



Multipoint Sensor MPS

General Description

The Multipoint Sensor (MPS) provides a method to obtain moisture content readings over a large contiguous area using a single input. The MPS allows a single input to be used to obtain moisture content information over a twenty five foot span as compared to using several Point Moisture Measurement (PMM) sensors to cover a similar area.

The MPS performs a direct contact measurement of moisture content in materials susceptible to moisture absorption such as wood, gypsum, concrete or masonry.

The MPS returns a moisture content value representing the total parallel moisture content of all probed locations. Due to the nature of moisture content readings, wet readings overshadow milder conditions allowing the operator to differentiate between dry and wet conditions.

Sensor data from the MPS is transmitted to the Building Intelligence Gateway where temperature compensation and wood species correction factors are applied.

Features

- Standard model covers 8 contact point locations over a 25 foot span.
- Built in temperature sensor allows for temperature compensation.
- Terminated on standard audio jacks for easy compatibility with SMT WiDAQs.
- Compact, low profile, very flexible design allows for easy deployment.
- Temperature data is transmitted and recorded along with Moisture Content Data
- Low profile design allows for easy deployment.
- Sensor can be reused on various restoration sites

Typical Application



MPS Sensor installed along base plate on basement floor.

Stainless Steel 3/4" screws are driven into the MPS at pre-defined locations.

Any number of probes sets (screw pairs) may be deployed depending on the desired area to monitor and the MPS length.

For the 8 contact point model any number between 1 and 8 contact points may be used.

Functional Specifications

Electrical Characteristics

Operating Voltage	2V to 12VDC
Resistance Measurement Range	100Ω to 1GΩ
Thermistor Measurement Range	-40°C to 125°C / -40° to 257°F
Thermistor part number	Cantherm MF52104F3950
NTC Thermistor Beta Value	3950

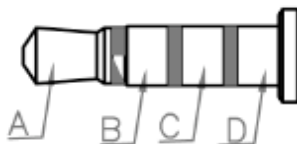
Environmental

Operating Temperature	-40° to 50°C / -40° to 122°F
Application Temperature	5° to 50°C / 41° to 122°F
Storage Temperature	-40° to 50°C / -40° to 122°F
Storage Humidity	30% to 70% RH

Physical – MPS-001-025

Length	7.62m (25 feet)
Termination	3.5mm Audio Jack
Probe locations	8 locations spaced 61 cm (24 inches) apart

MPS-01 3.5mm Audio Jack Wire Diagram

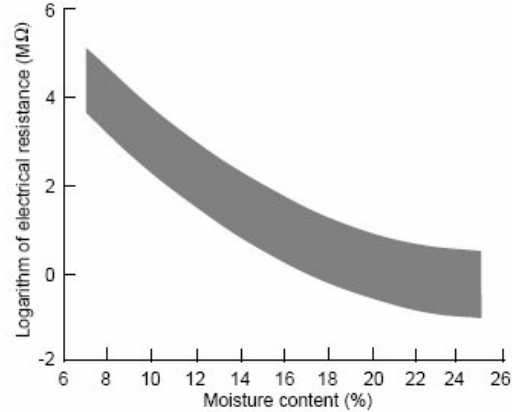


Scale: 2:1

MPS	Audio	Function
A	Red	Moisture
B	Black	Thermistor
C	Yellow	Thermistor (Com)
D	Green	Moisture (Com)

Specifications are subject to change without notice

Moisture Content Calculation



Change in electrical resistance of wood with varying moisture content levels for most wood species. Due to the logarithmic relationship, readings from multiple probe points follow a similar trend.

$$MC = \left[\frac{R_s + (0.567 - 0.0260x + 0.000051x^2)}{0.881(1.0056^x)} - b \right] + a$$

Where

- MC moisture content at 23°C
- R resistance to moisture based on above graph
- x temperature of the wood (°C), and
- a,b species correction regression coefficients

[See moisture content notes and papers.](#)

Ordering Information

8 pairs moisture sensing on 25 feet of cable. Terminated on audio jack. MPS-001-025

