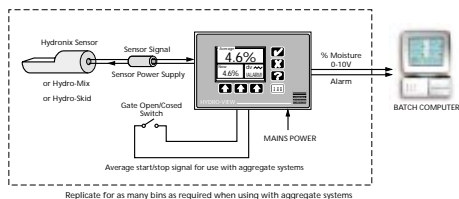
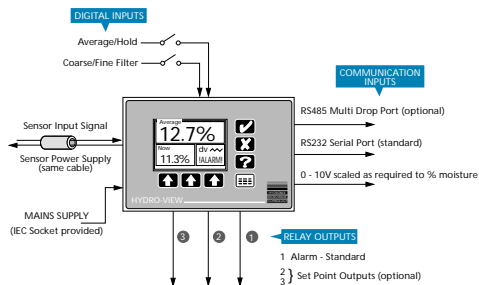
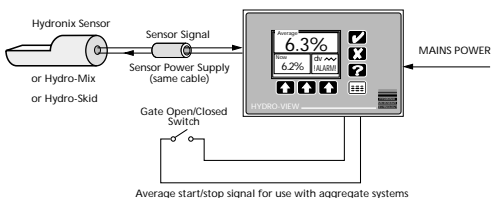


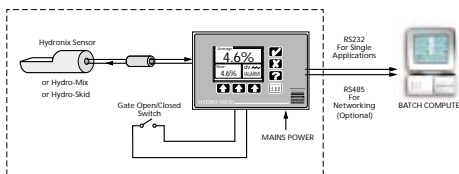
## Connections



INTERFACING USING ANALOGUE OUTPUT



STAND ALONE SYSTEM



INTERFACING USING SERIAL PORTS

## Technical Details

**Housing for panel mounting:**  
Nickel plated steel case with 'threaded' aluminium for fascia.

**Size:**  
Fascia dimensions 146 x 98mm.  
Panel cut out size 140 x 92mm.  
Depth of unit 180mm.  
(250mm with cables)

**Display:**  
LCD graphic display. 8 lines of 20 characters.

**Fascia:**  
Membrane keyboard with polyester overlay.

**Sensor input signal range:**  
Nominally 0-10V.

**Input resolution:**  
12 bits gives better than 0.1% over normal working range.

**Update rate:**  
10 readings per second or better.

**Digital inputs:**  
Two inputs for selecting average/hold and coarse/fine filter. 24Vdc or voltage free contacts. User configurable for sync, level and material inputs

**Analogue output::**  
0-10V or 4-20mA linear output selectable via internal link. Scaling to % moisture selected on instrument.

**Serial port::**  
Bi-directional RS232 (6-way RJ11 style connector). Optional cable to convert to 9-pin D-type connector available.

**Alarm output:**  
Relay output. Contact rated at 50V 500mA.

**Set point outputs:**  
Two independent set point relay outputs with programmable limits. Contacts rated at 50V 500mA. NB. Total load of alarm and set-point outputs must not exceed 500mA.

**Mains power supply:**  
230, 110, 100Vac, +/- 10% selectable. 12W max. IEC mains inlet, 2m cable supplied.

**Operating temperature range:**  
0-50°C.

**Electromagnetic compatibility:**  
Meets the requirements of the Electromagnetic Compatibility Directive 89/336/EEC.

# Hydro-View

## PRODUCT INFORMATION SHEET



*the ultimate  
monitor for total  
moisture control*



**Hydronix**



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# Hydro-View

defining the standards of microwave moisture measurement

The Hydro-View is a compact microprocessor based interfacing unit which displays the percentage moisture content as measured by any one of the Hydronix sensors. This unit will operate either as an integral part of a batch control system, or as a stand alone system with manual plants.

The unit is housed in a steel case suitable for panel mounting. The graphic display provides easy to read moisture readings of both the instantaneous and continuously averaged moisture contents, as well as providing information in trace form. A simple keypad arrangement with 'self help' facility will enable a variety of functions to be performed and options selected, including remote digital calibration of the sensor and the choice of fourteen languages for the message display.

The Hydro-View will communicate with other systems by means of analogue or serial output.

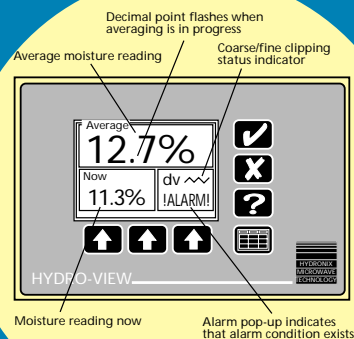


FIGURE 1

## Function

The Hydro-View provides power to the sensor, and by means of an easy to use digital calibration technique converts this information into a meaningful percentage reading for display and communication to the main control system.

## Front Panel Layout

There are nine options on the main menu including a sensor diagnostic facility useful for commissioning or fault finding.

## Moisture Display

The instantaneous or the average percentage moisture is displayed in large figures.

If the average percentage moisture facility is being used (by means of the average/hold input) then the average figure is displayed in large characters and the instantaneous or 'now' figure is displayed simultaneously in the small box.

