

I3200 Thirty-two channel Digital Electrometer

Features

- Thirty-two gated integrator channels
- Dynamic range 0.1pA to 100 μ A
- Optional integrated HV supply
- Integrated actuator solenoid control
- Integrated digitization and communications
- Integrated calibration test source
- Selection of current and charge integration modes



Applications

- Multi-electrode ionization chambers and ionization chamber arrays
- Multiwire proportional chambers operating in current mode
- Multiwire beam profile grids
- Multi-segment photodiode arrays

Options

- Auxiliary HV output for detector bias
- Alternative feedback capacitor options

Specifications

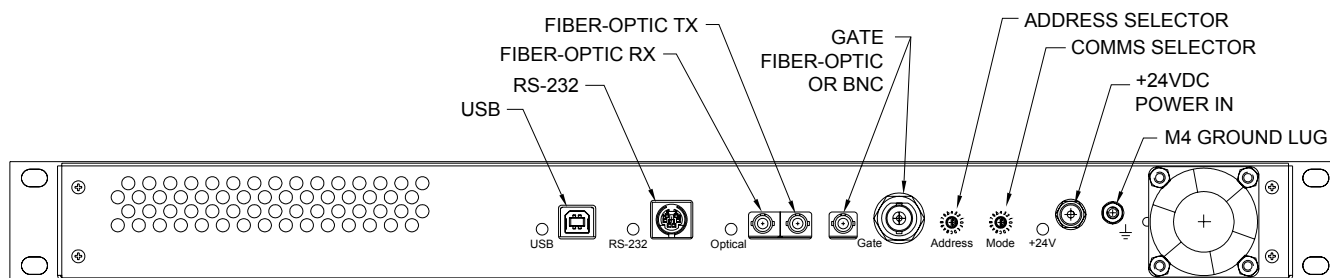
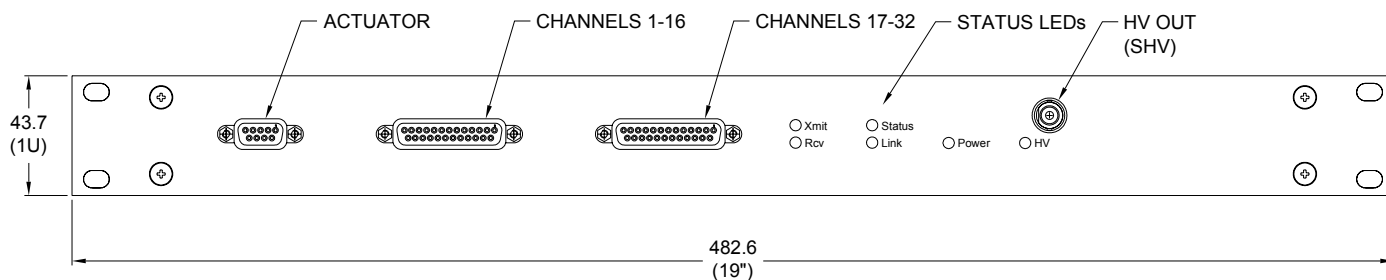
Integration capacitors	Each channel has dual, selectable capacitors	Actuator control	Switched 24 VDC for actuator solenoid, in/out limit switch sense
Input noise	< 10 fA rms + 1 fA rms per pF input load up to 100 pF (1 second integration, 10 pF capacitor)	HV PSU	0 to 2500 V programmable, (polarity factory selectable), 200 μ A max. Noise and ripple < 0.1%. Other voltages available.
Input offset current	< 100 fA at 0V bias, 25 C < 600 fA at 0V bias, 50 C < 200 fA at 400V bias, 25 C	Power input	+24V (+/- 2V) DC, 750 mA typ, 1200 mA max. excluding actuator
Stability Output drift	< 5 ppm / C / hour	Controls	Two rotary switches for loop address and comms mode/baud rate.
Integration time	User selectable, 100 μ sec minimum.	Displays	Status LEDs (power, device status, comms mode, data transmission rcv/xmit). "HV on" LED.
Integration modes	Continuous current; continuous charge; lossless charge accumulation; external gate integration; triggered burst mode	Case	1U 19" galvanized steel chassis with Al alloy front panel
Input protection	Back to back fast diode pair and spark gap on each input	Weight	2.7 kg (6.0 lb)
Digitization	Eight ADCs reading groups of four inputs, 16 bit bipolar, 250 kHz	Operating environment	10 to 35 C (15 to 25 C recommended to reduce drift and offset), < 70% humidity, non-condensing, vibration < 0.1g all axes (1 to 1000 Hz)
Data readout	time 32 channels are converted and copied to internal memory in \leq 10 μ sec	Shipping and storage environment	-10 to 50 C, < 80% humidity, non-condensing, vibration < 2g all axes, 1 to 1000 Hz
Data rate to host	> 1kHz typical for 32 channels		
External gate	0/+5 V, 50 ohm or fibre-optic logic level input		

Interfacing

Interfaces	RS-232, 8-bit ASCII. Selectable baud rate. USB, 8-bit ASCII 3 Mbit/sec Fiber-optic loop, 10 Mbit/sec serial, 9-bit asynchronous binary. Ethernet connection to host through A300 or A400 loop controllers.
Host computer	ASCII communications based on SCPI. Diagnostic host program supplied for Microsoft® .net framework. DLLs available for Microsoft® .net, National Instruments™ Labview™ and Microsoft® C++.

Connectors

Signal inputs	Two D25 sockets. Channels 1-16, channels 17-32.
Actuator control	D9 socket.
HV out	SHV
External gate in	BNC (isolated from case) or Avago Versatile Link HFBR ST bayonet
USB	USB B type female.
RS-232	Six pin mini-DIN ("PS/2")
Fiber optics	Two Avago Versatile Link HFBR ST bayonet (compatible with 1 mm POF and 200 μ m HCS fiber)
Power in	2.1mm threaded jack. Mates with Switchcraft S761K or equivalent.
Ground	M4 threaded stud



Dims in mm

Ordering information

13200 thirty-two channel electrometer with user manuals, software drivers, calibration data.

13200

Add HV supply positive 2500/1000/500/200 volts

-XP25/10/5/2

Add HV supply negative 2500/1000/500/200 volts

-XN25/10/5/2

Specify feedback capacitors x pF, y pF. (Default is 10 pF, 1000 pF.)

-Cx/y

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