

Features

- 0 - 50 psid pressure range
- Field replaceable pressure sensors
- 45kHz scan rates
- Duplex 128 pressure inputs with 64 pressure sensors
- On board sensor excitation

General Description

The Model ZOC33 electronic pressure scanning module is extremely compact and accepts up to 64 pneumatic inputs and converts them to high level electronic signals. Each ZOC33 module incorporates 64 individual silicon pressure sensors, calibration valving, a high speed multiplexer (45kHz), and an instrumentation amplifier. An integral "duplexing" valve is available to allow the ZOC33's 64 sensors to service up to 128 input pressures.

The integral calibration valve has 4 modes of operation: operate, calibrate, purge, and leak test. Each group of 8 pressure sensors has its own calibration valving and multiplexer which allows the ZOC33 module to incorporate multiple pressure ranges and easy sensor replacement. This calibration valve allows the ZOC sensors to be automatically calibrated on-line.

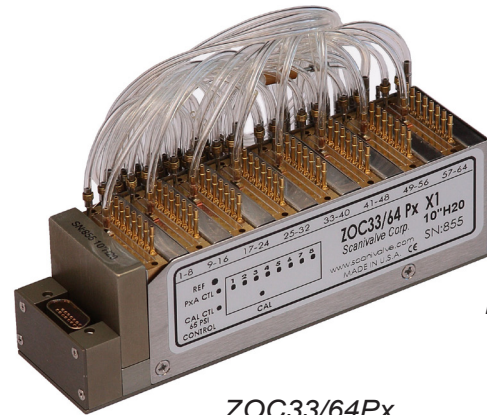
The ZOC33's extremely compact design (approximately .1 cu. in. per channel) permits installation within the very confined spaces typically available in wind tunnel models.

Three versions are available:

ZOC33/64Px - 64 Px inputs each with its own dedicated sensors.

ZOC33/64PxX2 - 128 Px inputs duplexed* between 64 sensors.

ZOC33/64Px - Valveless (no calibration valve).



Patented

ZOC33/64Px
Pressure Scanner (shown)

Applications

The ZOC33 electronic pressure scanning module is specifically designed for use in wind tunnel 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.

It may be mounted in any position so the pressure sensors may be close coupled to the pressure sources to be measured. A removable header allows for easy installation and removal without breaking the pneumatic lines. When the ZOC33 is used for flight test, it must be installed in a thermostatically controlled heater jacket.

The ZOC33 module is designed to be used in conjunction with our Model ERAD4000 Remote A/D or our Model DSM4000 Digital Service Module. Each ZOC33 pressure scanner incorporates an embedded RTD to monitor the temperature of the pressure sensors. The ERAD4000 communicates via Ethernet. The DSM4000 communicates via Ethernet, RS-232, or ARINC 429.

*Duplexing shares 2Px inputs with one pressure sensor. This doubles the usefulness of a ZOC33 module without increasing the installation volume.

Px = Pressure Input

Specifications

Inputs (Px): 128 or 64 .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 to 20 in.H₂O ±0.15% F.S.
 1 psid ±0.12% F.S.
 2.5 psid ±0.10% F.S.
 5 to 50 psid ±0.08% F.S.

Sensor Addressing: 6 bit binary, CMOS level

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

Resolution: Infinite

Scan Rate: 45kHz

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 @ 110mA

Control Pressure Requirements: 65 psi instrument grade air

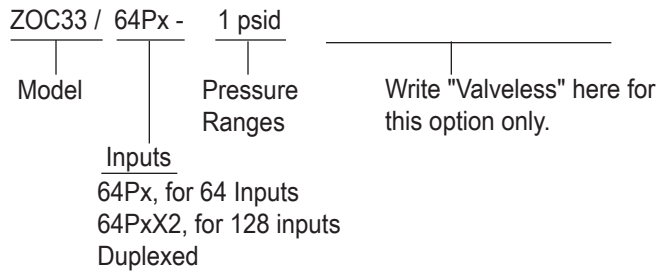
Overpressure Capability: (With no damage) 10 inch H₂O, 20 inch H₂O, 1 psid = 10 psi (70kPa) 2.5-50 psid = 400% or 75 psi (517kPa) (whichever is less)

Maximum Reference Pressure: 50 psig (345kPa)

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

Weight: ZOC33/64Px: 11 ozs. (312 gm)
 ZOC33/64PxX2: 13 ozs. (369 gm)

Ordering Information

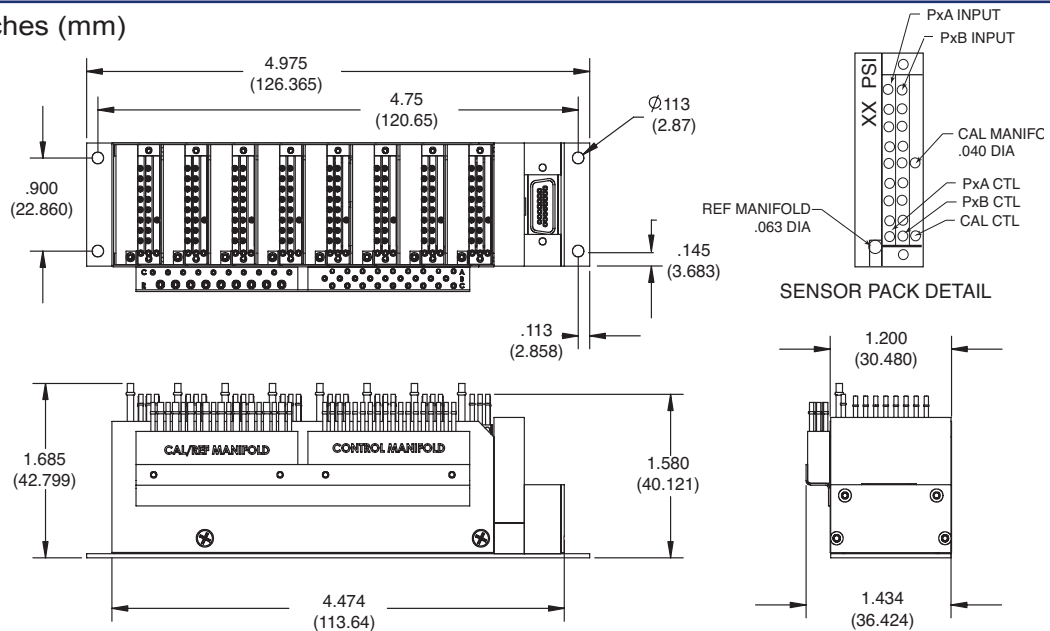


¹Note: Accuracies are following a calibration with Scanivalve DSM or RAD data systems.

† 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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