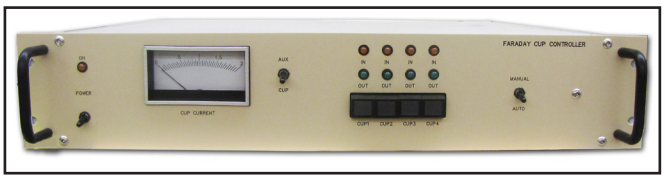
National Electrostatics Corp.
7540 Graber Rd., P.O. Box 620310, Middleton, WI 53562-0310 USA

02/17

Multi-Unit Faraday Cup Controllers



NEC offers two distinct models of Faraday cup controllers. One is a local controller that can control up to four Faraday cups. The other is a remote controller that can control up to six Faraday cups.

DESIGN

These mulit-unit controllers have been in use for over two decades on NEC Pelletron® accelerators and have been updated throughout the years. They provide suppressor voltage, input for beam current reading, and actuation control.

Both controllers are compatible with NEC Farday cup models FC18, FC28, and FC50.

Local Faraday Cup Controller

The local multi-unit Faraday cup controller can provide control for up to four NEC Faraday cups.

The front panel has a manual/auto mode switch. This switch allows automatic actuation of a Faraday cup on command from a beam current integrator or other device which provides a 24 VDC status control signal.

For Faraday cup extraction, the controller provides a 24 VDC signal to the Faraday cup. In addition, the controller provides 150 or 400 VDC for electron suppression to the Faraday cup in use.

A picoammeter is needed for current readout. It provides a 0-2V signal for use with the analog meter on the front of the controller.

A connector is provided to allow contact closure interlocks. Six connections must be closed for the Faraday cup to be removed from the beam path. When used with the NEC Faraday cups and a suitable electrometer, this controller completes an efficient and reliable ion beam current read system.

Remote Faraday Cup Controller

The remote multi-unit Faraday cup controller can provide control for up to six NEC Faraday cups.

This controller acts as an interface between a system control computer and the Faraday cups. The front panel has an LED that indicates when AC power is applied. Selection and control of the Faraday cups is done via the system control computer.

For Faraday cup extraction, the control cumputer sends an Enable signal to the controller, which in turn sends a +24VDC signal to the Faraday cup. Position status (in/out) information is sent directly to the control computer.

A logarithmic amplifier is needed to convert current readings from the Faraday cup to voltage output, which is then routed through the controller to the control computer.

As with the local controller, the remote controller provides contact closures for interlocks and electron suppression (150 or 400 VDC).

TELEPHONE: 608-831-7600 ♦ **FAX**: 608-831-9591 ♦ **E-MAIL**: nec@pelletron.com ♦ **WEB-SITE**: http://www.pelletron.com

Multi-Unit Faraday Cup Controller

SPECIFICATIONS

Input:	Local: 120/240 VAC, .5/.25A, 50 - 60Hz Remote: 120 VAC at 2A, 240 VAC at 1A, 50-60Hz
Output:	24 VDC, 2.3A for extraction (All cups close on power failure) -400 VDC, 1mA for electron suppression (150 VDC optional)
Controls/Indicators:	On/Off power; 4 station switch for Faraday cup selection (local only); Manual/auto mode switch (local only)
Meter (local only):	0-2 VDC for beam current read, requires a Keithley Model 600B or equivalent electrometer
Connectors:	Local ♦ 9 pin D- quantity 4- for cup actuation ♦ 15 pin D- quantity 2- for interlocks ♦ MHV- quantity 4- suppression outputs ♦ BNC- quantity 4- Faraday cup current input ♦ BNC- quantity 3- for electrometer input/output and current integrator Remote 37 pin D - quantity 1 - Status control/read to cups 1-3, controller status control 25 pin D - quantity 1 - Status Contro/Read to cups 4-6 9 pin D - quantity 6 - Cup actuation and sensing TY3F - quantity 6 - Interlocks MHV - quanitity 6 - Suppression outputs 9 pin D - quantity 3 - Faraday cup amplified current input IEC320-C14 - quantity 1 - AC power input
Dimensions:	Local: 19” rack mount, 3.5” height, 17.25” depth Remote: 19” rack mount, 5.25” height, 11.75”depth

ORDERING INFORMATION

Local controller Catalog No.	**2HA059100 (400VDC suppressor)**
	2HA047670 (150V suppressor)
Remote Controller Catalog No.	**2HA065191 (400VDC suppressor)**
	2HA065190 (150V suppressor)

F.O.B. Middleton, Wisconsin, U.S.A.

[FC Cont v1]

National Electrostatics Corp.
7540 Graber Rd., P.O. Box 620310, Middleton, WI 53562-0310 USA

TELEPHONE: 608-831-7600 ♦ **FAX**: 608-831-9591 ♦ **E-MAIL**: nec@pelletron.com ♦ **WEB-SITE**: http://www.pelletron.com