

GE Sensing

Features

- Dual range controller with independent test ports for each range.
- Simultaneous pressure control for each range.
- Select any range combination from 0 to 10 inH₂O (25 mbar) to 0 to 2500 psi (172 bar).
- Two models to choose from, 7252i or 7252.
- Time to setpoint < 15 seconds with no overshoot.
- Control stability, < 10 ppm of each range.

The Series 7252 dual output digital pressure controllers provide a unique and flexible approach to performing automated calibrations over a wide pressure range with a single instrument. This is accomplished through the use of two separate pressure sensors with independent pressure controllers for each range. Additionally, each range can be operated simultaneously to provide maximum efficiency and throughput.

For applications that do not require a dual output controller, GE offers the Series 7250 multi-range single output pressure controllers. Please refer to the Series 7250 data sheet for complete information.

Adding to the flexibility of the Series 7252, two performance models are available: the Model 7252i that offers percent of reading performance further extending the capabilities of a single calibrator, or the Model 7252, that provides percent of full scale (FS) performance for each range.

The Model 7252i provides a precision of 0.005% of Reading from 25% to 100% of each installed range. For pressures below the lower threshold of 25%, the precision becomes 0.005% of the 25% value. Alternatively, the Model 7252 provides a precision of 0.003% of FS for each installed range. Both models provide a one year stability of 0.0075% of Reading allowing a one year calibration interval.

Both the 7252i and 7252 are available in a variety of pressure ranges. Choose from any pressure range combination from as low as 10 inH₂O (25 mbar) up to 2500 psi (172 bar). For example, either the Model 7252 or 7252i can be configured with a lower pressure range of 10 psi (1 bar) and an upper range of 1000 psi (70 bar). Or, a Model 7252i could include a 10 inH₂O (25 mbar) range and 2500 psi (172 bar) to cover very low and very high pressure calibration requirements. Only GE provides such a broad pressure range coverage factor in a dual output pressure controller. Please refer to the back page for a complete list of standard pressure ranges. GE also offers custom pressure ranges to meet specific customer requirements.

Series 7252

Ruska Dual Output Digital Pressure Controllers

Series 7252 is a Ruska product. Ruska has joined other GE high-technology sensing businesses under a new name—GE Industrial, Sensing.





Series 7252s features a unique fused-quartz sensor. This rugged transducer offers unequalled precision and a stability of 0.0075% of reading per year.

For absolute mode calibrations, the Series 7252 can be supplied with a Barometric Reference option, or the Vacuum Reference option where a vacuum pump is connected to the reference port(s). While the former offers a high degree of convenience by allowing instantaneous transition from gauge to absolute mode, the Vacuum Reference option provides the ultimate performance solution, since it does not introduce the additional uncertainty of a secondary, barometric sensor. Instruments with the Vacuum Reference option include an on-board vacuum sensor to allow fully automatic zeroing when operating in absolute mode. For applications where absolute calibrations are performed exclusively, permanent absolute ranges to 50 psia (4 bar) are available. The Series 7252 also provides negative gauge operation to support the calibration of a wide variety of test devices and applications.

The Series 7252 is a dual output pressure controller, which increases throughput, while providing maximum stability for each range. With simultaneous pressure control, it can actually perform two calibrations at the same time.

For Series 7252's configured with dual ranges between 10 (1 bar) and 1000 psi (70 bar), the two test ports can be interconnected. The instrument will then auto range from the lowest to the highest sensor and vice versa. For performing single calibrations, this feature provides a high degree of performance over the full range.

Increased throughput is also accomplished via the digital control valve technology, that ensures fast control speed with no overshoot. For example, each range will control in 10% increments in 15 seconds, or less, into a 15 cubic inch (245 cc) volume. No other controller combines this speed coupled with no overshoot control.

For ease of use, the large, bright, active matrix color display provides the operator with menus that are presented in plain text with a logical navigation structure similar to all other Ruska digital pressure controllers and indicators, with multi-lingual support.

Automating Pressure Test and Calibration

The Model 7252i and Model 7252 are easy to use and can automate your calibrations in several ways:

- **Step up/down:** For calibrations where the increments are fixed intervals, enter a user-defined step value. The Series 7252 increases or decreases the pressure by the step amount with the jog dial—no lengthy keystroke sequences to program.
- **Sweep test:** For simple exercising routines, as with dial gauges, enter a start value, a stop value and number of times to repeat the cycle. The Series 7252 will automatically exercise the device under test prior to the calibration run.
- **Computer interface:** Every Series 7252 is provided with both an RS232 and IEEE-488 interface, and all Series 7252's syntax follow SCPI protocol for easy programming. Intecal, an off-the-shelf software package, is available in addition to a LabVIEW® driver, a free download. Firmware updates can also be performed over the RS232 interface (updates can be downloaded from the website). A MET/CAL driver is also an available option.

Versatility to handle any pneumatic pressure calibration

The Series 7252 is versatile enough to handle almost any type of pneumatic pressure calibration.

- **Wide pressure range:** The Series 7252 is available in a variety of standard or custom full scale (FS) pressure ranges from 10 inH₂O (25 mbar) to 2500 psi (172 bar).
- **Pressure units/scales:** Select from over fifteen standard units of measure, including inHg at 0°C and 60°F, kPa, bar, psi, inH₂O at 4°C, 20°C and 60°F, kg/cm², mmHg at 0°C, cmHg at 0°C, and cmH₂O at 4°C, and two user defined units.
- **Head pressure:** The Series 7252 automatically corrects for head pressure differences.
- **Autovent and autozero:** With a few keystroke, the Series 7252 will vent the test port to atmosphere or automatically zero itself (autovent is not applicable to permanent absolute models).
- **Protection of the device under test:** Set upper and lower pressure limits to ensure protection of the device under test.

