

Features

- Maintains a stable temperature environment for MPS4000 series pressure scanners
- Quick disconnects for electrical and pneumatic I/O
- Rugged IP-54 rated aluminum case
- Available for:
 - MPS4164 Analog Scanner - NPx or CPx
 - MPS4264 Ethernet Scanner - NPx, CPx, or EPx

General Description

The MPS (Miniature Pressure Scanner) line of Thermal Control Units is designed to provide a controlled temperature environment for MPS4264 series electronic pressure scanners, or MPS4164 analog pressure scanners. The MPS4000 series pressure scanners incorporate temperature compensated piezoresistive pressure sensors which must remain in a controlled temperature environment to provide the most accurate pressure measurement. All MPSTCU's include a rugged anodized aluminum enclosure, single pneumatic connector, mating pneumatic connector, a single electrical/data connector, and breakout cable with flying leads.

The MPSTCU offers an optional heater circuit for use in environments as cold as -60°C . This heater circuit utilizes two 20 watt heaters to keep the MPS4264 scanner within its temperature compensated range ($0-70^{\circ}\text{C}$). Exceeding the compensated temperature range can induce errors in the pressure measurements.

For higher temperature applications ($60-125^{\circ}\text{C}$) the Cooling Kit variant of the MPSTCU is required. The cooling kit variant contains the same heater circuit as the heater only MPSTCU variant. With the addition of the cooling kit, the MPSTCU can keep the MPS in the compensated range while the environmental temperatures range from -60°C to 125°C . Approximately 3.0 CFM of 23°C cooling air is required to properly cool the MPS while subject to the 125°C environment.

The electrical connector on the for the MPS4264T-CU (Ethernet) is a 17 contact M12 series connector which provides module power, heater power, scan triggering, and Ethernet data.



The electrical connector on the MPS4164TCU (analog) is a 19 contact Bendix PT series connector which provides module power, heater power, and analog addressing.

The pneumatic connector on all MPSTCU's is a Scanivalve 70MPS series connector. These features make for easy use and adaptability when implementing the MPSTCU into a complex system.

Application

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

Thermal Control Units may also be used anywhere a stable temperature environment is not available for MPS pressure scanners. Although the environmental temperatures are within the compensated range of the scanner, a Thermal Control Unit can be used to improve measurement accuracy and limit any effects from temperature.

Thermal Control Units also provide a ruggedized enclosure to protect the scanner's components from moisture, dust, debris, and other contaminants that could harm the scanner.

Specifications (MPS4264TCU for NPx or CPx)

Mechanical Capacity: MPS4264/64CPx
MPS4264/64NPx

Case Material: 6063 Anodized Aluminum

Operating Temperature Range: -60°C to +125°C*

Pneumatic I/O: 70 Port connector with 0.063" tubulations (standard)
or 70 Port connector with 0.040" tubulations** (optional)

Electrical I/O: 17 contact M12 Series

Heater Rating: Two 20 watt heaters

Power Required:
Without heater: 9-36Vdc, 3.5W
With heater option: 20-30Vdc, 45W

Cooling Air Required (125°C Environment): 3.0 CFM

Temperature Sense: 4 wire RTD

Mounting Position: Any

Ingress Protection: IP-54 rating

Shock and Vibration: MIL-STD-810G Category 24

Weight:
(Including MPS Scanner and connector)
MPS4264TCU 1.97 lbs. (.89 kgm)

