

Hydronix

Digital, Microwave Moisture Sensor for
Rotating Pan Mixers, Static Pan Mixers
and Conveyors

Hydro-Probe Orbiter



CONCRETE : AGGREGATES : ASPHALT

Hydro-Probe Orbiter

Digital microwave moisture sensor for mixers and conveyors

The Hydro-Probe Orbiter is a rugged, digital moisture sensor that measures in fast flowing abrasive materials. Reading at 25 times per second, the arm moves through the material providing a fast and accurate response to changes in moisture.

The sensor comprises of 2 parts - the Head Unit which houses the electronics and a hard wearing Sensing Arm, which can be easily changed, eliminating the need to replace the entire sensor. Remote configuration, calibration, diagnostics and firmware upgrades are simple using Hydronix Hydro-Com software and the linear output allows direct integration with any control system using industry standard interfaces.



Features

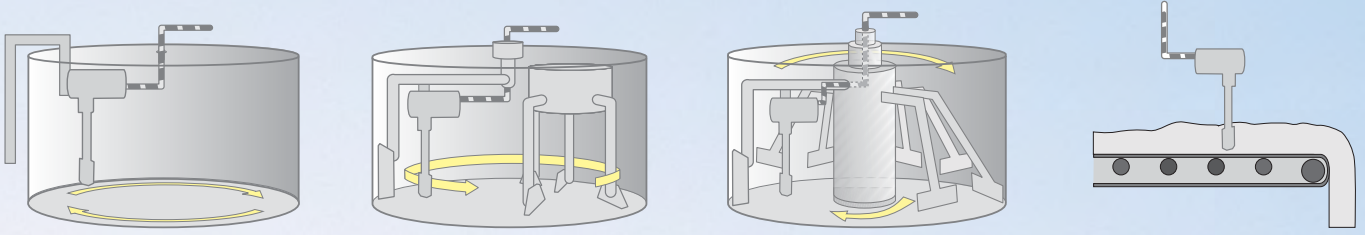
- Digital technology provides precise linear moisture measurement with 25 readings per second.
- Advanced Digital Signal Processing provides a clear signal with rapid response.
- Choice of measurement modes for optimising sensor performance in a variety of applications and material types.
- Fully temperature compensated measurement.
- Two analogue outputs, digital RS485 communications and configurable digital inputs/output, alarms.
- Remote communication with Hydro-Com software allows configuration of all sensor parameters.
- Consistent performance with no need to recalibration except for use with different materials.
- Calibration data points stored within the sensor for improved quality control.
- Stand alone or simple integration into a new or existing automation system.
- Choice of arm lengths.

Rotating Connector

Rotating unit for mounting the Hydro-Probe Orbiter in static pan mixers. Choice of models available for different mixer types.



Typical Installation

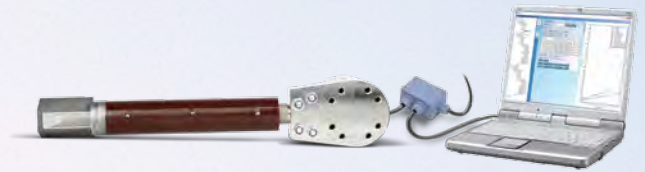


In a rotating pan mixer or conveyor application, the Hydro-Probe Orbiter can be cabled directly to the control system. In a static pan mixer the sensor cable is routed through the Hydronix Rotating Connector.

Connectivity

Direct Connection to PC

The RS485 serial interface provides a direct connection to an operator interface or a PC.

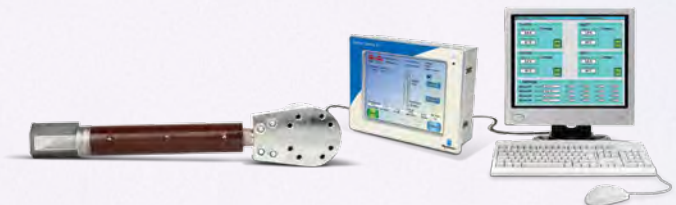


Direct Connection to Control System

The analogue or serial interface integrates easily with a moisture control system.

Hydro-Control Connection

Provides a complete system to control moisture in a mixing application.



Networking

Network up to 16 sensors using one standard Ethernet connection with the Ethernet Adapter Kit. Power over Ethernet option also available.



USB Interface

Easy communication with sensor using USB sensor interface module for sensor diagnostics, configuration and firmware upgrades.



Technical Information

Construction

Body: Stainless Steel (AISI 304).
Sensing Head: Hardened Ceramic.

Fixing

The sensor is designed to be clamped to a vertical 25mm square mild steel bar which is supplied by the customer.

Operating Temperature

Head Unit: 0-60° C.

Sensing Arm: 0-45°C. (High temperature arm also available)

The sensor will not measure ice.

Penetration of Field

Approximately 75-100mm dependent upon material.

