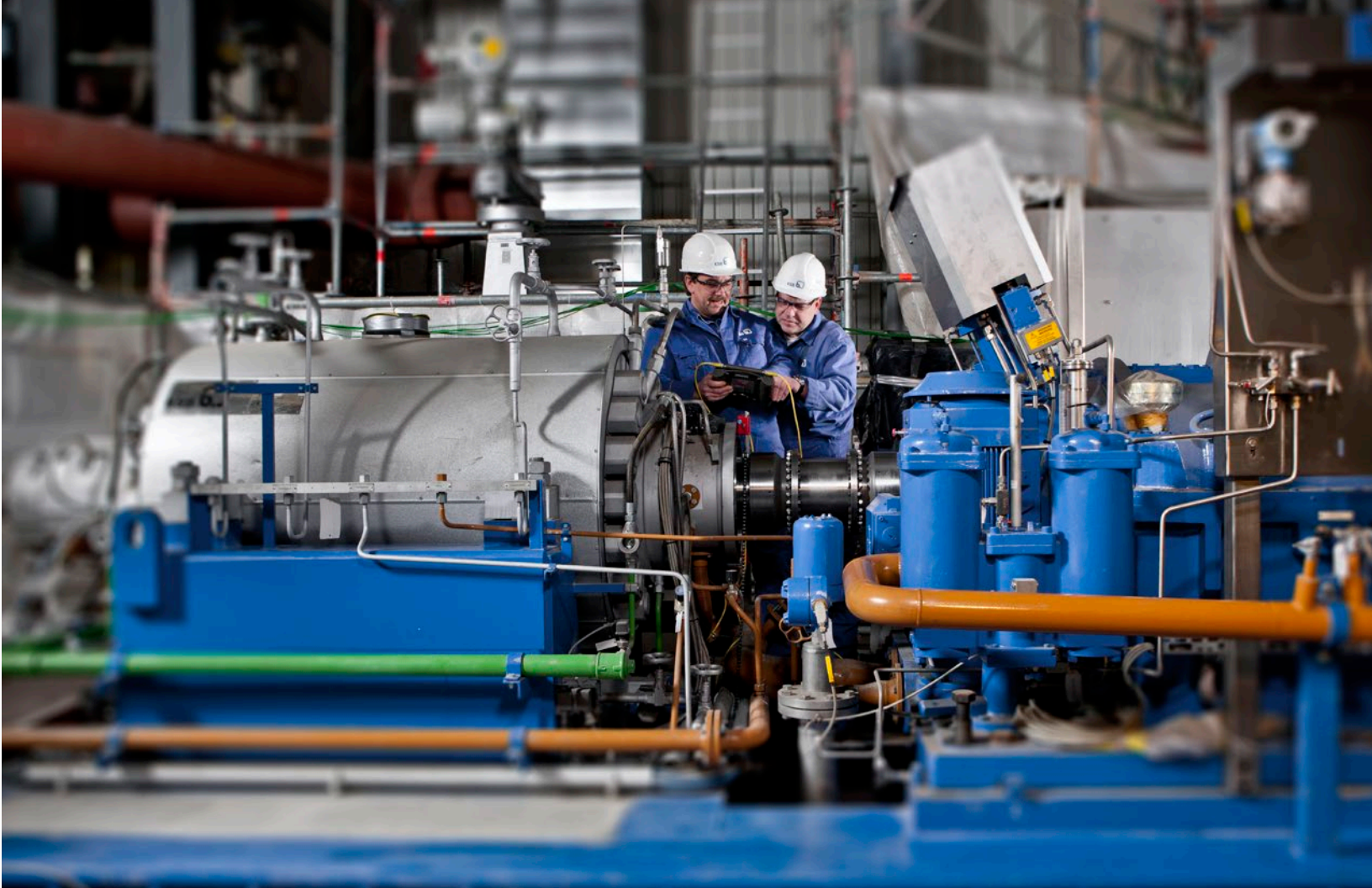


Data Sheet



The CPC2000 is a portable low pressure controller designed to perform calibrations in manufacturing, pharmaceutical, clean room and other low pressure applications. With integrated vacuum and pressure generation and a small footprint, it is designed to perform field calibrations, reducing down time.

- Accuracy up to 0.1% FS
- Measuring range: 0.01...14.5 psi
- Internal vacuum and pressure generation
- Li-ion rechargeable battery
- Zero and tare functionality



Industrial Applications

Applications such as industrial gauge and transmitter manufacturing, instrument maintenance and verification require an automated calibrator to maximize throughput. The CPC4000 can be used to perform final validation of these instruments in manufacturing. Maintenance of these instruments requires quick zero and span calibrations and/or stable pressure supply source; the CPC4000 can control pressure with 0.005% stability and allows for multiple setpoint entry methods.

Portable Applications

Low pressure calibrations and verifications can be performed on site using the CPC2000 for pharmaceutical, medical, clean room, HVAC and maintenance applications. Internal pressure and vacuum generation prevent the need for an external pressure source, and a light chassis make it a convenient portable calibration solution.

Accessories

Pressure Controllers

Pneumatic Pressure Boosters



Pressure boosters are available to source clean, dry air or nitrogen supply to the pressure controllers with outputs up to 10,000 psi. Mensor offers three versions of the boosters for varying supply with rollbar or rack mount configurations.

- Pressure input: 130 to 3000 psi (model dependent)
- Pressure output: 1,500 to 10,000 psi (model dependent)
- Built-in filter on supply port

Barometric Reference Transducer



All pressure controllers except the CPC2000 can be configured with an optional barometric reference transducer to emulate gauge or absolute pressure, or to perform zero calibrations on absolute transducers.

- Accuracy: 0.01% or 0.02% of reading
- Calibration interval of 365 days

Transducer Calibration Adaptor



The calibration adaptor/sled is designed for easy calibration of internal transducers outside the controller. The kit varies in dimension and components depending on the controller model. The kit includes power supply, cable and software for communication.

- Up to 11 points of linearization
- On-site calibration

Automatic Contamination Prevention System



The Automatic Contamination Prevention System (A-CPS) is compatible with the CPC6050 and CPC4000. It is equipped with a coalescing filter and a bleed valve to prevent contaminants from entering in the controller.

- Pressure range up to 3,060 psi
- Automatically driven by the controller touchscreen
- Clear collection bottle at the bottom to trap contaminants
- DUT connection at the top and back



Comparison of Pneumatic Pressure Controllers

	CPC7000	CPC8000	CPC6050	CPC4000
FS Range	1,500 - 10,000 psi	5 - 6,000 psi	0.36 - 3,045 psi	5 - 3,045 psi
Accuracy	0.01% FS/IS	0.008% FS/IS	0.01% FS/IS	0.02% FS/IS
Media	Nitrogen only	Non corrosive gases	Non corrosive gases	Non corrosive gases
Transducers	3	3	4	2
Control stability	0.008% FS	0.002% FS	0.003% range	0.005% FS
Special features	Relief valve & burst disk for overpressure safety. Emergency vent feature.	Auto adaptation to control volume & supply change.	Wide dynamic range with auto channeling. Internal pump up to 30 psi.	High speed operation with leak test application.



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