Minimum Environmental Pressure:
MPS4264TCU 0.5psia

Ordering Information

MPS4264TCU-X

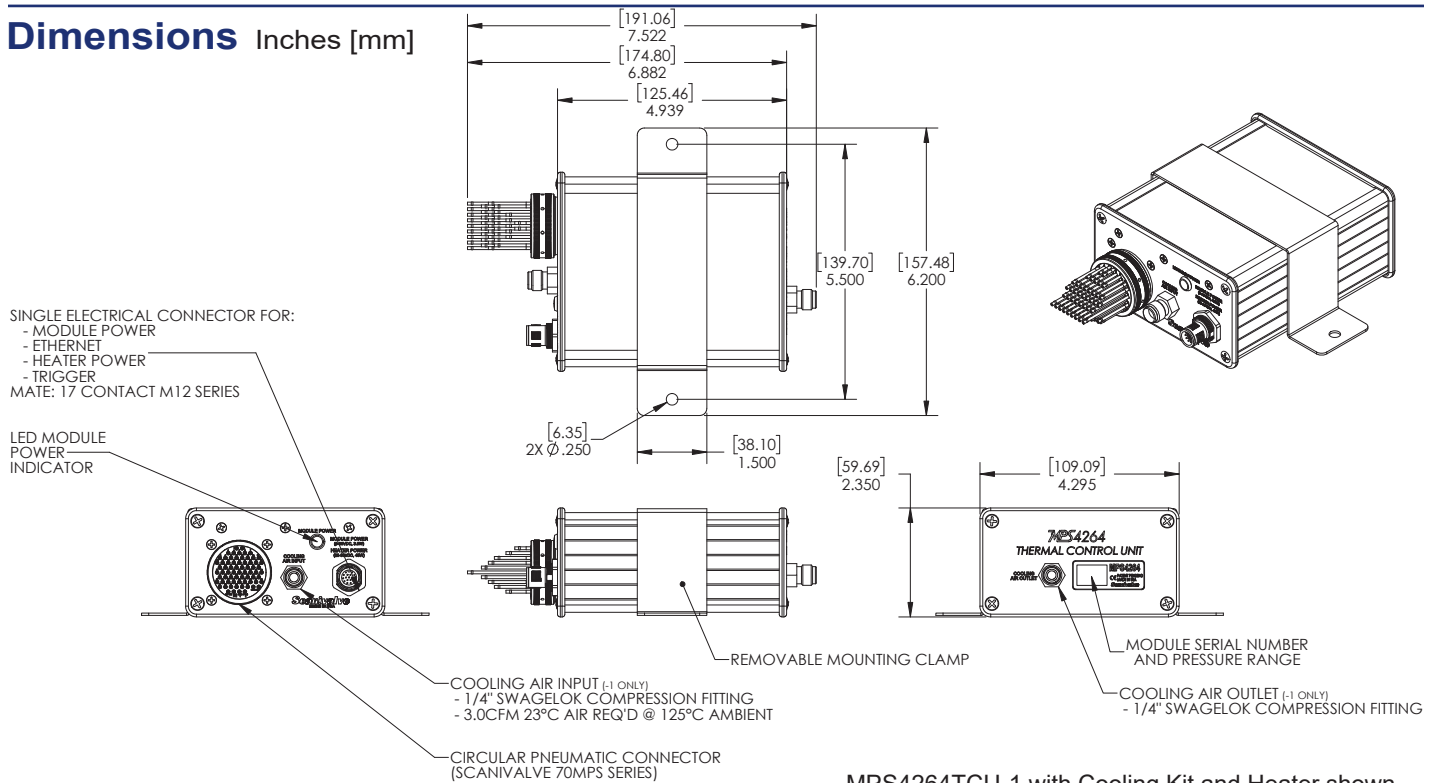
Where X is:

- 1 MPS4264TCU with Cooling Kit and Heater
- 2 MPS4264TCU with Heater Only
- 3 MPS4264TCU no Heater or Cooling Kit

*Scanivalve recommends use of the MPS4264TCU with Cooling Kit in environments above 60°C. 3.0 CFM of 23°C cooling air is required at 125°C.

**Px inputs are 0.040" tubulations. CAL, REF, CALCTL, PXCTL and PURGE are 0.063" tubulations

Dimensions Inches [mm]



MPS4264TCU-2
Thermal Control Unit



Specifications (MPS4164TCU for NPx or CPx)

Mechanical Capacity: MPS4164/64CPx
MPS4164/64NPx

Case Material: 6063 Anodized Aluminum

Operating Temperature Range: -60°C to +125°C*

Pneumatic I/O: 70 Port connector with 0.063" tubulations (standard)
or 70 Port connector with 0.040" tubulations** (optional)

Electrical I/O: PT06A-14-19P

Heater Rating: Two 20 watt heaters

Power Required:

Without heater: ±15Vdc @120mA
With heater option: 20-30Vdc, 45W

Cooling Air Required (125°C Environment): 3.0 CFM

Temperature Sense: 4 wire RTD

Mounting Position: Any

Ingress Protection: IP-54 rating

Shock and Vibration: MIL-STD-810G Category 24

Weight:
(Including MPS Scanner and connector)

MPS4164TCU-1 1.97 lbs (.89 kg)
MPS4164TCU-2 1.77 lbs (.80 kg)
MPS4164TCU-3 1.62 lbs (.73 kg)

Minimum Environmental Pressure:
MPS4164TCU 0.5psia

Ordering Information

MPS4164TCU-X

Where X is:
-1 MPS4164TCU with Cooling Kit and Heater
-2 MPS4164TCU with Heater Only
-3 MPS4164TCU no Heater or Cooling Kit

