Scanivalve

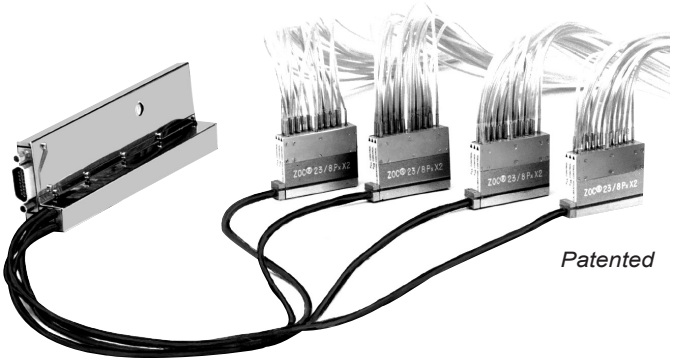
Model ZOC23B

Electronic Pressure Scanning Module

Data Sheet No. G431

Features

- 0 - 50 psid pressure range
- Field replaceable pressure sensors
- Patented microvalves make this miniature module possible(0.3 cu. in.)
- 20kHz scan rate
- Duplex 64 pressure inputs with 32 pressure sensors
- On board sensor excitation regulator



Patented

ZOC23B/32Px
Pressure Scanner

General Description

The Model ZOC23B is similar to Scanivalve's model ZOC22B electronic pressure scanner. The pressure sensor and calibrator microvalves package has been divided into 4 remote modules, each containing 8 pressure sensors which may be duplexed* to read 16Px (pressure inputs). The 4 remote pressure sensor modules are on umbilicals which connect into the amplifier multiplexer unit. Each module has its own reference pressure, calibration tubulations, and calibration valving. This allows the remote pressure sensor modules to be multi-ranged.

An integral "duplexing" valve is available to allow the ZOC23B'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. This calibration valve allows the ZOC sensors to be automatically calibrated while on-line.

Three versions are available:

ZOC23B/32Px - 32 Px inputs each with its own dedicated sensors

ZOC23B/32PxX2 - 64 Px inputs duplexed* between 32 sensors.

ZOC23B/32Px - Valveless (No calibration valve)

Applications

The ZOC23B electronic pressure scanner is specifically designed for space-constrained use, such as inside very small supersonic wind tunnel models. The remote pressure sensor modules can be mounted in any position to fit where no other pressure scanners can be used. They can be used inside flaps and control surfaces of flight test airplanes, where it is important to measure high frequency turbulent flow. The small size makes it possible to locate the remote modules very close to the pressure orifices to maximize frequency response. This is the same reason that makes the ZOC23B useful in oscillating model research. When the ZOC23B is used for flight test it must be installed in a thermostatically controlled heater jacket.

The ZOC23B module is designed to be used with a customer's "in-house" data system or contact Scanivalve for use with RAD3200 Remote A/D or DSM3400 Digital Service Module.

*Duplexing shares 2Px inputs with one pressure sensor. This doubles the usefulness of a ZOC23B module without increasing 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 H_2O, 1, 2.5, 5, 15, 50 psid (±2.5, 5, 7, 17, 35,100, 350 kPa)

Accuracy:[1]

10 inch H_2O†	±0.25% F.S.
20 inch H_2O‡	±0.25% F.S.
1 to 2.5 psid	±0.15% F.S.
5 to 50 psid	±0.10% F.S.

Sensor Addressing: 5 bit binary, CMOS level

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

Resolution: Infinite

Scan Rate: 20kHz

Temperature: 0° to 60°C

Temperature Sensitivity:

Range	Zero	Span
10 inch H_2O	0.25% FS/°C	0.1% FS/°C
20 inch H_2O	0.20% FS/°C	0.1% FS/°C
1 to 50 psid	0.10% FS/°C	0.1% FS/°C

Connector Type: Cannon 15 pin MDM 15SL2P

Power Requirements: ± 15Vdc @ 45mA

Overpressure Capability: (With no damage) 10 inch H_2O, 20 inch H_2O, 1 psid = 10 psi (70kPa) 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: ZOC23B/32Px: 6.00 ozs. (170 gm)
ZOC23B/32PxX2: 6.13 ozs. (174 gm)
ZOC23B/8Px muxless: .93 ozs. (27 gm)

Ordering Information

ZOC23B/32Px - 1 psid

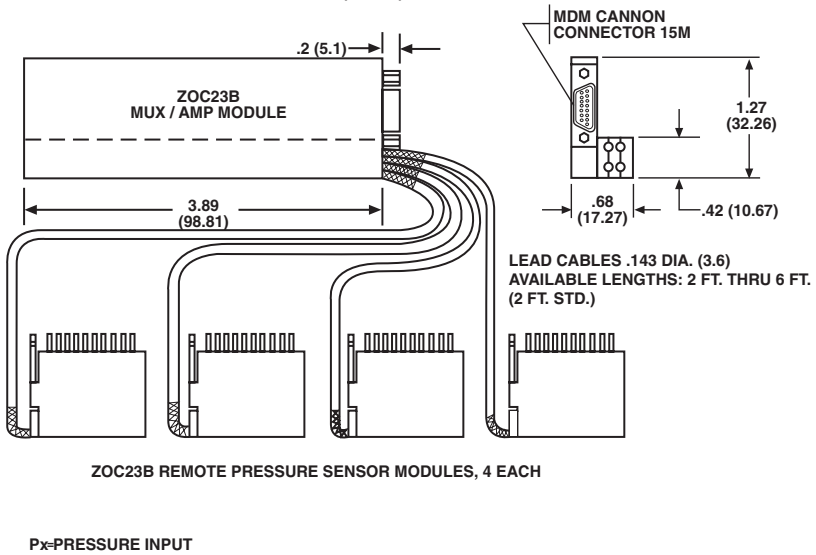
- Model
  - -32Px for 32 Inputs
  - -32PxX2 for 64 Inputs
  - -8Px for 8 Inputs Muxless
  - -8PxX2 for 16 Inputs Muxless
- Pressure Range
- Write "Valveless" here for this option only.

[1] Note: Accuracies are following a calibration with Scanivalve DSM or RAD data systems, in a thermally stable environment.

† 10 inch H_2O = 25.4 cm H_2O = .36127 psi

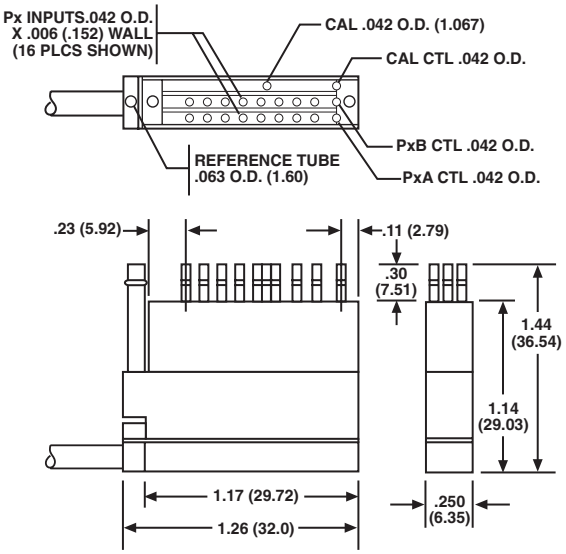
‡ 20 inch H_2O = 50.8 cm H_2O = .72254 psi

Dimensions Inches (mm)



ZOC23B REMOTE PRESSURE SENSOR MODULES, 4 EACH

Px=PRESSURE INPUT



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Printed in USA