

# WeldThru™ Sensor

## Force, Current, Temperature

### WT9000

MEASURE WHILE WELDING

FORCE RANGES TO 5000 LBS.

NIST TRACEABLE ACCURACY 1.0%

RUGGED, WATER-COOLED DESIGN

NEMA 4 RATED



The WeldThru is a rugged sensor designed to measure weld tip force and secondary current during resistance spot and projection welds to help improve weld quality and productivity. Coupled with appropriate instrumentation like the Sensotec WeldMeter, the WeldThru sensor can interface with your weld controller and help ensure quality welds every time. In conjunction with weld monitors, the WeldThru sensor can record critical weld parameters to help ensure compliance with ISO 9000 or QS 9000 quality requirements. The WT9000 is available as an in-line version for spot welding machines and guns or platen style for projection welders.

**FORCE:** This patented, breakthrough technology provides accurate measurement of weld electrode force right at the point of weld. The sensor produces a high-speed analog signal through all aspects of the weld cycle (squeeze, weld, and hold) while withstanding weld currents up to 50K amps. Integrated with the WeldMeter, the WeldThru sensor provides a force trigger to your PLC or weld controller to fire current only after your preset force is met. This ensures the right pressure has been achieved and minimizes the squeeze time.

**CURRENT:** An internal current sensor provides an accurate secondary current signal that is insensitive to position, orientation, and current frequency all within the same rugged package. This current sensor eliminates the need for external coils and associated electronics.

**TEMPERATURE:** A temperature sensor provides an indicator of coolant flow through the sensor and to the electrode. Integrated with our WeldMeter, a relay output can be used as a safety interlock to indicate loss of coolant.

## Specifications

### Model WT9000

#### PERFORMANCE

Force	
Capacities .....	0-500, 2000, 5000 lbs
Overload .....	150%
Accuracy .....	1.0%
Output .....	1 mv/v nominal (10VDC with instrumentation)
Current	
Capacities .....	30kA for 500 and 2000 lb range 90kA for 5000 lb range
Output .....	0-5.0 VDC (2.5 is zero output)

#### ENVIRONMENTAL

Package .....	All-welded load cell, NEMA 4
Operating temperature .....	-40 to 300°F
Compensated temp. range .....	60-160°F

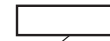
#### ELECTRICAL

Excitation (Force) .....	10VDC nominal (15VDC max.) Bridge resistance = 350 ohms
Excitation (Current) .....	10VDC nominal
Electrical Termination .....	12 feet armored cable with optional PT01W-10-6P connector

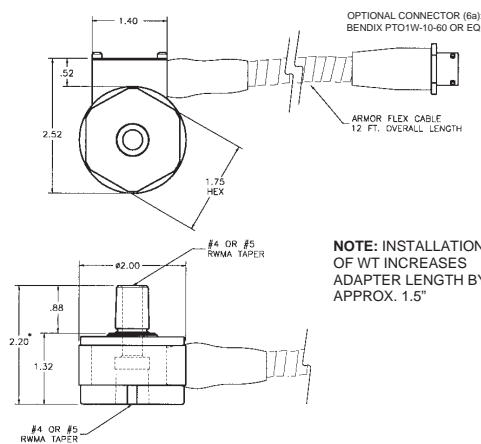
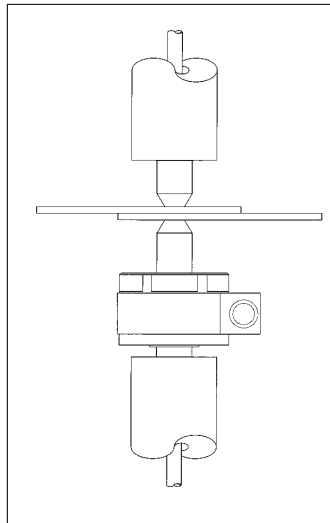
## How to Order

Model	
Force (Inline)	AW213
Force, Current, Temp (Inline)	AW214
Force (Platen)	AW223
Force, Current, Temp (Platen)	AW224
Capacity	
500 lbs.	CR
2000 lbs.	DL
5000 lbs.	DR
Electrode Interface	
#4 RWMA taper	71a
#5 RWMA taper	71b
#7 RWMA taper	71c

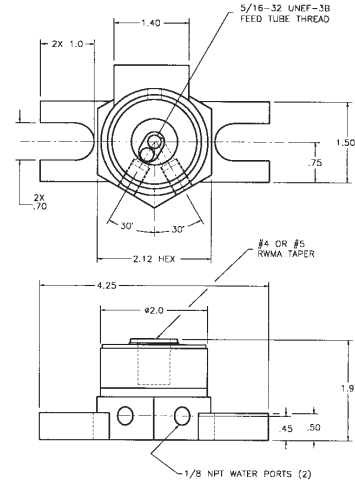
Order Code



Note: Pigtail cable standard, option 6a conn. shown below.



IN-LINE BASE STYLE



PLATEN STYLE

NOTE: INSTALLATION OF WT INCREASES ADAPTER LENGTH BY APPROX. 1.5"

## Instrumentation

The WeldThru sensor is interfaced with a variety of instruments and signal conditioners. Sensotec offers a WeldMeter which is a multi-channel device. One channel is used to excite and condition the force strain-gage bridge and provide an analog output and display. A force limit is set and a relay closure is provided to interface with your PLC or weld controller to fire current at a known force. A contact closure input is used to tare or zero the force value prior to the initiation of each weld. A second channel can be used to provide a relay contact output to trigger when a preset temperature limit is reached to alarm detection of coolant loss.

The WeldMeter is configurable with up to 14 channels and provides a wide variety of options. *Auto Cal* is a unique capability that creates a Smart Sensor function allowing the system to recalibrate itself automatically whenever a sensor is replaced on the shop floor.

For signal monitoring, tracking, and analysis, interface the WeldThru sensor to a variety of commercially available weld monitors. Inquire for more details.