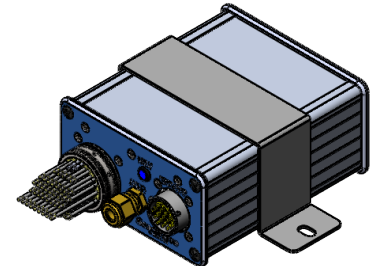
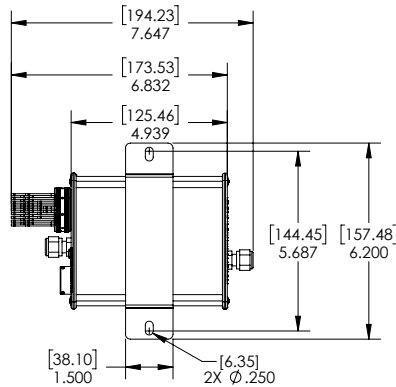
*Scanivalve recommends use of the MPS4164TCU with Cooling Kit in environments above 60°C. 3.0 CFM of 23°C cooling air is required at 125°C.

**Px inputs are 0.040" tubulations. CAL, REF, CALCTL, PXCTL and PURGE are 0.063" tubulations

Dimensions Inches [mm]

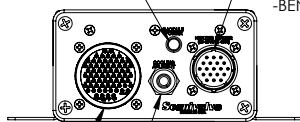
CONNECTOR PINOUT:

A	ADDRESS 0
B	ADDRESS 1
C	ADDRESS 2
D	ADDRESS 3
E	ADDRESS 4
F	+15 VDC
G	-15 VDC
H	+ TEMP
J	- TEMP
K	GND
L	+ OUTPUT
M	- OUTPUT
R	ID
S	ADDRESS 5
U	+20-30 VDC
V	20-30 VDC RTN
N, P, T	NOT USED



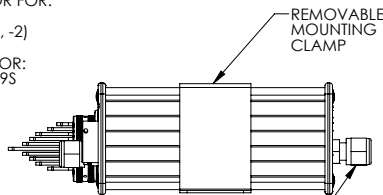
MODULE POWER INDICATOR LED

SINGLE CONNECTOR FOR:
 - MODULE POWER
 - HEATER POWER (-1, -2)
 - ANALOG DATA
 MATING CONNECTOR:
 - BENDIX PT06A-14-19S



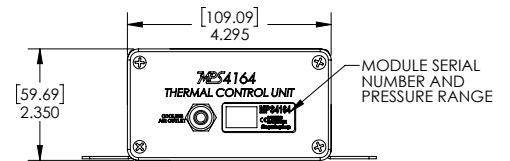
CIRCULAR PNEUMATIC CONNECTOR (70MPS SERIES)

COOLING AIR INPUT (-1 ONLY):
 - 1/4" SWAGELOK COMPRESSION FITTING
 - 3.0CFM 23°C AIR REQ'D AT 125°C AMBIENT



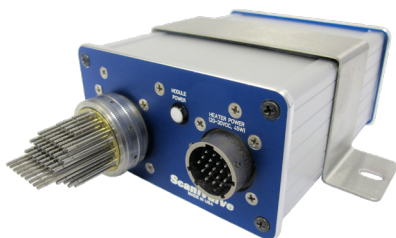
REMOVABLE MOUNTING CLAMP

COOLING AIR OUTLET (-1 ONLY):
 - 1/4" SWAGELOK COMPRESSION FITTING



MPS4164TCU-1 with Cooling Kit and Heater shown

- 1 MPS4164TCU THERMAL CONTROL UNIT, HEATER AND COOLING KIT (SHOWN)
- 2 MPS4164TCU THERMAL CONTROL UNIT, HEATER ONLY
- 3 MPS4164TCU THERMAL CONTROL UNIT, NO HEATER/COOLING



MPS4164TCU-2
Thermal Control Unit



Specifications (MPS4264TCU for EPx)

Mechanical Capacity: MPS4264/64EPx

Case Material: 6063 Anodized Aluminum

Operating Temperature Range: -60°C to +125°C*

Pneumatic I/O: 70 Port connector with 0.063" tubulations (standard) or 70 Port connector with 0.040" tubulations** (optional)

Electrical I/O: 17 contact M12 Series

Heater Rating: Two 20 watt heaters

Power Required:

Without heater: 18-36Vdc, 5.5W
(Required to operate electric valve)

