



WeldComputer

Digital Pressure Regulator Provides High Accuracy Pneumatic Control

Unit provides two regulated pressure channels controllable from an IBM PC compatible computer.



WeldComputer Corporation's Digital Programmable Air System with Feedback is a functional replacement for conventional manually controlled pneumatic pressure regulators. Originally designed for resistance welding applications, it eliminates the need for inaccurate and cumbersome manual operator adjustments by providing automatic adjustment of the pressure settings from any host computer equipped with a standard RS-232 serial interface. The unit plugs directly into the COM1 (or COM2) port of an IBM PC compatible computer to allow for two independent channels of digitally controlled pressure regulation ranging from 0.1 to 99.9 PSI. Each pressure channel employs automatic closed-loop feedback to

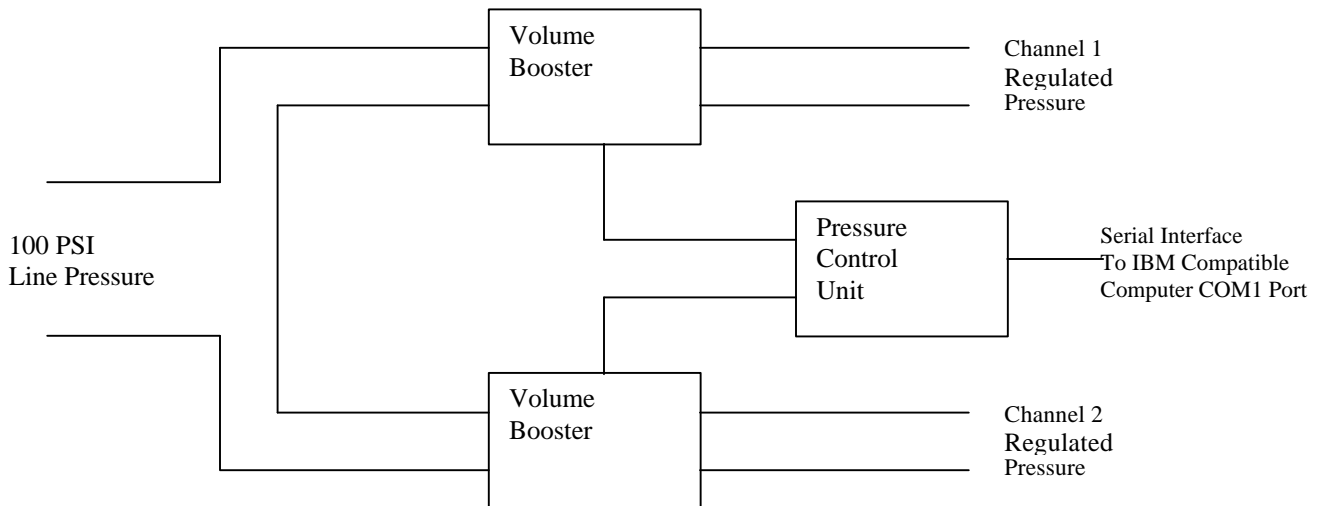
continuously maintain regulated pressures at the programmed target values. Actual measured pressure data from each regulator is communicated through the serial interface back to the host computer to provide real-time pressure monitoring capability.

Digital Programmable Air System with Feedback

Features/Benefits

- High accuracy computer controlled pressure regulation.
- Replace two manually controlled pressure regulators in pneumatic applications.
- Eliminate error inherent to conventional manually controlled pressure regulators.
- Standard pressure adjustable from 0.1 to 99.9 PSI with 0.1 PSI resolution.
- Other pressure ranges available.
- Pressure read-back capability allows monitoring of actual regulated pressures.
- Plugs into COM1 (or COM2) port of any IBM PC compatible computer.
- PC software available to control and program pressures and read back actual regulated pressures.
- Digital control of pressure provides superior immunity from noise and interference in factory environments.
- Available for wide range of CFM flow rate requirements.

Schematic



Digital dual pressure unit provides two regulated pressure channels controllable from an IBM PC compatible computer. Each pressure channel is adjustable from 0.1 to 99.9 PSI with 0.1 PSI pressure resolution. Pressure read-back function allows monitoring of actual regulated pressures.

Software Programming Information

Setting Pressures

A seven-character sequence transmitted from the COM1 port of an IBM PC compatible computer automatically sets the pressures at the Channel 1 and Channel 2 outputs. Each pressure channel can be set from 00.0 to 99.9 PSI in 0.1 PSI increments. Character transmission sequence @XXXYYY sets the pressures on Channel 1 to XX.X PSI and Channel 2 to YY.Y PSI.

Example: Character sequence @123456 sets the pressures on Channel 1 to 12.3 PSI and sets the pressures on Channel 2 to 45.6 PSI.

Monitoring Pressures

The actual measured pressures at the Channel 1 and Channel 2 pressure regulators are transmitted to the COM1 port of an IBM PC compatible computer as a seven-character sequence. A monitored character sequence @XXXYYY corresponds to a measured pressure of XX.X PSI on Channel 1 and a measured pressure of YY.Y PSI on Channel 2.

Example: A monitored character sequence @234567 corresponds to a measured pressure on Channel 1 of 23.4 PSI and measured pressure on Channel 2 of 56.7 PSI.

Hardware Interfacing Information

Host Computer (DTE Equipment) Serial Connector Pin Assignments:

<u>Pin</u>	<u>Signal Description</u>
1	Protective Ground
2	Transmit Data
3	Receive Data
4	Request to Send
5	Clear to Send
7	Signal Ground

Specifications

Number of pressure channels	:	2
Control Range	:	00.0 to 99.9 PSI
Control Resolution	:	0.1 PSI
Accuracy	:	0.25%
Interface Type	:	Serial
Baud Rate	:	19.2 Kbaud
Number of Data Bits	:	8
Number of Stop Bits	:	1