



**Logitech Electronics Limited**

---

## **SIGNAL PROCESSING MODULE**

# SigPro USB

User Guide

# Contents

Connections . . . . . 3

Programming . . . . . 4

Operation . . . . . 6

# Connections

**Power Supply** 12V to 30V DC Use standard 2.5mm power socket with positive connected to centre pin or, alternatively, wire directly to terminal block +V<sub>s</sub> and 0V.

**Input** Use input A for standard sensitivity (150mV minimum) or input B for high sensitivity (10mV minimum). Signal is connected between input and 0V. For reed relay input connect between +V<sub>s</sub> and input A.

**Voltage Output** 0–5V, 1–5V, 0–10V or 2–10V between V<sub>out</sub> and 0V

**Current Output** 0–20mA or 4–20mA between I+ and I- (non-isolated, I- is connected to 0V).

**Divider Output** Frequency Divided output available between D<sub>out</sub> and 0V.

**Alarm Output** High alarm (A<sub>hi</sub>) and Low alarm (A<sub>lo</sub>) sink up to 100mA of current to 0V when active. Connect load between +V<sub>s</sub> and alarm output. If load is a relay coil then use a diode across the coil to suppress interference caused when coil is de-energised.

# Programming

All parameters can be up to 8 digits with the decimal point in any position

**FACTORS** — Select the FACTORS tab:

**Rate Scaling** Rate value is calculated as frequency (in pulses per second i.e. Hz) multiplied by scaling factor.

**Offset** Entered value is subtracted from the calculated rate. Enter a negative offset if you wish to add a fixed value.

**Low alarm** When the calculated rate value (after any offset is applied) is less than the Low Alarm value then the  $A_{lo}$  output will be active.

**High Alarm** When the calculated rate value (after any offset is applied) is greater than the High Alarm value then the  $A_{hi}$  output will be active.

**Reference** This is the rate value (normally 0) that equates to the lowest analogue output signal (0V, 1V or 2V; 0mA or 4mA).

NOTE: Rate values below the reference value will produce the minimum analogue output.

**Fullscale** This is the rate value that equates to the highest analogue output signal (5V, 10V or 20mA).

NOTE: Rate values above the full-scale value will produce the maximum analogue output.

**Total Scaling** Enter a multiplication factor that is applied to the totalised pulse count.

**Division Factor** Maximum permissible value is 0.5. Dout provides a frequency scaled output which is input frequency multiplied by Division Factor. Output frequency can be no greater than half of the input frequency (hence 0.5 is max. value). No input pulses are lost as a result of rounding.

## MODE — select the MODE tab:

Select appropriate output mode 0–5V, 1–5V, 0–10V, 2–10V, 0–20mA or 4–20mA.

### Output

NOTE: Although both voltage and current are available simultaneously on the output terminals, only the selected range will be calibrated and calculated using reference and full-scale values.

Select High sensitivity (input B), Standard sensitivity (input A) or Reed Contact (input A – connect reed switch between +V<sub>s</sub> and input A).

### Input

NOTE: When Reed Contact is selected, the maximum input frequency is limited to 200 pulses per second (Hz).

## CALIBRATION — select the CALIBRATION tab:

Contains values for **V-offset**, **V-F.S.**, **I-offset** and **I-F.S.**

It is advisable to note these values in case they are inadvertently altered; it is strongly recommended that they should not be altered without good reason.

Instructions for setting these values can be obtained from the manufacturer.

# Operation

## READINGS — select the READINGS tab:

### Sensitivity

With an input signal connected to the appropriate input terminal, the sensitivity control should be adjusted to provide a stable reading of Rate. The sensitivity should be set no higher than that required to give stable and consistent results. The highest sensitivity is available with the slider at the top of the control.

### Rate

This displays the rate value which is calculated as:  $(\text{Input frequency} \times \text{Rate scaling}) - \text{Offset}$

### Analogue

This displays the analogue voltage or current value that equates to the calculated rate value. It is dependant on the output range that has been chosen and the values that have been set for reference and full-scale. This value is useful for comparing against the actual analogue output obtained from the terminal block of the unit.

### Max.

This value displays the maximum rate value that has been measured since the value was last reset.

### Min.

This value displays the minimum rate value that has been measured since the value was last reset. Values of zero are not recorded. The value must be present for at least one second in order that it is recorded.

### Total

This displays the total number of pulses that have been counted since the value was last reset. The value is scaled by multiplying by the 'Total Scaling' value.

Copyright © **Logitech Electronics Limited**  
1994 to 2017  
Document No: SIGPRO-USB\_hb v. 2.0 August 2017



MADE IN THE UK

*Reliability, Guaranteed*



**Logitech Electronics Limited**

e: [sales@logitechelectronics.com](mailto:sales@logitechelectronics.com)  
t: +44 (0)1952 820444

*Design and Manufacture of Electronic Systems and Instrumentation. Supply of Sensors and Transducers*

[www.logitechelectronics.com](http://www.logitechelectronics.com)

Lane End | Church Aston | Newport | Shropshire | TF10 9JJ | UK