

### Description

The KMC TPE-1483 series of pressure transducers incorporates a Wet / Wet differential pressure transmitter featuring low hysteresis, excellent repeatability, and long-term stability.

Up to four field-selectable input ranges are available in most models. The field selectable feature provides a single model that can be configured to cover all the input pressure ranges for any given application.

Three output ranges are field selectable, 4 to 20mA, 0 to 5 VDC, and 0 to 10 VDC. The output signal is factory calibrated and temperature compensated for the highest start-up accuracy.

The TPE-1483 can be powered from either a 24 VAC nominal or 12 to 30 VDC power source. TPE-1483 incorporates a rugged NEMA 4 enclosure.

### Features

- ◆ Push-button and remote zeroing terminal
- ◆ Uni-directional or bi-directional pressure range selection switch
- ◆ High / low port swap switch to solve incorrect plumbing for differential
- ◆ Normal or slow surge damping switch to prevent false alarms and reduce noise
- ◆ Output polarity reverse switch



### Models

The following models are available

TPE-1483-1	0 to 5/10/25/50 psig/d
TPE-1483-2	0 to 10/20/50/100 psig/d
TPE-1483-3	0 to 50/100/250/500 psig/d

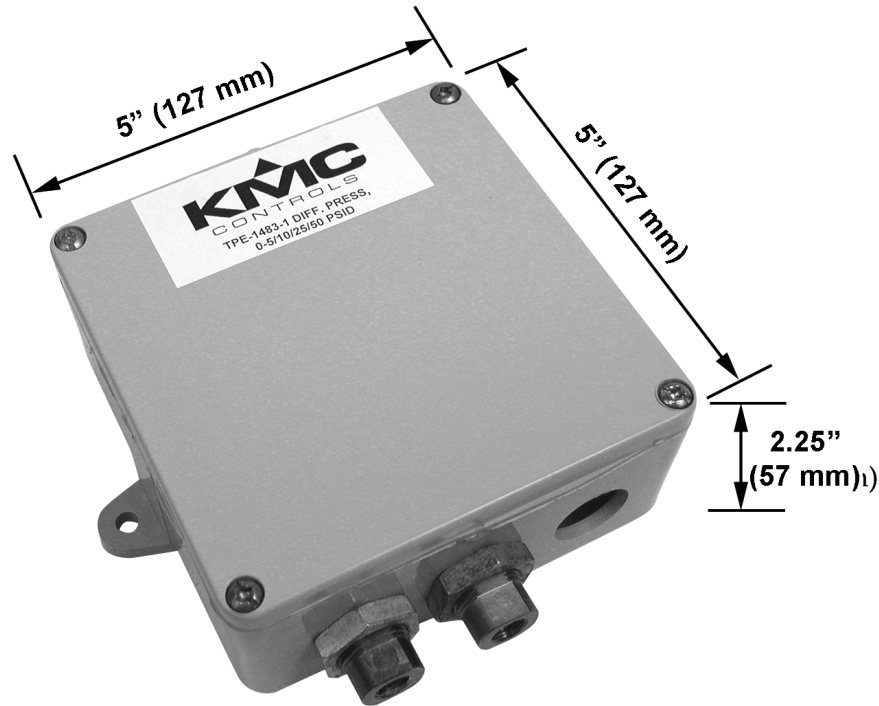
### Application

KMC TPE-1483 Pressure Transducers are suited for any application requiring a reliable pressure monitor providing a dependable conditioned and compensated signal output.

The TPE-1483 may be used with any liquid or gas that is compatible with 17-4 PH stainless steel.

**DO NOT USE** for these applications:

- ◆ Oxygen service
- ◆ Explosive/hazardous environments
- ◆ Flammable or combustible materials



## Specifications

### Media compatibility

17-4 PH stainless steel

**Supply Voltage** 24 VAC or 15 to 30 VDC

**Supply Current** 35 mA, maximum @ 24VDC

**Output Signal** 4 to 20mA, 0 to 5 or 0 to 10 VDC, field selectable

**Pressure Ranges** Field selectable:

TPE-1483-1 0 to 5/10/25/50 psig/d

TPE-1483-2 0 to 10/20/50/100 psig/d

TPE-1483-3 0 to 50/100/250/500 psig/d

**Proof Pressure** Max. 2X F.S. range

**Burst Pressure** Max. 5X F.S. range

**Accuracy** ±1% F.S. combined linearity, hysteresis, and repeatability. Range 4 accuracy ±2% F.S.

**Pressure cycles** > 100 million

**Surge Damping** normal 4-second averaging, slow 8-second averaging, switch selectable

**Sensor Operating Range** -40° to 220°F (-40° to 105°C)

**Temperature Compensation Error**

32° to 130°F (0° to 55°C)

