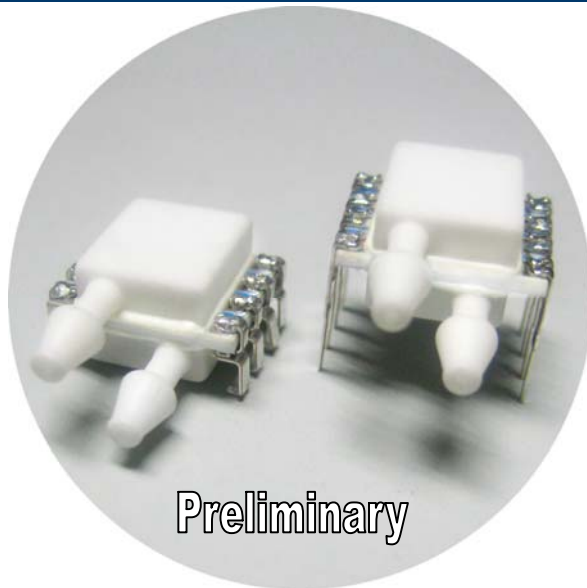


# 4515



- PCB Mounted Pressure Transducers
- Pressure Ranges from 2 to 30inH2O
- Amplified Ratiometric Analog Output
- Differential & Gage
- Temperature Compensated
- 3.3V or 5.0 Vdc Supply Voltage

## DESCRIPTION

The 4515 is a small, ceramic based, PCB mounted pressure transducer from Measurement Specialties. The transducer is built using Measurement Specialties' proprietary UltraStable™ process and the latest CMOS sensor conditioning circuitry to create a low cost, high performance transducer designed to meet the strictest requirements from OEM customers.

The 4515 is fully calibrated and temperature compensated with a total error band (TEB) of less than 1.0% over the compensated range. The sensor operates from single supply of either 3.3 or 5.0Vdc.

The rugged ceramic transducer is available in side port, top port, and manifold mount versions and can measure gauge or differential pressure from 2 to 30 inH2O. The 1/8" barbed pressure ports mate securely with 3/32" ID tubing.

## FEATURES

- PSI Pressure Ranges
- PCB Mountable
- High Level Analog Output
- Barbed Pressure Ports

## APPLICATIONS

- Blocked Filter Detection
- Altitude and Airspeed Measurements
- Medical Instruments
- Fire Suppression System
- Panel Meter

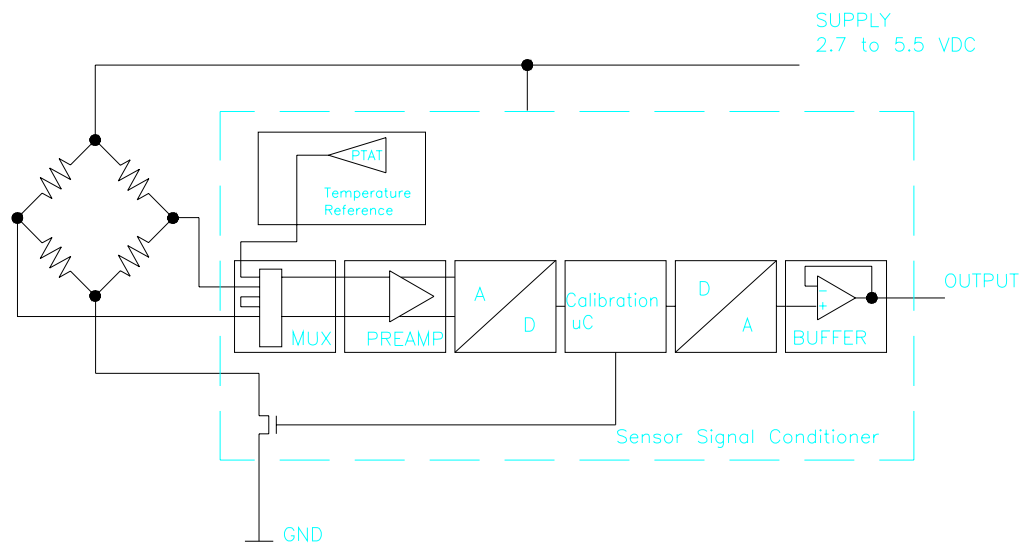
## STANDARD RANGES (IN H2O)

