USBPHP-S1 USB Programmable
Single Channel Instrumentation Amplifier, and High Pass Filter

- USB 2.0 compatible communication for setup and control
- Non-volatile configuration retains all settings through power cycles
- Does not need to be attached to a PC to operate
- AC/DC converter included for 115VAC or 220VAC power
- Optional 9 to 12V battery operation
- Compatible with any 12-, 16, or 24-bit A/D converter device
- Differential or single ended input with software selectable amplifier gains of 1 to 1000
- ± 10Vmax Signal Input and Output with input protection up to ±40V
- Filter rejection band attenuation up to -90dB
- High Pass Filter available as 4-pole Butterworth or Bessel.
- High Pass Software select any Corner Frequency (Fc) from 5Hz to 1275Hz in HyN model (185Hz to 47.22kHz in –HyE model)
- factory calibrated for unity gain and very low DC offset filter output
- Use multiple USBPHP-S1 units for multi-channel applications
- Windows 7/Vista/XP compatible menu setup software

Adaptable to most applications in the field, on the factory floor, or in the lab

The USBPHP-S1 stand alone USB controllable module provides a single channel of high pass filtering and high-quality instrumentation amplifier for front-end signal conditioning compatible with all popular A/D converter devices.

The USBPHP-S1 is powered with 9 to 12VDC so it can be connected to a battery voltage source or the supplied 115-220VAC adapter may be used for operation with wall power anywhere in the world.

When programmed from the USB port, the USBPHP-S1 will remember all of the programmed properties between power cycles. Program once and operate as a stand-alone signal conditioner without having to reprogram for every use. This is perfect for turn-key applications.

It's easy to connect the USBPHP-S1 into the data collection system. Input and output signals can be routed through BNC connection or using the detachable screw terminal connectors. Optional SMA type adapters are also available.

Protection from high input voltages

The USBPHP-S1 provides strong input protection and can withstand up to +/-40V at the analog signal input.

Amplify to improve signal resolution

The USBPHP-S1 high-quality instrumentation amplifier provides software-selectable gain as well as differential inputs with high-common mode rejection. Gain can be set at 1, 2, 5, 10, 20, 50, 100, 200, 500 or 1000. The USBPHP-S1 Instrumentation Amplifier provides an excellent common-mode rejection of 90 to 100 dB typical at high gains.

Multiple unit operation individually software select any high corner frequency

Each USBPHP-S1 module in a multi-channel data collection system can have a unique filter characteristic, a unique set of corner frequencies, and a unique amplification.

All Software is Included

The USBPHP-S1 comes with a complete menu-driven program.

SystemViewUSBPxx is a ready-made Windows 7/Vista /XPcompatible application that uses a few simple mouse clicks to program the parameters of each USBPHP-S1 connected to the PC. Once selected, the desired parameters are set and saved to non-volatile memory in the USBPHP-S1 so that they are reapplied after every subsequent power up.

Ordering information

USBPHP-S1/yz

y = high pass characteristic
z = high pass range

High Pass Range Options
Normal range   z = N
 Continuously tunable from 5Hz to 1275Hz
Extended range   z = E
 Continuously tunable from 185Hz to 47.22kHz

High Pass Filter Options
4-pole Butterworth   y = B
4-pole Bessel   y = L

Instrumentation Amplifier
Gain of 1, 2, 5, 10, 100, 200, 500, 1000 Software selectable
Gain Error ....<±.0.01dB @ 10kHz at gain of 1
Gain Tolerance ....@2-100   0.15%max
....@200-1000   0.3% max
CMRR ....75dBmin, 86dB typ. at gain of 1
Common Mode Voltage ....+/-10V max
Input Voltage.........................+/-10V max at gain of 1
Input Protection.....................+/-40V max, with power off or on
Input Impedance ....20MΩ differential (10MΩ each side to
                                 analog ground)
DC offset, Factory Adjusted..<±.0.1mV @ 10kHz at gain of 1
DC offset vs. temperature.....<±20 µV/°C
DC offset, long term drift.......<±5 µV/Month
Output impedance.................<0.01 Ω

Physical
Number of channels..............1
Size......................................108mm(4.25")x83mm(3.25")
Power consumption ....500mA at +9VDC
Operating temperature..........0°C to 70°C

Software

SystemViewUSBPxx.............Windows 7/Vista/XP compatible

System Accessories

Connectors

USBPxx-S1/STA	Screw terminal adapter kit(one 2-lead STA and two 3-lead STA)
USBPxx-S1/SMAM	two BNC to SMA Male adapters
USBPxx-S1/SMAF	two BNC to SMA Female adapters

Power Adapters

P9V500MA	Universal to 9V DC 500mA
PAP-NA	Power Adapter Plug North America
PAP-EU	Power Adapter Plug Europe
PAP-AS	Power Adapter Plug Australia