

## Features

- Maintains a stable temperature environment for ZOC pressure sensors
- For use with ZOC17, 22, and 33
- Quick disconnects for electrical and pneumatic I/O
- Rugged stainless steel case



ZOC22/32Tx  
Thermal Control Unit

## General Description

The ZOC (Zero, Operate and Calibrate) line of Thermal Control Units is designed to provide a constant temperature environment for ZOC17, ZOC22B, and ZOC33 electronic pressure scanners. These pressure scanners incorporate piezoresistive pressure sensors. The ZOCTCU minimizes the need to frequently recalibrate ZOC electronic pressure scanners exposed to varying ambient temperatures. All ZOCTCU's include a rugged stainless steel enclosure, insulation, electrical and pneumatic connectors, and a proportionally controlled heating element.

The ZOCTCU proportional heater circuit has a user adjustable set point that is stable within  $\pm 0.2^{\circ}\text{C}$  of set point. The thermal rejection rate of the ZOCTCU is 15 to 1 within its operating range. The sensors will see a  $1^{\circ}\text{C}$  temperature increase for every  $15^{\circ}\text{C}$  of ambient temperature change.

The ZOCTCU not only provides a controlled temperature environment, but also an easy method of breaking connections. The electrical connector is a heavy duty mil-spec bayonet connector. The pneumatic connector is a Scanivalve quick disconnect. These features make for easy use and changeout of ZOC pressure scanners.

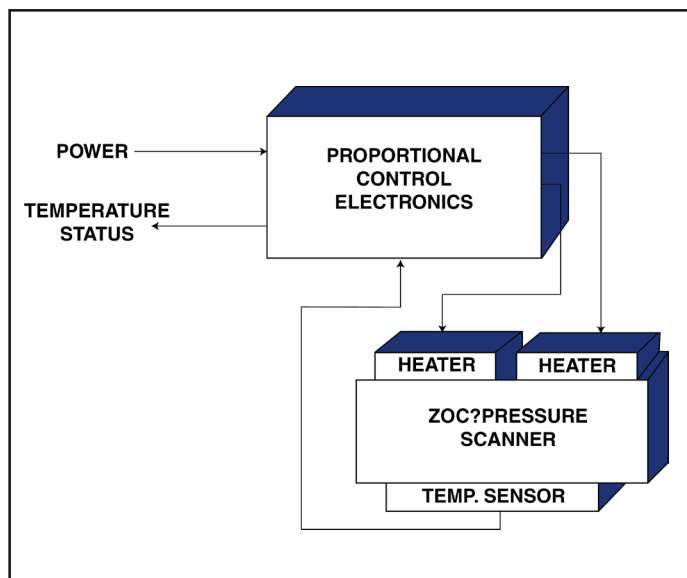
The ZOCTCU is typically purchased at the same time the ZOC electronic pressure scanners are purchased. Scanivalve can then assemble and test the two as one unit.

## Application

Thermal Control Units are most commonly utilized in flight test, wind tunnel, and engine test applications where temperatures tend to vary.

They may be used anywhere a stable temperature environment is not available for ZOC pressure scanner installation or anytime ambient temperatures will be below  $0^{\circ}\text{C}$ . This will prevent moisture from freezing inside the ZOC calibration valving.