With heater option: 20-30Vdc, 45W

Cooling Air Required (125°C Environment): 3.0 CFM

Temperature Sense: 4 wire RTD

Mounting Position: Any

Ingress Protection: IP-54 rating

Shock and Vibration: MIL-STD-810G Category 24

Weight:
(Including MPS Scanner and connector)
MPS4264TCU/EPx 2.93 lbs. (1.33 kgm)

Minimum Environmental Pressure:
MPS4264TCU/EPx 0.5psia

Ordering Information

MPSTCU Electric Valve - X

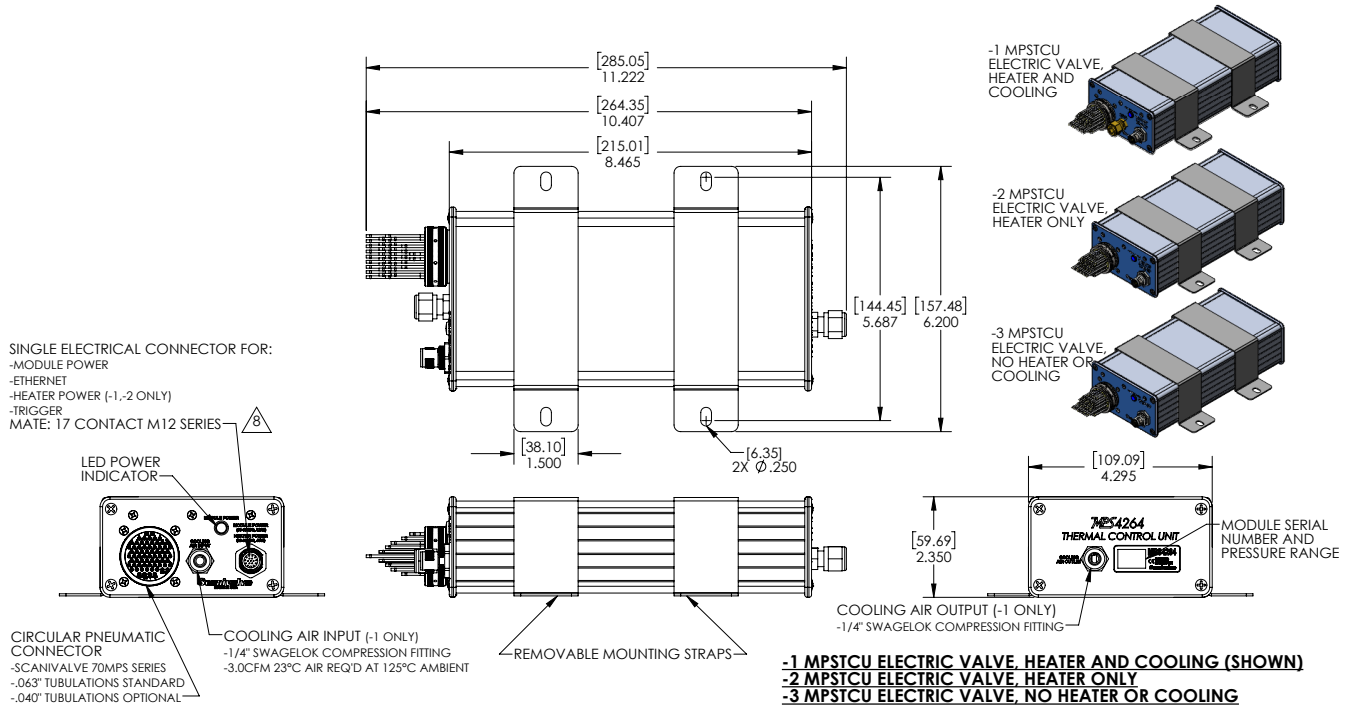
Where X is:

- 1 MPS4264TCU with Cooling Kit and Heater
- 2 MPS4264TCU with Heater Only
- 3 MPS4264TCU no Heater or Cooling Kit

*Scanivalve recommends use of the MPS4264TCU with Cooling Kit in environments above 60°C. 3.0 CFM of 23°C cooling air is required at 125°C.

**Px inputs are 0.040" tubulations. CAL, REF, CALCTL, PXCTL and PURGE are 0.063" tubulations

Dimensions Inches [mm]



Scanivalve Headquarters
 1722 N. Madson Street
 Liberty Lake, WA 99019
 Tel: 509-891-9970
 800-935-5151
 Fax: 509-891-9481
 e-mail: scanco@scanivalve.com
 www.scanivalve.com

Scanivalve
www.scanivalve.com

Printed in USA
 ©2019, Scanivalve Corp.