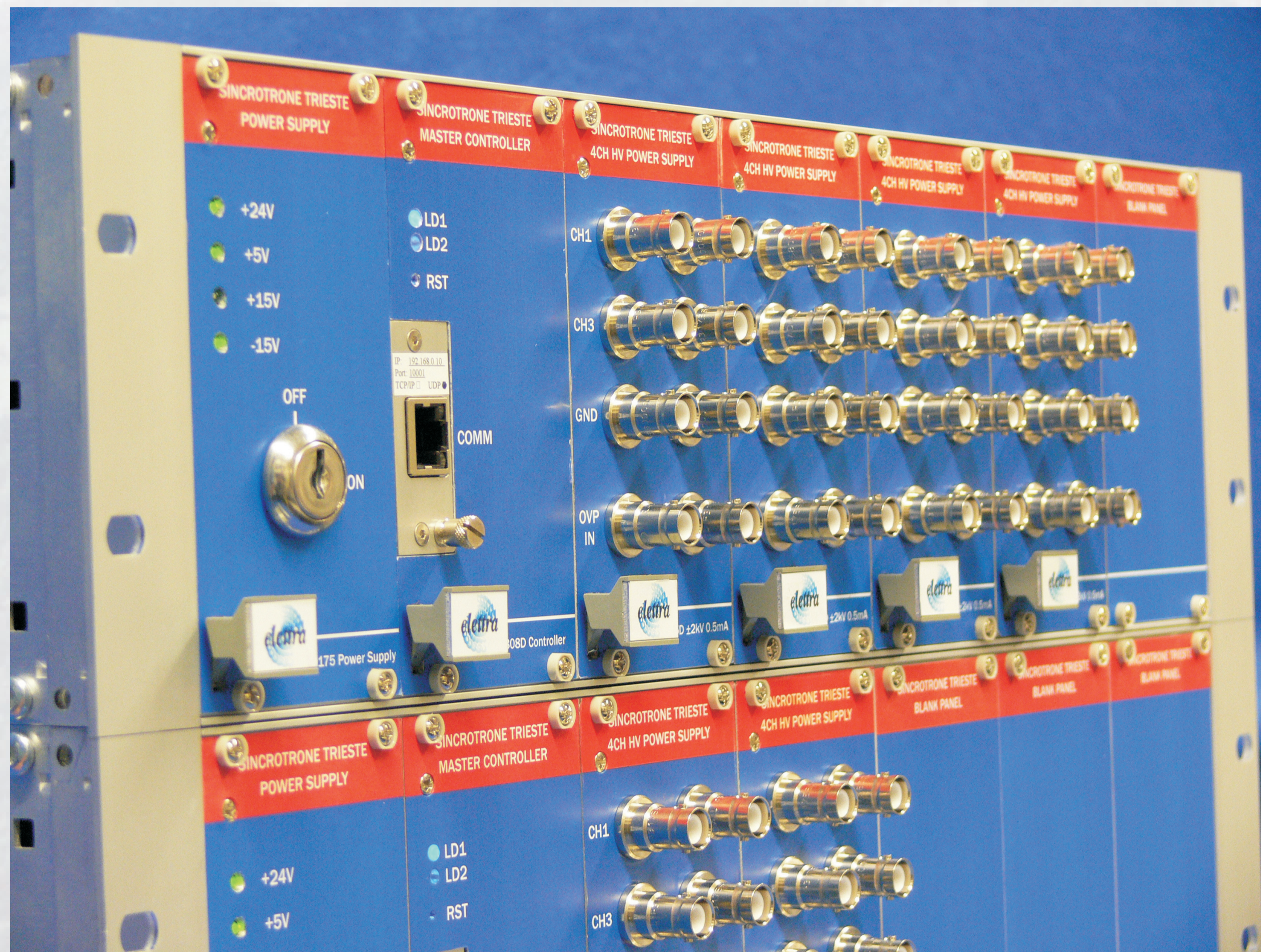


For special applications in synchrotron radiation instrumentation, high precision and stability high voltage power supplies are essential. Moreover in some particular cases like electrostatic lenses, piezo devices, electron analysers supply, high voltage capability and remote control/feedback are key parameters. Sincrotrone Trieste S.C.p.A. has expressly developed a new versatile high voltage power supply system for electrostatic field applications, designed to meet all these requirements. The unit layout has a modular architecture being accommodated in a 19" wide, 3U-high Euro crate. It consists of a controller unit and up to 4 power supply modules for a total of 16 high voltage outputs, which allow independent setting / reading of all voltages



The MAS-TER High Voltage System

This system (mirror advanced power supply) is a powerful and versatile system especially suited for applications in experimental physics (i.e. electron spectroscopy, adaptive piezoelectric mirrors, etc). A main general purpose control unit (industrial PC) supervises all the connected modules and runs proprietary software allowing complete control of the system assuring communication with any host computer via Ethernet connection.