## TCU Functional Diagram



ISO 9001:2008 CERTIFIED

# Specifications

**Mechanical Capacity:** ZOC22/32Px or 32PxX2  
 ZOC17/16Px or 2 ea. 8Px  
 Muxless  
 ZOC33/64Px or 64PxX2

**Case Material:** 303 stainless steel

**Operating Temperature Range:** -45 to +65°C\*

**Oven Stability:** ±0.2°C of set point  
 (Constant Environment)

**Pneumatic I/O:** 24, 48, 64, or 73 port connector,  
 .063 inch diameter bulged  
 tubulations

**Electrical I/O:** MS3100A type, size 20

**Heater Rating:** 16Px – 24 watts  
 32Px – 24 watts  
 64Px – 24 watts

**Power Required:** 16Px: 24Vdc @ 1.0 amp max.  
 32Px: 24Vdc @ 1.0 amp max.  
 64Px: 24Vdc @ 1.0 amp max.

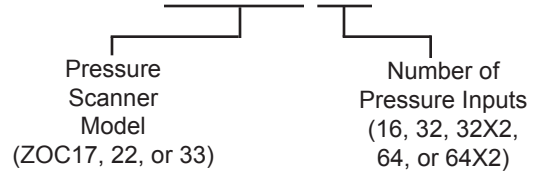
**Temperature Sense:** 4 wire RTD

**Mounting Position:** Any

**Weight:**  
 (Including ZOC Scanner)

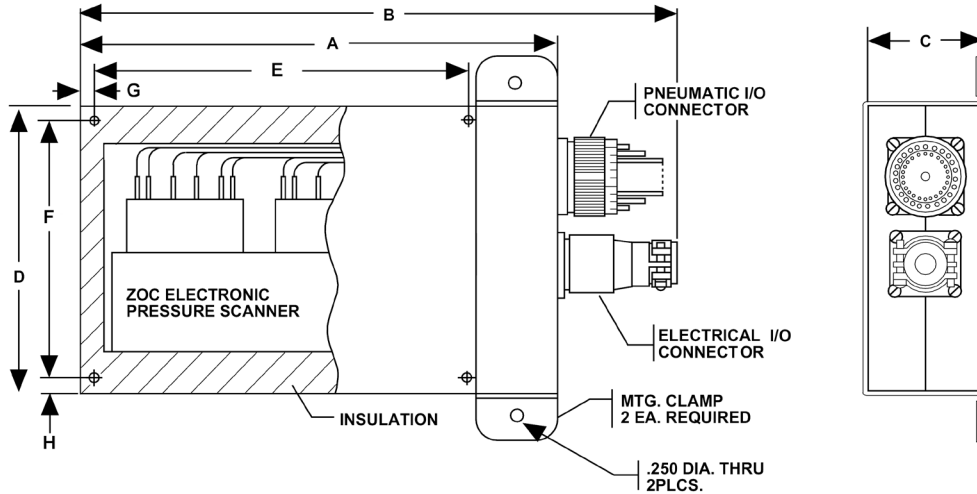
ZOC22TCU 1.8 lbs. (.82 kgm)  
 ZOC 17TCU/16Px 6.3 lbs. (2.86 kgm)  
 ZOC33TCU/64Px 3.8 lbs. (1.73 kgm)  
 ZOC33TCU/64Px X2 4.0 lbs. (1.81 kgm)

## Ordering Information



\*Scanivalve manufactures a ZOCEB Environmental Box for operating temperature ranges up to 176°C. Consult factory for more information.

## Dimensions Inches (mm)



ZOC Scanner to be used in ZOCTCU	A	B	C	D	E	F	G	H	Mating Connector	Mounting Method
ZOC22/32Px or ZOC22/32PxX2	7.0 (177.8)	9.0 (228.6)	1.5 (38.1)	3.0 (76.2)	N/A	N/A	N/A	N/A	6550-2	17053-1 strap
ZOC17/16Px	9.0 (228.6)	11.0 (279.4)	3.0 (76.2)	6.1 (154.9)	10.4 (264.2)	5.0 (127.0)	0.3 (7.6)	0.55 (14.0)	6530-1	19193-1 strap
ZOC33/64Px	7.3 (185.4)	9.65 (245.1)	2.4 (60.9)	4.2 (106.7)	6.7 (170.2)	3.44 (87.4)	0.3 (7.6)	0.38 (9.7)	6570-2 (1ea.)	Threaded elastic stop nuts
ZOC33/64PxX2	7.3 (185.4)	9.65 (245.1)	2.4 (60.9)	4.2 (106.7)	6.7 (170.2)	3.44 (87.4)	0.3 (7.6)	0.38 (9.7)	6570-2 (2 ea.)	Threaded elastic stop nuts

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