**Long term stability** ±0.25% typical (1 year)

**Zero Adjust** pushbutton auto-zero and digital input

### Operating Environment

32° to 122°F (0° to 50°C), 10 to 90% RH, non-condensing

**Fittings** 1/8" NPT female

**Enclosure** 5" x 5" x 2.25" (127mm x 127mm x 57mm); IP 54 (NEMA 4)

**Shock** 100G, 11 mSec, 1/2 sine

**Vibration** 20G peak 20 to 2400 Hz

**Weight** 1.33 lbs. (.60 kg)

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# Wet-Wet Differential Pressure Transducer

TPE-1483 Series

## Installation Guide

### Mounting

Avoid locations with severe vibrations or excessive moisture. The enclosure has a standard ½" conduit opening and may be installed with either a conduit coupler or a cable gland type fitting.

1. Mount on a vertical surface with the pressure port and cable entrance on the bottom.
2. Use screws in the tab holes to fasten the assembly to the mounting surface.
3. Ensure there is enough space around the unit to make the pressure and electrical connections.



#### WARNING:

Do not use in explosive or hazardous environments, with combustible or flammable gasses, as a safety or emergency stop device, or in any other application where failure of the product could result in personal injury.

#### !CAUTION:

Use electrostatic discharge precautions during installation and do not exceed device ratings.

### Plumbing

1. Use an appropriately rated pressure tubing for connections.
2. Arrange the tubing to minimize stress on the connections.
3. Do not allow debris to fall into the pressure ports, contamination can damage the sensor.

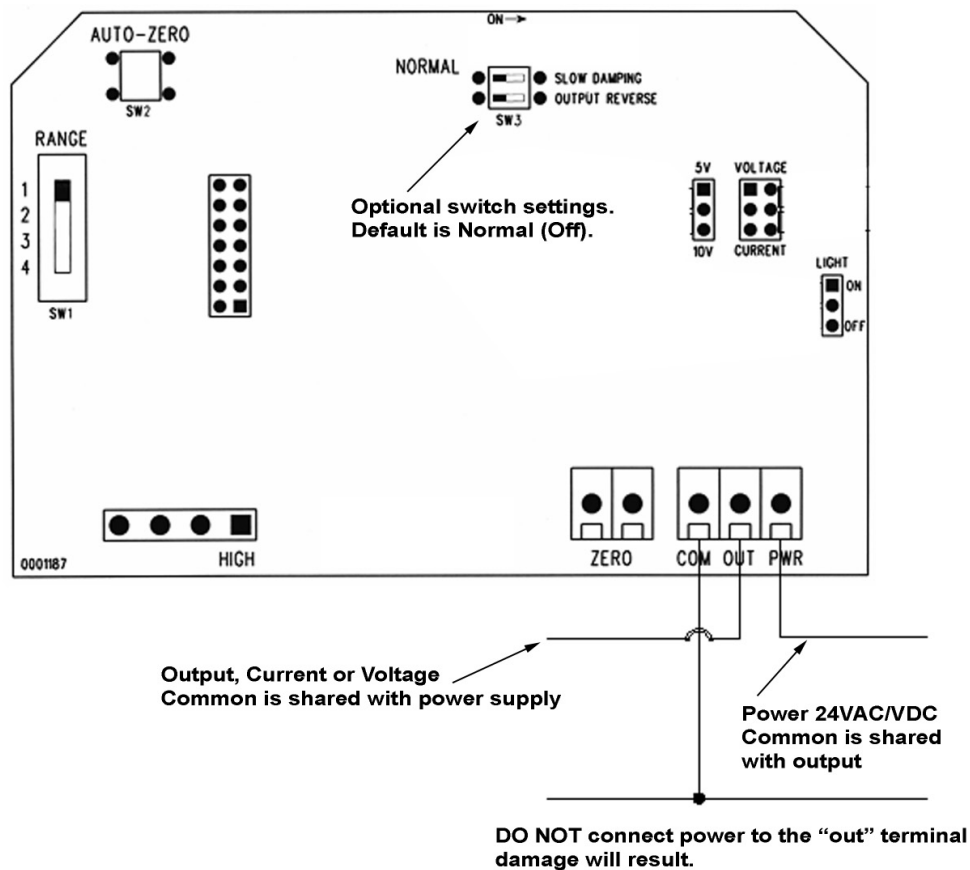
## Wiring

Use 22 AWG shielded wiring for all connections. Do not locate device wires in the same conduit as wiring supplying inductive loads.

