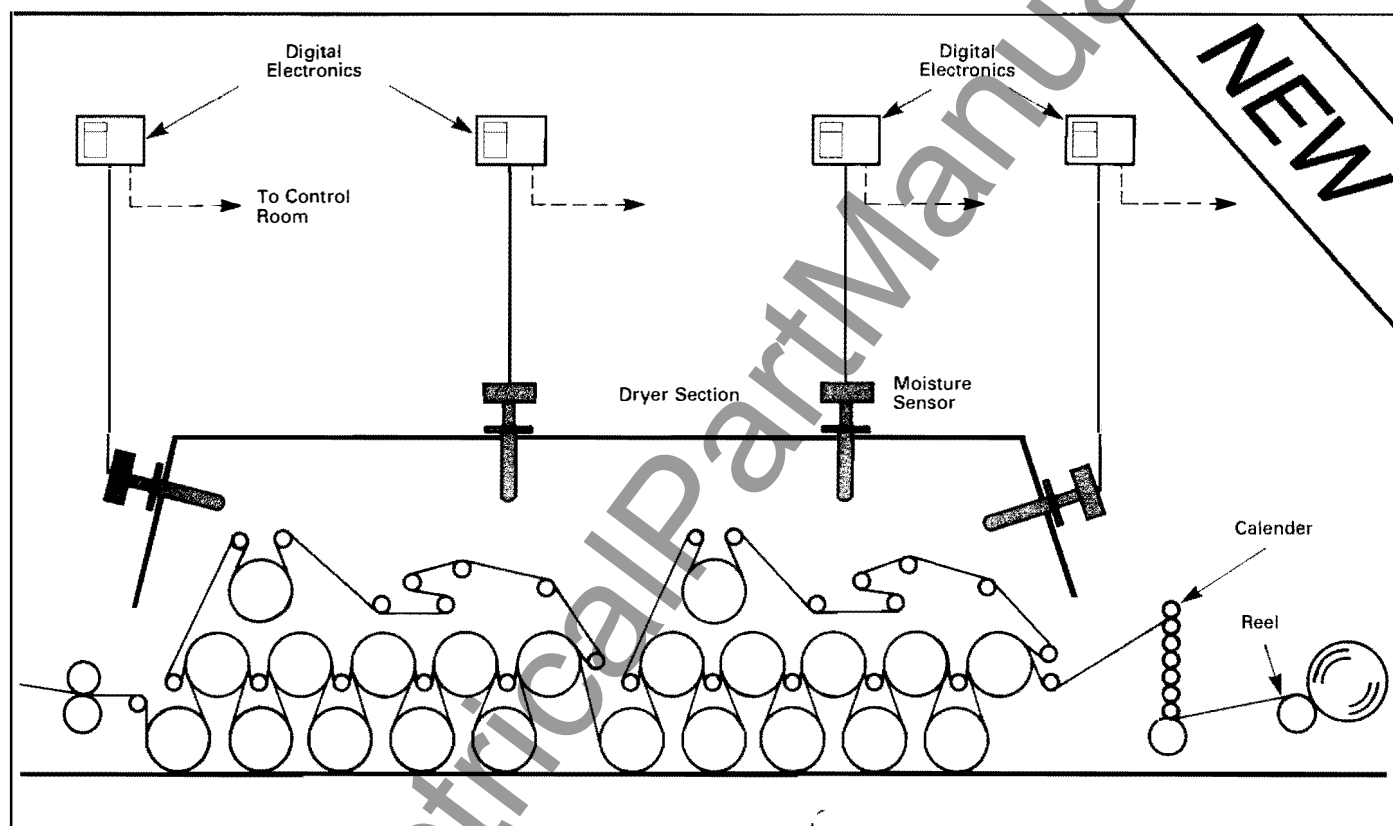




Moisture Monitor with Digital Electronics Package



Application Example: Paper machine drying process using one or more Westinghouse Moisture Monitors as required.

The Westinghouse Moisture Monitor is a continuous water-vapor sensing device for reliably measuring moisture in air at elevated temperatures in a variety of manufacturing applications.

The model MM10 uses the Westinghouse patented Zirconium Cell principle eliminating the need for sample systems. The sensor measures directly g/Kg of water-vapor in industrial drying processes to improve product quality and provide significant energy savings.

