

The CMP Support Electronics

Advanced-lab experiments in condensed-matter physics require various forms of supporting electronics. TeachSpin leaves data recording to individual taste (in oscilloscopes, data-loggers, or computer-aided data-acquisition systems), but is committed to supporting various low-level and analog-electronic measurement tasks with special electronic modules.

These modules all take the form of Small Instrument Modules (SIMs) and all can be powered by an SRS 'mainframe' or crate for SIMs. (One or two individual modules can alternatively be powered using a TeachSpin 2-slot power supply.) The modules in production, for support of present CMP experimental packages, are:

PCS-3012 Pulsed Current Source

Designed for quantifiable heat-pulse delivery in the Specific-Heat experiment

LPFA-3013 Low-Pass Filter/Amplifier

Designed for low-pass filtering, and d.c. offsetting, of low-level analog signals, such as the temperature-transducer signals emerging from the Specific-Heat experiment

PITC-3014 Proportional/Integral Temperature Controller

Designed to operate the unique FET/Resistor heater string in the TeachSpin Dewar

VCS-3015 Variable Constant-Current Source

Delivers constant currents of $\pm 1/10/100 \mu\text{A}$, $\pm 1/10/100 \text{ mA}$ with 10-V compliance

HCD-3016 Hartshorn Coil Drive

For driving & reading the Hartshorn Coil in the Magnetic-Susceptibility experiment

D.C.S-3017 Dual Current Source

A dual $1/10/100 \mu\text{A}$ current source, designed for transdiode thermometry support

SIMPS-3018 Power Supply

An alternative power supply for one or two Small Instrument Modules