

Filter Set or Relay Control Unit

OVERVIEW

The PFCU-4 is a flexible control unit for both Model PF4 Filter Inserters and Model PF2S2 Filter/ Shutter Units. In a 1-wide NIM module, it implements both manual control, via front panel switches, and remote control, via either TTL I/O or RS-232 daisy chain. It is thereby compatible with a wide variety of computer I/O modules. Since its 4 output lines are rated for 100 mA inductive loads, it may also be used to control a variety of other experimental equipment.

Each output in the PFCU-4 is switched by 3 ORed inputs: a front panel switch, a remote TTL input logic level, or RS-232 setting. Output status is shown by both a panel LED, and a TTL logic output level, and can also be read by RS-232. Thus, if remote control is overridden from the front panel, the actual experimental situation is still reported and can be accurately stored in the remote controller's data record. The outputs are short circuit protected and both short and open conditions are detected and indicated by flashing the LEDs. RS-232 remote control can be made exclusive with a simple command or disabled via front panel switch. The Model PFCU-4 combines with a Model PF4 or PF2S2 and an appropriate cable (3 lengths available) to implement a complete remote-controlled filter or shutter insertion system.

FEATURES

- Implements manual and computer control of PF4 filter unit, PF2S2 filter-shutter unit, small relays or other experimental equipment.
- 4 output lines, each at 24V, 5 - 100 mA, short circuit protected.
- Control via front panel switches, TTL remote control input signals, or RS-232 commands. Reports output activation status via TTL or RS-232.
- Detects both open and short circuits as error states; short circuit protected.
- Panel LEDs show normal activation, flash for error states.
- Simple RS-232 command language allows full control and monitoring of filter/shutter status.
- Up to 16 PFCU-4 units can be combined on one RS-232 daisy chain.
- Single width NIM module powered from NIM bin or through RS-232 connector using accessory power supply and adapter.



TYPICAL APPLICATIONS

Simplified Experimental Setup

Allows remote, "Beam On" selection of filters in front of the sample or in front of the detector in a convenient, rapid and reproducible manner.

Automated Data Acquisition

Implementing computer control over a PF4 lets data with a large dynamic range be collected automatically by allowing the control program to automatically insert calibrated filters when the detected intensity becomes too high, remove them again at lower intensity levels, and record these insertions as part of the data file.

Exposure Control

Implementing computer control over a PF2S2 unit allows software to produce exposures based on input beam intensity, accurately timed exposures, or exposures based on any other experimental parameter of interest.

SPECIFICATIONS

Front Panel I/O:

- 4 SPST switches "In/Out";
- 1 SPST slide switch "RS-232 Enable".
- 2 DB9 Male Plugs: "RS-232 Input" and "RS-232 Output"

Rear Panel I/O:

- DB9 Female receptacle: 24V, 0-100 mA; diode protected for inductive loads.
- DB9 Male plug: TTL Control and Status. Both Active LO.

Fault Detection:

- Output currents below 3.5 mA are detected as Open Circuits
- Output currents above 110 mA are detected as Shorts and switched off

Power Requirements:

NIM: +12 V: 200 mA. +24 V: up to 400 mA, depending on load.

Alternative RS-232: +24 V: up to 600 mA, depending on load.

ORDERING INFORMATION

Dimensions: Single width NIM module.

Weight: Shipping: 3.0 lbs; Net: 1.5 lbs.

Warranty: One year

Prices: Per Current Price Sheet

RELATED PRODUCTS

PF-CAB-xx connector cables

9 conductor shielded cables (26 AWG, 4 twisted pairs & ground) with M&F DB9 connectors to connect a PFCU-4 to PF4 filter unit or PF2S2 filter-shutter unit. Available lengths xx are 15', 25' & 50'.

HSC-PWR

The **Model HSC-PWR** is a wall transformer unit which can supply alternate power for the PFCU-4, allowing it to be used without a NIM bin. The unit is the same one which powers the **Model HSC-1** Huber Slit Controller and, in fact, both **PFCU's** and **HSC-1's** can be daisy chained on the same RS-232 control line, provided they are placed on the line in the proper physical sequence and the **PFCU's** are isolated from the **HSC-1's** by a **HSC-PWR** unit.

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