Refresh Rate

25 times per second.

Moisture Range

The sensor will measure up to saturation of material.

Analogue Outputs

Two configurable 4-20mA or 0-20mA current loop source outputs available for moisture and temperature. May also be converted to 0-10V DC.

Digital Inputs/Output

2 configurable digital signals available for averaging and alarm functions.

Digital (Serial) Communication

Opto-Isolated RS485 2-wire port.

RS485 to RS232, Ethernet and USB converters available.

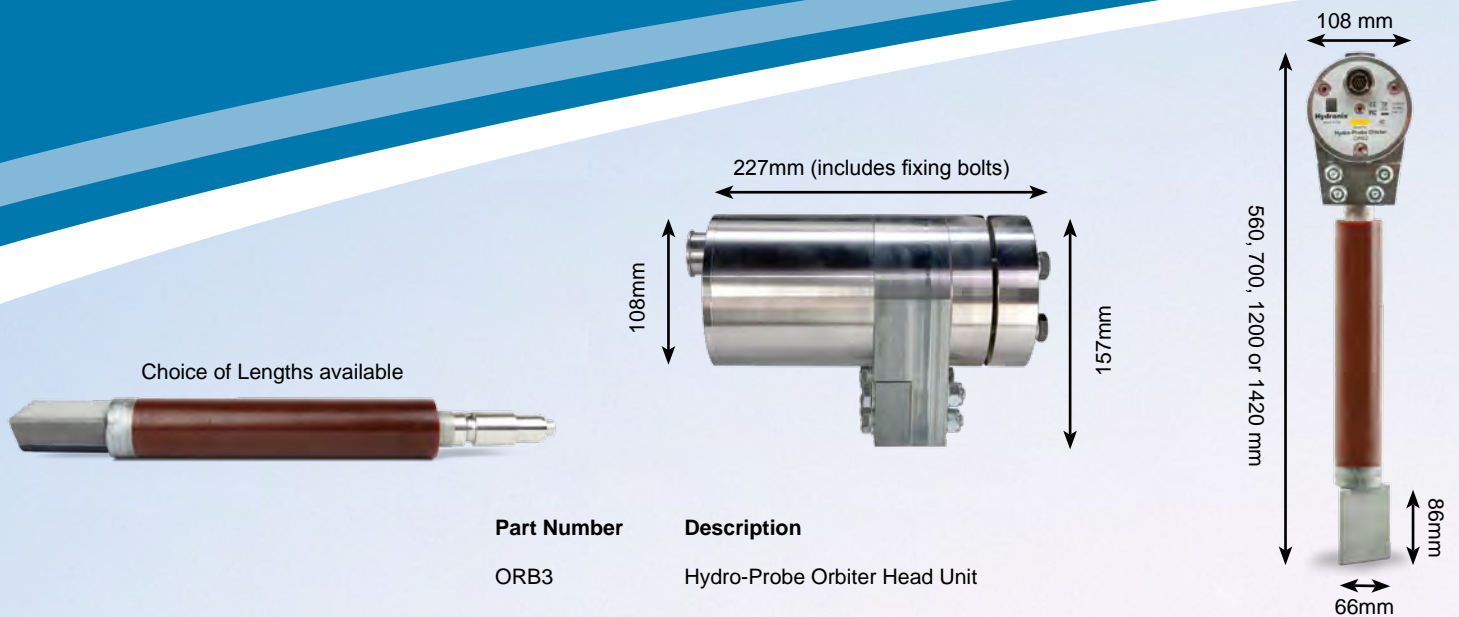
Programming details to access sensor values and parameters are available on request.

Extension Cable

Six twisted pairs, 22AWG, 0.35mm² conductors. Screen braid with 65% minimum coverage plus aluminium/polyester foil. Maximum cable run of 100m.

Power Supply

+15V to +30V DC, 4W.



Part Number	Description
ORB3	Hydro-Probe Orbiter Head Unit
ORBA2C	Sensing Arm - (0-45°C) various lengths
ORBA1-HT	High Temperature Sensing Arm - (0-100°C) various lengths
ORBR2	Rotating Connectors - Contact Hydronix for details
0580	Sensing Arm Guard
0582	Rear Protection Plate
0584	Ceramic Protection Ring, Pack of 2
0586	Steel Protection Ring, Pack of 5
0975A	4m Sensor Cable with military specification sensor connector. Also available in 10m and 25m lengths.
0116	Power Supply 30 Watt for up to 4 sensors
0049A	RS232-485 Converter - DIN rail mounting
0049B	RS232-485 Converter - 9 pin D-type to terminal block
SIMxx	USB Sensor Interface Module including cables and power supply
EAK01	Ethernet Adapter Kit
EPK01	Ethernet Power Kit - provides Power over Ethernet
ORB3EW	4 Year extended warranty option



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