DITEX

PDS500G advanced automotive pressure transducer

The basic information that is needed to create a custom input probe.

There are two hardware versions of the PDS500G relative pressure transducer available. The earlier one has only one pressure input range, 500 psi. The latest version has two input ranges: 500 psi and 200 psi. So, the information provided below is for the latest hardware version. Do not take into account the 200 psi mode if it is not present in your sensor.

PDS500G: 500 psi range

- 500 psi full range = 10 V output voltage
- Input Pressure Range (psi): -14.5 to 500 psi
- Input Pressure Range (bar): -1.0 to 34.5 bar
- Output Voltage Range: -290 mV to 10.0 V

▶ PDS500G custom input probe in psi.

The conversion formula is: **Yout (mV) = 20 * X (psi)**

To clarify, in the 500 psi mode, the conversion ratio is 20 mV per 1 psi.

The output voltage of the transducer in the absence of air is -290 mV [20 * (-14.5 psi)].

The same formula with respect to pressure is: **Y (psi) = 50 * Vout (V)**

Where Vout (V) is the output voltage of the PDS500G transducer when the 500 psi range is selected.

▶ PDS500G custom input probe in bar.

In this case, the formula is **Y (bar) = 3.45 * Vout (V)** for the 34.5 bar range selected.

When no pressure is applied to the pressure input, the output will be zero or some voltage very close to zero volts.

PDS500G: 200 psi range

- 200 psi full range = 10 V output voltage
- Input Pressure Range (psi): -14.5 to 200 psi
- Input Pressure Range (bar): -1.0 to 13.8 bar
- Output Voltage Range: -725 mV to 10.0 V

▶ PDS500G custom input probe in psi.

The conversion formula is: **Y (mV) = 50* X (psi)**

To clarify, in the 200 psi mode, the conversion ratio is 50 mV per 1 psi.

The output voltage of the transducer in the absence of air is - 725 mV [50 * (-14.5 psi)].

The same formula with respect to pressure is **Y (psi) = 20 * Vout (V)**

Where Vout (V) is the output voltage of the PDS500G transducer when the 200 psi range is selected.

▶ PDS500G custom input probe in bar.

In this case, the formula is **Y (bar) = 1.38 * Vout (V)** for the 13.8 bar range selected.

When no pressure is applied to the pressure input, the output will be zero or some voltage very close to zero volts.

DITEX **PDS500G -** PERFORMANCE SPECIFICATIONS (**500 psi range)**					
	MIN	**TYP**	**MAX**	**UNITS**	**NOTES**
Span		10000		millivolts	
Zero Pressure Output	-5	5	25	millivolts	
Pressure Non Linearity	-0.2		0.2	%Span	
Repeatability		±0.02		%Span	
Temperature Error – Span	-1.0		1.0	%Span	*
Output Noise (10Hz to 1KHz)		100		µV p-p	
Response Time (from 0% to 90%)		100		µs	
Pressure Overload			3X		
Pressure Burst			4X		
Compensated Temperature	0		50	°C	
Operating Temperature	-20		70	°C	
Media – Pressure Port	Liquids and Gases compatible with 316/316L Stainless Steel				
* Over the compensated temperature range with respect to 25°C					