Range	Gauge	Differential
2	DS, SS, TP,MM	DS, SS, TP,MM
4	DS, SS, TP,MM	DS, SS, TP,MM
5	DS, SS, TP,MM	DS, SS, TP,MM
10	DS, SS, TP,MM	DS, SS, TP,MM
20	DS, SS, TP,MM	DS, SS, TP,MM
30	DS, SS, TP,MM	DS, SS, TP,MM

See Package Configurations: DS= Dual Side Port, SS=Single Side Port, TP = Top Port

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**BLOCK DIAGRAM**



APPLICATION SCHEMATIC

**ABSOLUTE MAXIMUM RATINGS**

Parameter	Conditions	Min	Max	Unit	Notes
Supply Voltage	$T_A = 25^\circ\text{C}$	2.7	5.7	V	
Output Current	$T_A = 25^\circ\text{C}$		3	mA	
Storage Temperature		-40	+125	$^\circ\text{C}$	
Humidity	$T_A = 25^\circ\text{C}$		95	%RH	Non Condensing
Overpressure	$T_A = 25^\circ\text{C}$ , both Ports		100	psi	
Burst Pressure	$T_A = 25^\circ\text{C}$ , Port 2		3X	Range	
ESD	HBM	-4	+4	kV	
Solder Temperature		250 $^\circ\text{C}$ , 5 sec max.			

**ENVIRONMENTAL SPECIFICATIONS**

Parameter	Conditions
Mechanical Vibration	Mil Spec 202F, Method 213B, Condition C, 3 Drops
Mechanical Shock	Mil Spec 202F, Method 214A, Condition 1E, 1Hr Each Axis
Thermal Shock	100 Cycles over Storage Temperature, 30 minute dwell
Life	1 Million FS Cycles

## PERFORMANCE SPECIFICATIONS

Supply Voltage <sup>1</sup> : 5.0V or 3.3 Vdc

Ambient Temperature: 25°C (unless otherwise specified)

PARAMETERS	MIN	TYP	MAX	UNITS	NOTES
Accuracy	-0.25		0.25	%Span	2
Total Error Band (TEB)	-1.0		1.0	%Span	3,5
Supply Current		3		mA	5
Compensated Temperature	0		+60	°C	4
Operating Temperature	-10		+85	°C	
Response Time		1		mS	5
Weight		3		grams	
Media	Non-Corrosive Dry Gases Compatible with Silicon, Pyrex, RTV, Gold, Ceramic, Nickel, and Aluminum				

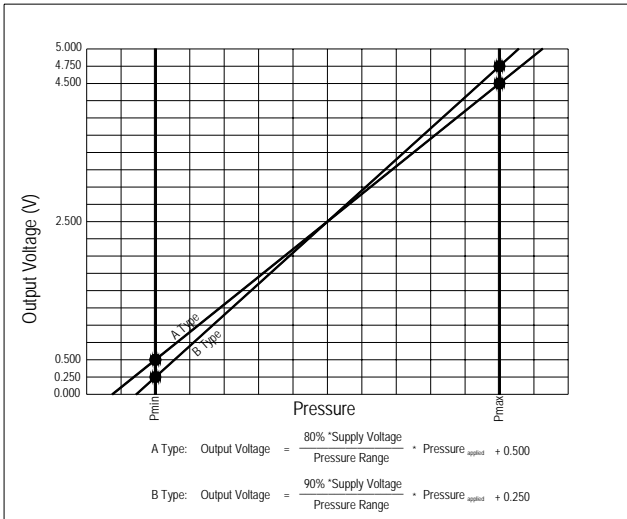
### Notes

- Output is ratiometric to supply voltage.
- Accuracy: The maximum deviation from a best fit straight line (BFSL) fitted to the output measured over the pressure range at 25C. Includes all errors due to pressure non linearity, hysteresis, and non repeatability.
- Total error band includes all accuracy errors, thermal errors over the compensated temperature range, and span and offset calibration tolerances. For ideal sensor output with respect to input pressure, reference Pressure Transfer Function charts below.
- For errors beyond the compensated temperature range, see Temperature Error Multiplier chart below.
- This product can be configured for custom OEM requirements, contact factory for lower power consumption or higher accuracy.