Typical Applications

- Pulp Processing
- Paper Dryers
- Food Processing
- Industrial Drying
- Board Manufacturing
- Recirculating Dryers

Features

- Direct insertion type analyzer eliminates sample system
- Easy calibration — keyboard initiated
- Optional RS232 serial link
- Proven closed-loop control reliability
- Calibration check without disturbing sensor
- Suitable for temperatures up to 1112°F (600°C)
- Low installation cost
- Low maintenance cost
- No moving parts
- High accuracy
- Corrosion resistant

Moisture Monitor

Features

Rapid, accurate and reliable measurement of moisture with a single, in situ sensor.

No sample system, no sample probes, no scrubbers and no pumps are necessary; test gas calibration check without disturbing sensor.

Solid zirconium oxide electrolyte.

Suitable for use in temperatures up to 1112°F (600°C)

Isolated outputs field selectable via keyboard.

Benefits

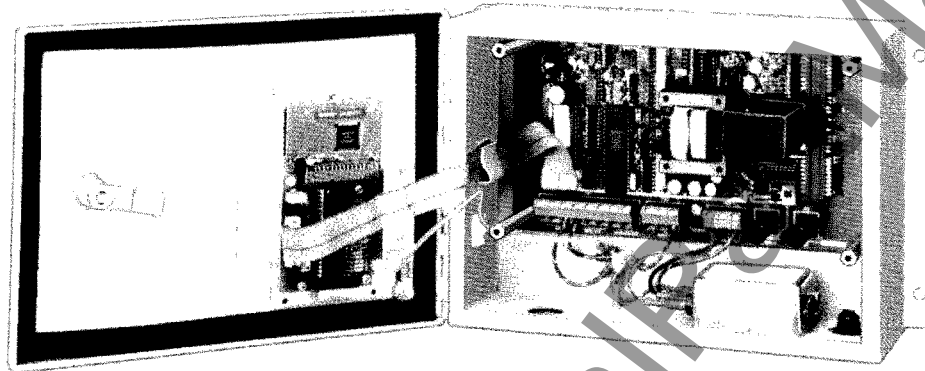
Significant energy savings normally pay for analyzer in less than 6 months. Facilitate significant product quality improvements.

Low installation and low maintenance costs.

Provides high reliability.

Ideal for most moisture control applications.

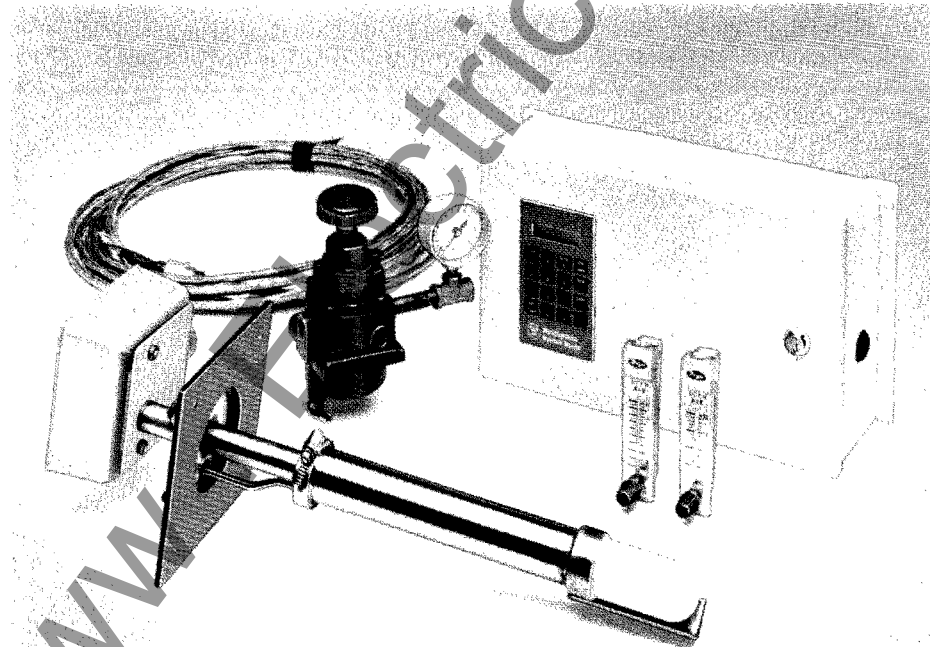
Linear for closed loop control.



