

American Magnetics

Excellence in Magnetics and Cryogenics, Since 1968

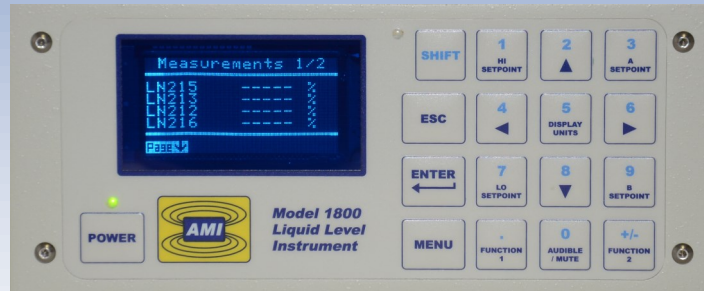


112 Flint Rd Oak Ridge, TN 37830

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Measure and Control most any Liquid Level (i.e.. nitrogen, helium, oxygen, CO₂, argon, xenon, petroleum products, water and many more...)



Up to 8 Channels

- **Remote Operation**
- **Automatic Level Control**
- **Multi Liquid Calibrations**

Model 1800 Liquid Level Instrument

The Model 1800 Liquid Level Instrument is a microprocessor-based instrument designed to provide multiple sensor monitoring and control of liquid levels and many other functions. The sensors supported include capacitance and liquid helium types. Selectable operation modes (Normal Auto-Fill, Auto-Changeover, and Pre-Cool) and user configurations provide broad system flexibility. Advanced features include external inputs for auto-fill interrupts and multiple calibrations per channel for changing conditions.

Multiple Sensor Monitoring and Control

The Model 1800 is capable of monitoring up to eight independent level sensors of either capacitance or superconducting types and controlling liquid level in up to two vessels by directly energizing two solenoid-operated flow control valves. Three levels of display filtering are provided to reduce transients in the displayed level and controller functions.

Multiple Calibrations per Sensor

Each of the sensor inputs to the Model 1800 can have two independent calibrations, which are user-selectable. The user simply selects the desired calibration using the interface menu. All calibration data is passcode protected and stored in nonvolatile memory.

Model 1800 General Specifications

Input Power.....	100-240 VAC
Analog Signal Output.....	4-20 mA and simultaneous 0-10 Vdc
Hi, Lo, A, B Alarms.....	Audible and front panel indication
Auxiliary Relay Rating.....	N.O. 10VA, 0.5A max
Heater Power Output.....	5 V @ 200 mA (1W)
Valve Control Output.....	AC line voltage @ 2A max
Linearity.....	0.1%
Accuracy.....	0.1%
Communication Options.....	RS-232 and 10Base-T Ethernet
Operating Environment.....	0 to 40 °C, non-condensing
Weight.....	3.3 lbs (1.5 kg)
Dimensions.....	3.8"H x 8.4"W x 11.4"D
Mounting Options.....	Single or Dual rack mounting

Email: sales@americanmagnetics.com for a Quote



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Control Modes

The Model 1800 is unique by offering three modes for level control. The function of each mode is summarized below. The controller modes provide flexibility for solving a wide range of level control problems with a minimum of external hardware or logic.

Normal Mode

In the normal mode, Channels 1 and 2 act as independent auto-fill systems. As each level falls below the “B” setpoint, an independent fill cycle is initiated and fills the controlled dewar to the “A” setpoint via two separate solid-state-relay-controlled AC outputs which drive solenoid actuated valves. The A and B setpoints for Channels 1 and 2 operate as independent liquid level control bands. The autofill can also be set to fill at anytime day or night in addition to the level function.

Auto-Changeover Mode

In auto-changeover mode, the Model 1800 monitors and controls a liquid level measured by Channel 1, and uses liquid supplied from two supply vessels. The A and B setpoints for Channel 1 function as the liquid level control band for the controlled dewar. The dual AC outputs control a fill valve for each of the two supply vessels. The instrument either monitors dry contacts to determine availability of liquid from each of the two supply vessels or determines availability by fill timeouts, or by using another channels to monitor supply vessel(s). The Model 1800 automatically switches from one supply vessel to the next. This allows one of the two supply vessels to be replaced when empty without interrupting the availability of liquid to the controlled dewar. The autofill can also be set to fill at anytime day or night in addition to the level function.

Pre-Cool Mode

The pre-cool mode provides for cooling of a cryogen transfer line before opening the transfer line to the controlled dewar. The A and B setpoints for Channel 1 function as the liquid level control band for the controlled dewar, while AC Output 2 controls a vent valve. When a fill cycle is initiated, the vent valve is opened for a user-defined time, after which the vent valve is closed and the fill valve to the controlled dewar is opened. During the time the vent valve is open, the cryogen cools the transfer line so that a minimal amount of warm gas enters the controlled dewar. The autofill can also be set to fill based on time of day in addition to or instead of the level function.