## Signal Filtering

The Hydro-View incorporates a technique that ensures optimum smoothing of the sensor signal yet without sacrificing the ability to respond quickly when monitoring changes in process moisture contents.

This is particularly relevant for mixer applications and conveyor belt applications. All signal conditioning parameters are selectable by means of the keypad. Therefore it is possible to tune the system for optimum response for any particular application. The trend display (figure 3) enables the precise effect of the conditioning to be observed in graphical form.

The facility to independently adjust the positive and negative rate of response by the keypad is provided, together with the facility for remote selection of either of two sets of filtering parameters – coarse/fine – by digital input.

## Instantaneous Moisture Reading

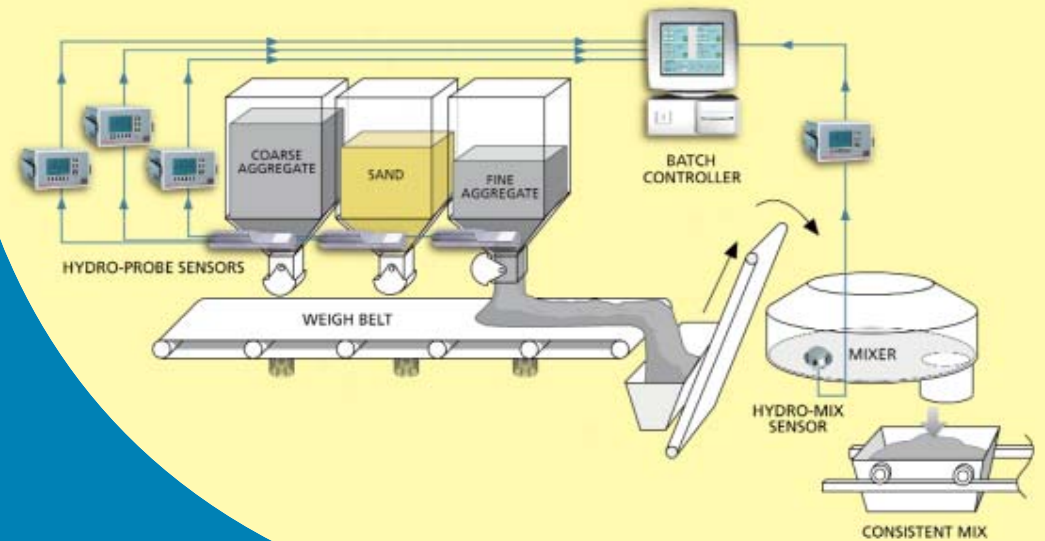
The Hydro-View takes 10 readings per second. The instantaneous reading is in fact itself an average of a 'pipeline' of readings. This 'pipeline' may be adjusted from 1 to 1000 readings. Therefore the characteristics of the instantaneous reading may be smoothed to suit the process parameters.

## Average/Hold Moisture Reading

This is activated by a digital input to enable the Hydro-View to continuously average the moisture content over a defined period of time. On removing the input signal the average figure is held until reactivated.

## Calibration

Calibration of the sensor is performed remotely with the Hydro-View. Thus unlike other systems there should never be a need to make adjustments to the sensor in order to correct for calibration.



The linear output for the sensor is simply calibrated by inserting two different laboratory moisture measurements for the material concerned, together with the associated unscaled sensor moisture reading (as observed on the display) at the time of taking the samples for laboratory analysis. These two sets of values are inserted into the calibration table, which "fixes" the straight calibration line for the material concerned.

Calibration lines for up to 10 different materials may be selected either from the keypad, or remotely. If remote selection of more than 4 is required then the serial link must be used.

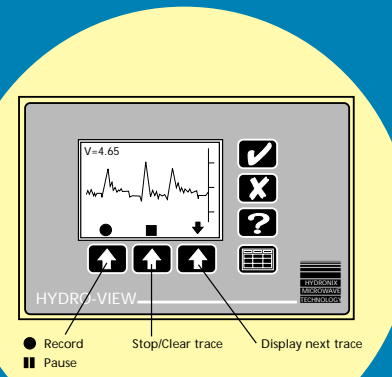


FIGURE 3

## Chart Recording Facility

A unique facility of the Hydro-View is the 'Trend Display' which will chart record four functions.

Raw Sensor input voltage	(V)
Sensor voltage after conditioning	(Vc)
Instantaneous Moisture %	(M)
Average Moisture %	(A)

Although only one trace can be displayed at any one time, any of the four traces may be selected, such that it is possible to compare the raw sensor voltage trace to the conditioned signal in order to assess the effectiveness of the filtering parameters selected.

## Optional Extras

**RS485 SERIAL PORT**  
Plug-in module allows up to 32 Hydro-View units to be connected to a suitable host computer using a single twisted pair cable. Simultaneous independent use with standard RS232 port allowed.

**RS232 CABLE**  
Connects two Hydro-View to PC with 6-way RJ11 style connector to 9-pin D-type plug via 3m cable.

**RS232 CROSS-OVER CABLE**  
Connects two Hydro-View units to allow the mean value of two moisture probes to be computed.