

## Sydor Electrometer

Sydor's Electrometer is a high performance 4-channel readout device with an integrated bias output. This is intended for use with Sydor's 4-quadrant diamond beam position monitors. The device is compact and can be linked to the beamline control system via ethernet hookups, allowing it to be installed close to beam position monitors and thus simplifying its integration.

The electrometer is Experimental Physics and Industrial Control System (EPICS) compatible and the control GUI is tailored to allow intuitive monitoring of the current signals, beam position and beam flux. The currents are measured continuously by dual integrators on each channel which operate in tandem and integrate at a rate of 2.5 Ksamples per second. Through Sydor's software, the readout can be set for single shot or continuous acquisition. The channels also have 2 programmable gain ranges (1 pA - 120 nA) and (100 pA – 865 nA) and a large 20-bit dynamic range.

Sydor's software also provides the capability of acquiring and displaying time series samples of the horizontal and vertical positions, total current intensity, and individual channel currents. The Sydor Electrometer allows the customer to deploy control and diagnostic systems for the optimization of beamline optics and other beamline-critical components.



### Features:

- ⊕ Independent pA to nA current measurement with an integrated adjustable bias voltage output.
- ⊕ Intuitive software controls via ethernet for beam position and intensity monitoring
- ⊕ Continuous current integration via a dual integrator scheme
- ⊕ Compatible with EPICS

### Applications:

- ⊕ Readout for beam position and flux monitors
- ⊕ Suitable for use with diode, foil, and ion chambers
- ⊕ Integrable to customer-supplied control schemes for beamline optimization



# Product Specifications

## Electrometer Specifications

- ➊ **Readout:** Continuous current integration via dual switching integrators, each operating at 2.5 kSamples/s
- ➋ **Readout Channels:** 4
- ➌ **Current Measuring Range:** 1 pA to 865 nA
- ➍ **Gain Selection:** 2 gain ranges: Low=(1 pA - 120 nA) High=(100 pA – 865 nA)
- ➎ **Trigger:** Internal
- ➏ **Bias Voltage Output:** 1.2 V to +22.0 V
- ➐ **Current Polarity:** Unipolar

## Readout

- ➊ **Interface:** EPICS soft IOC with DHCP addressing
- ➋ **Output:** Current measurement data, plus calibrated beam position and intensity logging
- ➌ **Ethernet:** 1 Ethernet Port 10/100/1000 Mb (RJ45 connector)

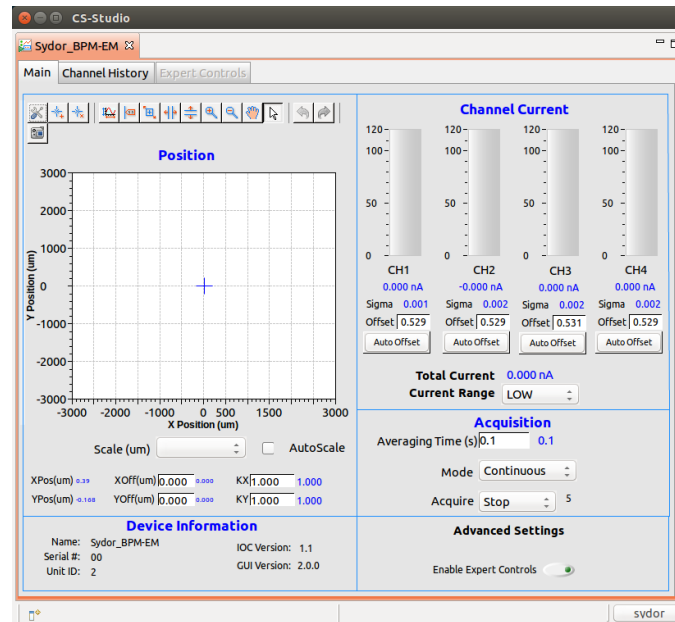
## Electrical Requirements

- ➊ **Input:** 110-220 VAC, 50-60 Hz, < 50 Watts

## Mechanical

- ➊ **Dimensions:** 7.25 x 7.125 x 2.345" (184 x 181 x 59.5 mm)

## Sydor Software Interface



Sydor GUI