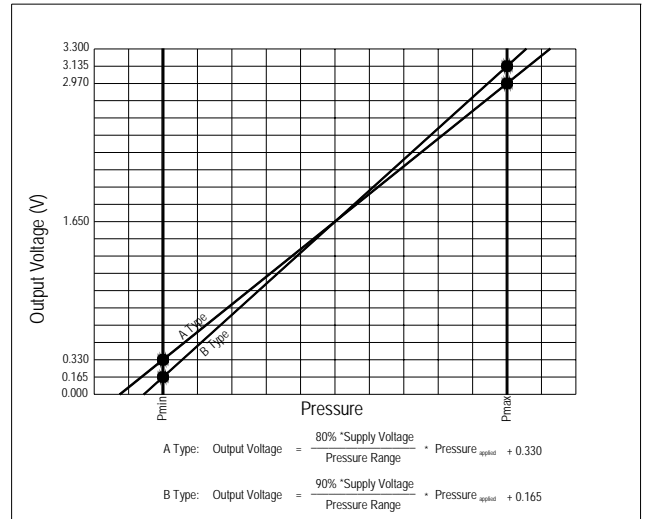
# 4515

## Pressure Transfer Function Chart

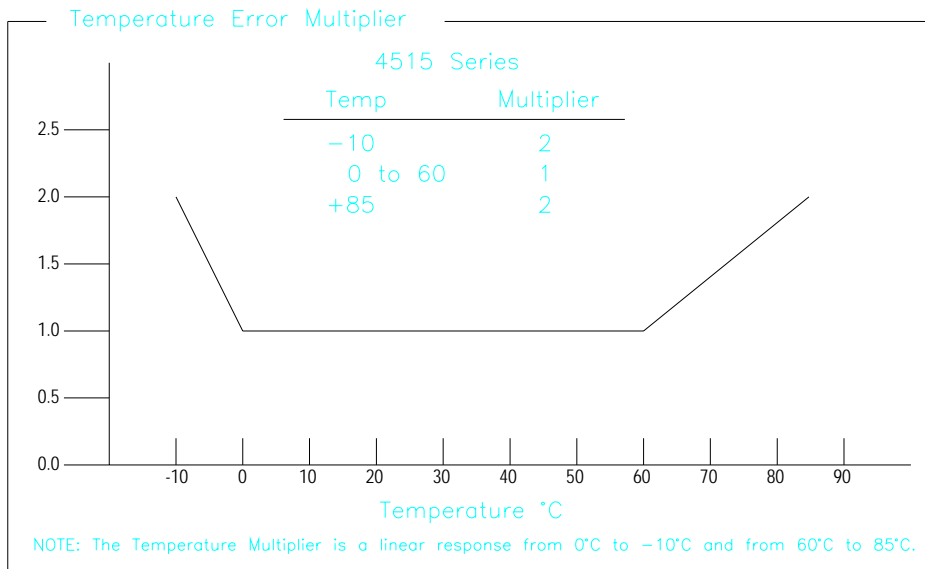
Pressure Transfer Functions, Supply=5V



Pressure Transfer Functions, Supply=3.3V

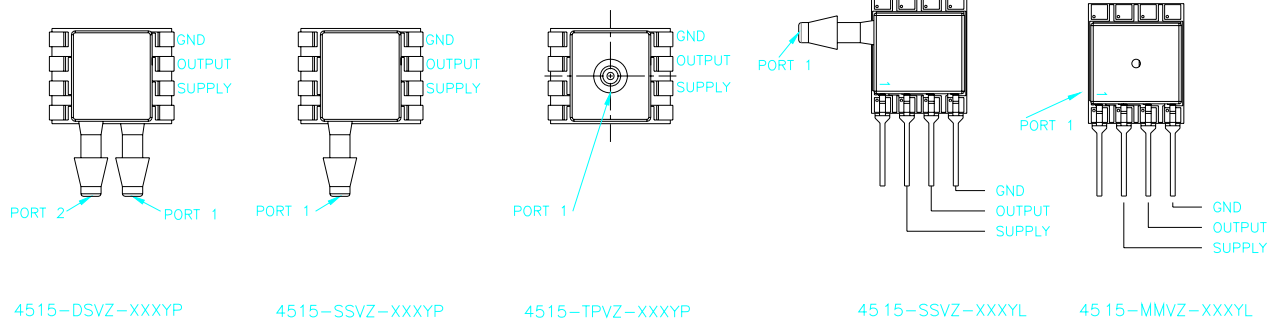


