

# Weld Force Differential Pressure Transducer

## Model WDP

MEASURE WELDING FORCE

1/4" NPT FITTINGS

FITS ALL WELD CYLINDERS

RUGGED PACKAGING



The weld quality of resistance spot welding depends largely on controlling your weld force. To reduce flash and ensure the proper nugget formation, it is critical that a minimum force (or pressure) is reached before current is fired and a maximum force is not exceeded during the weld. To minimize weld cycle time, weld as soon as the correct force is reached and eliminate wasted squeeze cycles.

Retrofit your existing robot transguns, press welders, or space-critical custom weld machines with a system that allows you to calibrate an accurate initial force level and monitor weld-tip force during every weld. The Model WDP differential pressure transducer is easily mounted between the upper and lower pressure ports of your air cylinder and interfaced with a WM9000 WeldMeter. Once installed, calibrate the system to read pounds of weld tip force using a WP9000 WeldProbe Force Calibrator.

Use the system to set the pressure regulator to provide an acceptable weld force. Then, preset a force limit to a value approximately 5% lower than this force and connect the relay output of the WeldMeter to your PLC or weld controller. The system will now monitor every weld and fire current precisely when the correct force is reached.

During the weld, it is important that the pressure does not continue to increase resulting in a cold weld or small nugget. Use the second programmable limit to detect high pressures and signal the operator when the tip force exceeds your acceptable limit.

## Specifications

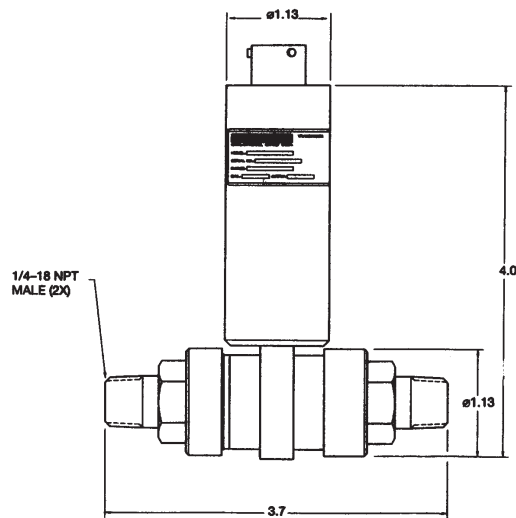
### Model WDP

Capacity .....	0-100, 200, 500 psid
Nominal Output Sensitivity .....	10 mv/v
Excitation Voltage .....	10 VDC
Electrical Connection .....	Bendix PTIH-106P or equivalent
Overall Accuracy .....	0.5% of full scale
Overload limit .....	150% of full scale
Operating Temperature Range.....	-40 to 225°F
Compensated Temperature Range .....	40 to 140°F
Pressure Ports.....	Two, 1/4-18 NPT Male
Housing .....	Stainless steel, all-welded construction

## How To Order

	<b>Order Code</b>	<b>AW813</b>
<b>Capacity</b>		
100 psid	BR	
200 psid	CL	
500 psid	CR	
<b>Optional Cable Assembly</b>		
15' Cable with mating Bendix connector		AW993

## Dimensions



## Instrumentation

The WDP Differential Pressure Transducer is interfaced with a variety of Sensotec instruments to help monitor and control weld force. The family of WeldMeters range from a simple, single-channel instrument with dual limits, relay contacts, and analog outputs to single- and multi-channel micro-processor meters with digital inputs and outputs for multiple head applications.

In all configurations, WeldMeters connect easily to the WDP Pressure Transducer and are calibrated on the machine with a WP9000 WeldProbe Force Calibrator. This provides an output of actual tip force, automatically accounting for cylinder diameter.

Once calibrated, the WeldMeter is easily programmed to set one or more force limits. One limit is used to trigger current firing after the preset achieved contact force is reached for every weld. This assures the minimum force is reached and minimizes the traditional squeeze time creating shorter weld cycles. Another limit is used to detect if a maximum preset force is exceeded during the weld which may lead to cold welds or incomplete nugget formation.

Finally, RS 232 or 485 serial outputs can provide data logging of peak forces achieved during every weld. The data can provide traceability for quality records or detect trends in force changes.

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