The power supply system consists of:

- One DSP controller unit 3U high 10TE wide (C2808D)
- Up to 2 power supply boards 3U high 10TE wide (PS0175)
- Up to 4 modules 3U high 10TE wide (i.e. A4205D)

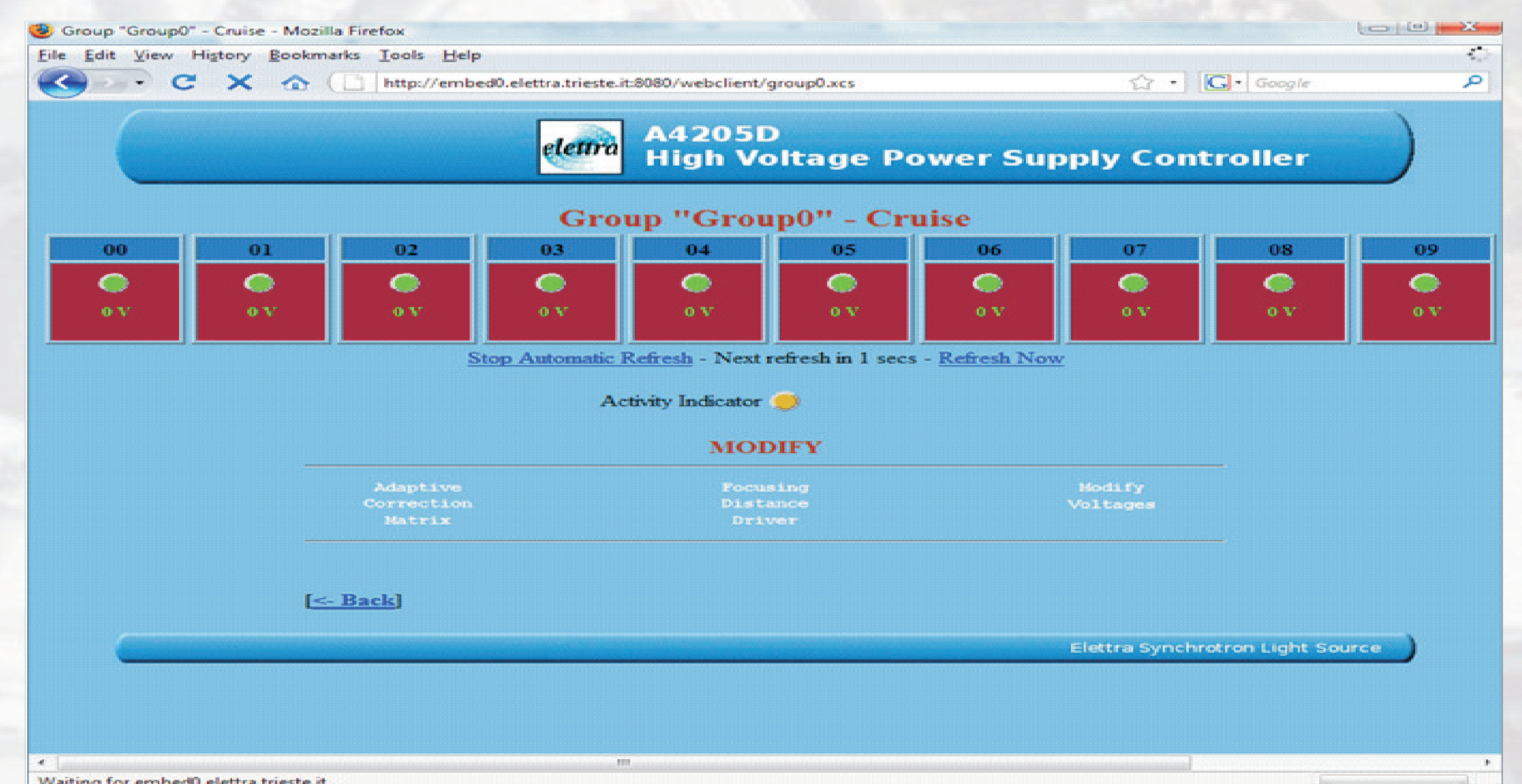
As the instrumentation is designed for experimental set-ups of large scientific facilities, EPICS and TANGO integration tools are also provided to users. Under EPICS, the field I/O is concentrated on low-level local controllers called I/O Controllers (IOC). MAS-TER may act as an IOC under EPICS environment.

MAS-TER system has an internal bus where the individual modules are connected through multi-polar connectors for both power supply and control lines. A variety of modules will be available for different applications and might be combined in various configurations. MAS-TER enables to use proprietary know-how that allows to safely control with the highest accuracy and repeatability, resolution and stability, all piezoelectric bimorph mirrors based on piezoelectric ceramic actuators. Thus, it is the most reliable, efficient and powerful tool for controlling bimorph mirrors in order to easily and reliably obtain their best performances.

The A4205D is a 4 Channel Linear Bipolar Power Supply

delivering +2kV/-2kV @ 0.5mA especially designed for driving piezoelectric loads like bimorph mirrors. Each A4205D module contains four bipolar channels referred to ground. Modular communication also satisfies users' requests: modules as RS232/485, USB and Ethernet (TCP/IP and UDP) reach data transfer rates up to 1 Mbit/s

Output Channels	16 max (4 per module)
Effective Output Current	500 μ A max intrinsically limited
Effective Output Voltage	+/- 2000V zero-crossing
Data Transfer	up to 115.2 kBaud
Resolution Bits	24
Communication	Modular (RS232/485, USB, Ethernet TCP/IP-UDP)
Supply Voltage	90-240Vac, 50-60Hz, 60W
Dimensions	19"-wide, 3U-high Euro-mechanics rack
Weight	6 kg (with 1 A4205D installed)
Output Connectors	Radial SHV connectors



Other Developments

AH-601 High Insulation, High Resolution Floating Ammeter

Designed for ultra-low current measurements. The instrument is particularly suitable for detection of any current generated by photo diodes, ionisation chambers, photoemission effect and those applications where high insulation is a concern. The front-end is positioned close to the current source to enhance its noise rejection.

XS-15K Extreme stability floating high voltage system (15kV@10ppm)

It is designed to deliver extremely stable, low noise and multiple outputs voltages. The power supply system is floating from ground. Its main application is to support volume photo emission electron spectroscopy and it is composed of a highly stable, low noise 15kV DC source. The instrument is controlled by Ethernet 10/100 connection and so it is particularly suited for stand alone operations and distributed Experimental systems.