## Temperature Error Multiplier Chart



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## PACKAGE, PINOUT, AND PRESSURE TYPE CONFIGURATION



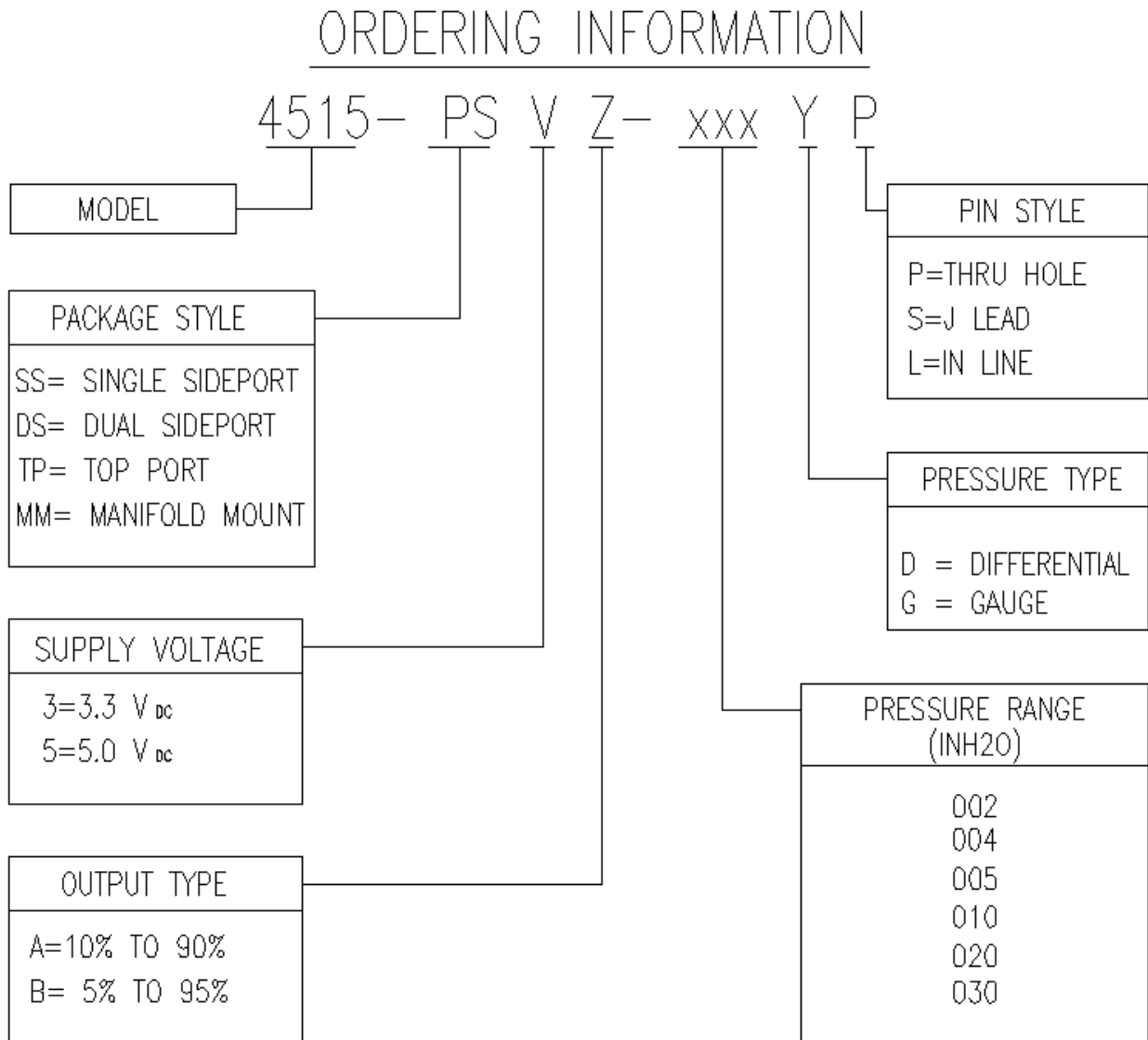
Pin Name	Pin	Function
SUPPLY	2	Positive Supply Voltage
OUTPUT	3	Analog Output
GND	4	Ground

