

SERIES 7200



Precision Pressure Indicator

- Pressure ranges from 1 to 2750 bar
- Precision to 0.01%
- Six pressure ranges available in one instrument
- User defined configurations allow one instrument to perform multiple tasks and functions
- Large, easy to read display
- AC or battery operation for portability



SERIES 7200

Precision Pressure Indicator

The Series 7200 is Ruska's latest, third generation, Precision Pressure Indicator (PPI) which includes several new features, from the large text and graphics display to the easy to use menu.

Flexibility and Performance

The Series 7200 consists of two models: the Model 7220 and the Model 7230. Each model is available in a dual sensor configuration for enhanced performance (7222 and 7232 respectively). The Model 7220 and 7222 provides cost effective measurement from 1.3 bara (ideal for barometric measurement) to 50 bara with a precision of up to 0.01% full scale. Ranges of 1.3, 2.6 and 3.5 bara can be used with virtually any noncorrosive gas whereas ranges of 10, 35 and 50 bara are for use on either air or nitrogen.

The Model 7230 and 7232 provide a greater range of pressure measurement capability with ranges from 1 bara to 2750 bara. Additionally, the 7230 and 7232 are available with the Triple Scale option providing up to six measurement ranges in a single instrument, with precision up to 0.01% of each range. The 7230 and 7232 can be used with virtually any noncorrosive gas for all ranges. Ranges of 68 bara and higher can be provided with a liquid filled test port for measurement applications where the test media is a liquid instead of a gas.

Large, Bright Display

The Series 7200 features a backlit, LCD display with a large character size allowing the pressure value and units to be read from several meters away, especially useful when utilizing the Series 7200 as a lab barometer. All aspects of the display can be customized by the user (for example, the upper part of the display can show the pressure reading and the lower display can be set to show the rate of pressure change in units per minute or per second).

Pressure Units

The PPI can display pressure in 18 different units including: psi, inHg @ 0°C, Pa, hPa, kPa, MPa, inH₂O @ 4, 20 and 25°C, cmH₂O @ 4°C, kg/cm², mmHg @ 0°C, bar, mbar, psf, atm, feet and meters. There are also two user defined units. Knots and km/hr are available on dual sensor instruments.

Tare Mode

The PPI has the ability to "tare" the sensor reading at any value. This is especially useful when using an absolute range PPI in gauge mode.

Peak Hold

The Series 7200 will retain the lowest and highest measured pressure since the last reset. This is a useful feature when using the Series 7200 to set and test relief valves and pressure switches.

Leak Test

The Series 7200 has a built in function to allow the operator to easily perform a leak test. The user can define a wait or dwell time prior to initiating the leak test along with defining the amount of time to perform the test. At the completion of the test the Series 7200 will display the change in pressure along with the rate of pressure change.

Programmable Limits

The PPI allows the operator to set user defined high and low pressure limits. Should the measured pressure exceed these limits, an audible alarm will sound.



Use the PV-411 Hand Pump along with the optional Series 7200 Carrying Case and battery for a portable calibration system.



Or, use the manual Pressure Control Pack with the Series 7200 to configure a bench top calibration system.



Profiles

The Series 7200 is capable of storing up to 4 user defined profiles. A profile is used by the PPI to save a display configuration for future recall. This way, the most commonly used configurations can be easily created and recalled with a minimum of key strokes. For example, a user may have a dual sensor PPI that is used in two primary applications. One may be for testing avionics devices in units of feet of altitude and knots of airspeed whereas the second application may be a single channel operation for measuring barometric pressure in units of inHg. The user could set up the unit for the first application with a profile named AVIONICS and a second named BARO. Switching between these two settings or profiles only requires two keystrokes.

Airfield Mode

The PPI can be set up to operate in either Standard or an Airfield mode of operation when utilized as a barometer. The Standard mode is used for most applications; however, the Airfield mode can be used where the operator wishes to correct the pressure reading for a particular airfield elevation and air temperature (both QFE and QNH are supported).

Three Hour Trend Graph

The Series 7200 has the ability to log and display a three-hour trend graph. Graph scaling occurs automatically with the X axis set at 3 hours, and the Y axis set at the maximum and minimum pressures that occurred during the previous 3 hour window.