Series 7252 Specifications

Pressure Ranges

Standard Pressure Ranges

Model 7252i

Select any two of the following ranges:

0.36/1, 5, 10, 20, 50, 100, 300, 500, 1000, 1500, 2000 and 2500 psi gauge; 15, 20, 30 and 50 psi absolute (25/70 mbar, 400 mbar, 600 mbar 1.0, 1.6, 2.5, 4, 6, 10, 16, 25, 40, 60, 100 and 160 bar absolute)

Model 7252

Select any two of the following ranges:

0.36/1.5, 10, 20, 30, 50, 100, 150, 300, 500, 1000, 1500, 2000, 2500 psi gauge; 15, 20, 30 and 50 psi absolute (25/70 mbar, 400 mbar, 600 mbar 1.0, 1.6, 2.5, 4, 6, 10, 16, 25, 40, 60, 100 and 160 bar absolute)

Optional Pressure Ranges

Model 7252i

Any FS range from 5 to 2500 psig (400 mbar to 172 bar)

Model 7252

Any FS range from 1 to 2500 psig (70 mbar to 172 bar)

Optional modes

- Absolute using barometric reference sensor for ranges from 15 to 2500 psig (1 to 172bar)
- Absolute using Vacuum Reference option for ranges from 5 to 2500 psig (400 mbar to 172 bar)
- Negative gauge

Performance

Precision

Model 7252i

Ranges from 5 to 2500 psi (400 mbar to 172 bar) From 25% to 100% FS: 0.005% of reading
Below 25% FS: 0.005% of 25% FS

Model 7252

Ranges 5 to 2500 psi (400 mbar to 172 bar) 0.003% of FS

Model 7252i

0.36/1 psi (25/70 mbar) range: 0.005% of reading from 10% to 100% of maximum FS.

Stability

0.0075% of reading per year

Control Stability

- Active mode: 0.001% of each range
- 0.36/1 psi (25/70 mbar) range: 0.004% of each range
- Passive mode: No additional uncertainty

Display Resolution

User selectable to 1:1,000,000

Control Response

15 seconds or less with zero overshoot into a 15 in³ (245 cc) volume in 10% increments

Negative Gauge Precision (Optional)

Model 7252i

0.005% of 25% FS or 0.0005 psi* (0.0345 mbar)

Model 7252

0.003% of positive FS

*Whichever is greater

Barometric Reference (Optional)

0.002 psi (0.1379 mbar) maximum error per year

Vacuum Reference (Optional)

0.0002 psi (0.014 mbar) maximum error per year

Calibration

A calibration report with traceability to National Institute of Standards and Technology (NIST) is provided. GE calibrates all Series 7252's with the Model 2465 (0.0010% of reading) to 1000 psi (70 bar) and the Model 2470 (0.0011% of reading). Gas piston gauge above 1000 psi (70 bar). A NVLAP accredited calibration is available.

Total Uncertainty

The maximum deviation from the true value of pressure including precision, stability, temperature effects and the calibration standard is:

Model 7252i

Ranges 0.36 to 2500 psi (25 mbar to 172 bar) (25%-100%FS)

- 90 day: 0.006% reading
- 1 year: 0.009% reading

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Series 7252

- Ranges 5 to 2500 psi (400 mbar to 172 bar)
- 90 day: RSS 0.003% FS + 0.002% reading
 - 1 year: RSS 0.003% FS + 0.0075% reading

Control Parameters

- Volume: 5 to 60 cu.in. (82 to 980 cc)
- Control low limit:
 - 0 psi (0 mbar) gauge
 - 0.15 psi (10 mbar) absolute

Communications

- RS232 and IEEE-488, SCPI syntax.
- LabVIEW driver—download from www.gesensing.com
- MET/CAL driver optionally available
- Firmware updates are performed via RS232 interface

Languages

The Series 7252 is capable of displaying menus and functions in: English, Japanese, French, Spanish, Chinese, Italian and German

Options

- Barometric reference (absolute and negative gauge)
- Vacuum reference* (absolute)
- Negative gauge only
- NVLAP accredited calibration
- Rack mount kit
- MET/CAL driver
- Intecal software
- Liquid trap assembly

*Requires external vacuum pump

General

Display

TFT, VGA, Active matrix, 6.4 in (163 mm), 640 X 480 resolution, 65,000 colors

Temperature

- Operating: 64°F to 97°F (18°C to 36°C)
- Storage: -4°F to 158°F (-20°C to 70°C)

Humidity

5% to 95% relative humidity, non-condensing

Dimensions (h x w x d)

All versions: 7 in X 16.5 in X 19 in
(178 mm x 419 mm x 483 mm)

Weight

Series 7252/7252i: 20 lb (9 kg)

Power

90 to 260 VAC, 50/60 Hz, 150 W

Test Port and Supply Connection

1/4 inch NPT female

Warm up Time

2 to 3 hours; may be left on indefinitely

Pressure Medium

Nitrogen or clean dry air

Precision is defined as the combined effects of linearity, repeatability and hysteresis throughout the operating temperature range.

Expression of uncertainty conforms with the recommendations of the ISO Guide to the Expression of Uncertainty in Measurement.

Due to GE's process of continuous improvements, specifications are subject to change without notice.

Other Products and Services

In addition to a wide range of digital pressure controllers and indicators from 0.36 to 40,000 psi (25 mbar to 2750 bar), GE manufactures primary standard piston gauges from 0.2 to 72,500 psi (14 mbar to 5000 bar).



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