Pressure Type	Pmin	Pmax	Description
Differential	-Prange	+Prange	Output is proportional to the difference between Port 1 and Port 2. Output swings positive when Port 1 > Port 2. Output is 50% of supply voltage when Port 1=Port 2
Gauge	0psiG	+Prange	Output is proportional to the difference between 0psiG (Pmin) and Port 1. Output swings positive when Port 1 > Port 2.

Prange is equal to the maximum full scale pressure specified in the ordering information.

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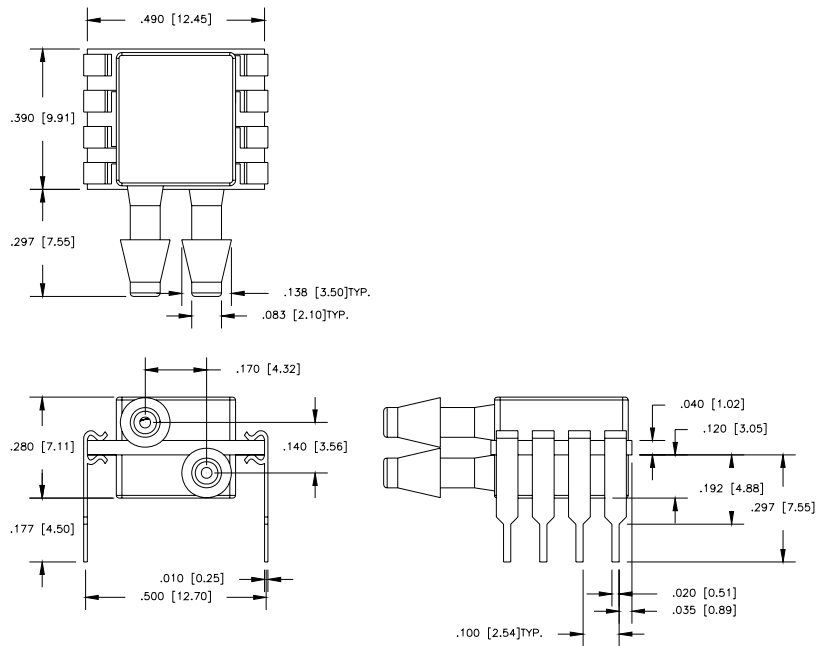
ORDERING INFORMATION



