

Features

- 0 - 50 psid pressure range
- Field replaceable pressure sensors
- 20kHz scan rate
- Duplex 64 pressure inputs with 32 pressure sensors
- On board sensor excitation regulator

General Description

The Model ZOC22B electronic pressure scanning module is an extremely compact, multi-pressure scanner which accepts up to 64 pneumatic inputs and converts them to computer compatible electronic signals. Each ZOC22B module incorporates 32 individual silicon pressure sensors, calibration valving, a high speed multiplexer (20kHz), and an instrumentation amplifier.

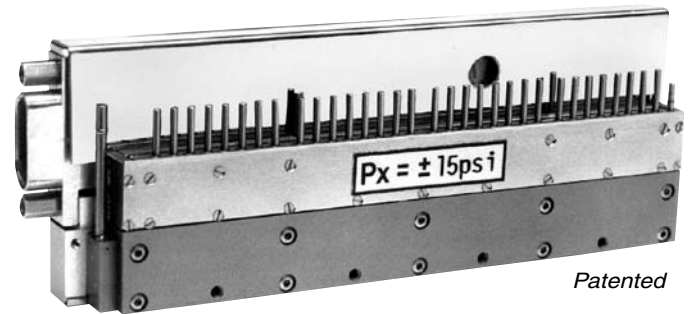
An integral "duplexing" valve is available to allow the ZOC22B's 32 sensors to service up to 64 input pressures. The integral calibration valve has four modes of operation: operate, calibrate, purge, and leak test; each activated by applying the appropriate pneumatic control pressure. Each group of 16 pressure sensors contains its own calibration valving which allows the ZOC22B module to incorporate dual pressure ranges. This calibration valve allows the ZOC sensors to be automatically calibrated on-line. The ZOC22B's extremely compact design (approx. 0.08 cu. in. per channel) permits installation within the very confined spaces typically available in wind tunnel models.

Three versions are available:

ZOC22B/32Px - 32 Px inputs each with its own dedicated sensors

ZOC22B/32PxX2 - 64 Px inputs duplexed* between 32 sensors.

ZOC22B/32Px Valveless (No Calibration Valve)



Patented

ZOC22B/32Px
Pressure Scanner (shown)

Applications

The ZOC22B electronic pressure scanning module is specifically designed for use in wind tunnel tests and flight tests where operational conditions are very space-constrained and pressures do not exceed 50 psi. It is ideal for use inside small supersonic wind tunnel models.

The ZOC22B may be mounted in any position so the units may be close coupled to the pressure sources to be measured. When the ZOC22B is used for flight test, it must be installed in a thermostatically controlled heater jacket.

The ZOC22B module is designed to be used in conjunction with our Model RAD3200 Remote A/D or our Model DSM3400 Digital Service Module. Each ZOC22B pressure scanner incorporates an embedded RTD to monitor the temperature of the pressure sensors. Optional temperature calibration data is available on disk. The RAD3200 communicates via USB. The DSM3400 communicates via TCP/IP, RS-232, or ARINC 429.

The ZOC22B is also designed to operate with customers' "in-house" data systems or Scanivalve's Module Address Control Unit (MACU2).

*Duplexing shares 2Px inputs with one pressure sensor. This doubles the usefulness of a ZOC22B module without increasing the cost or the space needed for module installation.

Px = Pressure Input

Specifications

Inputs (Px): 64 or 32 .042 inch (1.067mm) O.D. tubulations

Full Scale Ranges: ±10, 20 inch H₂O, 1, 2.5, 5, 15, 50 psid (±2.5, 5, 7, 17, 35, 100, 350 kPa)

Accuracy:¹ 10 inch H₂O † ±0.15% F.S.
20 inch H₂O ‡ ±0.12% F.S.
1 to 2.5 psid ±0.1% F.S.
5 to 50 psid ±0.08% F.S.

Sensor Addressing: 5 bit binary, CMOS level

Full Scale Output: Standard: ±2.5Vdc
Optional: ±5Vdc, ±10Vdc

Resolution: Infinite

Scan Rate: 20kHz

Operating Temperature: 0° to 60°C

Temperature Sensitivity:

Range	Zero	Span
10 inch H ₂ O	0.25% FS/°C	0.10% FS/°C
20 inch H ₂ O	0.20% FS/°C	0.08% FS/°C
1 to 50 psid	0.10% FS/°C	0.05% FS/°C

Connector Type: Cannon 15 pin MDM 15SL2P

Power Requirements: ± 15Vdc @ 45mA

Overpressure Capability: 10 inch H₂O, 20 inch H₂O, 1 psid = 10 psi (70kPa)
(With no damage) 2.5-50 psid = 400% or 75 psi (517kPa) (whichever is less)

Maximum Reference Pressure: 50 psig (345kPa)

Media Compatibility: Gases compatible with silicon, silicone, aluminum, and Buna-N

Weight: ZOC22B/32Px or ZOC22B/32PxX2: 3 ozs. (80)

Ordering Information

ZOC22B/32Px - 1 psid , xxpsid*

Model | Pressure Range | 2nd Pressure Range | Write "Valveless" here for this option only.

Inputs

-32Px, for 32 Inputs
-32PxX2, for 64 Inputs
Duplexed

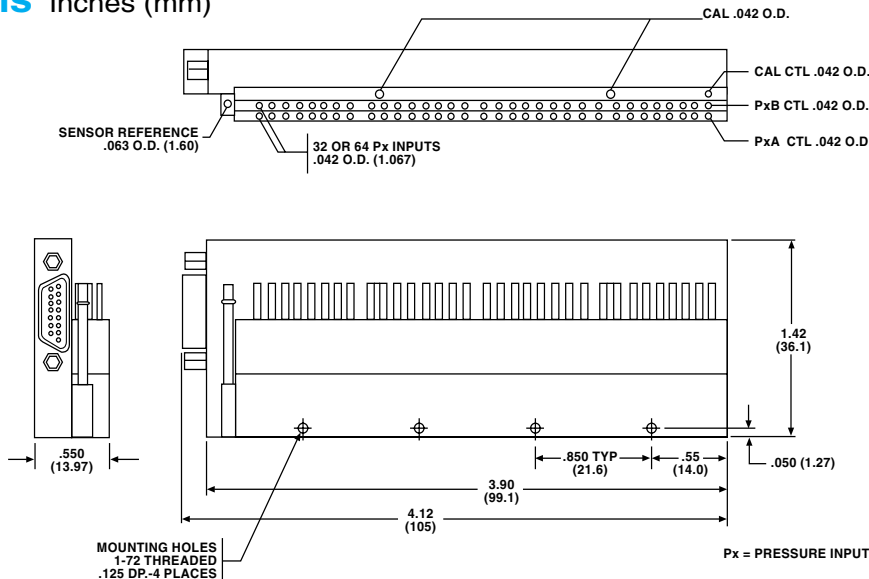
* Only list if 2nd 16 channel pressure range is different than the 1st 16 channel pressure range.

¹ Note: Accuracies are following a calibration with Scanivalve DSM3400 or RAD3200 data systems.

† 10 inch H₂O = 25.4 cm H₂O = .36127 psi

‡ 20 inch H₂O = 50.8 cm H₂O = .72254 psi

Dimensions Inches (mm)



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