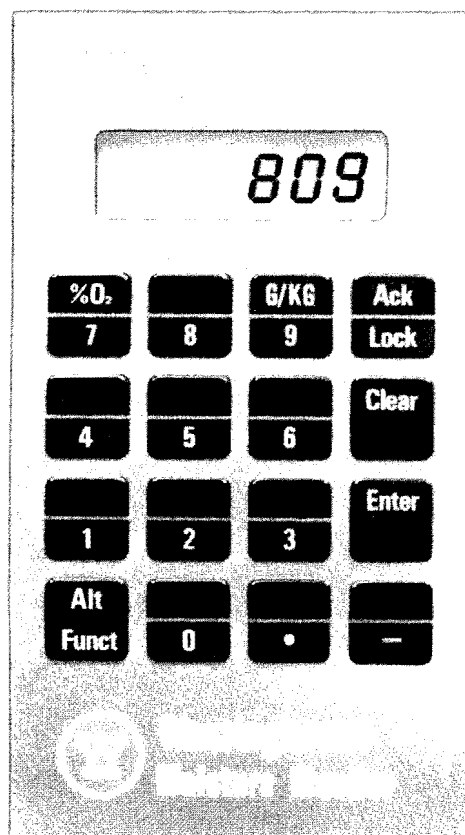
NEMA 12 (IP54) Housing

Digital Electronics Features

- Automatic analyzer calibration – no special test or measuring equipment required, only standard test gas.
- Easy operator interface provided by a 6 character alphanumeric Liquid Crystal Display (LCD) and membrane keyboard. Displays: g/Kg.
- Simplified set up procedure and access to all analyzer parameters via keyboard/display.
- No adjustable components in functional part of circuit.
- Automatic heater shutdown in sensor if thermocouple leads are reversed, short circuit or open circuit.
- Linearized output signal with three keyboard selectable ranges.
- Isolated voltage or current output switch selectable.



Model MM10 Moisture Monitoring Package



Keyboard Displays

g/Kg	0-1000 g/Kg
TG1	xx.xG1
TG2	xx.xG2
Sensor	xx.xtO
Temp	(compensated mV).
Cell-Constant	Plus or minus xx.xk (mV).
Cell-Slope	Plus or minus xx.xm (mV/NAPIER). 2.303 Napier = 1 Decade
O ₂	x.x% O ₂ (<10% O ₂) xx.x% O ₂ (>10% O ₂)

Display Messages

POW UP	Unit has powered up correctly.
DISP =	Prompt for parameter number to be displayed – display change mode.
TOOBIG	Parameter number too big.
PARAM?	Prompt for parameter number to be displayed – parameter change mode.
OVRANG	Value too large to be displayed.
CAL	Prompt for start of calibration.
TG1on?	Is test gas 1 on?
TG2on?	Is test gas 2 on?

WAIT	Interim step in calibration sequence.
CALIBR	System is about to calibrate.
PASSED	Indicates calibration was successful.
FAILED	Indicates calibration was unsuccessful.
PURGE	Indicates settling time for test gas to disperse.
ABORT	Calibration interrupted or unit timed out in a special operating mode.

Options

By using a simple plug-in expansion board incorporating all the necessary hardware the following software options are available:

- Fully automatic calibration (Standard system is semi-automatic, keypad initiated using Westinghouse portable standard test gas kits supplied as accessories).
The fully automatic calibration facility works with the Westinghouse 2 point calibration sequencer in conjunction with installed test gases to provide calibration checks at regular intervals.
- Serial link port for RS232 cable.

Specifications^①

Moisture Monitor Probe

Probe insertion length	14.5 inches (360 mm) (other lengths available)
Probe mounting	Flange
Sensor type	Zirconia Oxide (patent)
	Solid electrolyte
Process temperature range	122-1112°F (50 to 600°C)
Sensor Operating Temp	1549°F (843°C)
Cell speed of response	1 millisecond
Sensor reference air flow	1 litre/min (clean dry instrument quality air)
Sensor calibration gas flow	2 litres/min
Calibration gas mixtures	20.95% O ₂ dry instrument air for TG1 8.0% O ₂ /N ₂ for TG2
Calibration sequence	Keypad initiated

Electronics Specification

Housing	NEMA 12 (IP54) (Standard) NEMA 4 (IP66) (Optional) Explosion proof (Optional)
Display	LCD (6 digit alphanumeric)
Keypad	16 button membrane keypad

Measuring ranges	0- 200 g/Kg
(Display range keypad selectable)	0- 500 g/Kg 0-1000 g/Kg