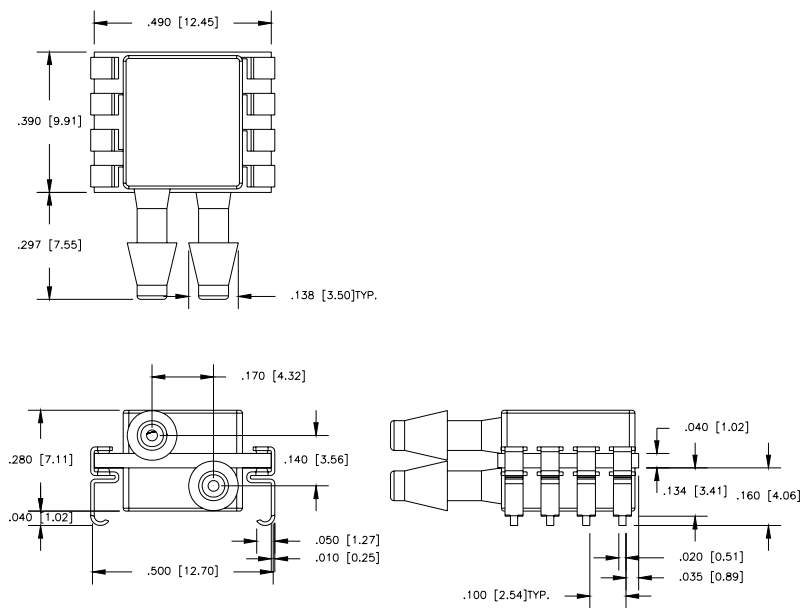
# 4515

## DIMENSIONS

Model 4515-DSVZ-XXXYP



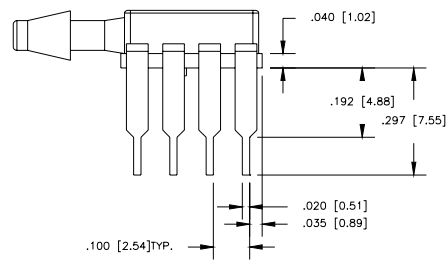
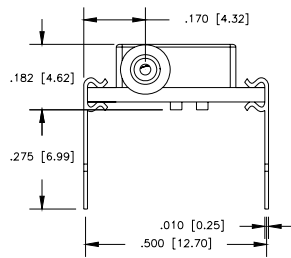
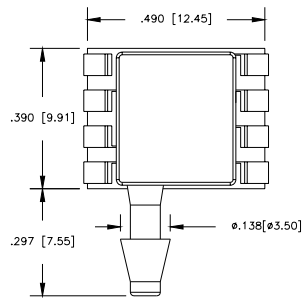
Model 4515-DSVZ-XXXYS



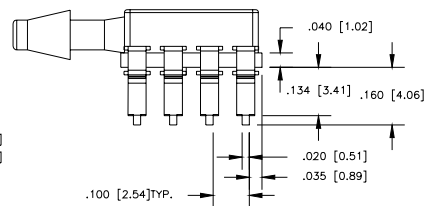
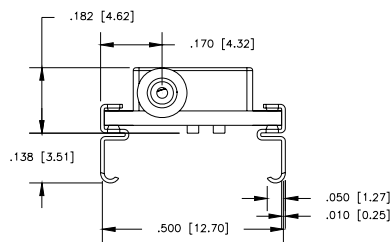
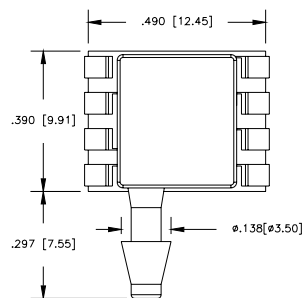
# 4515

DIMENSIONS ARE IN INCHES [mm]

Model 4515-SSVZ-XXXYP



Model 4515-SSVZ-XXXYS

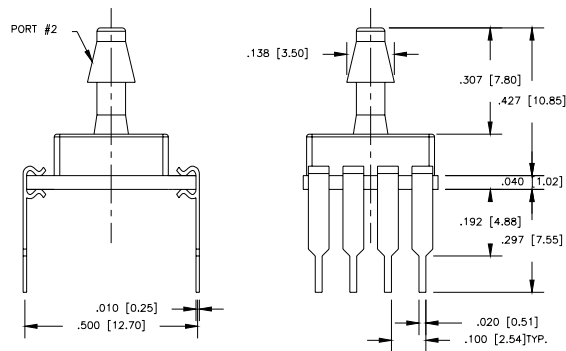
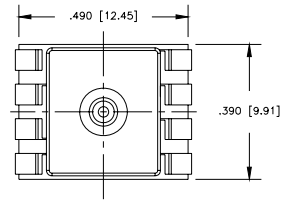




