Remote recipe module 8102

BCD/Binary/Discrete inputs from control system

Batch controller / PC or 24v DC 110/220v~ 30w psu

Inputs: RS232

Hydro-Control V

Technical Information

Interfacing
Input/Output Modules:
- 6 Output Modules and 4 Input Modules are provided as standard. These modules are supplied for 110v, 24v DC or can be customised to your specification.
- Only the water valve must be connected. All other outputs/inputs are optional and can be connected as appropriate for each configuration (Note: no connection to material load cells are required).

RS232 Communication:
- For reading and writing information relating to recipe parameters, as well as selecting active recipe.

Technical specification

Supply voltage:
- 24v DC, 30w for Hydro-Control V and Hydro-Mix V. Higher power may be required for powering valves and other outputs.
- Operating temperature range: 0 – 50ºC.

Keyboard:
- Sheet keyboard with polyester overlay.

Graphic display:
- 120mm x 90mm 1/4 VGA display with backlight.

Recipes:
- Memory for 99 recipes.

Security:
- Open access for operators; critical operations protected by three levels of pass codes.

Communications:
- RS323 for connection to batch computer or remote recipe module.
- RS485 communications to Hydronix sensor.

Sensor connection:
The Hydro-Mix V & Hydro-Probe Orbiter Microwave Sensor is connected to the Hydro-Control V by two pairs twisted (4 cores total) screened (shielded) cable with 22AWG, 0.35mm conductors suitable for up to 100m. Separate cable run to any heavy equipment power cables.

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

Dimensions

Operator panel (for panel mounting):
- Panel cut-out size 232mm wide x 178mm high.
- Steel Enclosure (Optional):
  - 400mm wide x 400mm high x 200mm deep.
  - Door hinged from left. IP65 rated.

Information given is correct at the time of publication. Hydronix reserve the right to modify and change the specification as deemed appropriate without notification.

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Hydro-Control V
the ultimate water control system for your mixer

The Hydro-Control V uses the digital technology of the Hydro-Mix V and the Hydro-Probe Orbiter to precisely control the addition of water in the mixer, irrespective of the variation of moisture in the aggregates.

Designed for simplicity of use and installation, the display clearly indicates the mix cycle status with a continuous graphical display of moisture content. Three selectable control modes ensure optimum performance is achieved for all recipes.

Key features
- Compact and powerful – suitable for all mixer applications. Supplied for panel mounting or for mounting in an AC supply.
- Direct communication – links to the latest Hydronix digital microwave sensors, the Hydro-Probe Orbiter for static pan or rotating pan mixers, or the Hydro-Mix V for static pan or horizontal shaft mixers.
- System integration – RS232 communication allows setting and reading of recipe number and data from the main control system, or simple installation using the inputs/outputs included in the unit.
- Easy to read display – continuous graphical display of moisture and mix cycle status. Mix log, sensor diagnostics and many other selectable screens.
- Versatile – three selectable control modes for controlling water addition in the mixer. Enables the most suitable mode to be selected for any given mix recipe.
- User-friendly – easy to install and easy to use.

Control modes
Three selectable control modes allow the most suitable mode to be selected for any given application or recipe. This enables the optimum performance for mix cycle time and moisture accuracy to be achieved.

- Present mode – water added as a fixed quantity. A fixed quantity of water is added as defined by the recipe. This is useful when setting up recipes and commissioning equipment. This mode can also be used without a sensor connected.
- Auto mode – water added progressively. Water is added quickly at first but more slowly as the moisture ‘target’ for the selected recipe is approached. Water flow is controlled by a unique algorithm developed by Hydronix to ensure optimum performance for mix cycle time and accuracy. Only a short ‘dry mix’ time is required and because the water is added progressively, only a short ‘final wet mix’ time is necessary.
- Calculation (Calc) mode – water added in ‘one shot’. No calibration is needed and although the use of a water meter is recommended, it is not essential in this mode. A ‘trim’ function enables manual intervention if required, and is used to establish the appropriate ‘moisture target’ for any given mix recipe.

Mix sequence for the ‘calculation mode’
A typical mix cycle is illustrated in figure 2.

Calibration
Using the calculation mode, it is necessary to calibrate the system. This is very easily performed by the operator using the automatic calibration cycle.

Mix log – records moisture, mix time and control parameters for the last 99 recipes.

System interfacing
The Hydro-Control V will operate as either a stand-alone system where the mix cycle is started and reset using the keypad function keys, or as an integral part of a fully automated system using digital I/O for controlling the mix sequence. RS232 communication for selecting the recipe number and batch size (see figure 8).

Guidance notes
When ordering, the relevant order codes should be specified. These notes are to assist with the correct identification of the components appropriate to your application. Please read these in conjunction with the Technical Details overleaf, and the current price list prevailing at the time. Items marked with a * are optional.

- The standard system comprising the front panel unit. Input/output voltage requirement must be specified at the time of ordering (110v AC, 24v DC or ask for details to customise to your own requirements).
- The units may be supplied with an IP65 steel enclosure unit (6107* figure 7).
- A 30w DC power supply (0116*) for sites without a 24v DC supply.
- A remote recipe selection module (8102*) enables remote recipe selection via digital inputs (not required when using serial communication).