TECHNICAL SPECIFICATIONS

Fuel Stick Sensor

The FS-3 electronic fuel stick sensor is commonly deployed on-site near prescribed burn and wildfire operations. The sensor's output tracks closely with 10-hour fuel moisture, an invaluable indicator of fire behavior. The sensor uses digital compensation and linearization to provide a greater degree of precision and better temperature performance than analog sensors.

The FS-3 provides an electronic measurement of the internal temperature and humidity of a wooden dowel. Based upon a 10-hour fuel stick algorithm, these measurements are used to indicate the moisture content of naturally occurring fuels in the vicinity of the weather station.

The FS-3 dowel is manufactured from clear kiln-dried ponderosa pine with 10-14 annual growth rings per inch. The dowel is hollowed with a machine ream to ensure precise repeatability between sensors.

The dowel is simple to replace in the field—it simply screws onto the end of the FS-3 housing, with the thermistor and humidity sensor protruding into the dowel's interior. The replaceable dowel keeps maintenance and replacement costs low.

Fuel temperature is monitored by a precision thermistor, and fuel moisture by a capacitive humidity sensor. Exposed to the elements, the FS-3 acts to integrate the varying effects of direct sunshine, wind, rain, air temperature and humidity over a period of time.

The FS-3 includes an armored stainless steel cable and bayonet connector, providing fast and simple mating to the "fuel stick" port on the Axiom Fire Data Logger.

TECHNICAL SPECIFICATIONS	
Temperature	
Type	Encapsulated thermistor
Output	10 k ohm @ 25°C
Accuracy (0 to 60°C);:	±0.1°C
Resolution	0.1°C
Range	-40°C to +60°C (-40°F to 140°F)
Humidity	
Type	Capacitive sensor
Output	0 to 1 VDC
Accuracy (0 to 60°C);:	1%
Resolution	±2% (0 - 100% RH)
Range	0 to 100%
Operating voltage	9.6 to 20 VDC
Oprating current	< 1mA
Measurement speed	< 50 ms