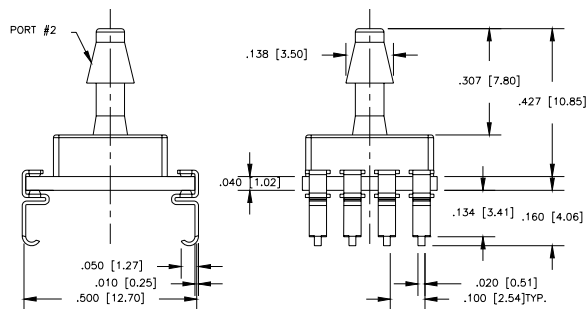
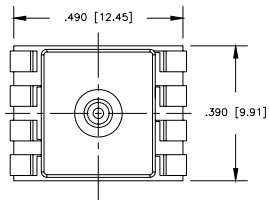
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DIMENSIONS ARE IN INCHES [mm]

Model 4515-TPVZ-XXXYP

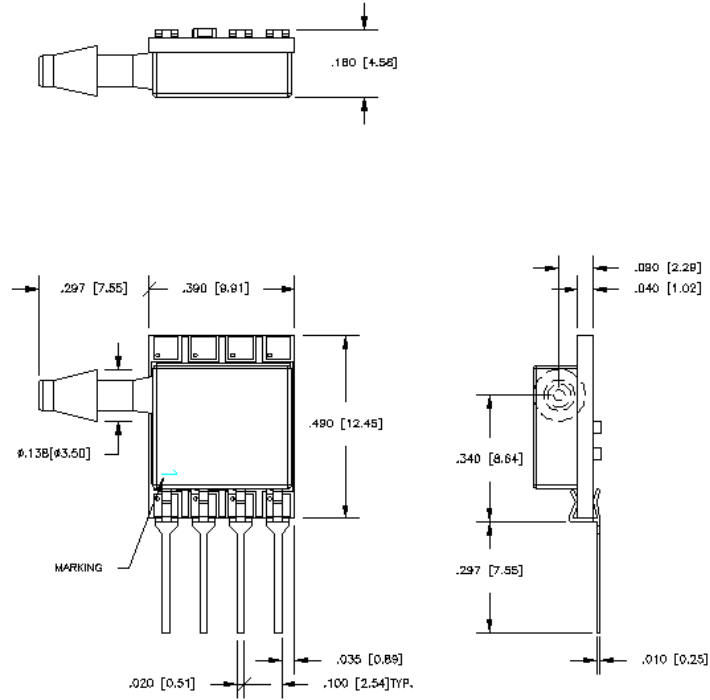


Model 4515-TPVZ-XXXYS

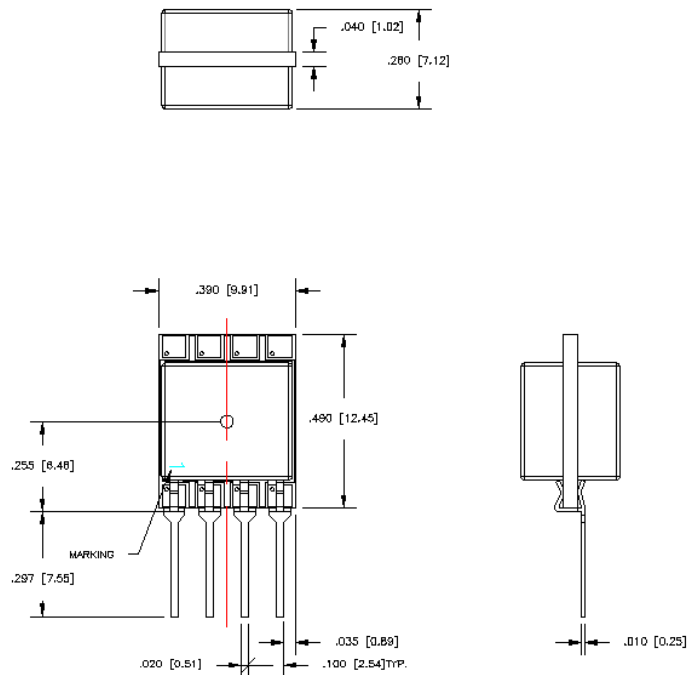


# 4515

DIMENSIONS ARE IN INCHES [mm]  
Model 4515-SSVZ-XXXYL



Model 4515-MMVZ-XXXYL



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