Analog output current	4-20mA DC into 950 ohms (linear/isolated) maximum
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Diagnostics facility	Using keypad/LCD display messages
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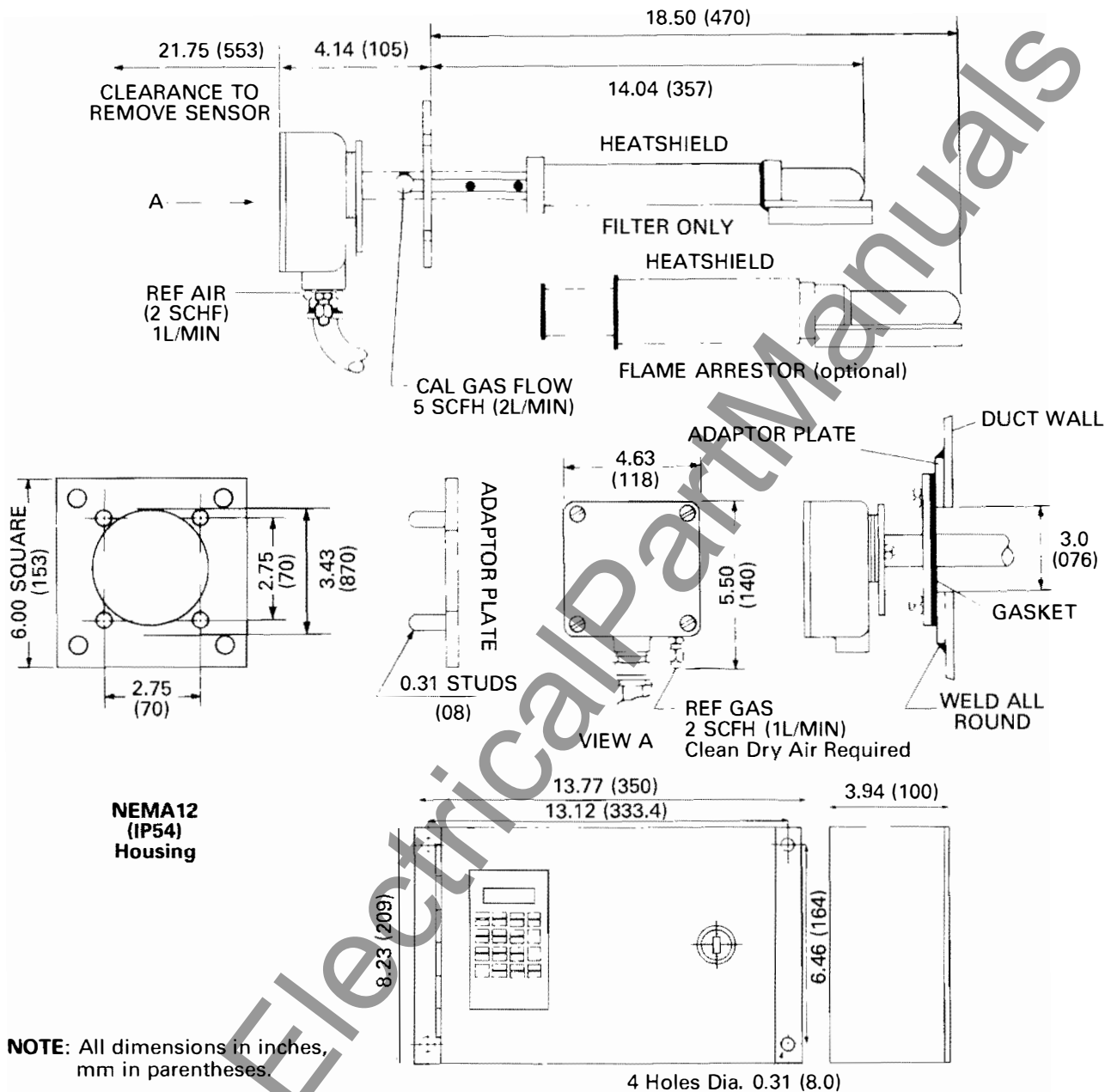
System Performance

Indication accuracy	± 3% of measuring range following in situ calibration
Resolution sensitivity	0.1% (transmitted signal)
System speed of response	less than 15 seconds for 90% of a step change

Power supply	110 ± 10% VAC at 50/60 HZ
Power requirement	
– start up	450 VA
– operating	200 VA
Ambient operating temperature (electronics)	32-122°F (0-50°C)

^① All static performance characteristics are with operating variables constant.

Outline Dimensions



NOTE: All dimensions in inches, mm in parentheses.

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Our policy is one of continuous product improvement and we reserve the right to change specifications.
If normal contacts with our sales and service operations fail to satisfy your needs,
our representatives are available 24 hours at 1-800-433-6076.

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