Battery Operation

An optional rechargeable battery is available for using the PPI in remote locations where AC power may not be available. No other instrument provides the range of performance and pressure range in a battery powered instrument. The battery is approved by the Department of Transportation (DOT) and the International Air Transport Association (IATA). The battery is easily installed and typically provides over 8 hours of operation and is automatically recharged when the PPI is connected to AC power. Alternatively, an optional external battery charger is available. A screen saver function is included to turn off backlighting when the PPI is not in use to extend battery life.

Triple Scale Option

The Model 7230 single sensor PPI and Model 7232 dual sensor PPI are available with the Triple Scale option. This option enhances the performance of the PPI over a greater pressure range turning the 7230 into a three range instrument and the 7232 into a six range instrument reducing the number of instruments required to cover a wide pressure range. The table (left) shows the ranges provided with each full scale sensor range.

Computer Interface

The PPI is provided with an RS-232 interface for connecting to a PC. An optional IEEE-488 interface plug-in card is also available. Both interfaces support SCPI (Standard Commands for Programmable Instruments) and can emulate the older Ruska Series 6200 PPI for easy upgrade.

Full Scale	Triple Scale Ranges (bara)		
	Low	Mid	High
1	0.3	0.6	1
1.5	0.5	1	1.5
2	0.6	1.2	2
3	1	2	3
7	2	4.5	7
14	4.5	10	14
20	6	12	20
30	10	20	30
70	20	40	70
140	45	90	140
210	70	140	210
415	140	280	415
700	200	400	700
1400	450	1000	1400
2070	700	1400	2070
2750	900	1800	2750

Specifications

PRESSURE RANGES

Model 7220	1.3, 2.5, 3.5, 10, 35 and 50 bara
Model 7222	Select any two of the above 7220 ranges
Model 7230*	
Absolute	1, 1.5, 2, 3, 7, 14, 20, 30, 70, 140, 210, 415, 700, 1400, 2070 and 2750 bara
Gauge	1, 2, 7 and 14 barg
Model 7232*	Select any two of the above 7230 ranges

*All ranges can be Triple Scaled (see table)

PERFORMANCE

Precision¹

Model 7220		
Ranges 1.3, 2.5 and 3.5 bara		0.01% full scale
Ranges 10, 35 and 50 bara		0.02% full scale
Model 7230		
Ranges to 1400 bara		0.01% of range
Ranges 2070 and 2750 bara		0.02% of range

Stability

Model 7220		0.01% of full scale per year
Model 7230 to 20,000 psia		0.01% of range per year
2070 and 2750 bara		0.02% of range per year

Total Uncertainty²

Model 7220		
Ranges 1.3, 2.5 and 3.5 bara		0.014% full scale per year
Ranges 10, 35 and 50 bara		0.028% full scale per year
Model 7230		
Ranges from 1 to 1400 bara		0.015% of range per year
Ranges 2070 and 2750 bara		0.028% of range per year

Display Resolution

User selectable to 1:1,000,000

Calibrated Temperature Range

All models and ranges 0 to 50 °C

Media

Model 7220:		
Ranges 1.3, 2.5 and 3.5 bara:		Any noncorrosive gas
Ranges 10, 35 and 50 bara:		Air or Nitrogen
Model 7230:		Any noncorrosive gas, or specify silicone oil filled test port for use with liquid systems for ranges 1400 bara and higher

OPTIONS

IEEE-488 interface card
Battery
Battery Charger
Carrying case
Rack Mount Kit

GENERAL

Display

Vacuum fluorescent, graphical

Electrical Power

110/220 VAC, 50/60 Hz

Communication

RS-232 standard, IEEE-488 optional

Temperature

Operating : 0 to 50 °C
Storage : -20 to 50 °C

Humidity

5% to 95% relative humidity, non-condensing

Dimensions

12 cm H x 30 cm W x 35 cm D

Weight

4 kg

Test Port Connection

1/4 inch NPT female for ranges to 30 bar
1/8 inch NPT female for ranges above 30 to 700 bar
1/8 inch Autoclave for ranges above 700 to 2750 bar

1 Precision is defined as the combined effects of linearity, repeatability, hysteresis and temperature effects over the entire operating temperature range (0 to 50 °C).

2 Expression of accuracy (uncertainty) conforms with the recommendations of the ISO Guide to the Expression of Uncertainty in Measurement and includes precision, stability, temperature effects, and the calibration standard.

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

Other Products and Services

In addition to a wide range of digital pressure controllers and indicators from 70 mbar to 2750 bar, Ruska manufactures primary standard deadweight gauges from 14 mbar to 5000 bar.



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