1. Connect the positive DC voltage or the hot side of the AC voltage to the terminal marked **PWR**.
2. Connect the power supply common to the terminal marked **COM**. The device is reverse voltage protected and will not operate if connected backwards.

The analog output signal is available on the **OUT** terminal. This signal is jumper selectable for either voltage or 4 to 20 mA output. In voltage mode, either 0 to 5 or 0 to 10 VDC can also be selected.

The remote zero feature may be used by wiring a dry-contact (relay only) digital output to the **ZERO** terminals. Do not apply voltage to the **ZERO** terminals.



## Set-Up

### CONFIGURATION

Push-on jumpers and switches are used to select the output signal type, the input pressure range, and several features. The device is factory configured to operate in the 4 to 20 mA output mode but can be changed to voltage mode by moving the two jumpers from the positions marked 'Current' to the positions marked 'Voltage'.

**NOTE:** Output jumpers can only be changed while the power is removed.

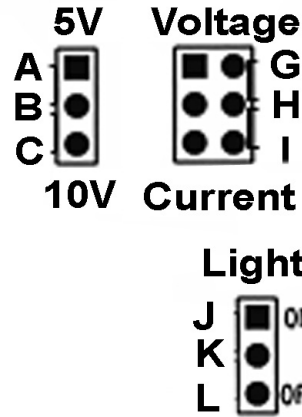
**CAUTION:** Always note the current jumper position before moving them to the new position. If the jumpers are rotated 90 degrees and installed incorrectly the product will not work and damage may occur.

# Set-Up Continued

## JUMPER SETTINGS

Refer to the detailed drawing for pin location, the letter designations do not appear on the actual board.

- ◆ 0 to 5 VDC signal            Connect A to B
- ◆ 0 1 to 10 VDC signal        Connect B to C
  
- ◆ Voltage signal                Connect G to H
- ◆ Current Signal                Connect H to I
  
- ◆ For Backlight                Connect J to K
- ◆ No Backlight                 Connect K to L



## RANGE

MODEL	PRESSURE RANGE			
	1	2	3	4
1483-1	50 PSI	20 PSI	10 PSI	5 PSI
1483-2	100 PSI	50 PSI	20 PSI	10 PSI
1483-3	500 PSI	250 PSI	100 PSI	50 PSI

NOTE: Range and Options switches can be changed while the unit is operating.

## BIDIRECTIONAL

This switch changes the range from “0 to full scale differential pressure” to “minus full scale to plus full scale differential pressure”. The analog output will read ½ when the differential pressure is zero.

## PORT SWAP

Reverses the polarity of the pressure ports. It makes the HIGH port “low” and the LOW port “high”. This is useful to correct plumbing errors.

## SLOW DAMPING

The switch provides an 8-second averaging for surge dampening (normally it is 4-seconds).

## OUTPUT REVERSE

Reverses the output signal polarity. In reverse mode the analog output is maximum when the pressure differential is zero and decreases as pressure increases.

## Set-Up Continued

### OPERATION

For normal operation such as 0 to 100 PSI, the pressure applied to the High port must be higher than the pressure applied to the Low port. If the pressure connection is reversed then the transmitter will always output 4 mA or 0 V.

If the Low port is left open to ambient pressure, then the High port is used to measure a positive pressure and 0 PSI = 4 mA and 100 PSI = 20 mA.

For bidirectional operation such as +/-100 PSI, the pressure applied to the High port should be higher than the pressure applied to the Low port for a positive output response.

Negative pressure is indicated if the High pressure is less than the Low pressure. In this case -100 PSI = 4 mA and +100 PSI = 20 mA. Since the transmitter is linear 0 PSI = 12 mA.

### CALIBRATION

With both ports open to the ambient pressure or equalized at 0 pressure:

1. Press and hold the auto-zero button or provide contact closure on the **ZERO** terminals for at least 3 seconds.
2. Release the button or terminals and the device will calculate and store the new zero point.

NOTE: To protect the unit from accidental zeroing this feature is enabled only when the detected pressure on both ports is less than 5% of the full range.

It is not recommended that the span calibration be performed in the field unless a high quality calibrator is available.

## Maintenance

No routine maintenance is required. Each component is designed for dependable, long term reliability and performance. Careful installation will also ensure long term reliability and performance.

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